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DEVELOPING AND PILOTING NATIONAL QUALITY AND PATIENT SAFETY KEY PERFORMANCE INDICATORS IN NURSING & MIDWIFERY PRACTICE

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Objectives: This paper describes the initial processes involved in transforming a national policy vision into practice in order to improve patient outcomes.

Methods: Measuring patient outcomes was a key objective following Ireland’s Commission on Patient Safety, which reported in 2008.

At the time a number of existing groups within the health service were already developing KPIs, though a number of these indicators focused on access and cost, and not all had a quality and patient safety or patient outcome focus.

In response, a number of new initiatives were undertaken, including the Chief Nurse establishing a nursing and midwifery key performance indicator (N&M KPI) steering committee with the aim of identifying KPIs that could be measured and applied in nursing practice and which would demonstrate patient outcomes.

This committee works in collaboration with a concurrently formed National Quality and Patient Safety Indicator Steering Committee and its technical group, jointly established by the Health Services Executive’s Quality and Patient Safety Directorate (QPSD) and the Department of Health, to co-ordinate indicator development and make recommendations in relation to quality and patient safety indicators for national reporting. The two committees have a mutual focus and some overlap of membership provides continuity and consistency in co-ordination.

The N&M KPI committee includes representatives from all nursing and midwifery stakeholders including service, education and regulation. This committee scoped a baseline of patient care measurement activity, and examined the international nursing & midwifery experience. From there, 4 care delivery topics were identified for further development into KPI’s, of which 2 (falls and pressure ulcers) were feasible and prepared for national piloting, using collaborative working with quality & patient safety experts in addition to topic specialists, with an aim of national reporting. This process took 12 months, however a further 3 months were required to define and establish the national reporting mechanisms through existing structures. The pilot was then commenced using two different data collection and reporting mechanisms across 19 sites reflecting the variety of care delivery settings from community to acute care.

Project Results: This paper will outline the lessons learnt in the project methods above. It will also discuss the results of the pilot evaluations, which will demonstrate the state of readiness for national reporting, through the national service plan, of the two chosen KPIs and inform the development of other QPS and Nursing & Midwifery KPIs.

Conclusion: The developing and piloting of KPIs for national reporting is a complex process which requires close collaboration. Ensuring data collection and reporting mechanisms are aligned and complement existing methods is essential for any piloting and implementation of national KPIs. Clear leadership and support from policy decision makers is critical in driving cross agency collaboration.
ENHANCING PATIENT SAFETY AND QUALITY OF CARE BY STANDARDISING TELEPHONE TRIAGE IN THE HAEMATOLOGY ONCOLOGY SETTING

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Objective: To develop a standardised Telephone Triage System (TTS) and related guidelines on providing telephone advice to patients thus ensuring immediate, appropriate and safe advice for patients receiving treatment in the haematology oncology setting and clarifying the decision making process for staff.

Background/Significance: Many of the episodes of care provided by the haematology oncology day ward (HODW) in St James’s hospital involve administration of cytotoxic chemotherapy which can have life-threatening side effects. Timely, effective intervention in managing these effects can be life saving. Telephone Triage (TT) provides essential 24hr assessment for patients experiencing these effects.

Method: Nurses and patient questionnaires identified the need for dedicated time, space, phone lines, standardised protocols, guidelines, e-documentation and staff competency for the provision of TT. A random sample of 20 calls was audited to evaluate implementation of the standardised TTS.

Results/Outcomes: The number and type of calls received over a one month period was audited. Over 40% of calls (n=64) were not treatment related resulting in redefining the 24hr contact numbers. Twenty of the 57 treatment related calls were randomly selected and audited. Eighteen calls (90%) were recorded correctly on the electronic patient records (EPR). Patients received appropriate and immediate advice in 90% of calls (n=17).

Conclusions: Nursing leadership in standardising TTS resulted in improved patient care and management, team communication and compliance with professional and legal requirements. Implementation of TTS resulted in the provision of immediate and standardised information whilst increasing staff awareness of the importance of timely, quality intervention and knowledge and skills in dealing with unplanned patient problems.
EFFECT OF TEAM RESOURCE MANAGEMENT (TRM) INTERVENTION: A COST OF QUALITY PERSPECTIVE
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Objectives: By introducing the cost of quality (COQ) system, this study aims:

1) to plan the COQ system for this hospital for management to understand the cost of effort in quality investment (preventive cost and appraisal cost) and the effect on output quality improvement (failure costs); and
2) to analyse the efficiency of COQ implementation, the level of COQ improvement, and the indicator of quality control performance. This way, we can turn this hospital into a model hospital of COQ implementation or provide a reference for other hospitals wishing to implement COQ.

Methods: The Delphi technique was applied to screen all key indicators. First, the hospital top management was surveyed as a reference for determining the cost indicators in the following four constructs: preventive cost, appraisal cost, internal failure cost, and external failure cost. Based on the survey results, two physicians with both medical and law backgrounds, one professor of healthcare management with COQ expertise, and two clinical experts in handling medical disputes selected the key indicators in these four constructs with the fuzzy Delphi technique and calculated the cost sources and total COQ.

Results:
1. Failure costs cover the cost of both internal and external failures. The items covered in the internal failure cost include ‘assessment of the cost of poor quality’ and ‘risk cost’. With reference to the right of request of damages from infringement (delict) in the Civil Law, the items covered in the external failure cost include ‘customer complaint settlement’, ‘litigation for medical disputes’, and ‘physician professional liability insurance’; and
2. in the COQ efficiency analysis, after the intervention of the team risk management team, the actual fees produced were (A)+(B)+(C)=$236,095.77. The actual cost efficiency brought by the team was $23,416,262.23, which can significantly reduce the cost on handling medical disputes.

Conclusion: The focus of avoiding medical disputes is enhancing healthcare quality by reducing patient damage. The focus of facing healthcare disputes is crisis management in risk management. The focus of settling medical disputes is dispersing liability with physical liability insurance.
PREVENTION OF HOSPITAL ACQUIRED INFECTION OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)

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Objectives: MRSA infection is very difficult to treat with standard types of antibiotics and thus becomes dangerous. It is even regarded as a hospital battle in fighting against the infection. There was a significant increase in hospital acquired MRSA rate in a 32-bed acute care medical ward of Hong Kong regional hospital. The rate was increased from 1.18 to 4.23 per 1000 patient bed days (pbd) from Nov/2011 to Jan/2012. It is a warning signal that the patient safety will be threatened. In April/2012, a multidisciplinary team composing members from medical team, infection control team and administration was set up to work out strategies and implement measures to reduce the infection rate based on evidence proof guidelines.

Objectives:
To reduce the hospital acquired MRSA infection rate in an Acute Care Medical Ward.

Methods: The strategies to reduce the MRSA infection rate were summarised as follows:

1) Infection Control Team educated frontline staff on the importance of preventing and combating MRSA infection, to control spreading of the infection within the ward.

2) Active surveillance screening was performed for all newly admitted patients to carry out early detection and prompt implementation of infection control measures. Patients with known history of MRSA infection or carrier were excluded from the surveillance screening.

3) Patients with history of MRSA infection or carrier and patients who were found to be MRSA carrier by the active surveillance screening were isolated to prevent spread of the infection.

4) Infection Control Nurse monitored hand hygiene compliance rate by applying WHO methodology before and after the educational sessions to ensure the staff were complied with the infection control procedures.

5) Environmental cleaning was enhanced by adopting colour coded cleansing methods and tools.

6) Hypochlorite tablets (Antichlor®) were used which are more stable disinfectant and improve occupational safety comparing to liquid hypochlorite (Chlorox®).

Results: From Jun/2012 to Dec/2012 there were 1216 patients admitted, and MRSA screening was done in 938 (77.1%) of the patients. 335 (35.7%) of screened patient had positive MRSA screening results. 613 (50.4%) of admitted patient was either labelled as MRSA carriers or had positive screening results. 89.8% of noted MRSA cases were isolated in a single room or cohorted in the MRSA cubicle. The overall hand hygiene compliance rate was maintained high and even by increasing from 94% to 98% after implementation of the strategies. With concerted efforts by all the disciplines, the hospital acquired MRSA infection rate was significantly reduced to zero from June /2012 and last for seven months.

Conclusion: The timely monitoring and implementation of effective infection control measures is essential to minimise the hospital acquired MRSA rate. In development and implementation of multifaceted control measures, multidisciplinary approach involving clinical, infection control and supporting staff is the key to succeed. Support from Administration is also essential in formulating effective infection control strategies.
DEVELOPING AND VALIDATING QUALITY INDICATORS FOR THE REVALIDATION SETTING
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Objectives: Because of the specificity of the patient population and the treatments, revalidation hospitals cannot identify themselves within the quality indicators that are developed for general hospitals. Nevertheless, the urge for internal evaluation and benchmarking is also growing in this type of hospitals. Therefore, we identified and validated a set of quality indicators for the evaluation of the quality of care in revalidation settings.

Methods: Assessment of this set was done by using the Delphi method. This indicator set was implemented in the indicator system navigator and placed at the disposal of the hospitals. Navigator is a clinical indicator system developed by the Centre for Health Services and Nursing Research from KU Leuven with an acknowledged use in Belgian general hospitals since 2004 (http://www.navigator.czv.be). It consists of a well-defined set of clinical quality indicators, software that supports input and delivers feedback, a coordinating website and an established network that links hospitals and expert groups. Monthly registration and quarterly feedback enables hospitals to monitor systematically and continuously and with short delay the quality of care processes and their results. Hospitals receive information on the evolution of their performance in time and on their position among the other participants.

Results: The final set consists of 18 process and outcome indicators covering the domains of length of stay, length of treatment, determining goals, falls, pain, discharge and after-care. The set can be extended up to 49 indicators when hospitals want to specify an indicator according to one of the following pathology group: knee prosthesis, hip prosthesis, stroke, transverse lesion, polytrauma, craniocerebral trauma, major amputation, chronic neurological condition, cardiopulmonar condition and COPD.

Conclusion: This study describes the development of quality indicators for the revalidation setting and the evaluation of the implementation of the indicators into practice.
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BUILDING A PATIENT-REGISTRY TO MEASURE THE QUALITY OF CARE FOR HYPERTENSION IN THE NATIONAL HEALTHCARE GROUP, SINGAPORE
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Objectives: To describe the development of a hypertension patient-registry and the indicators for measuring quality of care in a public sector healthcare delivery system in Singapore.

Methods: The National Healthcare Group (NHG) in Singapore is an integrated public healthcare delivery system comprising of 1 acute care hospital and a group of 9 primary care clinics, looking after the population health needs of over 1 million residents.

In 2008, the NHG developed a hypertension registry with business intelligence to deliver seamless and high quality care to people with hypertension. This Chronic Disease Management System (CDMS) links administrative and key clinical data of patients with hypertension across the NHG.

Patients with hypertension are identified using both primary and secondary diagnosis codes (ICD9CM codes 362, 401, 405 and 642) for each in- and out-patient clinical encounter since 2005. Demographic data includes age, gender and ethnic group. Clinical data includes physical parameters such as blood pressure (BP) and body mass index (BMI) readings, laboratory results such as renal and lipid profile.

The 5 annual process indicators included: BMI measurement, fasting blood glucose, serum electrolytes, fasting lipids and urinalysis. Outcome indicators include BP, BMI, serum creatinine and LDL-cholesterol control. Patients are grouped according to the site of care or by attending specialty.

Results: The number of patients identified with hypertension increased from 155,430 (2005) to 242,629 (2011), at an average rate of 8% per annum. In 2011, about 22% of all patients treated at NHG were known to have hypertension. The number of hypertensive patients increased with age and age-specific prevalence among patients increased gradually above 30 years old and peaked at 70% (80 years and above). About 66% of the hypertensive patients received treatment at one of the 9 primary care clinics.

In 2011, the rates of the annual process indicators were: BMI measurement (74.1%), fasting blood glucose (52.3%), serum electrolytes (94.2%), fasting lipids (89.2%) and urinalysis (75.5%). About 70.7% maintained a BP below 140/90 mmHg, 40.2% had normal BMI of 18.5 to 24.9 kg/m², 93.1% had a normal serum creatinine below 140 mmol/L and 84.2% had LDL-cholesterol <3.4 mmol/L. The mean BP was 132/72±77/19 mmHg, mean BMI was 26.3±6.0 kg/m² and mean LDL-cholesterol was 2.67±0.79 mmol/L.

Conclusion: As an integrative tool for chronic care delivery, the CDMS has made clinical monitoring and outcome management for patients with hypertension more efficient. The bulk of patients with hypertension are treated at primary care clinics. There is variation in the rates of quality process indicators achieved. The results of quality care are analysed by clinician champions across the NHG to identify areas of improvement to the delivery system to bring about better quality care for our patients.
QUALITY INDICATORS TO FOLLOW LABOUR INDUCTION RATE AND CAESAREAN RATE IN HOSPITAL AND TO BENCHMARK WITH OTHER OBSTETRIC WARDS
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Objectives: Labour induction is a common procedure in current obstetrics. This practice is thought to be associated with an increase in the risk for instrumental delivery and particularly caesarean section which can be associated with maternal and foetal morbidity and even mortality. The aim of the study is to develop quality indicators to follow induction rate and caesarean rate and to survey in the time their potential correlation within a hospital network.

Methods: Since January 2012, in Belgium and Luxembourg a network of general hospitals has developed and applied 11 quality indicators to follow labour induction rate and caesarean rate in hospital and to benchmark with other obstetric wards: total number of caesareans; number of first caesareans; number of repeated caesareans; number of vaginal deliveries after earlier caesarean; number of spontaneous deliveries; number of deliveries after labour induction; number of deliveries after labour induction for medical reasons; number of deliveries after labour induction for non-medical reasons; number of primary caesareans; number of secondary caesareans; number of caesareans after labour induction.

Obstetricians, midwives and hospital quality coordinators collaborate to develop them. These indicators are as part of the navigator project consisting of well-defined clinical quality indicators built with respect of practical standards as evidence-based existence, clear definition, accuracy, reproducibility, validity, ease of data collection, restriction of the amount of data obtained to the necessary minimum and clarity about interpretation of data. With navigator the data are monthly registered and a feedback is quarterly available for hospitals to monitor systematically the quality of their care processes and results.

Results: Besides the internal monitoring the follow-up of induction rate and caesarean rate is also the survey in the time of their potential correlation within the navigator network according to medical reasons of induction or not.

Conclusion: This study describes the development of quality indicators to follow induction rate and caesarean rate and the evaluation of their implementation into practice.
CLASSIFICATION OF PATIENTS COMPLAINTS – CAN THE CLASSIFICATION SYSTEM IN THE DANISH PATIENT SAFETY DATABASE BE USED FOR PATIENTS COMPLAINTS FROM HOSPITALS

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Objectives: National Agency for Patients' Rights and Complaints (Patientombuddet) was established in 2011. With this establishment it became possible to compare information from complaints, compensations cases and adverse events. There is currently no common classification system for the three types of data, and it is therefore not possible to compare data using common search criteria.

The purpose of this assignment is to assess how the Danish version of the WHO `s International Classification System for Patient safety, ICPS-DK, which is used for classification of adverse events, must be adapted, so that it can match complaints from patients.

The theoretical framework for the study is New Public Management with a focus on quality management, and how hospitals on a national level can learn from complaints.

Methods: The method is a validation test of WHO `s International Classification System for Patient safety, ICPS, for testing the case-variation in patient’s complaints. Before the validation test a pilot test was conducted to examine the detail of the classifications. A reliability test was conducted to investigate inter-observer variation.

The validation test was based on 117 responses from employees at The Complaint Centre at The National Agency for Patients' Rights and Complaints.

Furthermore, a random sample of 246, ten per cent of decided complaints from hospitals in 2010 were used.
For the pilot test 30 complaints from the sample were used. 46 complaints were compared in the reliability test of the ICPS classifications.

Results: ICPS classifications handle the case variation in patient’s complaints. The two studies illustrate, that the case variation shows that the respondents in the category of `other` are respectively 3.8 and 5.4 per cent. Inter-observer reliability of ICPS showed different results in the ICPS classification groups.

Conclusion: It is necessary to adjust the Danish custom ICPS-DK with 43 new classifications of ICPS to handle the case variation. In addition it is necessary to entering other classification to each classification group.

The systemic classifications in ICPS may contribute to a better understanding of quality management, including the systemic factors that are important for the reason why events occur and are preventable.

References: http://www.patientombuddet.dk/?sc_lang=en
EFFECTIVE PERSONALISED STRATEGIES TO DECREASE UNSCHEDULED RETURNS TO THE EMERGENCY DEPARTMENT WITHIN 72 HOURS

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Objectives: Unscheduled returns to the emergency department (ED) is an important acute care indicator that frequently signifies insufficient education or instruction to the ED patients, inadequate diagnosis or treatment during the initial visit or poor access to the outside hospital after discharge, resulting in higher ED use and hospital costs. We report our strategies to improve it over the last seven years. The statistics include the patients of any age that can access our ED, as it is a big general hospital with 2,600 beds.

Methods: In 2004, the unscheduled returns to ED within 72 hours were 5.89% (5900/100,170) in our hospital, which were unacceptably high. Further analysis revealed that children with acute illness were responsible for 7.18% (300/4,174 per month) of unscheduled return, followed by old-age patients with chronic illness 5.49% (317/5,164 per month). Serial strategies were used to improve it, which include adoption of standardised treatment protocol for diseases that tend to cause return of the patients, thoughtful discharge plan, and sufficient instruction of home care. For children, a phone line was set up so that the family could consult our paediatricians any time after the initial visit when they found it was necessary to do it. For adult patients, an effective plan was set up to manage patients with multiple entries to ED for pain control, alcoholism, psychiatric diseases, etc.

Results: Following the above strategies, unscheduled returns to ED within 72 hours decreased gradually from 5.89% in 2004 to 3.54% in 2010 (4,587/129,549, P=0.000). The decrease was most significant in paediatric population, from 7.18% in 2004 to 3.5(101/2,917 per month) in 2010, followed by adult patients with chronic diseases, from 5.49% in 2004, to 3.9(227/5,807 per month) in 2010.

Conclusion: Our results indicate that for effective management of unscheduled returns to ED within 72 hours, personalised strategies for different age population, as well as standardised treatment protocol, thoughtful discharge plan and sufficient instruction of home care are important ingredients.
TOWARDS AN INTEGRATED APPROACH TO MONITORING HOSPITAL MORTALITY IN THE NORTH EAST OF ENGLAND: THE NEQOS APPROACH

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Objectives: To develop an integrated approach to monitoring mortality in acute hospitals across the North East (NE). To respond to policy developments following publication of the Public Inquiry into Mid Staffordshire and in particular the new requirement to monitor and review preventable mortality in order to drive improvement in clinical care. To support the new regional mechanisms for mortality surveillance.

Methods: The North East Quality Observatory System (NEQOS) was established as the regional hub of healthcare quality measurement; its role is to drive improvements by making quality data and information available across the health system. NEQOS has produced fifteen quarterly reports presenting a range of mortality and contextual measures to provide mortality assurance to both providers and commissioners through the use of comparative data. Support is also provided to individual Trusts, particularly to Boards, to understand the technical challenges in measurement and in responding to their figures.

This approach to be further developed specifically to review deaths that may be preventable, in line with the new indicator proposed in the Outcomes framework for 2013-14, based on the paper produced on the review of preventable deaths (Hogan 2012). A pilot is planned for the spring of 2013 to develop the details of the methods that will be used in two of the eight acute trusts in the NE. In each Trust consultants will review 50 randomly selected case notes of patients who have died and judge whether there were any problems in care and whether the death could have been prevented.

Results: Trends for unadjusted mortality HSMR and SHMI will be presented, as well as various ways of breaking this data down below Trust level (including by condition).

Preliminary results will be presented from the pilot work on the review of preventable deaths. It is expected that results will be available from the reviews conducted in March and June 2013. The outputs from this work will be produced in a consistent format to those published by Hogan.

<table>
<thead>
<tr>
<th>Trust</th>
<th>Period for review (2013)</th>
<th>Case notes reviewed</th>
<th>Preventable mortality</th>
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<tbody>
<tr>
<td>Trust A</td>
<td>June</td>
<td>50</td>
<td>5.2%*</td>
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<tr>
<td>Trust B</td>
<td>March + June</td>
<td>50 + 50</td>
<td>5.2%*</td>
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* Note: preventable mortality figure shown of 5.2% per Hogan, pilots will provide Trust figures.

Conclusion: NEQOS has developed mortality assurance in the NE and all of the acute trusts report mortality at Board level and discuss mortality with their Commissioning organisations. The new regional mechanisms for quality surveillance are currently being developed and will be supported by NEQOS to monitor mortality.

Monitoring mortality statistics has been a priority since the publication of the first Francis report in 2010. However, mortality statistics have proven difficult to use for improvement. It is clear that new indicators which are more tightly focused on deaths that may be preventable because they are attributable to problems in care are needed to allow improvement efforts to be more successful.

Concentrating on preventability will allow the numerous streams of safety work that target specific issues, like managing deteriorating patients, infections, falls, venous thromboembolism etc to be integrated, thereby bringing together efforts to improve clinical processes with a focus on patient outcomes.

ENHANCING THE HEALTH GUIDANCE COMPLETION RATE FOR NURSING CARE STAFF CONDUCTING REHABILITATION EXERCISES WITH STROKE PATIENTS

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Objectives: Strokes result from pathological changes in blood vessels of the brain that cause damage to brain functions. Strokes interfere with motor functions, causing individual and family burdens as well as social costs. As such, rehabilitation exercises, which enhance reflexes and the brain’s proprioceptive functions and ensure normal functioning in joints, should be implemented early. However, continuous rehabilitation exercising is challenging from a patient’s perspective; one important factor is how frontline nursing staff evaluate, assists, and conduct health education, carry out rehabilitation exercises, and track their effectiveness by focusing on the given patient.

Methods: A review of the health guidance completion rate for the rehabilitation exercises by stroke patients showed a decreased rate of 20% due to lack of understanding regarding health guidance, inappropriate pamphlets, non-uniform transfers of shift responsibilities, and shortage of rehabilitation centers. Measures have been introduced to invite rehabilitation physicians as lecturers to strengthen the knowledge and concepts of nurses through on-the-job education, clinical teaching, and onsite training. A rehabilitation exercise DVD was filmed with real demonstrations of exercises broken down into various parts to enhance mutual participation by allowing participants to watch and carry out the exercises simultaneously, and the number of nursing shift options for rehabilitation exercises was increased to implement a complete and reliable shift system. A rehabilitation centre equipped with parallel wooden bars was established for patients and their family members.

Results: An effectiveness evaluation following the above enhancements showed that the health guidance completion rate for rehabilitation exercises conducted with stroke patients improved from 20% to 100%. Provided with 3 or less days of guidance, patients are able to carry out the rehabilitation exercises and understand the objectives and precautions. The frequency of exercises has been increased from once to 3-4 times per day, with each session lasting at least 20 minutes. Due to the diversified language backgrounds of the caretakers, 3 additional versions in Vietnamese, English, and Hakka have been introduced to meet their requirements. The nursing station also lent out laptops on movable stands to increase convenience and effect of learning from the health guidance DVD. The DVD can also be uploaded onto the hospital’s website and promoted comprehensively.

Conclusion: Continuity is an important part of rehabilitation exercises. Because the results in the early stages of rehabilitation affect the training and recovery of functions in later stages, nursing staff should play the roles of the caregiver, health educator, and supervisor and help patients during rehabilitation and exercising. This project used a multimedia DVD and colored pamphlets to reduce the times instructions had to be repeated and allow family members to view instructions repeatedly. This helps enhance the importance of rehabilitation in the aftermath of a stroke and emphasises its continuity. The recovery of limb movements also enhances patients’ participation in daily activities and their ability to take care of themselves. Through the use of diversified health tools by nursing staff, patients and family members can better understand the importance of rehabilitation exercises, while the level of satisfaction for nursing quality is also improved.
IMPLEMENTATION OF LEAN APPROACH TO IMPROVE CUSTOMER SATISFACTION THROUGH EFFICIENT DISCHARGE PROCESS

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Objectives: The management of KPJ Selangor Specialist Hospital decided to form a team to look into the problem. The members were selected from various hospital services to overcome the problem. The objectives of the project are to improve on 4 areas; Human dimension, Quality perspective, Time and Cost.

Methods: Data was collected from January to December 2011 based on customer complaints related to prolonged discharge time. Using LEAN approach, Value Stream Analysis (VSA) was conducted. When the team analysed the discharge flow, we identified the root causes that contributed to the delay in the discharge process. The root causes are: lacking in discharge planning, excessive duplication of information in documentation, delay in delivering of discharge medication to the ward, poor care coordination among members of the healthcare team and ineffective interdisciplinary communication.

The team had formulated 2 Rapid Improvement Events (RIE’s), in order to improve the discharge process. First RIE was related with implementation of pre-discharge process and was implemented in December 2011. A typical patient discharge process involves doctor, ward staff, pharmacy (medications) and financial consideration (bill settlement). This involves paperwork; a major portion can be done a day earlier to avoid work congestion on the discharge day itself.

The pre-discharge process involves early clearing of this portion of paperwork. The doctor will prepare the discharge papers (discharge summary, insurance, medical certificate and take home medications) on the day prior to the expected day of discharge. On the discharge day, all required document for the discharge procedure prepared earlier are submitted to the insurance company early part of the day on the discharge day. Pharmacy staffs are notified and they will send the take home medication to the ward.

Results: After 5 months of implementation, there was a 62% reduction in the discharge time from 170 minutes to an average of 65 minutes. We had also reduced the discharge process on the day of discharge itself from 26 steps to 7 steps (73%) which significantly reduced the staff’s workload. In relation to this, we were able to reduce the manpower during the discharge day and with this efficient discharge process, we managed to save our staff time up to 735 minutes per day. That means, we could save a total of 264,600 minutes (4,410 hours) per year, which equivalence to RM 174,636 per year. Our customers also had returned positive and encouraging feedback (95% positive feedback) in relation with discharge process.

Conclusion: Based on the data collected, we can see clearly that with the implementation of the pre-discharge project using LEAN management approach, we are able to achieved remarkable benefits from various aspects such as reduced workload, reduced staff stress, reduced manpower and cost and also improved customer satisfaction. The management has now implemented this process hospital-wide since May 2012.

References:

2. KPJ Selangor Specialist Hospital, MCSI, Jan.2011 - May 2012
NEEDLESTICK INJURY INCIDENCE AMONG NURSING STAFF AND INVESTIGATION OF ASSOCIATED LABOR SAFETY RISKS
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Objectives: to understand the needle stick incidence among nursing staff and the associated factors; 1. to understand the incidence of polluted needle stick; 2. to investigate the associated factors for polluted needle stick; 3. to study the polluted needle stick risk ratio.

Methods: the cross-sectional retrospective study design was adopted. The needle stick reporting system was used to analyse the reported needle stick events of the nursing staff in 8 branches of Taipei City hospitals from January 2011 to December 2012. The data collected included the basic characteristics of needle stick subjects, years of work experience, advanced professional skills and courses as part 1; the timing and medical conduct of needle stick events, needle stick object classification as part 2; the adherence to standard operating procedure, use of protective equipment, operation accuracy as part 3. The statistical methods used involved percentage, chi-square, correlation, and Odds ratio.

Results:
1. The needle stick events occurred mostly during blood withdrawal and medical practices (67.12%) among junior nursing staff with no more than 1 year of work experience;
2. The needle stick risk ratio of those who did not follow the instructions of the use of needle collectors was 5.067 times higher than those who did (OR= 5.067, 95% CI= 1.840-13.955; p= .001);
3. The needle stick risk ratio of those who did not comply with the instructions of the use of trolleys was 2.800 times higher than those who did (OR= 2.800; 95% CI= 1.062-7.385; p= .035);
4. The needle stick risk ratio of anthropogenic factors of those not abiding by the standard operating procedure was 0.142 times higher than those with safety structure uses (OR=.142, 95% CI=.017-1.199; p=.042).

Conclusion: Compliance with the standard operating procedure and the use of protective equipment were able to eliminate the hurdle of unsafe behaviours in the work place and therefore reduce the needle stick risks. However, how to ascertain the adherence to the standard operating procedure among nursing staff, the full use of protective equipment during medical practices, and the reduction of anthropogenic needle stick risks were the major goals that the hospitals should attempt to achieve.
AN INVESTIGATION OF THE ISOLATION RATE AND OTHER RELEVANT FACTORS OF ACINETOBACTER BAUMANNII INFECTION IN ICU

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Objectives: Investigate the isolation rate and relevant factors of Acinetobacter baumannii infection in Intensive Care Unit.

Methods: On the 6th of April, 2011, testing was conducted on the environment and on the hands of the working staff at the unit, with a total of 61 specimens collected. Among them, A. baumannii was isolated from 12 specimens spread across surfaces in the areas disinfected after the transfer of 3 patients. These included bed rails, respirator panels and respiration treatment records. However, the hands of working personnel were not found to have the pathogen.

From the 13th to the 27th of April, 2011, actual observation was carried out to inspect a total of 25 specimens during the process of transfer of patients, release from hospital and final disinfection. It is discovered that are mistakes in the processes of final disinfections by cleaners and use of physiological monitors by nursing assistants. There are no sequences in the disinfections carried out by cleaners, nursing assistants and respiratory therapists; Compilation and analysis of the information shows that the above is due to:

1) incorrect disinfection process;
2) non-integration of the disinfection team;
3) incorrect method of disinfection.

Intervening measures include:

1) inter-team discussion: doctors from the infection department, appointed personnel for infection control, general in-charge, cleaners’ supervisor, RT team leader, deputy director and supervisor of the nursing department and head nurses from the various ICUs would come together and improve the disinfection process for ICU units;
2) Inter team integration and process implementation;
3) the ICU management committee proposed to: adopt the use of anti-dust covers for respirators and change the disinfection methods used;
4) redo the respirator maintenance card and operative procedure card and remove the respiration treatment records out of the patient’s unit;
5) education on final disinfection methods and processes: includes cleaners, nursing assistants and respiratory therapists;
6) increase the strength of nursing assistants in the nursing department: implement a policy allowing nursing assistants to cover each the shifts of others.

Results: The isolation rate of A.baumannii bacteria in ICU infections fell from 12% in 2011 to 3.7% in 2012, while density of infections fell from 15.38% in 2011 to 11.37% in 2012.

Conclusion: A.baumannii accounted for 13%, the highest proportion, of bacterial infection cases in ICU in 2010. Testing conducted after carrying out disinfection upon transfer or release of patients from the hospital showed that A. baumannii can be isolated from bed rails, bedside desks, bedside physiological monitor screens, respirator panels and other equipment.

Effective intervening measures were introduced to reduce the congregation and cross infection of infectious bacteria in the hospital, as well as to monitor and analyse the reasons behind. The A.baumannii bacteria isolation rate in ICU infections fell from 12% in 2011 to 3.7% in 2012. Formulating of a standard operating procedure is important, but correct implementation is equally critical. Regular checks and tracing of specimens, monitoring and control of environment, as well as cleaning and disinfection can effectively reduce the congregation of infectious bacteria and cross infection of A.baumannii within the hospital. This research provides a source of reference for implementing preventive measures for clinical infections.
USING A QUANTITATIVE RISK REGISTER TO UNDERSTAND HEALTHCARE STAFF SAFETY RISKS
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Objectives: Our goal was to develop an innovative analytic framework for a risk register that would integrate data from multiple sources and use simple metrics to objectively categorise and quantitatively estimate risks to staff safety in healthcare. The organisation’s executive team would use the risk register’s findings to help identify opportunities for improving staff safety.

Methods: We developed a comprehensive risk concept model comprising 18 broad categories of safety concerns. We looked to industry standards to inform this model (e.g., U.S. Occupational Safety and Health Administration) and categorised the risks into a simple hierarchical structure. The main categories were risks due to physical mishaps (equipment, movement and falls), risks due to exposure (energy, biologics and chemicals), and risks due to behavioural events (impairment, verbal and physical abuse).

We then identified data sources and metrics that would allow us to quantify risk in all categories. We acquired 18,537 potential incidents for a full calendar year from key medical center data systems, including Patient Safety, Security, Human Resources and Employee Health.

For each reported incident, we quantified and rank-ordered risks along four dimensions: rate of occurrence, severity of harm, days away from work, and known payments for medical care. We also noted the staff involved in each incident (e.g., physician, nurse, or housekeeper). We conducted a detailed review of the top five areas of risk to identify recurring themes and specific opportunities for improving safety.

Results: Our methods allowed us to integrate 18,537 potential safety concerns from multiple data sources, and to quantify and prioritise their relative staff safety risks along four dimensions. We found 737 incidents that posed a risk to staff safety. Our risk register provided both empirical confirmation and refutation of anecdotal concerns raised in our organisation.

Our results showed that lifting presented the most risk to staff. The injury rate and severity were high, involved the most days away from work and the highest amount of known payments for medical care. Patient care technicians (PCTs) and medical assistants (MAs) had the most lifting injuries, usually while moving patients and equipment.

Invasive injuries also had a high rate of occurrence and potential for harm, as well as payments for medical care borne by the organisation, but the injuries did not result in prolonged absence from work. Physicians, nurses, PCTs and MAs were most at risk, getting punctures and cuts from sharp medical devices in the operating rooms and patient rooms.

Repetitive motion injuries (wrists, arms and shoulders), falls in buildings and blunt injuries (usually involving doors) rounded out the top five risks to staff.

Some anecdotal staff safety concerns, such as chemotherapy drug spills and assaults, did not empirically present high risk. Further investigation showed these issues already had safety mechanisms in place that either reduced the rate of occurrence or the potential for injury.

The organisation’s executive team used the risk register findings to prioritise safety improvements, such as lifting system enhancements, better injury follow-up, and focused reconditioning so that staff could return to light duty work.

Conclusion: The staff safety risk concept model allowed us to combine, analyse and compare safety data from many different sources. We were able to categorise risks in a simple format, rank them across the entire organisation and uncover recurring themes at a granular level. This risk register approach provided our organisation’s executive team with objective, quantitative, and actionable data about risks to staff safety.
IMPROVING THE COMPLETION RATE OF DISCHARGE PLANNING FOR NURSE STAFF
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Objectives: Discharge planning is a continuity patient care quality. Coordinated and multi-disciplinary care service. The current high complexity and variability of chronic diseases, providing patient-centred care philosophy, reduce cost of medical treatment and admission rate, after discharge in order to improve their symptom management and quality of life. Unit have nasal tube, suction and oxygen therapy disabled elder 65.1% of the total patient. Only 43.2% of the nurses completed discharge planning. The disabled patient satisfaction rate of discharge planning only 50.6%. The purpose of this project was to develop a set of discharge planning program for nursing staff to follow and the integrity of discharge planning services, improve patient and caregiver quality of care.

Methods: The goal of this study is to explore the nurses for discharge planning completion rate. We select disabled patient and caregivers members of have discharge planning in a medical center in New Taipei City. The project began from September 2009 to December 2010. Date two questionnaire methods. The study participants comprised of disabled patient and caregivers total 38 people. After analysing the problems including:

1) short of completion instruction booklet for discharge planning;
2) lack of a standard procedure for giving nursing instruction
3) lack of monitoring system discharge planning satisfaction.

The four methods of used included:
1) establish monitor tools for nursing discharge planning;
2) development standard nursing care procedures for discharge planning;
3) make the process of group nursing instruction for DVD;
4) establish satisfaction scoring system discharge planning.

Results: The results of this study were as follows:
1) The completion rate of nursing discharge planning increased from 43.2% to 89.5%;
2) The disabled patient discharge planning satisfaction increased from 50.6% to 90.1%.

The results of this study suggest that discharge planning programs should not only involve longitudinal follow-up, but also support groups and social workers to promote the disabled patient and caregivers' healthcare ability and quality of life.

Conclusion: The discharge planning has effective improvements of health care for disabled patients and caregivers. Combining different multiple nursing instructions method is an advantage for complicated and fragile disabled patients and it can expand further to meet the need of the patients. Therefore the effect of multiple nursing instructions is one worthwhile health education measure which can work as reference for clinic nursing teaching in the future.

GNOMES – IMPROVING THE SAFETY OF INPATIENT TRANSFERS AT GUY’S AND ST THOMAS’ NHS FOUNDATION TRUST

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Objectives: An in-patient transfer checklist was implemented across both acute hospitals in Guy’s and St Thomas’ NHS Foundation Trust (Guy’s – site 1, St Thomas’ – site 2) in 2010. Its purpose was to improve communication between staff and so improve the safety of patients transferring between areas; in particular to those areas whose staff does not routinely receive a nursing handover. The Radiology Quality Improvement Team was formed during a three day external training course. The project was titled GNOMES (Greeting, Notification, Observation, and Monitoring Ensures Safety) so that it was eye catching and memorable. The team deemed these as important elements for the safety of in-patients attending the radiology department.

Objective: To improve in-patient safety by assessing and improving the use of in-patient transfer checklists in a large London hospital’s radiology department.

Methods: A proforma was developed for the prospective baseline audit. This was carried out in during two weeks of December 2010 by radiology staff on both hospital sites. The audit was completed on in-patient’s being transferred to radiology during core working hours (Monday to Friday; 8am -6pm). The proforma was designed to capture a number of important factors affecting the safety of in patients during their visit to the radiology department. The presence of a transfer checklist, whether this was completed accurately and fully, and the inflation state of air mattresses were a few of the areas covered. The results of this baseline audit were analysed and actions, including an awareness campaign and mattress tutorials, were carried out. Following the implementation of these, three more cycles of audit were completed. The hospital porters were asked to request the presence of a transfer checklist between the third and fourth cycles.

Results: The percentage of patients having a checklist has increased from 39% in 2010 to 94% in the latest audit, and the percentage of patients with a fully and accurately completed checklist has increased from 27% to 68%. These are significant achievements and the upward trend (even taking into account a decline shown in the Spring 2012 audit) shows the effectiveness of the actions that have been put in place and the effort of all involved, particularly the GNOMES Radiology Quality Improvement Team.

As the proportion of partially or inaccurately completed checklists has increased in the fourth audit cycle, analysis was undertaken of the parts of the form which had not been completed, or completed incorrectly. Many forms had more than one item missing. ID Band was the most commonly missed section – however the placement of this question on the form means it could easily be missed by the person filling it in – especially if this is being done in a hurry. Falls, date of birth and hospital number are the next items most missed. One potential reason for the increase in incomplete forms is that porters are asking for a form, and it is then being filled in there and then by the transferring nurse, who with less time, and potentially less immediate access to some of the information, this is being left out in order to send a form at all.

Conclusion: The GNOMES project has been successful in raising compliance and so the safety of in-patient transfers with use of the transfer checklist across both hospital sites, from 39% in 2010 to 94% today. The improvement has been particularly marked at site 1, where compliance was always considerably lower than at site 2. Some work remains around ensuring full completion, which has been handed over to the nursing team. The GNOMES Radiology Quality Improvement team should be extremely proud of the success they have achieved over the two year period of this project.
ENHANCING PATIENT SAFETY AND QUALITY OF CARE BY STARDISING THE TELEPHONE TRIAGE IN THE HAEMATOLOGY ONCOLGY SETTING
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Purpose

To develop a standardised Telephone Triage System (TTS) and related guidelines on providing telephone advice to patients thus ensuring immediate, appropriate and safe advice for patients receiving treatment in the haematology oncology setting and clarifying the decision makes process for staff.

Background/Significance

Many of the episodes of care provided by the haematology oncology day ward (HODW) in St James’s hospital involve administration of cytotoxic chemotherapy which can have life-threatening side effects. Timely, effective intervention in managing these effects can be lifesaving. Telephone Triage (TT) provides essential 24hr assessment for patients experiencing these effects.

Method

Nurses and patient questionnaires identified the need for dedicated time, space, phone lines, standardised protocols, guidelines, e-documentation and staff competency for the provision of TT. A random sample of 20 calls was audited to evaluate implementation of the standardised TTS.

Results/Outcomes

The number and type of calls received over a one month period was audited. Over 40% of calls (n=64) were not treatment related resulting in redefining the 24hr contact numbers. Twenty of the 57 treatment related calls were randomly selected and audited. Eighteen calls (90%) were recorded correctly on the electronic patient records (EPR). Patients received appropriate and immediate advice in 90% of calls (n=17).

Conclusions

Nursing leadership in standardising TTS resulted in improved patient care and management, team communication and compliance with professional and legal requirements. Implementation of TTS resulted in the provision of immediate and standardised information whilst increasing staff awareness of the importance of timely, quality intervention and knowledge and skills in dealing with unplanned patient problems.
ARE THE DUTCH LONG-TERM CARE ORGANISATIONS GETTING BETTER? A TREND STUDY OF QUALITY INDICATORS BETWEEN 2007 AND 2009 AND THE PATTERNS OF REGIONAL AND ORGANISATIONAL INFLUENCES ON PERFORMANCE
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Objectives: Background
Dutch long-term care organisations, providing somatic care, psycho-geriatric care and home care, have to measure the quality of care through resident-related and professional indicators. At the same time, competition was introduced with regional stimuli from healthcare insurers.

Aim
The first aim of this study is to determine the trends of the national performance on resident-related and professional quality indicators for the period 2007 – 2009 in long-term care organisations in the Netherlands. The second aim is to determine the patterns of the influence of region, capacity and corporate structure on the quality performance in 2009.

Methods:
We performed trend analyses on the indicators of residents of 2,115 long-term care organisations. We used multivariate analyses to determine the difference in national performance between 2007 and 2009 and to calculate the influence of organisation characteristics on the performance of 2009.

Results:
The national performance on resident-related indicators for somatic care and home care increased. For psycho-geriatric care, the organisations performed worse on resident-related indicators. The professional indicators for intramural care improved in 2009 compared with 2007.

We noted an influence of region, structure and capacity. Organisations in the west of the Netherlands performed worse than other regions with exception of home care. Small and middle-size organisations and organisations with a small capacity performed better than other organisations.

Conclusion: Conclusions
This study suggests that a corporate structure with an intermediate size and a capacity < 100 residents, perform better than other organisations. Our results also suggest that the policy of healthcare insurers affects the quality performance of organisations.

References: 19
CHANGING TIMES - FASTING AUDIT
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Objectives: Royal College of Anaesthesia guidance recommends specific times for fasting prior to interventional procedures. In 2010 we reviewed pre-operative fasting times in a private hospital to answer the following questions:

1. Are our pre-procedure fasting times too long?
2. Are prolonged fasting times impacting on patients?
3. Is our practice in line with International best practice?

To improve care to patients by preventing unnecessary fasting, which is impacting on patient’s well-being, length of stay and post-operative recovery. To ensure our practice is safe and in line with current research.

Methods: Sphinx compatible questionnaire accessing fasting times of surgical patients’ pre-procedure audit and re-audit cycles.

Results: Initially fasting times far exceeded the recommended guidelines i.e. 2 hours from clear fluids and 6 hours solids. Our mean fasting time was 15hrs with a range 6-23 hours. This was in the context of elective surgical activity and should have been easily addressable. However, as a change management project, it was challenging and many lessons were learned that may be of interest to other healthcare organisations.

Consultation with stakeholders i.e. Consultants, Anaesthesics, Patients and Hospital Management highlighted the challenges of changing long-established practices and “theory in action” behaviours. The pilot of fasting guidelines in one surgical ward triggered reactions from patients, nursing staff and anaesthetists who were resistant to change. No rescheduling or reorganisation in theatre was required following the implementation. We found nutritional supplements to be a cost effective easy way round the provision of early morning intake. Re-audit showed impressive improvement with a mean fasting time 3 hours (range 2-8 hours). Even then, secretarial interaction with patients prior to admission was identified as further challenges to roll-out.

Conclusion: Our presentation sets out the possible roadmap for introducing this simple and basic tenet of good clinical care
TAKING PATIENT EXPERIENCE MEASURES TO ACTION: A REVIEW OF BEST PRACTICES
Kris Gustavson, Debbie Johannesen, Tricia McBain, Stephanie Ngo

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Objectives: The goal of this project was to find meaningful ways to disseminate the results of an Acute Inpatient Patient Experience survey to stakeholders in Provincial Health Services Authority facilities and to assist senior leaders and staff in actioning these results to ultimately improve the care received by patients in the acute inpatient setting.

Methods: In 2005, 2008 and 2011/2012, the province of British Columbia, Canada, undertook a survey of inpatients in acute care hospitals to solicit feedback about the care and services they received while in hospital. Two Provincial Health Services Authority facilities were surveyed: BC Children’s Hospital and BC Women's Hospital.

The survey evaluated inpatients’ experiences across eight dimensions of care: access to care; emotional support; information and education; physical comfort; involvement of family; respect for patient preferences; continuity and transition; and coordination of care. Survey results highlighted both strengths and opportunities to improve the patient experience.

In order to take these measures to action, undergraduate nursing students were selected to conduct a literature review focusing on best practices to improve patient experience. Advantages to incorporating students included dedicated time to focus on unbiased external perspective, financial benefit to engaging students versus external consultants, and the rich, immersive experience for the students.

Results: The literature review yielded best practice improvement tools and guidelines from the Institute for Healthcare Improvement (IHI) as well as research about the use of Experience-Based Co-Design from the National Health Service in the United Kingdom. The students presented the results of their literature review to key stakeholders within survey areas, linking examples of best practices to key dimensions of care in the 2005, 2008, and 2011/2012 surveys.

To further assist with integrating the survey results into current practices and operations, the students provided consultative services to unit level managers by determining their program-specific needs for disseminating results to staff and planning for action. The students offered to develop program-specific tools as requested, such as graphs, slides, speaking notes, customised reports, and trended results.

Conclusion: As a result of this project, leaders and educators within surveyed areas were provided examples of best practices to use as guidelines to action the data presented in the survey. Evaluation of this project will take place via agency initiative dashboards and results of the next iteration of the provincial acute inpatient survey.

References:
A SINGLE-CENTRE PROSPECTIVE OBSERVATIONAL STUDY ON FLUCTUATIONS IN INR CONTROL FOR SINGAPORE’S MUSLIM PATIENTS ON ORAL ANTICOAGULATION THERAPY WITH STABLE WARFARIN DOSING OVER THE MONTHS OF RAMADAN AND HARI RAYA AIDILFITRI
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Objectives: Oral Vitamin K Antagonist (OVKA) is a drug well-known for its narrow therapeutic window. Serious adverse events may result should the International Normalised Ratio (INR) be fallen out of target range. Known to have its anticoagulant effects augmented by changes in dietary vitamin K intake and lifestyles, such effects may surface during the Muslim fasting month of Ramadan, where dietary habits and lifestyles of patients are altered.

Objectives – To detect and study INR deviations and percentage time within therapeutic range (%TTR) before, during and after Ramadan in stable warfarinized patients, whom otherwise have steady INR control. The results of the study will tell us if our current appointment length and clinic protocols during Ramadan for Muslim patients are sufficiently safe, and whether adjustments are needed.

Methods: Potential study subjects were screened from hospital anticoagulation clinic (ACC) database, and pharmacy’s warfarin dispensing records. Only stable warfarinized patients who met the inclusion criteria were shortlisted and contacted for recruitment. All recruited patients underwent weekly INR monitoring, with 4 readings per subject per month, throughout a 3-month study period from a month before Ramadan to a month after it. The warfarin doses for these patients were kept constant, and they were instructed to keep to their usual religious practices, eating habits and lifestyle as previous years. All readings were blinded to the subjects until the end of the study to minimise confounding factors.

Results: In the intention-to-treat analysis (n=32), the mean difference in INR during the Pre-Ramadan month and the Ramadan month was significant at 0.207 [p=0.032, 95% CI 0.013-0.401]. A greater mean difference in INR of -0.309 [p=0.001, 95% CI -0.506(-0.112)] was observed between the Ramadan and the Post-Ramadan months. No significant difference in INR was detected between the non-Ramadan months [p=0.629, 95% CI 0.93(-0.298)], thereby suggesting that these increases in INR during Ramadan could be attributed to fasting. The percentage time within therapeutic range (TTR) showed a dip to 69.56% compared to 80.99% before Ramadan and 70.80% after Ramadan. On average, the first out-of-range INR could be seen 12.1 days [95% CI 9.0-15.1] after the start of fasting. Subsequently, an average of 10.8 days [95% CI 7.9-13.7] was required for the INR to return back to its therapeutic range after Ramadan.

Conclusion: The results of this study suggests possibility of significant INR fluctuation during Ramadan fasting. Additional caution or even pre-emptive dose reduction may be warranted especially for patients maintained at higher end of their target ranges, or for patients prescribed with narrower target ranges.
A QUALITY IMPROVEMENT STRATEGY IMPLEMENTED ACROSS MULTIPLE SITES TO REDUCE

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Objectives: Spire healthcare is a private healthcare provider operating 38 hospitals throughout the UK. Our hospitals provide surgical and medical care to both private and NHS funded patients. Whilst recognising that appropriate blood transfusion is important for some patients particularly in emergency situations Spire wished to make more appropriate use of the scarce resource and reduced the risk of transfusion related adverse events. Patients undergoing transfusion may also experience a longer length of stay and an increased risk of surgical site infection.

Spire healthcare implemented a strategy to:

1) reduce inappropriate blood transfusions and associated adverse events in accordance with the published evidence
2) to promote the spread of successful transfusion practice improvement strategies throughout all hospitals

Methods: Our strategy was established following the results of an audit indicating that the point of which surgical patients would receive a transfusion varied across our hospitals and surgical teams. Compliance with published guidance was poor and often arbitrarily based on habit, as a result it was difficult to provide patients with consistent information on the circumstances they would receive a transfusion. The National Clinical Services team worked with hospital nurses to introduce a new blood transfusion pathway. This incorporated decision making support to guide pre-operative planning, non-clinically urgent decisions to transfuse and the necessary pre-transfusion safety checks. A competency framework was developed and introduced for nurses involved in the transfusion process. A Spire transfusion threshold based on published evidence was introduced for non-emergency situations (transfuse if Hb <8; <9 for patients with existing cardiac disease). Senior nursing teams worked with anaesthetists to implement the threshold and compliance is monitored through our scorecard tool. Information was presented to the Medical Advisory Committee at each hospital and compliance with triggers for transfusion is consistently monitored and published on a quarterly basis. We monitor three key indicators: blood cross match to transfusion ratio, compliance with the blood transfusion trigger and the number of units transfused per 1000 admissions. The results are published through our quarterly clinical governance report.

Results: Since the introduction of our programme to reduce the blood transfusions in 2006, we have seen improvement in all indicators. In 2011, 60% of cross matched units were subsequently transfused; while the number of cross matched units fell 11% year on year. The volume of transfused blood has been reduced by 50% since 2006, despite an increase in surgical complexity. This has translated into a 25% reduction in adverse events and a reduction in recovery time from surgery and length of stay for patients. The programme has led to savings of £500,000 annually. Nursing staff have been empowered in transfusion process and patient information is more consistent.

Conclusion: We have learnt that consistent messaging supported by empirical evidence should be provided across the organisation. Empowering staff to challenge current practice based on evidence provided by Spire can positively influence change. Published guidance based on robust empirical evidence can lead to changes in practice across multiple sites and ultimately lead to the improvement of patient safety.
DEVELOPING AND TESTING A BUNDLE TO SUPPORT THE IDENTIFICATION OF DELIRIUM IN OLDER ADULTS IN ACUTE CARE

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Objectives:

➢ To improve the identification of delirium in acute care settings through the development and testing of a care bundle.
➢ To promote equality in the identification of delirium
➢ To improve patient and family experience of delirium by engaging and involving families and carers in the identification of delirium.

Methods: The identification of delirium has been identified as a key area of focus for the national improving older people's acute care work programme in NHS Scotland. Through a collaborative improvement approach, multidisciplinary teams based in acute hospital settings across Scotland, have gathered baseline data to identify areas for improvement in the identification of delirium. A delirium care bundle has been developed, based on the Scottish Delirium Association delirium pathway and NICE guidance¹. This is currently being tested by teams across a range of acute care settings to support the identification of delirium, to promote equity of care and to ensure engagement with family and carers in achieving a positive experience of care.

Results: Teams are gathering data to report progress in using the care bundle and demonstrate the impact of early identification of delirium in older people in hospital. Results will be available for sharing and discussion by October. Early testing indicates that implementing a structured approach to identifying delirium has benefits in ensuring that patients get the right care at the right time and in the right setting, by the right healthcare team. Engaging and involving families and carers at an early stage in the identification of delirium is an essential element in reaching a diagnosis as they are often the first to notice a change in an older person's cognition or behaviour.

Conclusion: Delirium is a common problem in older hospitalised people that is frequently overlooked and misdiagnosed. The use of a care bundle to support raised awareness of and early identification of delirium may help to differentiate older people whose delirium is caused by an underlying health condition and will consequently impact on other essential areas of care such as nutrition, continence and mobility.

NO LONGER IN THE DARK: TIMELY QUALITY CARE AFTER HOURS
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Objectives: Traditionally hospitals have worked with two distinct models of care - the 'in hours' model and the 'after hours' model. In November 2012, Alfred Health embarked on a transformational redesign program to improve the quality and timeliness of patient care. One key element was the establishment of high quality responsive care regardless of the time of day. In order to do this the Timely Quality Care - After Hours project was initiated. The specific objectives of the project were to:

- Improve patient safety in the after-hours period;
- Improve staff satisfaction and training provided in the after-hours period;
- Implement a consistent emergency admission process 24/7;
- Progress patient treatment and avoid overnight delays; and
- Increase efficiency and work output of the night workforce through transparent and equitable distribution of workload.

Methods: The design and implementation of initiatives was undertaken using a redesign approach with collaboration between management, nursing and medical staff. The approach incorporated change management, project management and Lean principles. The following key initiatives were introduced:

- Engagement of all stakeholders in gathering baseline data, and in developing an efficient new model;
- Establishment of a Junior Medical Specialists Leadership group to guide and communicate initiatives;
- Establishment of an After Hours Medical and Nursing Team led by an After Hours Clinical Lead and an After Hours Clinical Operations Manager;
- Co-ordination of task allocation through an electronic task management system;
- Re-profiled medical and nursing staff during the after-hours period;
- Establishment of team processes for example leadership training, handover, load levelling and clinical support, scheduled breaks; and
- Increased competencies of night nursing staff.

Results: Timely Quality Care - After Hours has been running for three months and a follow-up evaluation has yet to be completed. Results of the pre-post intervention will be available by October 2013. Evaluation will include:

1. Key stakeholder interviews;
2. Performance indicators for quality, safety and access markers pre and post implementation; and
3. Post-implementation gap analysis and review, identifying critical success factors, opportunities to optimise benefits and key learning’s for future redesign reforms.

Conclusion: The initiatives are still relatively new, however already the greater transparency has been an enlightening process. Benefits already seen have included greater accountability for day teams to complete their routine work (e.g. rewriting drug charts), facilitation of teamwork overnight, load levelling of tasks and more timely medical response to patients who have shown signs of deterioration. Anecdotal feedback from the night staff suggests a greater sense of teamwork, satisfaction, leadership training experience, and greater efficiency despite increased workload.
TRANSFORMING CARE FOR THE ELDERLY IN NURSING HOMES

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Objectives: To improve care for residents in the NH environment, the initial focus was prevention of falls. Key objectives were identified: To achieve 45 days or greater between falls by December 2012; to ensure 95% compliance with falls risk assessment on admission, at monthly review and to ensure a post-fall review is carried out, where relevant, for residents who sustain a fall; to develop capacity in quality improvement within the nursing home setting.

Methods: The Collaborative Multi-Disciplinary Advisory Group reviewed best practice from national and international quality improvement sources; a driver diagram was developed for falls prevention. A Gantt chart was developed for the overall improvement collaborative which included 4-5 Learning Sets for the participating teams and was facilitated by the Northern Ireland Health and Social Care Safety Forum. This included training on improvement methodology, supporting analysis of monthly measures, hosting conference calls and site visits to the nursing homes in the action periods, facilitating the distribution, collation and analysis of a nursing home staff culture survey. Each nursing home established an improvement team, the improvement teams identified pilot areas to begin the work on falls reduction, Small tests of change were conducted on a number of interventions; risk assessment, post-fall review, safety crosses, intentional rounding. Participating teams agreed key measures and carried out monthly audits. Nursing homes completed a baseline assessment of the falls rate per 1000 bed days. Teams shared their work through oral presentations and storyboards.

Results: A number of homes have achieved 45 days between falls. The Homes are achieving 95-100% compliance with risk assessment within 24 hours of admission, on monthly reviews and on carrying out post-falls reviews where indicated. Staff have greater awareness of when and why falls occur in the nursing homes. All homes are using Safety Cross/walking stick to record falls. All homes using post-fall form which is completed and actioned following a fall. Intentional rounding being carried out for at risk residents. Safety briefings are in place for residents at risk of falls. A number of resources have been developed as a result of this improvement work and these have been compiled into a resource pack to include: the Falls Flow chart, the Information Sheet on medication and falls, the Safe Footwear Information leaflet for residents and families, audit tools and relevant literature.

Conclusion: There has been excellent engagement in this regional collaborative as shown in results and enabled work to expand to focus on hydration. Face to face contact prior to the commencement of the collaborative was important to begin to build relationships with the nursing homes and to secure the support of the nursing home managers. It is important to take into account that building capacity for quality improvement in the independent profit driven sector takes time and significant support was needed between learning sets for the participating nursing homes.

References: Nice Guidelines on management and prevention of falls in older people: http://www.nice.org.uk/CG021
Institute for Healthcare Improvement website: www.ihi.org
1000 Lives Plus Campaign Falls Prevention: http://www.1000livesplus.wales.nhs.uk/event/5537
SYSTEMATIC REVIEW OF INTERVENTIONS DESIGNED TO REDUCE MEDICATION ADMINISTRATION ERRORS IN HOSPITALS

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Objectives: Medication administration errors (MAEs) are a common threat to patient safety.[1] As there have been no attempts to systematically review the literature on interventions designed to reduce MAEs in hospitals, we aimed to review and critically appraise studies examining interventions designed to reduce MAEs in the hospital setting.

Methods: Ten electronic databases were searched between 1985-October 2012 for randomised controlled trials (RCTs) and quasi-experimental studies reporting on the difference in rate of MAEs or related adverse drug events (ADEs) between an intervention group and a comparator group in the hospital setting. Conference abstracts, theses, review articles and studies reporting outcomes derived from simulation were excluded. The reference lists of included articles and relevant review papers were examined for additional studies. Three authors (RK, SDW & JC) independently extracted study data; primary data were MAE/ADE rates (numerator and denominator) and any formal statistical significance test results. Three authors also assessed risk of bias using established methods, [2] with all four meeting to reach consensus on extracted data.

Results: A total of 11 studies were included. Differences between study interventions, methods and definitions precluded attempts to combine data from different studies. Five studies were RCTs, 4 were controlled before and after (CBA) studies and 2 were non-randomised controlled trials (nRCTs). Tested interventions clustered around 4 main themes: information technology (n=4); nurse education (n=2); changing practice in anaesthesia (n=2) and the nursing/patient role (n=3) in hospitals. Statistically significant reductions in MAE rates were reported for two-nurse compared to single nurse drug administration (nRCT) and automated drug dispensing vs standard practice (RCT). Three RCT studies which reported significance test results found no differences in overall outcome rates for intervention vs. comparator groups. Four studies found significant changes through subgroup analysis. The internal and external validity of included studies was questioned due in part to risk of bias (more extensive for non-RCTs) and method of outcome data collection (five (2 RCTs) used methods other than direct observation which may underestimate the MAE/ADE rate [1]).

Conclusion: The evidence base for the impact of interventions on MAE/related ADE rates is limited; many of the studies which use a more robust study design still contain risks of bias. Despite this, some higher quality evidence does suggest interventions that may or may not warrant further study and provides useful guidance on appropriate methodology to study the impact of interventions on MAEs in the future.

A NATIONAL COMPLAINTS’ MANAGEMENT SYSTEM FOR PUBLIC HEALTH FACILITIES IN SOUTH AFRICA
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Objectives: To set up a national standardised complaints’ management system across South Africa to ensure the effective and efficient management of complaints in a resource constraint environment. This is important in lieu of the establishment of an independent Ombud Office for Health.

To revise a current national complaints management protocol and establish an electronic complaints management database to facilitate implementation of the revised protocol.

Methods: During October 2012, a questionnaire was used to assess the existing nine provincial complaints management systems. The results were used to revise the current protocol.

To support the successful implementation of the revised protocol, a complaints management database in Access was designed and piloted at an academic and a district hospital.

In November 2012, the revised protocol and newly designed database was presented to key facility managers at a national workshop to elicit discussion and inputs. Constructive inputs were obtained which informed a second revision of the protocol subsequent to the workshop. This 2nd revision was circulated in all provinces in December 2012 for final comments.

Results: The results of the assessment indicated wide variances in the management of complaints by provinces and even between facilities within the same province. The following important assessment results came to the fore:

- Format of complaint registers differed
- Indicators for reporting on complaints were calculated incorrectly or not at all
- Templates for collecting statistical data on complaints by provinces differed
- Categories for categorising complaints differed
- Complaints were not risk rated as stipulated in the National Set of Core Standards
- Each province had a different definition for the term ‘complaint resolved’

The process of consultation with key stakeholders resulted in:

a) major improvements being made to various revisions of the complaints’ management protocol, and
b) a greater awareness amongst managers who subsequently showed interest in becoming part of the further roll-out of the database and protocol.

The results of piloting the complaints’ management database in two hospitals indicated that the database was positively contributing towards the successful implementation of the revised protocol for complaints’ management.

Conclusion: The protocol will ensure a standardised national complaints’ management system for public health facilities across South Africa that will attain the following:

- The user/patient’s right to complain is respected
- A simple complaints’ procedure is understood by everyone
- Providing health managers with the means to extract lessons on quality and to subsequently improve services/care to patients
- Fairness for staff and complainants alike
- Problems and concerns of complainants being timely addressed and resolved to their satisfaction
- Unnecessary litigation being avoided

The electronic database will facilitate accurate data keeping of all complaints received by facilities and it will assist facilities to implement the protocol.

References:
5. The National Health Amendment Bill (of 2013)
ADVERSE EVENTS RECORDED IN ENGLISH PRIMARY CARE
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¹Dr Foster Unit at Imperial, Primary Care and Public Health, ²Primary Care and Public Health, Imperial College London, London, United Kingdom

Objectives: The epidemiology of patient safety incidents in primary care remains inconclusive, with fluctuating estimates and a narrow focus on drug-related harm. More accurate and recent estimates of adverse events in primary care are necessary to assign resources for patient safety improvement, while predictors must be identified to ameliorate patient risk. This study determined the incidence of recorded iatrogenic harm in general practice and identified risk factors for these events, using standardised clinical diagnosis codes.

Methods: Cross sectional sample of 74,763 patients at 457 English general practices between 1st January 1999 and 31st December 2008 obtained from the General Practice Research Database.

Patient age at study entry, sex, ethnicity, deprivation, practice region, duration registered at practice, continuity of care, comorbidities and health service use were analysed. Adverse events were defined by Read codes for complications of care (chapters S, T and U). Comorbidities were measured by a modified Charlson Index and the Johns Hopkins Adjusted Clinical Groups (ACG) Case-Mix System. Crude and adjusted analyses were performed by Poisson regression using Generalised Estimating Equations.

Results: The incidence was 6.0 adverse events per 1,000 person-years (95% CI 5.74-6.27), equivalent to 8 adverse events per 10,000 consultations (n=2,540,877). After adjustment, patients aged 65 to 84 years (RR 5.62, 95% CI 4.58-6.91; p<0.001), with the most consultations (RR 2.14, 95% CI 1.60-2.86; p<0.001), ≥5 emergency admissions (RR 2.08, 95% CI 1.66-2.60; p<0.001) or with the most diseases according to Expanded Diagnosis Clusters (RR 8.46, 95% CI 5.68-12.6; p<0.001) were at greater risk of adverse events.

Conclusion: The low incidence of recorded adverse events is comparable with other studies. The results demonstrate the potential uses of routinely collected data for active safety surveillance, with identification of some risk factors that may be associated with iatrogenic harm. Temporal sequencing of risk factors and case ascertainment would benefit from data triangulation. Future studies might explore whether first adverse events predict future incidents.
A QUALITY IMPROVEMENT TAXONOMY
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¹HEALTHQUAL International, New York State Department of Health AIDS Institute, New York, United States

Objectives: Language to describe quality improvement in health care is varied and inconsistently applied throughout the field, differing by system and context. Organisations such as the Institute of Medicine and the World Health Organization among others have offered dimensions, domains and approaches to quality which cover a spectrum of vocabulary and terms, often applying a range of language to converge around central themes. Differences are often driven by the organisational focus and structures that determine selected quality objectives, interventions and their application. Consequently, quality improvement lacks a common lexicon with widely agreed-upon terms of reference, making it difficult to categorise common interventions and relevant domains. Improvement continues to be grouped with quality assurance and/or monitoring & evaluation, further confusing critical distinctions between these activities. While scholarship addressing the science of improvement advances to enhance an understanding of implementation, the field is lacking a common taxonomy to describe and categorise improvement interventions by domain and activity type at all levels of implementation – and importantly – to adequately explain how improvement is achieved through analysis of contextual similarities and differences across interventions and domains. A QI taxonomy may further prove to accelerate improvement learning and knowledge through enhanced capacity for successful communication about QI implementation across countries.

Methods: A comprehensive literature review was conducted to identify published scholarship on improvement classification. Inventory of interventions was undertaken with grouping according to associated domains of intended impact/change that emerged from the review, including education; care processes; data and technology; organisation; and team & partnerships, as well as institutional knowledge; systems; staff, patient and community involvement; meetings; communication and coordination; human resources and staffing; and financing and incentives. Within the continuum of care that includes macro-level environmental and community context, through health system infrastructure and clinic/facility level care processes, domains of improvement generally flow through these categories. These themes were then divided according to activity/intervention type and area of overarching impact at the systems level. A matrix was designed plotting the above noted categories to demonstrate the intersecting, often cross-cutting nature of varying categories and interventions.

Results: A quality improvement taxonomy was constructed to define common categories of interventions to facilitate the consistency and integrity of language to communicate and describe QI implementation across contexts. The taxonomy reveals important factors in successful interventions and may promote a common language to advance the science of improvement.

Conclusion: Consideration of a QI taxonomy is key to linking common interventions to improvement, plays a pivotal role in reinforcing the science of improvement, and may prove to advance scale-up of QI knowledge and activities in resource limited settings.
HYPOGLYCAEMIA IN THE ELDERLY POPULATION
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Objectives: Hypoglycaemia is known to be harmful in the elderly population. At present the quality target for glycaemic control is 7.5% or less regardless of age of patient. A low HbA1c indicates a patient is at increased risk of hypoglycaemic episodes. In the elderly population hypoglycaemia can have detrimental effects such as falls leading to traumatic bone injury and prolonged hospital admissions. We therefore prospectively identified elderly diabetic patients who had a low HbA1c to see if they are symptomatic with hypoglycaemia and if so, altered their medications.

Methods: Diabetic Specialist Nurses (DSN) visited the admissions ward of the Department of Medicine for the Elderly on a daily basis. Any patient who was admitted over the preceding 24 hours who had diabetes and was either on sulphonylurea or insulin treatment was identified. Using a self-designed proforma, they obtained data including presenting complaint, past medical history, initial diagnosis, most recent HbA1c and renal & liver function tests. Based on the HbA1c and patient’s condition, the DSNs made the appropriate changes to the diabetic medication regime. These changes should reduce the risks of subsequent hypoglycaemia.

Results: Over the 12 month period, a total of 324 patients were identified who had diabetes. The average age for this patient population was 82 years (54-102). Out of these 324 patients, 145 were using insulin or taking a sulphonylurea, agents known to potentially cause hypoglycaemia. An HbA1c was measured for these patients and 40 (28%) had a HbA1c under 7.5%. Of these 40 patients, 5 were admitted with a fractured neck of femur and 9 were admitted because of a fall or collapse. 7 others were admitted because of ‘not coping at home’ whilst 2 patients were admitted because of documented hypoglycaemia. A further 2 patients had symptoms suggestive of transient ischaemic attacks and 2 admitted due to confusion. 4 others were admitted for various infections and in 9 patients the reasons for admission were unclear. After assessment by the diabetic specialist nurses, 30 (75%) of patients had their medication altered to reduce the risk of hypoglycaemia.

Conclusion: Amongst 145 consecutive elderly diabetic admissions using insulin or taking a sulphonylurea, 40 (28%) had an HbA1c below 7.5%. In 27 of these cases hypoglycaemia could well have contributed to the reason for admission. In 30 (75%) patients the DSNs reduced medication to reduce risks for hypoglycaemia. Slavish attention to achieving target HBA1c in elderly patients treated with insulin or a sulphonylurea probably put these patients at risk of hypoglycaemia. Elderly patients must be carefully assessed for symptoms of and risks for hypoglycaemia.
HEALTHQUAL INTERNATIONAL ALL COUNTRY LEARNING NETWORK (ACLN): A PEER-DRIVEN KNOWLEDGE MANAGEMENT STRATEGY AND COMMUNITY OF PRACTICE TO BUILD CAPACITY FOR SUSTAINABLE NATIONAL QUALITY MANAGEMENT PROGRAMS IN LOW- AND MIDDLE-INCOME COUNTRIES

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Objectives: Peer communication about quality management (QM) between governments occurs rarely, if ever. The Healthqual ACLN is a knowledge management strategy providing a forum for peer exchange among 17+ countries to reinforce institutional improvement and QM. Panel and expert presentations together with participant-driven discussion sessions advance quality improvement (QI) knowledge and build countries’ capacities to achieve sustainable national performance measurement (PM) strategies, QI techniques and QM frameworks. ACLN promotes rapid exchange between Ministry of Health (MOH) leaders and managers, with changing annual themes focused on programmatic priorities aligned with President’s Emergency Plan for AIDS Relief (PEPFAR) goals.

Methods: ACLN joins national delegations of MOH and US-supported technical staff who are directly involved with Healthqual implementation. Plenary speakers provide expert technical information on QI implementation emphasising impact on specified health outcomes. Panels and country presentations feature MOH teams, allowing country representatives to share improvement challenges and successes. Open Space, a meeting format of participant-chosen and led discussion sessions, facilitates further investigation on quality topics. QI workshops and case studies, and a storyboard competition encourage peer exchange and motivate reflection about implementation of QM programs. Learning and knowledge exchange activities include dedicated time for peer-to-peer discussion and informal networking opportunities which continue throughout the week and beyond the formal schedule, further reinforcing important links between participants.

Results: ACLN fosters cross-country peer exchange between MOH leadership, managers and data analysts, where subgroups based on functional roles exchange knowledge and expertise. ACLN supports the development of sustainable national QM programs through the sharing of strategies for practical implementation of QM capacity building; highlights accomplishments in QM across countries, including alignment of quality activities with other national initiatives and priorities; fosters exchange about PM strategies, including indicator development and data collection, data quality and analysis techniques while enhancing understanding of QI knowledge and strategies; and promotes communication of national quality work through country presentations and a formal QI storyboard competition. In year four of the ACLN, country teams are undertaking various leadership roles and responsibilities for key components of the agenda, including coaching of other country teams in core technical areas and management of country presentations.

Conclusion: Peer exchange facilitated by the ACLN is fundamental to building sustainability through shared experience, knowledge and expertise, and in establishing an international community of practice to reinforce effective QI strategies and spread.
OBJECTIVES:

➢ To develop a NICU-focused tool for adverse event reporting.
➢ To describe the incidence of adverse events by this tool. (voluntary report)
➢ Contribute to improve NICU patient safety, through health team awareness and involving in safety culture.

METHODS: Prospective descriptive study. Between August 2012 and January 2013, a NICU focused tool for voluntary adverse event reporting was developed and tested. Population: every patient in the Garrahan Hospital NICU during this period.

Phase 1: A group of expert neonatologists with expertise in patient safety developed an initial adverse event reporting form with a list of AEs, including ADEs, relevant to NICU.

Phase 2: Workshops were performed with NICU physicians, nurses, pharmacists and fellows in different shifts, to involve the whole team and to adapt the form.

Phase 3: Application of NICU tool the draft was piloted during 1 month, to redefine and establish the final form.

Phase 4: Outcomes were informed and discussed with NICU team, and action plans were designed to prevent AEs recurrence. AE (drug and nondrug related) was defined as "an injury, large or small, caused by the use including non-use) of a drug, test, or medical treatment".

RESULTS: 142 adverse events were reported, 52% of them were medication errors, 21% nosocomial infections, 6% accidental extubation (defined as unplanned extubations requiring re-intubation), 6% diagnostic studies related errors, 5% pressure ulcers, 2% mishandling or loss of catheters, 2% others. 37% of AEs were reported by physicians, 39% by pharmacists, and 24% by nursing staff. Outcomes were informed to NICU team, and 3 preliminary lines of action were designed: workshops to improve medication process, a bundle to decrease catheter related infection rate and workshops to improve endotracheal tube care.

CONCLUSION: Our NICU-focused tool appears to be effective at identifying adverse events.

The prevalence of reported adverse events is similar to that reported in the literature and highlights the need for increasing efforts to reduce hospital infection, improve medication process, and global care of new born patients. Although there are significant methodological and practical challenges to the accurate and reliable determination of rates of errors and adverse events, the voluntary reporting method may complement other tools in promoting a clinical safety culture and defining the risk profile of the NICU.

THE PERFORMANCE OF THE “REJECT-PAYMENT” INDICATORS FOR MEDICAL REVIEW OF TAIWAN’S NATIONAL HEALTH INSURANCE

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Objectives: To understand the performance of using the “reject-payment” indicators to refuse payment for medical anomaly identified through profile analysis of NHI’s claims data in medical review and conduct related analysis.

Methods: Since 2005, the Bureau of National Health Insurance (BNHI) in Taiwan has negotiated with the Medical Associations to construct reject-payment indicators through profile analysis of medical claims data for medical review. It intended to develop such indicators and set their thresholds above which to signify abnormal medical services behaviour. Moreover, BNHI has built a computer system to compute the values of these indicators regularly (monthly, quarterly or yearly). If the value of the indicator exceeded the threshold, the exceeding part of the claims would not be reimbursed. By this way, BNHI could reduce overuse or improper use of medical treatment, tests/exams and drugs to assure medical quality and drug safety.

One example is to reduce the overuse and repeated use of Zolpidem. BNHI created an indicator of “prescription days (measured by DDD) per quarter for the same patient in the same clinic” and set the threshold of 180 days and 135 days for a neurology/psychiatry clinic patient and non-neurology/non-psychiatry clinic patient, respectively. Another example is to use the indicator of “the number of times of ESWL (Extracorporeal Shock Wave Lithotripsy) per year for the same patient in the same hospital” to reduce the overuse of ESWL. The part of the ESWL which is greater than or equal to 6 would not be reimbursed.

Results: Up to the year end of 2012, BNHI has adopted 54 items of reject-payment indicators through profile analysis for medical review. Among which, 24 items are for the hospital sector, 23 items for primary western medicine sector; 4 items for Chinese medicine sector and 3 items for dental sector. It deducted totally 22,996,703 points of medical expenditures from 6,576 medical institutions in 2010. In 2011, it further deducted 34,601,829 points of medical expenditures from 10,553 institutions. BNHI will continue to work with the medical associations to develop new such indicators so that the overuse and improper use of treatments won’t get paid.

For the use of the indicator of “prescription days in DDD per quarter for the same patient in the same clinic of Zolpidem”, 232,729 points of drug expenditures (equivalent to 66,494 pills of Zolpidem) were deducted from 499 clinics in the 3rd quarter of 2012. Among the deduction, 1,773 patients were in neurology/psychiatry clinics; while 864 patients were in non-neurology/non-psychiatry clinics. For the above-mentioned ESWL indicator, totally 1,332,309 points were deducted from 22 hospitals in 2010, and 1,736,679 points were deducted from 24 hospitals in 2011.

Conclusion: Using “reject-payment” indicators and set their thresholds to refuse payment for medical anomaly identified through profile analysis in medical review – with the process of regularly(monthly, quarterly or yearly) calculating the indicator value for an individual hospital/clinic by the computer system and automatically deducting the part of expenditures exceeding the threshold-- can effectively cut down the overuse and improper use of medical treatments, test/exams, and drugs to assure good medical quality and drug safety. Though it can’t replace professional review of medical expenditures, undoubtedly it is an efficient way to manage medical cost.
IMPACT OF DOCTORS’ STRIKE ON ENGLISH HOSPITALS
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Objectives: To examine the effect of the 24hr doctors’ strike on 21 June 2012 on hospital activity in English NHS hospitals.

Methods: A retrospective descriptive study of inpatient and outpatient activity in English NHS hospitals over the strike period. We examine patients admitted to hospital, or with outpatient appointments to hospitals over a 3 week period (from 11th to 29th June, 2012), excluding weekends and spanning the strike day. Patient numbers and percentage change of inpatient admissions (elective and emergency), day surgery cases, outpatient appointments, cancellations and in-hospital deaths on the day of the strike are compared with patient activity during the Thursday before and the Thursday after the strike week.

Results: On the day of the strike, the emergency admissions dropped by 2.4% while elective admissions decreased by 12.8%. There was a 7.8% drop in the number of outpatients seen by medical staff on the day of the strike and a 45.5% increase in the number of appointments cancelled by the hospital. The number of in-hospital deaths on the day of the strike was not significantly different to the average of the non-strike period. The impact of the strike across regional Health Authorities in England was varied. The North West Health Authority was affected the most with a 100% increase in the number of cancelled appointments, 10% drop in the number of outpatients seen on the day and a 16% drop in elective admissions. The least affected Health Authorities were the South West, East of England and South Central.

Conclusion: The 24hr doctors’ strike in England on 21 June 2012 significantly affected the provision of health care by NHS hospitals. We observed regional variations on NHS service levels on the day of the strike.
FEASIBILITY STUDY OF A COMPUTERISED DECISION AID FOR THROMBOLYTIC TREATMENT IN ACUTE STROKE CARE
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Objectives: Thrombolysis (clot-busting treatment) administered within 4.5 hours from onset of symptoms has improved the prognosis for acute ischaemic stroke; however, there is increased risk of symptomatic intra-cerebral haemorrhage (typically within 24-36 hours following treatment) that can cause severe disability or death. Our objective was to establish the acceptability and usability of a computerised decision aid in the acute setting to support eligibility selection, and risk communication and consent/decision-making discussions about thrombolysis with stroke patients/relatives.

Methods: Informed by a structured development process (interview study; ethnographic study; literature review; a locally-designed decision analytic model; interactive group workshops with clinicians and patients/relatives to establish the optimal mode, form and content of decision support; and interactive usability testing of a functional prototype out with the clinical setting with clinicians and patients/relatives), we designed a computerised decision aid for stroke thrombolysis (COMPASS). The decision aid expresses predicted clinical outcomes (symptomatic intra-cerebral haemorrhage, death, and extent of disability at 3-months), with and without thrombolysis, as a function of 13 patient characteristics. Outcome probabilities are presented using numerical (percentages and natural frequencies) and graphical risk presentations (e.g., pictographs). Ten stroke clinicians used COMPASS (presented on a tablet computer and internet) in a pragmatic fashion within the existing acute stroke care pathway. Their experiences with use of COMPASS were explored with paper-based contact forms and brief interviews. Data logged automatically on the tablet computer was used to assess time in use. Patients’/relatives’ experiences of consent/decision-making discussions supported by COMPASS were explored using brief interviews.

Results: COMPASS was used in total on 25 occasions. On 15 occasions it was used to support clinical decision making. Graphical risk presentations were shared with 14 patients/relatives (primarily after infusion of thrombolysis to reinforce verbal information conveyed prior to treatment). Clinicians reported benefits in clinical decision making (e.g., patient-specific predictions of magnitude of likely benefit) and risk communication with patients/relatives. The median time in use was 2.8 minutes. Interviews with patients (n=2) and relatives (n=6) revealed that graphical risk presentations (specifically pictographs) facilitated understanding of the benefits/risks of thrombolysis. No adverse effects related to use of COMPASS were identified.

Conclusion: COMPASS has tangible benefits for acute stroke care:
1) allows clinical decision making about thrombolysis based on individual differential effectiveness; and
2) enhanced communication processes with patients/relatives.
A PROJECT TO IMPROVE INPATIENT FALL INCIDENCE AND SEVERE INJURIES

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Objectives: Inpatient fall incidence is one of the indicators evaluating the medical quality of a hospital. The inpatient fall incidence of the target hospital was 0.079% in 2010. However, based on the record from January to June in 2011, the results showed that the inpatient fall incidence of general wards was 0.092%, higher than the percentage of other medical centers (0.062%), and the percentage of patients with severe injury was up to 3.14%. Therefore, a working group aiming to prevent patient fall incidence and Severe Injuries

Methods: Analysis of fall incidents from January to June in 2011

1. Patients’ characteristics: The mean age was 58.8 years, patients were from various divisions as follows: neurology 20.6%, rehabilitation 9.7%, cerebral-vascular diseases 13.9%; the incidences of fall happened three days and seven days after admission were 30.1% & 39.8%.
2. Related factors: dizziness, unsteady gait, high-risk fall population insisting on getting out of beds by themselves accounting for 91.8% of the major factors; other factors were those when patients moving from bed(28.8%), walking(20.3%), and going to toilet(18.9%).
3. Analysis of the causes: (1) assessment tools for screening high-risk population of fall were not clearly defined; (2) identification of high risk factors of fall were not consistent among general wards; (3) the process and the timing for screening high-risk population of fall were not standardised.

II. Reformulation of standardising the assessment of fall:

1. Based on the Morse Scale, reformulated the assessment sheets.
2. The process and the timing for screening high-risk population of fall were formulated. After identifying those who belong to high-risk fall groups, the in-patient informatics system would automatically produce health problem of fall prevention which must be completed by on duty nurses. III. Implementation of strategies
3. Offering assistant equipment’s and sensor monitoring system:
   a) Offer assistant equipment’s for helping patients walking, going to the toilet, e.g. walker, bedside commode.
   b) Provide infrared sensor monitoring system to prevent fall incidents for bedridden patients falling repeatedly.
4. Make reminding note or marking of high-risk patients of falling: list high-risk patients of falling in nursing handoffs. Make specific reminding note or marking of prevention fall on nursing kardex and patient’s bracelet.
5. Practice root-cause-analysis (RCA) if the severity assessment code (SAC) of the fall incident is categorised into level 1-2.

Results: With steady improvement, fall incidence has been decreased from 0.099 % (2011) to 0.093 % (January to June, 2012). The percentage of patients with severe injury has been decreased from 3.14 % to 1.43 %. In 2011, five fall incidents were categorised into SAC1-2. From January to May in 2012, none fall incident was categorised into SAC1-2. By integrating in-patient informatics system and reminding the health problem of fall prevention, nurses offered more comprehensive strategies for preventing fall incidents.

Conclusion: Although, fall incidents could not be prevented perfectly. However, with standardised assessment and screening process of high risk population of fall and assistance from informatics system, nurses will thus identify high-risk population and provide individualised preventive strategies more efficiently. In this way, fall incidents are expected to be decreased, and patient safety will be guaranteed.
NO-FAULT BASED OBSTETRIC COMPENSATION / CAUSAL ANALYSIS AND FUTURE PREVENTION SYSTEM AND ITS EFFECT ON CONFLICT EASING AND QUALITY IMPROVEMENT IN OBSTETRIC CARE IN JAPAN
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Objectives: The Japan obstetric compensation system for cerebral palsy was launched in 2009 in response to the shortage of obstetrician due to surging conflict on profound cerebral palsy cases. The system is reviewed in terms of easing effect on the conflict and the quality improvement of obstetric care.

Methods: Japan Council for Quality Health Care (JCQHC) has operated the compensation/causal analysis and future prevention system in which 99.8% of Japanese childbirth facilities has registered. The collection of insurance premium from childbirth facilities and the payment of compensation money to a guardian bearing a baby with profound cerebral palsy have been conducted in cooperation with indemnity insurance companies. Guardians with children suffering from cerebral palsy are paid monetary compensation as much as US$337,000 and provided a causal analysis report which is also delivered to child birth facilities. The processes composing the system such as compensation, review of eligibility, causal analysis and future prevention are through reviewed in terms of efficiency and sustainability.

Results: The Japan obstetric compensation system for cerebral palsy is the system on voluntary basis, however, it has achieved 99.8% participation in cooperation with professional and academic societies of obstetricians/gynaecologists and midwives and the ministry of health, labour and welfare. Eligible case is provided with monetary compensation such as 6 million yen (US$67,000) for lump-sum payment and 24 million yen (US$270,000) for 20-time annual instalment payment. Review committee to discuss eligibility of patient only confirms birth weight, gestational week and congenital or post-natal factors causing cerebral palsy. Liability of obstetrician is out of scope of the review committee featuring the process as “No-fault basis”. Cases approved of compensation are filed in the following process of causal analysis. Six expert groups composing of obstetrician, neonatologist, midwife and lawyer have been intensively working on the production of causal analysis report. One hundred and sixty-one reports have been completed and delivered both to families taking care of patients with cerebral palsy and to childbirth facilities. The production of report has proved to be favoured of due to its neutral nature in a study. Despite of criticism arising from the beginning that intensive causal analysis may ignite conflict between childbirth facilities and families, no significant rise in the number of liability insurance payment for cerebral palsy case has been observed so far. For future prevention, the system published a report in 2012 carrying 3 important themes to improve quality of obstetric care such as vacuum-assisted delivery, maternal education on placental abruption and appropriate recording on delivery process. The report is open to public on JCQHC’s web site and circulated among obstetricians on occasions such as annual meeting or scientific societies for further prevention and improvement.

Conclusion: The Japan obstetric compensation system for cerebral palsy has been effective in easing conflict on cerebral palsy cases and improving quality of obstetric care. The system covers only obstetric field, however, it is noteworthy in terms of first no-fault compensation system for clinical practice in Japan.

HONG KONG’S EXPLORATORY MOTIVATION STUDY OF HOSPITAL VOLUNTEERS USING VOLUNTEER FUNCTIONS INVENTORY

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Objectives: Hong Kong Hospital Authority (HA) has long history of collaboration with volunteers and their contributions have been enormous and diverse from ward visitation, outreach service, clerical support to professional consultation. Volunteer service has become an indispensable workforce and asset in enhancing quality of health care service and reducing manpower cost.

Understanding the personal motivations of the unpaid workforce can assist the organisation in designing opportunities to fulfil their motivations.

Volunteer Functions Inventory (VFI), an instrument using 7-point Likert scale to detect six multi-factorial psychological functions of volunteering including Value, Social, Career, Understanding, Enhancement and Protection was administered.

Objectives:
1. To investigate the motivations and demographic information hospital volunteers using Volunteer Functions Inventory (VFI)
2. To study any motivations difference across volunteers’ characteristics e.g. gender, age, education background
3. To retain volunteers by providing suitable work nature and rewards
4. To provide suitable training according to volunteers’ characteristics

Methods: Self-administered questionnaires and Chinese validated version VFI were distributed to volunteers in 7 HA hospitals in Hong Kong via corresponding volunteer service coordinators. Convenience sampling was used. Descriptive analysis of demographic data of volunteers was performed and calculations of means of the six functions in the VFI were ranked. T-test and Kruskal-Wallis test were used to identify any differences of VFI across volunteers’ characteristics. Spearman’s rho was used to identify correlations between VFI, future service and average serving hours.

Results: 316 completed questionnaires were received in a 3-month period. 37% of interviewees had an average serving hours of 7-13 hours/ month. 87% volunteers were willing to continue serving HA in the following year. 65% of interviewed volunteers were currently receiving or received HA medical services. Their volunteering motivations were ranked in descending order as follow: Value, Understanding, Enhancement, Social, Protective and Career as described in Table 1.

Motivation differences were analysed across volunteers’ characteristics. Elderly volunteers were significantly focused more on Value and Social functions (p= 0.04, 0.02) whereas young adults focused more on Career functions (p= 0.00). Five functions of the VFI except Career had a positive correlation with the likelihood of continue serving HA in the subsequent year (p< 0.05).

<table>
<thead>
<tr>
<th></th>
<th>Somewhat Important to Extremely Important (Score 5-7)</th>
<th>Neutral (Score 4)</th>
<th>Somewhat Not Important to Not Important at All (Score 1-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>287 (90.8%)</td>
<td>9 (2.8%)</td>
<td>20 (6.3%)</td>
</tr>
<tr>
<td>Understanding</td>
<td>278 (88.0%)</td>
<td>9 (2.8%)</td>
<td>29 (9.2%)</td>
</tr>
<tr>
<td>Enhancement</td>
<td>252 (80.0%)</td>
<td>15 (4.7%)</td>
<td>49 (15.6%)</td>
</tr>
<tr>
<td>Social</td>
<td>205 (64.8%)</td>
<td>10 (3.2%)</td>
<td>101 (32.0%)</td>
</tr>
<tr>
<td>Protective</td>
<td>170 (54.0%)</td>
<td>21 (6.6%)</td>
<td>125 (39.6%)</td>
</tr>
<tr>
<td>Career</td>
<td>118 (37.1%)</td>
<td>17 (5.4%)</td>
<td>181 (57.3%)</td>
</tr>
</tbody>
</table>

Table 1. Volunteers’ Motivation on Six Domains

Conclusion: Understanding their motives and fulfil their expectations are beneficial for them as well as to the organisation as volunteers are not paid for their work.

For examples, elderly tends to have high Social motives; therefore HA may design training workshops or job allocation in group formats or with gathering components. While youngsters’ focuses on Career functions, awards and recognitions can be provided to meet their motives; career talks can also be arranged to let them to have more understanding in hospital work.

Majority of interviewees were also HA clients. Their special roles of being a staff and a patient could help spotting inadequacy of the organisation. They could be the linkage between the community and hospitals.
BUILDING QUALITY CAPACITY: TRAINING A LARGE GROUP OF HOSPITAL EMPLOYEES AS AUDITORS TO OBTAIN ACCREDITATION.

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Objectives: Audits are an effective way to determine whether an organisation meets standards for hospital accreditation. Usually, a small group of dedicated auditors is hired during the accreditation process to perform the audits and thereby value the work of the professional. This may give tension during the accreditation process. Health care professionals often experience the loss of professional autonomy when having to comply with all standards. To overcome this problem, we decided to educate a significant group of healthcare professionals to perform the audits along with their daily work in the hospital. We hypothesise that training a large group of hospital employees to act as auditors improves support for accreditation standards.

Methods: In large Dutch academic hospital (11,000 employees) the hospital board decided to start with JCI accreditation in 2010. In 2011 en 2012, more than 70 employees (mostly physicians and nurses, but also non-medical managers and staff members) received a training course. This course included training in patient safety, human factors and JCI standards. In addition, a practice-based training in auditing was given to teach system thinking and giving feedback. More than half of these employees were trained for 3 days by professional JCI consultants. The rest received a one day training course by the patient safety expert and trainer of the hospital. Furthermore, regular evaluation meetings were organised to exchange experiences.

Results: More than 400 audits were performed over the period of one year (2012) by more than 70 trained professionals-as-auditors. Audits were performed in (changing) couples of medical and non-medical professionals. By involving a large group of employees, the audits turned into a participatory practice, leading to a widespread support for the accreditation standards. In addition, performing the audits empowered these professionals and affected their own work. They started reflecting on their own work by questioning how they have organised things at their own department. In this way, highly practical capacity building took place; the organisational ability to deal with quality issues spread throughout the hospital.

Conclusion: Training a large group of hospital employees as auditors makes it possible to use the expertise of health care professionals during the accreditation process. It creates support for accreditation standards, but it also enables trained employees to perform their own work differently. The hospital slowly builds capacity to manage quality issues, without experiencing the darker sides of performance management.
PREVENTION OF CATHETER ASSOCIATED URINARY TRACT INFECTION USING IMPROVEMENT SCIENCE
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Objectives: The over-arching objective was to prevent ward developed catheter associated urinary tract infections and the development of related S. aureus bacteraemias.

Methods: Improvement science methodology was used to implement the bundles. The Model for Improvement and Plan, Do, Study, Act, cycles were used to test the bundles to identify any necessary changes required. The care bundles included audit tools to monitor staff compliance with the bundles; these audits were carried out by the clinical effectiveness facilitator to identify issues and barriers relating to the implementation of the bundles.

To monitor infections, a CAUTI incident cross was devised to:

a) Count the number of patients with a urinary catheter on a daily basis.
b) Identify incidents of CAUTIs (both where patients were admitted with a CAUTI and ward developed CAUTIs) using a Red, Amber, Green system.

This enabled a CAUTI rate per 1000 catheter bed days to be calculated as an outcome measure and allowed the days since last CAUTI incident to be recorded.

Once the care bundles were established within the ward, a 90 day improvement plan was utilised to spread the project across the remaining community wards within the Community Health Partnership. Staff in each ward were selected to be “CAUTI Improvers” and their role was to support the CAUTI work.

The original bundle audit tools were found to be inadequate and a Urinary Catheter Clinical Quality Indicator was designed and implemented to monitor staff compliance with the bundles.

Results: Twelve months of data, from January to December 2012, is displayed on the table entitled GNEF CHP CAUTI Surveillance.

<table>
<thead>
<tr>
<th></th>
<th>Ward A</th>
<th>Ward B</th>
<th>Ward C</th>
<th>Ward D</th>
<th>Ward E</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catheter Bed Days</td>
<td>1854</td>
<td>1478</td>
<td>1638</td>
<td>1211</td>
<td>1618</td>
<td>7799</td>
</tr>
<tr>
<td>Admitted With CAUTI</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Days Since Last CAUTI</td>
<td>278</td>
<td>284</td>
<td>213</td>
<td>96</td>
<td>458</td>
<td>96</td>
</tr>
<tr>
<td>Rate per 1000 CBDs</td>
<td>0.54</td>
<td>0.68</td>
<td>1.83</td>
<td>2</td>
<td>0.11</td>
<td>0.9</td>
</tr>
</tbody>
</table>

In total, across five wards, there were seven ward developed CAUTIs and 7799 catheter bed days, this equates to a rate per 1000 bed days of 0.90. There were no related SABs. As of the 31st December 2012, the last ward CAUTI was 97 days ago and one ward has had 458 days since the last CAUTI.

Prior to this project there is no comparable local data on the incidence of CAUTI in isolation of all urinary tract infections. The Scottish National Point Prevalence Survey of Healthcare Associated Infections and Antimicrobial Prescribing (Health Protection Scotland 2011) found that 22% of patients with an infection in Scottish acute hospitals had a Urinary Tract Infection. Approximately half of these patients had a catheter in-situ in the seven days prior to infection.

Conclusion: Learning and results from the project have been reported and presented both locally and nationally. Throughout the project there has been support from a multi-professional group to align the NHS Fife Adult Urinary Catheterisation Procedure and Management of CAUTI with the CAUTI care bundle work. Further implementation across all in-patient areas of NHS Fife is ongoing and the bundles have also been adapted for use by community nursing teams. Patient CAUTI cards have been designed to provide patients with key information on how to care for their catheters and how to recognise the signs of a CAUTI.

A multi professional approach and staff engagement were key to implementing the associated changes in care delivery. Sharing success with the ward staff also encouraged them to continue to adopt the new ways of working. The role of the senior charge nurse was crucial in supporting all staff involved to ensure optimal catheter care for every patient, every time. The role of the “CAUTI Improvers” was also a key factor in the successful implementation of the CAUTI bundles.
COLLABORATION AMONG US ACADEMIC MEDICAL CENTERS TO IMPROVE PATIENT OUTCOMES - A CASE STUDY AT UHC

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Objectives: Demonstrate development and use of shared data resources that facilitate quality and performance improvement among academic medical centers.

Describe metrics used to develop performance improvement initiatives.

Illustrate importance of risk adjustment in evaluating baseline performance and improvement.

Methods: Retrospective cohort study

Results: More than 200 US hospitals, including 100 academic medical centers, participate in UHC's clinical database/resource manager (CDB/RM). Quality improvement within participating hospitals is facilitated by comparing performance among hospitals using risk adjusted patient outcomes in a transparent scheme. For example, in-hospital mortality among neuroscience patients in all US hospitals decreased 5.75% between 2005 and 2010. Across UHC participating hospitals, there was a 25.9% decrease for the same cohort in the same time period. Moreover, top performers using data and collaborative resources actually had a 28.2% decrease.

Conclusion: By participating in UHC's CDB/RM, US academic medical centers have successfully created a shared quality and performance improvement resource to facilitate clinical improvement initiatives. Initiatives have included evaluation of resource demand and use as well as patient quality and safety. Over time, US academic medical centers have seen declining in-hospital mortality, in part a consequence of sharing data and eliciting best practices in managing patients.

References: Keroack 2007
WHAT IS THE IMPACT OF USING THRESHOLDS FOR FIRST-EYE CATARACT SURGERY ON THE DELIVERY OF THE CATARACT SERVICE? AND IS IT CLINICALLY AND COST EFFECTIVE TO PERFORM SECOND-EYE CATARACT SURGERY IN THE ABSENCE OF OTHER OCULAR CO-MORBIDITIES?

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Objectives: Two scoping reports were prepared to assess the following questions:

1. What is the impact of using thresholds (both for referral and surgery) for first-eye cataract surgery on the delivery of the cataract service and the resources associated with it?
2. Is it clinically and cost effective to perform second-eye cataract surgery in the absence of other ocular co-morbidities in patients who have already had first-eye surgery?

The aim was to help inform cataract referral guidelines for NHS Lothian.

Methods: A rapid review of the literature was conducted. This included a search for local policy documents, mainly from Primary Care Trusts in England, which were compared to a draft cataract referral pathway from NHS Lothian.

Results:

Question 1. There are no specific thresholds or criteria that define appropriate patients for referral and/or cataract surgery. As a result, there are variations (within and across countries) in clinical practice that could have implications for the delivery of a potentially efficient and more cost-effective cataract service. It appears that multiple objective and subjective criteria are in use, but there is little evidence available to support or refute their appropriateness for improving service delivery outcomes.

Question 2. The findings from two RCTs suggest that second-eye surgery in people with bilateral cataracts without severe ocular co-morbidities, compared with surgery in one eye only, can result in improvements in outcomes such as visual acuity, stereopsis, patient-reported visual disability and confidence. However, one of the trials was unable to demonstrate that second-eye surgery reduces the risk of falling. Three cost-utility studies were identified, but only one was UK-based. The results suggest that in people who have minor preoperative visual dysfunction, second-eye cataract surgery is not likely to be cost-effective in the short-term. However, the authors also reported that in the long-term, cataract surgery appears to be cost-effective in this patient group if carers costs are not included.

When NHS Lothian’s draft referral pathway was compared with 16 local policy documents from England, the following points were noted:

- The visual acuity threshold for cataract surgery in the draft NHS Lothian pathway was ‘worse than 6/9’. Of the 16 local policy documents identified, 13 referred to visual acuity thresholds. These ranged between 6/9 and 6/12, and so the draft NHS Lothian pathway was in line with these.
- According to the draft NHS Lothian pathway, people who have a visual acuity of 6/9 or better may still be eligible for cataract surgery if they meet certain criteria. This is similar to a number of local policy documents, although these mostly used a visual acuity threshold of better than 6/12 in the worst eye.
- Some criteria that were mentioned in the local policy documents, not mentioned by NHS Lothian, were:
  - Patients of 18 years of age or less at the date of referral (Bournemouth)
  - Management of coexisting eye conditions (Cambridge)

Conclusion: The scoping reports, and the evaluation of local policy documents, helped to inform cataract referral guidelines for NHS Lothian.
IMPROVING MEDICAL PERFORMANCE QUALITY AMONG A MULTIDISCIPLINARY GROUP BY EVALUATING DECISIONS IMPLEMENTATION

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Objectives: Health care quality performance depends on each individual performance but also on multidisciplinary outcomes obtained from international guidelines or experts consensus meetings. The objective of this study was to measure outcomes of a multidisciplinary digestive group, before and after those outcomes definition, in order to evaluate areas of improvement in our quality as a health service provider. Among the multidisciplinary group performance, application of protocols, accomplishments of predefined schedules and coherence among written critical medical decisions were evaluated and analysed in a systematic way to measure quality of medical performance.

Methods: In a National Oncology Centre, a multidisciplinary digestive group composed of Surgeons, Oncologists, Radiotherapists and Gastroenterologists created in 2009 an institutional protocol for patient’s evaluation, treatment and follow-up and set ideal time frames among these 3 phases of the patient’s health management and in 2010 defined specific criteria to include in written reports in critical medical decisions appointments including the TNM stage. Charts of all digestive patients, new among the institution during the month of November, in 3 consecutive years (2008, 2009 and 2010), were retrospectively reviewed, in order to assess the accuracy of patient’s evaluation, treatment, follow-up, time frames and written reports. Numeric variables were compared between consecutive years by the Mann-Whitney U test while categorical variables were compared by the Pearson Chi-Square test or Fischer’s Exact test as applicable.

Results: Charts of 96 patients were evaluated and results are reported for the years 2008, 2009 and 2010 respectively. Correct request of exams for patient’s evaluation increased during the 3 years (71% vs. 83% vs. 97%; p=0.25 and p=0.11) and correct schedule of follow-up exams after treatments also improved (40% vs. 36% vs. 75%, p=1.0 and p=0.28). For the time frames evaluated, the number of days to schedule the first appointment were 7 vs. 5 vs. 8 days (p=0.94; p=0.29), the time between the first appointment and the first critical medical decision was 6 vs. 7 vs. 14 days (p=0.24; p=0.24) and the gap between that decision and the first treatment was 8 vs. 20 vs. 17 days (p=0.01; p=0.73) with statistical significance between 2008 and 2009 but still below the threshold defined by the protocol. The TNM stage description rates were 71% vs. 83% vs. 97% (p=0.25 and p=0.11), increasing considerably in the 2010.

Conclusion: Auditing medical multidisciplinary performance in consecutive years allowed us to verify if decisions taken to improve quality of care were implemented and resulted in measurable improvements. According to the institutional protocol, patients’ evaluation, follow-up and charts precision improved considerably in just 3 years while the time gap among these steps increased slightly but without statistical or medical significance, still fulfilling the requirements of the institutions’ protocol.
ENGLISH

ENGAGING CLINICIANS IN QUALITY IMPROVEMENT AT THE UNIVERSITY OF CALIFORNIA DAVIS HEALTH SYSTEM

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Objectives: Hospitals have traditionally conducted quality improvement (QI) within the walls of their QI departments without engaging front-line clinicians. Educational competencies in health sciences schools and continuing education have rarely included translation of education to improve quality of care. Clinicians are, however, uniquely positioned to assess and modify pathways of care, recognise systems deficits, and support quality aims. Our goal was to develop and implement a strategy to actively engage front-line clinicians at the University of California Davis Health System (UCDHS) in QI by integrating our efforts with team-based and inter-professional education and care.

Methods: Our strategy involved:
1) alignment with organisation-wide strategic plan,
2) inter-professional education,
3) student interest group in healthcare quality,
4) continuing professional development,
5) increasing visibility of efforts; and
6) systematic scaling up.

Results:
1) Alignment with organisation-wide strategic plan: The UCDHS strategic plan has senior administrative support from our schools of medicine and nursing and our medical center. Improving the quality of healthcare and of health by integrating education with QI is specifically called out in our recently revised strategic plan.
2) Inter-professional education: An introduction to healthcare quality is presented during medical school orientation. We leverage our student home visit program to engage patients in identifying areas and strategies for improvement. We implemented a team-based curriculum in QI for house staff that has increased their ability to apply QI methodology and has improved clinical processes and outcomes. Working in teams, house staff and faculty apply QI principles to systematically design and implement QI initiatives. Instructors at our Schools of Nursing and Medicine have collaborated on introducing inter-professional courses into the curriculum that engage learners in completing QI projects aligned with organisational priorities.
3) Student interest group in health care quality: The group brings together students from medicine, nursing, public health, informatics, management, law, business, and engineering. Members are involved in working with faculty in designing and evaluating new curricula.
4) Continuing professional development: We have developed a mechanism for faculty clinicians to receive credits for board recertification and continuing education in their specialty for their participation in QI efforts at UCDHS.
5) Increasing visibility of efforts: Now in its third year, the goal of the UCDHS Annual Integrating Quality Symposium is to link high quality clinical care with clinician education and implementation science and to showcase our clinicians' work in QI.
6) Systematic scaling up efforts: We were funded by the University of California Office of the President’s Center for Health Quality and Innovation to coordinate a learning network of all five health systems within the University of California. This network engages trainees, faculty and staff in QI in areas aligned with national and health system priorities. The current focus of this learning network is to improve patient safety at hospital discharge, thereby reducing unplanned readmissions.

Conclusion: Our institutional experience demonstrates that students, trainees and practicing clinicians are large and infrequently tapped workforce of future QI practitioners. Weaving QI into the fabric of health care delivery organisations, combined with strategic and ongoing career development of inter-professional teams can overcome barriers to improving health care delivery and population health.
ZERO TOLERANCE FOR PRESSURE ULCERS - A REGIONAL STRATEGY
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Objectives: Background information: Capital Region of Denmark is a multi-hospital system, including a large mental health Service for psychiatric patients. The overall number of beds in the capital Region of Denmark is 3000 and the number of full time clinical staff is approx. 29.000. The region covers 1,2 mio. Inhabitants and the number of somatic hospitals are 8, situated in multiple locations.

A national and regional target area is to reduce the number of hospital acquired pressure ulcers to none in 2014. This goal is to be achieved for all nine hospitals. A prevalent study has been performed in December 2012 in order to collect baseline data. The study included the type, numbers, locations and classifications of identified ulcers. Patients with pressure ulcers at the time of admission were included as well.

A regional pressure ulcer preventions group is established and regional guidelines, documentations tools, and a uniform care plan have been developed. The project identifies sources and methods to regular monitoring the preventive actions for each patient and also the number of hospital acquired pressure ulcers on department level. Learning tools to support staff education is under development.

Methods: Prevalens study amongst 3000 admitted patients in 9 somatic and 1 psychiatric hospital. Review of medical records. Generic tools for assessing patients risk for developing pressure ulcers, reassessment and classification of pressure ulcers. Uniform documentation tools in the entire Region including a uniform tool for monitoring at department level.

Results: Baseline prevalens study has been concluded. 3000 patients included, 700 patients had ulcers and the total number of ulcers were appr. 1400. 350 patients were admitted with pressure ulcers - 50% of the patients with pressure ulcers. Pressure ulcers were classified in to 4 different categories (1-4, international classification)
Medical record review data November 2012 and May 2013: Pending

Conclusion: The prevalens study was the kick-off for a large scale implementation plan to reduce the number of hospital acquired pressure ulcers. We hope to be able to present the results of this large scale implementation of uniform practices that can show if such a regional effort will result in a substantial improvement.

References: Association of Danish Regions: Prevention of pressure ulcers - a national improvement project. 2012
THE PERFORMANCE OF THROMBOLYSIS IN GERMAN ISCHEMIC STROKE PATIENTS – DID THE GUIDELINE UPDATE HAVE AN IMPACT?

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Objectives: The recommended time frame for performing thrombolysis in ischemic stroke patients has been extended from 3 to 4.5 hours in 2009. The aim of our study is to compare the treatment situation of ischemic stroke patients in Germany before and after the guideline revision. Differences in the increase of the thrombolysis rates are being analysed with respect to influencing factors on the hospital level.

Methods: Data sources are the 2008 and 2010 quality reports, which according to German law have to be published by all hospitals performing medical treatment. Additional information has been gained by adding data from the federal statistic bureau to classify the hospitals by their location (urban, semi-urban and rural). We were able to include the data of 341 neurologic departments, treating 127,000 (2010) ischemic stroke patients (stroke patients with the diagnosis I63 ICD-10-GM). By performing logistic regression (STATA, Version 12) we estimated a statistic model to find correlations between hospital and department characteristics and the thrombolysis rate shift.

Results: The thrombolysis rate in ischemic stroke patients, treated by a neurologic department has significantly (p < 0.0001) increased from 6.5 per cent in 2008 to 8.9 per cent in 2010. With a range between 0 and up to 35.7 per cent of ischemic stroke patients receiving thrombolysis in 2010 there are huge variations between the different hospitals. Factors that influence the thrombolysis rate include the existence of a stroke-unit and the number of treated stroke patients. For the increase in the thrombolysis rate between 2008 and 2010 we could not find any significant variables on the department/hospital level.

Conclusion: Thrombolysis during the first 4.5 hours after onset of the first symptoms is the only approved treatment for ischemic stroke patients. Our analysis could show that there is a correlation between the hospitals experience in treating ischemic stroke patients and the performance of a guideline congruent therapy. The extended time frame resulted in an increase of thrombolysis rate, in hospitals located in urban as well as in rural regions. Hospital characteristics like teaching status, ownership, location or number of beds did not significantly influence the thrombolysis rate after the guideline update in 2009. Further research is necessary to detect possible reasons for the unequal performance of thrombolysis in Germany.
PATIENT SAFETY POLICY IN LONG-TERM CARE: FEASIBILITY OF EXECUTIVE PATIENT SAFETY WALKROUNDS TM TO IMPROVE MANAGING SOFT SIGNALS. A STUDY PROTOCOL.

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Objectives: In the last decade’s quality and safety in health care received substantial attention. Good quality of care and patient safety require leadership involvement, from both professionals and board members. Currently available tools for the management of safety in healthcare are largely based on quantitative management information. However, these tools do not paint the whole picture and do not yield sufficient information to monitor quality and patient safety. In addition, the professional relationship between board members and professionals is an important precondition for safety policy. This relationship should be based on mutual trust to allow the board to pick up on indirect signs. These so-called ‘soft signals’ are important early warnings that something is wrong. They can supplement or confirm current management information and seem useful as a leadership tool for the executive board. Safety WalkRounds™ offer the board an opportunity to build a trusting relationship with professionals and pick up on soft signals. The majority of the research on WalkRounds™ has been performed in hospitals. It is therefore unknown how board members of long-term care organisations use soft signals as a leadership tool and if so, how this influences their patient safety policy. The aim of this study is to identify how executive board members of long-term care organisations manage patient safety. Also, this study aims to introduce and evaluate the method of WalkRounds™ in order to explore the added value and the feasibility of this method for patient safety management in long-term care.

Methods: An explorative before-after study will be conducted between April 2012 and December 2013 in the Netherlands. Prior to the introduction of WalkRounds™, data collection will take place in 13 long-term care organisations (4 Mental Health Care institutions, 5 nursing home and home care organisations, and 4 institutions for physically and mentally disabled) to identify the characteristics of executive boards of organisations. Board members will be interviewed and asked to fill in a questionnaire, and reports of meetings of the executive boards will be studied. During the intervention period WalkRounds™ will be implemented in six organisations; the intervention group. The control group will continue care as usual. After one year, the added value of managing soft signals on patient safety outcomes will be investigated in all participating organisation. Quantitative data regarding characteristics of the organisation, characteristics of the executive board and the way executive board members manage patient safety will be analysed using descriptive statistics.

Executive board members manage patient safety will be analysed using descriptive statistics. T-tests will be computed within and between the various groups to compare the average number of patient safety improvement activities, and to evaluate the effect of the intervention by comparing the patient safety performance indicators; a p<0.05 will be considered statistically significant. Important texts that emerge from examination of the qualitative data of the questionnaires, interviews and the reports are analysed using open, axial and selective coding.

Results: Preliminary results are expected to be ready at the conference.

Conclusion: Discussion: A major challenge is the on-going development and implementation of patient safety management tools and quality measuring instruments. This might be a risk for the results of our study.
PATIENTS AS PARTNERS: DEVELOPMENT OF THE POST-STROKE ‘EASY ACCESS TOOLKIT’

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Objectives: The objectives of this study were:

1. To use a user-led strategy to develop a post-stroke assessment tool accessible for people with aphasia, a complex language processing disorder that affects approximately one third of people post-stroke.
2. To implement the assessment tool in the community to ensure that the unmet needs of this specific stroke population are appropriately identified and addressed in a timely manner, leading to more equitable service provision, improved outcomes and increased quality of life for patients and their carers.

Methods: A ‘Stroke Assessment Tool User Group’ was created comprising of eight people with varying degrees of severity, complexity and impact of aphasia post-stroke. This group was supported by three expert facilitators and was tasked with leading the development of a version of the Greater Manchester Stroke Assessment Tool (GM-SAT) that was appropriate and accessible for people with aphasia post-stroke. The group met for 2h biweekly for a period of approximately six months and worked to identify and agree upon the important characteristics of accessible information, such as the use of simple words, short sentences and relevant images, symbols and pictures. Using this as a basis, during subsequent meetings, the group then worked through the original version of the GM-SAT section by section, applying these principles and making the information appropriate for people with aphasia.

Results: The GM-SAT Easy Access Toolkit was created by the User Group. Comprising of two resources- the Conversation Support Resource (CSR) and the Trigger Question Resource (TQR) - this comprehensive Toolkit provides the materials required to support the assessment of the long-term unmet needs of people who have aphasia following a stroke. The Toolkit has subsequently been adopted by a number of health, social care and voluntary sector organisations across the United Kingdom.

Conclusion: While requiring significant planning and resource, adopting a user-led approach was key to ensuring production of a quality resource that is appropriate and capable of meeting the needs of people with aphasia post-stroke. Application of the GM-SAT Easy Access Toolkit has ensured that the post-stroke needs of people with aphasia are as effectively identified as address as those of their non-aphasic peers.
CUES TO QUEUES – AN ALBERTAN POLITICAL DEBATE
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Objectives: Responding to allegations of improper preferential access to publically funded health services in the Canadian health care system, the Government of Alberta established a “Health Services Preferential Access Inquiry” (http://www.health accessinquiry.com) that was driven by, responded to and catalytic of significant public debate relating to distribution of scarce health care resources. The establishment of the inquiry itself was imbedded in political positioning and machinations that in and of itself created a debate within a debate. Queues are an inevitable consequence when resources are limited. With health care ethical frameworks evolving away from a virtue ethic towards deontological and feminist paradigms, there is increasing pressure to codify rules and principles as it relates to distribution of resources. The public debate that arose in this instance can be examined using ethical paradigms, demonstrating how such an evaluative tool can ensure public policy is reflective of underlying public needs and wants. Health policy can advance and mature only with consideration and analysis of spirited public debate as arose in this case through the lens of ethical paradigms – otherwise, the potential gain to have such debate in consideration of the significant political costs would never make such a process worth the effort and risk.

Methods: This is an observational and contemplative study that reflects on this political discussion of access through the lens of virtue, deontological and feminist ethical paradigms. The background that led to this very public, sometimes principled and always political debate is considered in the political, economic, social and legislative context in which it arose. The presentations to the commission will be reviewed and codified. They will in turn be examined with an ethical lens to demonstrate how the ethical framework paradigms themselves invariably led to the eventual outcome. The outcome of the Inquiry will be evaluated against the existing political and cultural environment.

Results: Historically, access to health care has been through a virtue ethical paradigm which was typically physician centric and paternalistic. Training of physicians mirrored this ethical paradigm wherein it was believed that normative decisions of right and wrong can be learned with the right decision being midway between the vice of too much and too little. This is in contrast to the principles that arise within a deontological ethical framework that support the concept that society can codify rules, standards and principles that can be relied upon to manage health care queues. With an evolution towards a deontological ethical framework concentrating on autonomy, beneficence, non-maleficence and justice, ethical conflicts in regards to what is proper distribution of scarce health care resources surface. Evaluation of public policy debates often fails to consider these ethical frameworks and in so doing do not uncover and incorporate the richness of the learning’s that are available. This presentation will demonstrate using this concrete public example how such an evaluation allows those charged with crafting public policy to develop more acceptable and reflective policies.

Conclusion: Although public debate is often inherently risky from a political perspective, it is only through such processes that there can be robustness of public input required for development of public policies. Consideration of the underlying ethical frameworks when faced with open, public debate provides an invaluable tool in assuring the input from such politically charged rhetoric truly adds value to the creation of public policy.
DOES CONTEXT INFLUENCE THE EFFICACY OF PATIENT DECISION AIDS? A SECONDARY ANALYSIS OF A SYSTEMATIC REVIEW

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Objectives: There is evidence that the efficacy of patient decision aids (PtDAs) may be influenced by trial participants’ perceptions of their identity: whether they perceive themselves to be patients (seeking to benefit personally from involvement) or volunteers (consenting in order to support the research effort - altruism). Several study characteristics may be indicative of trial identity, including whether participants initiated the pathway of care that led to the decision, trial setting, and the context of practitioner interactions. The objective was to determine if study characteristics indicative of trial identity influence the efficacy of PtDAs.

Methods: Subgroup analysis was undertaken on trials comparing a PtDA with usual care in people making treatment decisions and included in the 2011 Cochrane systematic review. Data were extracted from all eligible trials on study characteristics indicative of trial identity by two reviewers independently. Two subgroup analyses were performed with trials being categorised as ‘volunteerism’ or ‘patienthood’ on the basis of:

1) whether participants initiated the pathway of care that led to the decision, and
2) whether any volunteerism factors were present. Volunteerism factors were: some or all participants did not initiate the pathway of care, participants attended a research setting, and participants had a face-to-face interaction with a research practitioner (whom they would not have consulted if they were not taking part in research).

Subgroups were compared with respect to seven outcomes: knowledge, accurate risk perceptions, total decisional conflict, feeling informed, feeling clear about values, participation in decision-making and choice of surgery over the more conservative option. Outcome data were derived from the Cochrane review.

Results: Data were available for all 32 eligible trials for at least one subgroup analysis. In the comparisons based on whether participants initiated the pathway of care that led to the decision, for each outcome there were six to 15 patienthood trials and two or three volunteerism trials. In the comparisons based on whether any volunteerism factors were present, there were one to six patienthood trials and four to 10 volunteerism trials. For all outcomes except accurate risk perceptions, pooled effect sizes were higher in trials where all participants initiated the care pathway (patienthood), but only reached statistical significance for knowledge (p=0.03). When trials were compared on the basis of volunteerism factors being present, no consistent pattern of difference in effect was seen: pooled effect sizes were significantly higher in patienthood trials for the outcomes of knowledge (p=0.02) and participation (p=0.02), but significantly higher in volunteerism trials for the outcomes of accurate risk perceptions (p=0.05) and feeling informed (0.04).

Conclusion: Knowledge acquisition associated with PtDA use appears to be greater in trials in which participants identify themselves as patients rather than volunteers. There is a trend towards greater PtDA efficacy for other outcomes in trials in which participants specifically initiate the pathway of care. The influence of other contextual factors (setting and context of practitioner interactions) related to trial identity remains uncertain. The findings are limited by poor description of trial context by some study authors and the likelihood of type 1 and 2 errors, confounding and other effect modifiers being present. Further work is needed to classify context-related factors in PtDA trials and understand their impact on PtDA efficacy.
USING QUALITY IMPROVEMENT TO IMPROVE PATIENT EXPERIENCE AND REDUCE READMISSIONS IN UROLOGY SURGERY PATIENTS

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Objectives: Baseline UCLH readmission data showed an average 30-day readmission rate of 6% across the Trust for the financial year 2010-11. For urology surgery patients the readmission rate was 15.7%. The objective was to test whether using quality improvement methods from the State-wide Action to Reduce Re-Hospitalisations (STAAR) initiative, shown to reduce readmissions in US hospitals, would improve patient experience and reduce preventable readmissions amongst urology surgery patients.

Work was carried out on Ward T10, a combined orthopaedic, urology and gynaecology surgery ward. Urology surgery patients are often referred to UCLH with complex urological conditions and other co-morbidities. Self-management of care is a fundamental component of the recovery process: Patients are often discharged with indwelling catheters and on several medications. Following surgery, patients are at risk of complications including urinary tract infections, wound infections and dislodged catheters.

Methods: A ninety day rapid improvement cycle comprising ‘scanning’ ‘focus’ and ‘testing and reporting’ phases was used. The ‘scanning’ phase involved quantitative and qualitative analysis of urology readmissions using data from community discharge alerts, incidents, complaints, audit and patient interviews. The focus stage used a facilitated brainstorming session with ward staff to identify interventions to test. Plan Do Study Act (PDSA) tests of change were used in the ‘testing and reporting’ stage to develop and implement interventions from the STAAR programme.

Three interventions were tested and implemented: a teach back medication prototype, single point of access telephone number and patient information traffic light sheets. Teach back was carried out by pharmacists and/or a ward charge nurse during the in-patient stay and forty-eight hours following hospital discharge.

Results: Six months following spread of the STAAR interventions, the readmission rate reduced from a baseline of 15.7% to 12%. In the cohort of patients involved in PDSA tests the readmission rate was 10%.

Thematic analysis of a log book used by ward nurses to record out of hours telephone calls from patients seeking expert urology advice was carried out. Results showed that the single point of access telephone number prevents patients who are experiencing minor symptoms being readmitted to hospital unnecessarily. It also acts as an early warning mechanism, alerting ward staff to patients whose symptoms warrant readmission.

PDSA feedback showed that patient information traffic light sheets present information on symptoms experienced post-discharge and what action patients should take in an accessible format. Feedback from patients was unanimously positive.

PDSA testing of the teach back protocol showed that patients and carers often did not understand their medications. Results supported the importance of using teach back across the discharge boundary (i.e. 48 hours post-discharge). Ward staff who believed that they were good at communicating information to patients and carers quickly realised that their perceptions were erroneous and adopted teach back.

Conclusion: Ninety day rapid improvement cycles provide a robust framework to test interventions to reduce readmissions. Patients and carers should be co-partners in quality improvement work. They identify weaknesses in healthcare systems and solutions that would improve patient experience and safety.

THE STRENGTH OF WORKING TOGETHER IN A STRUCTURED Q & S APPROACH IN FLEMISH HOSPITALS

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Objectives:
Developing an integrated, comprehensive and systematic approach for Q&S in Flemish hospitals. This approach was based on three pillars:
1. to stimulate Flemish hospitals to achieve an international hospital accreditation,
2. to define and implement a set of relevant quality indicators and
3. to develop a new model for governmental inspection in line with the previous elements in cooperation and with support of all relevant partners (medical directors, CEO, professionals, patients and government).

Methods:
- Buy in: defining an integrated and systematic approach for Q&S in acute hospitals. This plan was discussed with representatives of all Flemish hospitals in 2010 - 2011. This approach was given high priority in the two Flemish hospital federations. The Q & S plan was implemented in 2012.
- Structure: monthly commission ‘Q&S’ and working group ‘Hospital Accreditation’ for coherence and interaction. The commission was installed in September 2010.
- Collaboration agreement: working together with the Flemish government and the Flemish Association of Medical Directors (VVH) on the development of quality indicators (June 2011) led to the establishment of a ‘Quality Indicator Forum’ and several working groups.
- Developing partnerships with all relevant partners in promoting Q&S like the Flemish Patient Platform (VPP), scientific and professional organisations, the National Institute for Health and Disability Insurance and federal scientific organisation (from September 2010 till now).
- Developing process and outcome indicators: in 5 domains (orthopaedics, paediatrics, cardiology, breast cancer and hospital-wide issues). Each working group was led by a medical director. The quality indicators were presented in the public domain in November 2012.
- Developing a new inspection model by the Flemish government: in line with the previous elements and in cooperation with the professionals (December 2012).

Results:
- 57 hospitals (out of 63) are preparing to achieve an international accreditation (by an organisation accredited by ISQua) before the end of 2017.
- A set of 35 quality indicators (process and outcome) are validated and published on the web of the Flemish Government. They will and will be implemented by the Flemish hospitals by the summer of 2013. Additional to a general anonymous benchmarking, hospitals will publish results on these indicators on their own website.
- The involvement of patients was essential for the success of this project. The VPP constructed an instrument to objectify and measure patient experiences that will be implemented in all hospitals by June 2013.
- A new hospital inspection model was developed and implemented, in line with the previous elements. Every 5 years, hospitals will be visited to screen their implemented (hospital-wide) quality system and their procedures and structures to guarantee a culture of continuous quality improvement (system inspection). Every year, hospitals will be inspected for one hospital-wide care path (inspection of compliancy). The criteria and standards (legal, guidelines, evidence based) are defined in cooperation with the professionals and are crucial for the quality of care. The first care path, started in January 2013, is the care path of a surgical patient.
- A similar quality indicator project for mental health care has been initiated.

Conclusion:
The strength of a coherent Q&S approach, an intensive cooperation between all relevant partners in healthcare, the openness of this project for all stakeholders and a strong clinical leadership created many advantages and opportunities to guarantee substantial Q&S progress in Flemish hospitals.
ASSESSING PATIENT/FAMILY EXPECTATIONS THROUGH PATIENT FEEDBACKS FOR THE IMPROVEMENT IN QUALITY OF PATIENT CARE AND SAFETY: SCENARIO AT ACTREC

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Objectives: · To assess the patient feedbacks and derive insight into patient expectations for better improvement in quality of patient care
· To suggest better measures using patient/family collaboration for improvement of quality of patient care and safety at ACTREC

Methods: Structured Patient feedback forms strategically placed across ACTREC were assessed for the feedbacks voluntarily received from patient or their relatives. About 660 feedbacks received during the year January 2011 to December 2012 (two years) were subjected to systematic assessment. Feedbacks from anonymous patients were excluded as no clue could be found on their type of hospitalisation whether inpatient/outpatient/surgical intervention/chemotherapy treatment/radiation treatment etc. About 46 feedbacks (96.97%) were excluded leaving behind 614 feedbacks to be analysed. Patient privacy and confidentiality was maintained throughout assessment. The advantage of the receipt of feedbacks was that the patients from key DMG’s (Disease Management Groups) for the organisation were covered.

Regression analysis was conducted with patient satisfaction as a dependant variable and care assessed by doctors, nurses and auxiliary staff as impact factor. The data was analysed for multivariate normality, skewness, kurtosis, and outliers using statistical tool i.e. software- Statistical Package for the Social Sciences (SPSS).

Results: Thus, the assessment of patient /family feedbacks gave a mixed response for the various variables affecting patient care. Accordingly, highest positive response (97%) was obtained for medical care as ACTREC is a state of the art R&D satellite of Tata Memorial Centre (TMC) with the mandate to function as a national centre for treatment, research and education in cancer. Negative response were obtained for shortage of beds (58%), delays in surgeries (64%), admission process (44%). Additionally, the patient feedbacks gave us more than about 100 different suggestions that we consider as patient or family expectations from ACTREC. This is a titanic triumph as this could have never been achieved even after rigorous internal audits by the organisation.

Conclusion: Thus, the systematic study has helped to gain a thorough insight into patient expectations for treatment and patient care at ACTREC. Most of the concerns have been addressed by escalating the issues to the concerned authority. However, the concerns regarding delay in surgeries, bed shortages etc. require substantial expansion of the organisation both vertically and horizontally in terms of infrastructure and staff.

However, more and more qualitative and quantitative approaches have to be made, to actively engage patients and their families for better coproduction in improvement of patient care. Review of about 14 literatures on patient satisfaction reveal the use of SERVQUAL and SERVPERF scales to measure the quality of service to customers (patients for healthcare units). Hence, the future goal of ACTREC shall be to survey patient satisfaction and expectations using one or both of the above scales for quality improvement of patient care and safety at ACTREC.
PREVENTION OF CHOKING INCIDENT IN PSYCHIATRIC WARD BY USING ROOT CAUSE ANALYSIS METHOD IN TAIWAN
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Objectives: Choking is a life-threatening and not infrequent occurrence in psychiatric wards. This study attempted to reduce choking incidents and deaths among psychiatric inpatients by identifying the causes of choking incident through the using of Root Cause Analysis (RCA) method.

Methods: A multidisciplinary team was organised to perform the RCA. Following the RCA protocol, we begun with data collection and reconstruction of the choking incident through record review and participant interviews. The multidisciplinary team then analysed the sequence of events leading to the incident with the goals of identifying the causes. Finally, we identified 3 root causes of choking:

1) staff is in lack of knowledge about choking;
2) did not make good use of team resources, the timing of get support is not familiar; and
3) Inadequate food management scheme.

According to the root causes, 6 interventions were implanted:
1) Provide staff choking training
2) Revised the standard operating protocol (SOP), the choking risk assessment form, and the choking clinical care procedures.
3) Provide the patient with choking education.
4) Promotion and discussion about choking prevention in patients’ group sessions.
5) Implementation of a new food management scheme: assess the condition of patient feeding, snacks management program, and reorganisation of food shopping time.
6) Arrange monthly case discussion meeting: use of the medical team resource management practices (TRM) to enhance the health care team emphasis on the issues of choking.

Results: Before the interventions, the incidence of food choking in our ward (Apr 2012) was 3(0.28%) with 1 death. After the interventions, the incidence of food choking was down to 0(0%) (May 2012- Dec 2012).

Conclusion: The outcome indicators improved significantly, indicate that RCA is an effective method to solve the choking problem in our psychiatric ward. The multidisciplinary team make use of RCA in clinical practices can be useful in improve clinical care quality and create a patient safety environment.
IMPROVING PATIENT AND STAFF SATISFACTION DURING SURGICAL DAY-CARE

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Objectives: To improve patient and staff satisfaction and to reduce waiting times during the surgical trajectory by providing real-time progress information.

Methods: Long waiting times and lacking progress information decrease patient satisfaction and may cause anxiety and stress for patients and their family. Mostly nurses are expected to provide this progress information, but with increasing workload they do not always have the time to do so. Moreover, these inquiries also distract them from their nursing tasks.

Study design:
1. Adult patients admitted for surgical day-care were tracked during their stay in the Rotterdam Eye Hospital using active RFID-technology. The tags (attached to the patient’s wristband) were tracked by readers, which were placed at 8 locations in the operating room complex: registration desk, waiting room, intake room, two rooms at the ward, holding, OR corridor, and recovery. Length of stay and waiting times per room/phase were recorded and means, standard deviations, and min/max were calculated. Duration of actions was obtained through observations and manual time recording.
2. Based on structured interviews conducted with patients, family members, and staff members, two web-based applications providing real-time progress information were designed, implemented and evaluated.

Results: Waiting times: Patients were tracked between 7 August and 19 October 2012 (52 weekdays). 1027 patients received a tag and 663 patients (=65%) were included in the analysis. 364 patients were excluded, mainly because the operating room reader did not detect the patient (n=154) or the research protocol was not followed (n=185).

The results showed that 64% of patients (n=423) arrived early (Mean 0h20, STDEV 0h24, Max. 4h10) and 35% of patients (n=231) arrived late (Mean 0h20, STDEV 0h20, Max. 1h55). The table shows the duration of actions and waiting and recovery times per room/phase.

<table>
<thead>
<tr>
<th>Room / phase</th>
<th>Duration actions [h:mm]</th>
<th>Total time [h:mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing ward</td>
<td>Intake 0h10; Change clothes 0h06; Transport 0h02 &gt;TOTAL 0h18</td>
<td>Waiting: Mean 1h21, STDEV 0h57, Max 5h18</td>
</tr>
<tr>
<td>Holding</td>
<td>Handover 0h01; Preparation 0h10 &gt; TOTAL 0h11</td>
<td>Waiting: Mean 0h29, STDEV 0h20, Max 3h22</td>
</tr>
<tr>
<td>Operating room</td>
<td>Mean 0h55, STDEV 0h32, Min-Max 0h06-3h59</td>
<td>/</td>
</tr>
<tr>
<td>Recovery</td>
<td>&gt;TOTAL 0h12 (incl. waiting for recovery from anaesthesia)</td>
<td>Recovery: Mean 0h33, STDEV 0h35, Max 7h34</td>
</tr>
<tr>
<td>Nursing ward</td>
<td>Transport 0h02; Actions 0h05; Change clothes 0h07; Outtake 0h06 &gt;TOTAL 0h12</td>
<td>Recovery: Mean 1h36, STDEV 1h15, Max 9h28</td>
</tr>
</tbody>
</table>

Application: 18 (of 30) patients would like progress information and 16 (of 23) staff members would like insight in the progress and its duration in other departments. Two web-based applications and interfaces were designed, both tailored to the patients’ and nurses’ wishes and needs. The applications present ‘real time’ progress information on seven phases; registered, admitted, holding, operating room, recovery, rest, and dismissed. The patient’s interface shows the current phase in which the patient is and upcoming phases before the patient can go home (like a subway map). The nurses’ interface shows patients cards (stating the patient’s name, time entering a specific phase, and type of anaesthesia) in each of the seven phases. All patients (n=20) and all nurses (n=15) liked the applications providing them with real-time location and progress information.

Conclusion: On average 44-50% of time is waiting time and waiting and recovery times are relatively long compared to the duration of the actions performed (waiting: 2.6-4.5 x and recovery 2.8-8.0 x duration of actions). The patient progress information system based on RFID technology provides nurses and patients with real-time information and provides transparency in the entire surgical care trajectory.
DEVELOPING A FRAMEWORK TO EVALUATE HEALTH SERVICES ACCREDITATION

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Objectives: Health services accreditation is being implemented without a clear understanding of the costs and benefits involved. We lack suitable economic mechanisms to evaluate and revise such programs. This study reports on the development of an economic framework to evaluate acute health care accreditation in Australia, with implications internationally. 1

Methods: Step one: we conducted a review of the literature for economic and evaluation frameworks. Step two: we convened an expert panel with expertise across: accreditation methodologies, health economics and health services accreditation research. This panel reviewed identified literatures, determining the most appropriate methodology, and proposing an economic evaluation framework.

Results: No extant study or theoretical framework for the economic evaluation of accreditation programs was identified. The panel deemed a cost benefit analysis (CBA) framework the most appropriate tool for evaluating accreditation based on the need for a common monetary denominator and government guidelines for regulatory approval processes. A purpose designed economic framework was developed comprising five discrete activities:

1) Describe Scope and objectives;
2) Identify costs and benefits;
3) Quantify costs and benefits;
4) Calculate Net social benefits (NSB); and
5) Sensitivity analysis (the SIQNS CBA framework). 1

The first activity involves: literature reviews; analysis of acute care accreditation results; and stakeholder identification. Costs will be identified and quantified using a survey validated by an expert panel comprising: accreditation agency staff and surveyors; health quality consultants; government health policy representatives; and health service researchers.

Benefits will be identified using a purpose designed Indicator Assessment Tool to assess suitable accreditation outcome and process indicators across the ten mandatory accreditation standards. The tool includes the research, accuracy, proximity, and adverse effects accountability criteria developed by Chassin and colleagues. 2 We have also included a specificity measure to separate the effects of accreditation from related quality and safety interventions. The expert panel will assess and select the indicators for the study. The type of indicators chosen will determine the appropriate evaluation techniques for monetising the benefits.

Accreditation costs and benefits occur at different times and need to be adjusted using an appropriate discount rate. We calculate the net-social-benefit to derive an absolute measure of whether the discounted (net) benefits are greater than the discounted (net) costs. A benefits cost ratio is also calculated by dividing the net benefits by net costs to determine an effective return on the costs. A sensitivity analysis is the final activity, and is essential to measure the impact of changes in assumptions and variables on the output from our SIQNS framework.

Conclusion: The SIQNS CBA framework will enable systematic evaluation of health services accreditation programs. The flexibility inherent in the framework makes it applicable internationally for both existing and developing accreditation programs.

References:

INVESTIGATING THE CORRELATION BETWEEN PULMONARY REHABILITATION EXERCISES AND VENTILATOR USAGE AMONG PATIENTS IN INTENSIVE CARE WARDS

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Objectives: To investigate the correlation between the implementation of pulmonary rehabilitation exercises in the intensive care units of a hospital and the success of weaning patients off of ventilators.

Methods: Adopt a descriptive correlative research design at a medical centre’s intensive care unit in Northern Taiwan between the 1st of December 2011 and the 30th of April 2012. The research subjects were 256 patients who had used ventilators for more than 72 hours upon being hospitalised in the intensive care unit, with stable signs of life and hemodynamics. Convenience sampling, use of structured questionnaires and field examination is used to collect data, identify and analyse relevant factors. These include a lack of effective cooperation within the medical team, lack of confidence of understanding on pulmonary rehabilitation by nurses, lack of relevant educational courses, lack of a standard procedure of pulmonary rehabilitation exercises and lack of implanting tools etc. Intervening measures include: 1. Formulate a “pulmonary rehabilitation procedure”, 2. Organise relevant educational courses for nurses, 3. Design appropriate tools for patients to carry out pulmonary rehabilitation, 4. Produce a “Pulmonary Rehabilitation Exercise” handbook, 5. Formulate a “Pulmonary Rehabilitation exercises evaluation form” and “Pulmonary Rehabilitation exercises recording form”, 6. Hold regular discussions with therapists on appropriate pulmonary rehabilitation exercises for patients.

Results: The implementation rate of pulmonary rehabilitation exercises in intensive care units between the 1st of December 2011 and the 30th of April 2012 increased from 27% to 96%; the success rate for weaning patients off of ventilators increased from 41.7% to 51.5%.

Conclusion: Facilitating the cooperative relationship between doctors, therapists and nurses in the process of implementing pulmonary rehabilitation exercises, as well as an evaluation of the patients’ needs by an interdisciplinary team in order to provide appropriate rehabilitation resulted in the implementation rate to increase from 27% to 96% between the 1st of December 2011 and the 30th of April 2012, and the success rate of patients not relying on endotracheal tubes increased from 41.7% to 51.5%. Family members are often worried during the process of pulmonary rehabilitation that exercising would result in changes to the patients’ conditions or lead to a depletion of physical strength, and would therefore obstruct the medical team from performing rehabilitation. It is thus essential for the team to explain the advantages of pulmonary rehabilitation exercises. In summary, it is recommended that video clips related to pulmonary rehabilitation exercises be made and shown regularly in order to increase information transparency and reduce the doubts of family members towards the exercises, which would also help to facilitate cooperation between family members and the medical team.

The safety of patients is the objective of hospital management and organisation efforts. Most patients are confined to their beds due to the severity of medical conditions or pipeline safety, resulting in the deterioration of their muscle strength, which can lead to extended periods of respiratory training in the future. The results of this research show that early intervention with pulmonary rehabilitation exercises can increase the success rates for weaning patients off of ventilators, reducing hospitalisation times and hospital expenses.
THE EFFECT OF NEWLY-ESTABLISHED "GENERAL PRINCIPLES OF LIQUID MEDICINES" IN KOREA

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Objectives: The Health Insurance Review and Assessment Service (hereinafter HIRA) laid down "the general principles of liquid medicines" and has applied them since October 2011. They were established to permit prescription of liquid medicines for insurance payment only if patients couldn't take oral solid dosage form. This study aims to investigate and analyse the effectiveness and side effects of the principles on the basis of medical grounds and cost-effectiveness.

Methods: In this research, we analysed prescription status of 53 ingredients which had more than two forms; both liquid and tablet/capsule. To investigate the effect of general principles, we compared prescription status before and after effectuation of the principles by statistical data base from HIRA.

Results: For six months after founding the new policy, the total cost of drugs, in which the policy was applied to, decreased from 124.7 billion won to 89.2 billion won, accounting for 28%. In addition, the costs of drugs taken by patients aged 12 and above decreased by 90%, and the rate of usage of the same age group decreased from 25% to 4%. The actual cost-benefits by health insurance claims data was calculated at 35 billion won per year. Meanwhile, contrary to expectations that there will be decreased usage of liquid medicines and increase of tablet/capsule of the same ingredient, we found cases of some liquid medicines shifted to other drugs which had same effect and could be prescribed for insurance payment.

Conclusion: As the total cost of liquid medicines (mentioned above) as well as the prescription rate of patients aged 12 and above have decreased, we were able to identify the positive effect of newly established principles. And when establishing national medical insurance reimbursement policy of drugs which have the same effect, we would have to apply the same standard to block unintended shifting of prescription. The result of this study could be helpful for establishing new healthcare policy. In the future, monitoring for the effects of newly created principles of anti-diabetic or probiotics should be needed.
A SYSTEM TO ENSURE SAFE INTRODUCTION OF NEW TECHNOLOGY IN A CLUSTER OF HOSPITALS

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Objectives: Introduction of new technology into a hospital is associated with risks, which may be known or unknown at the time of introduction. Some risks may not be known to the party who introduces the technology but known to other staff of the hospital. Such risk can be minimised by adequate analysis and preparation. While this is easy to understand, the task is difficult because it is not easy to define what is new technology, and it is difficult to identify staff who know enough of the technology to make relevant decisions. In the NTE Cluster, we decided to dissociate the evaluation of the technology and the introduction procedures and focus on the latter using a team peer review process similar to that used in research ethics committees.

Methods:
1. Establishment of governance body.
The task is taken up by the Cluster Technology Advisory Committee (CTAC) which reports directly to top executives of the cluster.

2. Establishment of policy and peer review procedure.
The scope of technology to be included is defined by the following criteria:
a) Are there new risks to the patient?
b) Is significant training of staff required?
c) Is preparation of other parties required?

The system was piloted in the operating suite of the largest hospital with the cluster to test the concept. A peer review by members of CTAC which composed of different clinical and administrative staff.

3. Promotion
Application relies on voluntary reporting and it is essential that all involved departments understand the importance of the system and the benefit they can obtain from it. The team presents the idea & the proposed procedures to the Operation Theatre Committee so that all the stake holders in the operation theatre understand & provide input before the pilot.

4. Review
Information of outcomes after the introduction of new technologies was reviewed in CTAC.
Review meetings were organised with involved departments to collect feedbacks for further fine-tuning of the procedures.

Review of the pilot & feedbacks from stake holders were then presented to CTAC & Cluster management for the readiness for rolling out to other operation theatres within the cluster.

Results: From May 2011 to Nov 2012, 18 procedures applied which involved 8 subspecialties. Applications included new diagnostic or therapeutic device, new approach or technique in surgical operations. 17/18 applications were endorsed by the CTAC within 2 weeks (some applications required clarification of information electronically). There was 1 application not being preceded because it was under the scope of HAMSINP. The information provided in the earlier applications was sometimes inadequate & need further clarification. However, the condition improved after the explanation during the “Road shows”. In the review meetings, stakeholders agreed that the application procedures and the lead time were acceptable. And their acceptance was reflected by the increasing applications in the later phase of the pilot.

After reviewing the pilot, the Cluster management & CTAC considered this procedure is mature enough to roll out to other operation theatres within the clusters.

Conclusion: Within a period of 18 months, a method to ensure safe introduction of technology is piloted in the operating suite of a large teaching hospital and gained acceptance. It is evaluated, improved and ready for roll out to other areas within the cluster.
INTERRUPTED TIME-SERIES ANALYSIS OF LONDON STROKE SERVICES RE-ORGANISATION

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Objectives: To assess whether the implementation of eight Hyper Acute Stroke Units (HASUs) in London between February and July 2010 was associated with an improvement in the quality and safety of care received by patients with stroke.

Methods: Interrupted time series study of patients admitted to hospital with stroke using national hospital administrative data from April 2006 to March 2012. Main outcome measures were brain scan on the day of admission, thrombolysis treatment, aspiration pneumonia, seven-day in-hospital death, discharge to usual place of residence and thirty-day emergency readmission.

Results: The effect of the policy in London was significant over 4 out of 6 indicators. Before the implementation of the HASUs policy in London, the scan and thrombolysis rates for stroke patients were increasing by 5.3% and respectively 22.9% per quarter of year (adjusted odds ratio 1.05(1.04-1.06) and 1.22(1.18-1.27)). After implementation of the policy, there was a significant change in the time trend compared with pre-existing trend of -3.8% and respectively -18.3% per quarter of year (adjusted odds ratio 0.96(0.95-0.97) and 0.81(0.78-0.85)). However, both scan and thrombolysis rates continue to increase by 1.5% and respectively 4.6% per quarter of year after the introduction of the policy. The policy was significant associated with a 4.7% reduction of scan rates and a 31.8% increase in thrombolysis rates (adjusted odds ratio 0.95(0.92-0.99) and 1.31(1.07-1.62)). Among the outcome indicators, the policy was significant associated with a 14.2% reduction of seven-day in-hospital death rate (adjusted odds ratio 0.85(0.74-0.98)) and a 11% reduction of thirty-day emergency readmission rate (adjusted odds ratio 0.89(0.79-0.99)). No significant effect of the policy outside London has been observed.

Conclusion: The London HASU policy was associated with an improvement in the treatment received by stroke patients in terms of thrombolysis rates, seven-day in-hospital death rates and thirty-day emergency readmission rate. The impact of the policy over the indicators needs to be considered taking into account contextual factors, for instance a possible ceiling effect for the London scan rates.

THIRD ROUND OF THE FRENCH HOSPITALS ACCREDITATION PROCESS: A MID-TERM REVIEW
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Objectives: To assess the impact on hospitals accreditation results of inclusion of focus priority topics standards.

Methods: The French accreditation program for hospitals is mandated by law since 1996; it aims to improve quality and safety of care through the generation of sustained changes in clinical practices and management.

HAS standards address the hospital’s performance in specific areas; they specify requirements to ensure that patient care is provided in a safe manner and in a secure environment.

The current procedure uses an accreditation handbook containing 28 standards and 82 criteria whose 13 are focus priority topics standards related to Evaluation on clinical practices policy, Quality & security improvement program, Risk management, Patient’s needs, Pain management, Patient file, Patient identification, Drug management, End of life, Infectious risk, Complaints, Emergency room and Operating room.

At the beginning of 2013, 1296 hospitals (49% of French hospitals) have got their accreditation decision for this third round of accreditation.

Results: The distribution of the accreditation level for these 1296 hospitals is the following:

- 225 hospitals are accredited (17 %)
- 473 hospitals are accredited with recommandations (37 %)
- 464 hospitals are accredited with reservation (36 %)
- 130 hospitals have got a conditional accreditation (10 %)
- 4 hospitals are non-accredited (0.3 %)

These accreditation levels are the result of 7982 basic decisions related to criteria. 3837 of these decisions (48%) are related to focus priority topics standards:

- Drug management : 1085 decisions
- Patient file : 644 decisions
- Patient identification : 420 decisions
- Pain management : 374 decisions
- Evaluation on clinical practices policy : 319 decisions
- Risk management : 481 decisions
- End of life : 184 decisions
- Infectious risk : 156 decisions
- Operating room : 78 decisions
- Emergency room : 48 decisions
- Complaints : 48 decisions

74% of these decisions are recommendatons (2854), 23 % are reservations (23%) and 3 % are major reservations (3%).

Conclusion: The contribution of focus priority topics standards to the decision process is very important; 3837 decisions (48 % of the total decisions) are related to focus priority topics standards: 16 % of the criteria make 48 % of the decisions. Introducing priorities in the accreditation process clearly shows where room for improvement is; it helps to focus improvement efforts on priorities.
THE APPLICATION OF KEY PERFORMANCE INDICATOR (KPI) OF THE BALANCED SCORECARD (BSC) AND A BOSTON CONSULTING GROUP (BCG)-LIKE MATRIX MODEL TO ENHANCE THE EFFECTIVENESS OF TW-DRGS MANAGEMENT IN TAIWAN

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Objectives: Taiwan National Health Insurance Bureau implemented the Taiwan Diagnosis Related Groups (Tw-DRGs) payment system in 2010. Tw-DRGs payment system divides hospitalised patients into hundreds of different groups according to their diagnosis, surgery or treatment, age, sex, the presence of comorbidities or complications, and discharge status. Tw-DRGs sets payment weights with consideration of medical resource utilisation. In principle, payment for hospitalised patients in the same group adopts the same standard of payment weight. In other words, different disease categories (Major Diagnostic Category, MDC) classified into different groups of Tw-DRGs will have different Tw-DRGs fixed payment plans. Therefore, the purpose of this study is to use KPI of BSC and BCG-like matrix model to build (an) appropriate management mechanism(s), in order to enhance the financial performance and management effectiveness of hospitals under the TW-DRGs system.

Methods: In this study, 155 cases paid by implementing the first phase of Tw-DRGs in a medical center in 2011-2012 were analysed. There are two research purposes:

1) To use KPI of BSC to monitor the profit-and-loss rate and the hospital bed occupancy ratio of Tw-DRGs cases to establish a performance management mode.
2) To use BCG-like (profit-and-loss rate times case share ratio) matrix model to assign all Tw-DRGs cases in a hospital into the Stars, Cash Cows, Question Mark and Dogs cases in order to understand the structures of different Tw-DRGs cases and to assist the priority considerations when hospital management resource allocation is concerned.

Results: There were altogether 10,695 hospitalised cases in 2011-2012, with an average age of 49 years old, 59.3% being female, an average profit per reported case of 8,617 points/case, a profit-and-loss rate of 16.54%, CMI value of 1.54, an average length of hospitalisation being 4 days, and the rate of complications being 23.17%. Among the hospitalised cases during that period, the largest number of cases were from the orthopaedic department (2,840 cases, accounting for 26.55%), with an average profit of 10,017 points /reported case, and profit and loss rate being 15.56%.

In the analysis of BCG-like matrix model, MDC evaluation of effectiveness revealed that MDC 8— musculoskeletal system and connective tissue diseases (2,944 cases, accounting for 27.53%) outnumbered all the medical conditions, with an average profit of 73,395 points /reported case and a profit and loss rate of 15.2%, forming the “Stars” cases.

Conclusion: BSC is a closed-loop management system. Teamwork is emphasised at the same time, focusing on strategy (clear goals) and alignment (consistent directions). Hence, hospital operators can understand the classification of different Tw-DRGs cases through the BCG-like matrix model analysis, and thereby obtain the order of priority to the allocation of resources. That is to say, hospital managers could focus the medical resources primarily on the “Stars” and “Question Mark” cases. As for the “Cash Cows” and “Dogs” cases, the cost and expense analysis system should be applied to strictly control the costs. Moreover, process reengineering should be carried out appropriately to reduce health care costs of hospitalised cases, and to increase the overall profitability of the hospital.
PROVIDING FEEDBACK ON PRESCRIBING ERRORS TO JUNIOR DOCTORS: DEVELOPING POTENTIAL SOLUTIONS
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Objectives: Junior doctors do most prescribing in hospitals. Studies of the causes of their prescribing errors suggest that lack of feedback is a common theme. Our objectives were to determine how feedback was currently provided to foundation year 1 (FY1) doctors and any associated problems, to explore views on approaches to feedback, and to design a suitable feedback system to meet any gaps identified.

Methods: To explore views on both current and other possible feedback mechanisms, self-administered questionnaires were given to all FY1 doctors and pharmacists in a large London teaching hospital trust, combining both 5-point Likert scale statements and open-ended questions. We conducted a descriptive analysis, focusing on agreement scores for statements regarding perceived prescribing error rates, opinions on feedback, barriers to feedback, and preferences for future practice. The findings were then synthesised to create a new proposed feedback approach.

Results: Response rates were 49% (37/75) for junior doctors and 57% (57/100) for pharmacists. In general, doctors did not feel threatened by feedback on their prescribing errors. They felt that the feedback currently provided was constructive but often irregular and insufficient. Most hospital pharmacists provided feedback in multiple ways; however some did not or were inconsistent. They were willing to provide more feedback, but did not feel it was always effective or feasible due to barriers such as inability to identify prescribers, communication problems and time constraints. Both professional groups felt that they would prefer individual feedback with additional regular generic feedback on common or serious errors. A new feedback model is therefore proposed which relies on the use of name stamps to identify individual prescribers and combines individual feedback on specific prescribing errors with group feedback on common and important errors and how they can be avoided.

Conclusion: Feedback on prescribing errors was valued and acceptable to both professional groups. From the results, several suggested methods of providing feedback on prescribing errors emerged. Addressing barriers such as the identification of individual prescribers would facilitate feedback in clinical practice. We have now obtained funding to pilot and evaluate a new model of feedback based on our findings.
EFFECT ON THE LENGTH OF STAY AND COSTS ACCORDING TO PER-DIEM PAYMENT OF PALLIATIVE CARE PROJECT

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Objectives: The purpose of this study is to analyze the effect of change in end-stage cancer patient service patterns for cost and hospitalized day between January 2009 and December 2010.

Methods: Used data in this study were electronically submitted requests of payment to the Health Insurance Review Agency over the period from January, 2009 to December 2010. This study was controlled Natural Experimental Design. To verify the Difference in Difference analysis was employed.

Results: A group of people who had been eligible to the Palliative care payment policy for 2 years(from 2009 to 2010), was assigned to the experiment group(n=3,117). Those who had not come in Palliative care payment policy was assigned the control group(n=2,347). Major results of the empirical analysis are as follows; Firstly, the length of day per episode case among patients of the experiment group is lower than that of the control group. Secondly, the expenses per hospitalized patient day for both groups are decrease. Lastly, the cost of analgesics drug of the experiment group is lower than that of the control group. Therefore, length of day per episode case among patients decreased 2.56%(95% CI=-0.0324～0.0194). Expenses per day decreased 4.4%(95% CI=-0.071～-0.018). Analgesics medication cost per day decreased 0.59%(95% CI=-0.007～-0.0047). The cost of test also decreased 6.62%(95% CI=-0.0688～-0.0683) and there was significantly result(p<0.0001).

Conclusion: The finding of this study concludes that the introduction of the payment among palliative care patients was effective in decreasing the length of day per case, the cost per episode and length of day. Difference in Difference method can show net effect of the policy implication that has taken place with time and can be applied in the public health analysis as measuring interaction between treat and payment policy. Finally, this research finding will provide useful basic data in terms of making palliative healthcare policy with payment for end-stage cancer patient.
SAFETY AND THE DETERIORATING SURGICAL PATIENT: AN ANALYSIS OF THE COGNITIVE ELEMENTS OF NURSING EXPERTISE
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Objectives: Timely recognition by the nurse when a patient’s condition is deteriorating is a complex cognitive process and vital for patient safety. However, the critical cues and strategies experienced nurses use and why such situations present difficulties for less experienced nurses has not been systematically explored. The aim of this study was to understand the specific skills required of nurses during challenging situations.

Methods: An Applied Cognitive Task Analysis using Militello and Hutton’s (1998) technique was conducted to investigate the cognitive skills required of general surgical nurses when attending to a deteriorating patient following surgery. Data were collected using in-depth interviews with specific cognitive probes each designed to examine different aspects of cognitive skills and processes. Six registered nurses from general surgical wards were interviewed three times each and the interviews were analysed creating a task diagram, a knowledge audit table, a simulation interview table and ultimately a cognitive demands table which synthesised the data. The cognitive demands table presents a summary of the difficult cognitive elements identified, why they are difficult, the cues and strategies experts use to resolve the difficulties and the errors less-experienced nurses commonly make.

Results: The analysis revealed four cognitive elements and eight key cognitive skills characteristic of nursing expertise in this situation. The cognitive elements are: Recognition of physiological deterioration, confirming deterioration, initiating rescue and securing medical assistance. The cognitive skills identified are: Situation awareness, pattern recognition, anticipatory thinking, problem-solving, prioritising, dealing with uncertainty, experiential knowledge and professional knowledge.

Conclusion: These results show that experience is a key factor that nurses require to develop the cognitive expertise necessary for maintaining patient safety in critical situations. For less-experienced nurses to gain this expertise, they need to work alongside experienced nurses to develop the cognitive skills required to care for surgical patients safely when uncertainty exists. Identifying these critical cognitive elements, characteristic of expertise, provides important information for the design of professional education programmes and developing competencies, hospital policies and clinical practice. Such knowledge translation would have major implications for improving patient safety and quality of care.
THE CLINICAL EFFICACY OF USING IMPROVED PHYSICAL RESTRAINTS IN NURSING HOMES

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Objectives: At present, in order to emphasise the quality of health care and the patients' safety, almost every medical facilities view restraint as an important index of care and attention. Improved physical restraints are generally regarded as protective devices in nursing homes. The use of restraint is a temporary nursing intervention to ensure that intravenous lines or medical tubes will not be removed by patients. In this study, improved physical restraint was made by a recycle bottles. This not only allowed the fingers free for activities and physically unrestricted; the resources also can be re-used. The nurses can create it by themselves. It can reduce the cost of overhead and is worth mass-producing this project.

Methods: The objective of this study is to investigate the effectiveness of receiving intervention by the improved physical restraint amongst nursing home residents. The participants of this study were residents in nursing homes which have more than 30 beds in Taipei. Convenience sampling was used in this pre-experimental study at two different branches of nursing home in Taipei, Taiwan. The two branches were randomly assigned as either the experimental or control group. Eighty participants were assessed at baseline and follow up 6 months later. The research was conducted via questionnaires. The instruments used for data collection consisted of demography data, Barthel Activity of Daily Living, Muscle Power Scale, and Korokoff Scale. The data of the test was analysed through SPSS version 18.0. The collected data were statistically analysed by percentage, average value, range, rank, standard deviation, and t-test.

Results: We found a significant improvement in the experimental group in terms of life pressure (p<.001), disease pressure (p<.001), activities of daily living (Barthel Activity of Daily Living) (p<.001) and body function (Korotkoff Scale) (p<.001). In the experimental group, the results show that the Barthel Activity of daily Living increased from 4.5% to 6.25%. However, in control group there were no significant differences in Muscle Power. However, there were no significant differences in Muscle Power toward the use of physical restraints between experimental and control groups.

Conclusion: Improved physical restraint not only increased the ability of the elderly but also enhance patient safety. It can ensure intravenous lines or medical tubes, and also enhance the self-esteem of the elderly. This study’s results can be used a reference for future on education of nurses professional training, classroom teaching, administrator setting restraint procedure, restraint handbook. This can also enhance the ability of hospital nurses to solve patients’ problems, thus improve the quality of care. This project can improve the families’ and nurses’ satisfaction, enhancing nurses’ knowledge and improve the quality of nursing care in critical patients.
INCREASE OF ARRIVAL PUNCTUALITY AND REDUCTION OF DELAYED ARRIVAL TIME IN THE OPERATING ROOM: THE EFFECT OF PATIENT TRANSPORT MESSAGE PASSING (PTMP) SYSTEM IN A MAJOR HOSPITAL

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Objectives: Operating room efficiency is one of the major goals in hospital management and there have been many studies on the subject (1, 2). We developed the patient transport message passing (PTMP) system. This was done by hospital computerisation, along with and automatic text message passing system via mobile phone in order to improve the arrival punctuality in the operating room (OR) and cardiovascular center.

Methods: Multidisciplinary task force team including OR nurse, general ward nurse, transport team, and electronic processing team established several principles to guide the process of change. This is a brief summary of PTMP system; an OR nurse clicks "request" icon and checks the expected arrival time at least 30 minutes before schedule ETA (estimated time of arrival) and a ward nurse receives a "request" message and the label of patient information is printed out automatically. Simultaneously a transport team receives a "request" automatic text message. If the nurse or the transport team doesn’t confirm a “request” message, the OR nurse will know it via in the monitor and can take the necessary actions. The subjects were patients transported by gurney from one general ward to operating rooms for procedure or intervention in a general hospital. There was no difference in the distance from the general ward to the operating rooms or the number of times the elevator was utilised for each patient’s transport. Non-PTMP group was 115 (54 interventional, 61 surgical patients transported as an existing way from March, 2012 to May, 2011. PTMP group was 162 (81 interventional, 81 surgical) patients transported as PTMP system from June, 2012 to August, 2012.

Results: Before PTMP system, the percentage of patients in perioperative care unit on delayed arrival time was 40.9%. After intervention of PTMP system, it was decreased to 25.3% (p=0.006) (Table 1).

<table>
<thead>
<tr>
<th>Request time</th>
<th>before PTMP system</th>
<th>after PTMP system</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number of patient (%)</td>
<td>number of delayed case (%)</td>
<td>number of patient (%)</td>
</tr>
<tr>
<td>08:00-12:00</td>
<td>36 (31.3%)</td>
<td>12 (33.3%)</td>
<td>60 (37.0%)</td>
</tr>
<tr>
<td>12:00-16:00</td>
<td>68 (59.1%)</td>
<td>32 (47.1%)</td>
<td>87 (53.7%)</td>
</tr>
<tr>
<td>16:00-20:00</td>
<td>11 (9.6%)</td>
<td>3 (27.3%)</td>
<td>15 (9.3%)</td>
</tr>
<tr>
<td>total</td>
<td>115 (100%)</td>
<td>47 (40.9%)</td>
<td>162 (100%)</td>
</tr>
</tbody>
</table>

Table 1. Analysis of Delayed Arrival in the Operating Room

So, Arrival punctuality was improved from 59.1% to 74.7%. The average of delayed arrival time at operation room was 11±13 minutes (mean ± standard deviation in non-PTMP group and 6±5 minutes in PTMP group which had statistically significant difference (p<0.001).

Conclusion: We could achieve improvement of start-time tardiness and turnover time in operation by an increase of the rate of arrival punctuality from 59.1% to 74.7%, a decrease of the average delayed arrival time from to 10 minutes to 5 minutes. Now, this system is currently confined to the OR and cardiovascular center only. However, it should be applied to other settings within the hospital (ex. Laboratory session or Radiologic session). This system should be continued to establish a work environment for safe and punctual patient transport, an expansion along with the elevator system would create synergistic effect and further facilitate efficient patient transport.

References:


Efficient patient transport. This system should be continu...
SEEKING OF QUALITY INDICATORS OF HEALTH CARE IN PATIENT NARRATIVES AND IN RESPONSES TO THEM

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Objectives: Health care quality can be assessed from a lot of perspectives. The goal of our study was to seek quality indicators as seen by the patients.

Methods: We have about 1100 narratives available, written for the purpose of comprehensive description of ailing situation, not of assessment of quality in medicine. Each of them has been written by another author (mostly by the patients themselves, but also by their family members, friends or health care workers). We have performed secondary qualitative contents analysis, seeking assessment (both positive and negative) of health care quality and its contents. In that stage of research, we used non-numerical quantifiers to describe the results. About 50 of the narratives became later the topic of discussions in focus groups consisting of the authors of the narratives; they discussed "where the error occurred".

Results: The distinctively prevailing category indicating the quality level of health care in the Czech Republic from the patient’s perspective is the level of communication between the health care worker (not only the physician but also other health care professions) and the patient. Low-quality care of the type of laboratory error or confusion of documentation came along only sporadically, and even in such cases, it was assessed through the prism of the level of communication, i.e. of the health care worker's unwillingness to admit that an error could have occurred and of immediate corrective actions. Missing or worse access to health care is mentioned exceptionally. It concerns either patients living in remote small villages or situations when the health care worker refers the patient to more specialised care to more distant bigger cities. In that case, it is again the quality of communication of the health care worker that matters, i.e. whether the health care worker is able to convince the patient that referring does not mean the health care worker's attempt to "get rid" of the patient but that it is in the patient's interest. In the focus groups, distinctive similarity could be seen only in a few narratives where an error was obvious (evidently bad health care worker or problematic patient); the most narratives showed distinctive dissimilarity in assessment. The focus of the problem consists, in our opinion, in different expectations and ideas of the patient and the health care worker (and thus also the focus group participant) with regard to the progress and contents of the care.

Conclusion: The results show that in a country with very good accessibility, solidarity health care system and high professional level of health care workers (as is the case of the Czech Republic), the main quality indicator consists in the level of communication between the health care worker and the patient. The main indicator of good level of communication consists, in our opinion, in confidence in the relation between the health care worker and the patient. But such confidence can be difficultly subject to any formalisation.

SWISS INPATIENT QUALITY INDICATORS (CH-IQI): KEY ELEMENT OF A NATIONWIDE OUTCOME MONITORING

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Objectives: This contribution presents a screening tool for outcome-driven quality management of inpatient hospital services in Switzerland. It is based on the German Inpatient Quality Indicator (G-IQI 3.1) system, originally developed since 2000 by the German Helios private hospital group and at the TU Berlin. The Swiss adaptation, Swiss Inpatient Quality Indicators (CH-IQI), has recently been upgraded to the current Version 3.1, in collaboration between the Swiss University Hospitals, the Technische Universität Berlin and the Swiss Federal Office of Public Health (FOPH).

Methods: An industrial type of quality management based on an iterative process of measuring, analysing, improving and controlling outcome is applied to clinical medicine. With the nationwide inpatient survey conducted by the Swiss Federal Office of Statistics, a rich base of administrative data is at disposition. This data is used at the same time for the new nationwide DRG reimbursement system starting in 2012 (Swiss DRG).

Conclusion: The CH-IQIs is a key element for a structured outcome improvement process in the Swiss acute care hospitals. Although the results are just published without direct pressure to take actions, an increasing number of hospitals analyse their processes by means of peer reviews. The group “Initiative Qualitätsmedizin (IQM)” has installed a standardised peer review process for this purpose based on the same indicator set. This leads to very important and necessary targeted improvement activities in the hospitals and, if established decisively, to a change of corporate culture, triggering a huge potential of amelioration which is empirically proven. At the same time, concerns about a possible deterioration of the quality of services due to a possible economic pressure caused by DRG introduction in Switzerland can be addressed by analysing outcome.

References:
Project Website of the Swiss Federal Office of Health: www.bag.admin.ch/qiss
Initiative Qualitätsmedizin (IQM): www.initiative.qualitaetsmedizin.de
IMPROVING EXPERIENCE OF MEAL TIMES
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Objectives: To take a person centred approach to improving nutritional care on an acute orthopaedic ward to achieve 95% compliance with the elements of a Meal Time Observation Tool by October 2012.

Methods: Will: The Improvement Advisor, Nutrition Champion, Nutrition Link Nurse and Senior Charge Nurse engaged with the ward team to achieve buy-in to test an observation tool to improve meal times. The tool was tested to ensure this was suitable for the local context. Following a number of iterations using PDSA cycles, initial baseline data was gathered to check compliance with the elements of the observation tool. This information was triangulated with intelligence gathered through leadership walk-rounds and staff and patient feedback.

Ideas: Through discussions with staff and feedback from patients, ideas for improvement were generated. The changes which would have the biggest impact on patient experience and outcome were selected as initial areas for improvement.

Execution: Through PDSA cycles, a number of change concepts were tested and analysed.

Data: Observation of a full meal time on the whole ward of 20 patients was undertaken every 2 weeks from the period of April 2012 – July 2012 and then monthly until October 2012. Data was displayed through run charts on the ward, a ‘Highlights and Lowlights Report’ was developed and displayed monthly information, a local data reporting template was also populated. Patient feedback was displayed in the ward area.

Results: Results
Co-ordination of care during meal times was identified as the biggest barrier to ensuring patients on the ward received individualised person centred care. A meal time co-ordinator role was tested and compliance with the elements of the observation tool improved. Run charts (available for the poster) demonstrate these improvements.

The key area which improved was that patients received the assistance they individually required at meal times, avoiding unnecessary interruptions at meal times (through changes including altering timing of staff breaks and introducing a meal time co-ordinator). Patients reported a positive experience of meal times.

“the meals were good and I got plenty of help – thank you” (age 74, female patient)

Other benefits have included:
- better compliance with completion of food charts
- real time feedback to multidisciplinary team of good practice and areas for improvement to inform future work

Conclusion: The introduction of a meal time co-ordinator has led to patients on a busy acute orthopaedic ward getting the right help at the right time to improve their experience of meal times.

Towards Evidence-Based Quality Improvement: The Theory/Practice Balancing Act
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Objectives: We discuss how theoretical approaches to evidence-based quality improvement are used and interpreted across implementation projects in health care settings. We draw lessons about the mechanisms affecting theory-guided translation of evidence into improvement practice.

Methods: Use of theoretical models to guide quality improvement work is affected by three mechanisms acting at the level of practice:

a) Use of rhetoric, where building blocks are mentioned in project reports without actually being used in practice (e.g. citation of the Model for Improvement);

b) Shifts of meaning, where the interpretation of building blocks or their elements over time moves away from the original concept (e.g. knowledge transfer staff acting as project managers);

c) Privileging of certain aspects of work, where ‘building blocks’ or their elements (e.g. capacity building as part of ‘embedded evaluation and learning’) receive less emphasis than practical, short-term, measurable aspects of quality improvement practice (such as numbers of practices enrolled).

Factors contributing to all mechanisms included: shared understanding of the building blocks among stakeholders, strategic commitment to theory-informed approaches by leaders, and reinforcement of these approaches through learning opportunities.

Results: Use of theoretical models to guide quality improvement work is affected by three mechanisms acting at the level of practice:

a) Use of rhetoric, whereby theoretical building blocks are only mentioned in project reports without actually being used in practice (e.g. citation of the Model for Improvement);

b) Shifts of meaning, whereby the interpretation of building blocks or their elements over time moves away from the original concept (e.g. knowledge transfer staff acting as project managers);

c) Privileging of certain aspects of work, whereby theoretical ‘building blocks’ or their elements (e.g. capacity building as part of ‘embedded evaluation and learning’) receive less emphasis than practical, short-term, measurable aspects of quality improvement practice (such as numbers of practices enrolled).

Factors contributing to all three mechanisms included the extent of shared understanding of the theoretical notions among stakeholders, strategic commitment to theory-informed approaches by leaders, and reinforcement of these approaches through learning opportunities.

Conclusion: Applying a theory-informed approach requires attention to the design, delivery and on-going evaluation of improvement projects. Theoretical models are, perhaps inevitably, unable to capture the complexity of social interactions in which improvement projects are embedded, or to address practical and operational concerns. We suggest that theoretical models are more likely to influence across the lifespan of an improvement project where there is:

- understanding, agreement and commitment amongst key stakeholders about the nature, scope, value and key features of underlying theory;
- design and management of improvement projects with reference to theory;
- continuous reinforcement of the use of theory by establishing learning, development and knowledge sharing opportunities;
- strategic vision and sufficient resource investment to introduce and affirm the selected approach and adapt it to project-specific contextual factors.
TRANSFERRING ENT/AUDIOLOGY SERVICES INTO A COMMUNITY SETTING USING OPERATIONAL RESEARCH TECHNIQUES TO MODEL THE PATIENT EXPERIENCE

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Objectives: Large numbers of patients regularly travel long distances to receive treatment for ear conditions and the provision of hearing aids. The key objective of this study is to reduce demand for secondary care facilities, with improved waiting times and fewer no shows, by transferring ear nose and throat (ENT) and audiology services into a community setting. This will in turn ease pressure on the ambulance service and improve quality of care, including patient experience, through quick and relatively stress-free care, while saving time and costs for patients.

Methods: This project is supported and funded by The Health Foundation as part of its annual Shine programme. It innovatively brings together clinical specialists from the University Hospital of Wales, Cardiff, and Operational Research (OR) modellers from the School of Mathematics, Cardiff University, so that mathematical analysis of healthcare delivery can be used to demonstrate the system benefits of moving audiology secondary care services into the primary setting. This project is piloting a self-contained satellite community facility close to patients’ homes, within a local GP practice, that will enable 5,000–7,000 people to receive care outside of a secondary care setting. It is being run by the University Hospital of Wales, which treats a large number of patients, many of whom are older and travel some distance, often transported by carers or in ambulances, to receive treatment for ear conditions, hearing loss and hearing aids. Parking is a significant problem, and the hospital can be a complicated and confusing place for individuals to negotiate. Modelling the patient experience will include estimating quality improvement and cost reductions for the patient and the local health economy.

As well as shifting secondary care hearing services into a primary care setting, the team is developing a more generic new model for planning service redesign more accurately and ensuring better informed decision making. This is because simple average based spreadsheet models for planning service redesign fail to capture the necessary details and variability of healthcare processes leading to misleading and incorrect conclusions. The team expects the project to have a significant impact on individuals with hearing loss and the health service community, with wider learning for other services.

Results: Expected benefits and outcomes include:

- A dramatic increase in the quality of the patient experience associated with a reduction in travel time, transport and parking costs;
- Savings for the Welsh Ambulance Trust in terms of ambulance resource;
- A considerable carbon footprint reduction;
- The development of a generalizable model to inform commissioning decisions.

Specific results are not currently available but will be detailed at the conference. However, early anecdotal evidence is already suggesting an improvement across all areas.

Conclusion: Initiatives which involve shifting care closer to home are often met with resistance owing to lack of robust evidence. This project demonstrates the cost and qualitative benefits of such a shift, on both patients and the wider health economy.
INFECTION PREVENTION AND CONTROL (IPAC) - AN AUDIT PROGRAM FOR REPROCESSING OF MEDICAL DEVICES IN PHYSICIAN OFFICES

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Objectives: In 2007, there were several reported cases in Alberta (Canada) involving improper sterilisation and reprocessing of medical devices in physician offices and hospitals. There was furore within the healthcare and public sector regarding patient safety, and mistrust of perceived safeguards in healthcare. The Minister of Health directed health institutions and professional regulatory bodies to ensure all healthcare settings adhered to Alberta's infection prevention and control (IPC) standards. The College of Physicians & Surgeons of Alberta, the licensing/regulatory body for physicians in Alberta, responded with development and implementation of a formal on-site audit of medical practices and education for community physicians and office staff.

Objectives:
- Improve patient safety by increasing knowledge and quality of IPC practices in physicians' office
- Ensure adherence to standards for IPC practices, specifically relating to the re-processing of re-useable medical devices in physician offices
- Educate physicians and office staff on safe and reliable ways to reprocess/sterilise equipment/medical devices
- To inspect and report on compliance with best practices for device reprocessing

Methods: Physicians were categorised using a risk stratification based on procedures performed in their offices. These procedures were clustered, and physicians categorised into 3 groups:
1. Otolaryngologists
2. OB/GYN specialists
3. Other specialists and Family Physicians

Through use of surveys sent to 7600 physicians, medical practices were identified that reprocessed reusable medical devices using Spaulding's categories of “critical” and “semi-critical”. In parallel to the survey process, the IPAC program:
1. Assembled a panel of experts including Infectious Disease physicians, Family physicians and specialists, a medical officer of health, and Infection Control Professionals (ICP) to develop assessment tools for an audit of reprocessing practices
2. Created an audit form based on the Ontario Provincial Infectious Diseases Advisory Committee (PIDAC) standards and guidelines
3. Recruited/trained IPC practitioners to inspect physician offices and report on the findings
4. Provided education to physicians and clinic reprocessing staff during inspections, in newsletters, and website form
5. The expert panel reviewed each report and confirmed requirements for actions to be taken by the physician/office; Followed up with each office to ensure compliance
6. Conducted an evaluation of the process

Results: Final results are pending. Data will be available June 2013. Results to be included are:
1. Percentage (%) of offices that met standards/improved practices and continued to reprocess
2. % that switched to disposable devices exclusively
3. % that stopped doing procedures as a result of found deficiencies
4. % requiring a repeat audit due to nature of deficiencies
5. Identification of common deficiencies found

Other qualitative outcomes will include:
1. Post-audit survey results
2. Education provided to physicians/staff
3. Educational tools developed as a result of findings
4. Costs associated with improving IPC practices

Conclusion: Pending

CAN LOCAL SYSTEMS IMPROVE RECOGNITION OF DETERIORATING EMERGENCY DEPARTMENT PATIENTS

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¹Northern Health, Epping, Victoria, ²School of Nursing and Midwifery, Deakin University, Burwood, Victoria, Australia

Objectives: The aim of this study was to evaluate a comprehensive system for recognising and responding to clinical deterioration in emergency department (ED) patients. The major outcome was reported clinical instability defined as documented evidence in the ED nursing notes of clinical instability and subsequent report to a medical officer.

Methods: A repeated time series design was used. The intervention (a system for recognising and responding to clinical deterioration) evolved over time:

- 2009: no formal system
- 2010: single trigger ED Clinical Instability Criteria and escalation of care protocol was implemented
- 2011: colour coded nursing observation charts matching ED Clinical Instability Criteria and designed using human factors were implemented

The study was conducted at a metropolitan emergency department in Melbourne, Victoria. Study participants were adult ED patients with complaints of shortness of breath, chest pain and abdominal pain. A total of 50 patients per year (2009-2012) per diagnostic group were randomly selected from ED attendance records (n=600). Data were collected by retrospective medical record audit.

Results: In total, there were 318 episodes of documented clinical instability in 81 patients. The prevalence of instability for each year was relatively stable: 14.7%, 14.6%, 22.1% and 10.7% (p = 0.203). The proportion of reported instability increased over the four years (14.7%, 27.9%, 43.9%, 40%) but this increase was not statistically significant (p = 0.295). Tachypnoea and tachycardia were the most common documented abnormalities. Of 110 episodes of Tachypnoea in 35 patients, 27.3% were reported: the proportion of reported tachypnoeic episodes increased over the four years studied (11.1%, 18.2%, 27.6%, 68.7%). Of the 92 episodes of tachycardia in 28 patients, 27.1% were reported and the proportion of reported tachycardic episodes increased over time (17.4%, 28.1%, 31.6%, 33.3%).

Conclusion: A local, comprehensive system for recognition and response to deteriorating ED patients has increased reporting of clinical instability. ED specific systems for recognition and response to deteriorating ED patients remain ad hoc and further development and systematic evaluation of ED specific systems for recognition and response to deteriorating ED patients is warranted.
RECOGNISING DETERIORATION IN EMERGENCY DEPARTMENT (ED) PATIENTS: ORGANISATIONAL MET CRITERIA VERSUS ED SPECIFIC

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Objectives: The majority of adverse events such as cardiopulmonary arrest and death are preceded by vital sign abnormalities. Therefore, regular assessment of physiological vital signs is fundamental to detecting patients at risk of deterioration. The use of track and trigger systems such as Medical Emergency Team (MET) criteria have improved outcomes for ward patients; however, few published studies have investigated the use of track and trigger systems in Australian emergency departments.

The aim of this study was to explore the frequency, nature and outcomes of clinical deterioration in ED patients and assess the feasibility of organisational MET criteria against one example of ED specific criteria (Clinical Instability Criteria).

Methods: An exploratory descriptive design was used. The study was conducted in the ED of a major regional public hospital in Victoria, Australia. A point prevalence survey was used to collect patient characteristics and vital signs from 200 adult patients during ED attendance. A retrospective medical record audit collected patient outcome data.

Results: During the emergency episode of care 2% of patients fulfilled organisational MET criteria while ED specific criteria identified 7.5%. Patients fulfilling organisational MET criteria had a mean age of 85 years compared to a mean age of 67 years for those fulfilling ED specific criteria.

All patients fulfilling MET criteria were admitted to in-patient wards compared with 73% of patients fulfilling the ED specific criteria. Of the 136 ED patients admitted to in-patient wards, 8 had MET activation during admission, 87.5% of these within 24 hours of admission. Of the 200 participants in the study, 5% had died within 30 days of ED attendance.

Conclusion: The population of patients in the emergency department is undifferentiated, undiagnosed and often clinically unstable. An emergency department specific track and trigger system has the potential to identify more emergency department patients at risk of clinical deterioration.
THE RELATIONSHIP BETWEEN PATIENT SAFETY CULTURE AND ADVERSE EVENTS IN CHINESE HOSPITALS: A NURSE QUESTIONNAIRE SURVEY
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Objectives: There is limited research which explored Patient Safety Culture (PSC) among hospital nurses and examined the relationship between PSC and adverse events (AEs) in Chinese hospitals. This study aimed to describe nurses’ perception of PSC and frequencies of AEs estimated by nurses, and then examined the relationship between them.

Methods: Design: This study was a descriptive, correlated study. Setting: Twenty-eight medical unit, surgical unit, intensive care unit and emergency department in 7 level-III general hospitals across 6 districts in Guangzhou, China. Participants: This study surveyed 463 nurses worked on the sampled units. Instruments: The Hospital Survey on Patient Safety Culture (HSOPSC) was used to measure nurses’ perception of PSC, and the frequencies of AEs which happened frequently in hospital were estimated by nurses, including medicine error (ME), pressure ulcers (PU), patient falls (PF), physical restraints more than 8 hours (PR≥8h), surgical wound infection (SWI), infusion or transfusion reaction (IR/TR) and patients or their family complaints (PC/FC). Statistical Analysis: Multiple logistic regression models were used to examine the relationship between PSC and each AE with controlling the potential effects of nurses’ demographic factors.

Results: The positive responded rates of 12 dimensions of the HSOPSC varied considerably from 23.6% to 89.7%. There were 47.8%>75.6% nurses who estimated the above 7 AEs had happened in the past year. After controlling the potential effects of nurses’ demographic factors, a higher score of “Organisational Learning-Continuous Improvement” resulted in a decrease of the odds of the occurrence of nurse-estimated PU by 33.8%, PR≥8h by 42.7%, SWI by 43.8% and PC/FC by 45.2%, respectively (OR=0.338, 95%CI=0.165-0.693; OR=0.427, 95%CI=0.207-0.883; OR=0.438, 95%CI=0.223-0.860 and OR=0.452 95%CI=0.222-0.922); a higher score of “Frequency of Event Reporting” resulted in a decrease of the odds of the occurrence of nurse-estimated ME by 72.3%, PU by 63.6%, SWI by 71.2% and PC/FC by 74.5%, respectively (OR=0.723, 95%CI=0.547-0.956; OR=0.636, 95%CI=0.474-0.854; OR=0.712, 95%CI=0.536-0.946 and OR=0.745, 95%CI=0.555-0.999).

Conclusion: The nurses’ perception of PSC was not satisfactory, and the nurse-estimated AEs were high. The results suggested that the improvement of PSC could probably decrease the occurrence of patient AEs.
INCIDENCE OF ADVERSE EVENTS AND MEDICAL ERRORS IN JAPAN: THE JET STUDY

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Objectives: Epidemiology and nature of adverse events (AEs) or medical errors (MEs) should be scrutinised in a scientific manner, and such data were mainly reported in the Western countries. Epidemiological data should be collected in the rest of the world to attest the dissemination of newly developed interventions which were demonstrated effective in the Western countries. We, thus, conducted a prospective cohort study to estimate the incidence of AEs and MEs in Japan.

Methods: Japan Adverse Events (JET) study was a multicentre prospective cohort study which had evaluated AEs and MEs at 2 tertiary care hospitals. The 38 medical and surgical wards were stratified according to hospital and whether they were medical or surgical wards, and study wards were randomly selected. Intensive care units (ICUs) were all included. We included all adult patients aged ≥15 years who were admitted to any of the 23 study wards (10 medical; 11 surgical; 2 ICUs) over a 2-month period. The primary outcome of the study was the AE, defined as an injury due to any medical circumstance: medication use; operation, invasive/non-invasive procedure, testing, judgment, rehabilitation, nursing, administration. We also identified MEs, defined as a deviation from appropriate process of hospital care. Trained nurses placed at each participating hospital reviewed all charts daily on weekdays, along with laboratories, incident reports, and prescription queries to collect any potential event. They also collected the characteristics of the patients in the cohort. Independent physician reviewers evaluated all potential events and classified them according to whether they were AEs or MEs, as well as to their severity and preventability. If a ME was found, then the type of error and stage in the process at which it occurred were also classified. Inter-rater reliabilities were assessed using kappa statistics. Inconsistency was finally resolved by consensus. Incidence per 1000 patient-days, crude rates per 100 admissions and their 95% confidence intervals were calculated as a whole and by ward type (medical, surgical, or ICU).

Results: A total 1131 patients were enrolled during the study period. The potential events were 2955. These potential events are now under review by independent physician reviewers to classify them into AE, ME, AE with ME, and others. The incidences of AEs and MEs should be calculated.

Conclusion: We can show the incidence of AEs and MEs in Japan. Such data should be a part of evidence of global burden of AEs and MEs worldwide and also provide reference to estimate the effectiveness of any intervention.
PATIENT SAFETY AWARENESS ENHANCEMENT ACTIVITIES THROUGH OPERATION AND ANNOUNCEMENT OF PATIENT SAFETY TEAM

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Objectives: According to Heinrich's rule, there are 29 minor injuries and 300 non-injury accidents behind one major injury. Our institution tried to enhance the awareness of patient safety and prevent accidents by designating several safety officers, conducting education programs and announcements/bulletins but we faced limitations. To solve the problems, we tried to nurture Patient Safety Officers in various departments, conducting education programs and announcement/bulletin activities through them in order to increase interest of hospital members in patient safety and enhance their awareness.

The purpose of this study was to identify the effects of a such system change on the awareness of hospital members on patient safety issues.

Methods: Existing patient safety activities were performed by first, having one responsible safety officer relay the improvement case to the relevant department head. The case was then shaved through intranet and also posted on the bulletin board in the canteen. Finally a group lecture was given to all employees (education phase). In 2011, we appointed 17 departmental patient safety responsible officers, trained them through study group every other week for a year, and then had them educate other employees in the department. Hosted events of ‘Patient Safety Day’ every other month by improving the announcement method. First, to advertise, contestants were selected from among all employees in a random selection method and the participated in the 'Patient Safety Quiz Contest'. Second, posters on patient safety improvement cases were created and posted in the canteen for all to see. The best posters were selected and they were awarded accordingly. Additionally, a series of quizzes were given and those who gave the correct answers were rewarded with prizes. Third, such activities and improvement cases were shared by all the employees through bulletins. We tried to identify the changes in the awareness of hospital members on patient safety issues by performing surveys in 2009 when Departmental Patient Safety Officers were not yet introduced, and then again in 2011 and 2012 after the introduction of the new scheme using the same questions. The questionnaire consisted of eight questions using 5 Likert scales. Patient safety culture scores were analysed by ANOVA test, and the difference between groups was analysed by grouping by Turkey’s test. Cronbach σ to show the reliability of the questionnaires was 0.814.

Results: Patient Safety Awareness score in 2011 (3.91±0.617) and in 2012 (3.91±0.639) were significantly higher than in 2009 (3.73±0.699) (F=27.750, p<0.001). When comparing the patient safety culture score by year, Awareness (F=27.750, p<0.001) and Environments (F=12.256, p<0.001) in 2011 and 2012 were significantly higher than those in 2009. Communication (F=29.369, p<0.001) and educational effects (F=8.706, p<0.001) in 2011 and 2012 were significantly lower than those in 2009. It can be interpreted that higher awareness of employees on patient safety issues made them aware of the problems in the communication and education systems.

Conclusion: In our institution, it was found that the system change from several dedicated safety officer system to departmental safety officer system contributed to the improvement of awareness of hospital members on patient safety.
EVIDENCE-BASED NURSING DEVELOPMENT: A WAY FROM NOVICE TO EXPERT
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Objectives: Evidence-based nursing (EBN) enables nurses to provide effective care based on best current evidence rather than traditional practice. It is important for the assurance of quality and safety of patient care, and our nursing professional development. EBN development in Pamela Youde Nethersole Eastern Hospital can be traced back to 2003 when our Working Group on EBN was formed. Various EBN projects had been done previously to improve the clinical nursing service. To keep the momentum and accelerate our EBN development, a solid foundation of good nurses’ competency in EBN is necessary. Thus, it calls for an appropriate strategy to guide our plan of EBN training. The objective is to develop a feasible strategy for a continuous and sustainable EBN training system in our hospital.

Methods: EBN requires the acquisition of a peculiar set of knowledge and skills through both didactic and experiential learning. Based on “Benner’s Theory of “From Novice to Expert”, which recognises the impact of practice in competency development, a 3-tier training strategy is formulated.

Results:

First-tier training is a pre-EBN level which targets on general nurses for arousing their interest in EBN. In May 2012, a local expert was invited to conduct an EBN Seminar (a first-tier training event) in our hospital, which was highly appreciated by the audience with the mean satisfaction score of 5.08 out of 6.

Second-tier training covers the novice to advanced beginners. Mode of training is workshop and tutorial to develop the learners’ basic EBN knowledge and skills. Our first EBN Workshop and Tutorial for beginners was held last year. It got a positive feedback from the participants (mean satisfaction scores were 5.22 out of 6 and 5.06 out of 6 respectively).

Third-tier training caters for competent nurses or above who typically with 2-3 years’ experience in EBN. According to the Learning Pyramid by National Training Laboratories Institute for Applied Behavioural Science, teaching is the most effective method of learning. Therefore, for this tier, train-the-trainer approach can also be adopted to let learners participate in appropriate EBN teaching activities under guidance. Mode of training includes direct coaching by experts or advanced level workshops that aim at polishing the learners’ EBN skills and nourishing their leadership in EBN.

Conclusion: To foster the culture and development of EBN, a well-organised training effort is vital. A 3-tier strategy is generated according to Benner’s Theory to guide our present and future EBN training plan.
COMPREHENSIVE COUNSELING, HEALTH EDUCATION AND SUPPORT OF HIV POSITIVE PREGNANT WOMEN AS A FACTOR TO IMPROVED QUALITY OF SERVICES TO HIV EXPOSED INFANTS

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Objectives: The objective of this program was to improve Infant feeding practices, care and support given to the mothers using the Quality Improvement approach.

Despite PMTCT implementation for 12 years in Tanzania, assessments in the country show that coverage and quality of the full range of interventions for PMTCT, including those related to infant feeding counselling and support are disturbingly low. An assessment conducted in Iringa and Kilimanjaro regions on care of HIV-exposed infants showed that only 10% of mothers initiated breastfeeding within one hour of delivery; < 10% of mothers were counselled on infant feeding; exclusive breastfeeding was at 41%; enrolment of exposed infants to PMTCT within 4 weeks at 60%; and mothers receiving PCR results at 44%. The findings prompted efforts by the Ministry of Health and Social Welfare (MOHSW) and the USAID Health Care Improvement Project (HCI) to address these practices. The objectives of this project was increase counselling of pregnant women about breastfeeding, increase the rates of exclusive breastfeeding in the first six months of life, increase enrolment to PMTCT care within for weeks and increase the number of mothers receiving DNA PCR results.

Methods: HCI and the MOHSW, together with implementing partners (IPs), conducted quality improvement (QI) collaborative in 11 sites of Iringa and 13 hospitals of Kilimanjaro regions. HCI first sensitised the IPs, Regional Health Management Teams (RHMT), Council Health Management Teams (CHMT), and facility staff on QI and how national indicators on infant feeding (IF) would be monitored to measure the results of the improvement efforts. Implementation of the intervention was based on quarterly learning sessions for experience sharing and coaching sessions carried out on alternative months. In the learning sessions, health care providers shared tested changes to improve practices and prepared new plans for the next action period. On each visit to the health facility, mothers were given health talks on the importance of early initiation of BF within the first hour of delivery, demonstrated on good positioning and attachment to the breast, counselled on the importance of EBF, importance of their children checking for DNA-PCR in the first four weeks and taking co-trimoxazole for prophylaxis. Skilled counselling was also provided in labour wards and CTC clinics.

Results: In the period of implementation the percentage of mothers counselled on infant feeding increased from <10 at baseline in [August 2010] to 72% in Iringa in September 2012. EBF rates the percentage of infants receiving breast milk only for the first six months of birth increased from 41% in [August 2010] to over 70% in Iringa in September 2012, and in Kilimanjaro from 48% in [February 2012] to 100% in November 2012. Initiation of breast feeding improved in Iringa from 10% in [August 2010] to 82% in September 2012. In Kilimanjaro, the proportion of infants enrolled to PMTCT care within 4 weeks rose from 60% in [February 2012] to 100% in November 2012, and the proportion of mothers receiving PCR results increased from 44% to 86% in the same period. These results were obtained after two years of implementation in Iringa and nine months of implementation in Kilimanjaro.

Conclusion: The results from the demonstration in two regions of Tanzania has shown that using quality improvement methods in PMTCT services to provide a comprehensive program of counselling of HIV-positive mothers, health education, and capacity-building of health care providers improves quality services for HIV-exposed infants and enables health workers to offer correct needed care to these infants.
EFFECTS OF ADOPTING THE COMPUTATIONAL REVIEW SYSTEM IN SOUTH KOREA.

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Objectives: Health Insurance Review and Assessment Service (HIRA) is a statutory public corporation that has been checking up on whether the medical services are appropriately provided to the people in South Korea. Clonazepam (PO) is a benzodiazepine drug approved by KFDA for treatment of panic disorder and epilepsy and covered by National Health Insurance. HIRA adopted the Computational Review System for clonazepam; epilepsy adopted in March 2011, panic disorder adopted in April 2011. After adopting the Computational Review System for clonazepam, we supposed that there would be some changes in clonazepam use in clinical settings.

Methods: To assess how clonazepam (PO) use has been changed, insurance claim data would be good indications, as surrogate data. Thus, we collected insurance specification data claimed by medical institutions in HIRA. Data from the claim specifications (from August 2010 to December 2011) including clonazepam, the other drugs that have the similar effects to clonazepam, epilepsy, or panic disorder was used. Using pre-post-test design with (and without) comparison groups and trend analysis, we assessed whether Computational Review System affected the pattern of clonazepam use. We defined the duration of before was from August 2010 to November 2010, and that of after was from September 2011 to December 2011. The duration of before and after was equally 4 months. First, we compared the number of clonazepam claim specifications and the adjustment notifications. Second, we calculated the proportions of disease change in the claim specifications including clonazepam, and the proportion of clonazepam in the claim specifications including epilepsy and panic disorder, respectively.

Results: When we compared monthly insurance claim data between before and after, the average number of clonazepam claim specifications decreased from 143,000 to 99,000(▼4,400), and the average costs decreased from 1,390,000 won to 1,000,000 won(▼390,000). The average adjustment rate and its cost increased from 3.0% to 42.7%(▲39.7% point), 1.8% to 31.7%(▲29.9% point) respectively. The average number of diseases with clonazepam increased from 3.2 to 3.8(▲0.6). The panic disorder proportion in clonazepam claim specifications increased from 1.6% to 6.5%(▲4.9% point), while the other diseases decreased. A clonazepam proportion in panic disorder claim specifications increased from 6.8% to 13.0%(▲6.2% point). But, there were no changes in epilepsy.

Conclusion: Clonazepam is a benzodiazepine drug having anxiolytic, anticonvulsant, muscle relaxant, sedative, and hypnotic properties. However, clonazepam is approved by KFDA only for treatment of panic disorder and epilepsy. There have been some probabilities in the usage and claim patterns of clonazepam since HIRA adopted the Computational Review System to clonazepam. First, there might be up-coding from anxiety disorder to panic disorder. Second, it might have affected clonazepam (PO) use and claim patterns.
ADVERSE EVENTS MONITORING: A STEP TOWARDS MAKING AKUH A SAFE PLACE FOR PATIENTS

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Objectives: Medical harm and errors are almost inevitable outcomes of failures in processes of care. Therefore by focusing on the adverse events experienced by patients, a hospital can foster a culture of safety that aims at reducing them. AKUH since many years has quantified adverse events using conventional voluntary incident reporting. Research has concluded that only 10-20% of total errors in the hospital are ever reported. Thus an initiative has been taken by The Aga Khan University Hospital, Karachi, from January 2011 to promote safety culture. IHI’s (Institute of Healthcare Improvement) global trigger tools (GTT) is utilised to calculate hospital’s harm rate. The purpose of using IHI’s GTT was to identify number of adverse events in hospital, categorise them according to severity of harm, establish strategies to reduce harm rate and compare with our own trends to improve it over time.

Methods: A cross-sectional retrospective review was done from January to December 2011 using standard IHI’s GTT trigger tools. Random sample of 20 closed medical records per month were reviewed and audited by a patient safety nurse first then a clinician, against ‘56’ triggers mentioned GTT tool. Complete medical records of adult non psychiatric patients, who were shifted to high dependency area during the hospital stay, were selected. The GTT contains six modules, or groupings of triggers i.e. (a) Care (b) Medication (c) Surgical (d) Intensive Care (e) Perinatal and (f) Emergency Department. The data is then classified according to the severity of harm caused to the patient.

Results: Total 240 records reviewed in the year 2011 in which 66 (27.5%) patients experienced an adverse event with an average of 1.45 AE per patient; totalling the AEs to 96 in 66 patients. About 64 (66.6%) AEs contributed to temporary harm to patient requiring intervention (Category E), while 22 (22.9%) required prolong hospitalisation (Category F), 04 (4%) lead to permanent harm (Category G), about 05 (5.2%) required intervention to sustain life (Category H) and 01 (1%) led to patient’s death (Category I). On the basis of these results, the following improvement plans were developed by respective multidisciplinary team with the goal to improve patient safety.

1. Prevention and care of pressure ulcers/ bruises
2. Hypoglycaemic control in diabetic patient who are kept NPO and administered insulin
3. Readmission within 30 days and most admission within 10 days of discharge (Mostly from medical surgical units)
4. Prevention from urinary tract infection

Conclusion: These results suggest that adverse events are definitive source of harm to the patient. Using GTT has aided to identify those events which were not voluntarily reported. Hence the hospital plans to continue using this promising tool to identify AEs proactively.
EDUCATION SCENARIOS & PATIENT SAFETY: AN EXAMPLE FOR "ENABLELING AGE AS ASSET"
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Objectives: Education has an essential role in reducing harm and should not be overlooked just because it is difficult to quantify the impact of staff education on patient outcomes. The aim of our patient safety education scenario initiative is to demonstrate how different types of educational activity contribute to making healthcare safer. The example presented here is about enabling “Age as Asset” in the NHS workforce and links with patient safety. The NHS workforce is ageing, and developing an understanding of the impact of this on the overall workforce and on patient safety is important.

Methods: A typical education scenario describes an educational resource. We then make links between the resource and safer care. We capture quotes from educational resource sponsors and users, capturing their perceptions about how accessing the educational resource contributes to patient safety. We enhance access to other evidence of impact on safer care. Those taking part in the educational research were mostly NHS employees from Borders, Lothian and Fife. The "Age as Asset" patient safety education scenario was pulled together subsequently as part of a portfolio of scenarios. Patient safety education scenarios build on the established success of patient stories in using narrative and qualitative data as powerful leavers of improvement.

Results: NHSScotland staff described their concerns in relation to patient safety under a number of themes: “burnout”; lack of attention to redesign of jobs; changes in professional education and procedures; lack of succession planning.

“....The recruitment patterns in service and education providers over 20 years would suggest a deficit in staff with sufficient knowledge, cultural awareness and experience to fill the gaps. This is likely to have an impact on all aspects of care delivery and patient safety is likely to be affected.” NHS employee

A number of links were made between patient safety and an ageing workforce, and in some cases early retirements: less than recommended staffing levels; fewer experienced staff to mentor others; potential increased use of locum staff; human factors issues, arising from a lack of clarity in team roles; human factors issues for individual older workers can impact on patient safety, and can include stress, exhaustion and the failure to cope with the pace of change.

Other published evidence presented from elsewhere includes: "Interviews with older employees in the NHS suggest they are very aware of patient risks as a result of changes in procedures and are concerned about their own ability to prevent risks combined with the perception that the quality of patient care is being compromised,"

Conclusion: “We urgently need to value our older experienced staff and find better ways of keeping them and helping them to pass on their knowledge and skills. The safety of future patient care depends on this. Dr Jo Vallis, NHS Education for Scotland. The South East NHS Workforce Education and Development Advisory group have been highlighting key messages from the “Age as Asset” educational research and have encouraged discussion among various NHS forums. The NES Patient Safety Multidisciplinary Group continue to share this scenario also to raise the profile of enabling “Age as Asset” and links with patient safety, given an ageing workforce, and also early retirements in some healthcare teams.

References: Derek Phillips, Regional Director of Workforce Planning, South East NHSScotland (derekphillips1@nhs.net)
DIABETES APPOINTMENTS VIA WEBCAM IN NEWHAM
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Objectives: Traditional models of routine outpatient care are widely recognised to be inefficient or ineffective by failing to provide care responsive to patient need. This project aimed to evaluate if and how web-based consultations could deliver more effective and efficient diabetes care, whilst improving patient experience.

Methods: Newham, East London, has a high prevalence of type 2 diabetes (3-4 times the National average) with more than 66% of the local population from ethnic minority groups.

Following consultation with patient groups, selected routine follow-up outpatient appointments were replaced with webcam consultations, utilising everyday technology available in people’s homes (rather than expensive alternatives). Outcomes were evaluated using quantitative and qualitative measures including; recruitment data, ‘do not attend’ (DNA) rates, clinical outcomes, A&E attendance and patient and staff perception through phone interviews and questionnaires.

Results: In 10 months, 89 patients were recruited (62% uptake) and 174 webcam appointments were scheduled with an overall DNA rate of 27%. DNA rates decreased with time, showing a transition as patients moved to the new system. We also saw an improvement, during the last 3 months, when we changed the software provider to Skype with DNA rates falling to 16% (37 appointments).

From 28 questionnaires, patients reported that web consultations saved them time, were far more convenient, cheaper, that they preferred them and would be more likely to attend. The quality of care over webcam was considered at least as good as that provided face to face.

More time is required to verify the quantitative data, however trends suggest where patients have had several webcam appointments HbA1c (indicative of blood glucose control) levels have decreased with fewer A&E attendance. Initial savings are modest, through increased productivity.

Conclusion: The Newham diabetes service exemplifies challenges faced in the NHS with high non-attendance (DNA) rates (approx. 50%) and poor health outcomes, reflecting the complex lives of many patients with long term illness. Perceived lack of control, poor engagement with inflexible services and poor self-management are common with these patients.

Early evidence suggests web-based appointments can be used as part of outpatient’s services to improve patient experience and provide better access to effective care, with the potential to improve longer term efficiency. By using readily available video conferencing software, the service model could be easily replicable across the majority of outpatient care. Further work is now being done to explore the impact of online consultations on patient self-management.

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A REGIONAL MODEL ASSESSING DISEASE MANAGEMENT PROGRAMS

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Objectives: To present a model assessing disease management with a focus on quality of care, patient’s perspectives, utilisation patterns and cost.

Methods: Disease management programs are used widely to improve effectiveness, efficiency, and equity of care. Two disease management programs were developed in the Capital Region of Denmark for COPD and type 2 diabetes, respectively. The main focus of the programs is to improve quality and integration of provided care in hospitals, general practitioners, and municipalities. The aim of the programs is to deliver evidence based health care services in the correct setting – both from the perspective of the patient and the societal perspective. It is an important matter of the implementation process to monitor the impact of the programs to enable data driven improvement of quality of care. For this purpose an assessment model for continuous monitoring and evaluation of the implementation and effect of the Disease Management Programs has been developed.

The main objectives of the model is to monitor the effectiveness and efficiency at two levels; the population- and patient level using evidenced based indicators. The indicators are developed in disease specific working groups including relevant health professionals from all three sectors. Important principles of the model are the indicators are evidenced based, uses existing data where possible, and ensure effective feed-back, audit and benchmarking.

The model assesses the following aspects of disease management programs; quality of care, patients perspectives, utilisation patterns, and possible cost of change.

Results: A model has been developed and quality indicators identified. At the population level, data from central registers will be used to identify the two populations, including data on population specific variables of socio-demography co-morbidity and utilisation of the health care system. Time-series analysis of a few central indicators of health care use will be used to monitor change over time. Data at the patient level will be obtained from the National Indicator Database Project’s (NIP) databases, and data will be obtained form a new clinical database accumulating from patients following rehabilitations programs. The new database will collect data on rehabilitation from all three sectors; each sector will be able to access their own data at individual level, but will also get access to data from the other sectors at an aggregated level. Results will be fed back to relevant users and support cross-sector benchmarking and audit of central quality indicator for disease management programs.

Conclusion: Evaluation and monitoring is an important aspect of implementation new practices in health care organisations. Health professionals need to be involved in the process, to make sure that indicators are clinical relevant. Development of a useful model is expensive why engagement of relevant professionals is important including both health professionals and IT-managers and statisticians.
TYPES OF INCIDENCES DETECTED FROM 2010 TO 2012 IN TWO EMERGENCY HOSPITAL LABORATORIES: EVOLUTION AND ITS INFLUENCE ON PATIENT SAFETY.
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1Quality Coordinator, CATLAB, Viladecavalls, Barcelona, 2Laboratory Accreditation Commission, SEQC (Spanish Society of Clinical Biochemistry and Molecular Pathology), Barcelona, 3Emergency Laboratory in HUMT, CATLAB, Terrassa, 4Quality Committee, CATLAB, Viladecavalls, 5Biological Testing related Medical Emergency Commission, SEQC , Barcelona, 6Emergency Laboratory in HT, CATLAB, Terrassa, 7Biochemistry, CATLAB, Viladecavalls, Spain

Objectives: Analyse the evolution of the deviations (incidences and nonconformities) detected during three years in emergency laboratories of Catlab (certified according to Standard UNE-EN ISO 9001:2008 since July 2010) at the University Hospital Mútua Terrassa (Lab 1) and the Hospital de Terrassa in the Health Consortium of Terrassa (Lab 2), and its effect on patient safety.

Methods: Deviations detected were classified in two categories: as nonconformities, when the result or delivery time was affected or deviations which were detected during audits, and the rest as process incidences. Corrections were applied and corrective and improvement actions were taken whenever necessary. The Quality Area did a quarterly follow up of all deviations detected.

Results: The two Catlab emergency laboratories had a monthly average activity of 51461.1 (Lab 1) and 55524.8 (Lab 2) determinations. During the three years of the study period 721 incidences of process and 212 nonconformities (26 of them during audits) were detected:

<table>
<thead>
<tr>
<th></th>
<th>Year 2010</th>
<th>Year 2011</th>
<th>Year 2012</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lab 1</td>
<td>Lab 2</td>
<td>Lab 1</td>
<td>Lab 2</td>
</tr>
<tr>
<td>Preanalytical</td>
<td>216</td>
<td>33</td>
<td>111</td>
<td>11</td>
</tr>
<tr>
<td>Analytical</td>
<td>59</td>
<td>46</td>
<td>46</td>
<td>38</td>
</tr>
<tr>
<td>Postanalytical</td>
<td>5</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Nonconformities</td>
<td>Lab 1</td>
<td>Lab 2</td>
<td>Lab 1</td>
<td>Lab 2</td>
</tr>
<tr>
<td></td>
<td>Lab 1</td>
<td>Lab 2</td>
<td>Lab 1</td>
<td>Lab 2</td>
</tr>
<tr>
<td>Preanalytical</td>
<td>20</td>
<td>15</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Analytical</td>
<td>3</td>
<td>14</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>Postanalytical</td>
<td>3</td>
<td>18</td>
<td>5</td>
<td>12</td>
</tr>
</tbody>
</table>

Among the incidences, most were detected during the pre-analytical process, and many of them were related to requests and samples. They decreased progressively with the introduction of the electronic system (from 62% to 95% of the requests in Lab 1 and 85% to 94% in Lab 2) and the creation of a laboratory website in April 2012, which included a catalogue with the special conditions for sample collection, when applicable.

Nonconformities identified during audits (26) were due to aspects related to the recent implementation of the system of quality management: unclear documentation or incomplete records (42.3%), infrastructure improvements to prevent occupational risks (23.1%); establishment and clarity of requirements (26.9%) and format of the report (7.7%). The number decreased every year (12, 9 and 5 nonconformities, respectively).

Of nonconformities recorded in daily practice, 50.0% were detected by client complaint, as they did not coincide with previous analytical results or the patient’s chart. The rest were detected in the laboratory: 47.3% by inspection and testing during the analytical procedure and 2.7% by monitoring indicators.

Conclusion: We concluded that a record of all incidences and non-conformities detected in the laboratory as well as client suggestions is essential. This allows us to implement corrective and improvement actions and plan strategies in order to ensure correct and unambiguous analytical results, and all this redounds in patient safety.
CAN A FACILITATED MODEL IMPROVE EVIDENCE-BASED PRACTICE FOR HEART FAILURE IN PRIMARY CARE?
Lorraine Burey,*, Christi Deaton, Michael Spence, Kieley Wild
1R &D, CLAHRC, Salford, 2School of Nursing, Manchester University, Manchester, United Kingdom

Objectives: Management of heart failure (HF) in primary care practices (PCPs) does not always conform to guidelines. The aim of this project was to test a facilitated model of improvement in HF care (GM-HFIT) for effect on PCP identification and management of patients with HF.

Methods: 10 PCPs received GM-HFIT: verification of patients with HF, HF case finding and audit of 21 evidence-based indicators of care (resulting in a traffic light score 0 – 80 points), individual patient recommendations, interactive education and facilitation by a HF specialist nurse (HFSN) and knowledge transfer associate (KTA). Re-audit occurred at 9-12 months. Anonymous patient data were entered into a SPSS 16.0 database for comparison between audit and re-audit.

Results: At baseline 60% of 303 patients were appropriately on a HF register, 19% were inappropriate, and 20% needed further investigation. A total of 1303 patients were found for definite (n = 173) or possible inclusion to the register. At re-audit inappropriate patients on the HF register decreased by 85%. Characteristics of HF patients did not change between audits: mean age 73, 55-58% were male, and most had multiple co-morbidities. Significant improvement to HF patient care was seen at re-audit (Table), and all PCPs improved their overall scores. Changes to practice and service re-design were on-going at the time of re-audit, and patient reviews increased by 217%. There were improvements in collaboration with specialist HF services.

<table>
<thead>
<tr>
<th>Traffic Light score (n = 10 PCPs)</th>
<th>Audit</th>
<th>Re-audit</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF confirmed by echo</td>
<td>42+12</td>
<td>52+9</td>
<td>.003</td>
</tr>
<tr>
<td>Aetiology confirmed</td>
<td>82%</td>
<td>93%</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>LVSD</td>
<td>61%</td>
<td>81%</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>LVSD on ACEI or contraindication noted. Up-titrating or target dose</td>
<td>90%</td>
<td>89%</td>
<td>.213</td>
</tr>
<tr>
<td>LVSD on BB or contraindication noted. Up-titrating or target dose</td>
<td>58%</td>
<td>65%</td>
<td>.063</td>
</tr>
<tr>
<td>Self-care education</td>
<td>75.5%</td>
<td>83%</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>40%</td>
<td>47.5%</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>22%</td>
<td>.003</td>
</tr>
</tbody>
</table>

Conclusion: the GM-HFIT facilitated model was effective in improving evidence-based management of HF in PCPs, and supporting communication between PCPs and specialists. Support was individualised by the HFSN and KTA, who also served as bridges to other services.
ANALYSIS OF MEDICATION ERRORS VOLUNTARILY REPORTED
Sonia Moreno 1, Conxita Mestres 2*, M.Cruz Cipres 3, Carmen Molina 3
1Pharmacy, Hospital San Rafael, 2Pharma, Grup Mutuam, 3Hospital San Rafael, Barcelona, Spain

Objectives: To describe and analyse the medication errors voluntarily notified to the Pharmacy Service.

Methods: The hospital characteristics, a second level hospital with 200 beds, allow that sanitary professionals can notify the errors voluntarily through our clinical management computer application, the errors are communicated in the same way as medicines are requested, the occurred error is described, the involved medicine name and the patient’s data. Data collection is obtained after the registration of voluntary notifications before described, reviewing where the error has occurred, in what assistance process the error is detected, who is detecting it and the consequences for the patient. We refer, in the present work, to the real medication mistakes, when the medication is prepared on patient’s floor in order to be administrated.

Results: During the period between January to December 2012, the total errors that were notified were 254. From these 254 registered voluntary notifications to the pharmacy service during 2012, following the chain process of medicine use, the 33.07 % were prescription errors, 9.84 % during the validation/transcription process of the medicine, 33.85 % of dispensation and 23.22% were administration errors.

From all the errors produced, depending on the seriousness, did not arrive to the patient in a 62.20%, the errors that arrived to the patient without causing any injury were a 22.44%, the patient was monitored in a 6.69% of the cases and a treatment was needed or a temporal injury was caused in a 4.72 %.

The most part of notifications, the 76.37% come from the nursery (194), followed by the 16.14 % of the errors detected by the pharmacist (41) and in smaller proportion 7.48 % the errors notified by the doctors to the pharmacy service (19). We emphasise the nursery active role in the voluntary errors notification, not being equal on the part of the doctors. The most common mistakes that we stand out for their importance and/or severity, such as the prescriptions, are for example the regularity of the administration of daily fentanyl patches when their administration must be each 72, duplication of treatments that are prescribed with fixed patters and electronic prescribing protocol, for example, thromboprophylaxis; about dispensation we stand out some re-packaging mistakes for example levetiracetam 250 mg for acyclovir 250 mg, folic acid for hydrochlorothiazide and as administration error we have the insulin administration to a non-diabetic patient by confusion of bed or incomplete doses in the administration of drugs such as ceftazidime 2 g (2 vials) and only 1 g is administered.

Conclusion: The Pharmacy Department through meetings and newsletters, tries aware the professionals about the importance of notifying the mistakes, this report is always anonymous and non-punitive considering that the medication errors are preventable, the analysis and evaluation of this errors is needed to be able to introduce improvement measures.
WORKING WITH TEAMS TO IMPROVE QUALITY OF PREVENTION OF MOTHER TO CHILD TRANSMISSION OF HIV SERVICES: 
SUCCESSES CHALLENGES AND LESSONS LEARNT
Elizabeth C. U. Hizza 1,2, Rhea Bright 2, Ram Shrestha 2, Firma Kisika 3
1HIV Care, University Research Co. LLC, Dar es Salaam, 2HIV Care, University Research Co. LLC, Bethesda, United States, 3RCH, Iringa District Council, Iringa, Tanzania, United Republic of

Objectives: In Iringa region, Tanzania, the Ministry of Health (MOHSW), PMTCT implementing partners, Regional and Council Health Management Teams (RHMTs and CHMTs), with technical support from the USAID Health Care Improvement Project (HCI, are implementing a quality improvement (QI) project to Assure Infants and Mothers Get All PMTCT Services (AIMGAPS). Despite a high rate of HIV counselling and testing (73%), baseline assessment revealed low rates of ARV use (43%), enrolment to Care and Treatment Centre (CTC) (34%), and CD4 testing (15%) and late booking for antenatal care (ANC) (beyond 14) weeks. The project established a QI collaborative of 11 facility and community QI teams in 11 villages in rural setting to apply QI methods for addressing these challenges, using team work to improve PMTCT care and scale up best practices.

Methods: Sharing of baseline assessment results was done with the RHMT and CHMTs. Facility QI teams drawing providers from all PMTCT service delivery points were formed in the 11 health facilities: 5 hospitals, 4 health centres, and two dispensaries.

Management and facility teams were trained on QI principles, problem identification and testing changes through cycles of Plan Do Study Act and monitoring performance to narrow quality gaps for selected quality indicators. Monthly QI team meetings were held to share progress and plan for testing more changes.

Quarterly coaching of QI teams was conducted by HCI and the CHMTs. QI teams were gathered for experience-sharing (successes, challenges and lessons learnt) sessions at 4-5 months intervals. Teams compiled list of tested changes and best practices which formed a change package which was spread to other regions in the country.
The community QI team for each village was formed drawing members from: savings and credit, agricultural/ poultry / beekeepers, schools, religious denominations, groups of people living with HIV, sports clubs, village government and health facility staff. Group members were oriented to take health messages to, identify, and encourage pregnant women to attend ANC before 3 months gestational age; encourage males to accompany their partners for ANC, mothers to practice exclusive breastfeeding (EBF), and under-five children to be brought for follow-up care. Monthly community QI team meetings were conducted with coaches from the health facility to monitor progress of community objectives.

Results:

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline (Jan.-Apr.2011)</th>
<th>November 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV+ pregnant women enrolling in PMTCT</td>
<td>84%</td>
<td>95%</td>
</tr>
<tr>
<td>HIV+ pregnant women enrolling in CTC</td>
<td>33%</td>
<td>63%</td>
</tr>
<tr>
<td>HIV-exposed infants enrolled in care within 4wks of birth</td>
<td>48%</td>
<td>65%</td>
</tr>
<tr>
<td>Mothers practicing EBF 0-6m</td>
<td>41%</td>
<td>70%</td>
</tr>
<tr>
<td>HIV-exposed children retained in care (attending appointments as scheduled)</td>
<td>67%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Conclusion: Challenges for the project included that CHMTs have many projects and partners to work with; there is rapid turnover of service providers and teams take a while to master QI methods; and service providers have to focus on many programs and can’t always participate in QI team meetings, leading to lack of continuity. Availability of community teams was at times challenged by activities like farming, harvesting and attending workshops pertaining to their primary goals.
Team work is a cornerstone for improving care. Despite these challenges, we found that the facility-community linkage is a potential for improving clinical performance, client-provider relationships and strengthening the PMTCT continuum of care. Rural community groups also offer the potential for improving services through their engagement with the health sector.
THE EPIDEMIOLOGY OF MEDICATION ERRORS IN INTENSIVE CARE UNITS IN JAPAN: THE JADE STUDY

Yoshinori Ohta¹*, Mio Sakuma², David W. Bates³, Takeshi Morimoto¹
¹Department of Internal Medicine, ²Hyogo College of Medicine, Nishinomiya, Japan, ³Division of General Internal Medicine, Brigham and Women’s Hospital, Boston, United States

Objectives: Medication errors (MEs) are an important issue because they might cause the fatal adverse drug events (ADEs) especially in critically ill patients. We assessed the incidence and characteristics of MEs to improve the patient safety in such patients.

Methods: We conducted a prospective cohort study at intensive care units (ICUs) of three large tertiary care hospitals in Japan. The primary outcome of the study was the MEs, defined as errors which could occur at any process of medication use and which may or may not harm the patients. Trained research nurses reviewed all medical charts, incident reports, and reconciliations from pharmacy to identify suspected MEs and ADEs with their details as well as the background of the patients. Some MEs are associated with ADEs which are preventable ADEs, while some have significant potentials for injuring a patient and are considered as potential ADEs (PADEs). PADEs are either intercepted before reaching ADEs or not intercepted but do not happen to result in ADEs. After those suspected events were collected, physician reviewers independently evaluated them and classified them as MEs, ADEs, PADEs, or rule violations. Physician reviewers assessed the error stage of MEs in addition to its preventability, and rated ADEs and PADEs according to the severity of (potential) injury. All process above was conducted following the validated methodology¹.

Results: This study included 459 patients with 3231 patient-days. The median age of patients was 70 years old and 290 (63%) were male. Among these 459 patients, 50 patients (11%) had at least one ME during their ICU stay and the incidence of MEs was 17.0 per 1,000 patient-days. ADEs occurred in 50 patients with 55 events. The most common error stage was physicians’ ordering (58%) followed by administration (20%), monitoring (20%), and dispensing (2%). The most frequent drugs for MEs were anti-hypertensives (36%), electrolytes and fluids (15%), and antibiotics (13%). Among 55 MEs, 49 (89%) were not intercepted, and 16 of these non-intercepted MEs resulted in ADEs which were considered as preventable ADEs. Two of the preventable ADEs were fatal or life-threatening: one was methicillin resistant staphylococcus aureus infection after prolonged antibiotics use and another was hypotension caused by the omitted vasopressor agents. We also identified 36 PADEs: 4 (11%) were intercepted while 32 (89%) were not. Eighty nine per cent of all PADEs were potentially serious and 11 % were potentially significant.

Conclusion: MEs were common at ICU and a part of them resulted in fatal preventable ADEs. Automated detection and prevention of MEs should improve the mortality of critically ill patients at ICUs.

SUCCESSFUL REALISATION OF 6-SIGMA FOR IMPROVEMENT OF HEALTHCARE QUALITY
Min-Jeong Kim 1, 2*, So-Jeong Kim 1, Bok-Nam Lee 1, 2, Joon-Young Hyeon 1
1Management Innovation Office, 2 ER, Seoul National University Bundang Hospital, Seongnam, Korea, Republic Of

Objectives: Since starting its service, SNUBH has been engaged in various innovative activities such as QA (Quality Assurance), study organisation and suggestion system to improve healthcare quality and customer satisfaction. Still, even more aggressive improvements in healthcare quality and customer satisfaction are required to survive this ever-escalating competition in the medical field. To this end, SNUBH introduced the 6-sigma initiative. The fact that even the smallest mistake in life-dealing medical service can lead to fatal outcome is in line with the zero-defect principle 6-sigma pursues.

Methods: A strategy for successful realisation of 6-sigma was formulated, and systemic execution was carried out based on this. First, we exerted ourselves to build consensus among Clinical Departments to realise 6-sigma initiative. During the second half of 2005, prior to starting 6-sigma, offline training for professors and department heads and online training for the Department were provided. Secondly, organisation structure and rewarding system for the purpose of strong momentum were established. 6-sigma Steering Committee was formed to boost driving force, and a dedicated 6-sigma Department was launched to support relevant operations. Thirdly, various training sessions such as problem recognition, idea development, and statistical managements required to implement 6-sigma were provided to 6-sigma initiative leaders (Black Belt) and team members, and an innovative human resources infrastructure building system was established to further gain the momentum. Fourthly, for tailored execution, 6-sigma experts (MBB: Master Black Belt) were formed and 6-sigma training materials customised to the hospital were developed. Fifthly, the launching events of innovative activities and outcomes of 6-sigma initiative were shared on- and off-line to boost interests on and promote the program. Sixthly, post management system and post index monitoring system were developed in order to properly apply and maintain the improved outcomes with 6-sigma. Seventhly, bottom-up as well as top-down approaches were combined to identify challenging and practical projects that are associated with core customer needs and the center strategy. Afterwards, SNUBH is also managing a procedure that gathers ideas across Departments.

Results: Fifty-five (55) 6-sigma projects were implemented over 7 years and achieved the mean improvement rate of 47%. First, in terms of major improvements associated with patient safety, hand hygiene performance rate improved by 25% and the major multidrug-resistant bacteria isolation rate decreased. Second, in terms of key improvements regarding enhanced customer satisfaction, outpatient waiting-time, blood sampling waiting-time, and operation waiting-time were shortened to save time for patients, and a system that can track the outpatient waiting-time was instituted. Third, for major improvements associated with increased efficiency of hospital operations, SNUBH became the first local hospital that computerised all surgery, operation and test consents thereby, enabling their ubiquitous preparation through computer or tablet PC and preventing loss of informed consent and omission of key information items.

Conclusion: Although a number of prominent medical centers in Korea introduced 6-sigma, many of them failed because they could not involve entire Departments. SNUBH was able to realise a customised 6-sigma initiative based on strong momentum, systemic advancement, compensation for performance, and consensus establishment across Departments. We are poised to go a step further, and endeavour to be a customer-oriented hospital that delivers the best value for our patients.
PROVIDING AN EVIDENCE-BASED REMINDER INTERVENTION TO REDUCE INAPPROPRIATE URINARY CATHETERISATION AND REDUCE CATHETER-ASSOCIATED URINARY TRACT INFECTIONS IN HOSPITALISED PATIENTS IN A MEDICAL CENTER IN TAIWAN
Shirling Lin 1, Hsiang-Yu Lin 1,*
1Department of Nursing, Taipei Veterans General Hospital, Taipei, Taiwan

Objectives: Catheter-associated urinary tract infection (CAUTIs) can result in sepsis, prolonged hospitalisation, additional hospital costs, and mortality. The purpose of this study was to establish an evidence-based urinary tract care for general hospitalised patients and to provide the comprehensive strategic contentious care plans for improving the quality of care for patients with urinary catheters.

Methods: This research design used two methods:

1. to use systematic review method and search clinical guideline to investigate the major domains of urinary tract standardised care and intervention in general hospitalised patients and the effectives of each strategy in each domain;
2. to investigate the effectiveness of this standardised reminder intervention for urinary tract care to general hospitalised patients. A pre-post quasi-experimental design was used. Eighty-six patients in five wards in a medical center were invited with 32 in the control group and 54 in the experimental group. General medical patients who admitted with Foley were included, but if urinary tract infection happened by admitted time was excluded.

Results: The findings were the following: (1) The success rate for Foley removing was increased from experimental group (53.7%) to control group (31.3%); (2) The Absolute risk reduction of urinary tract infection from two groups was 9.8%, calculated the number need to treat was 7; (3) Estimated the saving cost of annual medical expense was NT$ 3,885,000 ~5,180,000; (4) The adherence rate of nurses for performing the urinary tract standardised care guideline were 90.7%.

Conclusion: The result of this study developed a standardised urinary tract care intervention for general hospitalised patients and provided the implementation of an intervention to judge appropriateness of indwelling urinary catheters. Furthermore, it would be recommended expanding this urinary tract care guideline to other institution.

THE SYSTEMS-BASED MANAGEMENT OF LABORATORY RESULTS IN PRIMARY CARE: EUROPEAN CONSENSUS ON SAFE PRACTICES

Paul Bowie 1,*, John McKay 1
1Postgraduate General Practice, NHS Education for Scotland, Glasgow, United Kingdom

Objectives: The systems-based management of laboratory results in primary care can be inadequate and is a significant source of error, harm and litigation. As part of the EU-funded LINNEAUS EURO-PC project, we aimed to gain European consensus on good practice guidance for the safe ordering of laboratory blood tests and the systems-based management of results in primary care.

Methods: We used multiple methods to collect and triangulate data to inform good practice guidance and gain agreement with primary care professionals in the United Kingdom and wider Europe:

1. A comprehensive review of international literature;
2. Exploratory workshops with a range of primary care staff groups;
3. A human factors analysis of six general practice results management systems;
4. Data from an anthropological study of organisation culture in four general practices;
5. Data from 467 clinical risk self-assessments by the Medical Protection Society;
6. Focus groups with frontline reception staff and patients with chronic disease; and
7. Consensus meeting with expert representatives from ten European countries.

Results: Consensus was agreed on ten safety domains (e.g. Obtaining a blood sample; Review of laboratory results) and related good practice statements (e.g. a formal system is in place to identify patients who do not attend for blood tests or who miss a related appointment). A care bundle intervention method to measure compliance with safe practice was also developed.

Conclusion: In the absence of any evidence based guidance in this area, we developed combined frontline practitioner and expert consensus on a series of good practice statements to improve the safety of laboratory test ordering and result management systems at all relevant stages of the process in primary care. The next development is to study how primary care teams implement this guidance to reduce associated healthcare risks and make related systems safer for patients.
IMPROVING THE QUALITY OF POST-OPERATIVE HANDOVER IN THE POST-ANESTHESIA CARE UNIT BY USING THE ISBAR TOOL
Shu-Ching Chi¹*, Chien-Jou Tsou¹, Yu-Wei Huang², Hung-Shu Chen²
¹Department of Nursing, ²Department of Anaesthesiology, E-DA Hospital, I-Shou University, Kaohsiung City, Taiwan

Objectives: Effective handover between shifts is critical for safe patient care. Communication failure due to inadequate handover has been identified as a major cause of adverse hospital events. Recent studies indicate that the ISBAR tool may improve handover through offering an expected pattern of transferred information. The purpose of this study was to investigate whether structured communications using the ISBAR tool improved the quality of postoperative handover in the post-anaesthesia care unit (PACU).

Methods: From January to December 2012, a structured handover project based on the ISBAR tool was implemented on a post-anaesthesia case unit in the E-DA Hospital, located in Kaohsiung, Taiwan. In the first 3 months (January ~ March) of this project, baseline data were collected by a pre-ISBAR survey to assess postoperative handover mistakes, duration, and satisfaction from staff nurses in the PACU and operating room. In the next six months (April ~ September), a ISBAR training program including the background of the project, concept of the ISBAR tool, and practice principles was introduced to all participants. In the last 3 months of this project (October ~ December), a post-ISBAR survey containing the same evaluated items as in the pre-ISBAR survey was carried out. The pre-ISBAR and post-ISBAR surveys were analysed and compared to validate the effect of the ISBAR tool on postoperative handover.

Results: A total of 132 staff nurses were recruited in this study. The rates of handover mistakes occurred per month decreased from 0.58% (25/ 4290) in the pre-ISBAR survey to 0.15% (7/4374) in the post-ISBAR survey. The average duration of handover per patient also shortened from 245 seconds during the pre-ISBAR survey to 109 seconds during the post-ISBAR survey. The positive satisfaction rates to postoperative handover increased from 58% (77/132) in the pre-ISBAR survey to 77% (102/132) in the post-ISBAR survey.

Conclusion: The results of this study show that implementation of the ISBAR tool in the post-anaesthesia care unit can improve the quality of postoperative handover. The ISBAR handover tool is helpful for staff nurses to reduce handover mistakes, save handover duration, and enhance handover satisfaction.
LUMBAR PUNCTURES ON MEDICAL WARDS – IMPROVING PATIENT CARE AND MINIMISING RISKS OF COMPLICATIONS

Lorna Young¹*, Vanessa Vallance¹, Tracey Dunn¹
¹NHS Lanarkshire, Lanarkshire, United Kingdom

Objectives: Lumbar punctures (LPs) are regularly performed by trainee physicians. Appreciable risks are associated with dural puncture including post-dural puncture headache (PDPH). Within anaesthetic practice, it is recognised that strict asepsis and use of 25 Gauge atraumatic needles reduces these risks considerably [1, 2, 3] With this in mind, we wished to review current technique adopted by trainee physicians within NHS Lanarkshire when performing LPs, and assess how it may be refined to reduce risks of complications.

Methods: An online survey was sent to all FY2 and ST level medical trainees. Questions covered grade and experience, aseptic technique employed, equipment choice, risk recognition, documentation and treatment options for PDPH.

Results: There were 51 responders ranging from FY2 to senior trainees. Only six had been taught by a consultant physician or anaesthetist. Aseptic technique varied widely, with all using sterile gloves, but few wearing surgical hats, masks or gowns. Fourteen responders reported using cutting needles; almost 50% did not know what type of needle they use. 70% used an 18, 20 or 22G needle; a further 16 did not know what needle gauge they use. Only 26% of trainees document risks discussed when obtaining informed consent. Twenty-seven responders offered epidural blood patch as a potential treatment modality for PDPH.

Conclusion: Our survey highlights that medical trainees’ LP technique could be refined, particularly in terms of equipment selection, to reduce potential harm. It has stimulated discussion within the trust on how this risk can best be minimised. NHS Lanarkshire’s clinical education department has adopted new documentation to emphasise the minimisation of risk through equipment selection, and improve knowledge of complications and their management. This new documentation is used during mandatory clinical skills sessions for FY2 level doctors. Furthermore, consultant anaesthetists and physicians within the trust are currently in the process of standardising equipment available on wards and are producing a procedural protocol or ‘bundle’ in light of these findings.

References:
IMPROVING THE DOOR TO NEEDLE TIME IN STROKE PATIENTS AT THE UNIVERSITY HOSPITAL TUBINGEN, GERMANY

Jens Maschmann, Manfred Beck, Sven Poli

Business Development Unit, General Surgery, Neurology, University Hospital Tubingen, Tübingen, Germany

Objectives: Due to an enlargement of the Stroke Unit (SU) at Tübingen University Hospital the process of emergency work-up for stroke patients had to be redesigned. Instead of doing the work-up on the SU it was transferred to the emergency department (ED) of the Dept. of General Surgery. The interprofessional approach and the results are being presented here.

Methods: In an interprofessional approach we involved neurologists, surgeons, (neuro) radiologists, and nurses to redesign the workflow of the patients being admitted with suspected stroke. For preparation we analysed the status ante with direct admission to the SU and secondary transfer from there to the CT-imaging site in the Dept. of Neuroradiology. We then introduced a new line of action with the emergency work-up starting already in the emergency facility of the Dept. of General Surgery using the same imaging site in the Dept. of Neuroradiology. In a further step of improvement the dedicated CT for emergency admissions of trauma patients was used to make the initial imaging right away and the algorithm was adjusted accordingly.

Results: The new pathway was introduced and evaluated in October 2012. Of a total of 168 admissions to the SU 64 were announced to the emergency department (2/day). 45 of these could indeed be assessed in the ED (1.5/day), 11 times the ED was occupied (5xpolytrauma, 6xstroke), and 8 times ED assessment was inhibited for other reasons. The table shows the time stamps of the old and the new pathway (phase I).

<table>
<thead>
<tr>
<th></th>
<th>Number of Patients</th>
<th>Admission-to-Door time</th>
<th>Door-to-CT time</th>
<th>Door-to-needle time</th>
<th>Admission-to-needle time</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 2011</td>
<td>9</td>
<td>5-10 min.</td>
<td>18 min.</td>
<td>32</td>
<td>55-60 min.</td>
</tr>
<tr>
<td>October 2012</td>
<td>5</td>
<td>1-2 min.</td>
<td>22 min.</td>
<td>44</td>
<td>66-67 min.</td>
</tr>
</tbody>
</table>

After proving that the new pathway was almost as fast as the old one we started to further improve it (measurements are currently under way). Admission starts now (Feb. 2013) directly on the CT-scanner in the emergency department with a full imaging work-up (cCT, CT-A, CT-P). A standard operating procedure was designed to clarify the processes for the different disciplines working together to help the patient with suspected stroke.

Conclusion: Although multiple disciplines had to be involved to redesign the Stroke-pathway, together we have established a new way for the initial diagnostic and therapeutic work-up. After evaluation of the process times before and after the change we already started generating new ideas to improve the process. The evaluation of this phase is currently under way. Our aim is to beat 20 min. from admission to needle.

References: Baron 1999; Hacke 2008; Saver 2006; Meretoja 2012
DIFFERENCES IN HOSPITAL RESPONSES TO VOLUNTARILY REPORTED MEDICATION ERRORS DEPENDING ON THE TYPE OF HEALTHCARE PROFESSIONAL REPORTING THE EVENT

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Objectives: Error reports and subsequent improvement actions are critical components in patient safety, possibly preventing the same events from occurring again. This study investigates how hospitals respond differently to medication error reports submitted by different major healthcare professional types in the medication use process - physicians, nurses and pharmacists.

Methods: Data from a national voluntary medication error reporting system (MEDMARX) in the US from 1997 through 2007 were utilised for this study. A logistic regression model was applied to understand the difference in the odds that an error report leads a hospital to take actions depending on types of reporters. Actions were acknowledged only when solid changes took place following error reports, such as policy/procedure, staffing, environment, formulary and computer software changes.

Because harmful errors generally induce more actions than non-harmful errors, we examined the effect of the reporter separately in harmful and non-harmful error reports. In addition, the differences in responses among different types of hospital owners—government hospitals (GH) and non-government hospitals (NGH)—were analysed to see whether they influence responses to error reports.

Phases of the medication use process such as prescribing, transcribing, dispensing, administering and monitoring medication are related to reporter type (e.g., pharmacists tend to detect most prescribing errors), and thus are controlled in the analysis. Also, in order to address any clustering of reports within hospitals, the model included a random intercept for hospital.

Results: A total of 605,422 medication error reports collected from 574 hospitals (153 GH and 421 NGH) were analysed. Among those errors, 594,232 (98.2%) were non-harmful and 11,190 (1.8%) were harmful errors. Nurses reported 58.1% of the errors, followed by pharmacists (39.7%) and physicians (2.2%).

For non-harmful error reports, we found that reports from nurses and pharmacists were less likely to lead a hospital to take actions than those from physicians. Compared to hospital responses to reports from physicians, reports from nurses induced significantly fewer actions both in GH (OR=0.63, 95% CI: 0.52-0.77) and NGH (OR=0.62, 95% CI: 0.53-0.72). The ORs for pharmacists (compared to physicians’ reports) were 0.25 (95% CI: 0.20-0.30) in GH, and 0.56 (95% CI: 0.48-0.66) in NGH.

For harmful errors, in GH, reports from nurses and pharmacists were also less likely to lead to action compared to physicians’ reports (nurses: OR=0.58, 95% CI: 0.42-0.79; pharmacists: OR=0.60, 95% CI: 0.41-0.87). In NGH, no statistically significant difference was observed in hospital responses to error reports from physicians and pharmacists, but reports from nurses were still significantly less attended to by hospitals compared to those from physicians (OR=0.56, 95% CI: 0.43-0.74).

Conclusion: Ideally, error reports should initiate improvement actions regardless of types of reporters. However, this study shows that hospitals are less likely to respond to reports from nurses and pharmacists compared to those from physicians. This can decrease the morale of healthcare professionals whose reports were not addressed well. Healthcare organisations with error reporting systems need to take full advantage of these under-utilised error reports, as they are a rich potential source of information for improving safety.
JUST AS DISSATISFIED, BUT FOR DIFFERENT REASONS – PATIENTS WITH DIABETES COMPARED TO THE GENERAL POPULATION.

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Objectives: Meeting the needs of the growing number of people with chronic conditions provide one of the major challenges in health care. Exploring patterns of patient dissatisfaction could provide an opportunity for healthcare improvement. Areas of dissatisfaction include access to care, quality of care received, and patient-provider interaction. Patients’ predisposition, healthcare utilisation and health status are other factors that may play an important role in patient satisfaction. The objective was to identify factors of dissatisfaction with health services among patients with diabetes compared to control individuals.

Methods: As part of a healthcare utilisation study, a questionnaire was sent to patients with diabetes and matched controls. Patients were selected from the Diabetes Incidence Study in Sweden, in which incident cases of diabetes mellitus among individuals aged 15-34 years are registered prospectively since 1983. For each case, two control individuals were selected from the general population register matched by age, sex and county of residence.

The questionnaire included one open-ended question asking dissatisfied patients to describe the nature of their dissatisfaction with health care.

Qualitative content analysis was used to analyse all answers (n=471). The Donabedian conceptual model (1988) of quality in healthcare (structure, process, outcome) was used to interpret categories identified during the analysis.

Results: Despite patients with diabetes having a significantly higher utilisation of healthcare, there was no significant difference in dissatisfaction (21% vs. 19%). Women were more likely to be dissatisfied (p<0.001) as were patients with lower income (p<0.001) and less than good self-rated health (p<0.001).

The qualitative analysis identified limitations in access to care, poor follow-up, and problems in interaction with care personnel. According to the Donabedian model (Table 1) these categories reflect mainly process-related problems among patients with diabetes (e.g. poor continuation of care and dissatisfaction with healthcare personnel) and mainly structure-related problems among control individuals (e.g. poor access). Some individuals in both groups also described outcome-related problems. Examples of statements:

“Get results from tests but no alternatives for treatment. Have asked for suggestions on how to change my treatment so that my health is not a hinder for me living a full life.”

“No appointment within reasonable waiting time. Been badly treated by doctor when I have reminded them about the waiting time guarantee.”

Table 1. Areas of dissatisfaction

<table>
<thead>
<tr>
<th>Category</th>
<th>Patients with diabetes</th>
<th>Control individuals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Women</td>
</tr>
<tr>
<td>Structure</td>
<td>37.2</td>
<td>43.0</td>
</tr>
<tr>
<td>Process</td>
<td>47.1</td>
<td>44.1</td>
</tr>
<tr>
<td>Outcome</td>
<td>14.5</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Conclusion: Analysing areas of dissatisfaction is of importance both for clinical practice as well as for the strategic planning and resource allocation. The results can guide improvement work as it leads to an increased understanding of areas important to patients. Our preliminary results are in line with previous research and show that from the patient’s perspective, major challenges concerned access to care (structure), coordination of care services and encounters (process). To address these challenges, improvement strategies should focus on transparency of processes, patient participation and timeliness of care. Coordination needs to be managed from all healthcare providers involved. Strategies are needed to facilitate patient self-management which has been shown to give fewer symptoms, faster recovery and longer healthier lives.
A SYSTEMATIC, TEAM-BASED PROJECT TO IMPROVE ADMINISTRATION OF PROPHYLACTIC ANTIBIOTICS

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Objectives: Surgical site infections are a significant source of morbidity and mortality which can be avoided by prophylactic antibiotics. The purpose of this paper is to describe how we used a systematic, team-based approach to implement practice guidelines for timely antibiotic administration within 60 minutes prior to the surgical incision.

Methods:
1. In Aug 2010, an independent auditing body called ‘quality assurance (QA) medical staff, was organised to monitor compliance and provide feedback in the timing and administration of prophylactic antibiotics.
2. A resolution reached in the Surgical Meeting demanded the circulating nurses in the operation room to begin antibiotic administration at the time when the surgical skin preparation was begun, rather than when the patient entered the room.
3. The administration and timing of antibiotics was included in the ‘Time-out’ session of surgical safety checklist, which involves everyone immediately prior to the incision, to mitigate the incidence of untimely or total lack of antibiotic administration.
4. Monthly review by QA medical staff of the database identified those cases in which antibiotics were (1) given within 60 minutes of incision, (2) not given at all, (3) given more than 60 minutes before incision (too early), or (4) given after incision (too late).
5. The specific feedback generated from the analysis was given to the section chief and the individual surgeon or nurse for internal review.
6. The QA medical staff also reported the monitoring data during the monthly all-staff Surgical Meeting and the 3-monthly Infection Control Committee.

Results: Before the initiation of this project, there was neither a monitoring mechanism by QA peer review, nor a feedback system to the nurses or individual surgeon. Thus, only 92% of the eligible patients received antibiotics within 60 minutes of the incision. In Jan 2011, four months after the project began; there was a steady increase in compliance to 100%. And the good compliance was maintained throughout after these guidelines were incorporated in the standard operating procedure for all surgical personnel.

Conclusion: By looking into the unexplained variations and remaining inconsistencies in our system, we designed a provider-specific monitoring mechanism and feedback system to increase compliance with practice guidelines related to timely administration of prophylactic antibiotics. We emphasised the importance of solving this problem from the point of view of the hospital system and team-based approach, in which nurses, surgeons, and QA medical staff work in partnership to bring about continued improvement in performance and patient care.
DEVELOPMENT AND EVALUATION OF A CHECKLIST TO SUPPORT DECISION-MAKING IN CANCER MULTIDISCIPLINARY TEAM MEETINGS: MDT-QUIC

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Objectives: The quality of decision-making in cancer multidisciplinary team (MDT) meetings can vary, which may result in sub-optimal clinical decision-making. We developed MDT-QuIC, an evidence based tool to support clinical decision-making by MDTs, which was evaluated by key users.

Methods: Following a literature review, factors important for high quality clinical decision-making were listed, and then converted into a preliminary checklist by clinical and safety experts. Attitudes of MDT members towards the tool were evaluated via an on-line survey, before adjustments were made giving rise to a final version: MDT-QuIC.

Results: The checklist was evaluated by 175 MDT members (surgeons=38, specialist nurses=62, and MDT coordinators=35). Attitudes towards the checklist were positive (P<0.001, One-sample t test), with nurses the most positive group regarding whether the checklist would improve their contribution in MDT meetings (P<0.001, Mann Whitney U test). Participants thought that the checklist could be used to prepare cases prior to MDT meetings, to structure and guide case discussions, or as a record of MDT discussion. Regarding who could use the checklist, 70% thought it should be used by the MDT chair, 54% by the MDT coordinator, and 38% thought all MDT members should use it.

Conclusion: We have developed and validated an evidence based tool to optimise the quality of MDT decision-making. MDT members were positive about the checklist, and felt it may help to structure discussion, improve inclusivity and patient centeredness. More research is needed to assess the effect on patient care and outcomes.
PERCEPTIONS AND PATTERNS OF USE OF GENERIC MEDICINES AMONG KOREAN MEDICAL DOCTORS
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Objectives:
In 2011, the Health Insurance Review & Assessment service (HIRA) investigated the understanding and opinions of medical doctor's about bio equivalence (BE) assured generic medicines.

This survey aims to promote the use of reasonable medicine and to provide baseline data for the establishing generic medicines policy in Korea.

Methods:
This survey was carried out by HIRA's on line survey systems and the 11 questionnaires were developed to assess doctor's attitudes and understandings of generic medicines as well as their willingness to use generics. Data analysis was performed using SAS 8.2.

Results:
361 medical doctors, who registered in HIRA, took part in the survey (response rate: 40%). The majority of the respondents (82%) knew about the BE guideline. However, only 25.7% of the respondents were reliable in the Korea Food and Drug Administration (KFDA)'s BE results. More than 50% of respondents preferred original to generic because of clinical experience, BE confidence limits and generic confidence limits.

And respondents' opinions on appropriate generic price were different from their position and specialty. But a total of 64.2% of the respondents though that Korea's generic price is expensive compare to other country.

On further analysis, the respondent in this survey answered that the most prominent factors associated with increase for generic prescription are policy reform in continuous post marketing surveillance, BE confidence recovery, disclosure of BE results.

Conclusion:
The current findings have important implications in establishing generic medicines policy in Korea.

According to this survey, even thought KFDA reinforced BE standard and reformed the generic policy, more than 70% of respondents didn't confide in BE results of generic.

In order to encourage the use of generic and restore confidence in BE results, it is necessary to provide accurate information about BE results and strengthen promotion of reformed generic policy. And this will need consistent efforts in a long term.
EVALUATE PATIENT SAFETY PROGRAMS WITH SURVEYING PATIENT SAFETY CULTURE OF NURSING STAFFS IN A SOUTHERN MEDICAL CENTER
Mei-Jen Chang¹*, Hsin-I Chiang¹, Jia-Ping Chang¹
¹Nursing Department, National Cheng Kung University Hospital, Tainan, Taiwan

Objectives: This study used the Safety Attitudes Questionnaire (SAQ) and Agency for Healthcare Research and Quality (AHRQ) to assess the culture of patient safety for nurses at a medical center in southern Taiwan, and to provide education courses to improve patient safety culture in the medical center further.

Methods: The study used SAQ and AHRQ to measure the 9 dimensions of the patient safety culture of a medical center in southern Taiwan with the consent of the Taiwan Joint Commission on Hospital Accreditation (TJCHA). These dimensions included six SAQ dimensions - safety climate, teamwork climate, stress recognition, perception of management, working conditions, job satisfaction, and three AHRQ dimensions - hospital management support for patient safety, teamwork across hospital units, hospital handoffs and transitions. This survey received 910 respondents. The study used SPSS17.0 for Windows to perform the statistical analysis on the survey data, including descriptive statistic and Chi-square, One way ANOVA inferential statistics, and multiple regression analysis.

Results: The overall average positive response score of the SAQ is 72.8. and the positive response score of AHRQ is 61.5. The highest positive response score among the SAQ dimensions is “teamwork climate”, and the lowest is “job satisfaction”. The highest positive response safety”, and the lowest positive response score is “hospital handoffs and transitions” score of the AHRQ dimensions that received is “hospital management support for patient. There are significant differences (p value = .002 and .016) by comparing the SAQ scale score and the AHRQ scale score before and after the intervention.

Conclusion: This study shows that the training for culture patient safety instructors and implementation of patient safety education training program significantly improve the positive average scores of nurses’ in the SAQ and AHRQ Scale, to inspirit the patient safety culture in the medical institutions.
REVISING STANDARDS FOR GENERAL PRACTICE ACCREDITATION: A UNIQUE STUDY OF LESSONS LEARNED

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1Centre for Clinical Governance Research, Australian Institute of Health Innovation, University of New South Wales, Sydney, 2Royal College of General Practitioners, Melbourne, Australia

Objectives: The credible development or revision of standards for accreditation purposes are known to be significant tasks that utilise considerable human and financial resources. No study has sought to identify the resources and expertise required or report evaluation outcomes arising from this task. Our study addressed this significant gap in the knowledge base.

Methods: An expert group, comprising academic researchers and standard setting agency staff, conducted a three-stage study. First, informed by the accreditation and evaluation literatures, a purpose-designed analysis framework was developed. Second, using the framework, document analysis of the standard setting agency documents, minutes and reports was conducted. Third, review and analysis of data collected was performed.

Results: The standards review process, conducted over a 12 month period 2009-10, comprised six phases with multiple tasks. Activities included: reviewing the evidence base supporting each standard; methodology and material development; field trials; and, document revision and production. Over 100 individuals substantively participated in this review process, with an additional 30 providing periodic input and feedback. Participants were drawn from professional associations, primary healthcare services, accreditation agencies, government agencies and public health organisations.

Their expertise spanned: project management; standards development and writing; primary healthcare practice; quality and safety improvement methodologies; accreditation implementation and surveying; and research.

The review and development process was shaped by five issues: project expectations; resource and time requirements; collaborative team approach; stakeholder engagement; and product produced. Participants were positive about their experience; the standards produced and considered the document to be high quality for three reasons. First, the credibility of the process, as reflected by the extensive engagement with stakeholders across Australia. Second, the rigour applied in the development, piloting and revision of materials. Third, the commitment and effort of agency staff and committee members, who overcame resource and time constraints. A majority of participants agreed that consideration could be given to altering the standards revision process to conduct periodic reviews and progressive updates.

Conclusion: This unique study shows that credible revision of standards for accreditation purposes requires considerable resources and expertise, drawn from a broad range of stakeholders. The revision process, including the resources and time allocated, and stakeholder engagement strategy, have a major impact on the acceptance of the standards.
IMPACT OF HYPOALPHALIPOPROTEINEMIA ON QUALITY OF LIFE IN CENTRAL OBESE WOMEN

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Objectives: To investigate the relationship between health related quality of life (HRQoL) and different cut-off value of low level of high density lipoprotein cholesterol (HDL-C) in central obese women. The change of obesity-related hormone peptides in different level of HDL-C was also observed.

Methods: Prospective observational study in central obese women in Taipei City Hospital in Taiwan. We defined two groups as group A (HDL-C<40mg/dL) and group B (HDL-C<50mg/dL) according to different definition of hypoalphalipoproteinemia in central obese women.

A total 572 women were screened at our outpatient clinic, and 227 of them with a body mass index (BMI) ≥27 kg/m2 and weight circumference (WC) ≥80cm were eligible for the study. Main outcome measures were quality of life in different domain and obesity related hormone peptides include insulin, ghrelin, leptin, adiponectin, and insulin resistance evaluated by the homeostasis model assessment of insulin resistance (HOMA-IR).

Results: Significantly reduced HRQoL score was noted in group A1 (HDL-C<40mg/dL) in domain of physical (P=0.002), psychological (P=0.004), social (P=0.001), and environmental (P=0.006) compared to group A2 (HDL-C ≥40mg/dL), but not between group B1 (HDL-C<50mg/dL) and group B2 (HDL-C ≥50mg/dL). Positively correlation was noted between HDL-C level and physical domain of HRQoL score. HDL-C and blood pressure contributes independently to physical domain of HRQoL score after controlling for other factors. Both groups with low HDL-C level was noted to have increased insulin resistance and ghrelin level, as well as decreased leptin and adiponectin level.

Conclusion: Central obese women with low HDL-C level have adverse impact on each domain of the HRQoL, especially when the HDL-C level is lower than 40mg/dL. Both hypoalphalipoproteinemia and hypertension accounted for a great variance to lower scores of physical domain of HRQoL with positively correlation with HDL-C level observed. Decreased leptin and adiponectin along with elevated ghrelin and HOMA-IR index was also observed in hypoalphalipoproteinemia group, which implied elevated cardiovascular risk. HDL-C level may deem as another indicator for predicting HRQoL in central obese women.
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ENHANCEMENT OF HANDWASHING COMPLIANCE TO PREVENT NOSOCOMIAL INFECTION

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Objectives: It is well known that cross-infection, which is caused by healthcare workers who failed to follow the hand hygiene practice, is one of the most common sources of hospital-acquired infection. In fact, it was found that the compliance rate for the vast majority of medical staff remains low, ranging from 30 to 50 %, and that, even if they do, they do not conduct it properly. Based on this, many effective actions were taken in order to increase hand hygiene compliance among surgeons and nurses, and prevent nosocomial infection in the Seoul National University Hospital.

Methods:
1) Identifying the current status and restraints: When asked about preventing infection propagation, protecting their hands, understanding the seriousness of transmitting infection via hands, and the effectiveness of hand hygiene, surgeons (n=86) and nurses (n=247) were found to be well aware of its importance with 3.8 of 4 points. However, the task-specific observation revealed that 74.8 % of doctors (n=519) and 54.9 % of nurses (n=1,204) did not follow the practice. These numbers were particularly lower when the contaminants were invisible.
2) Hand washing leaders and education: At each ward, a leader was designated with responsibilities to carry out communications and continuous monitoring.
3) Making educational video: Because the video from WHO, which had been used for the initial hand hygiene education, had some limitations that could not apply to the actual field, a new video was created to show hand washing in five nursing tasks.
4) Education and monitoring: Chief nursing officer and head nurses stayed for about an hour, providing feedback and training at five wards with the lowest compliance rates according to the inspection by the Infection Control.
5) Creating and posting promotional materials: Hand washing awareness stickers were attached to dressing carts, EMR carts and doors to each room. The Hand washing Action Bulletin Boards were also installed for posting at every ward.
6) Poster contest and recognition: A poster contest was held and winners were recognised for to encourage participation.
7) Hands-on event and campaign: In order to raise awareness about the proper hand washing procedures, a fluorescent lotion event and campaign was running.
8) Care and encouragement: When professors made their rounds, head nurses accompanied them to explain to patients the importance of hand hygiene and right hand washing method. Also, the practice was encouraged and checked at the time of dressing changes or treatment.
9) Better environment: automatic dispensing, easy-to-use hand disinfectants were installed in high profile spots.

Results: After these actions, the overall hand washing compliance improved from 45.3 % to 85 %, specifically 25.2 % to 74 % for doctors and 54.9 % to 90 % for nurses. In addition to our own monitoring, the official publication by the Infection Control also showed that the rates went up from 37.5 % to 69.2 % for doctors and 80.9 % to 89.5 % for nurses, demonstrating that these actions were objective effective. The daily consumption of hand sanitizer per patient increased from 6 ml to 14.7 ml, compared to the last year, and a higher satisfaction level for using sanitizer was also recorded.

Conclusion: The actions provided nurses with more knowledge about hand hygiene, and promoted the interest and better environment, bringing it as an active practice and, most importantly, improving the hand hygiene compliance rate. Hand hygiene should not be a temporary, one-time event. It is never overstated that the education, communication and monitoring should continue until it becomes a fully established culture and practice.
INTRODUCTION OF ‘PRESCRIPTION SUSPENSION SCHEME’ AND IMPROVEMENT ACTIVITIES TO ENHANCE THE COMPLETENESS OF MEDICAL RECORDS

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Objectives: Medical records are fundamental records to provide patients with consistent and continuous treatment, and a means of communication among medical team members who participate in patient treatment. Additionally, they are the materials for the analysis of the quality of medical services provided to patients and the indices for accreditation and external evaluations. Accordingly, an attempt was made to prepare the medical records of patients by prescribed due date. This was done in order to provide for patient safety, to meet various evaluation criteria, and finally the qualification of legal medical records.

Methods: Department of medical records changed the due date of the completion of medical records from after discharge to during hospitalisation. Although medical personnel recognised the necessity to prepare medical records within the prescribed period, they could not complete the records by the due date. Therefore, it would seem that improvements to the system are indicated in order to enhance the record keeping activities. We identified the current status by benchmarking other hospitals and introduced ‘Prescription Suspension Scheme’ to restrict prescriptions of inpatients if medical records were not completed by the due date. Advertisement and education were provided to resident doctors and staff, and various incentive methods such as emails, snacks, SMS, notifications via OCS, meetings and phone calls were introduced to stabilise the scheme and identify the problems. Statistics of documentation completion by department were posted and departments showing an excellent record were rewarded. Customised education was provided to those departments showing a poor documentation completion rate.

Results: After the improvement activities, medical record keeping rate was improved from 9.3% in 2011 to 82% in 2012.

<table>
<thead>
<tr>
<th></th>
<th>Hospitalisation Records</th>
<th>Operation Records</th>
<th>Specialties during Operation</th>
<th>Post-operation Progress Record</th>
<th>Discharge Summary</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 (Before Introduction)</td>
<td>23%</td>
<td>22%</td>
<td>0.6%</td>
<td>0.8%</td>
<td>2.5%</td>
<td>9.3%</td>
</tr>
<tr>
<td>2012 (After Introduction)</td>
<td>89.1%</td>
<td>88.4%</td>
<td>60.3%</td>
<td>73.9%</td>
<td>96.4%</td>
<td>82%</td>
</tr>
</tbody>
</table>

*Dated Document Completion Rate

Conclusion: We changed the medical record completion task to ‘in-hospital’ work and executed the ‘prescription suspension scheme’ based on this. As the result of the scheme, the documentation completion rate by the prescribed due date increased 9 fold (900% improvement).
DEVELOPMENT AND IMPLEMENTATION OF AUTOMATIC EMERGENCY CONSULTATION MANAGEMENT SYSTEM
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Objectives: To provide comprehensive emergency care of multidisciplinary specialists and prevent delay of treatment at emergency department, efficient operation of consultation to specialty is important. We developed implemented and assessed performance of Automatic Emergency Consultation Management System (AECMS).

Methods: This study was conducted at an academic ED located in Seoul Metropolitan city, South Korea between March and September 2012. We developed AECMS to consult to the specialist automatically and assess quality of consultation time process. The enrolled ED used electronic medical records (EMR) and AECMS is implemented into the EMR. Monthly, every specialty division should input the daily list of on-duty doctor for ED consult. They should fulfil the duty doctor list by the 5 steps. The order of 5 steps is junior resident, senior resident, junior staff, senior staff, and finally chief director of the division. After initially patients visited ED, if consultation is required, emergency physician activated AECMS and input clinical information of the patient into AECMS pop-up box. And then information is automatically transmitted using short message service (SMS) to the mobile phone of on-duty specialist. To stop the SMS, on-duty doctor should access the program at the designated computer located in the ED. If on-duty doctor did not access the computer at ED, SMS is automatically transmitted to next senior doctor every 10 minutes. AECMS saved detailed time profile and success rate of each consultation process.

During the period, we assessed the number of AECMS activation and mean time of call to ED arrival of each specialty division. We also compared the length of ED stay between patients using AECMS and not using AECMS. Finally, we conducted telephone survey for patients who discharged ED after specialist consultation on Feb 2012 and Oct 2012.

Results: We developed and implemented AECMS into EMR of enrolled institution. During study period, 30,447 patients visited the ED and 12 specialty divisions such as internal medicine, general surgery, and neurosurgery and so on participated in this project. 3,034 patients were consulted to 12 division and 491 cases utilised AECMS. Monthly mean number of AECMS activation was 70.1±55.1 and daily use was 3.3±2.4.

We assessed number of duty-doctor call steps for each activation case. Mean number of duty-doctor call steps by AECMS was 3.3±2.4. It means that specialist arrived at ED usually between 30 to 40 minutes after AECMS activation. ED length of stay for AECMS used group was 355 minutes (median, IQR 220-595) and non-used group was 380 minutes (IQR 239-619). In the telephone survey results, patients replied that the waiting time for specialist was 70 minutes (median, IQR 30-185) before AECMS implementation on February and 60 minutes (median, IQR 40-150) after implementation on October 2012.

Conclusion: We successfully developed and implemented AECMS into the enrolled ED. After implementation of the process, we could assess the quality of ED consultation process and showed decreased ED length of stay and waiting time for specialist.
GLUCOMETER VERIFICATION SERVICE IMPROVES THE ACCURACY OF GLUCOMETER IN DIABETICS
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Objectives: The accuracy of self-monitored blood glucose monitoring by glucometer is of utmost importance to enhance glycaemic control and to prevent hypoglycaemia in diabetic patients; however, the adequacy of using glucometer and the accuracy of glucometer are suboptimal in real practice. This study aims to enhance the correct use of glucometer and its accuracy in diabetics and/or their caregivers.

Methods: A novel glucometer verification service was developed incorporating the Food and Drug Administration and EN ISO 15197:2003 guidelines for the glucometer accuracy check and the education of participants for the correct use and preventive maintenance of the glucometer. Briefly, after patient submitted a simple request form of glucose verification service, blood sample was collected by phlebotomist according to laboratory routine. Blood sample was aspirated by glucometer for measuring blood glucose level immediately. The remaining blood sample was put into a sodium fluoride added blood tube to send to the central laboratory for measuring the blood glucose level within 20 minutes. Using the simultaneous measured venous blood glucose level as the standard, the acceptance criterion for the verification was within 20% if the glucose level was greater than 75 mg per deciliter (mg/dL) or within 15 mg/dL if the glucose level was less than 75 mg/dL. Education for the adequate use and necessity of regular maintenance and verification of the glucometer was undertaken by the trained medical technologist. A specially designed verification label was stuck on the glucometer to remind the next recommended date of re-verification. An interviewer-administered structured questionnaire was undertaken at the same time to collect the reasons for this attending this service. Telephone interview for the degree of satisfaction as well as for the final disposal of glucometer failing to pass the verification was undertaken for each participant.

Results: From 1st April 2010 to 31st December 2012, a total of 859 requests for glucometer verification service were enrolled. The mean age of the participants was 60.0 (SD, 13.0) years with a female to male ratio of 1:1.03. The reasons for requesting the verification service included asking for checking the accuracy of glucometer (90.1%), glucose level not consistent with symptoms and/or data from central laboratory (5.1%), possible deterioration of glucose strips (2.1%), and possible malfunction of glucometer (1.9%), and others (0.8%). The overall pass rate of glucometer verification during the study period was 78%. The pass rate was 76.9% and 85.3% for first-time verification requests and repeated ones, respectively. The pass rate increased from 66.0% in the 1st quarter to 79.1% in the last quarter. The most common disposal of those failed glucometers was sending back to factory for repair and maintenance (41.2%), followed by purchasing a new glucometer (29.4%), replacement of a new one free of charge by the manufactures (23.5%), and others (5.9%). The degree of satisfaction of the service was as high as 97%.

Conclusion: This novel glucometer verification service successfully enhanced the accuracy of glucometer in patient’s hand and enforces the importance of preventive verification measure and the adequacy of using glucometer in diabetic patients.
TO STANDARDISE ASTHMA CONTROL ASSESSMENT BY INCREASING ASTHMA CONTROL TEST SCORE CAPTURE RATE IN CLEMENTI POLYCLINIC IN SINGAPORE

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Objectives:
1. To increase ACT score capture rate from 53% to 100% in Clementi polyclinic for all asthma patients in 6 months.
2. To increase patients’ understanding of asthma control
3. To strengthen asthma care pathways in the clinic by giving the patient an objective score of their asthma control

Background:
Our clinic is in the Western part of Singapore providing primary care facilities to the residents, with a monthly attendance of about 300 patients with asthma. There is a monthly monitoring on the use of asthma control test (ACT) score for asthma patients in all 9 polyclinics under National healthcare group Polyclinics (NHGP). The ACT score is a validated, reliable and cost effective tool to assess asthma control. It is a 5 point questionnaire which assess the level of asthma control achieved by the patient.

Methods: A team of 8 motivated individuals from different departments of the clinic was constituted.
A flow chart of a typical asthma patient was constructed based on existing workflow. A macro flow chart and a micro flow chart for the asthma patient with focus on the asthma patient at the consultation point in the clinic.
A brainstorming session was done in a meeting with all team members. The members plotted factors contributing to asthma patient not able to complete the ACT score on an Ishikawa chart. A blind voting was done and a Pareto chart was made based on the voting pattern by the team.
A pre intervention asthma patient survey was done in first 2 weeks of October 2012. The responses of the 41 respondents were triangulated to the results of the Pareto chart to bring in the patient’s perspective. A post intervention survey of asthma patients to assess their knowledge about ACT score is planned in February 2013.
Each problem was addressed using interventions that were formed using the Plan-Do-Study-Act (PDSA) cycle with active contributions from all team members and clinic management.
The first Intervention implemented on 01 November 2012 was a patient education poster. The ACT score entry into the e-notes of asthma patients was monitored monthly. A direct measure to monitor the take up rate from the poster of the completed ACT forms was also set up.
The second intervention was a computer screen tab. This was to remind the clinician to check the patient’s ACT score and enter it in the e-notes during the consult. This was started on 01 Dec 2012.
The third intervention was meetings done by the team to discuss and reinforce with all new and existing staff in operations the existing workflow for the asthma patients in Jan 2013.

Results:

<table>
<thead>
<tr>
<th>Month 2012</th>
<th>PercentageACT score Capture in e-notes</th>
<th>Percentage of Nebulisation in regular asthma patients</th>
<th>Percentage of ACT score forms from the poster</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>52</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>August</td>
<td>60</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>September</td>
<td>54</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>October</td>
<td>47</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>November</td>
<td>63</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>December</td>
<td>63</td>
<td>4</td>
<td>26</td>
</tr>
</tbody>
</table>

Table: Increase in ACT score utilisation for Asthma patients at Clementi Polyclinic, NHGP, Singapore.

Conclusion: Improved patient education about ACT score led to increase in ACT score capture in e-notes of 16%. This displays better patient understanding about asthma control. There is stabilisation in the nebulisation rate for the regular asthma follow up patient during November and December 2012.
The ACT score gives an opportunity to strengthen the relationship between the patient and doctor/clinician. There is a room for improvement in the existing ACT form distribution pathways. ACT score is a reliable, cost effective and simple way to assess asthma control.
The patient education poster can find application in spreading information to patient for other chronic diseases also. This can be adopted in various Information technology portals e.g. localised Wi-Fi broadcast or display television sets in the waiting areas.
USING THE FUNCTIONAL RESONANCE ANALYSIS METHOD (FRAM) TO UNDERSTAND AND IMPROVE THE SERVICE PERFORMANCE OF THE WARD ROUND

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Objectives: The overall objective with this project was to reduce the length of stay of the patients in the geriatric ward. To improve the service performance, we wanted to do a detailed analysis of the ward round to get new insights of the performance and outcome. On the basis of the analysis, we wanted to address the system with meaningful changes.

Methods: To make a detailed analysis of the ward round we used a method called FRAM (Functional Resonance Analysis Method). The method identifies unwanted variations in the daily work routines. Through short semi-structured interviews with staff members, we gathered the data and information.

In our study we tracked variations such as time (start and finish time of the ward round), information flow and coordination of key actions in the team. We found that these things varied greatly in the daily routines and had a significant impact of the outcome of the ward round.

Intervention
Measuring these finds, we initiated a three month test project with the following changes to the ward round – to address the identified variations:

- A 20 minute interprofessional patient conference for the team at an electronic screen showing all patient data before the ward round
- Head nurses checked patient records for planned discharge date. Lack of discharge date was seen as a lack of treatment plan and basic nurse would be instructed to ensure a treatment plan for the specific patient at the next ward round
- Supervision of the junior physicians
- Heavy focus on patient plans and estimated time of discharge
- No disturbances is tolerated during the ward round

Results: A clear break-point was observed in LOS SPC diagrams. Average LOS was reduced from 9.59 (95% CI: 6.86-12.32) in 2011 to 7.00 (95% CI: 4.95-9.05) in first 8 month of 2012. The measures show that information flow, time and effectiveness of the key actions have been significantly improved in regard of outcome.

Conclusion: The FRAM proved useful in making a meaningful study of the ward round and on the basis of the analysis – a significant intervention project could be launched to address key issues regarding service performance and outcome.

References: FRAM is developed by Professor Erik Hollnagel and is described in: FRAM: the Functional Resonance Analysis Method. Modelling complex socio-technical systems (2012), Ashgate.
REDUCTION OF REVISITS THROUGH 6 SIGMA IN EMERGENCY DEPARTMENT
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Objectives: The aim of this study is to reduce the revisit rate in emergency department (ED) through 6-sigma. We also investigated the admission rate after revisit to ED to see the consequence of revisit.

Methods: From August to October 2012, we applied 6-sigma to reduce the revisit rate in one academic emergency department (after group). We compared the revisit rate of study period with historical data of January to December 2011 (before group). Revisit was defined as the revisit to ED with the same or similar symptoms within 72 hours (revisit patients/total patients). Admission after revisit to ED was defined as admission to ward in patients who revisit ED with the same or similar symptoms within 72 hours. With chart review of before group, we found that the main symptoms of about 60% of revisit patients were fever, abdominal pain, headache, nausea, vomiting, dyspnoea, cough, and urticarial, so we focused on these symptoms to reduce revisit rate. We used various methods to reduce revisit and subsequent admission as follows; protocolized treatment, organised discharge instruction, real time feedback to physicians, etc.

Results: There were 2,146 and 547 patients in the before and after groups, respectively. The revisit rate in after group was significantly lower than that of before group (3.45% vs. 4.05%). The admission rate after revisit in after group was also significantly lower than that of before group (18.18% vs. 22.02%).

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>59,606</td>
<td>15,856</td>
</tr>
<tr>
<td>Revisits to ED, No. (%)</td>
<td>2,416/59,606 (4.05)</td>
<td>547/15,856 (3.45)</td>
</tr>
<tr>
<td>Admission after revisit, No. (%)</td>
<td>532/2,416 (22.02)</td>
<td>99/547 (18.18)</td>
</tr>
</tbody>
</table>

Conclusion: We found out a way to decrease both the rate of revisit and the rate of admission to ward after the revisit through several measures. In conclusion, we believe consistent monitoring and improvement effort for revisit are an effective way to reduce inappropriate revisit in the aspect of patients’ safety and care quality.
HOW DO WE ENSURE FINANCIAL RESOURCES TO SECURE PATIENT AND HEALTHCARE WORKERS SAFETY?

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Objectives: In the medical fee payment system of Japanese public medical insurance, costs of drugs and medical material, personal expenses to ensure patient and healthcare workers safety (patient and healthcare workers safety cost) was non-medical expense reimbursement cost. But the size of the amount of such non-medical expense reimbursement cost, including patient and healthcare workers safety cost, has not been clear yet. Also these patient and healthcare workers safety cost has become a financial burden for each hospital.

How much will it take the amount of such non-medical expense reimbursement cost? Giving cases of heart disease which is one of the three major causes of death of the Japanese, we researched total amount of medical expense reimbursement cost of medical materials, among total amount of actual consultation cost for PCI (Percutaneous Coronary Intervention), which is the typical medical treatment for heart disease, as the case study. As a result, total amount of medical expense reimbursement cost of medical materials above became clear.

Methods: This study was designed: Total amount of actual consultation cost for PCI (N=60 case ; 810 case per year in 2011) was calculated by the method of Actual Cost Accounting in 3 hospitals (total 1,120 beds). Moreover, total amount of non-medical expense reimbursement cost was analysed. The period of research was 2months (June-August 2012).

Results: Total amount of actual consultation cost for PCI was approximately 920,000 Japanese Yen (1US dollar = 100 Japanese Yen). And among total amount of actual consultation cost for PCI, total amount of medical expense reimbursement cost for medical supplies was approximately 590,000 Japanese Yen and total amount of non-medical expense reimbursement cost was 40,000 Japanese Yen. It became clear that total amount of medical supplies cost for PCI was accounted for a 70% approximately of actual consultation cost for PCI, that total amount of non-medical expense reimbursement cost of medical supplies was accounted for a 5% approximately of actual consultation cost for PCI.

Conclusion: In this research, total amount of non-medical expense reimbursement cost of medical materials was approximately 5% of total amount of actual consultation cost for PCI. According to the previous work, Now it is inferred the Japanese hospital has invested a 2.4% approximately of hospital administration expense for patient and healthcare workers safety (per year). But the investment cost for patient and healthcare workers safety above used as non-insurance refund.

Therefore, if the investment cost for patient and healthcare workers safety above which has used as non-insurance refund by now is reimbursed, thereby, it is inferred that it can be covered the investment cost for patient and healthcare workers safety above equivalent roughness.

From the above, the meaning of this research giving case of medical materials cost is very large, which is proved the scale of the amount of non-medical expense reimbursement cost that it is not found until now.

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HOME SAFE HOME: PATIENT AND CARER PERSPECTIVES OF THE DEFINITION OF SAFETY IN HOME HEALTHCARE
Sarahjane Jones¹, Mairi Macintyre¹
¹WMG, University of Warwick, Coventry, United Kingdom

Objectives: Research into patient safety in community care is underrepresented in the academic literature, despite government efforts to redirect care for patients with complex long term conditions away from secondary care and into the community. Increased complexity of patient safety is introduced into newly developed interventions such as the case management programme because of, but not limited to: the unfamiliarity of the intervention, the unregulated and uncontrolled environment, greater patient responsibility for outcomes and co-ordination of multiple provider organisations of health and social care.

Traditionally, patient safety is thought of as freedom from accidental injury, or avoidance of unnecessary physical harm through the mismanagement of care and exclusive of disease progression. However, in a care model which aims to maintain quality of life rather than restore health, the exclusion of disease progression from the consideration of safety might be detrimental to positive health outcomes. If patients experience a decline in their health due to poor quality care, patients will experience unnecessary adverse outcomes.

This research aimed to achieve a patient and carer derived definition of safety, specifically in relation to healthcare that is delivered in the home. This paper presents the findings of a qualitative study, which explored the definition of safety for home healthcare from patient and carer perspectives.

Methods: The NHS case management programme was selected as a case study for home healthcare in which 13 interviews were conducted with nine patients and six carers across three primary care organisations.

Results: Patients and carers acknowledge safety as the active participation in risk reduction. They also express safety as the provision of care that meets their physical, social and psychological needs to generate acceptable physical, social and psychological outcomes. Given the nature of their illnesses, which are life long and limiting, greater emphasis was placed on maintaining or improving psychological and social outcomes.

Patients and carers relate negative psychological and social outcomes very closely to disease progression. For example, natural disease progression which results in immobility reduces their ability to leave the house to be social and contributes to feeling low.

Patients and carers also openly acknowledge and accept they have a role in their safety; however, the boundary between patient/carer responsibility and healthcare provider responsibility is blurry.

Conclusion: The definition of safety derived from patients and carers is more holistic and akin to the definition of quality. In a care service designed to increase quality of life for life long, limiting and degenerative conditions, rather than cure acute illness, progressively negative clinical outcomes are inevitable. However, maintenance of psychological and social function is of greater concern to patients and carers. Poorly managed disease will contribute to adverse psychological and social outcomes. Furthermore, inadequate recognition of the importance of psychological and social outcomes will result in them being left untreated. Finally, although patients and carers recognised they had a role in their safety, their responsibilities and what contributions the healthcare provider made were unclear. The implications of these findings include: an opportunity for healthcare organisations and staff alike to recognise the importance of psychological and social outcomes and deliver services which have greatest impact on the patient; and a need for all stakeholders to be aware of their responsibilities in order for them to deliver on them.
IMPROVING QUALITY AND PATIENT SAFETY IN THE EMERGENCY MEDICAL DISPATCH CENTRE BY REVIEWING MEDICAL
RECORDS: THE EXPERIENCE OF VERONA, ITALY

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1Healthcare Trust 20 Verona, Verona, 2Emergency Medical Dispatch Centre, Emergency Services, Mantua, Italy

Objectives: The Emergency Medical Dispatch Centre (EMDC) of Verona responds to 135,000 calls every year, coordinating services for the whole Province (around 900,000 inhabitants). The emergency process is inherently complex: it involves different professionals and is subject to internal and external factors. Every intervention must be registered by filling a short form in order to evaluate appropriateness of patient management. Objectives of the study were to check accuracy of compilation, adherence to treatment protocols and discrepancy that can affect quality and patient safety.

Methods: An expert team of the EMDC of Verona (3 nurses and 2 doctors) in collaboration with the Executive Committee for Patient Safety (ECPS) collected a random sample of 204 forms filled up by staff operating in the emergency services, from October till December 2011. The forms were analysed in order to identify both errors with potential medico-legal issues and due to lack of adherence to treatment protocols, exposing patients to potential risks, as well as evaluate the accuracy of compilation. The 50 fields were split into 4 groups:

1) personal patient data
2) clinical evaluation
3) clinical treatment
4) schedule of intervention.

Results: The 204 forms documented 35,29 % of high severity interventions, 37,25% of medium severity, 26,29% of low severity, 0,49% not reported. 60% of all forms were filled up completely. The personal data of patients (1) and the schedule of intervention (4) were filled correctly in over 90% of interventions. The weak point were the clinical evaluation (2) and consequently the inappropriate clinical treatment (3), due to a discrepancy in detecting and/or recording clinical parameters. While suspected diagnosis was present in 93,63% of interventions, blood pressure, heart rate, and oxygen saturation were correctly reported in 80%, Glasgow Coma Scale was present in 65%, schedule was recorded in 41% and respiratory rate only in 18,14%.

The second step of analysis was to investigate different types of pathologies and the most frequent errors analysing the following: trauma accidents (20,59% of interventions), cardiovascular diseases (17,16%), respiratory pathologies (12,75%) and neurological pathologies (11,76%). Trauma accidents and cardiovascular diseases were often missing data relevant to the clinical management, with lack of information that can affect patient safety (as detection of, localisation and immobilisation of trauma, therapy or RCP in cardiovascular diseases). In respiratory pathologies, respiratory rate was often absent as the use of glycaemic stick in suspected neurological diseases.

Conclusion: The review of the records highlighted the inconsistencies of medical records that may have influenced the final outcome. Improvement actions were introduced by reviewing the required fields and eliminating redundancies, and by revisiting protocols. Training courses for the staff were introduced to raise interest and compliance with the proper use of good practices. A sample of forms are currently reviewed in order to monitor the results and the impact on the patient. To complete the evaluation, a sample of medical records from the hospital of admission will be collected to analyse the consequences occurred in patients after an error in the emergency chain. The pursuit of quality in the service of emergency is a fundamental step to ensure the correct approach to patient safety, to involve staff in the application of clinical guidelines.
REVEALING PATIENT SAFETY EDUCATION IN HEALTH PROGRAMS AT UNIVERSIDADE FEDERAL DE SÃO PAULO.

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1Nursing School, Universidade Federal de São Paulo, São Paulo, Brazil

Objectives: To identify Curricular Units (CU) in which patient safety is taught in undergraduate programs in nursing, pharmacy, physical therapy and medicine at Universidade Federal de São Paulo, Brazil.

Methods: Descriptive/exploratory study. The sources were the Pedagogical Projects (PP) available on the University site. The reference framework was the World Health Organization’s Patient Safety Curriculum Guide: Multi-professional Edition, considering the following eleven topics:

- T1. What is patient safety;
- T2. Why applying human factors is important for patient safety;
- T3. Understanding systems and the effect of complexity on patient care;
- T4. Being an effective team player;
- T5. Learning from errors to prevent harm;
- T6. Understanding and managing clinical risk;
- T7. Using quality-improvement methods to improve care;
- T8. Engaging with patients and carers;
- T9. Infection prevention and control;
- T10. Patient safety and invasive procedures;
- T11. Improving medication safety.[1]

Seventy-nine key words and 99 thematic proposals were sought in each PP.

Results: The Nursing program offers 46 CU, 29 (63%) of which contain information about patient safety teaching. T5 was not cited in any CU and T4 is taught in 16 (34.8%). Teaching addresses communication; teamwork; multidisciplinary; conflict solving; leadership and ethics. Teaching on team coordination, what are successful teams and team performance assessment was not identified though.

In the Pharmacy program, 78 CU are offered, 25 (32%) of which declare patient safety topics. T1 and T10 were not cited. T9 and T11 were present in 10 (12.8%) CU. T9 is taught with a focus on antimicrobial action, bacterial resistance, development of vaccines and sterilisation methods, but no teaching contents were located about hand washing, gloves use and conducts in isolation units.

In the Physiotherapy program, 50 CU are offered, and safety themes were found in 24 (48%). T5 and T7 were not related to any CU. T8 was cited in 10 (20%), addressing the understanding of patients’ biological, social and cultural aspects, while themes like the consumer’s voice, communication tools, informed consent and the revelation process were not included.

The Medicine program offers 65 CU, 40 (61.5%) of which declared patient safety teaching. T5 was not evidenced in any CU, while T9 is taught in 19 (29.2%), with a focus on infection treatment and prevention.

Conclusion: All PP include contents related to patient safety. Their approaches, with rare exceptions, are partial though, demanding further elaboration of the themes, also involving teachers’ preparation. All programs lack at least one dimension, which does not permit a global view on the safety aspects that can be addressed in students’ education. T1, T5 and T7, which relate to safety concepts, learning from errors and management improvement processes, are absent from many PP, reflecting the programs’ clinical focus, without valuing the context they are inserted in. The lack of teaching on these dimensions can also reinforce concepts that health professionals may be immune to errors, without preparing students for the management of errors and adverse events, when these happen in professional practice involving patients. Patient safety teaching in health programs permits the development of reflexive learning experiences, granting students the opportunity to use scientific evidence to describe the care components, identify deviations in their practice and determine actions that need to be implemented, as members of an interdisciplinary team.

THE CLINICAL PROGRAM OF IMPROVING THE ACUTE ISCHEMIC STROKE TREATMENT IN THE HEALTH CARE PROCESS

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1Department of Emergency, 2Department of Nursing, Cheug Hsin General Hospital, Taipei, Taiwan

Objectives: Thrombolytic agents prepared for acute ischemic stroke within three hours can reduce the probability of irreversible damage in brain parenchyma tissue. The previous incomplete protocol in our emergency department (ED) for above condition includes four major circumstances:

1. The delayed activation about triage’s recognition for acute stroke within three hours,
2. The lack of standard operation procedures of emergency management,
3. Loss of urgent priority of clinical image and laboratory studies,
4. The un-established pre-hospital notification mechanism. The objective of this work is conducted to improve the ED management process, multidisciplinary team work cooperation, and the time of waiting for ED management.

Methods: The six months of pre- and post-intervention period were chosen from Jun.1st in 2011 to Jun.30th in 2012. 33 critical ischemic stroke patients in the pre-intervention phase and 34 in the post phase checked in our ED were recruited. The considerable components of ED improvement program include re-organisation the SOP for 3-hour ischemic stroke in ED, re-education about the protocol of acute ischemic stroke management to our ED staff, to build the mutual response of EMS and ED about acute ischemic stroke patients’ early notification.

Results: We set up the major items in each patient about accomplishing the ideal protocol of ED-acute ischemic stroke management. The ED-stroke management protocol includes achieving the four time course about door to initial neurological exam, door to brain CT image; door to neurological consultation; door to specialist ward (neurology or neurosurgeon care). Patients who accomplish above time courses will be selected as successful ED-stroke management case. The rate of accomplishing above protocol increased from 51.5% (17/33) to 97.1% (33/34). The flow rate of receiving CT scan within 25 minutes increased from 45.5% to 82.4%. The rate of thrombolytic agents’ infusion within 60 minutes increase from 66.7% to 83.3%. Significant findings are listed as following:

1) Improve the flow of triage process for acute ischemic stroke patients.
2) Simplify the flow of standard process.
3) Develop an efficient patient and laboratory specimen processing system.
4) Other relevant supporting findings: pre-hospital notification mechanism, ED anti-stroke consensus and quality promotions.

Conclusion: This program reveals that improving standard operation procedures for ED- medical care, team cooperation and education not only results in a better short-term outcome including tPA infusion, but possibly also leads to a deficit-free discharges the long-term outcome.
A UNIQUE EU QUALITY ASSURANCE BENCHMARK FOR BREAST CANCER SERVICES: PREPARATORY INVESTIGATION, PRESENT STATUS, FUTURE PERSPECTIVES

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Objectives: The European Commission (EC), in response to conclusions from the European Council on reducing the burden of cancer, has initiated a ground-breaking project to develop the first voluntary accreditation scheme for breast cancer services in the EU.

Methods: To help ensure adhesion to and uptake of the planned quality assurance scheme in all European Countries, a mapping of healthcare systems, and in particular of Breast Cancer Services (BCSs), was conducted. To this end, a 2012 survey was conducted in the 27 European Union member states, plus Croatia, Iceland and Norway. The survey questions included relevant aspects of how BCSs are organised such as: screening programs, training requirements for professionals, quality and safety aspects, quality assurance schemes. In addition, a comparison of existing quality assurance schemes was prepared based on input from:

- the survey results
- other schemes retrieved via Pubmed search
- other schemes obtained via consultation with experts.

Based on the results of the survey and the comparison of schemes, as well as existing rules and standards (ISO) already in place, the general concept of the project will be drafted and agreed in close collaboration with the experts and representatives from each Country.

Results: Twenty-five of the 30 contacted countries responded (83% response rate). The survey findings suggest a high heterogeneity in Europe in terms of: health systems, organisation of breast cancer services and screening policies. Twenty different quality assurance schemes were identified, covering either:

1. general aspects of quality and
2. safety and/or breast cancer specific professional issues.

Some countries declare no quality assurance policies in place, while others have more than one (i.e. a public national scheme plus one or more private international schemes). The general concept of the proposed EU voluntary scheme will be developed taking into account accreditation requirements (e.g. ISO 15189:2007) and including a list of specific requirements linked to evidence-based guidelines. It is planned that this will lead to the 5th edition of the European guidelines for quality assurance in breast cancer screening and diagnosis, but this time including additional guidelines covering the remaining stages and aspects of care.

Conclusion: The successful development and deployment of such a harmonised accreditation scheme will enable EU Member States and collaborating countries to formally ensure and benchmark the quality of their breast cancer services against a solid EU quality standard.
IMPROVING PATIENT SAFETY LEADERSHIP WALKROUNDS IN NHS GRAMPIAN

Helen Robbins¹, Jeanette Jackson²
¹NHS Grampian, ²Aberdeen University, Aberdeen, United Kingdom

Objectives: NHS Grampian has undertaken patient safety walk rounds since 2008 as part of the leadership work stream of the Scottish Patient Safety Programme (SPSP). The executive team take part in weekly walk rounds to clinical areas. We had limited knowledge of their effectiveness, staff impressions or impact on patient care so designed a study to examine this. Aim of the project was to evaluate the patient safety leadership walk round process in order to refine it and enhance its effectiveness.

Methods: Three stage study conducted in collaboration with NHS Grampian and University of Aberdeen. 18 clinical areas where walk rounds took place in 2010 were included:

1) 303 staff surveys were sent to 18 clinical areas asking about participation in the process and also safety culture questions.
2) semi structured interviews to 6 staff and 10 Executives asking about effectiveness of the walk round process.
   Interviews were analysed using a prompt guide and were coded by another researcher for inter-rater reliability.
3) document analysis of walk round reports from the 18 clinical areas were systematically analysed by two staff to look for themes in issues and actions.

Results were disseminated to the Executives involved in order to shape the recommendations. Two open workshops were held for staff to hear a summary of the study and findings. Recommendations were presented at relevant meetings.

Results: The walk rounds were found to close the gap between staff and executives and to be a mechanism for sharing learning. They were thought beneficial and an acceptable, valued process. Staff appreciated someone coming to their area. The staff involved tended to be nursing staff with a need to widen the professions taking part. There was a poor response rate to the survey (29%) and not so many clinical staff took part in interviews. Majority of staff received feedback on the walk round however they perceived no change or follow-up to actions. However the impact of the walk rounds was noted as improvements in the environment, increased visibility of management, leadership awareness of patient safety and staff more motivated re safety and teamwork. 89 issues lead to 6 themes identified from the reports: environment, staffing, patient safety programme, infection and patient and incident reporting. A feeling of being checked may have resulted from infection inspections which were also taking place. Areas of good practice were noted.

An action plan for each stakeholder group was developed from the recommendations. For example, the Executives improve sharing learning by shaping a Board aim around walk rounds and by comparing learning. Patient involvement is required in the walk round process. Ward staff will educate staff about patient safety by organising meetings to share solutions across wards. The Quality Unit will develop a structured checklist around patient safety and identified facilitators and barriers. A feedback process will be designed to close the gap between frontline staff and management level, but also to display and share learning of progress with patient safety across the organisation.

Conclusion: Learned that research with busy clinical staff is difficult. It is also difficult to feedback the findings and engage staff in improvements. Be creative with feedback mechanisms and focus on a few key achievements and concrete learning so staff can see a few benefits to a process. We also learned that other factors can affect your results such as the inspection priority at the time of the field work.

Main message is to examine the effectiveness of a process even though it may be structurally working smoothly. We identified a range of improvements to the process to assist making walk rounds more effective.
SANDY: A DEVASTATING STORM, AN UNPRECEDENTED RESPONSE
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Objectives:
Describe the steps that were necessary to ensure the safety of patients, employees and the community during Super Storm Sandy

Methods:
The North Shore-LIJ Health System Emergency Operations Plan (EOP) has evolved over the years in response to our unique geographic location and our experience with several serious and catastrophic emergencies. With our sixteen acute care hospitals located in and around New York City and emergencies such as 9/11 in 2001, SARS in 2003, H1N1 in 2009 and Hurricane Irene in 2011 our EOP has been repeatedly tested and revised.

Over time, the System’s leadership dedicated resources to plan for a multitude of contingencies that might cause the local population to rely on and require massive health care resources. As part of disaster preparedness and its EOP, North Shore-LIJ Health System, its hospitals and long-term care facilities activated their emergency operations centers three days in advance of Super Storm Sandy’s arrival. They remained staffed around the clock throughout the week of the storm, enabling the leadership of the health system and its facilities to maintain on-going communications, and arrange for and allocate resources and supplies as necessary.

Results: Three hospitals (Lenox Hill, Forest Hills and North Shore University Hospital) gave refuge to 93 patients who were evacuated from a New York City Medical Center, which closed due to flooding. In addition, to ensure continuity of care, Lenox Hill Hospital credentialed 372 physicians/licensed independent practitioners from this medical center including 38 obstetricians/gynaecologists.

North Shore-LIJ Skilled Nursing Facilities received more than 78 patients from nursing homes and shelters in New York City and Long Island. North Shore-LIJ’s outpatient dialysis centers extended their hours of operation to accommodate an influx of more than 30 patients whose treatment centers closed. Our Center for Emergency Medical Services (CEMS) responded to 1,008 requests for assistance before, during and after the hurricane, transporting a total of 726 patients, almost half of which were from non-health system institutions.

By the time Sandy was over, over one million people lost power and tens of thousands more were homeless. North Shore-LIJ raised approximately $2.7 million for a Sandy relief fund primarily dedicated to employees and their families.

Within 48 hours of the storm’s landfall, 62 employees’ families obtained temporary housing through North Shore-LIJ; similar arrangements continue to help hundreds of additional staff members and their families.

Conclusion: Repeated testing and activations of our EOP over the years has resulted in a flexible, adaptable and scalable EOP that is not restricted to a specific population/disease, or type of disaster. Lessons learned during the North Shore-LIJ response to Super Storm Sandy have expanded our existing knowledge of emergency preparedness. We have learned the vital role that our organisation plays, not only to our patients, but to our employees and to the community at large. These lessons are important to share with other healthcare organisations as they seek to enhance their internal capabilities and strengthen processes related emergency response.
WHAT IS THE FEASIBILITY OF INTERPROFESSIONAL PEER REVIEW OF SIGNIFICANT EVENT ANALYSIS? : A PILOT STUDY
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Objectives: This objective of this study was to examine the potential feasibility for inter professional peer review within this model.

Methods: 10 SEA reports were selected for review. Five reports had been submitted by pharmacists and five by GPs. All reports involved patient safety incidents (PSI). Each report was assessed by all reviewers (GP=9, Pharm=7) using a validated instrument. An analysis was made of both the qualitative and quantitative feedback provided by the peer reviewers to highlight areas of concordance and potential adherence between reviewers in the two professional groups.

Results: Analysis of the feedback in the pro formas identified principle themes. There were no SEA reports that were not able to be analysed by either professional group. Both groups of reviewers raised questions regarding understanding of abbreviations used by the other profession, but this did not prevent formal analysis.

GPs and pharmacists tended to award similar scores when reviewing the analysis of Significant Events (SEAs)

There was concordance on the feedback between GP and pharmacist reviewers.

Pharmacists and GPs focused their feedback on quality improvement issues.

GPs and pharmacists tended to provide scores only (without written comments), when providing feedback about; the setting, demonstration of learning and when they allocated the final score.

GPs provided global scores in a wider range than their pharmacist colleagues.

Pharmacists were more likely to provide written feedback than their GP colleagues.

Conclusion: This study was a pilot and indicated that the interprofessional peer review of SEAs by pharmacists and general practitioners is feasible.

The findings demonstrate the feasibility of inter professional review of SEA reports involving medication related PSIs. Calibration issues for scores and feedback as well as issues with professional terminology could be addressed through training

References:
**MULTIPLE STRATEGIES APPLICATION TO DECREASE MEDICATION INCIDENT RATE FOR MEDICAL ICU II**

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**Objectives:** While living in an information explosive era, the general public consciousness tends to rise. As more attentions are focused on patient rights, the health care quality becomes a common target for surveillance, to ensure a safe medical environment based on the concern of patient safety.

From 2004, Taiwan Joint Commission on Hospital Accreditation has listed "Improving medication safety" as a top goal under medical quality and patient safety, which demonstrates that medication safety, has become the very first concern on patient safety. Medication is a daily routine for nurses, and a higher prescription frequency leads to higher medication incident rate. In 2011, medical intensive unit II has a medication incident rate of 0.35%, however, the reasons involved are somewhat complicated. In order to enhance medication safety, our program induced multiple strategies to decrease medical ICU medication incident rates. From January to December 2012, based on the incident reporting system and the tracking audit mechanism, the reasons analysed from each incident include: dose error, medication type error, omission error, error for solution proportion, and patient identification error.

**Methods:** Multiple strategies involve Quality Control Cycle (QCC), ISBAR, TRM, educational seminars, prescription technique assessment, prescription surveillance, medication incidents case sharing, and individual consultation etc. Further, more actions are taken to reduce the medication incident rates such as standardise ICU medication procedure, set up guidelines for medical resident's order and emergency prescription, implement ISBAR communication principles, perform 3-read 5-right work and monitor medication dose, limit the amount of intravenous drip given, assess the techniques for insulin injection and intravenous drip of chemotherapy medication, arrange seminars for medication identification and high alert medication, improve pharmaceutical characteristic and identification knowledge and use 4W1H approach to ensure drips properly located and treatment tray without medication, share cases on a quality management meeting. Through multiple strategies and resource provided by medical teams, we ensure medication safety and medical communication delivered correctly, as well as implement medication knowledge and 3-read 5-right policy completely.

**Results:** After carrying out the multiple strategies, the medication incident rate sharply dropped from 0.35% in 2011 to 0.17% in 2012, successfully achieved the annual goal of reducing down to 0.3% in 2012.

**Conclusion:** Improve medication safety, lower the medication errors, increase inpatient medication safety, ensure health care quality are the common and essential target for medical staff.
CONTINUOUS QUALITY IMPROVEMENT: IMPLEMENTING A SHARED GOVERNANCE MODEL THAT MAXIMISES AGENT-SPECIFIC KNOWLEDGE

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Objectives: Through staff engagement, mobilisation of agent-specific knowledge is maximised through the identification, formulation, execution, evaluation, and dissemination of Continuous Quality Improvement (CQI) initiatives.

Methods: Motivate, Innovate, Celebrate - An innovative, shared governance model through the establishment of Continuous Quality Improvement (CQI) Councils was implemented at London Health Sciences Centre, the second largest academic health sciences centre in Canada. The model leverages agent-specific knowledge at the point-of-care and provides a structure aimed at building human resource capacity and sustaining enhancements to quality and safe care delivery. Interprofessional and cross-functional teams work through the CQI Councils to identify, formulate, execute, and evaluate CQI initiatives. In addition to the structure that facilitates collaboration, accountability, and ownership, a corporate CQI Steering Committee provides the forum for scaling-up and spread. Point-of-care staff, clinical management and educational leaders were trained in LEAN methodology and patient experience-based design to ensure sufficient knowledge and resources to support the implementation.

Results: To date, 61 interprofessional and cross-functional councils have been established. There are 120 quality improvement and patient safety initiatives at various stages of implementation and evaluation. These improvements range from evidence-based practice integration “firsts” to staff –led process and system redesign. The standardisation of processes and procedures across CQI council initiatives has led to the spread and scaling-up of a variety of best practices and clinical efficiencies. Projects have been replicated up to 14 times across clinical units and learning’s from initial projects have supported scaling-up opportunities. In addition, two evidence-based practice ‘firsts’, including, the development of an acute oral care assessment tool and guideline for implementation of oral care for clinical neuroscience patients; and, utilisation of colostrum for oral immune therapy for neonatal and infants have been introduced.

Conclusion: Integral to the sustained transformation is the clear articulation of expectations regarding system redesign through the eyes of the patient. Professional Scholarly Practice leadership, a robust communication strategy including, a real-time, web-based registry program, GEMBA TV, weekly CQI stories, and monthly continuous quality improvement reviews have supported the success of the model. The establishment of CQI Councils at the unit level and the supporting structure and processes fostered the ability for continuous quality improvement to be embedded in the culture of the organisation.
RADIATION SAFETY OPTIMISATION IN NUCLEAR MEDICINE
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Objectives: The occupational radiation exposure risk is proportional to the amount of radioactivity present in a nuclear medicine facility. This work is intended to introduce nuclear medicine and PET/CT strategies at Hospital São Rafael to optimise radiation safety due to patient throughput increase.

Methods: Occupational radiation doses were registered from 2008 to 2012 using a thermo luminescent dosimeter. Besides the radiological protection practices already in use until 2008, complementary strategies were adopted as weaknesses were identified in the processes along the time: training, personnel working schedule and information technology. Collective doses for 2009, 2010, 2011 and 2012 were compared to the baseline (2008) to verify the effectiveness of the strategies adopted. The increase of radiation exposure risks was verified through the amount of radiation activity manipulation and the number of patients assisted.

Results: In comparison to the baseline, the following years had respectively 15%, 50%, 55% and 56% increase in the number of patients diagnosed; 37%, 38%, 12% and 6% increase in I-131 radiation activity manipulation; 5%, -5%, 30% and 32% increase of PET/CT procedures. The baseline collective dose was 0.06 man.Sv against 0.06 man.Sv, 0.07 man.Sv, 0.06 man.Sv and 0.06 man.Sv for the following years, respectively.

Conclusion: Despite the overall increase of radiation exposure risks, the radiological protection strategies adopted were sufficient to assure acceptable radiation dose levels.
ARE COMPOSITE MEASURES OF GENERAL PRACTICE QOF DATA MORE VALID INDICATORS OF CARE QUALITY AND RELIABILITY?

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Objectives: A significant minority of patients do not receive all the evidence-based care recommended for their conditions. Health care quality may be improved by reducing this observed variation. Composite measures offer a different perspective on care quality and are utilised in acute hospitals via the ‘care bundle’ concept as indicators of the reliability of specific (evidence-based) care delivery tasks. We aimed to apply the care bundle concept to selected QOF data to measure the quality and reliability of evidence-based care provision.

Methods: Care bundles and components were selected from QOF indicators according to defined criteria. Five clinical conditions were suitable for care bundles: Secondary Prevention of Coronary Heart Disease (CHD), Stroke & Transient Ischaemic Attack (TIA), Chronic Kidney Disease (CKD), Chronic Obstructive Pulmonary Disease (COPD) and Diabetes Mellitus (DM). A retrospective audit was undertaken in a convenience sample of nine general practices in the West of Scotland. Practice level and overall compliance with bundles and components were calculated.

Results: Nine practices (64.3%) with a combined patient population of 56,948 were able to provide data in the format requested. Overall compliance with developed QOF-based care bundles (composite measures) was as follows: CHD 64.0%, range 35.0-71.9%; Stroke/TIA 74.1%, range 51.6-82.8%; CKD 69.0%, range 64.0-81.4%; and COPD 82.0%, range 47.9-95.8%; and DM 58.4%, range 50.3-65.2%.

Conclusion: In this small study compliance with individual QOF-based care bundle components was high, but overall (‘all or nothing’) compliance was substantially lower. Care bundles may provide a more reliable measure of care quality than existing methods. However, the acceptability, feasibility and potential impact on clinical outcomes are unknown.

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IMPROVING ADMISSION PROCESSES FOR RAISING THE CUSTOMER SATISFACTION AND NPS (NET PROMOTER SCORE)
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Objectives: According to IPA (Importance Performance Analysis) based on 2011 children’s’ hospital satisfaction research, inconvenience in the process of admission is the first area that needs to improve:

1) The purpose of our QI activities was to examine the reasons why the check-out time of discharge and the waiting time for admission were delayed.
2) Also, we aimed to improve the previous discharge-notice rate by 80% and reduce the waiting-time for admission by 60 minutes.
3) Consequently, we expected that these activities would contribute to promoting the customer satisfaction level and the NPS (Net Promoter Score) level.
4) We also expected that the improvement of the admission and the discharge process would give nurses much satisfaction, so we examined nurses' working satisfaction related to the process in wards.

Methods: In our QI activities, we examined the reasons why the check-out time of discharge and the waiting time for admission were delayed. We used the self-developed investigation tools for our QI activities. In the preliminary investigation, we surveyed the rate of the previous discharge-notice, and the factors that increased the waiting time (these factors are caused by the relevant departments such as doctors, nurses, patients, administration staffs, pharmacists, clinical laboratory workers, insurance auditors, clean service). We either analysed pre and post data of the performance rate of the previous discharge-notice, current situation of the discharging and admission, the real waiting time for admission(from arrival in ward to entering a room), customer satisfaction, NPS score, nurses' working satisfaction. Pre survey period was from March to April, 2012 and post survey period was September, 2012. We used descriptive statistics and pre-post comparison statistics.

Results:
1) The rate of the previous discharge-notice has increased by 13% (real score was 72%).
2) Average waiting time for admission has decreased by 65 minutes, which exceeded the target value (60 minutes).
3) Customer satisfaction level about admission process has improved by 18.1 points.
4) NPS score has improved by 17.3 points.
5) On the other hand, nurses' working satisfaction with discharging process has decreased by 19.6%.

Conclusion: These activities upgraded the process of admission in a general hospital. The rate of the previous discharge-notice has risen, the waiting time for admission has been reduced, and customer satisfaction and NPS (Net Promoter Score) have improved. However nurses' working satisfaction about discharging process has decreased. The reason seems to be that they felt too much burden during the discharge process.
SETTING BENCHMARKING OF HOSPITAL RE-ADMISSION RATE BY MEASURING UNPLANNED HOSPITAL RE-ADMISSION RATE AS AN INDICATOR.

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Objectives:
1. To set the benchmarking rate of unplanned re-admission because high re-admission rate have long been considered as a marker of lower quality care
2. Data use to establish strategies to reduce the unplanned readmission rate.

Methods: Retrospective study conducted through data collection from January 2012 to March 2012.

Results: In January 2012, total inpatients were 1313 with 48 re-admissions. However, only 11 cases of unplanned re-admission which is 23% of the total re-admission and 0.83% of total inpatients. Five cases were re-admitted within 14 days and only 1 case re-admitted within 15 to 30 days.

For February 2012, total re-admissions were 64 including new born. Numbers of unexpected re-admissions were 7 cases where 3 cases were re-admitted with 7 days and 4 cases re-admitted within 14 days. No cases re-admitted within 15 to 30 days. It shows that the percentage of unplanned re-admission in February had decreased by 12% compared to the previous month. Percentage of unplanned re-admission of total inpatients (1329) in February was 0.5%

As for March 2012, total re-admissions were 60 including new born. Numbers of unexpected re-admissions were 7 cases where 5 cases were re-admitted within 7 days and 2 cases re-admitted within 14 days. No cases re-admitted within 15 to 30 days. Percentage of re-admission from the total in-patients (1379) in March was 12% and only 0.5% was unplanned re-admission.

The highest cases for unplanned re-admission were due to Bronchopneumonia (10 cases), followed by post-operative bleeding (3 cases), uncontrolled DM and uncontrolled Hypertension (both 2 cases), and one case each for Cellulitis, infected Diabetic foot, Ureter Colic, IOL, Anal fistula, Pyelonephritis, viral fever, Abdominal Colic

Conclusion: A closer understanding of reasons for re-admission is therefore necessary to reduce unplanned re-admission, identify patients who may be at high risk of re-admission and future planning to optimise resources available. This study had enable KPJ Seremban Specialist Hospital to know the rate of unplanned re-admission by comparing with the international benchmarking standard. By doing this the management will have some guidance on the standard of care delivered by this hospital. Re-admission rates can help to monitor the success in preventing, or reducing, unplanned re-admissions to hospital.

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CHANGES IN THE PATTERN OF PRESCRIPTION THROUGH KOREAN QUALITY ASSESSMENT OF MEDICATION FOR 10 YEARS

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Objectives: In Korea, the portion of pharmaceutical expenditure in national health expenditures is higher than OECD (1.6 times in 2008). In order to reduce misuse or abuse of drugs and encourage the proper use of drugs the Health Insurance Review & Assessment Service (HIRA) has assessed prescribing trends of the rate of prescription of antibiotics and injections and provided feedback on outcomes in medical institutions since 2001. In 2006, we disclosed the rate of prescription of antibiotics and injections of the total medical institutions. From 2008, we progressed interventions such as visit-consult to clinics. We also continued promotional activities through posters, radio and television. The aim of this study is to introduce the effectiveness of quality assessment of medication project for 10 years in Korea.

Methods: We analysed the medical service statement regarding bills submitted by medical institutions (n=40,520). The number of medical institutions analysed was as follows: 44 tertiary general hospitals, 275 general hospitals, 1,193 hospitals, 25,177 clinics, 12,316 dental clinics, 1,515 etc. The number of cases analysed was 6.84 million (in 2011).

Results: The rate of prescription of antibiotics for acute upper respiratory tract infection (AURTI) decreased by 25.7% from 73.3% in 2002 to 47.6% in 2011. The rate of prescription of injections also dropped by 18.2% from 38.6% in 2002 to 20.4% in 2011.

Conclusion: Pattern of prescription was changed and improved through quality assessment of medication. Especially, % change in clinics was the highest. However, the rate of antibiotics prescription, the rate of prescription of injections were still high in Korea. The Health Insurance Review & Assessment Service (HIRA) will also perform the Pay-for-Performance (P4P) project in association with the quality and costs of prescription in the future.
IN-HOSPITAL FALLS AND FALL INJURIES: WHERE, WHEN AND HOW DO THEY OCCUR?

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Objectives: The aim of this study was to assess the incidence of in-hospital falls and fall injuries occurring in the acute hospital setting and to explore the characteristics (where, when, how) of in-hospital fall injuries.

Methods: Data were prospectively collected as part of the 6-PACK falls prevention project1 between September 2011—June 2012, from 26 acute wards across seven hospitals in Australia. A review of all in-hospital fall events was conducted using a multi-modal method, to ensure complete case ascertainment. A trained data collector audited the medical records of all patients admitted to participating wards each day and obtained a daily verbal report from the nurse unit manager about falls known to have occurred within the previous 24 hours to record information about falls and fall injuries. Data were triangulated with falls recorded in the hospital incident reporting database. Details on fall characteristics such as time, day of week, location of fall, fall type, subsequent post fall investigations and procedures and the type of injury sustained was recorded. Characteristics of fall and injurious fall events were described using descriptive statistics.

Results: Of the 12,280 patients admitted to the participating wards during the observation period 557 were recorded as having an in-hospital fall. There were a total of 775 unique fall events, 218 injurious falls and a total of 305 injuries recorded. The proportions of falls resulting in an injury varied significantly across hospital wards. Of the 305 fall related injuries skin tears were the most commonly reported fall related injury (33%), followed by bruises (24%) and then grazes (14%). With 2% of all falls resulted in a serious injury (fractures 1.6% and head injury 0.8%). Falls occurred in the bedroom (67%), bathroom (19%) and other ward areas (14%). Bathroom falls more commonly resulted in injury and the majority of these were un-witnessed (69%). More than a third of injurious falls occurred in relation to toileting (40%), with nearly 70% of these reported as un-witnessed. Rolls out of a low-low bed were less likely to result in an injury (16%) compared with falls out of a standard bed (28%). There was found to be no difference in falls or fall injuries occurring according to the day or time of the week.

Conclusion: Falls in the acute hospital setting are common and often result in injury. The results from this study can be used to help drive practice change and further develop and target falls prevention practices within the acute hospital setting. Falls prevention programs that adopt interventions such as supervision of patients in the bathroom, toileting regimes and the use of low-low beds may be effective at reducing fall injuries.

USING DEXAMETHASONE AND CHLORPHENIRAMINE INJECTIONS AS TRIGGER AGENTS TO IMPROVE PREVENTION OF REPEATED KNOWN DRUG ALLERGIES IN A UNIVERSITY HOSPITAL

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Objectives: To improve prevention of repeated known drug allergies by using dexamethasone and chlorpheniramine injections as trigger agents to identify the drug allergy cases and input the information into the alert system of pharmacy software.

Methods: Patients who received both dexamethasone and chlorpheniramine injections from Off-hour unit, Emergency unit, Trauma unit and Social security services unit from October 2011 to September 2012 were identified and their medical records were reviewed by pharmacists to verify whether drug allergies occurred or not. Agreement of pharmacist’s verification with physician diagnosis cases were collected and harm categories by NCC MERP were recorded. The recorded cases were checked against the voluntary reporting system to evaluate the effectiveness of the available system.

Results: A total of 321 cases were detected, 75 drug allergies (23.4%) were identified. Sixty of the events (80%) were temporary harm to patients (category E). Six events (8%) required initial or prolonged hospitalisation (category F). Nine events (12%) required interventions to sustain life (category H). Forty-three of the adverse drug reactions (57.3%) were recorded promptly in the available alert system. The leftovers (42.7%) were done completely when we found from the trigger agents. Fifty-four cases (72.0%) were reported by physicians or nurses to the available system but 21 cases (28.0%) were not. The method used in the study could prevent more unreported cases from repeated known drug allergies in future.

Conclusion: The trigger agents can be used to detect drug allergy cases which are adverse events both reported and unreported. The limitation of this study was the selection of 2 trigger agents which patients received at the same time. If we selected only one agent, dexamethasone or chlorpheniramine injection, many cases of mild reaction might be found, but this study focused on the severe immediate type hypersensitivity reactions such as anaphylaxis and this method was proved effective to prevent repeated known drug allergies and provide more patient safety.
RECOVERY CARE GUIDELINES AFTER SEDATIVE ENDOSCOPY: FOCUSED ON FLUMAZENIL ADMINISTRATION AND DISCHARGE FROM THE RECOVERY ROOM

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Objectives: SNUH Healthcare System Gangnam Center (medical center for health check-up) has a high percentage of clients who undergo sedative endoscopy. To reduce clients’ discomfort and pain during endoscopy, our center pre-medicates clients with midazolam (benzodiazepine) for sedation and administers flumazenil to facilitate their awareness. But many clients complain degrees of dizziness or sedation after the procedure and need a longer waiting line for and readmission to the recovery room. So this study is aimed to establish guidelines for the proper use of flumazenil and standardise nursing care for discharge from the recovery room, thereby enhancing clients’ satisfaction after sedative endoscopy.

Methods: Our team composed of physicians and nurses in the endoscopy unit brainstormed about problems and found out that problems are the lack of standards for sedation level evaluation and guidelines for flumazenil administration. We developed post-sedation evaluation criteria and drug administration guidelines. When midazolam was injected less than 10 mg and a sedation level was -3 or -4 on the Richmond Agitation-Sedation Scale during the procedure, 0.25mg of flumazenil was given to clients’ right after procedure. Clients were discharged from the recovery room only when their Modified Aldrete score was 9 or more. For the clients who still did not recover enough from sedation, they were provided with more time in the recovery room and additional dosage of flumazenil. When the clients revisited Gangnam center for results later, they were interviewed on their satisfaction levels for the sedative procedures and the length of time it took to return to work. We compared the percentage of clients readmitted to and the length of stay in the recovery room before and after applying the new guidelines and analysed statistically by SPSS 19.0 for windows.

Results: We conducted pre-survey from January to April, 2012 and post-survey from July to September, 2012 on clients who were given flumazenil right after entering the recovery room when drug-administration guidelines are being applied. The percentage of clients who said ‘satisfied’ (including VERY SATISFIED and SATISFIED based on the Likert 5-point Scale) increased from 63.3% to 66.1%. Clients who said that they got back to work less than 4 hours later went up from 77.78% to 93.1%(P<0.01). The clients with less time to return to work showed higher satisfaction levels(r=-.417, P<0.01). The average length of stay in the recovery room decreased from 34.56 minutes to 26.73 minutes. The readmission rate to the recovery room due to sedative condition went down from 46.54% to 40%.

Conclusion: Clients were satisfied more and returned to routine earlier when standardised sedation-level criteria and flumazenil administration guidelines were applied. Furthermore, it is expected that the decrease in average length of stay in the recovery room would contribute to an efficient management of the endoscopy unit.
USING EVIDENCE-BASED PRACTICE TO IMPROVE VENTILATOR ASSOCIATED PNEUMONIA RATE IN MEDICAL INTENSIVE CARE UNIT

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Objectives: Ventilator associated pneumonia (VAP), a type of nosocomial pneumonia associated with mechanical ventilation, increases morbidity and likely mortality as well as the inpatient day and expense of health care, therefore, the reduction of incidence of VAP is critical. In 2009, the incidence of VAP at Medical Intensive Care Unit (MICU) in our institute was 3.96‰, higher than those in local medical centers and regional hospitals (1.10 to 1.84‰). To improve this to less than 2‰ or with a reduction of 50% of VAP incidence in MICU, we introduced a novel infection control method “VAP bundle care” into clinical practice.

Methods: Design: An intervention protocol was conducted to compare the incidence rates of VAP before-and-after implantation of care bundle.

Setting: A 24-bed adult medical intensive care unit.

Patients: All patients admitted to our setting for 48 hrs or more during the periods before and after intervention.

Interventions: A three-element ventilator-associated pneumonia prevention bundle, consisting of head of the bed elevated to 30°–45°; daily sedation hold and assessment of readiness to extubation, and oral hygiene care with 0.2% Chlorhexidine 3 times a day were introduced into clinical practice for the patients receiving mechanical ventilation support. All the care processes were documented on the checklist in all three nursing shifts.

Results: Through January 2010 to November 2012, a total of 1089 patients were admitted to our setting, with mean age of 72.2 ± 17.1 years, with a total of 23771 patient-days and 14507 ventilator-days. The VAP rate was 3.74 /1000 ventilator days in 2010, and significantly reduced to 1.98 in 2011 and 1.20 in 2012 (P=0.032<0.05), respectively. Alternatively, the VAP rate was improved by a reduction of 47% after introduction of VAP bundle care in our setting. Furthermore, the average of ventilator-days for a patient reduced from 42.2 ± 37.0 to 40.9 ± 21.9 days after introduction of VAP bundle care. Additionally, most frequent pathogens found were Acinetobacter baumannii (34.3% of all isolates) followed by, Pseudomonas aeruginosa (17.1%), Klebsiella pneumonia (14.3%) and Staphylococcus aureus (8.6%).

Conclusion: We find that introduction of VAP bundle care into daily clinical practice significantly improved the VAP rate in medical ICU and suggest this might be applied to all intensive care units.
SAFETY STEPS: VALIDATION OF A CHECKLIST-DRIVEN TOOL FOR CREATING ACTION PLANS FOR ADVERSE EVENTS

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Objectives: Adverse events continue to occur in hospitals despite root cause analysis and action plans. Similar events tend to recur over time, suggesting that prior action plans were either not robust or were not implemented properly. The objective of this initiative was to develop a checklist-driven tool that can be used to develop more robust action plans that are based in safety science.

Methods: Review of the literature from healthcare and other high-risk industries was conducted to identify key themes in safety and accident prevention. Internal root cause analysis and action plans from prior events were reviewed. A tool incorporating the key themes from the literature and lessons from prior events was developed: The SafetySteps tool includes 5 categories of actions:

1. Manage hazards,
2. Address human factors,
3. Redesign process and systems of care,
4. Use administrative controls, and
5. Manage organisational learning, accountability and cultural norms.

Each set of actions was assigned a score ranging from 10 points to 30 points -- an action plan including interventions from each category would have a maximum score of 100.

The tool was prospectively applied to events and revised to its final form. The final version of the tool - SafetySteps - was validated by two independent clinical reviewers against publicly available reports of adverse events and action plans. The tool also was applied to selected types of adverse events.

Results: Two independent reviewers evaluated the events with action plans similarly. The SafetySteps checklist was applied to action plans for recurrent events including retained objects after surgery, mechanical complications of central venous catheters and shoulder dystocia. These previously frequent events (multiple times a year) have not occurred for more than 12 months.

Conclusion: A structured and systematic approach to developing action plans is essential to prevent recurrent events causing harm to patients. A checklist-based tool based on safety science was developed, validated and applied with success.
REDUCING NEAR MISS WITH INFORMATICS AUTOMATION OF MEDICATION PROCESS IN PHARMACY OF SOUTHERN TAIWAN MEDICAL HOSPITAL

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Objectives: To eliminate near miss error in pharmacy we develop many informatics automatic system replace traditional manual process and based on analysis of medication error of three years in Southern Taiwan Medical Center.

Methods: A proactive thorough analysis of medication process. Which medication error we found the critical process in wrong medication order, physician order entry errors, pharmacy dispensing errors, transmission errors and medicine issue error by human. So we implement some informatics automation process such as Inpatient, outpatient and emergency medical administration system about medication guideline, nurse care CPOE system, control antibiotic using system, Drug allergy Note system, Lowest and highest dose limits warning system, Medicines appearance identification cum formulary query system and Chemotherapy drugs specific dilutions warning system from 2010 to 2012. Total medication prescriptions were reviewed from Jan 2010 to Dec 2012. Among these episodes, it was done in 1,510,390 (2010), 1,620,284 (2011) and 1,623,236 (2012).

Results: The preliminary report showed the improvement of informatics automation in clinical medication. After implementation of medication informatics automation from 2010 to 2012, we did the pilot performance evaluation the performance. There were 4129 near miss errors in 2010, 3367 near miss errors in 2011 and 3481 near miss errors in 2012. We reduce the incidence of medication near miss errors by human about MD, nurses and pharmacists. Informatics automation system can eliminate the potential risk of hazard score from 0.27% decreasing to 0.21%.

Conclusion: Pharmacy informatics automation is a useful tool to reduce the near miss errors which would be potential serious medication errors due to many critical manual steps caused by human. Further study is warranted.

References:
TEAM RESOURCE MANAGEMENT IN COMBINATION WITH STRUCTURED ELECTRONIC INFORMATION SYSTEM IMPROVES THE QUALITY OF MULTIDISCIPLINARY INFORMATION SHARING AND HANDOVER IN CARDIOVASCULAR SURGERY INTENSIVE CARE UNIT

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Objectives: Patient handover following cardiovascular surgery involves a multidisciplinary team and a critically ill patient, which causes multiple cognitive demands for the treating team, carrying an increased risk of information error with potentially clinical hazards. To improve the information transfer and multidisciplinary team cooperation, we combine the team resource management and structured electronic information system to create timely and accurate information sharing.

Methods: Since March 2011, a change team formed in our ICU to make sure the consistency and accuracy of handover and cognition of patient information to improve patient safety. We investigated the most frequently encountered problems regarding to information between different medical professionals and handover in the ICU using questionnaire. After confirmation of the main problems, we used team discussion and matrix analysis to figure out the most feasible and effective way to improve process of practice. Practicing team resource management with emphasising on the leadership and communication domains was decided. In October 2011, we constructed a structured electronic information system using the SBAR (situation, background, assessment, and recommendation) configuration to integrate the inputs from every professional in the same page in order to facilitate the documentation and communication. Check-back was encouraged if any unclear or incoherent information was found. Physicians, nurses, pharmacist, respiratory therapists, physical therapists, nutritionists, and social workers were all included in the information provision. As a team leader, physicians were asked to view SBARs from all team members and give response. Physician specialists in intensive care unit used brief-huddle-debrief technique in daily team rounds. Other tools such as two-challenge and cross monitoring were encouraged. Questionnaires concerning staff perception of the quality and consistency of handover, teamwork climate, and patient safety cognition were used before and 3 months after the change. The number of adverse events related to inadequate handover was recorded. The rate of physician response to information provided by other professionals was measured. The data were analysed using chi-square test for dichotomous variables and t test for continuous variables.

Results: The use of electronic information system did not cause much inconvenience to all fields of professionals and was rapidly incorporated into their daily activity. Since the ease of use and the convenience of obtaining information provided by other professionals, the electronic information system became widely used in all ICU in our hospital since January 2012. Three months after the execution of the system, the staff perception of the handover quality increased from 50% to 100% and the consistency of handover increased from 40% to 98%. The perception of teamwork climate increased from 73% to 95% and the patient safety cognition increased from 80% to 100%. No adverse event was recorded in relation to inadequate handover. The rate of physician response to information provided by team members was 100%, which remained 99.2% in the following year. Additional benefit from the promotion of team resource management was the reduction of resignation rate from 16.8% to zero.

Conclusion: Implementation of team resource management and use of structured electronic information system based on SBAR format improves the communication between multidisciplinary team member and the culture of cooperation as well as patient safety.
EVALUATION OF MEDICAL STAFFS’ FEEDBACK ON USING UPTODATE® AS A DEPARTMENTAL WEB-BASED POINT-OF-CARE CONSULTATION SUPPORT

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Objectives: The Medicine & Geriatrics Department (M&G) of NTW Cluster (NTWC) of Hong Kong decided to use UpToDate® as a departmental web-based point-of-care consultation support for the year 2012. After subscribed by departmental funding, it was accessible by all computer stations in the M&G wards through Hospital Authority intranet department website 24 hours every day. UpToDate® is an evidence-based, physician-authored & extensive peer-reviewed (more than 5100 authors & reviewers worldwide) clinical decision support resource for clinicians to make the point-of-care decisions. The most recent medical information is put into evidence-based recommendations with full references. It provides information on over 9500 clinical topics in 20 specialties, covering all subspecialties in internal medicine. It also covers Surgery, Oncology, O&G, Paediatrics and Psychiatry.

Objectives:
After one year of subscription, we wish to review the usage pattern and feedback from medical staffs on its clinical usefulness

Methods: In January 2013, survey forms (e-mail & hard copy) were sent to all 117 medical staffs of the department. 54 (46.1%) valid replies were received. The usage information of 2012 was also updated.

Results: The hit rate of UpToDate® steadily rose across the year, the highest being 495 hits per week. It was mainly used for patient management & consultation, followed by preparing presentation & knowledge update.

➢ 72% - it changed the choice of diagnostic testing
➢ 87% - it changed patient management
➢ 95% - it improved patient care
➢ 96% - it updated medical knowledge
➢ 73% - used it twice or more per week
➢ 93% - preferred it to other available clinical knowledge resources
➢ 94% - satisfied or very satisfied as a clinical knowledge resource
➢ 96% - department should continue to provide access to it

The costing per hit was estimated to be US$0.66 by using Jan13 data.

Conclusion: UpToDate® was a welcomed web-based clinical reference for M&G clinical service with acceptable costing. It formed the cornerstone of promoting evidence-based medicine in our practice. It is worthwhile to explore the provision of similar web-based point-of-care reference at territory-wide level.
RISK ADJUSTMENT OF THE OPERATIVE MORTALITY FOR STOMACH, COLON AND LIVER CANCERS
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Objectives: We developed the risk-adjusted model for the three prevalent cancers including stomach, colon and liver and compared operative mortality with risk-adjusted operative mortality by hospital types.

Methods: We collected data from the Health Insurance Review and Assessment Service (HIRA) and analysed stomach, colon and liver cancer operations that were performed between January 1, 2010, and December 31, 2010. Patient risk factors include age, gender, operation type, emergency operation, ASA class, BMI, Charlson Comorbidity Index (CCI), cancer staging (excluding liver cancer), MELD (model for end-stage liver disease) score[1] and etc. Here, the outcome variable is the mortality rate of operation (in-hospital and post-operative 30 days). Risk-adjusted models for all cancer were developed using Multivariable logistic regression. C-statistic and Hosmer-Lemeshow test were used to evaluate the performance of the risk-adjusted model.

[1] MELD score=10[0.957ln(creatinine)+0.378ln(T.bilirubin)+1.12ln(prothrombin time)+0.643]

Results: We analysed 39,180 operations performed at 302 hospitals. Operative mortality was 0.92% for stomach cancer, 1.63% for colon cancer and 1.88% for liver cancer.

C-statistic (more than 0.8 for all of the cancers) and Hosmer-Lemeshow test at the 5% level of significance showed that the model performance was good.

After risk adjustment, hospitals that operative mortality was greater than upper confidence limit were 2-3 (5.1-6.9%) in Tertiary hospital and 4-11 (13.3-17.4%) in General hospital.

Table Risk-adjusted result of operative mortality

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*Hospitals containing less than 10 operations were omitted.

Key:
- below: mortality < 95% lower confidence limit
- between: Lower confidence limit ≤ mortality ≤ Upper confidence limit
- above: 95% Upper confidence limit < mortality

Conclusion: We reported risk adjusted result to monitor surgical services and provided a means for potentially improving the quality of surgical care.
PATIENT SAFETY CLIMATE SURVEY- A PERSPECTIVE FROM A PRIMARY CARE SETTING IN SINGAPORE
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Objectives: Identifying inadequacies in different aspects of patient safety issues among healthcare workers is an important step in improving overall patient safety and clinical quality. In order to achieve the aim of improving overall patient safety, we performed a study to compare the patient safety culture among our healthcare workers between surveys performed in 2007, 2009 and 2012.

Methods: We conducted the patient safety climate (PSC) survey in 2012 across nine National Healthcare Group Polyclinics and Headquarters, by using a standard format of PSC Survey Form as per 2007 and 2009. The questionnaires focused on six important aspects, namely the work environment, supervisors, communications between team members, frequency of incident reporting, patient safety grading and staff background information. A non-punitive policy was emphasised for the survey.

There were 1313 respondents in 2012, with response rate ranging from 77\% to 95\% among the different polyclinics and headquarters. From the data gathered, comparison was being made between the 3 different years of survey and statistically significant results were identified.

Results: Statistically significant results are as shown:

Strengths (Areas of improvement since 2007)
- More respondents agreed that they treat each other with respect in their unit.
- The proportion, who disagreed that staff work longer hours than is best for patient care, has increased.
- A rising trend is seen in the group who reported that they are given feedback about changes put into place based upon event reports.

Potential areas of improvement
- The percentages of respondents in 2012 who reported that there is enough staff to handle the workload are less than those in previous years.
- A decreasing trend is seen across the period in the group who disagreed that they use more agency/temporary staff than is best for patient care although not much is changed between 2009 and 2012.
- The percentages of respondents in 2012 who reported that they evaluate the effectiveness of changes after they have made changes to improve patient safety are less than those in previous years.
- A decreasing pattern is seen in the proportions of respondents who reported that their procedures and systems are good at preventing errors from happening.
- The proportion of respondents in 2012 who reported that their supervisors seriously considered staff suggestions for improving patient safety is less than those in previous years.
- Fewer staff disagreed that their supervisors overlook patient safety problems that happen over and over since 2007.

Conclusion: High participation rate in the survey, together with a strong non-punitive culture, provided us with strong and reliable indicators of our patient safety culture. By utilising the data obtained, we have been able to target specific area in our patient safety improvement programs, by fully leveraging on our advantage of knowing and understanding our area of weakness in patient safety culture. We have been successful in incorporating the results into our Primary Care Safety Walkabouts. From the data available, we were able to drill down to specific groups of staff in individual clinics, thereby allowing us to be more effective in our interventions. The results available also enable us to plan more strategically in the formation of our Patient Safety Training Curriculum, targeting areas of weakness and building on our strengths. In summary, by organising and analysing data from systematically conducted PSC Surveys will enable healthcare institutions, including Primary Care Centres, to better plan and execute patient safety improvement programs, which will subsequently lead to improved patient overall safety outcomes and clinical quality.
IMPROVEMENT WORK-EFFICIENCY THROUGH APPLICATION OF TOPICAL ANESTHETIC CREAM
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Objectives: In SNUH Healthcare System Gangnam Center, a major medical check-up center, most clients experience venous sampling or intravenous (IV) catheter insertion for drug injection for endoscopy or CT scan. To lessen related pain or anxiety, our center applies topical anaesthetic cream for clients at the first examination room. But improper application of the cream has also caused clients’ complaints and decreased staff’s work-efficiency. This study is designed to develop measures to prevent improper application of topical anaesthetic cream and enhance satisfaction of internal and external clients.

Methods: Our team composed of radiologic and laboratory technicians brainstormed cream-related problems and identify problems and their solutions. Frequent problems were that cream was skipped in the first place, was applied in improper sites or in an insufficient amount. To solve these problems, several improvements were developed:

1) To ensure cream application, another check box was added on examination checklists for double-check by a co-staff.
2) To find exact vein sites, a tourniquet was recommended and replaced by new button-typed for a convenient use.
3) When it was hard to find proper application sites for a client at the first exam room, a more-experienced staff was immediately called from nearby rooms like laboratory, CT, or endoscopy unit.
4) Any special comments on IV routes were recorded in detail on computer for use at the client’s next visits.
5) For the continuity of quality care, regular education for new staff continues in the next year. We compared several parameters after activity by number of report and satisfaction survey.

Results:

1) After improvements (9.19~29, 2011), cream-related problem was reported 57 cases (6.1%) out of 928 clients compared with 153 cases (13.6%) of 1,124 clients before the improvements (5.4~21, 2011). In detail, application on improper sites decreased from 84 (7.5%) to 35 (3.8%), omission from 44(3.9%) to 13(1.4%), and insufficient-amount from 19(1.7%) to 2(0.2%).
2) Staffs who apply the cream (at the first exam room) were surveyed about the improvements. 53.5% said education program helped their work, and 36.7% said new guidelines did. Their satisfaction was rated high on 5-point scale. Staff education scored 92 point and guidelines got 88 point on average, adjusted for 100 points.
3) For post-care activities, more details were recorded about cream application and IV routes of clients. 72 cases in 2012 were input compared with 12 of the previous year, six times higher during the same period. The content was more specific as well.

Conclusion: Staff’s work performance and work satisfaction improved significantly through better application of the cream. Moreover, this activity became an opportunity to re-establish other relevant work protocols. New guidelines and staff education reduced problem occurrence while increasing work-efficiency. Staff education will be more strengthened in the future and electronic records on IV routes will be used to satisfy clients who revisit Gangnam center.
IMPROVE THE COMPLETION RATE OF PHYSICIANS’ DOCUMENTATION ON INPATIENT CRITICAL VALUES USING QUALITY CONTROL CIRCLE METHODS
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Objectives: Improve effective communication is the key to achieve patient safety goals. Specifically for critical clinical data, timely, accurate, and complete reporting should be tracked and monitored to confirm the abnormal critical values or inspection reports are received, once reported. The tracking mechanism also provides the clinical data to be used in subsequent medical management for the patients, and recorded in the patients’ progress note. This study is to improve the completion rate of physicians’ documentation on inpatient critical values using Quality Control Circle (QCC) methods.

Methods: The Quality Control Circle consists of multidiscipline members, including physicians and staffs of Quality Management Department. Three categories of critical values reporting are laboratory, pathological, and radiological reports. The QCC team conducted monthly chart review on the 10-15% of inpatients who have reported critical values. As the base line, the average completion rate of physicians’ documentation on inpatient critical values was 51.3% between August and November 2011. The target rate was set as 70.0%, a 40% improvement of the base line rate. Through fish bone and Pareto charts to conduct cause analyses, the QCC team discovered that 81.7% of the main factors include handled but forgot to record it, the condition of the patient rapidly changing, and follow-up and observation.

Results: The completion rate had been improved from 45.0% in August 2011 to 73.8% in December 2012. During the study period, the QCC team standardised and revised the Procedure for Critical Values, unified the documentation of critical values on the progress note, provided three training courses to a total of 280 physicians, promoted the procedure through computer desktop, and regularly reported the chart review results to the Medical Quality and Patient Safety Committee and related departments. As a result, the average completion rate was 71.0% after the interventions, compared to the base line rate of 51.3%. The target was met with a 38% improvement and a 101% accomplishment rates.

Conclusion: “Effective communication” can not only provide timely treatments to patients, but also prevent possible patient safety issues. In order to continuously improve quality of care and patient safety, the QCC team is planning to utilise the Electronic Medical Record (EMR) system, add notification for critical values documentation, and include the notification and response from the Critical Values Messaging App.
THE IMPACT OF CARDIOLOGY NURSE-LED CLINIC ON CARDIAC CARE SERVICES IN QUEEN ELIZABETH HOSPITAL OF HONG KONG
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Objectives: To evaluate the impact of Cardiology Nurse-Led Clinic on cardiac care services

Methods: Patients with fluctuating (warfarin overdose/ under dose) INR, confirmed with heart failure by echocardiogram or with PCI done, were referred from SOPC (specialist out-patient clinic)/ in-patient. Assessment, education and counselling would be provided to patient individually. Medication would be titrated according to protocol endorsed by our cardiologists if necessary. After stabilisation, patients would be referred back to SOPC/ GOPC (general out-patient clinic) for follow up.

Results: Anti-coagulation (April 2009- December 2012): 4844 patients were referred. 14582 INRs were recorded and 80.2 % INRs taken were within +/- 0.5 limit of therapeutic range. According to the British Society of Haematology guideline, all results have achieved the international key performance indicator (≥ 50 % within 0.5 limit of therapeutic INR range). 33 patients (0.7%) were hospitalised for warfarin overdose due to poor drug compliance or co-morbidity. The mean patient satisfaction level is 9.17 (10 is the highest). Average 3 bed days were required for warfarin titration in the past, 4844 avoidable admission with 14532 in-patient bed days were saved.

CHF (September 2010- December 2012): 154 patients (mean age 65.42 +/- 12.11) confirmed with heart failure by echocardiogram (ejection fraction 35.5 +/- 15.3%) were referred to our clinic. The 1 year readmission rate and length of hospital stay related to CHF were significantly reduced from 1.24 to 0.07 times and 9.84 to 0.33 days respectively (p<0.001). These patients perceived better physical and mental health status by using SF-12 (quality of life) (P< 0.001). They also complied with healthier diet and had good drug compliance (p< 0.001). The mean patients satisfaction score is 9 (10 is the highest).

Post PCI (March 2011- December 2012): 369 patients were referred. LDL was significantly decreased from 2.65 to 2.04 (p< 0.001), which was recognised as the single most effective strategy for reducing cardiovascular events. The diet compliance and adherence to dual platelet are also significantly improved (p<0.001) after discharged from the clinic. The mean patient satisfaction score is 9 (10 is highest).

Conclusion: Process of care should be shifted from specialty-centred to patient-centred. The Cardiology Nurse Clinic has shown to be safe and effective to empower patients to take part in the care of their own health. It not only extends the boundaries of the traditional nursing role but also prevents avoidable admission for relatively stable patient and shortens their length of stay.

Future directions:
With the extension of the role of nursing practice as case managers, nurse-led services can be further expanded to accommodate more complex patient subgroups.
DEVELOPMENT AND EVALUATION OF INFORMATION TECHNOLOGY FOR PATIENT CENTERED CANCER CARE
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Objectives:
Information Technology (IT) system utilising mobile phones and other smart devices is becoming more prevalent for cancer patient care. The purpose of this study is to structure development and evaluation of IT system designed for the patient centred cancer information and education.

Methods:
To develop a customised educational system for the cancer patients at a university hospital, an IT system composed of the Smart Guide, mobile phone Application, and internet website are established since 2011 March. The Smart Guide is a touch screen kiosk and it is connected to the electronic medical records (EMR). Synchronization between EMR and the Smart Guide allows the patient to log-in using their patient registration number and to receive any personalised cancer information that is related to their particular cancer type. Mobile Phone Application refers to the “My Cancer Information”; it’s a mobile phone application (App) that can be used in both iOS and Android system. This App is composed of 4 functions; general cancer information, multimedia on cancer examination and treatment, which is classified according to 34 kinds of cancer, integrative cancer care information, and QR code reader. This App also has a button linked to the website of Cancer Education and Information Center (CEIC).

The website provides personalised cancer information upon user’s input of the type and the stage accurate to their cancer. All of the selected information is presented in a page. We have surveyed 212 patients, only patients with breast cancer, in order to minimise the variance caused by different types of cancer, at this university hospital in 2012 August to October regarding these IT systems we described above on the usage and satisfaction rates measured in 5 point Likert.

Results:
1. Participants involved in this study were on different stage of their care; 35.56% in follow up care, 27.11% on-going chemotherapy and 16.44% in operating stage. For 39.15% of the patients less than 1 year passed after the diagnosis, and the mean duration after diagnosis was 43.88 (±57.30) months. The mean age of patients was 51.50(±9.27) years. Most of them (92.45%) were high school graduates or above and 83.01% of patients were married. Their average monthly income was 4,401 US dollars.
2. Among the breast cancer patients who responded when asked whether they have used the cancer information provided by the IT system at this hospital, 64 patients (30.19%) used the Smart Guide, 34 patients (16.04%) used the mobile phone application “My Cancer Information”, and 79 patients (37.26%) used the website of CEIC. In comparison, 143 patients (67.45%) used leaflets of this hospital and 140 patients (66.04%) sought individual counselling from this hospital staffs to satisfy their needs for cancer information.
3. The satisfaction rates of the IT system for the access to cancer information at this hospital were the following from the results: 3.41 points (equivalent to 68.2 out of 100) for the Smart Guide, 3.06 points (61.2 pts) for mobile phone application “My Cancer Information,” and 3.54 points (70.8pts) for website of CEIC. In comparison, the satisfaction rate of leaflets of this hospital was 3.68 points (73.6 pts), and the satisfaction rate of individual counselling from this hospital staffs was 3.72 points (74.4 pts).

Conclusion:
Although various IT have been developed and applied to provide customised information for cancer patients, the usage of IT is not properly high and the satisfaction rates of the users remain at the average level. Therefore, more effort needs to be made to allow patients to easily access high-quality personalised cancer information.
NEW PARADIGM IN MANAGING PATIENTS WITH CHRONIC ILLNESS THROUGH PATIENT ENGAGEMENT
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Objectives: The shortfall of healthcare workforce requires a rethink of prevailing models for delivering care to patients with chronic disease. A chronic disease patient needs to be taken care by a multi-skilled team of healthcare professionals with support from specialist. We need to explore new collaborations to deliver multidisciplinary healthcare for handling chronic disease patients and evaluate these for patient outcomes and cost effectiveness. We have set up a patient group, “The Better Breather Club” for patients with chronic obstructive pulmonary disease in Tai Po in 2011. This support system provides an opportunity for chronic lung disease patients and their families to meet regularly and render mutual support among themselves. Through the gatherings, they could know more about their health condition from concerned health care professionals in a supportive environment. We identify the high risk chronic disease patients in the patient group and provide medical support especially during winter surge or before long holidays so as to reduce avoidable hospitalisations.

Methods: High risk patients with ≥ 2 emergency room attendances or hospital admission for COPD exacerbations per year or Gold Stage ≥ 2 with co-morbidities or high symptoms scores were recruited from the patient group. They were then assessed in Comprehensive Day Rehabilitation Center.

We provide integrated care to COPD patients, including:
1) Comprehensive intervention;
2) Introduction of a self-management education programme;
3) Individually tailored care plan; and
4) Enhanced accessibility to healthcare professionals.
5) Regular phone contact by volunteers and clerical staff of the Club to member patients during winter surge and before long holiday.

Results: We have recruited 140 patients with chronic obstructive pulmonary disease to join the Better Breather Club. We have identified 76 high risk patients (11.8% female) with poor lung function (75% with stage 3 or 4), co-morbidities (93%), or poor social support as all of them are prone to repeated hospitalisation. Their mean age is 72 years old (49-89). 64.5% of the patients have completed pulmonary rehabilitation program. 35.5% of them have received treatment with home O2 and 20 patients have been referred for home non-invasive ventilation.

We have analysed 30 patients with quality of life questionnaires including St. George Respiratory Questionnaire and SF 12 after intervention for 12 months using integrated care pathway. Greater improvement in the activity scores and symptom score were observed in some patients in the intervention group at 12 months intervention.

Conclusion: The integrated care approach is ideally suited to provide management of chronic illness, such as COPD. We provide education and community support for respiratory patients as well as caregivers of those coping with breathing problems.
PATIENT SAFETY CULTURE OF DEPARTMENTS AT JAPANESE HOSPITALS
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Objectives: Patient safety culture (PSC) attracts a growing interest in improving safety and quality in healthcare. Little is known about the characteristics of PSC in each department. The aim of this study is to clarify the characteristics of PSC in each department of Japanese hospitals.

Methods: A cross-sectional study was conducted at 18 hospitals in 2012. Questionnaires were distributed to all healthcare workers (n=12,076). For evaluating the PSC, we used the questionnaire of Hospital Survey on Patient Safety Culture developed by the US Agency for Healthcare Research and Quality (AHRQ). The questionnaire has 44 items and 12 sub-dimensions of PSC.

For each sub-dimension, the proportion of positive responses (per cent positive score) was calculated on the instructions of AHRQ for every respondent. The per cent positive scores of each department were calculated by taking the mean of per cent positive scores of respondents who belong to the department. The departments were categorised into 16 types such as “General ward”, “Outpatient department”, “Pharmaceutical department” and “Operation department”. Cluster analysis was used to categorise the departments according to the per cent positive scores of 12 sub-dimensions. Generalised linear mixed model (GLMM) was performed to clarify the characteristics of department’s type by using the results of cluster analysis.

Results: A total of 9,124 (75.6%) respondents completed the questionnaire, and valid data of 8,700 (72.0%) were analysed. Each participated hospital had departments ranging from 7 to 77, and the total number of departments in 18 hospitals was 440. Each department had 5 to 115 respondents, and the median was 17.5 respondents. Among the respondents, physicians were 9.2%, nurses were 46.4%, administrative workers were 14.4%, and the others were 30.0%. According to the per cent positive scores of 12 sub-dimensions, 440 departments were classified into 2 clusters: “Superior culture” departments (n=184), and “Inferior culture” departments (n=256). All of per cent positive scores of “Superior culture” departments were significantly higher than those of “Inferior culture” departments. The result of GLMM revealed that the odds ratios to be “Superior culture” departments were significantly high at “Obstetrics and gynaecology ward, perinatal ward, or NICU” (OR=9.7), and significantly low at “Long term care ward” (OR=0.2), “Rehabilitation department” (OR=0.2) and “Administration department” (OR=0.3).

At “Superior culture” departments, the proportion of respondents who participated more than one in-house training of patient safety during one year before the survey was significantly higher than that of “Inferior culture” departments (75.7% vs. 65.5%, P<0.01).

Conclusion: Our study suggested that types of departments were related to PSC scores. PSC was highly evaluated in “Obstetrics and gynaecology ward, perinatal ward, or NICU”, and it was evaluated low at “Long term care ward”, “Rehabilitation department” and “Administration department”. Factors contributing to “Inferior culture” and possible countermeasures for them should be investigated.
EFFECTIVENESS OF PROMOTING POLICIES OF QUALITY INDICATOR MANAGEMENT TO IMPROVE THE CATHETER RELATED SAFETY CARE IN HOSPITAL-WIDE ICUS OF A MEDICAL CENTER IN SOUTHERN TAIWAN

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Objectives: The essence of medical care itself is highly complicated and uncertain. There was persistent reporting of medical adverse events in various countries all over the world in recent ten years. Especially, during the process of offering emergent and intensive care, artificial tubing incident may lead to the death of patient immediately or severe disability, as well as prolonged length of stay in the hospital and iatrogenic complications. Thus, reducing device utilisation, risk of device-associated infections, and unplanned extubation were one of the annual goals of patient safety of Department of Health in Taiwan in 2008. Kaohsiung Medical University Hospital (KMUH), a medical center with 1700 beds, including 11 intensive care units (ICUs) and 120 beds in ICUs, is located in southern Taiwan. In 2009, on an average, the nosocomial infection rate was 10.2‰; ventilator associated pneumonia was 3.57‰; symptomatic indwelling urinary catheter-associated UTIs was 4.92‰; central line-associated bloodstream infections was 5.18‰; Unplanned extubation rate of endotracheal tube was 0.6%. All of the above are higher than those in peer medical centers of Taiwan. Therefore, the implementation of this project was to improve the device safety in ICUs.

Methods: The aim of the project was to reduce the infection rate and unplanned extubation rate by promoting policies of quality indicator management in the hospital-wide ICUs, which including the strategies of:
1) Reintegrating the procedures of data collection for quality indicators,
2) Authorised personnel for date collection,
3) Formulating the mechanism of PDCA,
4) Using control charts of SPC for data analysis and regular monitoring of the indicators,
5) Setting up “the outcome bulletin board of indicators” by applying the concept of “traffic light-red, yellow, green” as a symbol of notice in ICUs, which help identify the exact timing of the PDCA cycle, and
6) Establishing outcome-oriented indicators for monitoring quality of care.

Results: From year 2009 to year 2012, the average nosocomial infection rate in the ICUs was decreased from 10.20‰ to 6.00‰; ventilator-associated pneumonia was dropped from 3.57‰ to 1.21‰; symptomatic indwelling urinary catheter-associated UTIs was dropped from 4.92‰ to 2.13‰; central line-associated bloodstream infections decreased from 5.18‰ to 4.46‰. Furthermore, unplanned extubation rate of endotracheal tube was reduced from 0.60‰ to 0.31‰. All of the above were lower than those in peer medical centers of Taiwan.

Conclusion: By implementing the policies of quality indicator management, the communication across the healthcare team and the catheter related safety care were improved effectively and progressively in hospital-wide ICUs. Hopefully, the policies of indicators monitoring from the instant dashboard notice will be established, and be applied to the management of other medical relative indicators in the future, such as restrained rate and unplanned ICU readmission within 48 hours, in order to promote the quality of care in ICUs.

ACTIVITIES FOR THE IMPROVEMENT OF CUSTOMER SATISFACTION THROUGH THE ROLE EXPANSION OF INFORMATION SPECIALIST NURSE
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Objectives: Providing information to patients and their families is getting more important in terms of patients’ rights and customer satisfaction (CS) in the rapidly changing medical environment. However, SNUH was not in a position to provide sufficient information to outpatients due to a heavy workload of clinicians, nurses and other medical professionals. The purpose of our QA activity is to improve customer satisfaction by expanding the role of information specialist nurses (ISN) and by creating ISN stations independent from the other nurse stations.

Methods:
1) A questionnaire on CS and information service was collected from patients before and after the expansion of ISN service and was analysed.
2) Customer complaints related to the information service were analysed.
3) Treatment processes at the surgical department were analysed.
4) Conferences were held for nurses and other staff to identify areas on the basis of treatment process, where information needs to be provided more effectively.
5) Visitors to the ISN stations were analysed.
6) Materials used for providing information were reviewed by the departments.
7) Expected demands of the ISN’s roles were identified through meetings with clinicians.
8) Interim results of the information service were shared periodically with other medical departments at CS seminars.
9) Daily-work reports of the ISN stations were recorded, including numbers of visitors.
10) Meetings were held with the staff at the Medical Information Service Center for a possible statistical program.

On the basis of our assessment results, we carried out the following strategic activities to improve customer’s satisfaction:
1. Creating ISN stations.
2. Establishing a procedure for providing information based on surgical treatment process.
3. Following up customers’ complaints and demands by administering in-hospital questionnaires on CS,
4. Implementing activities to equip ISNs such as initial training and periodic education and conferences,
5. Promoting the ISN stations’ services and the locations on the hospital map with the installation of POP
7. Flagging up the information service for new visitors: placing a guide banner for first-time patients and sending SMS messages,
8. Developing information materials: Q&A for representative and commonly occurring diseases,
9. Devising the ways to foster cooperation between ISNs and clinicians,
10. Educating the nursing staff
11. Developing a daily ISN job log and developing a statistical program.

Results:
1. Extended ISN stations have been established.
2. Tailored-made information is provided based on the relevant treatment process.
3. ISN’s job description has been standardised.
4. The satisfaction score of the ISN service was improved in a statistically significant way from 85 to 89 (p<0.05).
5. An improved response manual and new information materials have been developed.
6. The number of visitors to the ISN stations increased by 35% from 5,207 to 7,078. The number of first-time and second-time visitors increased by 83% from 1,407 to 2,579.
7. The number of visitors per ISN increased from 35 to 50, showing an average 46 visits/day/ISN.

Conclusion: The results of the QA activities at SNUH show improved CS in the ISN service and an increased number of visitors to the ISN stations. They are attributed to the creation of the independent ISN stations along with the expansion of ISNs’ roles and all staff members’ cooperation in providing high quality service to patients. Given the meaningful result, best possible service by ISN system needs to be expanded along with the correction for customer-oriented services and all medical staff’s empowerment for CS.
USING CLIENT’S EXPERIENCE TO IMPROVE QUALITY OF MEDICAL SERVICES IN A COMMUNITY HOSPITAL IN HONG KONG

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Objectives: Interpersonal-based service encounters will affect the trust of the patients on our service and their satisfaction. It is important for the service provider and the customers to understand the need of each other. To examine client experience using patient satisfaction survey and group interview in order to improve quality of patient care.

Methods: We collected information from two channels:

1) Patient satisfaction survey was done for in-patient discharges;
2) Information was gathered through face-to-face interviews with representatives from patient groups regarding effectiveness, safety and patient orientation

Results: Data were collected from 2,437 in-patient respondents including medical, paediatrics, orthopaedics, psychiatry and mixed surgical ward of a community hospital using standard opinion survey from 1 Jan 2011 till 31 Dec 2012. The average percentage in rating “good” or “very good” was demonstrated in following aspects:

1) Provision of adequate information was 86.9%;
2) Staff performance was 94.7%;
3) Hospital facilities and environment was 85.5%;
4) Overall evaluation was 90.7%.

Besides, we had received 980 written appreciations regarding staff and hospital services from the opinion survey. 191 suggestions for future improvement were also received from the survey regarding hospital facilities, catering service, staff attitude and clinical management.

We held focus group interviews with 27 patients who were representatives from 3 patient support groups servicing 920 patients from different categories, with renal, respiratory and stroke from Department of Medicine, AHNH. Open questions were asked during the interviews regarding how we could improve our services in various aspects.

Conclusion: Patient satisfaction survey and focus group interviews have provided useful information and valuable insight into refinement of existing items/services and construction of new items/services for improving our medical services
USE OF AN INNOVATED ASSISTING DEVICE TO DECREASE THE INCIDENCE OF FACIAL PRESSURE SORE INDUCED BY THE USE OF NONINVASIVE POSITIVE PRESSURE VENTILATOR (NIPPV)
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Objectives: Decrease the Facial Pressure Sore Rate.

Introduction: The incidence of pressure sore in the surgical intensive care unit (SICU) of our hospital, which was a local teaching hospital, during the year 2008, reached 0.15%, which was higher than that of 0.06%, in other peer hospitals. Among which, 19.4% of them were facial pressure sore caused by NIPPV, including four patients with skin necrosis over both sides of nasal bridge, ten patients having bullae formation and slight maceration over the forehead and both sides of nasal bridge, and six patients suffering from minor skin breakage with erythema over the forehead and bilateral nasal bridge. The quality improvement team was established in the March of 2009, and the members included nurses, wound care nurse, and respiratory therapists (RTs). The goal was set as low as the average of the peer hospital of 0.06%.

Methods: The study was done in the SICU with a total of 30 beds. Thirty-eight per cent of patient admitted to this in SICU used NIPPV, and the mean duration was 5 days. The skin care was provided by nurses, RTs, and wound care nurse. In this project, an innovated assisting device was used. Through 80/20 principle and matrix analysis, priorities were determined, and the solutions included:

1) establishing the standard operation procedure for NIPPV care,
2) using the modified make-up puff for facial decompression support, and
3) providing on-the-job training courses. Evaluation was then done through auditions, demonstrations, and tests.

Results:
1) Regarding the completeness of nursing care technique, the rate to perform skin care and cleaning once every two hours is 92%, and to have a 2 finger-breath space for the facial mask straps was 94%.
2) The rate of using make-up puff was 100%, and the satisfactory rate was also higher for the nurses as well as for the families.
3) A significant increase of score from 66.6 to 87.5 under a total of 100 was noted in the SICU NIPPV Related Nursing Assessment Form among 49 nurses and 7 RTs. The RTs would inform the nurses to use this assisted device as soon as the patient needed to use NIPPV, and this also improve the communication environment in the team. The rate of facial pressure sore decreased from 19.4% to 11.4%, and that of the overall pressure sore decreased from 0.15% to 0.04%. The patient satisfaction increased from 83% to 94%, and the cost decreased from 490 NT (with Duoderm®) to 9 NT (make-up puff). The satisfactory rate for nursing staff also increased from 76% to 89%.

Conclusion: The NIPPV masks used in our hospital are designed for Caucasians, which are oversized for oriental, and the straps cannot be adjusted individually to fit each patient. This is a first know study of using make-up puff to successfully reduce facial pressure sore. It has several advantages over Duoderm®, the puffs can be removed from patient skin surface freely, and reused by the same patient after temporary removal for skin care. The puffs also eliminates the lignifying phenomenon of Duoderm® after long term use, and may decrease the chance of air leakage in case of unfitting facial masks. In conclusion, the make-up puff not only lowers the incidence of facial pressure sore, but also reduces medical expenses for the families. With our new device and protocol, the satisfactory rate for patients and families increases, and the nursing care quality was also improved.
MULTI-MORBIDITY OF HEART FAILURE AND COPD: PATIENTS AND CARERS’ EXPERIENCES AT HOSPITAL DISCHARGE
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Objectives: The main objective of the study was to explore the experiences of heart failure (HF) and chronic obstructive pulmonary disease (COPD) multi-morbid patients and their carers on hospital discharge. Secondary objectives included identification of gaps in the health care of multi-morbidity and optimal solutions from patients and carers’ perspectives.

Methods: Adult participants were recruited from two cardiology and respiratory wards at a large regional hospital in England, and all had a multi-morbidity diagnosis of COPD and HF. Mixed-methods were used to collect data using patient self-complete questionnaire and in depth interviews. The survey questionnaire included an adopted version of the American HCAHPS survey questionnaire, which specifically covers communication with doctors, nurses and medication issues at the point of discharge. A semi-structured interview schedule was developed based on our review of the literature and using modified questions from the “HCAHPS” questionnaire. Audiotaped interviews were transcribed verbatim with participants’ consent, and data in transcripts were analysed using thematic analysis.

Results: In the HCAHPS survey, 14 out of 29 (48%) completed questionnaires were returned. Half the respondents were women and the average age was 74 years. Overall, nurses scored better (84%) than doctors (64%) in listening to patients. There were problems in communication about medication with 73% not aware of the reasons for new medication and 64% never been informed of their side effects. The overall satisfaction score was 6 out of 10 and 43% would definitely or possibly recommend (36%) the hospital. In-depth interviews were carried out with 6 patients and 5 carers in the home setting one to two weeks following hospital discharge. Interviewees’ descriptions of their experiences on hospital discharge fell into four main themes: clarity of information, issues with medication, communication and continuity of care after discharge (Table 1). Information on diagnosis was often provided by multiple clinicians, which could be contradictory and resulted in confusion. Participants felt they received very little information about how to cope at home after their discharge, and that the hospital team disengaged immediately post-discharge. Most participants experienced difficulties in understanding what they were taking and were uncertain about prescribed medicines regimen.

Table 1: Main themes and sub-themes from participants’ interviews

<table>
<thead>
<tr>
<th>Main theme</th>
<th>Sub-theme</th>
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| 1-Clarity of information | -Diagnosis uncertainty  
-Information to carers  
-Discharge information and inconsistent information from different clinicians |
| 2-Medication | -Better information on medication changes (regimen, dose, side effects) |
| 3-Communication | -Between healthcare professionals  
-Between patients and clinicians  
-Perceived lack of communication between hospital and primary care  
-Special communication needs of elderly patients |
| 4-Discharge process and continuity of care after discharge | -Discharge process  
-Follow up after discharge and availability of a contact point |

Conclusion: Our study showed that gaps and delays in communication between healthcare professionals and poor discharge documentation continue to be recurring issues in caring for patients with HF and COPD multi-morbidity. It further points to the need for a comprehensive, coordinated and integrated care that incorporates patient preferences in order to improve the outcomes for multiple-morbidity.

EXPERIENCES IN IMPLEMENTING AN EMR EXCHANGE NETWORK IN TAIWAN
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Objectives: To interconnect clinicians in Taiwan, a national electronic medical record (EMR) exchange center was established by the Department of Health in 2012, in order to improve the patient information sharing and reduce redundant examinations across nation. The implementation experience of National Cheng-Kung University Hospital (NCKUH) case in Taiwan was proposed and shared to encourage the use of interoperable EMR exchange among hospitals.

Methods: A systematic literature review was performed to evaluate the interoperability of EMR exchange. An EMR system was developed which used HL7-mandated codes to facilitate the EMR exchange across nation. Four types of EMR exchange were provided through the national exchange center, i.e. inpatient prescriptions, blood examinations, medical image and report, and discharge summary. A multidisciplinary team of quality circle project of NCKUH was organised in 2012. To enhance the use of EMR exchange among hospitals, the PDCA method of quality circle was adopted to monitor the frequencies of EMR exchange between the national exchange center and the hospital. Data collection included group discussion, monthly meeting, and statistics of EMR exchange and use. The data were analysed periodically and systematically.

Results: Four improvement plans were identified and proposed:

1) setting up a one-stop service window and designing a standard operation procedure of EMR exchange among hospitals,
2) reducing transmission errors of the EMR exchange,
3) increasing training hours to enhance user’s perception of EMR exchange,
4) building an EMR knowledge management system to help users. After a six-month implementation period, the correct transmission records of EMR exchange increased from 255,470 to 343,845 monthly. The number of EMR users increased significantly. The frequencies of EMR use increased from 2.3 to 561.3 monthly.

Conclusion: The hospital EMR system coupled with exchange functions provided by the national exchange center proved to be effective in improving the patient information sharing among hospitals in our study. We believed that the implementation experience from the NCKUH case will be beneficial to other hospitals or countries dealing with the EMR exchange issue.
EFFICIENCY OF HEALTHCARE: A METHODOLOGY TO HIGHLIGHT, MEASURE AND INVESTIGATE VARIATION IN ORTHOPAEDIC SURGERY
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Objectives: In the emerging market of efficient healthcare services, the operating room (OR) provides plentiful opportunities to deliver efficiency improvements through the reduction of variability. This paper presents a methodology to access, highlight and evaluate variation in Orthopaedic Arthroplasty. The use of this methodology enables the identification of surgical procedures that could benefit from process improvement efforts.

Methods: A structured literature review was conducted to identify healthcare efficiency evaluation methods. These methods were subjected to Pugh matrix to compare and contrast against ethical and functional requirements of the key stakeholders to determine the most appropriate. The selected method was then implemented and data collected over a one month period from 12 hospitals from around the UK. Data was examined and analysed statistically.

Results: The mobile tablet devise with specialised software packages was demonstrated to be the most pertinent in terms of ethical and functional requirements. Requirements met include: non-intrusive (ethical), mobile, easy to use, easily cleaned with a sterilised cover and network connective (functional). Implementation of the method in the operating room demonstrated high quality results in comparison to conventional methods. Furthermore, it helped to establish a greater awareness of the hospitals’ relative performance indicators consolidated in one database and benchmarked against other organisations involved in the study. Intuitive representations of delays, wasteful operations and bottleneck processes as well as estimated performance levels and economy options have more than ever highlighted the need for efficient healthcare service delivery with respect to concrete deficiencies of current surgical service provision.

Conclusion: Mobile service efficiency evaluation methods provide new scope for healthcare effectiveness improvements. A number of diverse options for their application are envisaged including both hospitals and their suppliers. Such methods could be provided by supplier as a supplementary service to indicate advantages of new product solutions, or become a source of aggregate information for more sophisticated process modelling and profound efficiency improvement. Advantages of the technique are not limited to orthopaedic surgery cases: on-going studies are to be performed to appreciate the full potential of the method.
PRESENCE AND SAFETY STATUS SYSTEM FOR OPERATING ROOM DEVICES
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Objectives: The increasing number of new technologies in the operating room (OR) has made the surgical environment more complex. Missing or malfunctioning equipment often delay the procedure and are a source of incidents during procedures. The objective of this study is to design and implement a system to monitor the presence and the safety status of OR devices, to alert the staff about irregularities and to simplify the notification of a malfunction.

Methods: The system is based on active radio frequency identification technology (RFID) and is implemented in an OR complex of a Dutch teaching hospital consisting of 4 ORs. For this study a selection of 100 devices was made. The system is composed of 100 active RFID tags equipped with a button and a LED lamp, 10 readers for detecting the RFID tags and 4 tablet computers for interfacing with the OR staff. All information gathered by the system is saved on a server that is linked to the hospital’s technical facility management system.

The location and maintenance status of the 100 OR devices are instantly determined by the system. The developed software alerts the staff about irregularities and simplifies the notification of a malfunction. The OR staff can report a malfunction by pushing the button of the RFID tag placed on the malfunctioning device and by filling in the asked information about the malfunction on the tablet placed in the OR. All the information is then automatically send to the technicians and registered in the hospital’s technical facility management system. The screen portrays safety status and presence of the devices. A green screen on the tablet indicates a correct safety status of the devices in the corresponding OR, when the maintenance is up to date and the devices are tested to work properly. A red screen indicates that maintenance is overdue or a malfunction has been reported. Detailed information about the safety status can also be shown on the screen. The system is currently being tested for a pilot period of six months until March 2013.

Results: Preliminary results show an increase in the number of notified malfunctions compared to the previous years (see table). In total, 24% more malfunctions were reported compared to last year and 62% compared to the average of the last three years.

<table>
<thead>
<tr>
<th>Period</th>
<th>Number of reported malfunctions</th>
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<tbody>
<tr>
<td>October 2009 – January 2010</td>
<td>22</td>
</tr>
<tr>
<td>October 2010 – January 2011</td>
<td>27</td>
</tr>
<tr>
<td>October 2011 – January 2012</td>
<td>38</td>
</tr>
<tr>
<td>October 2012 – January 2013 (pilot)</td>
<td>47</td>
</tr>
</tbody>
</table>

Current activities are focussed on evaluating the user experience in terms of functionality and intuitiveness. Also the reliability of the tracking system is being evaluated.

Conclusion: Automatically monitoring the status of OR devices increases the number of reported malfunctions compared to previous years. This provides valuable insight in the frequency of incidents and recurrence of malfunctions of individual devices. On a longer term, such a system is expected to prevent irregularities and increase the safety related to medical OR devices.
A COMPARATIVE ANALYSIS OF HOSPITAL DISCHARGE SUMMARIES ACROSS EUROPE: IS THERE SCOPE FOR PROPOSING A STANDARDISED TEMPLATE?
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Objectives: To identify similarities and differences in the channel of discharge summaries and their recipients; to elicit information on categories of information typically included in a discharge summary across Europe; and to explore whether there is scope for proposing a standardised template.

Methods: A comparative analysis of hospital discharge summaries was conducted using qualitative and quantitative data. This multi-method approach included:
1) A systematic review undertaken in accordance with the Cochrane methodology on the use and scope of hospital discharge summaries in Europe;
2) As part of a larger project on care pathways, country-based surveys on the management of i) diabetes, ii) hip surgery and iii) AMI were performed, and relevant questions on discharge summaries were extracted and analysed.
3) Distribution of a web-based questionnaire to hospital authorities in 27 Member States, which collected information on the following topics: discharge processes; national standardisation of discharge summaries across hospitals; accreditation of discharge summary templates; content and access (particularly in the case of cross-border patients) and availability in other languages. This survey tool was of an exploratory nature to gather additional information that would have otherwise proved difficult to acquire, specifically that related to discharge summaries.

In addition to the surveys, a systematic internet search was performed to identify any available discharge summary templates. Another source for obtaining discharge summaries was through previously-established contact with a relevant completed EU project.

Received discharge summaries were analysed with regards to their structural content, with particular emphasis on:
1) Major structural similarities/differences,
2) Most/least common categories,
3) Range of terminology and classification used; and
4) Quality and detail of clinical information.

Results:
1. Twenty-five studies from 9 EU countries were included into the systematic review, 21 papers provided information on key content items. The most frequently cited key categories across the studies were “Future treatment/Follow up” and “Diagnosis”.
2. A total of 233 participants responded to the relevant questions within the disease management survey. The majority of hospitals across the EU for which data was collected provide their patients with a paper discharge summary upon discharge (90%). 35% send it in paper form to general practitioners or specialists. An electronic report with patient data is sent by 50% of respondents to GP/specialists. The most common categories in discharge summaries include: ‘information on hospital stay (admission and discharge date)’ (95%), ‘diagnosis at admission (90.1%) and discharge (92.7%)’, ‘procedures undertaken (94.8%)’ as well as ‘medication information (87.9%)’.
3. The web-based questionnaire received 18 responses from the 99 individuals contacted initially (18.1% response rate) and provided insight on different regulations within countries.

A total of twenty two discharge summary templates from 15 countries across Europe that had been supplied to patients and/or referring physicians upon hospital discharge were obtained and analysed.

Conclusion: Hospital discharge summaries play a critical role in ensuring safe and efficient continuity of care, particularly through transmission of key information from secondary to primary care. In the cross border health care context they are often the only method of communication between health providers from different countries. However, discharge processes and content differ across Europe due to various national, regional and hospital-specific regulations or guidelines.
THE IMPORTANCE OF COMPLEMENTING SURVEY WITH INTERVIEW IN ASSESSING SAFETY CULTURE IN HEALTHCARE
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Objectives: To test, adapt, and evaluate combined methods of survey and interview used in other safety critical industries for assessing safety culture in three hospitals in Norway and England.

Methods: The Safety Attitudes Questionnaire (SAQ) was used to survey hospital staff’ attitudes towards patient safety practices in three hospitals (case studies). We adapted a semi-structured interview guide previously developed by DNV for other industries to assess safety culture qualitatively and interviewed a selection of staff in each hospital. Welch Robust Tests were used to analyse survey results. We conducted individual interviews ranging from 23 to 29 per hospital. Notes from the interviews were analysed qualitatively to find common themes. Survey and interview results were combined and analysed qualitatively to find similarities and differences.

Results: Hospitals were analysed separately due to the nature of the study (i.e., case study). We surveyed 259 staff in Hospital 1 (Response rate=70.27%), 57 staff in Hospital 2 (Response rate=32.95 %), and 262 staff (Response rate=38.93%) in Hospital 3. Individual interviews achieved data saturation. Variations in safety culture scores were found between and within hospitals. Interviews revealed common themes such as “cooperation and communication”, “competence and development”, “cost and safety balance”.

The results showed that in some cases the interview survey result could be explained by interviews. For example, for Hospital 1, there was most variability between units for the dimension for “perceptions towards the management”. The interviews revealed that “role models” influenced hospital staff’s perceptions meaning that if their management was a good role model they rated this dimension higher than staff that perceived their management as poorer role models.

Another example of this was observed in Hospital 2 where survey results indicated that staff believed the ward management was more committed to patient safety than the hospital management. Interviews revealed a disconnect in communication between ward and hospital management in terms of the implementation of changes and the use of incident reports. This influenced staff’ perceptions of ward and hospital management.

The method also revealed more accurate information to give a more complete picture of safety culture. For example, in Hospital 1 the ratings were relatively high in the survey on items relating to staff awareness on the proper channels to raise patient safety concerns and the encouragement by colleagues to report any patient safety concerns. The interviews implied that staff did not always use the reporting system due to the perception of the reporting system being complicated, that reporting would not lead to improvement or poor handling of previous cases on reporting. Without information gained from the interviews, one may interpret that staff do report using the existing system. Staff preferred to discuss incidents in a group than reporting them through a system, as interviews also revealed.

Conclusion: Our findings demonstrate that interview as a complementary method to survey can be used in order to identify both the status of the safety culture (i.e. what it is) and further explain the reasons for this status (i.e. why it is the way it is). This is particularly useful in order to understand the complexities of an organisation’s safety culture and further design and implement effective changes in order to improve it. These findings therefore have implications for safety culture improvement programs.
QUALITY-IMPROVEMENT INITIATIVE SUSTAINS IMPROVEMENT IN MEDICAL SPECIALTY- VENTILATOR WARD AMONG NURSING STAFFS AND HEALTH CARE ASSISTANTS

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¹Medical, Hospital Authority, Hong Kong, Hong Kong

Objectives: Use quality-improvement (QI) method to develop and test a multimodal intervention to improve hand-hygiene compliance of health care providers (HCP) to 80%.

Methods: It is an observational experimental staggered interventional study. A Pre-Post Test was conducted in a medical Specialty Ventilator Ward. Compliance was defined as acceptable hand hygiene before and after contact with patient or patient’s care environment. Measurement of HCP hand-hygiene compliance was performed by covert observations made during routine patient care. Three months of pre-intervention data were collected. QI methods were used to test and implement interventions sequentially in different level of HCP including Ward Manager (WM); Advanced Practiced Nurse (APN); Registered Nurse (RN); Enrolled Nurse (EN); Health Care Assistants (HCA); Personal Health Care Workers (PCW) and Clerks. Interventions addressed leadership support, improving all HCPs’ knowledge, hand-hygiene supply availability, and behaviour. Three months post-intervention, second set of data were collected and analysis. Comparing the difference between the compliance rates under the World Health Organisation (WHO) Hand hygiene formula, the effectiveness has been shown.

Results: Pre-intervention compliance rate was collected on 1.3.2012. Interventions then began on 1.4.2012-30.4.2012. Compliance Rate was calculated 3 months post Intervention on 1.7.2012 as a washout period. By 1.8.2012, compliance increased on WM, APN, RN and EN (from 75% to 91%). However, compliance increased on HCA and PCW (from 45% to 62%). There was no significant difference within the clerks. Improvement on HCA and PCW occurred only after the interventions were introduced. Identifying HCAs who failed to perform hand hygiene and offering alcohol-based hand rub to them before patient contact resulted in the greatest improvement. Improvements were sustained on all the Nursing Staffs and Health Care Assistants for more than 5 months.

The numbers of newly diagnosis of MRDA and MRPA after admitted to Ventilator ward were also measured. The average admission rate in Ventilator ward from 1.3.2012 to 31.8.2012 was 55 patients/month. There were 3 newly diagnosis MDRA and MRPA patients before the intervention began. Only 1 newly diagnosis MDRA and MRPA patients noted 3 months after the intervention. Although there is no significant difference on serious infection disease pre- and post-intervention, but the decreasing trend is an encouraging result for further study.

Conclusion: Use of QI methods to implement a multimodal intervention resulted in sustained improvement in hand-hygiene compliance. Real-time individual performance feedback or other high-reliability human-factor interventions seem to be necessary to reach and sustain high levels of hand-hygiene compliance. There are different confounding factors needed to further explored in order to have a thorough picture of Quality-Improvement initiative sustains improvement hand hygiene program.

References:
‘BREAKTHROUGH’ WITH THAT EXTRA SMILE AND IMPROVE OLDER PEOPLE’S CARE
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Objectives: In June 2012 NHS Tayside and NHS Grampian launched an Older People in Acute Care Collaborative to get the fundamentals of care right for older people. The aim of the collaborative is to improve the experience of older people (in particular those with cognitive impairment) and their carers during their journey through Acute Care by November 2013. 14 pilot wards from both Boards are focusing on interventions that emphasise the clinical technical skills and caring behaviours necessary to improve the patient and family experience. High level aims are:

- 95% of patient satisfaction scores are excellent
- 300 days between formal complaints
- 95% of appropriate patients receive a standardised screening

Methods: Using Institute of Healthcare Improvement’s Breakthrough Series a comprehensive change package was developed which identifies the improvements required by the multidisciplinary team. The model is a short term learning system that brings together multidisciplinary teams to seek improvement and uses the Model for Improvement as the framework. The collaborative will run for 18 months and in this time teams attend learning sessions and report progress and share the learning from testing with other teams and stakeholders. The change package is supported by a robust collaborative measurement plan with teams required to maintain run charts tracking their system measures over time. The following five measures will be presented:

1. Patient experience scores
2. Percentage of appropriate patients who receive a standardised comprehensive geriatric assessment
3. Percentage compliance with multidisciplinary team structured ward rounds
4. Days between complaints
5. Percentage of patients who have had an assessment of their ability to manage their medicines

Results: This collaborative involves all members of the multidisciplinary team (MDT) and recognises the involvement of support services as key. MD teams are now demonstrating improvements against the aims of the collaborative including; reduction in complaints, improved patient experience scores and reliable identification of patients at risk on admission. National leads were invited to attend the second learning session held on the 17th & 18th of January in NHS Grampian and have described this work as exemplary: “The OPACC is a fantastic example of improvement work led from the front line with senior executive support. It was clear to see at Learning Session 2 how real multidisciplinary collaborative teamwork is improving the safety and effectiveness of clinical systems in Tayside and Grampian with the person and family truly at the centre. This collaborative has it all; safety, person centeredness, integration, collaborative effort and flow. The commitment and support of senior leadership from each NHS Board is clear to see and early results impressive. I look forward to learning more from those involved with this Collaborative” — Dr Andrew Longmate, National Clinical Lead for Patient Safety, The Quality Unit, The Scottish Government.

<table>
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Conclusion: The complexities of working as multidisciplinary team have been highlighted due to the people, processes and cultures associated with a busy acute hospital. Building the “dream team” to drive sustainable improvements to care is critical. By removing the top down approach to implementing improvements and give the permission to teams to lead improvements within their own areas sustainable change is achievable.
INTERNAL COMMUNICATION GOING SOCIAL - WORTH IT OR NOT?
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1NEw Territories East Cluster, 2Prince of Wales Hospital, Hong Kong Hospital Authority, Shatin, Hong Kong

Objectives: Internal Communication Going Social – Worth it or not?

The objective of this research paper is to explore the risks and benefits of introducing social media as a communication tool in internal communication in healthcare setting.

The New Territories East Cluster (NTEC) is one of the seven hospital clusters of the Hong Kong Hospital Authority. It is geographically the largest hospital cluster of Hong Kong and serves a population of over 1.3 Million people, the second largest in terms of population size.

The Cluster consists of seven hospitals and it has a multidisciplinary staff force of around 9500. Many of those work in shifts and different work units of different hospitals. How to achieve effective communication is a challenge. In Feb 2005 it hosted a suggestion box called Q&S (Question and Suggestion) on its intranet homepage. It ran on an electronic notice board format and has often been criticised for being uninteresting, slow and full of staid and bureaucratic replies.

Seeing the success of social platforms like Facebook, the cluster management replaced the Questions and Suggestions page with a discussion forum called YouSay in March 2011. The forum has embraced the key elements of enterprise 2.0 technology. It allows anonymous posting and real-time uploading. 26 members of the management including the Cluster Chief Executive were recruited to participate as expert contributors. The forum runs on simple editorial guidelines.

Hit rate instantly surged from a few to a few hundreds each day. And the number of postings has increased from around 70 per quarter to over 200 each month. The nature of posts are not predominantly welfare and benefit focused, many are on daily operations and patient services, and they come in different formats, ranging from suggestions to ventilation to ideas to opinions.

Methods: The cluster conducted a survey in Feb 2012 using the format of media readership questionnaire. It is divided into two parts. The first part focuses on users’ demographic data and media consumption patterns while the second part asks for readers’ views on 10 statements which are set to validate the benefit and risk claims of social media as a corporate communication tool as expounded in the literature. A different set of questionnaire with 12 statements were distributed to the members of the management who participated as expert contributors.

Results: The results show that the YouSay has achieved 96% awareness and that 70% of the staff has often/sometime visited the forum. 89% of the users surveyed agreed that YouSay is ventilatory in nature and yet they are attracted to it as over 70% of them found that YouSay has diverse and interesting content, they have gained useful information from YouSay, and that YouSay has shown openness and sincerity on the part of the management. On the contributors side they have overwhelmingly (i.e. 100%) agreed that YouSay has helped to identify potential issues and conflicts and 93 % has agreed that YouSay has enabled them to get instant employer pulse-reading and stay in touch with the hot issues in the organisation. Over 70% of those surveyed in both categories have opted for keeping the forum/further enhance and improve it.

Conclusion: The experience of going social so far seems to suggest that staff do take to novel mode of communication which calls for a new communication culture from the management. So far, YouSay has become the stickiest platform on the intranet. And like any media which has a strong readership base, it has huge communication potentials to be explored. It is a worthwhile trial.
USING HEALTHCARE FAILURE MODES AND EFFECTS ANALYSIS TO PROMOTE BLOOD TRANSFUSION SAFETY
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1Division of Transfusion Medicine, Department of Pathology and Laboratory Medicine, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan

Objectives: The assurance of blood transfusion safety depends on a multi-discipline teamwork corporation. Since it is a process of highly complex and people’s judgment dependent, any miss of blood transfusion is a severe sentinel event in the hospital, as defined by JCAHO. In a retrospective analysis of 15 years period in a medical center in northern Taiwan, a near miss transfusion of 0.27% and adverse event of 0.001% were found. To prevent the immediate disasters or late complications, every steps involved should be reviewed and revised repeatedly, periodically and systemically

Methods: From June 2011 to May 2012, using Healthcare Failure Modes and Effects Analysis (HFMEA) model we conducted a collaborated interdepartmental analysis of blood transfusion safety including procedures, adverse events and failure experience of peers

Results: Among 59 detailed procedures, 39 potential failure causes were defined, and therefore 28 primary corrective proceedings and 12 corrective measures were worked out accordingly. First of all, the indication of blood transfusion were reviewed and audited by Transfusion Committee. A consultation system of pathologist and haematologist was established. The adequacy of blood products delivery (including package, transportation, storage in the nursing stations, etc) was monitored by a computerised alarming system. Moreover, the introductions of a barcode patient identification system significantly further reduced the unexpected man-made mistakes. The promising improvements include unqualified rate of blood transfusion (9.9 % vs. 3.18%) and qualification rate of blood supplies (92.5% vs. 100%). No miss transfusion occurred.

Conclusion: In conclusion, any efforts of improving medical practice are important and some miss or errors are preventable.
HEALTH TRUST ULSS20 OF VERONA - ITALY: THE ACCREDITATION OF EXCELLENCE WITH ACCREDITATION CANADA INTERNATIONAL

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Objectives: Compare activities with international standards. Obtain recognition of accreditation for excellence by an international corporation.

Methods: In June 2011, the Ulss20 has taken the path of excellence accreditation in partnership with Accreditation Canada International involving all the areas of health, social and administrative services. The work, divided into two phases, based on standards for the organisation, and for the provided services. Step1: staff training; self-assessment questionnaire on ACI website. The self-assessment, made by about 900 employees, gave as result created a specific “roadmap” that identified areas to be improved or not. By those results we created specific work group to identify action plan to solve problems the road map highlighted. Step2: within the departments have been created working groups which have implemented the plans identified in Step 1. At the same time have formed working groups that have been involved in cross-cutting issues, such as cultural mediation, the system of evaluation of the results. Every team, with a multi-professional peculiarity, had a team leader and about 15-20 participants. The work focused on the eight dimensions of quality: accessibility, security, centrality of the population, work environment, continuity of care, patient-centred, effectiveness and efficiency. In October 2012 an evaluation team of Accreditation Canada met-on site with Azienda Ulss20, and verified the organisation. During the visit, surveyors verified 38 locations and 21 services areas, interviewed 2 patients in home help, and met business partners in specific focus group.

Results: In November 2012, Accreditation Canada announced to the Ulss20 the accreditation of excellence. The strength point of the project was the large number of employees who participated and the various professionals involved: the clinical operator and the administrative one.

Conclusion: The challenging work with Accreditation Canada has allowed to increase the culture and skills in the field of quality management, especially due to the high number of employees involved. In addition, Accreditation Canada has led to a strengthening of policies on patient safety, recalling the support team to the issues of risk.
DOES HAVING CERTIFIED PROFESSIONALS IMPACT QUALITY & PATIENT SAFETY IN JORDANIAN HEALTHCARE ORGANISATIONS?

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Objectives: By the end of presentation the participants will be able to:

1. Know about quality and patient safety education in Jordan
2. Orient to healthcare accreditation council certification courses development process
3. Identify impact of certification courses on the quality and risk management programs in healthcare organisations

Methods: The education and consultation department at HCAC collaborated with regional and international experts to develop certification courses addressing the topics in need. These courses are designed based on adult learning principles in which theoretical and practical implementation are combined to ensure skills are properly acquired throughout the courses and competency assessment framework has been developed to evaluate performance of trainees. Each course is broken down into a theoretical classroom training period, followed by a 3 month mentorship period in which participants are expected to work on topic specific portfolio assignments. As prerequisites for certification, the courses require that each participant present their assignments to their colleagues and course trainers and finally sit for a final certification exam.

Results: the results will be ready in the conference as the assessment of the certification courses impact will be conducted during first quarter of 2013

Conclusion: Pilot certification courses were conducted throughout 2001 and 2012. These courses yielded a total of 58 certified professionals that are now embedded within the healthcare professionals working in Jordan. This pilot project also served in testing and evaluating the courses. The feedback from the participants and trainers allowed for revision of the course to develop the final programs. These programs are now integrated in the HCAC annual education plan.

References:
THE ROLE AND CULTIVATION OF INFECTION CONTROL LINK NURSES

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1RN, BSN, Department of Nursing, Chang Gung Medical Foundation Hospital and Graduate Student, Graduate Institute of Nursing, Fooyin University, 2RN, BSN, Department of Nursing, Tri-Service General Hospital and Graduate Student, Graduate Institute of Nursing, Fooyin University, 3RN, PhD, Associate Professor, School of Nursing, Fooyin University, Kaohsiung, Taiwan

Objectives: As frontline personnel in medical teams, nursing staff should conduct nursing assessments and medical auxiliary behaviour, and should also prevent and control infection, understanding the cause of infections and implementing infection control measures. Because the infection control operations in hospitals are complex, in addition to an infection controller and epidemiologists, infection control link nurses (ICLNs) should be assigned to or established in each care unit or ward to facilitate communication and negotiation between wards and infection control departments.

Methods: Regarding the training of ICLNs, we suggest that hospitals select nursing staff with clinical experience, acute observation abilities, good communication and negotiation skills, and teaching knowledge. The ICLN training program should include microbiology, test report interpretation, environmental inspection, communication/negotiation, and critiquing and management skills to improve the applied knowledge, risk assessment, and decision-making abilities of ICLNs regarding infection prevention measures. We also recommend that the transformational steps of unfreezing, moving, and refreezing should be employed to enhance organisational and personnel changes.

Results: The primary responsibilities of infection controllers are to analyse, monitor, and report infection control data for the entire hospital promote and guide related operations, and offer professional counselling services. The responsibilities of ICLNs in units are to identify infection paths and analyse infection causes in the early and middle periods of health care and participate in the recommendations, promotion, and educational training of infection control planning. With these two mechanisms working in parallel, medical institutions can effectively prevent infections and thereby avoid infection outbreaks and spread.

Conclusion: The role of ICLNs can reduce the gap between infection control theories and clinical practice to achieve infection control. We suggest that medical institutions recruit and establish ICLNs and related mechanisms to effectively train clinical nursing staff to participate in infection control activities. These activities can reduce health care-associated infections (HAIs) to achieve the goal of zero infections.

References:
ASSESSING THE ROLE OF REGULATORY BODIES IN ASSURING PATIENT SAFETY AND THE QUALITY OF HEALTH CARE IN EUROPE: AN ANALYSIS OF VIGNETTES OF MEDICAL ERRORS AND PROFESSIONAL ISSUES

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1Health Services Research and Policy, London School of Hygiene and Tropical Medicine, London, United Kingdom, 2Health Care Management, Berlin University of Technology, Berlin, Germany, 3London School of Hygiene and Tropical Medicine, London, United Kingdom

Objectives: To determine whether there is any consistency in how medical regulatory bodies in nine European countries contribute to maintaining quality of health care and patient safety, using vignettes describing behaviours that raise concerns about professional behaviour.

Methods: Twelve vignettes describing scenarios that raise concerns about standards of physicians were designed by the UK’s General Medical Council covering a range of disciplinary and professional issues, based on a conceptual framework that included a combination of clinical, criminal and administrative matters. The vignettes were sent to medical regulatory bodies of nine European countries who indicated what action they would normally take for each hypothetical situation. The data were compared with each body’s regulatory mandate.

Results: Responses varied greatly across participating countries. All regulators are involved where patients are at risk or where a criminal offence is committed within a clinical setting, where severe, and often punitive, action (suspension of license; strike off medical register) are enforced. These events are relatively rare, however, and there are many alternative self-regulatory mechanisms in place related to patient safety and quality of health care not reaching the threshold for regulatory involvement. Non-criminal medical issues, such as those related to competency/training or attitude, were generally handled by the employer. This shows delineation between a doctor’s accountability for professional standards, which are generally overseen by the regulatory bodies, and their accountability as an employee or member of professional association or medical chamber, where their competency and ability to practice in a respectful way is regulated by that body. However there is considerable variation and some countries – Austria, England, Germany and Slovenia – employed punitive actions more frequently than others, and covered a much broader scope of activity extending beyond professional standards for quality and safety. Conversely the regulatory bodies of the Netherlands, Spain and Estonia seemed to have the narrowest scope of authority, evident by the frequency at which they responded that certain vignette themes sat outside of their remit, resulting in a referral to another regulatory authority or no action at all.

Conclusion: There is little consistency across Europe in how events questioning competency and qualities of medical professionals are handled. There is considerable diversity in the range of topics that regulatory bodies administer, with almost all covering health care quality and safety, and others exploring themes around reputation, respect and trust. With increased professional and patient mobility, this has significant implications regarding patient safety and quality of care in light of the lack of regional standardisation.
SUPPORTING DENTAL PRACTITIONERS IN THE DEVELOPMENT OF LOCAL DECONTAMINATION UNITS IN NHSSCOTLAND

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1 Decontamination Services, Health Facilities Scotland, 2NHS Education for Scotland, 3 National Procurement, Glasgow, United Kingdom

Objectives: This collaborative approach is aimed to support and coordinate initiatives, on behalf of The Scottish Government Health and Social Care (SGHSC), to improve decontamination of primary care dental instruments in NHSScotland

Methods: Engage with the stakeholder including SGHSC, national organisations such as Health Facilities Scotland, NHS Education for Scotland, National Procurement, NHS Boards, and Dental Practice Advisers and dental practitioners. Develop compliance standards and guidance for safe decontamination of dental instruments. Provide on-site support and guidance to local practitioners in planning upgrades to the existing or new-build LDU. Develop a visual learning environment covering infection control and decontamination. Provide in-practice training to dental workforce. Inclusion of quality assurance of decontamination practice in Dental Practice Inspections

Results: Most dental practitioners have moved towards compliant local decontamination facilities. Over £12M of decontamination equipment and services have been purchased via the National Procurement Framework NP143. Over 1000 dental practices have been visited and supported through the development of action plans. 11517 dental staff has accessed NES in-practice training.

Conclusion: The improvement of dental decontamination practice can be achieved to meet SGHSC targets, through careful planning and close collaboration with the relevant stakeholders.

References:
2. Scottish Executive Health Department, NHS HDL (2005) 1, Decontamination- Compliance in primary care, 11 January 2005
AN EMPIRICAL STUDY ON EFFICIENCY OF INCIDENT MANAGEMENT SYSTEM AT A MEDICAL CENTER IN TAIWAN
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¹Department of Medical Management, Kaohsiung Veterans General Hospital, Kaohsiung, ²Graduate School of Business and Operations Management, Chang Jung Christian University, Tainan, ³Department of Information Management, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan

Objectives: To probe important factors of efficiency for the incident management system to be regarded as the reference for improving and assessing the incident management system.

Methods: The authors examined and analysed 3,262 incident reports filed for three years at a medical center in Taiwan. The important influence factors included reporter’s identity, injury degree of incident, anonymous or confidential report, and study period. The management procedure of the incident reporting system was divided into three stages—reporting, investigation, and treatment. We performed multivariate analysis by using Poisson regression with over-dispersion to evaluate the lag time of those three stages among each of the four factors.

Results: The higher proportion is minor incidents (90.7%), confidential reports (93.3%), and nursing staff reports (76.9%) in the research database. The lag time was influenced with reporter’s identity at the reporting stage, and the doctor’s lag time is the longest. The injury degree of the incident influenced the lag time of investigation and treatment, and is much longer for serious incidents. Adopting anonymous report shows significant difference at the reporting and investigation stages. Furthermore, the lag time in later study period is shorter than that in earlier period at the treatment stage.

Conclusion: Those four factors did influence the managerial efficiency of incidents at different stages separately. The results of this study not only help the medical organisation improve the efficiency of patient safety but provide future researchers with the significant reference to assess the managerial efficiency for the incident reporting system.
INADVERTENT ENDOBRONCHIAL INTUBATION: A SENTINEL
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Objectives: Unintentional bronchial intubation may result in serious complications such as lung collapse or pneumothorax. These complications amount to sentinel events should be reported, and a hospital sentinel event policy should be implemented, including corrective actions to prevent recurrence.

Methods: A 12-month prospective observational study in a multidisciplinary adult intensive care unit (ICU) to estimate the frequency of inadvertent bronchial intubation and its major sequels in intubated patients admitted to the unit. Complications will be reported as sentinel events attracting investigation by root cause analysis method, action plan, and follow-up.

Results: There were 36 (12.9%) cases of inadvertent bronchial intubations in 279 orally-intubated patients admitted to the ICU during the study period (1.5.2010 - 30.4.2011), 2 (0.7%) of them already developed total left lung collapse. The hospital sentinel event policy was activated followed by action plan, which included raising the awareness of the problem, presentations, and regular checking on the position of the tube following tracheal intubation at different location in the hospital.

Conclusion: Early detection and correction of endobronchial intubation will prevent complications developing. Applying sentinel event policy on complications of inadvertent bronchial intubation will encourage finding permanent solution to an old and preventable problem. Anaesthetic and resuscitative regulatory bodies should incorporate methods of checking on correct position of tracheal tubes in their training programs. Knowing that the tube may advance into a bronchus, they should insist on regular checking of the tube in a manner similar to monitoring patient’s vital signs.

References:
USING HEALTH CARE FAILURE MODE AND EFFECT ANALYSIS (HFMEA) IN EMERGENCY ROOM VIOLENCE PREVENTION

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1Chang Bing Show Chwan Memorial Hospital, Changhua County, Taiwan

Objectives: Emergency room (ER) is an open, public area and is concerned as a high-risk unit for direct violence attack. In recent years in Taiwan, there were many violence cases occurred in ER. To decrease the incidence of violence attack, the alarm system and staff training are critical issues. In order to protect our staff and provide a safety medical environment, we established a new violence prevention algorithm according to HFMEA analysis.

Methods: A multidisciplinary team was organised in May 2011. We used the healthcare failure mode and effect analysis (HFMEA) to analyse the violence prevention processes. Based on the recommendations from HFMEA conclusion, a new violence prevention algorithm was established with aims to improve the alertness and management speed of the staff. Several performance indicators were used to measure the effectiveness:

1) Nursing staff are able to locate the alarm system and correctly answer code KK and when alarm systems needs to be activated.
2) Duty managers are able to show up within 5 minutes.
3) Security guard shows up in one minute.
4) Duty managers are able to successfully handle the violence situation without incident of staff injury.
5) Engineer staff needs to show up within 3 minutes.
6) Police officers arrive within 15 minutes.

Results: Several critical failure modes in the ER violence prevention processes were identified:

1) ER nurses lacked confidence and ability to control the situation.
2) On-duty administration manager lacked knowledge and understanding of the role.
3) Alarm system was installed outside of ER. ER staff has no direct access to press the button and cause delay.
4) The police were not aware of the urgency.

According to weak points identified from these analyses, a new violence prevention algorithm was established. When there is a potential or actual violence situation, ER staff must activate the system and the telephone operator will notify duty administration manager, duty nurse manager, and security guard without delay. We installed alarm system in the ER and instructed ER staff when and how to activate the alarm. We negotiated with police department and reached agreement to show up within 15 minutes once alarm activated. Furthermore, more than 10 violence prevention training programs were completed.

In 2012, the performance indicators were checked. The drill results were below:

1) Alarm was installed at nursing station in ER. 100 % ER staff answered correctly.
2) Duty managers showed up within 5 minutes.
3) Security guard showed up in one minute.
4) The duty managers completed 10 sessions of violence prevention training and were familiar with the work instruction.
5) Engineer staff showed up within 3 minutes.
6) Police officers arrived within 15 minutes. The processes were formalised.

Conclusion: Through HFMEA analysis, we established a new violence prevention algorithm. Everyone knows their role more clearly. We are better prepared and ready to handle violence situation. We feel safer and also ensure patient safety to avoid further harming of self and other.

IMPROVING CARE AND ENHANCING PATIENT SAFETY BY RESEARCHING NEVER EVENTS IN THE COMMUNITY
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1Chief Executive Officer, Central Community Care Access Centre, Toronto, 2Communications, Central Community Care Access Centre, Richmond Hill, Canada

Objectives: To improve quality of care and enhance patient safety, the Central Community Care Access Centre (CCAC) sponsored a research study with the University of Toronto to determine serious reportable events (Never Events) for home healthcare services. This was the first time the study of Never Events was applied in the community setting in Canada. The research was done in conjunction with a Safety in Home Care study commissioned by the Canadian Patient Safety Institute.

Methods: The research incorporated a comprehensive literature review, and used a pan-Canadian panel of experts using Delphi methodology.

Results: The four types of events identified by the Delphi panellists as both reportable and preventable: Serious injury related to inappropriate service plan; medication-related events requiring emergency department (ED) visit/hospitalisation; serious events related to care or services that are contrary to professional practice standards; and new peritoneal dialysis infection.

Conclusion: Using our Quality and Safety Framework of Safety, Science and Service, Central CCAC will integrate the study findings into practice to improve quality and safety at an organisational level, and into the management of our contracted service providers to deliver safer care in the home.

Key steps include engaging front-line staff, patient services management and senior management, assessing the organisation’s current state, and validating the research in the context of the Central CCAC’s Quality and Safety Framework.

Based on this information, two Never Events were selected as the initial focus for action:

1. Adverse reaction requiring ED visit or hospitalisation related to a medication-related event
2. New wound infections (community acquired)

Incorporating findings of the study’s literature review, which identified characteristics of successful reporting systems and facilitators/barriers to reporting, the committee will oversee the establishment of measures and tracking mechanisms to support evidence-based decision-making.

This will include the use of Lean methodologies to leverage the expertise of staff at all levels of the organisation, service providers and other stakeholders to:

- validate roles and responsibilities in preventing Never Events by specific operational areas
- develop a documented, standardised process for reporting on the selected Never Events
- develop a measurement system to facilitate tracking and analyses of events
- investigate opportunities to enhance accountability – across the community health system – for preventing and reporting Never Events, through strategic policy changes and performance measures
- ensure patients do not experience Never Events in our community

Session attendees will gain an understanding of the research findings and how Central CCAC incorporates those findings into its Quality and Safety Framework while promoting system change, how the complexities of providing care in a community setting impacts safety and the ability to ascertain root causes of Never Events, the types of reportable and preventable events that occur in community care, and the role of the CCAC, providers and other stakeholders in preventing Never Events.
USING INNOVATIVE SIMULATIVE TRAINING PROGRAM TO REDUCE FALL RISK IN HOSPITALISED NEUROLOGICAL PATIENTS
Ming-Yi Chen¹*, Wei- Hua Yu¹, Mei-Chih Ou Li²
¹Neurological acute ward, ²Nursing, Shin Kong Wu Ho-Su Memorial Hospital, Taipei, Taiwan

Objectives: Fall often occurs on hospitalised patients in acute wards and incurs physical injuries. In 2009, our neurological acute ward’s reported fall incident rate was 0.15% (19 incidents). This was five times higher than the average in the same medical center (0.03%), more than twice higher than the average reported rate of fall (0.06%) by all medical centers in the nation. In hope to reduce the high rate of fall from 0.15% to below 0.07%, we developed an innovative simulative training program, embedded identified risks of fall in various scenarios of hospitalised neurological patients to train nurses and students to better identify patient’s fall risk and to implement fall prevention.

Methods: In January 2010, we observed how nurses practiced on patient safety for one month. We also interviewed 72 patients in our unit about how their nurses had helped them on maintaining their safety during hospitalisation. Applied the Cause-Effect Diagram on the collected data, we identified that nurses’ underestimation of patients’ fall risk, patient’s confusion, agitation and not using call bell, and gaps of bed rails were factors accounted for the higher rate of reported fall in our unit. We then used the Decision Matrix Analysis to determine the most critical intervention was to develop a series of case-based (stroke, head injury, and herniation of intervertebral disk, the top three diagnoses of patients in our unit) simulative training program for all nurses in the acute neurological ward to assist them to be able to accurately assess patient’s risk of fall, and to implement a protocol of maintaining patient’s safety. Four training sessions were provided in February, 2010, the content including nurses’ competence to assess fall, prompt and proper response to patients’ call bell, applying simulative teaching to patients to use call bell, rearranging confused and agitated patients’ beds next to walls, using cushion pads to block gaps of bed rails. In March of 2010, we also designed educational flier, with simulative stories of scenario of patients’ fall incidences, to give to all neurological patients to call for their attention to fall precaution. Later in the October of 2010, we broadcasted fall precaution programs on hospital television system to raise patients’ and family’s awareness of patients’ falls.

Results: After two months of carrying out our innovative simulative training program, the descriptive statistics showed that reported rate of falls had dropped from 0.15% (19 incidents in the 2009) to 0.04% (3 incidents in 12 months from May, 2010 to April, 2011). In the following 7 months from May, 2011 till the end of the year, there was only one reported fall occurred. No fall incident was due to gaps of bed rails or not using the call bell.

Conclusion: Our innovative simulative training program had reduced fall risk effectively. Nurses and students had exercised their critical thinking to accurately assess patients’ fall risk and implement protocol of fall prevention. From May, 2010 to December, 2011, those four incidents of fall all occurred when family helped patients using the toilet seats. This is our next phase of continuing work on fall prevention in the neurological patients.
THE PRELIMINARY RESULTS OF HEALTH CLOUD IN HEALTH PROMOTION-TAIWAN EXPERIENCE

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Objectives: Many researches and articles have documented information and communication technology-based interventions on health promotion and behaviour change. Cloud computing is the emerging trend in many field and healthcare industry in the future. There is very few article focused on the effect of the cloud computing practiced on health promotion. We collaborated with software providers and constructed the health cloud based on the health promotion center (eVIP service) in the Show-Chwan healthcare system. Now we will present the pioneering experience of the first health cloud in Taiwan. We conducted a questionnaire to clarify the satisfaction of many characteristics and took the suggestions from the end users.

Methods: A ten-sentence questionnaire was given at the health cloud and ten characteristics of cloud computing was included. The target populations were the members of the health cloud. Every question was given 1 to 5 points from “strongly unsatisfied” to “strongly satisfied”. One open question was added for suggestions from end users. The data was collected from 1 November to 9 November in 2012. SPSS was used to analyse the data. T-test was used to test the samples.

Results: Thirty-one answers were gathered. The overall mean of all characteristics is 4.04. The quantitative mean of ten characteristics are listed in table 1. Each characteristic is tested to be statistically significant. The overall satisfaction rate of health cloud is 80.8%. The results indicate that the health cloud is acceptable by the end users. The most unsatisfied characteristic is “elasticity of functions”. The most satisfied characteristics are “reliability of output information” and “contribution of output information for users’ work”.

Conclusion: Health cloud in Taiwan is constructed from the technology of cloud computing. Meanwhile it owns the characteristics and delivery models of cloud computing technology. The results of this preliminary study conclude that the members of health cloud accept the operation model of health cloud and are satisfied with the characteristics.
THE HIGH 5S PRE-OPERATIVE SURGICAL CHECKLIST – RESULTS FROM OVER 60,000 SURGICAL CASES IN GERMANY

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Objectives: One objective of the WHO initiative “Action on Patient Safety: High 5s” is to optimise correct site surgery (CSS) by introducing a standardised operating procedure (SOP) within participating hospitals in a multi-national context. Key steps of the SOP are recurrent identity checks, surgical site marking, and team-time-out. An important tool to support clinical staff and to document progresses is the High 5s surgery checklist. Since 2010 sixteen German hospitals have gradually implemented the SOP CSS. For evaluation purposes checklists are reviewed and indicator measures are calculated. This allows for assessment on performance measures and documentation quality over time.

Methods: Paper based High 5s surgery checklists were completed by clinical staff of the participating German hospitals (n=16) for each surgical case and carbon copies were sent to IfPS for evaluation. Checklists of 2012 were reviewed for the following indicator measures: Proportion of verification checklists for all eligible surgical cases (CS0), proportion of cases with a complete preoperative verification process (CS1), proportion of cases with properly marked surgical site (CS2), proportion of cases with complete final time-out (CS3), proportion of cases with discrepancy noted at final time-out (CS4), proportion of cases undergoing surgery with unresolved time-out discrepancies (CS5), proportion of surgical cases that are cancelled or postponed due to discrepancies identified at any point in the conduct of the SOP (CS6). Checklists received since November 2010 were also reviewed for completeness of documentation. Review of checklists was done electronically, frequency of single checklist items was calculated and completeness of documentation was registered. Composed indicator measures were calculated according to the international High 5s calculation sheets and aggregated data were generated for each hospital and month. For each measure a hospital ranking was drawn and high- and low-performers were identified.

Results: We analysed 111,960 checklists for completeness of documentation. The median for checklist completion was 85.7%. 10.6% of checklists were completed to 100%. We calculated High 5s indicator measures for 61,684 checklists of the year 2012. 4 hospitals consistently performed high for CS0-CS3 measures. 2 of these 4 hospitals were also part of the top 25% for CS4. These hospitals, however, ranged completely different for CS5 and CS6.

We identified 2 hospitals continuously ranking in the lower 25% for all of the first 4 indicators CS0-CS3. These hospitals also ranked in the lower 33% for CS5. Both presented a very low rate of case cancellations due to discrepancies (CS6, 0.00% and 0.01%).

Conclusion: Within the German High 5s hospitals checklists have become a common tool to monitor and document surgical patients’ care. Two years after starting SOP CSS implementation hospitals have reached consistent levels of performance measures. From our review of checklists it is clearly evident that with regard to the first 4 indicator measures project hospitals are divided in groups of high- and low-performers with most hospitals moving in the centre span. For the indicator measures dealing with discrepancies (CS4-CS6) high- and low-performers cannot clearly be identified. Our results are compromised by the adherence to complete documentation. Further investigation is needed to clarify the relationship between adherence to SOP, documentation quality and results of High 5s indicator measurement.
DESIGNING A GUIDELINE TO IMPROVE MEDICATION PRESCRIPTION IN COMPLEX OLDER PATIENTS

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Objectives:
- To know medication prescription quality in two long care facilities for elderly patients (CSS-Mutuam Güell, Barcelona with 165 beds and CSS-Mutuam Girona with 105 beds), of public assistance through the Catalan Health System.
- To draw a guideline for prescription revision by pharmacists, adapted to clinically complex elders.

Methods: In order to know the prevalence of potential inappropriate medications and the prescription quality, we followed throughout 2012, the inappropriate prescribing, using Beers’ criteria and number of patients in treatment with more than 9 drugs (1,2).

The guideline has been designed using different tools:
- Literature search (Beers’ criteria, de-prescribing, STOOP (Screening Tool of Older Person’s Prescriptions) and START (Screening Tool to Alert doctors to Right Treatment, clinical relevant interactions in elderly).
- Therapeutic substitution protocol
- Meetings between pharmacists, nurses and doctors.

Results: During 2012, we found that the treatments not meeting the Beer’s criteria, in the two institutions have been 13,4% and 16,6%. The more prescribed drugs against Beer’s criteria have been: Amiodarone, Hydroxyzine, Clonazepam, Oxybutynin and Clorazeopate. However, in some cases it has been problematic, because it is difficult for doctors to change the drug if the patient has already controlled it during a long time (Clonazepam), or they have more experience with its use (Amiodarone). Patients treated with more than 9 drugs have been 82,63% and 70,15%. To only consider polipharmacy as an indicator of a low quality prescription, is not an accurate way to know the patterns of risk-benefits of the drugs prescribed to our patients. It was clear for pharmacists that we need criteria adapted to these patients in order to make a thorough revision of the prescriptions and detect issues to be improved. Therefore, we have started a project oriented to improve the quality and safety of drug prescription adapted to our patients.

In a first phase, we have:
- Established a Therapeutic substitution protocol, related to our Pharmacologic Guide.
- Created a check list of criteria for pharmacists to assess the prescriptions, that includes, besides the usual revision of dose, frequency, administration route, etc:
  - Criteria to determine inappropriate medication (unnecessary drug therapy- need additional therapy)
  - Beer’s criteria adapted to our patients
  - START-STOP criteria
  - Effectiveness
  - Verification of the suitability of the administration form, for older patients
  - Contraindications
  - Selected drug-drug and drug-food interactions
  - Safety
  - Dosage adaptation for risk and narrow therapeutic range medication
  - Selected drug-drug and drug-food interactions

Conclusion: Patients in our facilities have complex treatments with many drugs. With a Therapeutic substitution protocol and a guideline adapted to these patients, pharmacists can review the prescriptions in a homogeneous and coherent way. Repetitive errors or inaccuracies can be detected and improvement measures proposed to doctors.

In the second phase of our project we will evaluate the results of the implementation of the guideline, through the pharmacist’s interventions and the prevalence of potential inappropriate medication use.

References:
AUDITING SELF-REPORTED QUALITY INDICATORS: LESSONS LEARNED
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Objectives: Clalit is the largest public healthcare provider organisation in Israel with 4,100,000 enrolees. Clalit has a system of 36 quality indicators for 14 hospitals it operates. Initially, quality indicators were based on automatically extracted data from Clalit’s clinical and administrative database, (e.g. excessive length of stay following colectomy, or a laparoscopic cholecystectomy converted to an open procedure). In 2012, clinicians recommended introducing quality indicators based on the medical record. Lacking a standard complete computerised medical record, these indicators had to be based on self-reporting process. These indicators include medications prescribed at discharge following an acute myocardial infarction (MI), antibiotics given within six hours for community-acquired pneumonia in the elderly, primary percutaneous coronary intervention (PCI) conducted within 90 minutes for ST-elevation MI, acquired pressure sores, patient falls, and patient falls with injury. The purpose of the present study was to conduct an external audit of self-reported data submitted for these indicators.

Methods: An external audit was conducted by physicians and nurses from the Hospital Division of Clalit. In each hospital, relevant closed records were reviewed. For pressure sores and patient falls, a high-risk population of patients over 75 with the longest stay within the survey period was selected, in order to detect a maximal number of cases. According to the validation methodology endorsed by Joint Commission International, each record was classified as either (1) included in the denominator only, (2) included both in the numerator and in the denominator, or (3) excluded from the denominator. The per cent agreement between the auditor and the self-report was calculated for each indicator at each hospital. In compliance with JCI definitions, a threshold of 75% agreement was defined as satisfactory. The performance calculated by the auditor was compared with the self-reported performance and gaps were identified.

Results: For the proportion of patients with a community-acquired pneumonia given antibiotics within six hours, agreement ranged from 70% to 100%. One hospital was <75%. For PCI conducted within 90 minutes in STEMI, agreement ranged from 0 to 95%, with 3 hospitals achieving <75% agreement (mostly due to under-reporting of cases). Regarding medications prescribed for MI patients, agreement was high for aspirin, beta blockers and statins (86-100% for all 3 medication groups), but lower for ACEI/ARBs (36-100%, with 4 hospitals achieving <75% agreement). Regarding acquired pressure sores (grade 2 or higher) agreement was 84-100% in all hospitals, although complete reporting of all identified pressure sores was seen in only in 3/8 hospitals. Self-reported data regarding patients’ falls and patients' falls with injury had 100% agreement in all records reviewed.

Conclusion: External auditing and validation of self-reported quality indicators proved to be a useful method for detecting discrepancies in reporting, mainly due to misunderstanding of inclusion criteria or due to under-reporting. Data reported by hospitals operated by Clalit were found to be reliable in most cases.
NATIONAL PROGRAMS TO PREVENT AND MANAGE PPH AND PE/E 2012: STATUS REPORT OF 37 COUNTRIES

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Objectives: Discuss findings of a multi country analysis conducted by MCHIP (USAID’s flagship Maternal and Child Health Integrated Program) in 2011 and 2012 on country-level activities on the prevention and management of post-partum haemorrhage (PPH) and pre-eclampsia/eclampsia (PE/E).

Methods: To track progress in expansion PPH and PE/E prevention and management in country programs, focusing on high impact interventions and commodities. Analysis used two tools completed thru consultations with governments and partners: scale up “maps” covering topics from policy to coverage of key interventions and a 44-item questionnaire in English, French & Spanish.

Results: Illustrative data from 37 countries includes: policies to support Active Management of the Third Stage of Labour (AMTSL) are almost universal for PPH prevention with 90% of countries stating that midwives are authorised to do AMTSL; 43% have piloted Misoprostol for PPH prevention at home births yet only 14% are scaling up; Magnesium Sulphate is on the essential medicine list of 100% countries, with midwives authorised to administer it in 78% of countries. Pre-service education or in-service training may not address required competencies and service delivery guidelines were sometimes incomplete or outdated.

Conclusion: Access to oxytocin and magnesium sulphate has improved; but not all skilled birth attendants are authorised to use magnesium sulphate. Opportunities to scale up the use of misoprostol for prevention of PPH at homebirths are being missed. Although policy and program efforts for PPH and PE/E are being prioritised, internal inconsistencies of national guidelines and other documents are notable.
QUALITY IMPROVEMENT BY IMPLEMENTING A MULTIDISCIPLINARY CARE PATHWAY FOR BREAST CANCER PATIENTS IN THREE HOSPITALS

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1Networks, Comprehensive Cancer Centre the Netherlands, Groningen, 2Research, Comprehensive Cancer Centre the Netherlands, Rotterdam, 3Faculty of Economics and Business, University of Groningen, Groningen, 4Health Technology and Services Research, University of Twente, Enschede, Netherlands

Objectives: The Comprehensive Cancer Centre the Netherlands supported the development and implementation of the breast cancer pathway in hospitals by using the Integrated Oncological Care Pathways (IOCP). The study hypothesises that the implementation of a multidisciplinary breast cancer pathway will improve the care for breast cancer patients.

Methods: Retrospectively data on almost 800 patients with breast cancer, diagnosed in three hospitals, in which a multidisciplinary care pathway was implemented in 2008, were selected from the Netherlands Cancer Registry (NCR). Fourteen quality indicators were selected and results before implementation of the pathway in 2006-07 (baseline measurement) were compared to those after implementation in 2009 (post measurement). Furthermore, structured interviews with the involved project leaders were used to verify the impact of the implemented care pathway on the results.

Results:

<table>
<thead>
<tr>
<th>Indicators with medical information</th>
<th>NABON norm</th>
<th>Baseline measurement (2006-07, % patients); N total = 366</th>
<th>Post measurement (2009, % patients); N total = 427</th>
<th>Significance (p &lt; 0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HER2neu determination</td>
<td>92%</td>
<td>96%</td>
<td>0.016</td>
<td></td>
</tr>
<tr>
<td>2. Sentinel node procedure is performed</td>
<td>75%</td>
<td>78%</td>
<td>0.303</td>
<td></td>
</tr>
<tr>
<td>3. Axillary lymph node dissection by pN0(i-)</td>
<td>17%</td>
<td>8%</td>
<td>0.012</td>
<td></td>
</tr>
<tr>
<td>4. Number of breast cancer surgeries per year per surgeon</td>
<td>74%</td>
<td>92%</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>5. Radiotherapy and chemotherapy not simultaneously</td>
<td>87%</td>
<td>99%</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>6. Time between first visit and PA-confirmation (median; mean: days)</td>
<td>0 / 3,7</td>
<td>0 / 3,0</td>
<td>0.705</td>
<td></td>
</tr>
<tr>
<td>7. Time between first visit and first surgery (median; mean: days)</td>
<td>21 / 28,6</td>
<td>21 / 27,8</td>
<td>0.764</td>
<td></td>
</tr>
<tr>
<td>8. Time between last surgery and first chemotherapy</td>
<td>within 4 weeks</td>
<td>33%</td>
<td>45%</td>
<td>0.129</td>
</tr>
<tr>
<td>9. Time between last surgery and first radiotherapy</td>
<td>within 4 weeks</td>
<td>55%</td>
<td>59%</td>
<td>0.312</td>
</tr>
</tbody>
</table>

Seven out of eight indicators with medical information and four out of five indicators with information about waiting- and throughput times improved (see the most important results in table). Better compliance with the evidence based guideline for breast cancer was achieved e.g. more patients underwent the sentinel node procedure and therefore needed less axillary lymph node dissections. Furthermore, the breast cancer care complied better to the norms of the National Breast Cancer Organisation of the Netherlands (NABON). After implementing the care pathway more patients started with their first chemotherapy or radiotherapy within 4 weeks after surgery.

Conclusion: By implementing the multidisciplinary breast cancer pathway, breast cancer care improved and resulted in better compliance with the evidence based guideline and the NABON norms. The development and implementation of a breast cancer pathway according to the IOCP model is worth the effort as it improves the quality of the care for breast cancer patients.
PATIENT-MOVIES ON THE WEB: HOW TO COPE WITH COPD AND TYPE 2 DIABETES

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1KPUK, Capital Region of Denmark, Hillerød, Denmark

Objectives: Our objective was to complement health information with a user based experience on a life with a chronic disease. We wanted to strengthen the patients’ ability to self-care and strengthen their decision making regarding the lifestyle choices when you have a chronic disease.

Methods: We performed a series of focus group-interviews with people suffering from Type-2 diabetes and COPD. From these, we were able to pinpoint relevant themes for each patient group. Afterwards we conducted/held a workshop with patient organisations, staff members, Municipal workers and patients. Through the use of the NABC-model in the workshop we created a user experience-based platform. Hence the outcome of the focus group-interviews and workshop was a web based patient portal with focus on short length videos, where people with COPD and type 2-diabetes reflected on their life with chronic disease.

We recruited volunteers for the videos from the participants of the focus groups. We shot more than 30 videos based on themes such as “Work and COPD”, “Type 2-diabetes and the guilty/bad conscience”. While the videos were edited, we established a website based upon the firms existing CMS. This was at initially meant to be the main platform for the videos. The website is found here: www.gribomlivet.dk. When the website was ready to launch, we performed a screening in the Danish Film Institute where politicians, health-care workers, participants, patient organisations and citizens were invited. This gave the portal publicity in newspapers and regional television.

We quickly realised that in order to have a closer dialogue with our users, we could make use of Facebook which most of our users already were using in their everyday life. From Facebook we linked to all of our videos on the homepage and called for our users to comment on the videos.

Results: We have frequently been invited to screen the videos on local hospitals for employees and citizens. This resulted in a very constructive feedback which we have used in our future work. Teachers in communal healthcare centers use the videos when they teach patients in coping with their chronic disease. Patient counsellors in hospitals recommend the videos for their patients. The participants from the videos now act as patient ambassadors in different contexts, not only relating to our project but other projects in the region as well.

As a part of the project evaluation we had a consultant agency to perform a series of qualitative interviews and a larger quantitative internet survey with chronic patients. The evaluation showed us that our videos were predominately perceived as credible, relevant and informative by the patient groups.

Conclusion: The results from the evaluation show that using an audio-visual medium is an effective way to display a life with a chronic disease. Everyday situations in the life of a chronic patient get visualised and therefore become concretised for the viewer. The videos may contain new information for newly diagnosed and/or relatives and they may be able to identify themselves with the represented situations, strengthen them in the belief that they are not alone trying to cope with a chronic disease.

References: Danish Ministry of Health & Capital Region of Denmark.
THE USE OF BUSINESS INTELLIGENCE AS A TOOL TO SUPPORT A MODEL OF CORPORATE GOVERNANCE ECONOMIC EFFICIENCY – HOSPITAL SÃO RAFAEL

Antonio Rabelo 1,*
2Strategic Advisory, Hospital São Rafael, Salvador, Brazil

Objectives: The search of a model of management that guarantees gains for all its actors has been a problem worth of constant mobilisation in many health care systems worldwide. The evaluation of the role of the actors involved in this system, being either suppliers, health insurers, physicians, hospitals, is crucial to the development of a sustainable and manageable system. The high costs of the services implicate that the health-product need to be increasingly predictable.

Methods: The use of the methodology of Business Intelligence (B.I), in Hospital São Rafael, has guided the strategic decisions of the institution, directing it to a model of corporate governance economic efficiency. B.I has been used for analysis and construction of indicators of healthcare, services, procedures, surgeries, treatment regimens, calculation of the profitability of procedures, and made managers able to identify which patient profiles, specific diseases, type of surgeries, and health insurers that achieve better results. On the basis of this performance measurement and predictions of outcome, gain negotiation strategies are defined between the actors involved in the production process.

Results:

<table>
<thead>
<tr>
<th>MEDICAL SERVICES</th>
<th>Outcome - Days stays in hospital and hospital rates</th>
<th>Outcome - Materials and Medicines (drugs)</th>
<th>Outcome - Medical Income</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUROLOGY</td>
<td>(105.609,68)</td>
<td>2.911.524,22</td>
<td>36.677,81</td>
<td>2.842.592,35</td>
</tr>
<tr>
<td>ORTHOPEDY</td>
<td>(1.482.261,05)</td>
<td>3.444.667,10</td>
<td>145.581,36</td>
<td>2.107.987,41</td>
</tr>
<tr>
<td>ONCOLOGY</td>
<td>(267.773,77)</td>
<td>2.198.334,47</td>
<td>41.783,26</td>
<td>1.972.343,97</td>
</tr>
</tbody>
</table>

Horizontal Analysis - Type of items

<table>
<thead>
<tr>
<th>MEDICAL SERVICES</th>
<th>Outcome - ICU</th>
<th>Outcome - Departments</th>
<th>Outcome - Surgical Center</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEUROLOGY</td>
<td>2.637.242,10</td>
<td>2.726.658,84</td>
<td>115.933,51</td>
<td>5.158.158,31</td>
</tr>
<tr>
<td>ORTHOPEDY</td>
<td>375.395,00</td>
<td>718.082,91</td>
<td>1.389.904,50</td>
<td>2.243.180,16</td>
</tr>
<tr>
<td>ONCOLOGY</td>
<td>1.193.073,80</td>
<td>1.832.183,69</td>
<td>140.160,28</td>
<td>3.043.052,99</td>
</tr>
</tbody>
</table>

Horizontal Analysis - Outcomes for business departments

Conclusion: With this method it is possible to define which specialty, surgical procedures, medical staff, etc. is economically more advantageous and where it is most advantageous. In a scenario of market transition as is currently seen in Brazil, this methodology has enabled the Hospital São Rafael to face the challenges already known and those that are still to come.
USE OF LAB DATABASES TO MONITOR CHRONIC KIDNEY DISEASE IN A POPULATION USING CUMULATIVE EGFR GRAPHS

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Objectives: Chronic kidney disease (CKD) is common and prevalence is increasing in the UK. The majority have mild-moderate disease and are asymptomatic. A minority progress to end-stage kidney disease (ESKD) requiring kidney replacement therapy (KRT). KRT is associated with poor quality of life and costs £30K per patient pa. Early detection and intervention can halt or delay progression to ESKD but many patients are detected too late [1].

Our aim was to develop a population surveillance system using existing laboratory data to enable early detection of patients at high risk of ESKD by reviewing cumulative graphs of a kidney function marker - estimated glomerular filtration rate (eGFR). We report results from the first audit of clinicians receiving the reports since this system was introduced.

Methods: A bespoke software database was developed, which is updated daily with biochemical data from the laboratory computer system (LIMS). Data is collected for all patients having an eGFR test from community or out-patient locations within the Trust catchment c.1 million population. The software is capable of creating lists of patients using a variety of search criteria and displaying cumulative eGFR graphs for each patient containing up to 5 years data.

The cumulative eGFR graphs are reviewed by a healthcare scientist for all patients fulfilling the following criteria; a new eGFR result within the last 7 days and age ≤65 years and eGFR ≤50 ml/min/1.73 m² or age >65 years and eGFR ≤40 ml/min/1.73 m². Depending on the trend, patients are categorised as either UI - requiring urgent investigation by the renal team, IC - inform the requesting clinician via a paper report including the eGFR graph or NA - no further action required.

Results: Since April 2012, we reported 370,000 eGFR results, of which approx. 12,000 (3.3%) fulfilled our filter criteria (c. 400 per week) and the cumulative eGFR graph was reviewed. On average 15% of the 12,000 graphs reviewed are flagged as high risk (UI or IC) and paper reports are sent out to the requesting clinician containing the eGFR graph with details of where to get advice.

After 6 months, feedback was sought from clinicians for 96 consecutive patients reported as high risk. We assessed clinician's existing habits for reviewing kidney function results, 30% stated they only look at the last few results and 33% look back at less than 2 years of data. 74% found it useful and 41% claimed to change management in response to the graph. Average score for ease of use was 8/10 (10 highest).

Conclusion: We have developed a system for lab staff to review cumulative eGFR graphs for a large population and identify patients at highest risk of developing ESKD. Reports with eGFR graphs are sent to clinicians highlighting patients so that appropriate interventions to delay or halt deteriorating kidney function can happen earlier. Because CKD progresses over many years, it is too early for clinical outcome data from our project. However, since 2004, this system was introduced for diabetics attending hospital clinics in our Trust. Statistical process charts show a significant reduction in the number of patients needing KRT since 2010 (P<0.001).

IMPROVING MANAGEMENT OF PATIENTS WITH ACUTE CORONARY SYNDROME BY ENFORCED POLICY AND STRINGENT AUDIT TO FACILITATE DOOR-TO-BALLOON TIME

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Objectives: Acute myocardial infarction (AMI) is one of the leading causes of death in Taiwan. Emergency intervention is life-saving in many patients with acute coronary syndrome (ACS) and impending myocardial infarction. Door-to-balloon (D2B) time is critical and should best be within 90 minutes.

Methods: In the first quarter of 2011, D2B time in our hospital was 68% for those patients with ACS who were finally confirmed to have AMI, which was below the level of 75% set by the Department of Health in Taiwan. We established a policy to facilitate the process, which included establishment of a special chest pain area to serve those patients suspicious of ACS, so that they could pass triage in the Emergency Department without unduly delay to receive EKG within 10 min and withdrawal of blood for Troponin I. The Council for Quality Health Care in this hospital also adopts a stringent audit of the performance. The report of the Troponin I level could reach the physicians within 60 minutes in more than 80% of the cases.

Results: In those ACS patients who finally being diagnosed to have AMI with ST elevation, 93.7% had a D2B time less than 90 minutes in the first quarter of 2012 and 96.2% in the last three quarters of 2012, which was significantly higher than 68% in the first quarter of 2011 and 78% in the other three quarters in 2011.

Conclusion: Our findings indicate that enforced policy and stringent audit are helpful to facilitate door-to-balloon time and to improve management of the patients with ACS who are finally confirmed to have AMI.
THE PROGRAM OF THE FIFTH VITAL SIGN: PAIN KNOWLEDGE AND ATTITUDES AMONG NURSES IN SOUTHERN TAIWAN
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Objectives: The purposes of study were to:

1) develop an educational program about the fifth vital sign;
2) Evaluate the effectiveness of a program about the fifth vital sign on pain knowledge and attitudes among nurses.

Methods: The study was a cross-sectional design. The nurses in a medical center were invited to participate in a two-hour educational program of pain management. The educational program focused on the significance of fifth vital sign, the tools of pain assessments, and the standards of pain care. The educational program was implemented 12 times within two weeks that allowed all nurses to attend. A questionnaire about the knowledge and attitude of pain was administrated to nurses before and after the educational program. The questionnaire consisted of 35 items ranging from 0 to 37. T-test and ANOVA were used to examine the difference of pre-post program on pain knowledge and patients’ satisfaction.

Results: A total of 756 nurses participated in the study. After implementation of the program, scores on the pain knowledge and attitude increased significantly from 23.28 (SD = 4.58) to 25.60 (SD = 5.27) (p<.001). The score range 80-100% of pain knowledge and attitude significantly increased from 11% to 31%; while the score range < 60% significantly decreased from 32% to 22%. Nurses’ pain knowledge scores significantly differed by education levels, clinical ladder levels. However, pain knowledge did not differed by working years. A total of 438 patients with pain care satisfaction increased from 94.2% to 97.3%.

Conclusion: The educational program of pain management and fifth vital sign improves nurses’ pain knowledge and attitudes in patient care.
THE SOCIAL SIGNIFICANCE OF THE ACTION OF NURSING STAFF CONCERNING THE ADVERSE EVENTS REPORTING SYSTEM

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Objectives: Recognising the need to take action so that adverse events and risks can contribute to a review of care processes and reduce harm to patients, this study was conducted in order to understand the meaning that the nursing staff attributed to the adverse events reporting system (AERS) in effect at the institution.

Methods: To achieve this, a qualitative research approach based on the social phenomenology of Alfred Schutz was chosen. Data were collected during June and July 2011, through open interviews, using the following guiding questions: “Tell me what an adverse event is for you. Use examples if you like.” and “Tell me about your experience regarding the occurrence of adverse events and their notification”. Thirty-one nursing professionals participated in the study, 17 nurses and 14 nursing assistants or technicians, who had experience with the AERS in a tertiary university hospital in the interior of the state.

Results: Meaning was revealed through six categories:

1) all types of occurrence must be reported;
2) reporting as an auxiliary system to care management;
3) the culture of punishment in transition;
4) the nurse as the agent responsible for voluntary reporting;
5) sharing problems with upper management; and
6) achieving quality in the work process.

Analysis highlighted the need to disseminate the WHO taxonomy for patient safety in order to improve the quality of information and stimulate notification. Analysis also revealed the participation of the instrument in institutional communication, the management of personnel and materials, medicines and equipment, in monitoring the results of the unit and in the indication of continuing education needs. The instrument contributed to critical analysis of the flaws in the work process, permitted the healthcare professional to share responsibilities with management and encouraged corrective actions. The non-punitive purpose of reporting was guaranteed and efforts to publicise this feature were highlighted. Among the professionals interviewed, feelings of fear in relation to the process of research and analysis were observed; however, they reported positive understanding experiences. When reporting adverse events, team members perceived themselves to be in a collaborative relationship with the institution and expected a response in the form of a review of the conduct taken and in achieving higher levels of solvability. Team members are confident that they will be granted administrative support and professional security, conditions that encourage them to continue reporting. The motivation to report to achieve continuous improvement of the work process, contributing to non-repetition of the error and to prevent future adverse events was highlighted by the social experience of the team.

Conclusion: The professionals perception is that the adverse events reporting system is instrument that assists care management and allow them to share responsibilities with managers and foment correctives actions, looking forward to avoid errors repetition and prevent future adverse events.
IMPROVEMENT IN PATIENT AND HOSPITAL STAFF SATISFACTION BY INCREASING ADHERENCE TO DISCHARGE PLAN

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Objectives: A patient would like to be informed of his/her treatment and discharge plan and anticipated discharge date beforehand during inpatient stay. However, SNUBH does not have a standard procedure to follow for discharging patients. Lack of standardisation and communication makes unexpected changes in physician orders which leads to delay of discharge. Patients are not provided with proper discharge information and/or the administrative work of the supporting staff are done inefficiently. An interdisciplinary team with the task of improving inpatient discharge process used Six Sigma methodology to improve adherence to discharge plan and discharge cycle time.

Methods: The course of the project was an eight month time for improvement in discharge procedures and one year time for post management period. Through treatment process analysis, benchmarking, brainstorming sessions and Voice of the Customers analysis, the team identified five root causes that contribute to delay of discharge. The five causes were:
1) unpunctual physician rounds
2) a lack of awareness of discharge procedure
3) a lack of need for discharge patients on expected discharge date
4) a lack of reward and punishment on adherence to discharge plan
5) re-scheduling follow-up appointments for patients.

For clinical providers such as nurses and physicians to raise awareness of the importance of a discharge plan which allows patients to be discharged on an expected discharge date, the following improvements were implemented:

1. Provided the standard for discharge planning and response to that feed back
2. Provided the discharge planning education sessions to each clinical department
3. Promoted discharge procedures to hospital staff
4. Established a rate of discharge on time inquiry system
5. Rewarded physicians who followed discharge planning successfully
6. Reflected discharge planning to hospital management index
7. Revised follow-up outpatient appointment scheduling system
8. Established a channel of communication between hospital staff

Results: All improvements listed influenced all clinical departments and increased adherence to discharge plan. Patients who were discharged on time improved, a 27.5% increase, from 40.9% to 68.4%. DPMO (Defect per Million Opportunity) and Sigma level showed a 97% and 3.4 sigma increase respectively. Improving discharge cycle time boosted patient and hospital staff satisfaction.

Conclusion: The project team developed a discharge planning project to evaluate SNUBH’s current discharge process, provide an excellent patient care experience and minimise delay of discharge. The most significant achievements were to bring clinical provider’s attention to discharge plan and create an atmosphere of voluntary quality improvements by identifying patients and hospital staff’s needs. The success of the results from this project can be attributed to monitoring patient satisfaction and continuous support of clinical departments. Therefore, the team plans to devise a proper measure to continue quality improvements.
THE ASSOCIATION BETWEEN NURSES’ CHANGES IN PRACTICE AND RESPONSES OF COLLEAGUES TO THEIR MEDICAL ERRORS IN JAPAN

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Objectives: Earlier studies have found a relationship between managerial or institutional responses and healthcare professionals’ changes in practice after an error. However, the effect of colleagues’ responses to such errors has not been investigated thoroughly. The purpose of this study was to classify the change in nurses’ practice after experiencing an error and to explore colleagues’ responses to such errors in Japan.

Methods: A self-administered questionnaire was distributed to 1,375 nurses at three hospitals in Japan from November to December 2011. The questionnaire included the most serious medical errors that nurses felt they had made during their careers, perceived response or no response from colleagues (81 items), and nurses’ change in practice subsequent to the error (18 items). Statistical analyses consisted of:

1) factor analysis of the change in nurses’ practice; and
2) correlation analysis between subscales identified from the factor analysis, the number of supportive responses from colleagues, and the presence of their judgmental responses. We calculated the partial correlation coefficients between every two variables and adjusted for other candidate variables.

Results: Valid responses were obtained from 1,172 participants and data from 1,022 participants were analysed. Factor analysis identified four types of changes in practice: “cautionary attentiveness,” “growing awareness of organisational safety,” “increased worry,” and “becoming more self-defensive.” Correlation analyses showed:

a) a negative correlation between the number of support vs. “becoming more self-defensive” (partial correlation r = -0.17; p < 0.01); and a positive correlation
b) between the number of supportive response vs. “cautionary attentiveness” (r = 0.194; p < 0.01) and “growing awareness of organisational safety” (r = 0.104; p < 0.01); and (c) between the presence of their judgmental response vs. “increased worry” (r = 0.234; p < 0.01).

Conclusion: The types of changes in practice that had been conventionally classified into two types were newly divided into four types in this study. Additionally, we apparently revealed some weak relationships to the changes in practice and the responses from colleagues. This information may be helpful in providing support for nurses who commit medical errors in Japan.

EXPERIENCE OF PHARMACY INTERVENTIONS ON QUALITY OF HOSPITAL INPATIENT PRESCRIBING IN SOUTHERN TAIWAN

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Objectives: To analyse and characterise the inpatient prescription errors after pharmacists intervened in electronic prescribing system. The result may be used as a reference to develop a computer-based monitor for improving medication safety.

Methods: A retrospective study was conducted from January 1, 2011 to December 31, 2011 at a 2600-bed, tertiary-care academic hospital in Taiwan. After pharmacist intervened those medication and made recommendation which was accepted by physician then it became a record. All data were collected and analysed from these records.

Results: The research checked 1276727 inpatient medication order sheets across the whole year. With the help of connecting electronic medical record system, pharmacist generally used chart reviews at detecting order errors. In this way, all clinical monitoring and dosage adjustments are in place when required. Of these, 4264 errors were detected, an error rate of 0.33%. Potentially lethal errors were found in 0.04% of these prescriptions. The most common errors were improper dose of medicine, accounting for 45% of the medication errors. Among them about 17% related to inappropriate drug selection and dosing for patients with chronic kidney disease. Confusing two medications with similar-sounding names and overdosing by combining more than one medication with similar properties accounts for up to 25% of all reported errors. Giving the wrong drug (dosage, route) with insufficient or unavailable drug information accounted for 18% of the errors. Missing indication were 4%. Interaction between medications were 8%. Drugs most frequently associated with prescription errors included anti-infective agents, cardiac agents, and gastrointestinal agents.

Conclusion: Inpatient in a medical center may have multiple comorbid conditions and subsequent polypharmacy. This leads to a higher risk in medication safety. From those experiences, we can design computer software that give alerts to recommend dose reductions for patients with renal impairment or limitation of improper route of administration or to flash up warning messages about interactions and allergies. That can guide the physician while prescribing medication.
THE SATISFACTION OF NURSING CARE INTERVENTION ON MANAGEMENT OF PATIENTS’ PAIN EXPERIENCE
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Objectives: The purposes of the study were to:

1) develop an educational program which integrated pain as the fifth vital sign;
2) evaluate the effectiveness of the nurses’ educational program about pain management on patients’ satisfaction.

Methods: This study was a cross-sectional design. The subjects were patients who admitted to adult wards at a medical center in southern Taiwan. The exclusion criteria for patients included the patients who were paediatric, psychiatric patients as well as those who visited outpatient departments. A scale of satisfaction regarding pain management was developed by the researchers. The scale consisted of 15 items which assessed patients’ pain experience and their satisfaction to pain relief or control. The nurses in the medical center were required to attend an educational of program about fifth vital sign and pain management. The educational program was implemented in 10 times within two weeks that allowed all nurses to attend the pain education. A survey was conducted before and after the educational program.

Results: In pre-survey, 870 questionnaires were distributed to patients; only 438 questionnaires (50.3%) were collected. In post-survey, 870 questionnaires were distributed to patients; only 422 questionnaires (48.5%) were collected. In pre-survey, the subjects reported the mean score of pain endurance (0-10) was 5.26 (SD =2.3). Females were more likely to endure pain than males (t= -1.86, p = .002). The mean score of seeking pain relief was 5.87 (SD= 1.95). In post-survey, the subjects reported the mean score of pain endurance (0-10) was 5.07 (SD =2.12). The mean score of seeking pain relief was 5.53 (SD= 1.95). It was worth to note that a significant difference of pain endurance between pre-post survey (t=2.16, p < .01). In pre-survey, 317 (72%) subjects reported pain experience during hospitalisation. Of the 317 subjects, 91.4% satisfied to physicians’ pain management; 94.2% satisfied to nurses’ pain management; 91.7% satisfied to overall pain relief at hospitalisation. In post-survey, 294 (70%) subjects reported pain experience during hospitalisation. Of the 294 subjects, 95.9% satisfied to physicians’ pain management; 97.3% satisfied to nurses’ pain management; 93.2% satisfied to overall pain relief at hospitalisation.

Conclusion: Pain is a widespread experience for hospitalised patients. An education program of the fifth vital sign and pain management to nurses improves patients’ stratification about pain relief. Educational program focusing on pain management are needed to be widely implemented for nurses.
APPLICATION OF RISK MANAGEMENT STRATEGIES IN THE NON-MEDICAL PERSONNEL DURING UNEXPECTED IN-HOSPITAL RESUSCITATION AT THE PUBLIC SPACE

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Objectives: In our hospital, serial analysis of the unexpected resuscitation demonstrated that most resuscitation cases happened in the public space without medical staff (61.8%). The majority of these cases were due to conscious change or fainting. However, 34.2% of these cases were considered as false alarms and were discharged directly without medical events after primary resuscitation. According to the concept of risk management, the promotion of ability to assess the unexpected resuscitation cases by the non-medical staff in the public space could definitely enhance the efficacy of resuscitation. Therefore, this project aims to investigate the awareness and perception of non-medical staff in encountering with unexpected resuscitation, and promote their appropriate response to these events.

Methods: This cross-sectional study was conducted in 4 non-medical units that most frequently faced with unexpected resuscitations, namely the guard station, general administration counters, outpatient area in the radiotherapy department, and specialist administrative office. The members in these 4 units randomly received a serial of questionnaire surveys. First, it analysed the responses of non-medical staff to the following items: willingness to receive training, familiar with the principles of management, reaction to resuscitation, and critical assessment of resuscitation scene. The relationships and differences between these issues were compared across each unit and seniority of the staff.

Results: 92 questionnaires were delivered and 75 of the completed sheets were collected. Analysis of the 4 factors showed that there were significant relationships among these factors (P<0.01). All staff were most enthusiastic participating the training courses, and also affirmed to be familiar with the principles of management. But they were less confident with assessment of the scene of resuscitation. Post-Hoc showed that members in the guard station responded better than the members of the general administration counter in “familiar with the principles of management” and “critical assessment of resuscitation scene” (1.25*; 1.54*). And the former also better than the specialist administrative officers in “critical assessment of resuscitation scene” (1.77*). Using structural equation models, there were two significant routes with “critical assessment of resuscitation scene” (P<0.05). Route 1 was “willingness to receive training” via “reaction to resuscitation” to “critical assessment of resuscitation scene” (0.519*; 0.216*). Route 2 was “willingness to receive training” via “familiar with the principles of management” to “critical assessment of resuscitation scene” (0.322*; 0.408*).

Conclusion: From our data, 42.5% of all responders had involved in unexpected resuscitation during the past six months. After primary resuscitation, most of these cases turned out to be false alarms. Therefore, appropriate response to these unexpected resuscitation events could be essential. Our study underscores that non-medical staff members of all seniorities are enthusiastic about receiving basic training in resuscitation. Following proper training courses, they could develop higher confidence in the critical assessment and management of resuscitation events. Our on-going project integrates the resources of the medical and non-medical departments to promote the efficacy of primary in-hospital resuscitation, reduce inappropriate callings, and enhance the competence in the assessment of resuscitation scenes.
PROMOTING A POSITIVE PATIENT EXPERIENCE AND STAFF ENGAGEMENT CULTURE THROUGH PATIENT SATISFACTION SURVEY IN HONG KONG
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Objectives: To enhance patient experience and staff engagement through establishment of a Patient Satisfaction Survey (PSS) Mechanism in HK. The incorporation of patient satisfaction as a part of the evaluation of health care quality will benefit not only the wider public interest in health care policy and services, but can also be employed as a tool to engage patients and staff with aspirations and a common goal to enhance patient experience and staff satisfaction.

As a former British colony, HK citizens used to be relatively inexperienced about playing a major role in public affairs. Following with the modern civil rights movement, and the new media technologies inspiring public participation in politics, the environment, social issues, and of course healthcare services they receive, patients nowadays are more eager to express their feelings and opinions, more concerned about self-interests and rights. They are no longer unquestioning towards doctors’ decision and advice. With societal sentiments towards higher accountability to the public rights, the inclusion of patients’ opinions in service assessments has gained greater prominence over the years. The HK Hospital Authority (HA), being the largest public healthcare provider in HK, launched its first baseline PSS in 2010 for 5,000 patients. The PSS was conducted by an independent academic institution using a validated tool adapted from the NHS PSS questionnaire by Picker Institute Europe.

The 2010 baseline survey (Full Report at www.ha.org.hk) reported to the public in June 2011 was generally well received by staff, patient groups, public and media. The overall result was encouraging with more than 87% of the patients indicating a high degree of trust for our doctors and nurses, and 80% rated that the treatment and care they received was good to excellent.

Methods: As an important strategy to engage staff and enhance patient experience, the HA has decided to deepen the governance arrangement to set up a clear corporate policy, standards & protocols, monitoring, follow up & public reporting on PSS. Whilst territory-wide PSS benchmark survey will be conducted every 5 years, individual public hospitals are encouraged and will be equipped with a standardised PSS tool to conduct small scale PSS locally and at regularly. Improvement action plans arising from PSS will be incorporated in the annual service planning and corporate programmes. In-depth studies were conducted in 2012 on:

a) secondary data analysis of the 2010 PSS results;
b) engagement of doctors and nurses for the views on the enablers and barriers of patient engagement.

Results: The results of in-depth study on:

a) the 2010 PSS results (secondary data analysis);
b) engagement study involving doctors and nurses for patient engagement will be available in the second quarter of 2013. With these results, the management will be able to formulate strategies and action plans to enhance patient experience and staff satisfaction through co-production of a patient-centred culture.

Conclusion: As health policies/services come under public scrutiny, the public becomes more critical of the healthcare provided. The HA PSS Mechanism is a timely movement to address the public concern about their rights as active participants in the planning and evaluation of health services. In addition to responding to social demands for patient involvement, PSS itself is also a good means to reinforce the patient-centred culture. Improved patient experience and their trust in our clinical staff will result in patients with greater compliance with clinical treatment and correspondingly enhance staff satisfaction.
OPTIMISING THE WORK PROCESS THROUGH IMPROVEMENT OF RESERVATION SYSTEM

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Objectives: As increasing interest in health care, there has been a high demand for more accurate, prompt diagnosis and treatment of the patients and caregivers. In Seoul National University Bundang Hospital (SNUBH), patients with the brain diseases and cancer demanded one stop service highly according to the survey results of the external customer satisfaction. The highest demand for the one stop service was all the exams under fasting condition required to be performed for a day. Therefore, to enhance the quality of the one-stop service, this study progressed optimising the work process through total reservation program to outpatients.

Methods: This study proceeded the improvement activities with techniques of DMAIC (define, measure, analyse, improve and control) through the six sigma for test scheduling process. In the stage of definition, this technique confirmed the problem in the reservation program of medical examination. The survey was conducted on the outpatients who were prescribed two or more fasting tests to investigate the satisfaction and requirement regarding the reservation of fasting tests and waiting time. In the stage of Measurement, the statistics were calculated by analysing the reservation rate of the patients prescribed with more than two fasting tests over six hours including CT, MRI, ultrasound, fluoroscopy, echocardiography and nuclear medicine exams between 01/03/2011 and 02/29/2012. This technique selected the reservation rate as a key indicator which included more than six hours of fasting examinations performed on the same, and it set a goal as 85%. In the stage of Analysis, this technique drew key reasons for the problems. This technique confirmed the potential reasons of the problem in reservation system by the technique of 5 why and selected a direction of improvement by the reasons drawn. In the stage of Improvement, the improvement activities were progressed. One-stop exam reservation system has been established that allowed on to make all the tests reservation and doctor’s appointment on one computer screen. In the stage of Control, this technique confirmed once more the current level and post-improvement activity level by the key indicator selected in the stage of measurement.

Results: This study identified that the average of same day booking rate of the fasting examinations was improved to 76.8% from 67% by 9.8% between September 01 to October 31, 2012. Also, with one-stop test reservation program, the time to schedule the tests done under fasting condition has considerably declined from 120 seconds to 29 seconds. Therefore, this effective improvement of work process leads to the satisfaction of the inpatients.

Conclusion: The result of this study is that the number of patients’ visits to the hospital was decreased by the reservation of the exams in one day with one fasting. Additionally, systemic control of the exam reservation based on the priority and duration of the test allows the work progressing more efficiently and decreasing the error of the reservation.
RETIREMENT OF INDICATORS: HOW TO DECIDE WHICH INDICATOR NEEDS TO GO?
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Objectives: As large numbers of indicators are now in use in many healthcare systems, the question has arisen when indicators should be ‘retired’. Currently more than 400 indicators for more than 30 clinical indications are in mandatory use in external quality assurance in the German health care system. More indicators for further clinical indications are in preparation. The Federal Joint Committee, the body responsible for external quality assurance in the German health care system, is thus seeking for a methodology for evaluating quality indicators for their eligibility for retirement. The AQUA-Institute has been commissioned with proposing such a methodology

Methods: An analysis of methodologies in use for selecting indicators for retirement was conducted. Based on this, a three step graduate scheme for evaluating indicators for their eligibility for retirement is being developed.

Results: A short analysis conducted by IQ healthcare at Radboud University Nijmegen, of methodologies for “indicator retirement” that are practiced by the leading indicator developing agencies in the world, revealed that in fact no explicit procedures for removing indicators exists today. However, the analysis revealed arguments and reasons that are used in relation to indicator retirement. They could be summarised under four headings:

1. Indicator is not (longer) valid due to changes in policies, in health care practice or system and new research evidence.
2. Indicator does not mirror quality in a useful way due to problems with validity and reliability or lack of case mix adjustment.
3. There is an aim to reduce the burden of documentation.
4. The indicator sets perverse incentives.

In the methodology developed on the basis of this analysis indicators at question for retirement are selected through a filter. The filter includes issues such as the duration of use of an indicator, the time since last data validity check and others. After identifying indicators by the filter, they are evaluated by a three step graduate scheme. These three steps successively build on each other:

1. Quantitative evaluation: Explore validity, ability to discriminate between service providers, negative quality results, development of quality over the last three years.
2. Qualitative evaluation: Expert opinion whether the indicator has fulfilled its purposes.
3. Policy evaluation: based on the information provided in 1 and 2 and considering policy issue, a policy decision is sought about retirement of the respective indicators.

Conclusion: At current this methodology is tested with indicators for the indication of hysterectomy and for decubitus ulcer. The presentation will report about the process, results and experiences with evaluating indicators for their eligibility for retirement with the methodology described.
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CAPTURING AND IMPROVING PATIENT EXPERIENCE FOR OLDER PEOPLE IN HOSPITAL - NHS TAYSIDE

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Objectives: In June 2012, NHS Tayside in partnership with NHS Grampian launched the Older Peoples Acute Collaborative. Seven wards are involved in the collaborative. The aim of this collaborative is to improve the experience of older people in an acute hospital setting. It is recognised that the age profile of our population in Scotland and other countries is changing significantly with greater life expectancy and an increase in older people using our services. In line the number of older people with cognitive impairments is also increasing. They and their families will require support to ensure they are well cared for and are treated with dignity and respect in a supportive environment whilst in hospital. Whilst the majority of feedback from older people is positive, as identified by Scotland’s In-patient Survey Better Together, it is recognised that there is room for improvement with complaints relating mainly to poor communication and staff attitudes towards older people and their carers’.

Methods: A patient experience survey was specifically developed for the older peoples collaborative (aged > 65) based upon the collaborative change package and following NICE guidelines for Patient Experience. The survey comprises a number of themes including orientation to the ward, communication, dignity and respect, involvement and cleanliness with an overall outcome measure rating overall care provided. A carer’s survey was also developed to capture their views, particular for those patients who are unable to feedback due to cognitive impairment. Carers can choose to complete a paper version or use the alternative online website. Qualitative feedback is captured from patients or carers by external facilitators on a monthly basis to supplement the quantitative data already received using the OPAC survey.

Results: Data is captured for 20 patients per ward each month. This is entered and displayed by themes on run charts with the overall aim 95% of patients will rate their care as excellent. These are owned by the wards to encourage discussions for improvement. The table below illustrates improvement over time for each theme and the overall outcome measure since commencement of the collaborative in June 2012.

<table>
<thead>
<tr>
<th>Week</th>
<th>Orientation</th>
<th>Communication</th>
<th>D &amp; R</th>
<th>Involvement</th>
<th>Cleanliness</th>
<th>Overall Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>58%</td>
<td>62%</td>
<td>77%</td>
<td>58%</td>
<td>77%</td>
<td>68%</td>
</tr>
<tr>
<td>Week 2</td>
<td>54%</td>
<td>60%</td>
<td>81%</td>
<td>51%</td>
<td>64%</td>
<td>67%</td>
</tr>
<tr>
<td>Week 3</td>
<td>49%</td>
<td>60%</td>
<td>75%</td>
<td>58%</td>
<td>75%</td>
<td>77%</td>
</tr>
<tr>
<td>Week 4</td>
<td>71%</td>
<td>57%</td>
<td>78%</td>
<td>51%</td>
<td>76%</td>
<td>61%</td>
</tr>
<tr>
<td>Jul-12</td>
<td>57%</td>
<td>73%</td>
<td>87%</td>
<td>54%</td>
<td>68%</td>
<td>73%</td>
</tr>
<tr>
<td>Aug-12</td>
<td>64%</td>
<td>74%</td>
<td>90%</td>
<td>62%</td>
<td>69%</td>
<td>78%</td>
</tr>
<tr>
<td>Sep-12</td>
<td>77%</td>
<td>83%</td>
<td>89%</td>
<td>73%</td>
<td>78%</td>
<td>81%</td>
</tr>
<tr>
<td>Oct-12</td>
<td>71%</td>
<td>82%</td>
<td>88%</td>
<td>78%</td>
<td>85%</td>
<td>84%</td>
</tr>
<tr>
<td>Nov-12</td>
<td>85%</td>
<td>86%</td>
<td>92%</td>
<td>86%</td>
<td>90%</td>
<td>93%</td>
</tr>
</tbody>
</table>

The following improvements have been made by the wards:

- A welcome board with directions to the toilets and information regarding staff uniforms.
- Reduction and amendments to signage at ward entrances to welcome rather than confuse and deter visitors.
- Daily board rounds to discuss patients with all Multi-Disciplinary Team Members present.
- A poster to improve hygiene at mealtimes was developed “Did you wash your hands – you spread germs if you don’t”.
- Ear plugs offered to help patients sleep.
- Early dialogue with families to identify critical pieces of information required for functional screening.

Conclusion: Whilst early days there is an increasing trend for each theme and the cumulative outcome measure over the last six months. This is expected to continue as further improvements are made during the period of the collaborative by the wards involved. The OPAC patient experience tool has enabled wards to identify areas for discussion and improvement according to themes whilst striving to provide excellent care at all times for older people.
Objectives: In the Post-Anaesthetic Care Unit (PACU) a patient is observed continuously by nurses so that early complications of surgery or anaesthesia can be identified and treated before they develop into major problems. The aim of this study was to identify the frequency and nature of patient adverse events related to discharge from the Post-Anaesthetic Care Unit (PACU).

Methods: A retrospective case-analysis of postoperative adverse events, where there was clinical deterioration within 24 hours of completion of surgery. All adult patients admitted to the PACU at three Australian metropolitan public hospitals, between January and December 2009 and who experienced clinical deterioration resulting in an adverse event were included. Data were sourced from patient records, Victorian Health Incident Management System (VHIMS) reports; ICU admission records, Medical Emergency Team and Code Blue (Cardiac Arrest) call logs. Patient adverse events within 24 hours of PACU discharge and the patient outcome were identified.

Results: From a total of 19,589 surgical procedures, 84 patients experienced 113 serious adverse events within 24 hours of PACU discharge, including 43 (38%) unplanned ICU admissions, 4 (4%) hospital transfers, 4 (4%) returned to theatre, 36 (32%) delayed hospital discharge, 4 (4%) readmissions and 2 deaths (2%). The 84 patients experienced one (75%), two (20%) or three (5%) adverse events. The median age of patients in this group was 72 years (range 20 - 93) and 46% were male. The most frequent signs of clinical deterioration were: respiratory, including respiratory arrest, dyspnoea, and hypoxemia (31%, n= 26/84) or cardiac complications, including atrial fibrillation, bradycardia, tachycardia, heart failure (21%, n=18/84), excessive bleeding (20%, 17/84) and hypotension (18%, n=15/84). Other complications included uncontrolled pain (33%, n=28/84) and uncontrolled nausea and vomiting (8%, n=7/84). Very few of the events were captured in the health service incident reporting system. The average length of stay in PACU for patients experiencing a complication leading to an adverse event was 98 minutes (95%CI: 76-119 minutes; range 10 minutes to 8 hours 25 mins) and 30% (n= 25) remained in PACU more than 2 hours. The average length of hospital admission for these patients was 8.5 days (95%CI: 6.5-10.6 days; range 1 day to 47 days).

Conclusion: This study demonstrated an overall prevalence rate of 5.8 per 1000 procedures for those experiencing a serious adverse event within 24 hours following surgery, and a mortality rate of 0.01%. The most common adverse events identified were unplanned ICU admission and delayed hospital discharge. These findings highlight the importance of patient monitoring in the immediate post-operative period, in PACU and continuing on the ward. Further prospective studies of adverse events and predictors of clinical deterioration following anaesthesia and surgery are warranted.
“LET’S CLEAN UP THIS MESS!” - A COMMUNITY-BASED STRATEGY TO IMPROVE FOOD HYGIENE AND SANITATION AT A HIGHWAY TRAVEL STOP: LUGONO EXPERIENCE, MOROGORO REGION, TANZANIA

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Objectives: Tanzania has many stopping points for travellers along its roads where travellers purchase food from street vendors and frequently exit their vehicles to relieve themselves. Lugono Center is one of these stopping points for travellers. It started as a minor stopping point for selling sugar cane, became a major stopping station for travellers to purchase food, especially roasted meat processed under unsanitary conditions. Without toilets, a water supply, or a safe food preparation area, conditions were hazardous, and in 2010 the area suffered an outbreak of cholera. Due to the filthy conditions at this stop, the Regional and Council Health Management teams twice demanded that the area be closed down, but the local population resisted because they had come to depend on profits from food sales. The objective of this quality improvement (QI) initiative was to improve sanitation and hygiene at Lugono Center.

Methods: Health officials had experience applying QI for HIV/AIDS care and treatment programs and decided to apply these methods to the sanitation problem at Lugono. First, health officers were approached and engaged in performing a baseline assessment at the site in order to understand the problems, followed by sensitisation of ward and village leaders on the importance of bringing about change. Finally community members, including vendors, were engaged in analysing the problems, identifying opportunities for change and developing a plan for overcoming challenges to improve the quality of services and food available to travellers stopping there. The district commissioner was also involved to ensure government support.

Results: After much discussion community members who raised and sold livestock to the food vendors financed and arranged the construction of a latrine with 8 stalls to be used by travellers. A youth organisation called TWIKALEWOSE supported the construction of a second latrine with 10 stalls. Two slaughter slabs and sheds were also constructed using community funds. A total of 12 meat chambers are now in place on these slabs which include a basic arrangement for food handling and sanitation. Using community funds, a water tank with capacity of 5000 litres was installed to facilitate sanitation. To complement the financing and labour provided by the community, the government provided a veterinarian to inspect all meat before it could be sold.

Less than a year after the launch of this activity, travellers’ are using toilets at the cost of 200 Tanzanian shillings. The practice of meat inspection revealed that 15% of the 660 goat carcasses inspected over a 6 month period were infected by Hydatid cysts. These inspections prevented a considerable amount of hazardous meat from entering the food supply. Because the number of toilets remains insufficient for the number of travellers needing them, an extension of the latrine with 4 additional stalls is already underway. Furthermore, another youth organisation recently constructed 1 latrine toilet and 12 food kiosks. The District Council has committed to drilling a well as a permanent water supply.

Conclusion: Where government mandates fail to solve certain community problems, community engagement in problem solving can transform a problem situation into a model of improvement. Through engagement of local leaders and community members in strategic problem solving, QI methods that have proven successful in clinical setting can be transferred to cost-effectively address basic hygiene and sanitation issues in low-resource settings.
PERSPECTIVES OF PRIMARY CARE CLINICIANS ON AN INTERVENTION AIMING TO IMPROVE CARE FOR PATIENTS WITH TYPE 2 DIABETES THROUGH EXAMINING, ADVISING AND PRESCRIBING (IDEA TRIAL): A SCOPING STUDY

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Objectives: Previous research and NICE quality standards identify key clinician behaviours for providing high quality care for people with type 2 diabetes: prescribing, advising and examining. Before developing and delivering an intervention targeting these behaviours, it is important to consider the perspectives of primary healthcare professionals (HCPs) about how they care for people with type 2 diabetes and factors that impede care. The study objectives were to explore HCPs’ perspectives and preferences to inform intervention design.

Methods: Scoping study using a convenience sample. Semi-structured interviews with 3 GPs and 3 practice nurse prescribers in 5 general practices in the north-east of England. Interviews focused on context, knowledge, skills, goals, motivation, resources and social influences to help HCPs identify barriers to performing the behaviours. We also explored their intervention delivery preferences. Data were analysed thematically and discursively.

Results: Contextual barriers
HCPs expressed a tension between keeping drug costs down and improving diabetes care. Clinic organisation, good teamwork and one person being responsible for diabetes care in each practice were viewed as important.

Health Care Professional barriers
HCPs found it demanding to tailor patient education to meet needs of individual patients and to balance giving necessary information with overloading patients.

- Regarding weight management advice, HCPs reported flexibility in their adherence to guidelines and linked weight management advice to glycaemic control. They perceived that the HCP/patient relationship affects adherence to advice.
- For self-management advice, HCPs stressed their aim to support patients to take ownership of their diabetes but it was sometimes easier to increase medication than to motivate patients to self-care.
- GPs felt that prescribing for glycaemic control is a nursing role, but nurses reported often not being confident in prescribing.
- Some GPs were trained to adhere to higher hypertension targets than current guidance and saw lowering blood pressure to current target of 140/80 mmHg as a low priority.
- HCPs described challenges in accessing formal training in foot care for staff.

Patient barriers
Diabetes education was reported as group-based, often some distance away and inconvenient for working patients. Giving advice to people with no understanding of the importance of diabetes was seen as challenging.

- HCPs described changing health behaviours for weight management in patients with long-term lifestyle or mobility issues as difficult. They reported that people with unpredictable work schedules struggle to adhere to a healthy lifestyle.
- HCPs perceived that many of their patients do not take prescribed medication and felt patients were reluctant to take additional drugs when they do not feel ill.
- HCPs reported that poor patient hygiene sometimes makes patients reluctant to have their feet examined.

Delivery of the Intervention
The preference was for practice-based training, professionally led, delivered over lunchtime or during dedicated practice learning time.

Conclusion: Several barriers to improving the quality of care for people with type 2 diabetes were identified. We are developing an intervention, using taxonomy of behaviour change techniques, to help clinicians overcome these barriers.
ADOPTING A PROACTIVE APPROACH TO PATIENT SAFETY: CAPTURING DATA ELECTRONICALLY AT THE POINT OF CARE
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Objectives: The primary objective of this research is to reduce human suffering resulting from avoidable errors in clinical care. This study seeks to improve patient safety through the user centred development of a system which tracks evidence-based practice provided to patients in a hospital setting.

Methods: The Scottish Patient Safety Programme aims to improve the safety of hospital care in Scotland. This programme has been designed to develop real time data capture systems to allow data to be produced that reflects current work [3]. The current approach to capturing this data is paper based. Significant resource is required to collect and collate the information and competes with clinical workload. Results are reported retrospectively. The potential for information technology (IT) to improve patient safety has been universally recognised. User involvement is widely acknowledged as a key factor in developing usable and effective IT solutions. However, the national NHS IT programme has been criticised over the lack of clinical engagement [1]. Solutions with poor usability not only affect the rate of adoption but can lead to the introduction of errors [2]. A participatory design approach was used in this study to ensure that the end users were actively engaged and involved in the design and development of a novel IT system. This study was conducted in a Surgical High Dependency Unit in one of Scotland’s four teaching hospitals. At the onset of the study a clinical advisory group was formed. This group consisted of the Head of Critical Care Nursing, Senior Charge Nurse, Charge Nurse, Infection Control Nurse, Lead Surgeon for Patient Safety within the NHS Trust, two Consultant Anaesthetists and a Critical Care Fellow. Regular meetings were held with the group. These meetings were used to elicit the user requirements of the system, evaluate rapid prototype designs and give recommendations for changes to the design.

Results: A prototype system was designed and evaluated with the clinical advisory group. A touch screen tablet pc was used to input data allowing doctors and nurses to capture patient safety data, related to the care of central venous catheters, at the patient’s bedside. The prototype system was evaluated in parallel with the current paper system in a live clinical environment over one month.

Response from the evaluation suggested that:

- The electronic system made the process for recording the required information easier
- The system was easy to use and people were confident using the system
- The system supported real time data entry
- Staff were able to effectively complete their clinical work using the system
- Staff did not feel that the system took longer than the paper system or added to their workload.

Conclusion: A novel IT system was designed in cooperation with the end users. The prototype system enabled data to be captured at the point of care. The clinicians liked the computer system and did not feel that it interfered with their workload. This real time data will allow clinicians to detect and react to adverse events as they occur enabling a proactive approach toward patient safety.

References:
IMPROVEMENT OF NUCLEAR MEDICINE PROCESSES THROUGH INFORMATION TECHNOLOGY APPLICATION

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Objectives: The lack of specific nuclear medicine computerised tools has limited traceability, radiation safety and quality assurance management. A software prototype has been developed in order to improve the clinical routine, resources management, quality assistance and security.

Methods: The relationship between technology and institutional data was analysed. The major problems related to nuclear medicine processes were highlighted and computerised. The system was created based on GNU Web 2.0 and the database was based on MySQL for the safe storing of useful information. The system was designed to be multi user where every professional has access to specific information. Algorithms to optimise radiopharmaceutical and equipment’s usage were included in the prototype. Moreover, there is a work list where is possible to identify every process of all patients in an only screen. The system was distributed at Hospital São Rafael in web and also portable versions.

Results: The prototype has been a powerful tool in identifying the sources of errors in the processes, the management of occupational dosimetry and minimising costs due to the optimisation of input usage, schedule exams and working times. Data statistics and indicators of performance have been generated to continuously identify possibilities of improvement in the processes.

Conclusion: Software applications released to other fields have not been effective to nuclear medicine management facilities. On the other hand, the prototype has shown information technology is a promising field to mitigate problems in nuclear medicine processes, radiation safety and quality assurance management. Other advantages reside in the fast manipulation and access to data reducing human efforts, integrated control of information physically distributed and data sharing. Clinical data indexing allows improving the quality of assistance by recognising specific population.

References:
EVALUATION OF THE IMPLEMENTATION OF A FOUR-YEAR NATIONAL HOSPITAL PATIENT SAFETY PROGRAM IN THE NETHERLANDS
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Objectives: To evaluate the implementation of five safety themes within a four-year national hospital patient safety program in the Netherlands.

Methods: In 2008, a national hospital patient safety program was started to improve patient safety in Dutch hospitals. The safety program focussed on 10 safety themes, chosen through consultation with experts in the relevant professional groups and medical specialist. For each safety theme a module was developed to support hospitals with the implementation of interventions concerning this theme. An observational prospective study was performed to evaluate the quality of the implementation of the themes. This evaluation study was performed in a representative sample of 38 hospitals, stratified by area and type of hospital, during the final year of the safety program between November 2011 and December 2012. The present study focussed on the results of the implementation of five themes:

1. pain;
2. mix-ups in and among patients;
3. renal insufficiency;
4. medication reconciliation; and
5. administration of high-risk medication.

During 10 monthly visits, the implementation of the themes was evaluated by patient record research (theme 1, 3 and 4) or observations (theme 2 and 5) by trained research assistants. Process indicators were formulated for each theme to evaluate the degree of implementation of this particular theme. Multilevel analysis was used to determine if the percentage of achievement of the process indicators changed in the total population and in different hospital types (teaching versus non-teaching) during the study.

Results: The outcomes of the process indicators of the five safety themes during the 1-year follow-up were calculated. The mean percentage of patient records/observations meeting the process indicators for the five themes during the follow-up are shown for the first, median and final measurement in Table 1. Furthermore, a mean percentage for every process indicator during the study was calculated and shown in Table 1. Differences were determined between the hospital types in meeting the process indicators.

Table 1. Mean percentage patient records or observations meeting the process indicators

<table>
<thead>
<tr>
<th>Theme</th>
<th>Process indicator</th>
<th>T=1</th>
<th>T=5</th>
<th>T=10</th>
<th>Overall</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>≥3 postoperative pain measurements</td>
<td>44%</td>
<td>51%</td>
<td>60%</td>
<td>51%</td>
<td>4206</td>
</tr>
<tr>
<td>2.</td>
<td>Correctly executed TOP before surgery</td>
<td>72%</td>
<td>74%</td>
<td>68%</td>
<td>71%</td>
<td>1281</td>
</tr>
<tr>
<td>3.</td>
<td>Hydration of high-risk patient for CIN</td>
<td>64%</td>
<td>69%</td>
<td>67%</td>
<td>67%</td>
<td>557</td>
</tr>
<tr>
<td>4.</td>
<td>Medication reconciliation during:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Admission</td>
<td>42%</td>
<td>44%</td>
<td>42%</td>
<td>41%</td>
<td>2157</td>
</tr>
<tr>
<td></td>
<td>- Discharge</td>
<td>16%</td>
<td>22%</td>
<td>22%</td>
<td>17%</td>
<td>2813</td>
</tr>
<tr>
<td>5.</td>
<td>Correctly performed bundle (9 items) of administration of parenteral drugs</td>
<td>23%</td>
<td>8%</td>
<td>24%</td>
<td>19%</td>
<td>2154</td>
</tr>
</tbody>
</table>

1TOP, time-out procedures; 2CIN, contrast-induced nephropathy

Conclusion: After a four year patient safety program, in which hospitals gave a lot of attention to the importance of patient safety themes, the implementation of various safety themes does not seem to be optimally fulfilled in Dutch hospitals. The percentage patient records/observations meeting the process indicators remained relatively stable during the 1-year follow-up for the five themes. Slight differences were observed between teaching and non-teaching hospitals in the implementation of the safety themes. Points of attention were formulated to achieve better implementation of the safety themes in the future.
THE EMERGENCY DEPARTMENTS PHARMACEUTICAL TOOLBOX IS PUT INTO PRACTICE TO PREVENT ADVERSE DRUG INTERACTIONS AND REACTIONS

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Objectives: “Counteracting adverse drug events and providing safe pharmaceutical practice for the patient in transit”
Setting up guide lines, checklists and deviation analyses are essential in benefiting the patient, community, and hospital personnel. Management of the patient’s medication from the time of admission until discharge, securing good communications regarding the patient’s medication in Handovers between Primary care and the hospital, is imperative to sustain patient safety. The majority of our older patients have a tendency to move in and out of the health care system. At its worst this type of yo-yo activity undermines the patient’s health and recovery; additionally it can have detrimental economic consequences for the hospitals and the county council.

Methods: In order to prevent this pattern from occurring we have to work on improvements and work with preventing re-admissions i.e. by assuring safe pharmaceutical practice. The Emergency department at Huddinge has for many years worked with improvements in pharmaceutical safety and patient safety. During 2009-2011 the department’s improvements efforts intensified, testing different methods/activities/projects.

Projects initiated, using different tools and targets in order to reduce and counteract adverse drug reactions, side effects, incorrect drug prescribing began and to assure patient safety in transit. The department managed to collect in total, 16 different tools in counteracting adverse drug reactions.

Results: The toolbox has also given the Emergency Department a standardised, structured and unique working process hence optimising patient safety in relation to drug related incidents. What has been pivotal in the Department’s patient safety is our electronic patient journal system momentarily being implemented in most of the primary health care facilities and major hospitals in the Stockholm county region. Our focus has been on “Getting it right from the start”. This is one of the Emergency Department’s mottos and one of the hospitals “target mottos”.

Conclusion: These different activities have given us a “pharmaceutical toolbox”, where specific tools can be utilised for the patients’ individual and specific needs on different occasions. The toolbox has also given a standardised, structured and unique working process hence optimising patient safety in relation to drug related incidents. What has been pivotal in the department’s patient safety is our electronic patient system. Our focus has been on “Getting it right from the start”

References:
THE ANALYSIS OF TOTAL QUALITY MANAGEMENT AND THE EFFECTIVENESS OF THE QUALITY AND PATIENT SAFETY EDUCATION PROGRAM

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Objectives: Applying Total Quality Management (TQM) can reduce medical errors, promote patient safety, and increase patient satisfaction in the healthcare. Implementation of the quality education program is in order to enhance the nurses’ knowledge and competency of applying those in practice. The objective of the study was to analyse the perception, performance, and culture of total quality management and its related factors and to predict the factors of total quality management culture in nursing divisions. And further to evaluate the effectiveness of applying the quality education program.

Methods: Participants were recruited from a medical center in Taiwan and the criterion of inclusion for nurse staffs was that they had the practical experience for at least three months. The measurements of total quality management were self-developed questionnaires with total quality management perception, total quality management performance, and total quality management culture. Data were analysed with SPSS 17.0 for Window. The analyses for descriptive statistics were using mean, standard deviation, frequency and so on. The analyses for inferential statistics were t-test, one way ANOVA and stepwise regression to predict the outcomes. The study design is the one group pre-test-post-test. The participants were instructed to implement the quality education programs based on their nursing clinical ladders that programs including the concept of total quality management and patient safety, the establishment of the nursing standards, monitoring and evaluating the quality of nursing with setting indicators by JCAHO 10 steps and using focus PDCA for quality improvement programs.

Results: The major findings in the study were as the follows: 1. the mean scores of the total quality management performance for the participants with implementing in the education training programs was higher than those without participating in the education training programs significantly (mean: 51.5, SD: 6.6 versus mean: 48.3, SD: 7.7, p< .001); 2. The mean scores of the total quality management culture for the participants with implementing in the education training programs was higher than those without participating in the education training programs significantly (mean: 84.1, SD: 10.7 versus mean: 80.3, SD: 11.22, p< .001); 3. In the analysis of stepwise regression, the total quality management perception (OR, .288; 95% CI: .040- .537, p< .05) and total quality management performance (OR, .851; 95% CI: .749-.953, p< .001) could predict the total quality management culture that accounted for 39% of the variance in the total quality management culture (p< .001).

Conclusion: This study came to the conclusion that when the higher the total quality management perception and the more the total management performance, it could be brought out the better the total quality management culture. It is recommended that the managers in the healthcare can apply the quality and patient safety education programs to enhance the perception of total quality management, and further, to promote the performance and culture of total quality management.

A PROJECT FOR IMPROVING CORRECT ANTIBIOTIC USAGE RATE FOR TREATING GRAM-NEGATIVE BACILLUS (GNB) IN HOSPITAL INPATIENTS

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Objectives: Because Gram-negative bacillus (GNB) can induce sepsis, it has to be treated immediately. This project is about the project’s effort on improving correct antibiotic usage rate for treating GNB in hospital inpatients.

Methods:
1. To enhance correct antibiotic usage for treating GNB, GNB treatment guidelines were developed for doctors to use as a clinical standard for treating patients, and moreover, relevant educational training was also held for doctors. To ensure antibiotics are correctly prescribed for treating GNB, patients’ medical records were reviewed, and feedbacks are given immediately.
2. Strategies for improvement were implemented in August, 2012.
   a) Cards with GNB treatment guidelines were printed and given to doctors to use as a reference. Doctors also took educational training related to GNB treatment.
   b) Medical records were reviewed to check if doctors had given GNB inpatients correct antibiotics. The review results were immediately given to doctors as feedbacks.

Results: Before the implementation of the project, there were a total of 61 GNB inpatients in the hospital from January to February 2012, and 46 of them were given correct antibiotic prescription, so the correct antibiotic usage rate in inpatients is 75%. After the implementation of the project, there were 22 GNB inpatients between September and October 2012, and 18 patients were given correct antibiotic prescription, so the correct antibiotic usage rate in inpatients is 82%. These cards with GNB treatment guidelines not only enabled different specialties and departments to treat GNB patients consistently and continuously but also promoted correct antibiotic usage. Those feedbacks from the review of medical records also helped doctors adjust their antibiotic usage. These strategies can ensure best treatment efficacy for hospital inpatients.

Conclusion: Treating inpatients according to GNB treatment guidelines enhances correct antibiotic prescription, so the incidence of shock and sepsis can be reduced, medical expenditure can be minimised, and medical care quality can be elevated.
2005

REDUCE THE RESPIRATORY CARE CENTER’S CENTRAL VENOUS CATHETER-RELATED BLOODSTREAM INFECTION RATE
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Objectives: It was found on September 1, 2011 that our central venous catheter-related bloodstream infection rate had soared to 26.7%, much higher than that of peer hospitals (13.2%). Therefore, the objective was to reduce the Respiratory Care Centre’s central venous catheter-related bloodstream infection rate to peer hospitals’ average, 13.2%.

Methods:
1. The Respiratory Care Center has a total of 12 beds, and the patients we treat rely on a respirator and have transferred from the intensive care unit at our hospital or other hospitals. Their bodies are usually left with a central venous catheter, an endotracheal tube and a urinary catheter, retention rate of the three tubes standing at 80%.
2. The Centre’s average of hospitalisation days stood at 38.6, and its bloodstream infection rate had been kept at a high level, so it was necessary to remove the central venous catheter as soon as possible (Chen, Chen, Dong, Su, Chen and Zheng, 2010). As a result, before entering the Center, from now on every patient has to receive a central venous catheter retention/removal assessment. If a patient needs to be treated with intravenous medicines, peripheral venous line insertion should be employed instead so that the he or she can continue to be treated with medicines without being affected.
3. Meanwhile, the nutrition consultant with the Center should conduct an assessment, and discussion with the nutrition consultant should be held to assess and confirm the patient’s current nutritional state. Also, the patient’s calories intake should be increased by raising the frequency of nasogastric tube feeding.
4. In accordance with the nutrition screening and assessment form as well as the patient’s disease condition, the doctor should assess if the patient’s central venous catheter needs to be removed within two days of his or her entering the Center (Marschall et al, 2008).

Results: The central venous catheter-related bloodstream infection rate decreased to 8.5% in January 2012 from 26.7% in 2011.

Conclusion: A raft of factors is behind in-hospital bloodstream infection, and bedridden patients who suffer from chronic illnesses have weaker immunity, so they belong to an especially frail group, so to speak, in the hospital. When an illness is in an acute state, central venous catheter insertion serves as a necessary therapeutic means. However, if we could remove unnecessary tubes for patients as early as possible, we could boost protection from central venous catheter-related bloodstream infection by 50% (Harbarth, et al, 2003; Marschall et al, 2008). We suggest that group care and discussion be employed, and that nutrition assessment and opinions regarding patients’ nutritional needs be provided so as to allow patients to recover his or her physical strength and have their unnecessary catheters removed as early as possible. According to the findings from the execution of this project, exploring the necessity of retaining the central venous catheter and removing the catheter as early as possible can both help prevent in-hospital infection effectively. Some units believe that the central venous catheter should not be removed until the stipulated period ends so that medical personnel’s workload and medical costs could be reduced. Nevertheless, this could instead increase patients’ in-hospital bloodstream infection rate, making things worse rather than better. Hopefully, beginning with this Respiratory Care Center, we could reduce the number of unnecessary catheter retention to decrease the in-hospital infection rate so as to maintain patients’ safety and enhance the quality of medical care.
2007

“BETTER COOPERATION - BETTER CARE DELIVERY FOR THE FRAILEST ELDERLY”

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Objectives: To improve cooperation and implement new routines among health and social care givers who are involved in delivering care to the frailest elderly in order to improve quality and cost efficiency.

Methods: Managers and change agents from 12 participating healthcare and social care givers (including primary care, social care givers, local hospital etc.) have joined together with a nationally funded project management team in Hägersten-Liljeholmen, a district in Stockholm, Sweden, with 74 000 inhabitants - 12 % aged 65 or more. The project has focused on engaging employees from the involved organisations in designing seven special and strengthened work routines using Lean methodology, regarding areas such as:

- Improved risk assessment
- Medication reviews
- Multi-disciplinary planning conferences
- Improved discharge handover

A key aspect has been developing a green binder that follows the patient across all contacts. The routines have been targeted towards the frailest elderly, individuals aged 65 or more with social care delivery in their homes and:

- Two hospital stays or more during the last 12 months and/or
- Home health care with at least one visit every other week

These individuals make up for 6% of those aged 65 or more in the district and they account for:

- 31% of the county council’s healthcare costs in the district for individuals aged 65 or more
- 56% of the district’s social care costs for home care for individuals aged 65 or more

The group is also highly dynamic–more than 30% leave or enter the group during a one year period.

In order to follow improvement the following measures are used:

- Customer/employee satisfaction based on randomly selected interviews
- Perceived cooperation between the participating organisations based on employee web questionnaire
- of acute hospitalisations in the target group over time
- of avoidable readmissions over time and compared to the county of Stockholm
- of risk assessments performed over time
- medication reviews performed over time

Results: Evaluation is on-going since January 2012. Preliminary results show increased customer satisfaction and increased sense of collaboration among employees.

Conclusion: The diversity of actors supporting the elderly poses a challenge in coordinating the care to the individual. It is important to involve the employees who work within a complex and diverse organisational context who meet the individuals in order to find the easiest and best solutions for collaboration.
ENHANCED MEDICATION SAFETY – REDUCING THE NUMBER OF MEDICATION ADMINISTRATION ERRORS BY THE ICU NURSES
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1Nursing Department, Landseed Hospital, Taoyuan, Taiwan

Objectives: Barcode medication administration (BCMA) system has been implemented to reduce medication errors and improve medication safety. Of the totalled 17 medication error events in our Hospital between January and May 2011, 11 occurred in the intensive care units (ICU), accounting for 64.7% of all events. This study aimed to actively promote medical care quality for patients by using a BCMA system.

Methods: The approaches to improve medication safety were implemented as follows:
1. The nursing carts were integrated with additional devices to become compact mobile nursing carts for medication administration. Standard operating procedures (SOPs) and maintenance practices were also developed.
2. Re-planning the workflow in medication administration process. Bedside Medicine Cabinets were re-equipped to be Compact Mobile Medication Nursing Carts. Drug Boxes for Current Use and Return Drug Boxes were used to replace the unclassified medicine cabinets for drug disposal. Drug Boxes for Current Use enabled the nurses to prepare medications directly.
3. To enhance ease of use of the BCMA system, wearing barcode wristband’s was limited to a fixed position on patient’s hand to save nurses’ time looking for wristbands. The photo mask was fixed to installed boxes to untangle workflow and increase nurses’ convenience and willingness to use.
4. The SOPs for medication administration were laminated and hung on the side of compact mobile nursing carts to facilitate the convenience of reading. Teaching materials of medication administration were prepared for on-the-job training to improve medication administration accuracy. Small-group training was conducted to improve the skills of preparing drugs and increase participation and response. The outcomes were included in the annual audits of quality management system.
5. Re-education programs with the knowledge about consequences of medication errors were conducted. All colleagues actively provided positive feedback and expressed their thoughts after watching the videos of News of Significant Medication Error Events at ward meetings. The Handbook for New Employees including the disc with video copies was used to inculcate the importance of Check, and Check Again concept of new employees, which was also used in the pre-employment training for new nursing staff of ICU.

Results: The number of medication error event was zero during the intervention implementation between June 2011 and December 2012.

Conclusion: The number of medication error event was reduced; the quality of clinical care was increased, and thus achieved the goal of safe medication administration for patients. Although the BCMA system has been considered to be an effective nursing information system for reducing medication errors, room for improvement remained. Our hospital continues its commitment to preventing the occurrence of medication errors. The simplified display screen for BCMA system, operating procedures and modified Combination Drugs interface have been completed. However, currently used drugs are not all displayed on the screen of BCMA system and not easily accessible to query. To facilitate the ease of medical staff reviewing, the tabs of Patient’s Current Medications were included. Furthermore, to strengthen the identification of different medication doses, the doses of < 1 were highlighted in red, whereas the doses of > 1 were highlighted in green for enhancing distinguishability. By the approaches of continuous improvement, constructing a safe medical environment and preventing medication errors, we aim to maintain patient safety and to enhance medical care quality.
2011

STRATEGIES TO REDUCE UNPLANNED RE-ADMISSIONS BY APPLYING TEAM RESOURCE MANAGEMENT
Jui-Ling Hung 1,*, Xiu-Fang Wu 1, Yu-Ru Huang 2
1Nursing Department, 2Department of Quality Management, Landseed Hospital, Taoyuan, Taiwan

Objectives: Communication and cooperation of the medical teams can result in profound effects on the outcomes of patients. Unplanned readmission rate is used as an important indicator of the quality of medical care that may reflect the quality of care and less medical costs. The 14-day unplanned readmission rate in our hospital has been higher than other hospitals since 2010. Therefore, this study aimed to achieve a 30% decrease in unplanned readmission rate by applying the concept of team resource management.

Methods: An integrated project team was organised and established in 2012. A high 14-day readmission rate was identified after conducting medical record reviews and questionnaire surveys. In addition to disease characteristics, many problems related to organisational and systemic factors were also associated with readmissions, such as the lack of effective communication and comprehensive discharge planning. Therefore, the concepts of team resource management, including brief, debrief, shared mental model, hand off, collaboration, DESC (describe, express, specify, consequences), feedback and et al., were used as the approaches of improvement strategies for the Department of Medicine. This project was conducted to improve the medical record review process of readmissions, to promote the home-care skills of primary caregivers of patients, to enhance the knowledge on preparing discharge of discharge planning team, to enhance the completeness of nursing documentation, and to strengthen cooperation between teams.

Results: The 14-day readmission rate was 2.35% after the implementation of this project. Although an 11% decrease reported improvement, the outcomes not yet reached the targeted value.

Conclusion: Despite failing to reach the target value, decreases in the readmission rate and medical resource utilisation were achieved by tracking the patients at high risk for readmission through team cooperation and continuous monitoring of indicators. The results indicated improvement of patient safety and the quality of medical care. It is suggested that this goal can be included in the organisational plans of other hospitals and become the patient safety focus.
FACTORs ASSOCIATED WITH 30-DAY AND 1-YEAR RE-ADMISSION AND 1-YEAR MORTALITY RATES AFTER PCI IN ESTONIA
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Objectives: 30 days readmission after PCI (Percutaneous coronary intervention) is a frequently used indicator for measuring the quality of treatment. Estonia (population 1.3 million) has three central hospitals performing PCI and until now the outcome of PCI has not been measured using international standards. This study aimed to identify factors associated with 30-days readmission after primary PCI, using administrative databases, and concentrating on the impact of co-morbidities.

Methods: Using data from the Estonian Health Insurance, we identified all 1966 PCI procedures conducted in 2008 in Estonia on patients, who had not been re-vascularised during the previous 3 years. Demographic characteristics studied included age and gender, clinical variables included all primary and concomitant diagnoses and procedural characteristics included the number of stents and length of hospital stay. We used multivariate logistic regression models to estimate the risk factors that contribute to the 30-day readmission. In addition, the association between 30-day readmission and 1-year mortality was analysed by applying Cox proportional hazards models with readmission as a time-dependent covariate and by using landmark analysis. The main outcome measures were all cause 30-day readmission to any heart disease hospitalisation following PCI and 1-year mortality.

Results: The logistic regression analysis provided us with the significant factors that influence the 1-year readmission and 1-year mortality. The analysis is conducted on infarct and without infarct patients. The highest risk factors that contribute to readmission among infarct patients is diabetes with complications (OR=2.9) and previous diagnosis of heart failure (OR = 2.4). The highest risk factors among non-infarct patients for 1-year readmission is peptic ulcer disease (OR = 6.4) and renal diseases (OR = 6.2).

Total number of readmissions in one year is 175 (9%) patients. 1 year mortality after PCI was 3.2% of patients not readmitted in 30-days and among those with readmission 1.9%. Thus, the mortality is significantly higher among patients not readmitted (p=0.00).

Conclusion: Important risk factors for 30-day, 1 year readmission and 1 year mortality after primary PCI are age and comorbidities (especially diabetes with complications). These results are similar in both with and without MI patients.

The numbers of risk factors that attribute to MI patients groups are higher than for without MI patients. This result is expected, as these patients are already in a more serious condition.

For several risk factors, the odds ratios were relatively high but with large confidence intervals. This could be attributed to rather small samples for some quality indicators.

Compared to other studies, this study could not confirm that such potential risk factors as gender, average length of stays; repeated revascularisation and use of statin have statistically significant contribution to risk.

References:
THE WORK ENVIRONMENT FOR HIV-RELATED SERVICE DELIVERY IN ZAMBIA: DOES A QUALITY ASSURANCE PROGRAM CHANGE PROVIDERS’ PERCEPTIONS?
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Objectives: The perspectives of health providers, key actors in quality assurance, are important to measure. Providers can shed light on the individual and external factors affecting service delivery from prolonged experience. The aim is to determine the association of the Standards-based Management and Recognition (SBM-R) program, led by Jhpiego with the Zambian Defence Forces (ZDF), with providers’ higher ratings of work environment and quality of HIV-related services.

Methods:
- Design and Sample: In a quasi-experimental design, the study collected data before and after the 1.5 year intervention. Four ZDF intervention sites and four matched comparison sites (8 total sites) participated. All health care providers offering PMTCT and ART follow up were asked to participate. 105 provider interviews were conducted (27 at baseline and 33 at end line in intervention group & 16 at baseline and 29 at end line in comparison group).
- Intervention: The initial 3-day orientation involved assessment using checklists, analysing root causes, developing action plans, and coaching providers. ZDF and Jhpiego strengthened supplies and equipment and conducted a 6-day on-site training. Supportive supervision and coaching continued. Communication with ZDF and donors led to structural changes.
- Data collection: Trained, external assessors (midwives) used a tool based on the Workplace Climate and Job Satisfaction Survey.
- Outcome variables and analysis: Providers’ work environment and confidence in skills and perceived quality of several HIV services were the outcomes. Each item was rated 1 to 5 (strongly disagree to strongly agree). Changes were first compared within each group using a t-test. Next, multivariate linear regression was used to model outcomes as a function of group, time point, and interaction of these two terms -- controlling for provider cadre and adjusting for within-facility clustering.

Results: In the intervention group (i-group), the share of non-clinical staff rose from 30% to 55% from baseline to end line, and in comparison group (c-group), from 0% to 30%. In i-group, participants trained in PMTCT rose from 41% to 76% from baseline to end line (p=.006), while in c-group declined from 63% to 26% (p=.022). However, both groups reported an increase in receipt of 2+ supervision visits in past 6 months. On 5 of 9 aspects of work environment and confidence, i-group ratings increased over time (adequacy of drugs/supplies (p=.02); adequacy of equipment (p=.004); receipt of constructive feedback (p=.01); confidence in critical skills (p=.008); and provider not feeling isolated (p=.02)). Conversely, in c-group, scores on 2 of 9 items started high and declined significantly; none increased. In multivariate analysis, the interaction term was significant (p=.004 to .038) on 5 items, indicating the changes between groups were statistically different. In i-group, perceived quality increased in 5 areas, for ART treatment readiness, ART initiation, ART follow-up, PMTCT and Laboratory (p=.001 to .01). In c-group, perceived quality also increased in 3 areas for ART treatment readiness, ART initiation, and Laboratory (p=.01 to .03).

Conclusion: The SBM-R group’s provider ratings improved significantly on 5 of 9 aspects of work environment and confidence, while the c-group declined significantly on 2 aspects. Despite this, the c-group’s increases in perceived quality of HIV services may be related to continued supervision. Future evaluations should examine the relationship of provider ratings of work environment, retention and motivation.
PROMOTING EFFECTIVE GOVERNANCE TO SUPPORT SAFE HIGH QUALITY CARE
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Objectives: To improve safety and quality of care and services in long term care homes by assisting members of governing boards to increase their understanding, knowledge and application of: governance principles and practices; their roles and responsibilities under relevant legislation; the accreditation standards and processes; and continuous improvement and performance management tools.

Methods: The Aged Care Standards and Accreditation Agency’s (ACSAA) role is to promote high quality care and services through accreditation and providing training to the long term care sector. Many boards in Australia’s long term sector are transitioning from a committee or board of management to a governing board. To assist members of governing bodies to increase their understanding and knowledge of their roles and responsibilities the Agency initiated and funded the research and development of a governance education package. An evaluation of the package was undertaken to determine if it met the needs of board members and to identify areas for improvement.

Data collection involved:
- In-depth interviews with board members, Chief Executive Officers and senior managers of long term care homes (n=13) and consultants in governance and leadership (n=2) who had been involved in developing and delivering the package.
- Electronic survey of representatives of organisations who had obtained the package (n=220; response rate 28%). The survey collected quantitative and qualitative data about: the demographic features of respondents; level of board members’ knowledge of governance, and their roles and responsibilities under relevant legislation, pre and post education sessions; the components of the education package that was most useful; and barriers to its use.

Results: Analysis of the survey responses revealed: Chief Executive Officers initiated and facilitated most of the training sessions (46.4%); differences between the roles and responsibilities of the management team and the governing body were not well understood; 82% of respondents believed undertaking the education sessions increased board members understanding of the differences between management and governance roles; 72% reported the sessions assisted the board to assess its performance against legislative and regulative requirements; and the majority of respondents (61%) reported the sessions assisted the board to prioritise their program of work and develop an action plan.

Thematic analysis of the interviews and survey comments revealed that the major barriers to board members undertaking education and training to develop their governance skills and knowledge was an unwillingness or inability to commit sufficient time to undertake the training, and/or a reluctance to recognise and acknowledge deficiencies in their skills and knowledge. Participants noted the advantages of using an external consultant to facilitate the training sessions because of their expertise and knowledge of governance and the industry, and their ability to assist organisations to use their limited time most effectively.

A recent revision has modularised the package to provide greater flexibility to address time constraints, and a scheme of accredited facilitators to deliver the package has been developed.

Conclusion: An effective governance framework supports the delivery of safe and high quality services. This is acknowledged by accreditation standards that require services to meet governance related criterion. Although the framework and principles of governance are being increasingly understood these principles and their implications remain a challenge for some on governing boards. The education package seeks to address this challenge and highlight the link between good governance and quality care.
QUALITY INDICATORS ON PREVENTION AND CARE OF POST-PARTUM HAEMORRHAGE IN FRANCE
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Objectives: Postpartum haemorrhage is the leading cause of maternal mortality in France. The major factor in the adverse outcomes associated with severe haemorrhage is the time for initiating appropriate management. The aim of the study was to assess the results of the first French generalisation of process quality indicators.

Methods: In 2012, all French maternity units gathered for the first time quality indicators (QIs) on prevention and initial care of postpartum haemorrhage (PPH). This collection was organised by the French National Authority for Health and concerned 5 QIs: 2 QIs related to immediate prevention of PPH after delivery: one concerning minimal monitoring after birth in delivery room; the other early administration of oxytocin at the third stage of labour. 3 QIs related to initial care of PPH: diagnosis (hour and volume of bleeding at the time of diagnosis), inner-uterine gesture and anti-bio prophylaxis. The objective of these QIs is to improve patient safety during delivery and to make decrease the number of serious PPH.

All 536 French maternity units audited retrospectively 60 delivery records and 60 PPH records of 2011, based on a random selection of patient records. 31 032 delivery records were analysed, as well as 17 850 PPH records (not all maternities had 60 PPH records to collect). Means of QIs were computed for each maternity unit. Missing elements were examined for improvement actions. QIs allowed inter-maternity units comparison and follow-up overtime and will be publicly reported in 2013 (2012 data soon available).

Results: Only 3 patients’ records out of 10 comply with all quality and security criteria on PPH prevention. National means were 67 for “oxytocin”; 41 for “minimal monitoring”. There was no track or prophylaxis by oxytocin in 20% of patients’ records, even though it is considered as a major element of prevention of PPH. Concerning QIs on care of PPH, national means were 64 for “PPH diagnosis” (time to care of patients is important), 90 for “inner-uterine gesture” and 79 for “anti-bio prophylaxis”. Almost 4 patients’ records out of 10 complied with all criteria necessary for PPH care. Inter-maternity units and French administrative areas variability’s were observed for all QIs.

Conclusion: Low 2011 national results are unexpected. However, analysis of these QIs allowed maternity units to assess their practice in delivery room, to compare themselves to several references and to implement improvement actions if necessary. Two important results are expected following implementation of these QIs: first, a decrease of the number of serious PPH through better management of this undesirable event; second, a better prevention and a decrease of the number of PPH through a better monitoring of this risk period. To complete the assessment of the PPH management, the rate of PPH will be validated for comparative measure and would be interesting in order to compare this data to process QIs to follow practices improvement.
THE WORKFLOW OF HEALTH PROVIDERS AT ANTENATAL CLINICS IN A RESOURCE LIMITED AFRICAN SETTING

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Objectives: Despite the great potential for improving safety and quality of health care by Computerised Decision Support Systems (CDSS), workflow issues are among the significant challenges which need to be closely observed and addressed during implementation of such a system. CDSS is one of the intervention tools to be tested by the QUALMAT project aimed at improving the quality of maternal and neonatal care in selected districts of three sub-Saharan African countries. CDSS may have an impact on the workflow of healthcare providers and needs to be well embedded in there to be effective. This study evaluated the workflow pattern before implementation of a CDSS at Antenatal Clinics (ANC) in resource limited districts in Ghana and Tanzania.

Methods: A direct observation, time motion study was conducted in intervention and non-intervention QUALMAT project sites. A researcher and an assistant observed ANC providers in 12 primary health facilities from an unobstructed position and recorded start and end time and the sequence of task categories performed using a structured data capturing tool and a stopwatch. Providers were interviewed at the end of the observation to validate the observations.

Results: Overall 214 observations (144 in Ghana, 70 in Tanzania) were carried out and 12 major task categories were recorded. The sequence of events was highly variable and differed between health centers. The tasks with the most variable position in the treatment path were physical examination, vital signs assessment, obstetric examination, preventive drug administration, and client education with 84.3% clients of first ANC visits educated out of sequence. This is due to mass education of clients in some clinics to save time. If only the most frequent consultation type (first ANC visit) was analysed (33.0% of all visits), significant deviations from the guideline, which defines antenatal care activities, were observed: only 50.0% of the required laboratory analyses (first ANC visit) were performed and pregnant women on average spent 1.5 hours on laboratory investigations. Difficulties with this task are mostly due to lack of equipment’s, reagents or staff. Comparison of the results in the two countries revealed only minor differences with a trend towards more frequent education in Tanzania (95.7%) compared to Ghana (77.8%).

Conclusion: Pathways in the ANC process vary. Laboratory investigations were rare and took much time. Further investigations are needed to identify the causes of delay in performing this task. Re-structuring the order of performing some tasks may benefit the client and the provider and improve the quality of care.
PATIENT SAFETY IN CANCER CARE – FROM KNOWING TO DOING
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Objectives: The aim of the work has been to recommend and initiate actions to enhance safety for cancer patients in Denmark in a process involving stakeholders in Danish cancer care.

Methods: 46 persons representing 22 stakeholders were gathered in a national task force. The group included cancer patients and representatives from medical cancer groupings including general practitioners, oncologists, surgeons, specialist nurses, representatives from all five health regions, designated experts, Danish Multidisciplinary Cancer Groups and the Danish Cancer Society. Previous works on safety problems in Danish cancer care were used as a basis for the work (1). Seven subgroups were established around safety challenges related to chemotherapy, radiation therapy, hospital acquired infections, transitions, post treatment trajectory, patient involvement in safety and monitoring of patient safety parameters. The subgroups were all commissioned to the same task: describe the most important safety problems and recommend actions to enhance patient safety in Danish cancer care.

Results: During a one year period each of the seven subgroups identified and prioritised risks as well as described and proposed preventive actions related to their specific theme. Output from each of the seven subgroups varied in both content and number. Some focus areas were addressed by more than one group, e.g. patient information and support, patient access to their own medical record, organisational anchoring of patient safety in the clinical environment, need for IT support, access to and use of existing patient safety data as well as the use of patient reported outcome measures. The recommendations addressed various levels and authorities within the Danish healthcare system. Output from all subgroups was gathered and the total of 43 recommendations was prioritised and handed over to the national hospital operators. Implementation of some recommendations may be initiated immediately; others may be put into process later.

Conclusion: A disease specific approach to safety enhancement is rewarding. Gathering stakeholders across the continuum of cancer care holds the potential to present safety enhancing initiatives that cuts across the silos of care. A national, multidisciplinary and disease specific task force provides a forum where parties with different positions in the cancer patient trajectory can meet and discuss safety aspects that are not addressed elsewhere. It supports the awareness of patient safety in cancer care as a common interest that should be enhanced through specific initiatives and through further development of safety culture. The national task force helps stakeholders to understand the tasks and challenges in different parts of the patient trajectory and enables replacement of local piecemeal solutions with national initiatives. According to the task force ranking ‘top-3- recommendations’ were related to:

1) enhancement of the quality of transitions during the cancer patient trajectory,
2) reduction of errors in prescription and delivering of chemo- and radiation therapy; and
3) reduction of infections related to surgery and chemotherapy.

Contents of these and the remaining recommendations can be shared at the conference. Many safety problems in cancer care are similar to safety problems in other disease groups hence the described efforts and the potential safety gain may be generalised to other types of patients.

References:
IMPLEMENTATION OF THE CRITICAL PATIENT PROTOCOL IN INPATIENT UNIT FROM BRAZIL PUBLIC TEACHING SCHOOL HOSPITAL

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Objectives: During hospitalisation, some patients may have pathophysiological changes, manifested by signs perceptible to clinical deterioration. Early recognition of these signs and emergency care performed by multi-professional team determines directly the outcome and hence the mortality reduction, seeking care quality and patient safety. The objective was to describe the process of implementation of a protocol of care for critical patients in inpatient units in a public teaching hospital localised in Sào Paulo state, and to characterise the critical patients with opened protocol in 2012.

Methods: This is a descriptive study. The team of critical patient began this work in July 2010, in Sumaré State Hospital, a public teaching hospital in Sào Paulo state, consisting of 260-bed hospital, which is a reference to cities around it with 1,100,000 inhabitants. The team consists of doctors, nurses, physiotherapists, speech therapists and administrative assistant. Initially we conducted a literature review on themes and profile analysis of critically ill patients in inpatient units. Based on the Modified Early Warning Score (MEWS) were defined warning signs for adult and paediatric patients and the criteria for inclusion in the protocol of critical patients. We established flows care and the care needed by identifying the critical patient, both for those with worsening of clinical status in inpatient units, and patients discharged from intensive care units (48 hours). The multidisciplinary teams of professionals working in various sectors of the institution were trained and improved on the implementation of the protocol. During January and February 2013, the professionals who make up the team performed a retrospective analysis of the protocols initiated during the months from January to December 2012, to identify the number of open protocols, the sectors of hospitalisation of patients and outcomes. Data were recorded in Excel tables and graphs were used for better visualisation.

Results: Six hundred and fifty-two protocols were initiated in 2012. Of these, 499 (76.53%) were discharged from intensive care units; 465 (93.18%) had better clinical outcome, 12 (2.40%) died and 22 (4.40%) also died, however, were under palliative care.

For the patients with clinical worsening in inpatient units, 153 (22.2%) protocols were initiated; 112 (73.20%) had better clinical outcome and 41 (26.80%) died.

The surgical clinic is the sector where the largest number was initiated protocol (n = 200, 30.62%) and 141 of egress (28.2%) and 59 started in the unit (38.81%). In this sector, the protocols started at the hospital, was identified through analysis of a sample of 36 medical records that: in 100% of records there was evidence on the use of life support materials; in 21 (58.33%) of cases, happened the transfer of the patient to the bed closest to the nursing station, and in one case that didn't happen, was justified in the record; about the standard of verification of vital signs, 27 (75.00%) of the records, showed records of vital signs; 19 (52.77%) of the records contained evidence of medical evaluation. Only ten (27.77%) medical records contained evidence of physiotherapist, nutritionist and social worker evaluation.

Conclusion: It is observed that the deployment of critical patient protocol enabled the training of professionals to identify signs of clinical deterioration of patients in various inpatient units. The standardisation of care is still a challenge, mainly involving the work of the multidisciplinary team.
THE IMPACT OF DECENTRALISATION ON PERCEIVED JOB CHARACTERISTICS: A SURVEY WITHIN A SAMPLE OF HOSPITAL DOCTORS

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Objectives: This report covers a study that examined the impact of organisational change, more specifically, decentralisation on experienced job characteristics within a sample of hospital doctors. Based on the Demands-Control-Support Model (Karasek & Theorell, 1990) a series of hypotheses was tested concerning the impact of decentralisation on doctors’ level of experienced:

a) job satisfaction,
b) job demands,
c) job control; and
d) their level of perceived social support in the organisation.

Furthermore, the associations between these variables -as outlined in the Demands-Control-Support-Model- were examined within centralised and decentralised organisational hospital structures, which was the secondary goal of the current investigation.

The associations between these job characteristics are seen as an important predictor for job stress, absenteeism, turnover and burn out.

Methods:

- Participants: Self-report data from two samples of doctors, working in a large Belgian hospital were used. The first sample involved 26 doctors that were working within a typical centralised organisational structure within the hospital. The second sample involved 21 doctors that were working within a decentralised organisational structure within the same hospital.
- Procedure: Doctors who were undergoing a medical control examination were asked to participate in a research on organisational change within their current work setting. Doctors who were willing to participate were asked to complete a set of self-report questionnaires.
- Measures: The Job Content Questionnaire (Karasek, 1985) was used to examine participants’ level of job demands, job control, and their level of perceived social support. These measures were supplemented with a measure of perceived job satisfaction.
- Statistics: A series of Mann-Whitney U analyses were used to test whether doctor’s perceived job characteristics differed as a function of organisational structure (centralised vs. decentralised). To examine the interrelations between doctor’s level of job satisfaction, job demands and control, and their level of perceived social support, a series of Spearman correlations were carried out.

Results: Overall, the self-report measures yielded no significant differences in job characteristics, including job demands (p=.72), job control (p=.49), perceived social support (p=.95) and job satisfaction (p=.66) between the two samples. Both doctors working in a centralised and decentralised organisational structure within the hospital reported high levels of job satisfaction, job demands, perceived social support and job control.

The Spearman analyses revealed that higher levels of perceived job control corresponded with higher levels of job satisfaction (p<.01). The latter, however, was only found within the centralised organisational structure and not within the decentralised hospital structure. Finally, doctor’s level of job satisfaction was significantly predicted by their level of perceived social support (p<.01), with higher levels of social support contributing to higher levels of job satisfaction. This association was consistent across organisational setting. These findings proved to be independent of doctor’s gender and age.

Conclusion: Our findings seem to suggest that decentralisation has little or no impact on doctor’s level of perceived job demands, job control, social support, and job satisfaction. The second major conclusion is that social support may play a central role in the prediction of job satisfaction in centralised as well as decentralised organisational structures. The present findings await replication within future research that deals with the present study’s limitations.
SUPPORTING THE SERVICE USER, CHANGING THE CLINICIAN, AND CHANGING THEIR RELATIONSHIP: FINDINGS FROM TWO IMPROVEMENT PROJECTS WHICH HAVE INTRODUCED PEER SUPPORT ROLES INTO EXISTING CLINICAL SERVICES

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Objectives: The Health Foundation programme ‘Closing the Gap through Changing Relationships’ supported seven improvement projects to improve patient-centred care. Two of these projects introduced new roles into existing services based on the model of peer support. Peer Support workers (with experience of using mental health services) were introduced into a mental health trust and Care Navigators (with experience of homelessness) were introduced into an acute trust. While the concept of peer support has been discussed in the literature for some time, reports of implementation have to date been limited. These projects sought to improve patient and service user experience by training and recruiting to paid peer support roles, people who explicitly draw on their own experience of being a patient or service user to promote and model patient-centred care.

Methods: The two improvement projects utilised recognised improvement methodologies, which included measurement activity to demonstrate whether changes they were making were resulting in improvement (or unanticipated effects). In addition, each conducted a self-evaluation supported by external evaluators who also undertook a programme-level evaluation using a realistic evaluation approach.

Results: To varying extents, both projects can evidence improvements in patient or service user experience. Their work suggests, for instance, that the mere realisation that a member of the service team has ‘been where you’re sitting’ can have a transformative effect, with patients and service users seemingly more able to feel comfortable around workers who have similar experiences to their own. Staff attitudes and behaviours have been influenced, as peer workers model both positive attitudes towards patients and service users, and demonstrate that recovery and positive outcomes can be a reality. One project has anecdotal evidence to suggest that some service users became open to different treatment options and experienced improved outcomes. Findings about how to effectively implement these approaches have also been generated. These include: making appropriate adaptations to the usual employment processes, such as sensitive handling of references; supporting the peer workers themselves in roles which can be emotionally demanding; and highlighting the need to guard against potentially negative effects such as using the peer supporter role as a tool to persuade a patient or service user to accept a particular treatment. The long term sustainability of the roles has yet to be demonstrated, but both projects continue to operate after the life of Health Foundation funding, with one being scaled-up within their home organisation.

Conclusion: Peer support can improve patient experience and may improve health outcomes. The projects demonstrate that thoughtful implementation is required, and provide valuable insights into how to operationalize such roles. Further research is needed to see if findings from these projects are transferable and to robustly demonstrate an impact on health outcomes.

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Sin, C et al. (forthcoming) Evaluation of the Health Foundation Closing the Gap through Changing Relationships Programme, The Health Foundation;
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A TOOL TO ENHANCE PHYSICIAN ENGAGEMENT IN ACCREDITATION

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Objectives: Physician engagement in strategic initiatives to improve the healthcare system in Canada is essential. At Accreditation Canada we are committed to enhancing physician engagement in order to achieve quality, patient-centred health service delivery. Physician input is provided through a Physician Advisory Committee, physician surveyors and recognised physician champions in the field of quality improvement as well as physician-led organisations and associations. An important new initiative to support health care organisations in enabling physician involvement in Qmentum is the development of a survey tool to measure the physician work environment based on the survey results.

Methods: Recognising the evidence linking an organisation’s work environment and the quality of care provided, the Accreditation Canada Qmentum program includes a survey tool to measure the quality of the work environment. This survey tool is known as the Work life Pulse. This is completed by staff of many categories throughout the organisation, at minimum, once in the survey cycle. In 2012, with the guidance of the Physician Advisory Committee and with the expert advice of the researcher who developed the original Work life Pulse, a work life tool specifically tailored to physicians working in accredited organisations was developed. This new survey tool was pilot tested in ten health care organisations across Canada in Fall 2012.

Results: The new Physician Work life Pulse Tool is designed to assess issues of importance to physicians, such as their practice environment, working relationships within the team/unit and with senior leaders, health and safety issues and overall professional satisfaction. Information gathered from the administration of this tool will help health care organisations to identify improvement priorities related to physician work life. The tool contains 24 questions and offers the opportunity for open comments. In January 2013, it was introduced as an optional tool available to health care organisations participating in the Qmentum program.

Conclusion: The Physician Work life Pulse tool is a tool for health care organisations to improve quality of care through identifying and addressing work environment issues of importance to physicians. In addition to the introduction of this new physician tool, Accreditation Canada is actively involved in other initiatives to enhance physician participation in accreditation activities. For example, efforts are underway to strengthen the way in which clinical governance is identified and assessed in the Qmentum accreditation process through the development of specific standards content related to clinical governance and organised medical staff. This content would specifically address medical governance, credentialing, appointment processing, privileging, on-going performance evaluations and medical leadership in designing services.
PATIENT SAFETY IN THE CURRICULUM IN GRADUATE SCHOOLS OF NURSING AND MIDWIFERY IN THE CITY OF SÃO PAULO – BRAZIL

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Objectives: To analyse the thematic patient safety on curricular in the nursing and midwifery schools.

Methods: This is a documentary study of curriculums in graduate schools of nursing and midwifery in Sao Paulo, Brazil, which discussed Patient Safety. In Brazil, the establishment of policies by the World Health Organization focused on quality and patient safety as well as the impact of errors in health care of the population have demanded educational institutions of health professionals to rethink and implement changes in their curriculum. In 2008, the Pan American Health Organisation established the Brazilian Network of Nursing and Patient Safety (REBRAENSP), in order to consolidate the safety culture in healthcare organisations, universities, non-governmental organisations and between users. The REBRAENSP is a group of Poles and Regional Centers. The Regional Center of nursing and midwifery schools is composed of 15 Universities, of which derives this study. Data collection occurred in 2012 through a form. The first part of form was constituted of the identification data of the schools while the second variables about year, semester, discipline and programmatic content. To identify either directly or indirectly the issue of patient safety curriculum were established 16 keywords: safety in health services, safety processes, safety health professionals, patient safety, care quality nursing, evaluation of health services, quality measurement tools, quality indicators, risk management, adverse events, sentinel events, iatrogenic occurrences, rights of users of health services, consumer code, code of ethics and law of professional practice.

Results: The partial results of this study showed that patient safety is being addressed on curriculum, in different disciplines, directly in the disciplines of Health Policy, Nursing as a social practice, Bioethics, Ethics and Law in Nursing, Biosecurity, Preparedness and Drug Administration, Nursing Administration, Health Services Management, Quality Management, Process Fundamentals of Care, Primary Care Nursing, Nursing and Surgical Center with these disciplines taught in the first and last semesters of courses.

Conclusion: The curriculum of the schools nursing and midwifery also has gaps to be complemented with respect to patient safety. We believe to imperative the implementation of new teaching strategies covering the students, professors and health professionals of the multidisciplinary team to ensure that this issue is thoroughly discussed and integral of the curriculum.
COMPLIANCE OF HAND HYGIENE IN EVALUATING THE SERVICE INDICATOR TEMPORARY DOUBLE LUMEN CATHETER FOR HEMODIALYSIS IN A UNIVERSITY HOSPITAL IN SAO PAULO – BRAZIL

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Objectives: To assess the compliance of healthcare practice of maintaining the temporary double lumen catheter for haemodialysis, through the employment indicator in the model Donabedian guided process, in the haemodialysis unit of a university hospital in Sao Paulo, Brazil.

Methods: This is a quantitative, exploratory, descriptive, observational study with prospective data collection. The research was conducted at the Service of Dialysis, University Hospital, University of Sao Paulo. The sample was comprised of 155 opportunities for analysis of the practice of maintaining the temporary double lumen catheter for haemodialysis, each opportunity contained 13 components, totalling 2015 items observed. Data collection occurred from March to November 2011, through direct observation, and the use of two forms. Data were analysed according to the descriptive statistics and the application of the equation of general and specific indicator - hand hygiene.

Results: The characterisation of the users, it was found that the majority (75.6%) were male, with a mean age of 55 years (SD ± 16.5), 52.6% had a diagnosis like Hypertension, then of Chronic Kidney Disease worsened (39.5%) and diabetes mellitus (36.8%). With regard to the index of the indicator accordingly, this corresponds to 65.8%. In relation to 13 specific components of the indicator, 9 (69.2%) had 100% compliance. The worst percentage of compliance (83.9%) were attributed to the practice of hand hygiene by health professionals.

Conclusion: The findings of this research allowed to establish the relevance of procedural reviews in maintaining temporary double lumen catheter for haemodialysis and infer that there is need to implement strategies and targets care and management in order to reduce the rates of non-compliance indicator, especially in the practical component of hand hygiene before the high percentage of non-compliance. Also, explore elements that are interfering with the process of hand hygiene, as structural issues and behavioural of the health professional.
OBJECTIVES: Quality in community healthcare is a cornerstone of the healthcare system in Israel. Since 1995 all residents receive medical insurance and a basic basket of care from one of four healthcare providers – Clalit Health Services, Leumit Health Fund, Maccabi Healthcare Services, and Meuhedet Health Fund. The National Program for Quality Indicators in Community Healthcare in Israel (QICH) utilises population-based indicators, which cover six areas of disease prevention and management. These indicators are used to assess changes to the healthcare system over time and variations in the quality of care between subgroups. The present study examines QICH quality indicators for cardiovascular care prevention and disease management.

METHODS: Electronic patient records are collected for the entire Israeli population from all four health plans in Israel for the period 2003-2010. Data are aggregated to create the national indicator set (numerators and denominators). Heart disease is defined as patients who underwent a percutaneous coronary intervention or coronary artery bypass graft. QICH indicators are reported annually by age group, sex, and socio-economic position (SEP).

RESULTS: Adherence to preventive care guidelines for cardiovascular disease increased over time in Israel. Rates of documentation of body mass index for adults aged 20-74 years increased from 6% in 2003 to 77% in 2010. For adults 35-74 years old, cholesterol documentation rates increased from 61% in 2003 to 81% in 2010 and blood pressure documentation rates increased from 24% to 86% during the same period. In 2010, documentation rates were higher for younger than older adults. The percentage of adults with controlled low-density lipoprotein (LDL) cholesterol levels (≤160 mg/dL) was 92% (2010) and did not vary substantially by age group, sex or SEP. Quality indicators of effectiveness of care and intermediate health outcomes for patients with heart disease showed consistent improvement over the 8-year assessment period. For adults aged 35-74 years with heart disease, long-term treatment with lipid lowering medications grew by 10% (absolute increase) from 74% in 2003 to 84% in 2010. Variations in rates over time were observed by age group, sex, and SEP. Notably, disparities in long-term treatment with lipid lowering medications according to SEP diminished from an absolute difference of 5% in 2003 to 0.3% in 2010. Intermediate health outcomes, measured as the per cent of patients with heart disease who had controlled levels LDL cholesterol (≤100 mg/dL) increased from 48% in 2003 to 72% in 2010. Rates of controlled levels of LDL for patients with heart disease were higher for older age groups, men, and the higher SEP group.

CONCLUSION: Quality indicators in healthcare are essential tools for assessing adherence to primary and secondary prevention guidelines and examining health outcomes. While variations in healthcare indicator rates differed by sex, age, and SEP, consistent improvements were observed from 2003 to 2010. Further research will be necessary to evaluate the effect of improved quality of care on cardiovascular morbidity and mortality.
DEVELOPING METHODS TO CAPTURE THE PATIENT PATHWAYS EXPERIENCE
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Objectives: The Chronic Care Model (CCM) is a well-documented model for improving outcomes in long-term care. CCM is aligned with other best practices such as “patient-centeredness” and “continuity of care”. When care is provided by multiple professions over time, quality of care more than ever relies on the weakest link in the patient pathway. The ability to capture experiences of best-practice that are linked to both time/place and outcomes is essential for quality improvement efforts. However, current instruments, like the Patient Assessment of Chronic Illness Care do not address these needs. We therefore wished to combine event timelines with qualitative methods as an original and new way of generating empirically founded scalable methodology to capture the patient experience.

Methods: Interview data from 9 cancer patients were used as a basis for this methodology development. Patients reviewed, in a semi-structured interview, their past health care events, and were encouraged to describe and give their evaluation. The interviews were transcribed ad verbatim. In stage 1 we developed themes relevant for description and evaluation of single health care events by combining a deductive and inductive approach according to the “framework analysis”. In stage 2, the material from 2 patients was structured as series of health care events organised by time. Each event was coded with quantified stage 1 categories, yielding a quantitative description of the patient pathway.

Results: The following typology for events emerged from the qualitative analysis:
1. purpose of the encounter,
2. the participants; and
3. the nature of the event. Important events were described in richer detail, and were accompanied with both process evaluation, ranging from positive through mixed to negative, and perceived short-term outcomes for patient.

Outcomes were grouped into:
1. increased patient burden,
2. temporary health issues; and
3. long-term health issues.

The researcher separately assessed processes in terms of best-practice. The models of CCM, patient centeredness and continuity of care were useful in describing positive patient experiences. Negative patient experiences could not readily be classified in terms of lack of specific best-practices, and were tentatively divided into the sub-groups given in table below, with examples. Quantitative pathways descriptions will be presented at the conference as descriptive event timelines.

<table>
<thead>
<tr>
<th>Patient expectation not met</th>
<th>I was a bit surprised. After the surgery the doctor came round for just a minute, and he said it all looked good, and everything was as expected, and then he stressed on. And you could say that… I had expected to be able to talk to him a bit more (…), but he was quick-quick-quick (knocking on the table) and then he was gone.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information discontinuity</td>
<td>Interviewer: “The GP writes here in the record that he has received a phone call from the patient, the one you are referring to: “the patient has been informed, but the GP-office has not received any diagnostic information”. Patient: No, he didn’t know anything. Interviewer: Yes, he writes as much, and it is clear he doesn’t like it.”</td>
</tr>
<tr>
<td>Organisational discontinuity</td>
<td>“I used 9 days to get hold of the prescriptions I needed to start treatment (…) in the end I had to say: Who is responsible? By then I had contacted the mammography center, the ward and the outpatient clinic. And in the end I said, I will not give up. You HAVE to find me a doctor.”</td>
</tr>
</tbody>
</table>

Conclusion: We lack precise terminology for patient’s negative care experiences. The refinement of such terminology is essential for care quality improvements. A quantitative typology of care experiences will enable scalable patient pathway assessments.
HOSPITAL SURVEY ON PATIENT SAFETY CULTURE IN FRANCE WITHIN THE WHO HIGHSs ACTION
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Objectives: To assess professionals’ perceptions and values regarding patient safety in seven French hospitals participating in the World Health Organization High5s project. High5s is “a patient safety” collaboration among a group of participating countries, WHO and the WHO Collaborative Center for Safety; it aims at facilitating the implementation and evaluation of standardised solutions within a global learning community. Assessing the patient safety culture at the beginning of the project is part of the evaluation strategy.

Methods: Seven French hospitals took part in this international survey including 5 others countries (Singapore, Australia, United, Kingdom, Netherland) with a total of 59 hospitals. The Hospital Survey on Patient Culture Questionnaire released by the AHRQ in November 2010 was used and the analysis done by Westat. The questionnaire assesses hospital staff opinions about patient safety issues, medical error and event reporting. It includes 42 items designed to measure 12 composites regarding patient safety culture; two overall patient safety outcomes asked the respondents about overall patient safety grade and number of events reported over the past 12 months. For each item, the percentage of positive response was calculated and a score was estimated for each areas. This score was the mean of percentages of positive answers to the areas’ respective items. An area with a mean of 75% was considered as developed; an area with a mean of at least 50% positive responses was considered as requiring improvement. Following training of the teams, 1000 paper-based questionnaires translated in French were distributed either hospital wide – in 3 locations – or in the units of the 4 other hospitals, all implementing the solution “correct site surgery”(mainly surgical unit, obstetric, operating room). A systematic feedback of the results was given to the front line staff and managers by the national High5s team.

Results: The overall participation rate was 62% over the 7 hospitals (min 42%>max 95%). 78% of the respondents were nurses/ nursing assistants (409/621) and14% were physicians (75/621). No composite had a score above 75%. The score of five composites were less than 50% and included “Team work across units” 46%, “Staffing” 41%; and the three lowest scores including were “Handoffs and transitions”(39%),“Non punitive response to error” (32%), “Management support for patient safety”(28%).Five composites had a score above 50%:“Teamwork within units” (59%), “Organisational learning and continuous improvement” (58%),“Communication openness” (56), “Supervisor manager expectations and Actions promoting patient safety” (54%),“Overall perceptions of patient safety (51%)”.The overall patient safety grade was reported to be “very good” to “excellent” in 47% of respondents.

Conclusion: This study demonstrates a high motivation of healthcare professionals involved in the High5s project for the issue of patient safety culture, despite a poorly developed safety culture in French hospitals. The results of this survey emphasise the need for a strong development of patient safety culture in France. Compared with other participating countries in the High 5s France demonstrates slightly lower scores. Five composite indexes among the 12 have a score within the High5s average range (52%). After 3 years of experiencing the High5s project, teamwork, overall leadership, better communication, exchange of information among teams and the development of a non-punitive culture, appear as key success factors in the spreading of High 5s safety solutions within French hospitals.
CO-DESIGNING LOCAL PATIENT SAFETY INTERVENTIONS: IS USING THE TDF FEASIBLE, ACCEPTABLE AND EFFECTIVE?

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Objectives: There is evidence of unsafe care in healthcare systems globally. Interventions to implement recommended practice often have modest and variable effects. Ideally, selecting and adapting interventions according to local contexts should enhance effects. However, the means by which this can happen is seldom systematic, based on theory, or made transparent. This study aimed to develop and pilot a flexible and transferable approach to embed interventions tailored to patient safety practices in the local context.

Methods: We worked with three hospitals to support the implementation of guidance to reduce the risk of feeding into misplaced nasogastric (NG) feeding tubes. Our stepped process was informed by the theoretical domains framework (TDF; Michie et al., 2005) and key principles from implementation literature. Following discussions with staff and baseline audits to confirm the target behaviour for change, a validated questionnaire was used to identify barriers to health professional behaviour change and focus groups were conducted to co-develop theory-based pragmatic interventions. Repeat audits were undertaken in each Trust following intervention implementation.

Results: Audit data indicated that the target behaviour for change was the first line method to check NG tube position. Questionnaire results indicated the main barrier to using the correct method to check the position of NG tubes across each organisation was ‘social influences’, but there were differences in other identified barriers. Focus groups generated some innovative, generalizable, and adaptable strategies for overcoming barriers. Significant improvements in the target behaviour were seen in all three Trusts (Trust A: $x^2 = 16.03$, $p < .001$; Trust B: $x^2 = 4.38$, $p < .05$; Trust C: $x^2 = 44.72$, $p < .001$). Run chart data from Trust A provided additional information about the impact of individual interventions over an 18 month period. Data from control organisations is currently being collected and will be reported.

Conclusion: We have demonstrated the applicability, feasibility and pilot-level effectiveness of the TDF as a framework for co-designing patient safety interventions. Future work should test the effects of this approach across other areas of patient safety guideline implementation.

COMPARING STAKEHOLDER PERSPECTIVES: A MODEL OF DECISION-MAKING FOR AMYOTROPHIC LATERAL SCLEROSIS MULTIDISCIPLINARY CARE

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Objectives: Normative models of decision-making do not account for the complex and changing needs of amyotrophic lateral sclerosis (ALS) care throughout the short disease trajectory. We investigated ALS patient decision-making from the perspectives of patients, carers and health professionals, to derive a decision-making model for specialised ALS multidisciplinary care.

Methods: Fifty-four respondents (32 health professionals, 14 patients and eight carers) from two specialised ALS multidisciplinary clinics participated in semi-structured interviews between April 2011 and May 2012. Interview topics were derived from the patient decision-making literature body, refined in reference to ALS. Audio recordings of interviews were transcribed, coded and analysed thematically.

Results: Comparison of health professionals, patients and carers perspectives revealed broad agreement on ALS decision-making for symptom management and quality of life. Six key factors were perceived to influence patient-centred decision-making. These were: the decision-making process; patient-centred focus; timing and planning; information sources; engagement with specialised ALS services; and access to non-specialised services. In addition, psychosocial factors and continually changing symptoms, including physical, cognitive and behavioural deterioration, impacted on patients’ capacity to participate. Participants agreed that specialised ALS multidisciplinary clinics offered an optimal setting for decision-making. Nonetheless, issues of timing of evidence-based care delivery and the role of carers were contentious.

ALS decision-making was acknowledged to be a collaborative, complex and cyclical process. The derived model is embedded in the decision-making environment of the specialised ALS multidisciplinary clinic, where patients’ health status and readiness to participate is determined. Health professionals, patients and carers form a decision-making triad, and move through a cycle of four interlinked stages. Stages may occur within the timeframe of a single consultation, or over a prolonged period. Patients may cycle within and between each stage of the model until ready to proceed. The first stage, ‘Patient Engagement’, identifies the participants and establishes their values, preferences and expectations. In stage two, ‘Option Information’, information and guidelines on the available management options are determined, including the optimal timing for implementation of each choice. During the third stage, ‘Deliberation’, patients weigh up the risks and benefits, and decide between proceeding with an option, deferring their decision, or choosing to do nothing. The final ‘Implementation’ stage results once an option is chosen.

Conclusion: Participant engagement in ALS patient-centred decision-making is tested by the dynamic nature of the disease, limited treatment options, and patient and family distress. The roles and expectations of stakeholders influence the decision-making process. Our model captures these complexities and offers a framework for health professionals, researchers and policy makers in this challenging environment.
RAPID EXPANSION OF KOREAN DRUG UTILISATION REVIEW (KDUR): BASED PROGRAM CONSIDERING VARIOUS IT ENVIRONMENTS OF MEDICAL INSTITUTIONS

BJ Kwag *, YE Hur , HG Yeo , CU Kim

Abstract:

Objectives: DUR system informs proper usage of drugs to physicians and pharmacists in order to prevent accidents caused by abusing drugs and decrease a cost of drug usage. The more hospitals and pharmacies participate in DUR; its benefits are the bigger. However, it is difficult to spread DUR system in short period due to various IT environments of each medical facility. This study is about providing the program which easily integrates with their system for rapid expansion of KDUR.

Methods: Korean medical facilities have various IT environments (hardware, programming language, operating system, etc.). Therefore, Health Insurance Review & Assessment Service (HIRA) designed a COM (Component Object Model) based program which is independent from these environments as below.

1. This program runs with EMR (Electronic Medical Record) program and communicates each other for DUR inspection
2. Provide common interfaces (functions) for DUR inspection and sample program sources.
3. The list of contraindicated drugs should be synchronised automatically, because it can be changed often.
4. Provide standardised information window in order to notify users when drug duplications or prohibitions occur.
5. For a safety data transfer, all data are encrypted.
6. Run the self-DUR (self-checking in a prescription) in case internet connection is unreachable.

Also, we provided guidelines about how to develop DUR functions to some hospitals (about 100 facilities) which can’t use above program due to other reasons.

COM: The Microsoft Component Object Model (COM) is a platform-independent, distributed, object-oriented system for creating binary software components that can interact. COM is the foundation technology for Microsoft’s OLE (compound documents), ActiveX (Internet-enabled components), as well as others. (Microsoft. (2012, October 27). The Component Object Model. Retrieved from http://msdn.microsoft.com/eu-en/library/ms694363.aspx)

Results: Because we provided this program, medical facilities could minimise development cost and time. (About 7,764USD saved per each EMR manufacturer or medical facility). In addition, KDUR could be rapidly spread by public release of the program since December 2010. In 2012, 65,936(98.9%) facilities have used DUR system out of a total 66,689 hospitals and pharmacies. And 65,869(99.8%) are using the COM based program, out of which KDUR system is constructed in 65,936 facilities.

Conclusion: The program considering various IT environments of medical facilities not only contributes to rapid DUR expansion but also has a lot of potential for giving other services to facilities in real-time. We will continuously study the program utilisation and how to apply KDUR system to other platforms.
NONSTOP DUR INFORMATION SYSTEM FOR PREVENTING DRUG SAFETY INCIDENTS FOR 24 HOURS A DAY, 365DAYS

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Objectives: In 2011, Health Insurance Review & Assessment service (HIRA) built the Korean Drug Utilization Review (KDUR) Information System that provides the real-time safe drug information based on personal prescribing data from about 65,000 clinics and pharmacies within prescriptions and dispensing ones.

This study was performed in order to explain how to build and evaluate DUR information system which is constructed to run 24 hours a day for 365 days because prescribing and dispensing a prescription could happen anytime during the day including daytime of consultation hours and even the night time, weekends and holidays.

Methods: We proceed as follow to build nonstop DUR information system which can get the patient's safe drug information in real time at a prescribing and dispensing level at all times. KDUR is targeting all the medical institutions including the clinics and pharmacies for 24 hours a day, 365 days.

1. All servers of DUR information system is duplex configuration. If one server happens to error, the other server can work normally.
2. We established the exclusive network for only DUR information system, so it can remain unaffected by other's system or network errors.
3. We build the system which can recover the systemic faults immediately by using the Oracle Active Data Guard which is separated completely from the operating database.
4. In occurring a few disaster (fire, flood, terror, war, etc.), we constructed a disaster recovery system at different location for rapid restoration.

After building the DUR information system, we used the prescription data for the period of 3 months from October 2012 to December 2012 to measure the effectiveness of nonstop DUR system. We analysed the prescription transmission status of time-based including weekends and holidays.

Results: HIRA have operated nonstop DUR system without any fault within the system for 2012, and it have provided the safe drug information without ever missing a day for 365 days.

On analysing the prescription data for the fourth quarter of the 2012 year, we reviewed 276,782,610 prescriptions in prescribing level and dispensing level, reviewed 3,476,815(1.26%) prescriptions at night(P.M 20 ~ A.M 08), reviewed 5,067,641(1.83%) prescriptions of weekends and holidays.

Conclusion: Prescribing and dispensing occurs a lot even during the night time or holidays including weekends. The nonstop KDUR information system could prevent the drug safety incidents for 365 days even including night time, weekends and holidays which could be remaining in the blind spot of drug accidents.
GETTING THE BEST FROM ONLINE RESOURCES TO IMPROVE QUALITY OF CLINICAL CARE
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Objectives: A national e-learning resource for the administration of intravenous (IV) medicines was developed by Clinical Skills Managed Educational Network, NHS Greater Glasgow and Clyde, NHS Lothian and NHS Tayside in 2011/2012. The aim was to develop a national multi-professional resource that supported independent learning and supplemented practical clinical skills teaching.

As part of the evaluation of the resource trainees were asked to fill in a questionnaire about their confidence relating to certain aspects of IV medicines administration and also their access to computers.

Methods: The e-learning resource was launched on two platforms:

1. learnPro - a secure VLE requiring a login; and
2. Knowledge Network – freely available no login required. Trainees were asked to fill in two online questionnaires one before they started learning and another after they had completed the resource.

All questionnaires were anonymous and were designed to provide information about the trainee, their place of work and their thoughts about IV medicines administration and training in general, as well as their perception of the resource and how useful they found it. They were also asked questions about their profession, how the resource was accessed (at home or at work), which platform they used and how confident they felt in carrying out certain clinical skills associated with IV medicines administration.

Results: From the launch of the resource in July 2012 until December 2012, 90 trainees completed the pre-course questionnaire and over 200 trainees completed the post-course questionnaire from 12 different health boards in Scotland. The majority of respondents (>75%) were nurses. Some trainees undertook training as part of a larger, blended, training programme involving simulated workshops after the theory whilst others completed it individually.

In the pre course questionnaire, more than 70% of trainees would describe themselves as IT literate. Two thirds of trainees completed the resource at work and a third at home. Nearly 90% used learnPro to access the resource. Whilst everyone had access to a work computer, for the majority (>75%) the computer was shared with other staff and only a third thought the computer was in a place that was conducive to learning.

Trainees were generally confident in their clinical skills associated with IV medicines administration; however they were not confident in “recognising special considerations concerning paediatrics”. Over 90% of trainees rated the resource as either good or very good and a similar number would recommend it to a colleague.

Conclusion: The resource itself was well received and had many positive comments. The evaluation has shown it has met its target of being relevant nationally (used by many different health boards) and is also used multi-professionally as nurses, midwives, allied health professions including ambulance technicians as well as students all used the resource. It is also adaptable in its use as either a stand-alone resource or as use in a blended learning course enabling trainees to access and learn the theoretical knowledge with more time devoted to face to face practical simulation workshops. However, if health boards are to fully promote the use of eLearning some thought must go to providing study areas that are more conducive to learning and possibly dedicated study time.
EXPLAINING THE UNEXPLAINABLE - THE IMPACT OF LITIGATION RISK ON INCIDENT DISCLOSURE BEHAVIOUR OF PHYSICIANS
Erik (H.) Renkema¹*, Manda Broekhuis¹, Kees Ahaus¹
¹Operations, University of Groningen, Faculty of Economics and Business, Operations Department, Groningen, Netherlands

Objectives: The disclosure of medical incidents to patients is a way of acknowledging human dignity and respecting patients. Physicians hesitate to disclose incidents to patients due to the fear of malpractice litigation. In this study we investigate how differences in physicians’ attitude towards malpractice litigation affect their disclosure behaviour. We also investigate the influence of the perceived patient’s response on disclosure behaviour of physicians. By studying these two topics we aim to contribute to fill current gaps in disclosure theory and improve the incident disclosure process.

Methods: A qualitative field study was carried out in 8 hospitals in The Netherlands. In total 31 in-depth structured interviews were carried out with physicians. Topics that were discussed in the interviews were their thoughts and emotions towards malpractice litigation risk, and how that affected their incident disclosure behaviour. The data were clustered using hierarchical cluster analysis (HCA). Indexing and coding helped to develop empirically driven themes.

Results: HCA revealed that only half of the participants scored high on worry and fear towards the risk of malpractice litigation. Despite their fears half of this group disclosed incidents because they think that disclosure prevents litigation. Specific patient behaviour, perceived as aggressive and irresponsible, made a third of the physicians reluctant to disclose.

Conclusion: Physicians’ disclosure behaviour varies and is affected by the complex interplay between the physician’s thoughts and emotions towards the risk of malpractice litigation and the patient’s response to disclosure. The emotions that possible consequences of disclosure evoke and the recipient’s response to disclosure should be addressed as factors in disclosure theory. This knowledge can help hospitals and politicians in defining and implementing disclosure policies to improve incident disclosure to patients.
ADDRESSING THE PHYSICAL HEALTH CARE OF PEOPLE WITH SEVERE AND ENDURING MENTAL ILLNESS

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Objectives: People with severe and enduring mental illness (SMI) often experience poor physical health (PH) which can lead to cardio metabolic disease. People with SMI die on average 15-25 years prematurely, with poor physical health being a precipitating factor. The aim of this project was to develop and test an integrated model of physical health care between a community mental health team (CMHT) in North Manchester and participating primary care practices (PPCPs).

Methods: One CMHT and five PPCPs were involved in this project. The project was designed from the feedback of a formative evaluation; involving initial scoping interviews n=28 with Manchester Mental Health and Social Care Trust staff and primary, community and secondary health care professionals (HCPs), formal semi-structured qualitative interviews with general practitioners (GPs) n=2; practice nurses (PNs) n=3; service users (SUs) n=19 and a facilitated focus group with CMHT clinical staff n=17. Basic PH data of the CMHT’s SUs was obtained from GP clinical systems, utilising QRISK2 cardiovascular disease (CVD) risk indicators. Interventions involved the introduction of:

1. a physical health link worker (PHLW)
2. multi-disciplinary team (MDT) meetings
3. lifestyle and PH education
4. community-based PH assessments.

The summative evaluation is currently on-going and will involve semi-structured interviews with HCPs and SUs; supplemented with MDT action-based data analysis.

Results: At baseline 187 people with SMI were jointly managed by the CMHT and PPCPs. The formative interview results indicated limited co-ordination, skills/knowledge and responsibility for PH. PH data collected from PPCPs confirms the issues outlined from the interviews; n=102 (54.5%) SUs were overweight (BMI 25+); with no data available for n=42 (22.5%); important CVD risk data was not recorded (within previous 12 months) n=77 (42.2%) had missing HDL/Cholesterol data; n=43 (23%) missing smoking data; and n=43 (23%) missing blood pressure data. Relying on the formative field work and the existing evidence base, the interventions tested were tailored to the specific context.

Interim results from MDT action-based data illustrate that joint action plans produced at the MDT meetings (held either monthly or bi-monthly) have addressed issues relating to missing SU CVD data and effective PH management. Currently (after 4 months of data collection) there have been n=102 actions from n=71 SUs at n=17 MDT meetings; n=23 (23.6%) related to cardio metabolic disease tests/reviews i.e. diabetes, hypertension, coronary heart disease and cancer; n=21 (20.6%) involved primary care PH assessments. The PHLW has facilitated the sharing of information, co-ordination of actions between the CMHT and PCPs and provided professional guidance and co-ordination for the PH care of SUs. An interview with a SU demonstrates the improvement “my mental health worker opened the process of bringing everyone together to discuss their roles and my needs”.

A community-based PH assessment has been introduced; currently n=55 have been performed, with the information shared with PPCPs and discussed at MDT meetings by the PHLW. A process of continuous education with CMHT staff, community-based lifestyle services and PPCPs has been delivered.

Conclusion: The interim data indicates that the introduction of multi-faceted interventions including a PHLW and MDT meetings has improved the management of the PH care for people with SMI jointly managed by the CMHT and PPCPs.
HANDLING OF THE BLOOD SAMPLING (VENIPUNCTURE)-RELATED ADVERSE EVENTS: RESULTS OF A NATIONWIDE SURVEY IN JAPAN

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Objectives: Background: Cases of adverse events associated with blood sampling (venipuncture) have been evident through various clinical incident reports. Some of these develop into medical disputes and litigations. It is often difficult to determine whether such an adverse event is due to clinical negligence or not.

Objective: To investigate the existence of policies and guidelines on blood sampling practice and the current handling of adverse events such as incident investigation procedures by the medical institutions.

Methods: Of all the medical institutions founded by a member of Japan Medical Association, 938 hospitals (20.0% of total 4688) and 1468 medical clinics (2.0% of total 73402) have been randomly selected for the study. An anonymised questionnaire was posted to them and their responses were collected over the period between 8th and 28th December 2011. SPSS Statistics 20 was used for the statistical analysis of the data. Chi-square test or Direct Fisher test was used to assess the associations between the sets of the relevant results. Unanswered questions were treated as missing data and excluded from the analysis.

Results: 201 (21.4%) hospitals and 418 (28.5%) clinics Hospitals and Clinics responded. 127 hospitals (64.1%) had some policies on the procedure while it was the case for 104 medical clinics (25.1%) (Table 1(1)). 75 hospitals (37.9%) and 94 clinics (22.5%) have experienced adverse events associated with blood sampling (venipuncture). For those who have experienced adverse events table 1(2) shows how they handled the incident.

Table 1. (1) The existence of policies and guidelines on blood sampling practice, (2) Handling of an adverse event.

<table>
<thead>
<tr>
<th>(1) The existence of policies and guidelines on blood sampling practice</th>
<th>Hospital (n=201)</th>
<th>Medical Clinic (n=418)</th>
<th>Total (n=641)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Have a written policies.</td>
<td>78 (39.4)</td>
<td>9 (2.2)</td>
<td>87 (14.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>2) Have informal guidelines.</td>
<td>49 (24.7)</td>
<td>95 (22.9)</td>
<td>144 (23.5)</td>
<td>1</td>
</tr>
<tr>
<td>3) Have no written policies or guidelines at all.</td>
<td>71 (35.9)</td>
<td>310 (74.9)</td>
<td>381 (62.3)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(2) Handling of an adverse event*</th>
<th>Negligence case</th>
<th>Non-negligence case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital (n=34)</td>
<td>Clinic (n=43)</td>
<td>Total (n=79)</td>
</tr>
<tr>
<td>1) Expressed sorri ness</td>
<td>12 (35.3)</td>
<td>23 (53.3)</td>
</tr>
<tr>
<td>2) Apologised</td>
<td>27 (79.4)</td>
<td>30 (69.8)</td>
</tr>
<tr>
<td>3) Paid medical cost for physical harm</td>
<td>13 (38.2)</td>
<td>8 (18.6)</td>
</tr>
<tr>
<td>4) Paid solatium</td>
<td>4 (11.8)</td>
<td>1 (2.3)</td>
</tr>
<tr>
<td>5) Paid compensation</td>
<td>4 (11.8)</td>
<td>1 (2.3)</td>
</tr>
<tr>
<td>6) Other</td>
<td>14 (41.2)</td>
<td>3 (7.0)</td>
</tr>
</tbody>
</table>

*Subjects: Hospitals and clinics answered the number of experience of negligence/non-negligence. Multiple responses.

Conclusion: In as much as a 30% of cases apologies are not being offered even when negligence was identified. This is not consistent with the current recommendation as demonstrated by the “Sorry Works” in the USA. The reasons for not offering apologies need to be investigated urgently. On the other hand there are situations where apologies are being offered and compensations are being paid in the absence of negligence. Such situations are potentially avoidable and we plan to investigate further into these cases. The policies and guidelines should be developed to facilitate appropriate handling of venipuncture-related adverse events.

Disclosure of Interest: S. Maeda Grant / Research support from: Japan Medical Association Research Institute, R. Kobayashi: None Declared, E. Kamishiraki: None Declared, M. Baba: None Declared.
A NEW CONCEPT: ANNUAL ACCUMULATED DURATION OF TIME (AADT) OF PRIMARY CARE VISITS - IS THERE AN ASSOCIATION WITH THE QUALITY OF DIABETES CARE.
Shlomo Vinker¹*, Haim Bitterman¹, Doron Cormaneshter¹, Arnon D. Cohen¹
¹Chief Physician office, Clalit Health Services, Tel Aviv, Israel

Objectives:

Background
The encounter of the diabetic patient may be an opportunity for medication intensification and lifestyle counselling even during visits with acute unrelated complaints. Guidelines are usually dealing with the content and frequency of visits but not with the duration of visits. With the increased workload, primary care physicians (PCPs) visits had become shorter. To follow this trend we established a unique central database with documentation of number of visits as well as duration of each individual visit to the PCP.

Aim
To evaluate the association between annual accumulated duration of time (AADT) of PCP visits and the quality of diabetes care.

Methods: An observational study of adult diabetes patients enrolled in one district of Clalit Health Services (CHS) in Israel during 2010. The number of visits and the AADT of visits of each individual patient to a PCP were retrieved with other clinical and socio-demographic data. Quality assessment included follow-up measures (annual HbA1c, microalbumine, LDL-c, blood pressure (BP) and fundus examinations), and three outcome measures (HbA1c<7 mg%, BP <130/80 mmHg, and LDL-c<100 mg/dl). Multivariable regression model was employed to evaluate the association between AADT and quality of care, controlling for the number of visits and other clinical and socio-demographic variables.

Results: The study included 40,116 diabetic patients, 50.2% males; average age 64.7+/−12.8 years. The average duration of diabetes was 6.3 years. Median number of visits was 15 and median AADT of visits was 90 minutes. The final regression model included: annual number of visits, diabetes duration, insulin treatment, age, gender, socio-economic status and chronic diseases burden. There was a linear positive correlation between AADT of visits and the performance of all five follow-up measures. For example in comparison between patients with AADT of 16-30 minutes and AADT>120 minutes the latter had an OR=1.76, OR=2.41, OR=1.65 and OR=1.65 in performance of fundus examination, HbA1c test, micro albumin test, and blood pressure measurement, respectively. There was no association between AADT and the outcome measures.

Conclusion: Annual accumulated duration of time of visits was positively associated with diabetes follow-up but had no effect on diabetes control. Optimal AADT duration of visits should be added to the number of annual visits in guidelines and for future cost-effectiveness analyses of diabetes care by PCP.
INCIENCE OF ACCIDENTAL HYPOTHERMIA IN PATIENTS UNDERGOING AMBULATORY SURGERY: AN EXPLORATORY STUDY

Amelisa Pirutti¹, Maristela P. N. Ramos²,*, Maria E. Estevão², Fernnada R. E. Gimenes³

¹IQG, São Paulo, ²Sumaré State Hospital, Sumaré, ³USP, Ribeirão Preto, Brazil

Objectives: To identify the incidence of accidental hypothermia in patients undergoing ambulatory surgery before and after direct interventions from Nurse Manager and implementation of an institutional protocol.

Methods: A descriptive exploratory study was conducted in a Brazilian State Hospital. We performed medical record audits of 108 outpatients in February 2011 through checklist especially developed for the purposes of the study. Based on results, meetings and regular discussions with nursing staff were performed by Nurse Manager. Also, a protocol to prevent accidental hypothermia in patients undergoing ambulatory surgery was implemented at all patient’s admission. In September 2012 new audit was performed in 200 medical records to evaluate the effectiveness of these interventions.

Results: Ninety-eight patients (92%) had their temperature measured in February 2011 at the admission. From those, 20 (16%) had hypothermia, and 10 (85%) did not have their temperature measured. After interventions, 194 (93%) outpatients had their temperature measured at their admission. From those, 10 (5%) had hypothermia and 4 (2%) did not have their temperature measured.

Conclusion: The results reinforce the need for continuous education of nurses concerning the temperature measurement of all patients undergoing ambulatory surgery at their admission. The implementation of the protocol might help nurses to identify early hypothermia and treat it, minimising adverse events.
THE EXTRACORPOREAL LIFE SUPPORT (ECLS) INITIATIVE: CREATING AN INTER-PROFESSIONAL MODEL OF CARE FOR PATIENTS ON ECLS IN THE INTENSIVE CARE UNIT

Elizabeth Gordon 1*, UHN ECLS Team 2
1Medical-Surgical Intensive Care Unit, 2University Health Network, Toronto General Hospital, Toronto, Canada

Objectives: To develop a new inter-professional model of care for the provision of safe, timely and effective ECLS for critically ill patients, while ensuring the efficient use of resources with minimal operational impact to surgical and critical care services.

Methods: A Needs Assessment was conducted to determine the educational requirements of nursing staff. Questions focused on which knowledge, skills and judgement would be required for nurses to safely and independently monitor and troubleshoot ECLS technologies. An educational program was developed that consisted of didactic lectures, simulation training, as well as practical hands-on experience with the ECLS circuit. The target audience that initially included 150 intensive care unit nurses was expanded to include respiratory therapists, physiotherapists and fellows and residents from critical care, medicine and surgery.

Results: Group discussions as well as anonymous written evaluations of content and practical experience guided revisions of the program. Staff who had the opportunity to attend the course expressed increased confidence in their abilities to care for ECLS patients, and established the ECLS program as a core competency for MSICU nurses. To date, 65 nurses have completed the course with additional sessions offered monthly.

The success of this educational endeavour lead to the development of a new model of care. A classification system was developed based on the degree of patient stability and which then defines the level of perfusion support (at bedside, in hospital or on call) depending on severity of illness and intensity of bedside care required. To maintain consistency and quality of ECLS patient care, standardised policies and procedures and pre-printed physician orders were developed.

Conclusion: With the continued introduction of advanced innovative therapies for critically ill patients, hospitals and critical care units should continuously re-evaluate models of care to enhance quality, safety and efficiency. A model of care that challenges nursing staff to expand their competency, clinical expertise and fosters interprofessional collaboration has proven to be a safe and efficient approach to providing ECLS therapies to patients in the intensive care unit.
IMPROVING SAFETY AND PERFORMANCE USING VALUE STREAM MAPPING (VSM) COMBINED TO HEALTHCARE FAILURE MODE AND EFFECT ANALYSIS TOOL (VSM-HFMEA)

Carlos F. Pinto 1,2,*, Stela M. Coelho 1,2, Marcelo F. Taborda 2,3, Evelin S. Marotta 3,4
1HRVP, Taubate; 2Instituto de Oncologia do Vale, Sao Jose dos Campos, 3HRVP, 4Instituto de Oncologia do Vale, Taubaté, Brazil

Objectives: Patient Safety is a major concern for our organisation and, by using lean methods we were able improve dramatically our capacity. With this capacity improvement we required better tools to measure and manage safety through these new "lean" flows and procedures. Our organisation is an outpatient cancer center, with 4 locations in 3 cities in São Paulo State, Brazil. Value Stream Mapping is the most valuable tool to eliminate waste and improve flow while using lean thinking. To address safety and risk management in our processes; we associated a solid and reliable tool to prospectively evaluate risks, the HFMEA (Healthcare Failure Mode and Effect Analysis).

Methods: The Value Stream Mapping method followed Shook & Rother as proposed in “Learning to See” (ref 1). A CURRENT STATE was identified; followed by problem analysis and waste removal to improve flow; a FUTURE STATE was designed and an action plan developed (as a regular PDCA).

To add the HFMEA each “box in the flow” for the FUTURE STATE was reviewed for Failure Mode and Effect Analysis for risk identification and further improvement, adding extra boxes if needed; then the “VSM-HFMEA FUTURE STATE Project” (the action plan) was executed.

We used the HFMEA tool and scores as proposed by the VA NCPS (ref 2). The VSM-HFMEA project and actions plans took place during 2010-2011, and results are presented for 2010, 2011 and 2012 up to September.

Results: Two VSMs were developed and executed between 2010-2012 in our two major units, with different results and outcomes. We developed a comparative score for sentinel events (never events) adjusting data to our huge capacity improvement (over 100%) through 2009-2012.

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Patient Flow IOV</td>
<td>5,098</td>
<td>1,927</td>
<td>62%</td>
<td>IOV unit</td>
<td>0,001</td>
<td>0,003</td>
<td>0,000</td>
<td>5</td>
</tr>
<tr>
<td>Care Path IOV-HRVP</td>
<td>27,261</td>
<td>17,085</td>
<td>37%</td>
<td>IOV-HRVP unit</td>
<td>0,001</td>
<td>0,002</td>
<td>0,000</td>
<td>3</td>
</tr>
</tbody>
</table>

* As of March 2012;
** Rate of Sentinel Events per medical procedure/month, updated up to September/2012;
# IOV has ~ 7,000 medical procedures/year and IOV-HRVP ~ 20,000.

Conclusion: The use of Value Stream Mapping (VSM) combined to Healthcare Failure Mode and Effect Analysis (HFMEA) is a powerful tool to identify and mitigate risks in complex processes. The gains associated with flow improvement and waste removal using VSM and the deep risk analysis provided by the HFMEA were able to reduce dramatically (>80%) our sentinel events (never events) in 2 years, even in an environment with fast growing demand. The VSM is a powerful tool but it does not set a clear message of safety improvement at first sight, this combination enlighten the safety perspective and clearly correlates with better safety outcomes. We suggest that the association of VSM-HFMEA should be tested by other organisations for process and safety improvements.

References:
RELATIONSHIP BETWEEN HOSPITAL OPERATION VOLUME AND THE IMPROVEMENT OF PERIOPERATIVE PATIENT SAFETY INDICATORS.
Takefumi Kitazawa 1,2, Kunichika Matsumoto 1, Shuhei iida 2, Tomonori Hasegawa 1
1Department of Social Medicine, Toho University School of Medicine, 2All Japan Hospital Association, Tokyo, Japan

Objectives: Hospital administrative data can be used to clarify frequency of adverse events and the status of effectiveness of patient safety activities. The US Agency for Healthcare Research and Quality (AHRQ) has developed Patient Safety Indicators (PSIs) which are series of indicators providing information about complications following procedures. Our previous study suggested that PSIs could be calculated using the diagnosis procedure combination/per-diem payment system (DPC/PDPS) data. The DPC/PDPS was introduced in 2003 to reimburse acute care hospitals in Japan. The data of DCP/PDPS includes administrative claim data and patients’ information and complications, as well as information of day-by-day procedures. We reported the relationship between hospital operation volume and three perioperative PSIs; ‘Death among surgical inpatients with serious treatable complications’ (PSI#4), ‘Postoperative haemorrhage or hematoma’ (PSI#9), and ‘Postoperative sepsis’ (PSI#13). The purpose of this study is to investigate the relationship of hospital operation volume and improvement of perioperative PSIs in Japan.

Methods: The database of “Medi-Target” project was used for this analysis. “Medi-Target” project is a benchmarking project using DPC/PDPS data and is managed by the All Japan Hospital Association (AJHA). The AJHA is one of the biggest nation-wide hospital associations with 2,200 member hospitals. We used the dataset of patients discharged from 2009 to 2011. If 2011 data were better than 2009 data, the hospital was defined as “improved”.

Results: We used 1.96million patient discharge data from 140 hospitals. During the observation period, proportion of hospitals which improved their PSIs was 75.0% (PSI#4), 56.4% (PSI#9) and 53.6% (PSI#13). Among hospitals which improved PSI#4, 56.2% had also improved in PSI#9 and 46.7% in PSI#13, respectively (p<0.05).
We divided hospitals into three groups based on their operation volume by 33.3 and 66.7 percentiles. Average score of PSI#4 was significantly improved on Middle-Volume hospitals and High-Volume hospitals (p<0.01) (Table1).

<table>
<thead>
<tr>
<th></th>
<th>PSI#4</th>
<th>PSI#9</th>
<th>PSI#13</th>
<th>AMR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low-Volume hospitals (n=47)</strong></td>
<td>Score of 2009 344.8</td>
<td>25.2</td>
<td>4.9</td>
<td>983.5</td>
</tr>
<tr>
<td></td>
<td>Score of 2011 281.1</td>
<td>18.8</td>
<td>4.9</td>
<td>1,180.8</td>
</tr>
<tr>
<td></td>
<td>p value 0.10</td>
<td>0.10</td>
<td>0.99</td>
<td>-</td>
</tr>
<tr>
<td><strong>Middle-Volume hospitals (n=46)</strong></td>
<td>Score of 2009 308.1</td>
<td>28.8</td>
<td>5.2</td>
<td>974.4</td>
</tr>
<tr>
<td></td>
<td>Score of 2011 202.9</td>
<td>35.8</td>
<td>7.0</td>
<td>1,166.6</td>
</tr>
<tr>
<td></td>
<td>p value 0.00</td>
<td>0.19</td>
<td>0.08</td>
<td>-</td>
</tr>
<tr>
<td><strong>High-Volume hospitals (n=47)</strong></td>
<td>Score of 2009 222.7</td>
<td>40.3</td>
<td>11.5</td>
<td>1,181.0</td>
</tr>
<tr>
<td></td>
<td>Score of 2011 140.2</td>
<td>47.2</td>
<td>11.6</td>
<td>1,328.2</td>
</tr>
<tr>
<td></td>
<td>p value 0.00</td>
<td>0.12</td>
<td>0.91</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total (n=140)</strong></td>
<td>Score of 2009 291.8</td>
<td>31.5</td>
<td>7.2</td>
<td>1,111.2</td>
</tr>
<tr>
<td></td>
<td>Score of 2011 208.1</td>
<td>33.9</td>
<td>7.8</td>
<td>1,284.5</td>
</tr>
<tr>
<td></td>
<td>p value 0.00</td>
<td>0.36</td>
<td>0.35</td>
<td>-</td>
</tr>
</tbody>
</table>

Score of PSIs are indicated by rate per 1,000 discharges.
AMR is a number of deaths per 100,000 operative patients. Japanese standard population was used for age adjustment.

Conclusion: Among three PSIs, PSI#4 improved significantly in Middle and High-Volume hospitals. Results of our study suggest that hospital operation volume might influence the improvement of perioperative PSIs. AMR increased suggesting patients in more serious condition were being operated, but the detailed analysis is needed with severity, complications and the type of operations taken into account. Quality and safety of healthcare should be evaluated based on improvement as well as baseline PSIs, and the mechanism how hospital operation volume improves PSIs should be investigated.
ESTABLISHMENT OF A STANDARD TREATMENT POLICY

Jinah Kim 1,*, Youjeong Kim 1, Moonsook Kim 1, Jaeyoung Lee 1
1Seoul National University Hospital, Seoul, Korea, Republic Of

Objectives: To propose a course of state action based on the evaluation guidelines of outside agencies, aimed at improving the quality of medical care through the establishment of a standard treatment policy.

Methods: A joint TFT, under the supervision of the Director of the Office of Planning & Coordination, the Head of the QA Center, professors from the relevant medical departments, and members of the Insurance Evaluation team, Business Innovation team, QA team, was formed with the purpose of establishing a standard treatment policy. The professor of Medical Management coordinated Focused Group Interviews with the professors of the relevant departments, which provided the TFT a sound understanding of the current state of the hospital’s treatment policy.

The first theme the TF focused on was Breast Cancer. Cancer is the leading cause of death in Korea and Breast Cancer has the highest incidence rate as well as the highest death rate among all cancers. The TFT hosted two conferences with the leading professors from Division of Breast Surgery, Division of Hemato-oncology, Department of Radiation Oncology, Department of Pathology to discuss in detail and establish standard treatment policy concerning the appropriate medicines and length of hospitalisation for patients. Through these discussions, the prescription of unnecessary antibiotics have been reduced and other steps such as taking consent forms for anti-oestrogen therapy, have been put in place so as to reform existing processes.

Colorectal cancer which has the second highest incidence rate among cancers in Korea was the second theme of focus. The TFT hosted three separate conferences with the leading professors in Division of Colorectal Surgery, Division of Hemato-oncology, Department of Radiation Oncology, and Department of Pathology. There existed no uniform guideline for chest CT examinations for Stage 1 Rectal cancer patients. The TFT was able to convince the Department of Breast Surgery and Department of Radiology to agree on a unified process that would simultaneously take both the abdomen CTs as well as the chest CTs needed prior to surgery. This would result in significantly reduce the overall waiting period for cancer patients.

The TFT’s third theme was Acute Myocardial Infarction, a condition that requires speedy, prompt, and precise treatment and the third leading cause of death in Korea. The TFT was able to keep up to date through regular meetings with the professors from the Division of Cardiology. The principal focus of these detailed discussions was on how to effectively implement the STEMI (ST-Elevation Myocardial Infarction) Hot-line, and as a result, the Hot-line has become a key agenda for the hospital.

Results: During the second half of 2012, the TFT has headed the effort in establishing a standard treatment policy for the three leading causes of death in Korea. The TFT, through active consultation with the relevant departments, was able to successfully implement a standard treatment policy and has taken steps to reform processes aimed to promote correct and more efficient diagnosis. The TFT’s findings have been published three white papers so that any member of the hospital may easily follow and understand the newly established standard treatment policy.

Conclusion: In 2012, a TFT was launched with the purpose of improving the quality of medical care and to propose a course of state action. The TFT identified three key themes and proceeded to implement various reforms and form a standard treatment policy. In 2013, the TFT is currently working to implement a standard treatment policy for diseases in the field of Obstetrics and Gynaecology. Seoul National University Hospital will continue to work toward building a unified process aimed at providing patients with high quality care.
VALUE BASED DECISION MAKING - A TOOL FOR QUALITATIVE AND QUANTITATIVE ASSESSMENT OF HEALTHCARE INNOVATIONS
Marian Schoone, Evelien Rijken
Healthcare Innovation, TNO, Hoofddorp, Netherlands

Objectives: It is important to know the value for all stakeholders to support decision making, when you have an idea for a new product or working method to improve quality of care, quality of life and enhance independence of the elderly. In a societal business case a range of important variables, both costs and benefits, qualitative and quantitative, are considered in a structured way. This will provide insights into the effects and will form the basis of a discussion on the real added value of the innovation.

With funding from the Dutch agency for Healthcare Research, ZonMw, TNO has been developing several tools to put together societal business cases for innovations in health care. Last summer an English web tool for composing societal business cases in long-term care has become available: www.businesscase-longtermcare.com. With this tool health care providers and advisors can assess the effects of an innovation in an early stage. The assessment will make clear what the investment will offer in terms of productivity, quality of care, income, work satisfaction and feasibility of implementation. The tool is unique because both quantitative measures like time and money spent and qualitative measures like quality of care or work are assessed. By presenting these outcomes side by side the weighing of pros and cons is easier for clearer decision making.

Methods: With help of the tool the situation before the innovation is scored on a range of items, including: time spent quality of care, income, operating expenses, income and work satisfaction. Next, the same items are scored for the expected situation after implementation of the innovation. The tool presents an overview of expected differences. Quantitative measures like spent time or income are presented in hours or euros. Qualitative measures are presented in marks ranging from 1 to 10.

Once an innovation has been implemented a real-live assessment can be performed with help of the tool, for instance, by measuring time spent or by letting a team of healthcare specialists or a group of potential clients rate the new situation.

In a pilot three innovative projects in long-term care have applied the tool to develop their own societal business case. The three project leaders involved where instructed in a workshop on the concept and working of the tool. Subsequently they were supported individually when making their assessments on all relevant items.

Results: The project leaders found the tool easy to use and it gave them a complete picture of the (expected) effects of the innovation. The tool presents checklists with items for clients, employees and management and proved to be a good starting point for the discussion on the effects of the innovation with stakeholders. The variable lists made them consider all relevant items including societal aspects.

Conclusion: The tool helps the healthcare innovators to make and integral picture of the changes inflicted by an innovation. Composing such a societal business case is one of the important first steps in the successful development and implementation of new healthcare innovations. They now use the results to convince partners within an innovative consortium, but also to present the benefits of the innovation to external investors or public funding parties. The web tool www.businesscase-longtermcare.com is available for free.

Objective: Objective: Waiting time for hospital care is in the center of the health policy debate in Norway. We wanted to examine the association between waiting times measured by patient administrative data and patient reported waiting times from the national patient experience survey.

Methods: We combined data from the National Patient Registry (NPR), presented by the Office of the Auditor General(1) and patient reported outcomes from PasOpp(2), a national patient experience survey (N=10514). Waiting time is defined as time from received referral at the hospital to start of treatment/operation. The government goal for average waiting time was 65 days in 2012. In the survey patient were asked: “Did you have to wait to receive an offer from the hospital?” We compare the results on these two sources for the four health regions in Norway in order to see how patient reported outcomes compares to data from the patient registries.

Results: None of the health regions met the targeted goal of an average at 65 days. The national mean is 77 days, and the median waiting time is 50 days. There are some regional differences, the two largest regions average at 75 and 76 days, about ten days less than in the Central Norway RHA.

<table>
<thead>
<tr>
<th>Regional Health Authority (RHA)</th>
<th>Average waiting time in days</th>
<th>% of patient who reported quite/too long waiting time</th>
</tr>
</thead>
<tbody>
<tr>
<td>South-Eastern Norway RHA</td>
<td>75</td>
<td>27</td>
</tr>
<tr>
<td>Western Norway RHA</td>
<td>76</td>
<td>29</td>
</tr>
<tr>
<td>Central Norway RHA</td>
<td>85</td>
<td>25</td>
</tr>
<tr>
<td>Northern Norway RHA</td>
<td>79</td>
<td>31</td>
</tr>
</tbody>
</table>

Somewhat surprising the region with the highest recorded average waiting time, has the lowest percentage of patients who reported that they had to wait for too long. Patient from the two largest regions, the Western and South-Eastern RHAs has about the same average waiting in their registries, and it corresponds with reporting on patient experiences. Northern Norway has slightly higher waiting times, and has the largest per cent of patient reporting long waits. The increase in percentage corresponds well with the increase in waiting time measured in the registries.

Measuring waiting time is a challenge, and using the average waiting time in days gives a slightly skewed distribution. Patient with an excessive wait will heighten the mean. It is also a special challenge to compare the mean waiting time with patient experiences, since the patient administrative data will contain waiting times for patient who has yet not been treated, and the patient experience survey will only address patients who have received treatment.

Conclusion: We have seen how patients experience in general is consistent with recorded waiting times in patient administrative systems. The results from Central Norway emphasis the need of including measures from different perspectives, such as patients perspective. One important note is that some patients may choose to delay non-urgent operations for various reasons. We have no information available on how this may affect waiting time. Analyses of waiting times should also include measures of seriousness of condition. Waiting times should be explored with further analysis of how patient experience their hospital stay, and outcome of operations. Another important lesson is to strengthen the measures of waiting times, to include measures of both mean and median. It would be useful to include measures based on the distribution, such as the proportion of patients who had long waits. Waiting time for the whole patient journey, both for in and out-patient treatment should be recorded.

References:
FACTORS ASSOCIATED WITH ECLAMPSIA IN A TERTIARY HOSPITAL
Ching-Ming Liu, Shuenn-Dyh Chang, Po-Jen Cheng

1Obstetrics and Gynaecology, Chang Gung Memorial Hospital, Taipei city, 2Obstetrics and Gynaecology, Chang Gung University, 3Obstetrics and Gynaecology, Chang Gung Memorial Hospital, Tao yuan, Taiwan

Objectives: To determine, in a multivariate analysis, some associated factors for maternal morbidity and pregnancy outcome, as well as some issues related to substandard care between eclampsia and severe preeclampsia in Taiwanese women. Substandard care may threaten the pregnancy outcome of hypertensive pregnant women.

Methods: A case-control study of eclampsia and severe preeclampsia. The definition of substandard care was demonstrated. Women who gave birth at a tertiary hospital during between 1994 and 2003, 53 cases of eclampsia versus 226 severe preeclampsia, non-eclamptic patients were analysed. Binary logistic-regression analysis of the outcome measures were performed to identify univariate predictors associated with eclampsia, at the level of statistical significance of P≤0.05. Multivariate logistic-regression analysis was performed to adjust for potential confounding factors.

Results: The significant factors associated with eclampsia, including systolic blood pressure (SBP) ≥180 mmHg, diastolic blood pressure (DBP) ≥105 mmHg, haemolysis, elevated liver enzymes, low platelets (HELLP), disseminated intravascular coagulation (DIC), hypoxic encephalopathy, acute respiratory failure, preterm labour. After eliminating the confounding factors, a multivariate logistical regression revealed that preterm labour (adjusted odds ratio, 0.333; 95 per cent confidence interval, 0.103 to 1.74; p= 0.066), multiple organ dysfunction syndrome (MODS) (adjusted odds ratio, 10.83, 95 per cent confidence interval, 4.25 to 27.57; p < 0.001), DBP ≥105 mmHg (adjusted odds ratio, 0.418; 95 per cent confidence interval, 0.166 to 1.055; p= 0.065) had made significant contributions in the development and progression of eclampsia. The preventable procedures of patient safety issues and in relation to substandard obstetric care will be demonstrated as to process indicators, the proportion of eclampsia cases from local medical clinics who were not received magnesium sulfate prior to ER; the proportion of eclampsia cases in which the lactate dehydrogenase were not checked in order to exclude the possibility of HELLP syndrome. Among 53 eclampsia cases, 29(54.7%) were referred from local medical clinics emergently. They might not have magnesium sulfate use prior to our ER. In addition, no appropriate laboratory test such as lactate dehydrogenase was available. As a result, the suspected HELLP syndrome in which the possibility was about 30% cannot be excluded. They were all substandard procedure occurred in our daily practice.

Conclusion: Women with eclampsia had significantly higher incidences of multiple organ dysfunction syndrome (odds ratio, 10.828; 95% confidence interval, 4.252-27.524, p < 0.001). In contrast, women with severe preeclampsia were more likely to have preterm labour develop (83.6% versus 71.7%, p < 0.066) and diastolic blood pressure ≥105 mmHg (60.6% versus 35.8%, p = 0.065) than were those with eclampsia.

References: Key words: Eclampsia; Severe Preeclampsia; Multiple Organ Dysfunction Syndrome; Maternal Morbidity; Substandard Obstetric Care
RATIONAL USE OF ANTIBIOTICS- A QUALITY INITIATIVE IN HOSPITAL SETTING

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Objectives: To decrease irrational use of antibiotics by implementing guidelines for antibiotic use in obstetrics and gynaecology.

Methods: Descriptive study where antibiotic guide lines are implemented in maternity unit of Aga Khan Hospital for Women and children Kharadar, a secondary care facility. Data was collected from medical records from January 2010 to December 2010. Prophylactic antibiotics were given according to ACOG guidelines 2009; single dose of 1gm cefazolin is given preoperatively. Surveillance is done by surgical site infection rates and infectious morbidity. Data was analysed on SPSS.

All patients with gynaecologic problems for elective vaginal or abdominal hysterectomy, laparotomy , dilatation and evacuation, curettage of uterus and all pregnant females undergoing elective or emergency caesarean section, spontaneous or instrumental delivery with episiotomy were given single dose prophylaxis with cefazolin 1gm intravenously at the time of induction of anaesthesia in gyna patients and after cord clamping in obstetric patients. All patients who delivered spontaneously without episiotomy were not given any antibiotic. Patients with diabetes mellitus, fever, rupture membranes more than 18hours, premature pre-labour rupture of membranes were given therapeutic antibiotics for five days. A protocol is implemented emphasising on giving bath prior to surgery, avoid removal of hair with razors, effective hand washing scrubbing techniques, decreasing OR traffic during surgery, giving bath on 1st and 2nd post-operative day. During post-operative period 4 hourly temperature charting maintained. Wound was inspected for signs of superficial and deep infection. If body temperature was greater than 38 C and later white blood cell count was greater than 12,000, therapeutic antibiotics were started. Patients are followed for 30 days postoperatively. The outcome measures were febrile and infectious morbidity including wound infection.

Results: A Total of 1710 patients were studied during the period of one year. Out of these 1564(91.5%) were obstetric patients and 146 (8.5%) gynae surgical patients. Patients with caesarean section were 511 and 1053 were vaginal deliveries. Mean age of obstetric patients was 25 years and gyna patients 33 years. Decrease in irrational use of antibiotics and its impact on surgical site infections is given in table. Continuous monitoring and emphasis has brought the usage of therapeutic antibiotic to 8% by December 2010 without increasing infectious morbidity above 5%. Out of SSI 25 patients developed superficial wound infection, only 3 cases of deep infection with complete gaping of wound, no case of pelvic abscess or wound dehiscence. During the post Op period, 20 patients reported fever of which 7 had infection on blood counts, and were given antibiotics. The rest settled within 24 hours. No case of UTI or chest infection reported.

<table>
<thead>
<tr>
<th>MONTH</th>
<th>Patients receiving therapeutic antibiotics</th>
<th>Total patients</th>
<th>Percentage</th>
<th>*Surgical site infection rates %</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>160</td>
<td>165</td>
<td>97%</td>
<td>3%</td>
</tr>
<tr>
<td>Feb</td>
<td>62</td>
<td>115</td>
<td>54%</td>
<td>3.2%</td>
</tr>
<tr>
<td>march</td>
<td>45</td>
<td>107</td>
<td>42%</td>
<td>2.8</td>
</tr>
<tr>
<td>April</td>
<td>43</td>
<td>108</td>
<td>40%</td>
<td>4%</td>
</tr>
<tr>
<td>may</td>
<td>50</td>
<td>130</td>
<td>33%</td>
<td>3.3%</td>
</tr>
<tr>
<td>June</td>
<td>36</td>
<td>156</td>
<td>23%</td>
<td>2.9%</td>
</tr>
<tr>
<td>July</td>
<td>63</td>
<td>157</td>
<td>40%</td>
<td>4.2%</td>
</tr>
<tr>
<td>August</td>
<td>35</td>
<td>181</td>
<td>20%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Sept</td>
<td>15</td>
<td>150</td>
<td>10%</td>
<td>2.2%</td>
</tr>
<tr>
<td>October</td>
<td>20</td>
<td>156</td>
<td>13%</td>
<td>2.3%</td>
</tr>
<tr>
<td>November</td>
<td>12</td>
<td>160</td>
<td>8%</td>
<td>3.8%</td>
</tr>
<tr>
<td>December</td>
<td>10</td>
<td>125</td>
<td>8%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

Conclusion: Implementing guidelines for antibiotic use in obstetrics and gynaecology and translating it into our protocols was effective in decreasing the irrational antibiotic consumption in our hospital. It has decreased the cost incurred to the patient and work load on nursing staff.
FUNCTIONAL IMPROVEMENT TEAMS ARE POSITIVELY ASSOCIATED WITH LINKAGE OF HIV POSITIVE MOTHERS INTO HIV CARE

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Objectives: To determine factors that affect functionality of improvement teams and to determine if there is an association between team functionality and linkage of HIV-positive mothers into HIV care at sixteen HIV clinics in Central and Western Uganda and thus validate the functionality index

Methods: The USAID Health Care Improvement Project (HCI) supported sixteen HIV clinics in Central and Western Uganda to improve linkage of HIV-positive mothers into HIV chronic care. A cross sectional study was done after a period of 21 months to determine their functionality and performance. Data was collected from QI team leaders using a standard questionnaire, extraction of records and by observation. Functionality was assessed using a composite indicator (team composition, team activeness, use of right data tools and coaching) in which teams were classified as functional or non-functional. The association of team functionality and linkage of HIV-positive mothers into HIV chronic care was assessed using trend analysis of percentage of HIV-positive mothers identified at antenatal clinic and linked into HIV care by the improvement teams.

Results: Quality improvement teams significantly improved the linkage of HIV-positive mothers from an average of 25% before team formation to 70% after 12 months of their existence (p<0.001). The performance of QI teams in linking of HIV-positive mothers into HIV care was positively associated with team functionality, with functional teams performing better than the non-functional teams, (R² 0.84 vs. 0.50 respectively). QI team activeness was the biggest challenge to team functionality, with teams scoring an average of 54.1%, while use of right data tools was the least challenging with teams an average score of 86%.

Conclusion: QI teams significantly improved the linkage of HIV-positive mothers into HIV chronic care at sixteen HIV clinics, with the functional teams performing better than the non-functional teams. Quality improvement team activeness is the biggest hindrance to QI team functionality. There is need to address factors that lead to poor team activeness if QI teams are to be made functional and thus post better performance.
NURSES’ OPINIONS REGARDING THE DISCLOSURE TO PATIENT OF NEAR MISSES AND MEDICAL ERRORS IN JAPAN
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Objectives: Responding to adverse events when they do occur is now regarded as an important part of patient safety management. This includes communication with the patient in the form of disclosure and apology [1]. The purpose of this study is to describe and evaluate the nurses’ opinions regarding the disclosure to the patients of near misses and medical errors in Japan.

Methods: Between 3rd and 19th of October 2011, anonymous questionnaires were distributed to all nurses (n=840) in a university hospital with about 900 beds in Hyogo, Japan. The questionnaires included 8 hypothetical scenarios differed in seriousness of the adverse event ranging from a near miss case to a patient death. We asked the nurses’ opinions on whether the medical error should be disclosed to the patients or not on each of the eight cases. Their responses were measured on a 5-point Likert scale (from “strongly disagree” to “strongly agree”). These responses were classified into 3 groups (“agree”, “uncertain”, “disagree”). SPSS Statistics 19.0 was used for the statistical analysis of the data. Chi-square test or Mann-Whitney U test was used to assess the associations between the sets of the relevant results. Unanswered questions were treated as missing data and excluded from the analysis.

Results: The response rate was 40.4% (340/840). There are nurses who do not think disclosure of medical error to the patient is appropriate in serious adverse event cases. Table 1 shows the nurses’ opinions in relation to their year of professional experience (within one year or over one year).

<table>
<thead>
<tr>
<th>Seriousness of the adverse event</th>
<th>Nurses’ opinions</th>
<th>Years of experience n (%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near Miss</td>
<td>Agree</td>
<td>2 (6.7)</td>
<td>18 (6.0)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>4 (13.3)</td>
<td>46 (15.4)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>24 (80.0)</td>
<td>234 (78.5)</td>
</tr>
<tr>
<td>Level 1</td>
<td>Agree</td>
<td>23 (76.7)</td>
<td>251 (83.7)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>3 (10.0)</td>
<td>38 (12.7)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>4 (13.3)</td>
<td>11 (3.7)</td>
</tr>
<tr>
<td>Level 2</td>
<td>Agree</td>
<td>22 (73.3)</td>
<td>282 (94.0)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>6 (20.0)</td>
<td>12 (4.0)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>2 (6.7)</td>
<td>6 (2.0)</td>
</tr>
<tr>
<td>Level 3</td>
<td>Agree</td>
<td>26 (86.7)</td>
<td>297 (99.3)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>4 (13.3)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0 (0.0)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Level 4</td>
<td>Agree</td>
<td>27 (93.1)</td>
<td>297 (99.3)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>2 (6.9)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0 (0.0)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Level 5</td>
<td>Agree</td>
<td>29 (96.7)</td>
<td>296 (99.3)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>1 (3.3)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0 (0.0)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td>Patient Death</td>
<td>Agree</td>
<td>29 (96.7)</td>
<td>298 (99.7)</td>
</tr>
<tr>
<td></td>
<td>Uncertain</td>
<td>1 (3.3)</td>
<td>1 (0.3)</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
</tbody>
</table>

Mann-Whitney U test.

Conclusion: In the U.S., the Harvard University affiliated hospitals published a consensus paper, “When Things Go Wrong” and more recently the “Sorry Works Coalition” is gaining interest. In England, the National Health Service initiated the “Being Open Project” in 2006[1]. Our study revealed that there are nurses who do not think disclosure of medical error to the patient is appropriate in serious adverse event cases. There were statistical differences in the two groups in their opinions on the level 2 and 3 incidents (Table 1). A system to assist nurses in disclosing medical errors to patients and further education to enable nurses to do so needs to be established.

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DEVELOPMENT OF HOSPITAL STANDARDISED MORTALITY RATIOS IN KOREA
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1Department of Health Policy and Management, Seoul National University, College of Medicine, 2The Seoul Institute, 3Health Insurance Review and Assessment Service, Seoul, Korea, Republic Of

Objectives: In Korea, hospital evaluation and public disclosure programs were started in the early 2000s and these brought improvement of hospital quality. However, until now, these activities have focused to specific conditions and procedures. Health Insurance Review and Assessment Services (HIRA) has the main responsibility of these activities. HIRA is considering the introduction of Hospital Standardised Mortality Ratios (HSMR) to evaluate hospital’s overall performance. The purpose of this study is to develop the Korean version HSMR and evaluate technical feasibility.

Methods: We analysed national health insurance claim data (2008-2010). Korea has the National Health Insurance program including almost people (about 97% of population). The claim data of these people are collected to HIRA. We classified all cases to 256 disease groups by using Clinical Classifications Software developed by AHRQ. Among 256 disease groups, 31 disease groups accounted for 80% of in-hospital mortality. These 31 disease groups are our analysis object. We calculated respective hospital’s HSMR by applying the mortality probability model.

Results: We calculated HSMR in two ways.

1) Caterpillar plot: 30.1% hospitals had a HSMR value categories as ‘as expected’. However, 43.1% hospitals had a HSMR value categories as ‘higher than expected’. And others had a HSMR value categories as ‘lower than expected’.
2) Funnel plot: 56.1% hospitals had a HSMR value categories as ‘as expected’. However, 27.6% hospitals had a HSMR value categories as ‘higher than expected’. And others had a HSMR value categories as ‘lower than expected’. There is tendency that bigger hospitals have higher performance.

Conclusion: These results suggest that the introduction of HSMR is feasible in Korea. However, Korean version HSMR calculating model isn’t yet complete. Therefore, methodological improvement is needed for applying HSMR in practical fields.
THE EFFECTIVENESS OF A NURSE-IMPLEMENTED SEDATION MANAGEMENT ON UNPLANNED EXTUBATION

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Objectives: To examine the effects of a nurse-implemented sedation management on unplanned extubation rate in ventilator ward.

Methods: Study Design: A quasi-experiment method was used. From 1st January 2012 to 31st December 2012, 364 patients fulfilled the inclusion criteria for the study and were recruited. Conventional Group recruited those subjects who were prescribed with a fixed dosage of sedated medication or even no sedation prescribed. Interventional Group recruited those who were prescribed with a range of sedated medication titrated by trained nurses. Main outcome measures of the study include the length of stay (LOS) of ventilators days, rate of successful extubation, incident rate of unplanned extubation and sedation score.

Instruments: The sedation management is a package of nurse-implemented protocols which include:
   i. Algorithm-based sedation protocol;
   ii. Daily awakening protocol; and
   iii. Spontaneous breathing trial protocol.

Results: The mean age of the interventional group (IG) and the conventional group (CG) are 78.9 and 75.8 respectively (P = 0.65; NS). The LOS of ventilator days had been measured between 2 groups. The IG were 5.5 days and the CG were 6.5 days (P= 0.53). The sedation score was 3.2 among IG and the CG was 5.1 (p<0.005) which reflected the subjects in the CG were agitated whereas the IG were optimally sedated. Meanwhile the unplanned extubation rate from the IG was 5.23 comparing with the CG 16.53 (P<0.001). It showed there was great significant positive difference between the nurse-implemented sedation management with the conventional group.

Conclusion: The implementation of nurse-implemented sedation management showed effectiveness in the unplanned extubation rate. It may reduce duration of MV and length of stay in ventilator ward. The nurse-implemented sedation management provide immediate response to relieve patients discomfort on MV and helps to deliver appropriate medication according to the titration autonomy delegated. This nurse-implemented sedation management may improve patient safety by minimising unplanned extubation. Areas on patients and relative satisfaction as well as nursing competence in this nurse-implemented sedation management should be examined. More interventional studies should be executed in the future to consolidate the effectiveness of this sedation management.

References:
FACILITATORS, BARRIERS AND PATIENT CENTEREDNESS IN MULTIDISCIPLINARY CANCER TEAMS

Benjamin W. Lamb 1,2*, Jonathan N. Lamb 3, Sophie L. Strickland 4, James S. Green 5

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Objectives: Multidisciplinary teams (MDTs) are the standard means of making clinical decisions in surgical oncology and other arenas. Our objective is to address issues that affect clinical decision-making in MDT meetings, such as the representation of patients, dealing with disagreements, and factors that impair team working that have not previously been investigated.

Methods: Responses to open questions from the 2009 national survey in the UK were analysed using standard qualitative research methods. Themes were tabulated, and verbatim quotes were extracted to validate and illustrate emergent themes.

Results: Free-text responses from 1636 MDT members were analysed. Key themes were:

1) the importance of non-technical skills, organisational support and good relationships between team-members for effective team working;
2) recording of disagreements (potentially sharing them with patients), and the importance of patient-centred information in relation to team decision-making;
3) the central role of clinical nurse specialists as the patient’s advocates, complementing the role of physicians in relation to patient-centeredness.

Conclusion: Developing team-members’ non-technical skills and providing organisational support are necessary to help ensure that MDTs are delivering high quality, patient-centred care, with the ultimate aim of increasing survival rates and patients’ quality of life. The question of how best to represent the patient in MDT meetings requires further exploration.
DUPLICATE PRESCRIPTION POST-RECAPTURE OF SAME ACTIVE INGREDIENT IN NHI BY HIRA

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Objectives: This study, based on the post-recapture of Duplicate Prescriptions with the Same Active Ingredient Drug to the same patients from the same hospital from 2009 to 2011, drew a conclusion to prevent medicines misuse and consider the future health care policy.

Methods: Study subjects were all the hospital-based post-recapture of Duplicate Prescriptions with the Same Active Ingredient Drug whose eligibility for health insurance was assessed by the Health Insurance Review (HIRA) & Assessment Service from 2009 to 2011. The status of Duplicate Prescriptions with the Same Active Ingredient Drug was compared and analysed, sorted by years, hospitals, patients and high drug of duplication days.

- Same Active Ingredient Drug: Medicines with the same serial number of active ingredient
- Duplicate Prescriptions: The same ingredients of prescription drug history from patients with the same hospital that exceeds 214 days during six month (oral drug)

※ Post-recapture of Duplicate Prescriptions with the Same Active Ingredient Drug differ from DUR for proving real-time safe drug management and information in Korea

Results: As a result of Duplicate Prescriptions with the Same Active Ingredient Drug, the number of hospitals declined from 2,978 (2009) to 2,362 (2010) and to 2,252 (2011). The number of patients also declined from 11,410 (2009) to 8,412 (2010) but increased to 9,789 (2011). The high drug of duplication days were chronic condition medicines such as anti-thyroid hormone, anti-diabetics, cardiovascular drug and anti-lipidemics.

<table>
<thead>
<tr>
<th>Year</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hospitals</td>
<td>2,978</td>
<td>2,362</td>
<td>2,252</td>
</tr>
<tr>
<td>Number of Patients</td>
<td>11,410</td>
<td>8,412</td>
<td>9,789</td>
</tr>
<tr>
<td>The high drug of duplication days (Top 3)</td>
<td>Anti-thyroid, hormone, anti-diabetics, cardiovascular -drug</td>
<td>Anti-thyroid, hormone, cardiovascular –drug, anti-lipidemics</td>
<td>Anti-thyroid, hormone, cardiovascular-drug anti-lipidemics</td>
</tr>
</tbody>
</table>

Conclusion: After the post-recapture of Duplicate Prescriptions with the Same Active Ingredient Drug from 2009 to 2011, the number of hospitals decreased continuously, and these results affected on the doctor's duplicate prescribing behaviour and influenced the patient's medical use. However, in terms of correctly using the high drug of duplication days (top 3) as treatment for chronic patient as well as doctor’ prescribing behaviour, need on-going management and also the review of medical policies should be considered.
TO ANALYSE AND ASSESS THE METHODOLOGY FOR OPTIMISATION OF COMPUTED TOMOGRAPHY (CT) AND MAGNETIC RESONANCE IMAGING (MRI) PROCEDURES IN A TERTIARY CARE JCI ACCREDITED TEACHING HOSPITAL IN THE DEVELOPING WORLD

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Objectives: The objective of this quality project was to analyse and optimise the operational aspects (marketing and financial) of CT and MRI services.

Methods: The Aga Khan University Hospital has been in the process of expanding its facilities in order to cater for the increased healthcare services demand. In line with institutional objective, the department of Radiology has plans to install additional units of MRI and CT Scan. Acting proactively before the functionality of the planned new services, the management in radiology identified a quality improvement project to assess the current situation and propose recommendations for optimisation. The project was done in collaboration with a team of final year student of the most reputed business school in the city. The project methods included Data Mining, Observation of Work Practice, Team Interviews, Time and Motion Study, Patient Survey and Sensing, and Scheduling and Queuing. There were also limitations pertinent to each area of focus which was also considered.

Results: The project revealed the following outcomes:

- Lack of coordination was observed in MRI and CT Scan operations.
- Non-utilisation of machine was not being monitored particularly in MRI.
- Reluctance to schedule appointments after 7 pm.
- Data, already available in various information management systems was not being analysed properly.
- Complexity and variability in the procedures restrict the modelling of an individual procedure’s cost.
- Non-aggressive marketing strategy.
- Due to higher costs of MRI and CT Scan procedures, outside referral is low.
- General lack of quality awareness in patients

Conclusion: On the basis of the study we concluded:

- Establish strategic partnerships with corporates as well as pursue aggressive marketing strategy with referring physicians.
- Explore various options to promote utilisation of MRI and CT in off-hours for optimum utilisation
- Schedule procedures based on the queuing model.
- Introduce performance-based incentives. This is meant to motivate the staff even further through extrinsic rewards.
- Increase seating capacity in the waiting area and provide free Wi-Fi service.
- These initiatives are meant to improve the customer’s waiting experience.
- Introduce differential pricing model and offer discounts through Loyalty Cards and discounts based on the frequency of procedures.
- Increase general quality awareness in masses by differentiating CT and MRI services based on clinical features.
RESPIRATORY NURSE-LED SERVICE ENHANCES EFFECTIVENESS OF NON-INVASIVE MECHANICAL VENTILATION IN GENERAL WARDS

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1Medical, North District Hospital, Hong Kong, Hong Kong

Objectives: To evaluate the effectiveness of respiratory nurse-led NIV round in general wards

Methods: During daily NIV round, respiratory nurse performs mask interface-fitting, inspects NIV circuit connections, and assesses mask hygiene and monitors complications such as nasal bridge or facial skin sore. If necessary, NIV settings including oxygen concentration (FiO2), inspiratory positive airway pressure (IPAP), expiratory positive airway pressure (EPAP), respiratory rate (RR), rise time (RT) and inspiratory time (Ti) would be adjusted according to a local NIV titration protocol developed by respiratory physician. Nursing interventions are backed by respiratory specialists who perform weekly NIV rounds with nurse and are available for consultations.

Results: Fifty-seven patients were managed from July to December 2012 among seven medical wards. Twenty-four patients required further nurse-led NIV titration with adjustments made to IPAP, EPAP, RR, RT, Ti and FiO2. Twelve patients were under-ventilated, as reflected by low tidal volume (TV). Four patients’ respiration was not synchronised with NIV. Weaning process was expedited for four patients. Three were found to have obstructive sleep apnoea. For one patient, both backup RR and TV were set too low. While 13 patients were eventually transferred to respiratory beds, 11 remained in general beds. Eight patients’ blood gas results improved in either pH or PCO2 after nurse-led NIV titration.

Conclusion: Under close collaboration with respiratory specialists and backed by an NIV titration protocol, experienced and trained respiratory nurses are empowered to have role expansion in the care of respiratory failure patients on NIV. As a result, patients continue to receive high quality care in general medical beds while ward colleagues benefit from specialist nursing support and guidance.
MONITORING OF POST-REGISTRATION ULTRASOUND PATIENT DELAYS USING AVAILABLE OPTIONS IN THE CURRENT RADIOLOGY INFORMATION SYSTEM (RIS) AND PICTURE ARCHIVING AND COMMUNICATION SYSTEM (PACS) IN A TERTIARY CARE JCI ACCREDITED TEACHING HOSPITAL IN THE DE

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Objectives: The objective of this study was to use RIS and PACS to monitor the waiting times of patients registered for Ultrasound examination and expedite where unnecessary delays were identified.

Methods: The Aga Khan University Hospital, Karachi, Pakistan is a tertiary care teaching hospital incepted in 1985. Since its inception, the institution has been quite receptive to the technology advancements and has a blend of both home-grown and off-the-shelf information technology systems/applications. In terms of information technology, the backbone of the institution is the “home-grown” Hospital Information System (HIS), coupled with many applications such as RIS and PACS and many others pertinent to patient care.

Ultrasound section experience heavy patients’ turnover with 9 rooms to carry out the diagnostic and interventional procedures. Based on our observation coupled with patient complaints related to unnecessary waiting, a strategy was designed to address the issue using existing RIS and PACS.

Results: The RIS and PACS were used to extract real time data related to patient registration and image archiving respectively. Based on the data, patients who had been waiting beyond 60 minutes, after registration, were approached to determine the actual reasons for delay. In cases where the delays were due to technical reasons (e.g., incomplete preparation, etc) such patients were counselled and in patients where the delay was avoidable, such patients were expedited.

The initiative proved extremely useful by providing information about the quantum of patients waiting beyond a certain limit, the extent of waiting times, and the reasons for delays in calling for the procedure. These reasons were analysed and will prove valuable in developing a strategy, in future, to reduce the waiting times to a minimal level despite heavy patient inflow.

Conclusion: Utilisation of unorthodox features of high-tech applications (RIS and PACS) and monitoring and efficiently managing waiting time for radiology procedures.
USING EDUCATION, STRUCTURED TRAINING PROGRAM AND A MODIFIED CENTRAL VENOUS CATHETER DRESSING KIT TO ELIMINATE RETAINED GUIDEWIRE FOLLOWING CENTRAL LINE INSERTION

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Objectives: Central venous catheter insertion is a common and essential procedure in the intensive care unit. It allows administration of fluids, vasopressors and central venous pressure monitoring. A rare but possibly fatal complication of central venous catheter (CVC) insertion is guide wire retention. Retained guide wires may fracture and embolise, or cause infection and vascular injury. There were 3 cases of guide wire retention in the Medical Intensive Care Unit (MICU) in Singapore General Hospital in a 3 month period between December 2011 and February 2012. These alarming incidences necessitated urgent action. The aim of this quality improvement project was to eliminate guide wire retention during CVC insertion in MICU and High Dependency.

Methods: A multidisciplinary project team was formed involving internal medicine residents, medical intensivists and specialised nurses. Root cause analysis of the 3 cases identified major factors leading to such complications. Interventions were planned and tested using Plan-Do-Study-Action cycles. The analysis showed that the major factors were insufficient training and lack of awareness of CVC insertion complications. Following this analysis, we instituted the following interventions:

1) a structured training program which included didactic lectures with a focus on strategies to reduce guide wire complications, hands-on training on task trainers, and structured procedural skill assessments;
2) enforcing mandatory supervision by a senior doctor for all procedures;
3) modification of the CVC dressing kit (CVC PLUS) to include a sterile drape with reminder stickers. Video demonstration and printed poster guides of CVC PLUS were made to educate on the use the CVC PLUS. Between June 2012 and Feb 2013, CVC complications were monitored.

Also, surveys were conducted among MICU and High Dependency proceduralists (n=39) between June 2012 and February 2013 to assess efficacy of changes. Survey of the CVC PLUS was conducted among the proceduralists (n=15).

Results: Between June 2012 to Feb 2013, there were 320 CVC insertions in MICU and High Dependency. There was no guide wire retention during the study period. 97% (38) of participants found the training program to be useful, in particular the hands-on simulated insertions and education of complications. The result was consistent in both post training and at 3 to 4 months. Survey of CVC PLUS showed that 13/15 (86.7%) of the proceduralists found it easy to use. 11/15 (73%) found the reminder stickers on the drape useful. Further cost analysis studies showed a cost reduction of $29 for every CVC insertion.

Conclusion: This important patient safety quality improvement effort, which encompassed education, training and a modified CVC kit, was effective in eliminating guide wire retention during the study period.
PATIENT EDUCATION VIA TELEMONITORING ENHANCES DISEASE SELF-MANAGEMENT AND REDuces HOSPITALISATION

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Objectives: To evaluate patient acceptance and the impact of education delivered by Telemonitoring device on disease self-management and hospitalisation

Methods: A prototype TeleTREK® (Celki) Touch device that facilitated self-reporting of COPD Assessment Test (CAT) scores was developed in 2011. The 2012 version now incorporates educational materials developed by Respiratory Collaborative Care Team (RCCT), North District Hospital (NDH). Each score to the first three questions on COPD exacerbation is directed to differential information if it reaches 3 or higher. Depending on scores entered, instructions include adjustment of inhaler dosage or oxygen flow rate and use of crisis management pack of antibiotics and prednisolone. Cough management includes information on gastro-oesophageal reflux or post-nasal drip. Animated demonstrations of breathing and coughing techniques, and tips on sleep hygiene or healthy lifestyle were also available. Scores are transmitted to a password-protected website where nurses monitor and render phone support when necessary.

Patients’ feedback on usefulness of the information was sought.

Results: Between May 2012 and January 2013, 22 patients were recruited. One patient was recruited because of symptom deterioration at home. The rest were all recently discharged.

<table>
<thead>
<tr>
<th>Mean CAT score</th>
<th>No. of patients: 22 - (Mean age:70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 (14%)</td>
<td></td>
</tr>
<tr>
<td>11-20 (medium disease impact)</td>
<td>9 (41%)</td>
</tr>
<tr>
<td>21-30 (high disease impact)</td>
<td>9 (41%)</td>
</tr>
<tr>
<td>&gt;30 (very high disease impact)</td>
<td>1 (4%)</td>
</tr>
</tbody>
</table>

Six episodes of exacerbation were detected amongst five patients based on increase in total scores by at least 5. Mean score increased from 18 to 24 during exacerbations and improved to 18 during recovery. None required hospitalisation. Two patients, whose baseline CAT scores exceeded 20 and 30 respectively, were re-admitted. Overall 28-day hospital readmission was 9.5% (2/21). Patients unanimously agreed that the education improved their self-management of cough, dyspnoea and sputum clearance. Most (95%) felt that symptom control was enhanced and anxiety reduced when their condition worsened. Overall understanding of disease and self-management were enhanced according to 96% patients.

Conclusion: Patient education bundled with symptom monitoring reinforced knowledge learnt, enhanced disease self-management and reduced hospitalisation.
THE ORGANISATION OF CARE FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS RECEIVING NON-INVASIVE VENTILATION IN PUBLIC HOSPITALS OF HONG KONG

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Objectives: To study Hong Kong (HK) public hospitals’ organisation of care for chronic obstructive pulmonary disease (COPD) patients receiving non-invasive ventilation (NIV) for hypercapnic respiratory failure and its impact on patient mortality.

Methods: Questionnaires were sent electronically to respiratory team heads of 21 public hospitals of HK in July 2011. Data on NIV service settings, availability of designated nursing staff, structured training and protocol, level of patient monitoring and specialist involvement were collected. Data on admissions and mortality of COPD patients receiving NIV for hypercapnic respiratory failure between July 2010 and June 2011 were retrieved from hospital database - the clinical data analysis and reporting system (CDARS). Relationship between mortality and organisational factors were analysed by non-parametric Mann-Whitney U test.

Results: Twenty responses (95.2%) were received. NIV was provided in general wards in 80% of surveyed hospitals, followed by Respiratory beds (55%), Ventilator unit (35%) and NIV unit (20%). There were designated NIV nurses in 25% hospitals. Hourly monitoring was the norm in 64.7% hospitals. Respiratory specialists were involved in NIV management in 78.9% hospitals. Regular staff training was provided in 65% hospitals and NIV protocols/guidelines were available in 25%. Between July 2010 and June 2011, the number of NIV patients ranged from 1.6 to 33.4 per hospital per month. NIV Mortality ranged from 14 to 56% per hospital. Hospitals having an NIV protocol were associated with lower median mortality among COPD patients requiring NIV support (p=0.036). There was a trend showing an association between lower NIV mortality and respiratory specialists’ supervision (p=0.060).

Conclusion: In spite of the need for close monitoring, NIV care frequently occurred in public hospitals’ general wards in HK. Few hospitals had designated nurses or protocols/guidelines for NIV care. It was noteworthy that lower mortality was associated with the availability of protocols. A trend towards improved mortality with Respiratory specialists’ supervision suggested that clinical leadership as well as standardised care could impact upon the outcome of respiratory failure patients on NIV.
THE DEFERRED BLOOD DONOR- RISING LIKE THE PHOENIX

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Objectives: A healthy community houses a robust blood donor and his blood in turn vitalises an ailing patient. He has the potential to donate blood over a hundred times in his lifetime. Every willing person is however not accepted as a donor. A frequent reason for deferment is anaemia. This is an important hurdle that must be crossed failing which we are forced to refuse an individual's altruistic gesture. We were dealing with an urban, educated demographic and noticed two facts. These volunteers were not overtly anaemic and they were disappointed at deferral. We worked on the premise that the gap in haemoglobin shortfall is minimal and that simple remedial measures can right this situation. This niche segment can thus be brought back into the mainstream by improving a donor's health, both for individual and community wellbeing.

Methods: Our study sample is the quantum of blood donors at our blood bank from 1 Jan to 31 December 2012. Each one first answered a questionnaire that excludes disease conditions. We then test the individual's haemoglobin levels using the cyanhemoglobin method. A daily internal and external control assures reliable results. The machine displays the individuals Haemoglobin level. The standard for haemoglobin is based on National Guidelines. Our acceptable standard is 12.5 gms/dl to 18 gms/dl. The volunteer is informed of his haemoglobin level. With the sole motive of changing this situation to a positive by improving the general health of the volunteer, in the next step, a questionnaire of clinical history is asked and elicited. This comprises questions such as a history of eating habits, worm infestation, bleeding per rectum and menstrual history in the case of female donors. After ascertaining from the history that there is no reason to suspect any serious medical or surgical conditions, we then advise the person about the benefits of a wholesome diet. We also recommend a de-worming and iron tablets. A printout of food stuffs that are likely to increase the haemoglobin level is given to him. At the end of three months, we call them for a Haemoglobin check. Many were found to meet standards and several gladly donated blood. Those who did not were advised to meet their family physician for further investigations. Tests done in this study are only those mandated for Blood Banks by law.

Results:

<table>
<thead>
<tr>
<th>Deferral number</th>
<th>Haemoglobin</th>
<th>Sex</th>
<th>Deviation from standard &lt;12.5 gms/dl</th>
<th>History of worm infestation</th>
<th>History of piles, bleeding ulcers</th>
<th>Food habits</th>
<th>Haemoglobin After 3 months</th>
<th>Accept / Refer</th>
</tr>
</thead>
<tbody>
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</table>

This table was used to log data of deferred donors and results were derived from it.

Study sample: 3086
Number deferred: 61
Sex: Male 60 Female 1
Range of Haemoglobin: 9.5 gms/dl – 12.4 gms/dl
Correction required: 8% to 23.2%
Response after 3 months: 68.8%
Of these, Successful donation: 85%
Referred: 16.6%
Repeat donation: 11.1%

Conclusion: 68.8% of our deferred donors showed improvement in their hemoglobin levels and 85% of them went on to donate blood. Indeed, 11.1% of them have since donated blood more than once. We believe that we have not only reversed a trend but also earned the goodwill of the individual and in turn improved in the health of a community. The once deferred but redeemed blood donor is our ambassador for the cause of blood donation.

COGNITION OF RISK FACTORS AND HEALTH BELIEF ON THE QUALITY OF LIFE FOR THE PATIENTS HAVING CORONARY ARTERY BYPASS GRAFT SURGERY
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Objectives: The purposes of this longitudinal, descriptive and correlational study were to explore cognition of risk factors, health belief and quality of life (QOL), and to examine the impact of various variables on QOL among coronary artery bypass graft (CABG) patients.

Methods: A total of 27 subjects who met the selection criteria were selected from a medical center around the northern part of Taiwan. Three questionnaires were completed by each subject pre-operatively, post-operatively, and 3 months after CABG. These questionnaires are the Risk Factors Scale, the Health Belief Scale, and the Quality of Life Index (QLI). Descriptive analysis, McNemar Chi-square test, Wilcoxon signed-rank test, Kruskal-Wallis test, and Spearmen rank-order correlation coefficient were performed for data analysis.

Results: The results showed:

1) Patients reported moderate degrees of cognition of risk factors. At post-operatively and 3 months after CABG, cognition of risk factors was significantly improved than pre-operatively.
2) Patients reported similar condition was found in regard to health belief.
3) The range of proportional means for QLI during the three times are 69.7~72.7%. Among these factors, patients reported the highest satisfaction in the intimacy factor and lowest satisfaction in both the health factor, psychosocial factor.
4) The cognition of risk factors was positive related to QOL.

Conclusion: Coronary heart disease is a major cause of mortality and morbidity and is a growing problem. This study findings can promote the efficiency of medical teams to improve QOL of CABG patients in clinical practice.

References:
3. Angiographic analysis of the angioplasty versus rotational atherectomy for the treatment of diffuse in-stent restenosis trial (ARTIST).
Objectives: The objective was standardisation of processes for clinical handovers, medication safety, surgical safety, patient identification, verbal orders, hand washing compliance and falls prevention across 32 hospitals in the Apollo Group in geographies varying from rural to semi urban, urban and metropolitan. The aim was to educate all our hospitals about the importance of patient safety, implement patient safety practices in all our Apollo hospitals make care safe for all our patients.

Methods: For each of these areas, the Apollo Quality plan described the need and the rationale, the implementation method, the training needs and 20 parameters for monitoring compliance with outcomes colour coded as green, orange and red e.g. %age of patients receiving antimicrobial prophylaxis within one hour before surgery scored a green for > 95%, an orange for 90 - 95% and a red for < 90%.

Clinical handovers were standardised to involve the use of the Situation-Background-Assessment-Recommendation format. The Six International Patient Safety Goals (IPSGs) of JCI were implemented at all locations irrespective of accreditation status. This covered correct patient identification using two patient identifiers; improving communication through the use of read back for verbal orders; improving the safety of high alert medication through segregation, proper labelling and cross checks during administration; implementing the process for preventing wrong patient, wrong side, wrong procedure surgery using preoperative checklists, surgical site marking and time outs; preventing healthcare associated infections through an effective hand hygiene program and implementing a falls risk assessment and prevention program. Surgical Care Improvement Plan envisaged targeting surgical site infections (SSIs) and foreign body retention during surgery. Steps for moving towards Zero Medication Errors were delineated. An implementation checklist guided the implementation process. A team of 20 quality representatives from various Apollo Hospitals was sent to other Apollo hospitals to guide implementation, audit the monitoring process and validate the data reported.

Results:

i. Documented clinical handovers were introduced for the first time at many locations for in house patient transfer, nursing handover and physician handover. Group compliance levels for each of these improved over the year (e.g. from 84.9% to 96.7% for use of in-house transfer form before patient transfer).

ii. IPSGs were being followed only by JCI accredited hospitals. They were implemented by other hospitals with increasing compliance (Time out compliance increased from 85.8% to 95.2%).

iii. There were hospitals which did not track the time of administration of antimicrobial prophylaxis before surgery. They initiated this to be able to ensure that the prophylaxis was given within one hour before surgery. (Group average compliance improved from 79.4% to 89.4%). While the bigger hospitals measured Surgical Site Infection (SSI) for 30 days post operatively, smaller hospitals did not have a system of following up patients after they were discharged from hospital after surgery. They devised mechanisms for this.

iv. There were hospitals with well-defined mechanisms for audit of all prescriptions of inpatients, but they missed out on covering the audit of medications prescribed in the discharge summaries which was started.

Conclusion: The average Apollo Quality Program scores for all group hospitals improved from 62 in April 2011 to 82 in March 2012. AQP has brought about improvement in processes for patient safety for thousands of patients visiting Apollo hospitals in varied geographies. This has translated into improved patient safety statistics.
WOMEN’S DESCRIPTIONS OF SUPPORT FOR BREASTFEEDING OR ALTERNATIVE NUTRITION IN MATERNITY WARDS: ASSOCIATIONS WITH CONTEXTUAL CONDITIONS IN A NATIONAL NORWEGIAN CROSS-SECTIONAL STUDY

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1User Surveys Unit, Norwegian Knowledge Centre for the Health Services, Oslo, Norway

Objectives: Adequate nutrition is an obvious part of mother and child health, in facilitating a sound short term development and preventing future health problems such as obesity. The philosophy and knowledge that are implicit in the baby friendly hospital initiative pervades Norwegian health care and more than 90% of children are born in certified institutions. In a national survey among mothers and partners about pregnancy, birth and post natal care we reviewed the contents of the respondents’ verbal responses. We observed a large number of comments that expressed frustration about the support provided in hospital post natal care with regard to breast- and other feeding.

Objective: To explore in the quantitative data whether variation in women’s experiences with information and guidance in breast- and alternative feeding can be explained by individual and contextual conditions.

Methods: The inclusion process aimed to obtain representative samples for all birth institutions, and used data from the Medical Birth Registry of Norway. The women were contacted by mail, and presented a questionnaire that was developed by the Knowledge Centre specifically for this target population. The outcome was measured by the average of two items in the post natal stay part of the questionnaire:

- “Did you receive sufficient guidance on breast feeding or other ways of feeding the child during the post-natal stay?”
- “Did you receive sufficient information about breast feeding or other ways of feeding the child?”

Explanatory variables:

Individual characteristics:
- Previous births
- Caesarean
- Highest completed education
- Self-rated health

Contextual conditions:
- No of days post natal stay
- Staying in a multiple bed room
- Sufficient peace and quiet
- Personnel had enough time
- Well organised services
- Conflicting information from staff

Results: About 8900 women were contacted in 2012 and just above 4900 (57%) answered the survey. Additional data were joined to the material after the survey was closed. We constructed an OLS regression model with the individual characteristics as explanatory variables, and this model explained about 1% of the variation in the outcome variable. Higher number of previous births was associated with a slightly poorer description of information /guidance, and a positive rating of own health was associated with higher scores. When the contextual variables were entered in the model, the proportion explained variation rose to over 41%. Number of previous births still had small, negative effect. “Well organised services” had by far the strongest effect on the outcome variable, followed by “personnel had enough time”, length of post natal stay, and “sufficient peace and quiet”.

Conclusion: Conclusion: Even with the philosophy and knowledge well in place, there seems to be potential for making the institutions even more baby friendly. In order to improve the support given to the mothers during their hospital stay, this study suggest organisational approaches. Time and space should be dedicated to this activity during the women’s post natal stay, and the staff must have time to support the women when needed.

Disclaimer: This study has used data from the Medical Birth Registry of Norway. The interpretation and reporting of these data is the sole responsibility of the authors, and no endorsement by the Medical Birth Registry of Norway is intended nor should be inferred.”
EIGHT YEARS OF LOW-VOLUME THRESHOLDS FOR ELECTIVE PROCEDURES IN GERMANY – WHERE ARE WE NOW?

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Objectives: Multiple studies have shown strong evidence for a volume-outcome-relationship for several elective surgical procedures. Therefore in 2004 the German Federal Joint Committee (G-BA), which is the highest decision-making body of the joint self-administration of physicians, dentists, hospitals and health insurance funds in Germany, passed a resolution on ‘minimum quantity regulations’ for five elective surgical procedures (transplantations of liver, kidney or stem cells as well as complex oesophageal and pancreatic procedures). Minimum quantities for knee-replacement were passed for 2006 and for the treatment of premature new-borns with a birth weight of less than 1250 grams for 2010. These agreements, although partly questioned in court disputes, are mandatory for all hospitals treating patients with statutory health insurance and are meant to lead to improved quality by reducing the number of low-volume-hospitals. In our study we investigate the effects of the minimum quantity regulations on the proportion of low-volume-hospitals and patients treated by them.

Methods: The study is based on the national DRG-data. The DRG-payment-system in Germany has been introduced as an all-patient/all-payer-system in 2003. The data cover all inpatient cases with the major exception of psychiatric and military hospitals. We analysed the procedure-codes from 2005 to 2011 and calculated the number of cases with the above mentioned procedures (except premature new-borns) per year for each hospital. The hospitals are categorised for each procedure as reaching the minimum quantities or not. Additionally we investigated if the annual respective hospital-volume was in line with the minimum quantity regulation or not, taking into account all general derogations (e.g. implementing new services).

Results: The proportion of hospitals which reach the minimum quantities does not change over the years for kidney (around 78%) and stem cell transplantation (around 63%) and complex oesophageal procedures (around 30%) but it increased from 16,8% in 2006 to 29,3% in 2011 for liver transplantation, from 35,3% to 51,3% for complex pancreatic procedures and slightly from 79,5% to 83,9% for knee-replacement. The proportion of patients who were treated in these hospitals increased from 83,8% in 2006 to 88,9% in 2011 for liver transplantation and from 81% to 88,6% for complex pancreatic procedures but the proportion does not change more than 2% between 2006 and 2011 for the other 4 procedures.

Conclusion: The proportion of patients treated in hospitals with a volume over the defined thresholds has been increased by the implementation of the low-volume thresholds (minimum quantity regulations) only for liver transplantation and for complex pancreatic procedures. However, the effect is still dissatisfying. Furthermore, the number of hospitals with procedure-volumes below the minimum quantities could not be reduced at all for 3 out of 6 procedures by introducing these regulations. The regulations should be enforced within the yearly budget negotiations between hospitals and health insurance funds. Our results suggest that this process may currently be insufficient.
USERS SPEAKING UP FOR THEIR OWN SAFETY IN ACUTE AND MATERNITY CARE: FINDINGS FROM TWO STUDIES
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¹Division of Women’s Health, King’s College London, ²Guy’s Hospital, King’s Health Partners, London, United Kingdom

Objectives: To examine users’ experiences of speaking up for their own safety in acute and maternity care; to explore facilitators and barriers to speaking up.

Methods: 2 ethnographic studies in 6 NHS Trusts across England carried out in 2010 as part of the Birthplace in England Research Programme and NIHR King’s Patient Safety Research Programme. We report on semi-structured interviews with 79 users: 58 postnatal women, 14 acute patients and 7 relatives. Transcript coding using NVivo8 software. Framework and thematic analysis with triangulation involving researchers from both programmes.

Results: Acute patients and relatives’ readiness to speak up was affected by ability to recognise changes in clinical condition, self-monitoring, trust in staff, and culture and system of health care. Speaking up was facilitated by knowledge from previous experiences, being treated as an individual, and staff reassurance/validation. It was hampered by sensory impairment, uncertainty about significance of symptoms, staff giving priority to objective measures of illness, and difficulties with systems not expediting access to care.

The maternity study redefined speaking up as insistent and vehement communication when faced with failure by staff to listen or respond on at least one occasion. 30 of 58 women interviewed, crossing all socio-demographic groups, reported speaking up in their latest pregnancy or birth. 14 reported speaking up in situations they felt to be urgent and experiencing distress or harm from staff failure to listen. Speaking up was facilitated by sensing urgency of need, and presence of a relative. It was hampered by staff ignoring or dismissing women’s safety alerts. 28 women did not speak up because they considered professionals had greater knowledge, because they lacked personal or situational resources to intervene, or because they had dialogic communication with staff and ‘just speaking’ was sufficient to be heard.

Conclusion: Acute patients and maternity service users do speak up, but this is not enough: staff need to listen and respond to their concerns and safety alerts. Strategies aiming to encourage speaking up need to consider specific challenges faced by users with chronic health conditions and acute illness, and those experiencing escalation of care. More research is needed on organisational practices that encourage and respond to service users’ contribution to their own safety, and on ways that services can learn from patients and relatives who have suffered harm.

References:
THE EVOLUTION OF AN EFFECTIVE CLINICAL GOVERNANCE AND PATIENT SAFETY
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Objectives: A systematic approach & framework was required through which National University Hospital (NUH) is accountable for continually improving the quality of services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish.

The approach to quality of care in NUH was fragmented before 2002. NUH had activities to improve and maintain the quality of care but were somewhat distant to routine care delivery and benefits were not clearly apparent to the other areas and to patients. Clinical processes were governed at departmental level with variation in practices.

Methods: An overarching framework to look into relevant components of clinical governance as a whole had to be effected. The relative autonomy of departments and healthcare professionals particularly clinicians has to be challenged so that lasting change could be effected. Benchmarking from model adopted by National Health System (UK), we looked into various aspects of the clinical governance and focused on clinical effectiveness, risk management, patient experience and communication. Emphasis was placed on using the best available evidence to treat and care for patients. This was accomplished by ensuring use of best practice to manage patients, change practice, developing new protocols or guidelines. Use of evidence-based medicine and standardising practices in high volume, high cost and high risk areas was implemented. Clinical practice was continuously monitored and deficiencies were remedied. Clinical Review Programme allowed independent review of care, and peer review. External accreditation programmes such as the Joint Commission International (JCI) were leveraged upon as an independent view of existing clinical processes. Clinical risk management helped to identify system changes that were required to reduce adverse events. Active senior leadership involvement is exhibited in Leadership Walk rounds, Sentinel Event Sharing sessions, Patient Safety Workshops and Patient Safety briefings. Walk rounds served as a platform for leaders to discuss critical issues with frontline staff. Anonymised medical errors are highlighted to staff but fair accountability is stressed to obtain staff’s continuous support. In our efforts to link all these together, the concept of accountability in NUH has started to take root. If an unacceptable behaviour or practice is noted, reporting and correcting it has become more of a rule than an exception. This is a very encouraging shift in culture change.

Results: The biannual Patient Safety Climate Survey results (2005, 2007, 2009 and 2011) were reflective of the enhanced safety and quality and role of governance and leadership. Overall patient safety perception in NUH increased from 97.4% (2005) to 98.3% (2011). The percentage of staff who agreed on the following questions showed an improved trend from 2005 to 2011: hospital management provides a climate that promotes patient safety (76.8% to 82.8%); the actions of hospital management show that patient safety is a top priority (78.5% to 81.4%); the hospital is actively doing things to improve patient safety increased (87.7% to 90.1%); after we make changes to improve patient safety, we evaluate their effectiveness (77.2% to 81.8%).

A fair culture is evidenced by an increase in voluntary incident reporting 2001 at 950 reports to 3969 in 2011.

Conclusion: Clinical governance is composed of different areas that can function independently but may not achieve the level of success that an integrated system will have. The lines between these areas should be indistinct to achieve an organisational team concept.
UNDERSTANDING THE DIFFERENCES IN HAZARD IDENTIFICATION PROCESS IN HEALTHCARE AND OTHER HIGH-HAZARD INDUSTRIES

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Objectives: There is a growing awareness that medical errors in healthcare delivery are playing vital roles with serious consequences affecting patient safety and the quality of healthcare services. As a result, healthcare organisations are expected to monitor their care delivery processes, identify errors and investigate their links to hazards. In order to reach the stories behind errors and investigate their links to hazards, hazard identification is an important learning point produces a great yield in making healthcare environment safer for patients. As an important aspect of safety and quality, hazard identification is also playing a vital role in other high hazard industries such as aviation, petroleum and chemical industries.

The objective of this study is to analyse both healthcare and other high-hazard industries to see how importantly hazard identification is embedded in their safety systems. We also looked at the main dimensions which vitally played important roles in both industries' hazard identification process to capture possible learning points from other high-hazard industries to healthcare in terms of hazard identification.

Methods: Through the comprehensive literature review, we analysed the differences in safety systems of healthcare and other high-hazard industries in terms of hazard identification.

Results: Although each hazard identification method used in healthcare has its own strengths, it can be said that there is no perfect hazard identification process in healthcare applied for patient safety within the scope of risk management when compared to other industries. Moreover, many of the prospective hazard identification methods used in high-hazard industries have not been tested and evaluated in different healthcare settings yet, despite their importance have been recognised. Therefore, still there is a potential to improve hazard identification process in healthcare by using current methods more effectively and applying new methods, which are essentially capable of hazard identification in highly hazardous industries. Therefore, the hazard identification process would potentially show the strengths of each method, while minimising the weaknesses of them to bring out a better methodology within the scope of risk management for safety improvement. Moreover, it can potentially yield a greater benefit in terms of learning about hazards and proactively preventing possible adverse incidents. When we reviewed the main disparities between healthcare and high-hazard industries in terms of hazard identification, it was found out the understanding of system thinking, safety culture in the environment and the use of different hazard identification techniques are the main dimensions potentially affect the success of the hazard identification process.

Conclusion: By indicating the importance of hazard identification in both healthcare and other high-hazard industries, this study particularly stated how the disparities in safety culture, system understanding and the techniques used for hazard identification play important roles in the success of hazard identification process to promote patient safety; thus quality.
RESOURCE UTILISATION FOR CLOSTRIDIUM DIFFICILE CASES AT AN ACUTE CARE TEACHING HOSPITAL

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Objectives: To estimate resource utilisation for Clostridium difficile in an acute care teaching hospital by comparing the length of stay (LOS) and Total and Direct cost per Weighted Case of Clostridium difficile infection (CDI) case versus non CDI case.

Methods: The study was based on hospital case costing data base between March 2010 till September 2012. 340 patients with discharge diagnosis of CDI and 21382 cases without the discharge diagnosis of CDI as controls were matched based on similar Case Mixed Groups (CMG). Differences in the burden of illness, patient age, or patient complexity were adjusted by Complexity Overlay Methodology (PlxTM) and Resource Intensity Weights (RIW weighted cases) to achieve statistical and clinical homogeneity between the two groups. Using the Generalised Linear Model and Lifetime Models with risk adjustment the CDI and non CDI cases were then compared for length of stay, Total Cost per Weighted Case and Direct Cost per Weighted case.

Results:
Our data shows that cases with CDI had statistically significant longer LOS compared to non CDI cases. (16 days versus 9 days, P<0.0001) The total cost per weighted case ($8092 for CDI case versus $6922 for non CDI case) and the direct cost per weighted case ($5685 for CDI case versus $ 4896 for non CDI case) was also significantly different. (P<0.0001)

Conclusion:
The impact of Clostridium difficile infection on the length of stay and cost of care is significant. LOS and cost of care are important measures of hospital resource utilisation management. We investigated the hospital case costing data for two and a half years and found that there were significant differences in the adjusted total cost per weighted case, direct cost per weighted case and length of stay of CDI and non CDI cases. Our study provides a more accurate estimate of the impact of Clostridium difficile on resource intensity, cost and resource utilisation and has future implications for funding allocation for the hospitals. Cost Efficiency (cost per weighted case) needs to be improved by introducing “value improvement” changes which improve quality and efficiency of care.

THE APPLICATION OF COST-EFFECTIVENESS MEASURE FOR PAY FOR PERFORMANCE (P4P) PROJECT IN KOREA

YEONHEE CHO, YOUNG MI PARK, MI KYUNG KANG, SUNHO JOUNG

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Objectives: Health Insurance Review and Assessment Service (HIRA) has been assessing the quality of Acute Myocardial Infarction (AMI) as Payment for Performance (P4P) Project since 2007. Despite improving the quality of care, the length of stay has been decreasing while the cost has been increasing. To identify the effect and the cases of using the Costliness Index (CI) measure that applied cost-effectiveness to exclusion criteria of incentive payment in P4P project.

Methods: We analysed the Korea National Health Insurance claims data and the clinical data documented by hospitals of all patients admitted to hospitals through emergency room from Jan. to Dec. in 2011 with AMI. A total of 17,262 patients were hospitalised with AMI in 181 hospitals.

Six AMI measures - five process measures, one outcome measure - were aggregated with one Composite Quality Score (CQS) to judge the quality of the hospitals’ services for AMI. We categorised the hospitals into nine groups and implemented incentive or disincentive payment according to the AMI results. A total of 45 hospitals received incentives while there were no disincentive hospitals. For CI, all the patients were classified according to the Korean Diagnosis Related Group (KDRG). Differences in case mix among hospitals are adjusted using the RDRG (Refined DRG). Risk-adjusted costs were computed with Costliness Index (CI). CI (index>1.2) was applied into exclusion criteria of incentive payment in P4P project and one of 45 hospitals was excluded from incentive payment (CI=1.27).

Results: The length of stay was decreasing consistently, on the other hand, the costs was increasing in AMI patients as P4P Project since 2007.

After applying the cost-effectiveness measure to the AMI quality assessment result of 2011, the trend of increasing cost per patient has decreased (Table).

<table>
<thead>
<tr>
<th>Variables</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>the costs per patient(KRW)</td>
<td>7.59 million</td>
<td>7.35 million</td>
<td>7.57 million</td>
<td>8.04 million</td>
<td>8.11 million</td>
</tr>
<tr>
<td></td>
<td>(100.0%)</td>
<td>(96.8%)</td>
<td>(99.7%)</td>
<td>(105.9%)</td>
<td>(106.8%)</td>
</tr>
<tr>
<td>the length of stay per patient(days)</td>
<td>9.1</td>
<td>8.7</td>
<td>8.7</td>
<td>8.6</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>(100.0%)</td>
<td>(95.6%)</td>
<td>(95.6%)</td>
<td>(94.5%)</td>
<td>(89.0%)</td>
</tr>
</tbody>
</table>

Conclusion: After applying the cost-effectiveness measure, we were able to confirm the effect of high quality-low cost in P4P project. We will take into consideration not only the cost but also the length of stay as the exclusion criteria of incentive payment.
PREVENTING DUPLICATION OF RADIOGRAPHIC EXAMINATIONS: FOCUSING ON COMPUTED TOMOGRAPHY (CT) - A CASE OF A CANCER HOSPITAL IN KOREA

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Objectives: The objective of this project was to prevent patient harm (radiation exposure, economic loss, waste of time) due to duplicate radiographic examinations in a cancer department of a tertiary teaching hospital.

Methods: A duplicate CT scan was operationally defined as follows: it is a redundant duplicate CT scan of the same anatomical field(s) within one month by the same prescriptions from a patient’s various physicians of both medical and surgical departments. A QI team has taken a scrupulous approach to QI through collaborative team meetings and communication activities among outpatient and radiology nurses since April, 2012.

1. As a preliminary investigation, the QI team retrospectively reviewed the records of 2,535 CT scans that a patient underwent more than twice per month, 3 cases of 2,535 CT scans were duplicate examinations during a 6-month period (from July 1, 2011, to December 31, 2011).
2. The QI team developed Electronic Nursing Record (ENR) display program that outpatient nurses can check whether the same radiographic examinations have been previously done by other medical or surgical doctors’ prescription in April, 2012.
3. Just before patients undergo CT, the radiology nurse checks routinely whether the patient has undergone the same CT within one month, and prevents a duplicate CT through confirming with other medical team.
4. Using the same method as the preliminary investigation, the QI team investigated 2,880 CT scans during a 6-month period (from April 1, 2012, to September 31, 2012).

Results:

1. Outpatient nurses can monitor all the radiographic test records of patients by new ENR system.
2. In the preliminary study, 3 cases of 2,535 CT (0.12%) were duplicate examinations.
3. After the QI, 17 cases of 2,880 CT prescriptions (0.6%) were found to be duplications, so the 17 duplicate prescriptions were cancelled during a 6-month period (from April 1, 2012, to September 31, 2012).
4. Finally, there was no incidence of duplicate CT examinations after the QI.

Conclusion: We contributed to patient safety by preventing duplication of radiographic examinations. For the future, we will recommend physician’s EMR program that doctors can check previous radiographic prescriptions by other doctors.
QUALITY OF HEMODIALYSIS TREATMENT IN KOREA DEPENDING ON THE AVAILABILITY OF QUALIFIED PHYSICIANS

Hyunsook Kim 1,* Misun Yun 1
1HIRA (Health Insurance Review & Assessment Service), Seoul, Korea, Republic Of

Objectives: The aim of this study is to compare the quality of haemodialysis (HD) treatment between clinics with qualified physicians and those without.

Methods: We analysed the Korea National Health Insurance claims data of 316 clinics with patients who have received HD more than twice a week from April to June in 2010. The quality of HD care was assessed using the quality indicators: the frequency of dialysis per day per physicians and RNs; frequency of the HD adequacy test and the fulfilment rate of appropriateness of HD with regard to HD adequacy; and the administration rate of supplemental iron and the rate of iron storage capacity with regard to anaemia management. The researchers divided clinics into 2 groups according to the availability of qualified physicians: Group I (clinics with qualified physicians), Group II (clinics without qualified physicians).

Results: The frequencies of dialysis per day per physician and per RN were lower in group I than group II. The HD adequacy and anaemia management were better in group I than group II. Table. Haemodialysis assessment outcome according to the availability of qualified physicians (Mean±SD)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Indicator</th>
<th>Total</th>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manpower</td>
<td>Frequency of dialysis per day per physicians</td>
<td>26.3±14.5</td>
<td>26.4±11.6</td>
<td>30.1±22.6</td>
</tr>
<tr>
<td></td>
<td>Frequency of dialysis per day per RNs</td>
<td>4.3±1.3</td>
<td>4.2±1.3</td>
<td>4.5±1.0</td>
</tr>
<tr>
<td>HD adequacy</td>
<td>Frequency of the HD adequacy test</td>
<td>86.2±32.6</td>
<td>85.4±33.6</td>
<td>81.9±35.9</td>
</tr>
<tr>
<td></td>
<td>Fulfilment rate of HD adequacy</td>
<td>87.5±13.1</td>
<td>87.2±13.9</td>
<td>85.9±11.5</td>
</tr>
<tr>
<td>Anaemia management</td>
<td>Administration rate of supplemental iron</td>
<td>26.8±29.2</td>
<td>32.4±31.2</td>
<td>27.9±28.7</td>
</tr>
<tr>
<td></td>
<td>Rate of iron storage capacity</td>
<td>50.7±27.3</td>
<td>50.6±27.7</td>
<td>49.4±26.4</td>
</tr>
</tbody>
</table>

Conclusion: The care quality of the clinics with qualified physicians was better than those without specialised physicians. The quality improvement of the clinics that perform HD treatment is required through continued quality assessment.
DO RAPID RESPONSE SYSTEMS ENABLE THE PROMPT DELIVERY OF APPROPRIATE EMERGENCY CARE TO PATIENTS AT RISK OF ACUTE DETERIORATION: RESULTS FROM AN AUDIT ON HOSPITAL STAFF UTILISATION OF THE PATIENT WITH ACUTE CONDITION FOR ESCALATION (PACE) PROGRAM

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1 Clinical Governance Unit, 2 District Access, Redesign and Clinical Services, South Eastern Sydney Local Health District (SES LHD), Sydney, Australia

Objectives: To estimate the rate of emergency call activations made for patients with signs of unexpected acute deterioration as defined by the PACE criteria, and to measure the length of time from the breach observation to the call activation and, to the arrival of appropriate emergency medical assistance.

Methods: Audit of hospital charts referring to two 24 hour periods (Sunday and Thursday), from all patients in general medical and surgical wards of the 3 largest metropolitan hospitals in one Sydney health district. An audit tool was developed for this purpose, which captured the frequency and thoroughness of routine patient vital sign observations and the times of key events in the process of identifying and responding to a PACE criterion breach. The principal outcomes of interest were the time intervals between the following 3 events; initial observation of PACE criterion breach, PACE call activation and, arrival of appropriate medical assistance. Results were reported using descriptive statistics. Logistic regression modelling was used to analyse the effect of PACE criterion breach type, shift and, ward on the key principal outcomes of interest.

Results: Preliminary data on 989 day episodes of care in 3 hospitals indicate 53 had a recorded vital sign observation breaching the PACE criteria, 51 of these were not initially observed by the primary care team (PCT) and hence required a PACE call.

A PACE call was activated for 35 (69%; CI:56-81) of the PACE breach events, all initially to the patient care team (PCT). In another 16 (31%; CI:19-44) no PACE call was activated and, of these 3 (6%) had a request for medical review made without using the PACE system and, no medical assistance was requested for the other 13 (25% CI:14-37). There were fewer PACE call activations made on Sunday compared to Thursday (activated for 52% versus 80% of PACE breach observations, p=0.06).

Times were recorded for 28 of the PACE calls. The median time from PACE breach observation to the call activation was 5 minutes (ranging from immediately to 35 minutes). Times to the PCT response were recorded for 27 of the PACE calls and the median time to PCT arrival was 12 minutes (ranging from less than 1 minute to 54 minutes). In 5 patients (19%; CI:13-36), the PCT arrived more than 30 minutes after the call activation. Two of the 3 three events for which medical assistance was requested without using the PACE system, were reviewed within 30 minutes of the recorded PACE breach observation.

Three of the events involving a PACE call activation were escalated to the Advanced Life Support Team of which two were admitted to Intensive Care and one was made Not for Cardio-Pulmonary Resuscitation, all others were stabilised. Of the 13 events for which no medical assistance was requested, one was observed with persisting PACE breach signs for at least 3 hours and one for 18 hours until a PACE call activation, however all were eventually stabilised.

Conclusion: Preliminary data suggests that in almost a third of the observations of patients with signs of being at risk of acute deterioration are not having an emergency call activated, as mandated in the PACE policy. Also, some of the PACE calls were not attended to by the PCT within the 30 minute rule. Policy directives alone are not sufficient to effect change in complex health care systems. Process oriented strategies, such as education, may be necessary to support the PACE program objectives.

PCT: Team including Specialist Consultant and or Registrar.
EXPLORATION OF PATIENT SAFETY CULTURE IN ICUS AFTER INTRODUCING TEAM RESOURCES MANAGEMENT

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¹Medical Quality Control Division, ²Department of Nursing, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan

Objectives: Patient safety culture is the core issue of fostering patient safety in medical institutions, and the survey of patient safety culture can help measuring the extent of upholding patient safety. Multidisciplinary teamwork has become a globally pivotal issue in fostering patient safety in recent years. Definite results of related researches also identified the effectiveness of team resources management (TRM) in promoting the patient safety culture. The purposes of this study were to explore the difference of patient safety culture of nursing professionals working in ICUs after introducing TRM to the hospital in southern Taiwan, and furthermore, to look into whether there will be positive feedback in applying TRM to other clinical units of the hospital in the future.

Methods: The survey of patient safety culture of nursing professionals working in ICUs was employed in this study in the end of year 2011. There are 10 ICU units in the hospital, and the projects of TRM were introduced in 6 ICU units since March, 2011. The questionnaire of patient safety culture was distributed to 290 nurses working in various ICU units with or without introducing TRM, and 257 questionnaires with 89% response rate were collected, 154 participants working in ICUs which TRM was applied. Descriptive and inferential statistics of the data were analysed in SPSS12.0 in this study.

Results: From the demographic analysis of the participants, 98.4% (n=253) were female, 51.4% (n=132) were 31-40 years old, 3.5% (n=9) were nursing administrators. Regarding the experience of incident reporting, 57.3% (n=138) were none. And nurses working for 5-10 years were 25.3% (n=65), 98.1% (n=252) were educated with diploma or baccalaureate degree. No matter whether the nurses working in ICUs with or without introducing TRM, there were no significant differences among the variables of gender, age, administrative position, cases of incident reporting, working experience, and nursing education preparation. The average scores of major dimensions of the survey of patient safety culture of nursing professionals in ICUs were demonstrated as follows, teamwork climate was 80.3, working condition was 79.8, safety climate was 79.1, stress recognition was 78.8, perception of management was 78.6, job satisfaction was 74.0, handoffs & transitions of medical professionals was 69.5, management support for patient safety was 68.7, and teamwork across units was 68.7. With regard to the impact of TRM, patient safety culture of ICUs with introducing TRM scored higher than the ones without introducing TRM. Moreover, there were significant differences among the dimensions of teamwork climate, job satisfaction, and working condition.

Conclusion: Findings of the survey of patient safety culture suggested that nursing professionals of ICUs scored highest in the dimension of teamwork climate, which indicated the concern of effectively interactive communication among medical professionals. ICUs with introducing TRM scored higher in each dimension of patient safety culture, and positively significant difference were identified among the dimensions of teamwork climate, job satisfaction, and working condition. Nurses working in ICUs with introducing TRM could easily have access to communicate with healthcare team members by applying the strategies and tools of TRM when facing the problems and apprehension related to patient care. Generally speaking, introducing TRM not only could foster the awareness of patient safety among healthcare professionals, but also could make the patients acquire safer quality of care and promote the job satisfaction of employees in the hospital.
ARE WE IN THE SAME WORLD? – PERSPECTIVES FROM SENIOR AND JUNIOR NURSES IN ICUS

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1Dept. of Nursing Service, Taipei Medical University Hospital, 2Health Policy and Care Research Center, Taipei Medical University, 3Dept. of Quality and Patient Safety, Taipei Medical University Hospital, Taipei, Taiwan

Objectives: The study aims to identify the hazardous conditions potentially leading to unsafe states for patients in the perspectives of nursing staff in a 18-bed surgical intensive care unit (SICU) and a 24-bed medical intensive care unit (MICU), and provide suggestions to redesign the conventional training program.

Methods: Multi-method was used; firstly, a focus group organised by eight nurses representing varied seniority in the ICUs, which explored nurse's knowledge and experiences about the hazardous conditions in the two ICUs; followed by a survey of all nurses in the two ICUs using a semi-structure questionnaire which was designed based on the discussion of the focus group.

Results: Total 67 hazardous conditions were clarified and identified by the focus group. Forty-five of the questionnaires were returned, giving a response rate of 77.5%. 47.4% (SICU), 19.2% (MICU) of nurses had less than one year working experience in ICU. Nine conditions in MICU, 43 conditions in SICU were determined as the high risky states by over 30% of nurses in the two ICUs respectively. Oral medical order and communication between nurses during handover were the top two hazards for the juniors in MICU, while handover between juniors was concern mostly in SICU. Handover in time pressure, training for new comers, and infection control were identified significantly (p < 0.05) as different magnitude toward patient safety between juniors and seniors in MICU, while patients’ status and unreliable devices and equipment were identified as high magnitude significantly by juniors rather than seniors in SICU. The survey revealed that nursing staff with varied seniority working in MICU and SICU had different perspectives in hazardous conditions of the ICUs' environment toward patient safety.

Conclusion: Based on the findings, a new training strategy was recommended. Learning from successes rather than failures has been planned. Share of adequate responses between nurses was scheduled by subjects in their routine meeting.
EFFECTIVENESS OF NURSES’ USE OF DISCHARGE PLANNING SYSTEM OF EXPERIENCE IN TAIWAN
Lai Yi-Fang 1*, Yuan Chien-Yi 1, Lee T.T 1
1Department of Nursing, Far Eastern Memorial Hospital, New Taipei City, Taiwan

Objectives: In the era of information technology, there are various types of information technology introduced into health care. In order to simplify the nursing process, to provide decision-making, and to improve the care quality and effectiveness, health care institutions actively participate in nursing information system development which including nursing care, physician orders management, care and quality control, nursing management and educational research applications. Patient care relies on team work of all specialties in every clinical scenario. The team work required specifically discharge planning information systems to achieve the integrated nursing care based on nursing users’ feedback.

Methods: This study is performed at the basis of information system success model, which was introduced by DeLone & McLean (2003). The model contains five domains, included the system quality, information quality, service quality, the willingness to use, satisfaction and net benefits. The study is focus on the nurses working primarily in a department of discharge planning services of a medical center in Northern Taiwan. The aim of this research is to explore nurses' opinion and satisfaction about the effectiveness of the discharge planning system. After the implementation of discharge planning information technology, the service volume and the length of consultation were collected and compared. There are 177 nurses enrolled in the study. A satisfaction questionnaire was completed, and 176 questionnaires were returned. Patients' demographic data are recorded by chart review. The first outcome indicator was medical team service volume and the second one is time response to consultation.

Results: The results showed that system quality, information quality, service quality and overall satisfaction (willingness to use/satisfaction) were positive correlated. The net benefit was the highest average score, showing that nurses using the system are satisfied with system effectiveness. The domain of information quality could most predict medical service with the variance was 53% (p <0.001). After using the discharge planning services system, the time response to consultation requirement decreased 1.2 days. In terms of consultation service, the specialties including social workers, dieticians, home care providers showed significant greater volume (p <0.001); however, the rehabilitation program showed no significant difference.

Conclusion: In conclusion, this study could serve as the reference for those health care institutions starting the application of discharge planning system to achieve a high-quality teamwork.

References:
BEYOND ACCREDITATION: AN EMERGING NEW SYSTEM FOR "QUALITY SUSTAINABILITY"
Yuichi Imanaka 1,2,*, Hiroyuki Sugawara 3, Hirobumi Kawakita 4, Quality Sustainability Task Force 1
1Japan Council for Quality Health Care, Tokyo, 2Kyoto University Graduate School of Medicine, Department of Healthcare Economics & Quality Management, Kyoto, Japan

Objectives: The mission of the JCQHC, a national healthcare quality organisation in Japan, is to improve the health and welfare of the people by improving healthcare quality and ensuring trustworthy health care for the people. The latter component actually deals with the sustainability of providing quality health care in an accessible manner, and is greater gaining importance in this era of cost containment in social security due to massively increasing government financial debts. The JCQHC has accredited thousands of hospitals so far, and has been improving the current status of quality and safety throughout the nation. However, we have yet to address the depth of sustainability for quality health care.
In the context of these situations, we have developed a new system to evaluate and support already-accredited hospitals striving for a stronger strategic management basis for quality sustainability.

Methods: We formed multidisciplinary teams including professionals on quality and safety, management, finance and policy; and developed an evaluation scheme based upon literature review, case studies, expertise knowledge, and interactions with hospitals and professionals. In addition to the whole-system approach to quality and safety of hospitals, we introduced regional and time-trend axes for evaluating hospital performance, wherein we looked widely into the healthcare "demand and supply" in each relevant region and back into the "history" of hospital performance and management, respectively. We also set up approaches specifically to assess "medical care achievement" with hospital supply structure stability; "organisational culture" for quality and sustainability, including "professional growth"; and also "financial achievement" and "mid- & long-term plans".

Results: The new scheme has been developed to evaluate and support hospitals in the above processes, and it has a structure that integrates and networks the following areas:

1) Mission/Vision/Values and Historical Achievement
2) Medical Care Achievement
3) Financial Achievement
4) External and Internal Environment
5) Human Resources and Organisational Management
6) Processes and Systems for High Quality, Safety and Productivity

"Responsiveness" to patient and community needs is regarded as vitally important, in addition to internal processes of assurance and improvement in quality, safety and efficiency.

A "quantitative approach" is also employed and covers numerical data analysis of medical care achievement, financial output and regional demand and supply.

A "multi-level multidisciplinary teams approach" was designed in phases of pre- and post-survey analysis, on-site surveys, interactions with hospitals, validation panels and follow-ups.

This system aims to strengthen the sustainability of healthcare throughout Japan. Proceeding from the accumulated knowledge bases though reviews and support of multiple cases, we plan to "disseminate practice and knowledge" on improvements and best practices by multiple types of media and seminars. In addition, within these new processes, we have found and will likely continue to find problems in healthcare systems and policies, and plan to publicise "policy proposals" for nationwide quality and sustainability.

Conclusion: A new system, beyond accreditation, for accredited hospitals, was developed to evaluate and support sustainability for quality health care. This is expected to work well to facilitate individual hospitals and the national healthcare system for quality sustainability in the face of impending drastic healthcare reforms.
ATTITUDES OF JAPANESE CITIZENS AND HEALTH CARE PROVIDERS REGARDING PARENTERAL NUTRITION IN INDIVIDUALS WHO LACK DECISION MAKING CAPACITY

Etsuko Kamishiraki 1,*, Shoichi Maeda 2, Jay Starkey 3

1 Department of Social Welfare, University of Kochi, Kochi, 2Graduate School of Health Management, KEIO UNIVERSITY, Fujisawa, Japan, 3University of California, San Diego, United States

Objectives: The current study aims to clarify attitudes of Japanese citizens and health care providers regarding the use of parenteral nutrition given various scenarios of patient age and duration of incapacitation.

Methods: We sent standardised questionnaires to a sample of citizens (1000 people) and health care providers (2180 care managers and 360 home health nurses) between February and March, 2012.

Specific clinical scenario shown in questionnaires: “A (X)-year old patient was diagnosed (Y) years ago. Subsequently, s/he has received medical care at home. The cancer has spread to her/his lungs. S/he is currently unable to take food, water, or other nutrition by mouth. Both of her/his feet are very swollen and her/his mouth is very dry. Even with treatment, s/he is only expected to live another 3 weeks. S/he has recently been sleeping all day and is not very responsive. If you repeatedly yell her/his name, s/he opens her/his eyes a tiny bit and mumbles something incoherently. S/he is different than before, without wilful activity.”

Results: Response rates: citizens 76.2% (n=762), care managers 38.7% (n=832), nurses 33.9% (n=122)

Table 1. Parenteral nutrition in patients without decision making capacity

| Table 1. Attitudes of respondents Regarding Parenteral Nutrition (P<0.0001) | Age / Incapacitation | Support Parenteral Nutrition |
|---|---|---|---|
| | | Citizen % | n | Care Manager % | n | Nurse % | n |
| 80 / 5 years | 67.4 | 512 | 55.0 | 445 | 37.7 | 46 |
| 80 / 1 year | 68.5 | 513 | 60.3 | 482 | 40.5 | 47 |
| 50 / 1 year | 83.3 | 623 | 70.5 | 550 | 55.4 | 62 |

Table 1.2. Most favoured form of parenteral nutrition Nutritional Form |

| Age / Years since diagnosis | Percutaneous gastrostomy tube | 80 / 5 years | 15.6 | 80 | 6.3 | 28 | 2.2 | 3 |
| | Nasogastric tube | 17.4 | 89 | 9.7 | 43 | 4.4 | 2 |
| | Intermittent oesophageal tube feeds | 7.8 | 40 | 0.9 | 4 | 0.0 | 0 |
| | Central venous total parenteral nutrition (TPN) | 8.4 | 43 | 25.1 | 111 | 6.7 | 3 |
| | Peripheral venous TPN | 35.7 | 183 | 51.4 | 227 | 75.6 | 34 |
| | Subcutaneous parenteral nutrition | 14.3 | 73 | 6.6 | 29 | 11.1 | 5 |
| Same as above | 80 / 1 year | 16.4 | 84 | 8.1 | 38 | 2.2 | 1 |
| | | 17.7 | 91 | 10.4 | 49 | 6.5 | 3 |
| | | 8.0 | 41 | 1.5 | 7 | 0.0 | 0 |
| | | 8.4 | 43 | 25.0 | 118 | 6.5 | 3 |
| | | 34.8 | 179 | 47.7 | 225 | 73.9 | 34 |
| | | 13.5 | 69 | 7.4 | 35 | 10.9 | 5 |
| Same as above | 50 / 1 year | 21.8 | 136 | 14.3 | 75 | 0.0 | 0 |
| | | 18.0 | 112 | 9.6 | 50 | 3.1 | 2 |
| | | 9.8 | 61 | 1.9 | 10 | 0.0 | 0 |
| | | 10.0 | 62 | 33.1 | 173 | 34.4 | 22 |
| | | 27.9 | 174 | 34.2 | 179 | 53.1 | 34 |
| | | 11.7 | 73 | 6.9 | 36 | 9.4 | 6 |

JMP 10.0 was used for the statistical analysis. Chi-square test was used; blank responses were excluded.

Conclusion: Citizens and health care providers differed in their opinions regarding the use of parenteral nutrition at the end-of-life to a statistically significant degree. This suggests that health care providers need to work to adequately understand the wishes of those served to provide optimal patient care. The next step is to research the reasons for these differences.
A PROJECT OF MULTIDISCIPLINARY COLLABORATION TO PROMOTE MEDICATION SAFETY AMONG HOME CARE CLIENTS
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1Department of Nursing, Far Eastern Memorial Hospital, New Taipei City, Taiwan

Objectives: This study aimed to establish a project of multidisciplinary collaboration to improve medication safety among home care clients.

Methods: Data was obtained by administrating a structured- questionnaire survey and medication review. Demographic factors and perception of medication safety were recorded on questionnaire by caregiver.

This project was implemented via four programs:
1) arrange pharmacist combined home visit
2) interprofessional case conference
3) development and implementation of medication reconciliation education
4) drug-drug interaction (DDI) alerting in computerised physician order entry (CPOE). The implementation period ranged from August to December in 2009.

Results: The survey was completed by 146 patients. The average number of current medications taken by the patients in the study was 6.7.

We observed 37 potential drug interactions, and at least one potential interaction was identified in 22 patients. Forty-three (29.4%) patients were exposed to duplicate medications; the prevalence of drug interactions and duplicate prescriptions in home care patients was 61.7%. After these intervention strategies, the prevalence of drug interactions and duplicate prescriptions was reduced from 61.7% to 13.7%. The perception of medication safety was increased from 3.82 to 4.26.

Conclusion: This project not only improve caregiver’s perception of medication safety but also quality of home care nursing. Medication safety for patients cannot be achieved without including the caregivers and multidisciplinary collaboration.

References:
A NURSING EXPERIENCE IN CARING FOR A GSD VENTILATOR USER
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¹Department of Nursing, Far Eastern Memorial Hospital, New Taipei City, Taiwan

Objectives: Rare disease patients need more medical care support due to their frequent visits to the hospital. This case report describes a 26 year old female patient who had suffered Glycogen Storage Disease (GSD) for 10 years. Chronic dependence on ventilator led to pulmonary tuberculosis (TB) complications, which required treatment and nursing.

Methods: During the nursing period from January 31 to March 21, 2008, the author gathered data through observation, interview, physical assessment, and applied Gordon's functional health patterns as an evaluation tool.

Results: The result found that the patient had various health related problems, including Ineffective Airway Clearance, insomnia, Relocation Stress Syndrome (RSS), etc. During the nursing period, the author instructed the patient to effectively carry out coughing in order to maintain a smooth airway. The insomnia problem was improved by arranging an environment that was favourable to sleeping and by adjusting her daily regimen. Besides, the patient was assisted to understand a TB isolation care program. Moreover, approaches like active caring, listening, and company were adopted to build a trustful nurse-patient relationship to adapt the patient’s physiology and psychology positively and reduce her discomfort as a result of the disease.

Conclusion: Through individual nursing intervention, the authors helped the case to face the progress of the illness condition. It is hoped that this nursing experience can provide as a reference for nursing personnel caring for rare disease patients and improve the medical care quality.
AN EXPERIENCE OF NURSING CARE FOR A HOMELESS PATIENT WITH LIVER CIRRHOSIS, SERIOUS ASCITES, AND POWERLESSNESS
Li-Hsueh Chi, Mei-Hua Sun

Objectives: The purpose of this article was to describe a 46-year-old homeless patient who fainted and was admitted to hospital through a 119 call. The patient lost confidence in his physical health condition and future life prospects, in turn triggering a sense of powerlessness and other health problems. Subsequently, he was accepted a resettlement plan due to successful nursing care and guidance.

Methods: During the period of nursing care, from September 7 to 27, 2010, the authors used listening, observation, interviews, and Gordon’s functional health assessment tool to conduct evaluations in order to identify patient's health problems.

Results: The patient's health problems including ineffective breathing pattern, imbalanced nutrition: less than body requirements, a sense of powerlessness. During the nursing process, the patient’s progress was closely monitored. By health education that fitted the patient's, the authors offered diet principles for liver cirrhosis and daily water replacement computations, then his fluid levels were controlled, thereby relieving the symptoms of dyspnoea. In conjunction with social resources that give the procurement of regular food supplies and shelter for meet his basic need. Through caring, listening, and encouraging him to express his emotions. Providing self-care knowledge and nursing instructions about disease were given to help the client increased level of self-control ability. Moreover, problems related to discharge from hospital were also discussed with the patient, in order to help the patient build a sense of control over his life and reduce his sense of powerlessness.

Conclusion: Through the nursing process, would help the client to face life with a positive attitude upon leaving hospital and to overcome the difficult challenges ahead. We hope this holistic nursing experience can prove the nursing staff a reference when taking care of such patients and improve the medical care quality.

References:
UNDERSTANDING AND REDUCING MEDICATION ERRORS
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Objectives: The purpose of this study was to determine the various types of medication errors, their incidence and to analyse the data to help reduce the medication errors. In the US alone, medication errors are amongst the most common medical errors, harming at least 1.5 million people every year amounting to morbidity and mortality costs of more than $77 billion per year. It must be noted here that published data regarding medication errors does not exist as on date in developing countries. With a better understanding of cause and effect relationships, healthcare professionals can learn what factors tend to make healthcare processes prone to medication errors and hence develop methods, models and systems to reduce the incidence.

Methods: At the hospital under study from Jan 2010 to Dec 2012, every medication error was analysed to determine the systemic gaps that resulted into an error. Methods for detecting medication errors included direct observation audits at the time of prescription, transcription, dispensing and administration of medication and incident reports from across the hospital. Before dispensing of any medication, it was checked by the Clinical Pharmacologists using dedicated software to verify the appropriateness of the drug, dose, frequency, and route of administration; therapeutic duplications; potential allergies or sensitivities; potential interactions between the medications and medications with food; any variation from the organisation criteria for use; patient's weight and other physiological information; and other contraindications to identify the errors. Pareto analysis of errors was carried out and it was found that out of 1642 errors 56.1% were prescription errors, 43.3% were transcription errors, 0.1% were dispensing errors and 0.5% were administration errors.

As per our analysis, the major challenge understood, was to control the number of prescription and transcription errors which formed 99.4% of all medication errors which took place in the hospital. A multi-pronged approach was adopted which encompassed man, methods, materials and machine to bring down the medication error rate. Interventions to reduce the medication errors included focused training, changes in the Physician Order Sheets, disturbance free indenting, collaborative rounds, tall man lettering for identifying look alike, sound alike drugs and changes in the Hospital Information System module for reducing transcription errors to enable ‘mistake-proofing’.

Results: As a result of analysis and interventions undertaken over the period of three years from 2010 to 2012, the medication error rates came down from 11.95 medication errors per 100 discharges in Jan 2010 to 2.2 medication errors per 100 discharges in the month of Dec 2012, giving us an overall reduction of 83.1%.

Conclusion: Avoiding medication errors requires vigilance and the use of appropriate technology to help ensure proper processes. Medication error reduction programs are necessary to achieve improvement in patient care and to satisfy the need for a safer health care system.
APPROPRIATE MANAGEMENT OF BLOOD PRODUCTS IN THE OR
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Objectives: The purpose of this project is to enhance the patient and blood products identification process in the chaotic complex OR setting and so reinforce the patient safety.

Methods: The patient identification process is the most important and cannot be skipped fundamental principle in every clinical procedure. And it is needed to be more cautious when handling the blood products because of the high-risk nature of the service itself.

In our organisation we have barcode system to identify the blood and patient information but unfortunately the OR, the most complex and busiest department in our hospital, is lack of the identification system or barcode supplies for the blood products. To guarantee safe healthcare service and quality care, the electronic blood product management system for the OR had developed and applied in October 2012.

The electronic blood product management system for the OR is based on the barcode tagging system. The blood bank cross-matches the blood products and the patient blood sample and then places a unique barcode number on the blood bag. When the receivers take the blood products out of the exclusive blood refrigerator, they have to tag the barcode and confirm if the patient and the blood product information on the computer are perfectly matched or not. The receivers take the right person’s right blood product to the nurses or doctors who will transfuse the blood to patients. The providers who had been delivered the blood products from the receivers can verify the travel time of the product so that assure the admitted blood products are in appropriate condition or not.

The healthcare providers double-check the patient and the blood product data again when they had been delivered the blood and right before giving a blood transfusion, with another provider simultaneously. Like the preceding, the barcode system is also used during the double check process. And the blood bank can monitor the usage of the blood products. The blood products are very limited and priceless resource in the healthcare environment.

The nurse manager can monitor the blood receiving time, arriving time, and transfusion time data on the computer so that the safe, high-quality blood product transfusion service is possible. “Transfusion initiation rate within 30 minutes from delivered” and “Disposal rate of the blood products” indicators are selected to ascertain the safe transfusion and the proper utilisation of the limited, costly blood products.

Results: An organised electronic blood products management system for the OR was developed. The healthcare provider can see the patient and the blood product data on the computer screen with their bare eyes, now the patient identification process of our organisation has been more powerful and admirable. The blood product receipt time has been recorded on the computer system and that enable safe, fine quality transfusion service. The compatible indicators were adopted to monitor the whole process from the release of the blood products to the transfusion to the patients.

Conclusion: The more elaborate electronic system to manage the appropriate usage of the blood products had been developed. The healthcare providers now can supply the safe, quality-guaranteed blood transfusion service without complicated burdensome extra works. The customers can be given fresh, well preserved blood products on the very opportune time.
ISBAR HANDOVER FORM AS A TOOL TO IMPROVE THE SAFETY OF ER PATIENT DURING TRANSFER
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Objectives: Handover is a critical process of patient safety especially when the patient is transferred from ER to general ward or ICU. Error during transfer and handover should be reduced as low as possible.

Methods: Adverse transfer events (ATEs) were defined and collected to all the ER admission patients from 2010 to 2012. ISBAR handover form was designed and deployed since Jan. 2011. All of the admitted patient should be evaluated and categorised into 3 levels of severity before they left ER. Handover should be executed exactly according to the ISBAR form. The numbers of ATEs before and after the deployment of ISBAR form were compared.

Results: Numbers of ATEs per month were 2.50+/-1.24 before deployment and 1.00+/-0.85 after that. P value is 0.0026. Significant reduction of ATEs were noted in our survey.

Conclusion: ISBAR handover form can facilitate the process of patient transfer and handover between medical personnel. Numbers of ATEs could be reduced after the applications of this ISBAR handover form. ISBAR (Introduction, situation, background, assessment, recommendation).
EXPLORING THE ATTITUDES OF HOSPITAL PHARMACISTS TO REPORTING MEDICATION INCIDENTS USING A THEORY OF PLANNED BEHAVIOUR (TPB) SURVEY

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Objectives: Due to their high prevalence hospital pharmacists admit that they don’t always report medication incidents, with the complex decision to report depending on the severity of patient harm, anxieties about harming inter-professional relationships, prior experience of the outcomes from reporting and the perceived effort required to use reporting forms.

The objective of the study was to assess the effect of factors within hospital pharmacists’ practice on the likelihood of their reporting a medication error, using a TPB questionnaire. The Theory of Planned Behaviour is a social psychological model which aims to explain human social behaviour, not just predict it, and postulates that behaviour results from individuals’ salient beliefs about that behaviour. It has been validated to assess the intentions of health professionals and their subsequent behaviour in clinical practice.

Methods: A TPB questionnaire was developed based around a prescribing error scenario which involved confusion between Azathioprine and Azithromycin and resulted in serious patient harm. Paired TPB questions to test Behavioural, Normative and Control beliefs (i.e. the pharmacist’s own attitude to reporting; the pharmacist’s perception of other people’s attitudes towards reporting; the pharmacist’s perception that (s)he has control over the reporting process) were based on salient beliefs identified through a previous qualitative study. 596 hospital pharmacists in a NHS region of England were invited to participate, via paper or online versions of the survey. Multiple regression, using SPSS version 15, was used to determine the relative influence of the three different TPB variables and participant demographics on the pharmacists’ behavioural intention to report medication incidents.

Results: 270 questionnaires were available for analysis, 179 paper (66.3%) and 91 electronic (33.7%), with an overall response rate of 45%. Behavioural beliefs, normative beliefs and control beliefs accounted for 32% of the variance in the intention to report medication incidents (R= 0.568, R²=0.323, adjusted R²= 0.293). Pharmacists’ seniority (directly) (R= 0.187 p< 0.003) and gender (indirectly) (R=0.19 p< 0.003) had a weaker influence over intention to report, with senior pharmacists being more likely and female pharmacists having a stronger intention because of their normative beliefs about other pharmacists reporting. Analysis of individual beliefs and their respective regression coefficients revealed; beliefs that reporting increases awareness of a medication safety problem and reduces the risk of a similar errors (behavioural beliefs); and the seriousness of the outcome of the error (control beliefs) influence pharmacists’ intention to report.

Increasing awareness about medication safety problems and preventing similar harm in the future were considered to be an extremely desirable outcome, with anxiety about damaging the doctor-pharmacist professional relationship the most undesirable outcome. Time/workload pressures and the fact that patients commonly come to no harm (i.e. a near miss) were rated as making reporting errors less likely, whilst a simple reporting form and the presence of a medication safety pharmacist, to assist with the completion of the reports, were rated as making reporting more likely.

Conclusion: Efforts to improve the reporting of medication incidents by hospital pharmacists should focus on their behavioural and control beliefs. This should include instilling greater confidence about the benefits of reporting and not harming professional relationships with doctors, greater clarity about what / not to report and a simpler reporting system.
THE EXPERIENCE OF ADAPTING THE THEORY OF OREM SELF CARE TO A CASE OF DISABILITY SENIOR LIVING ALONE

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Objectives: The purpose of this study is to examine a case of 57 year-old with disability and living alone and bedridden for a long time. He was sent to ER by ambulance for help. During the period of admission, because of being unable to self-care lacking the family supports and other assistant resources he became very passive and hopeless.

Methods: The author took care of him between 02/09/ 2008 and 02/28/2008, giving nursing assessment by means of observation, interview, physical assessment and self-care of Orem theory, he was found having 4 major problems including nutrition imbalanced: less than body requirements, physical mobility impaired, self-care deficit (feeding/dressing/toiletting), hopelessness.

Results: Applying Orem nursing theory of wholly compensatory, partly compensatory, supportive nursing education system etc., provided nursing intervention including nutritional care plan and food resources, limbs positioning properly and recovery exercise plan, teaching and assisted the patient’s hygiene and eating, offering referral resource system to improve the patient’s ability of daily self-care and approved self-value.

Conclusion: Through this caring experience anticipates contributing a guide to nurses as they nurse this specific patients, not only taking care of physical needs but also mental dimension, the most important goal is to provide the health resources and supportive system for patients, expecting to enhance nursing quality for this particular case.

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CONTINUOUS IMPROVEMENT IN HOSPITAL CARE SERVICE USING BY INDICATORS BASED ON HEALTHCARE ACCREDITATION STANDARDS

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Objectives: The aim of this study is to check that our organisation meets accreditation standards continuously and improves hospital care service using indicators based healthcare accreditation standards.

Methods: After acquiring accreditation in 2011, our project team developed 78 indicators sorted into 5 categories (patient safety, human resource management, effectiveness and efficiency of care service, medical records and clinical indicators) with accreditation standards. We defined indicators, specified person in charge for each item, frequency and target, then measured and analysed as scheduled with making best use of our existing electronic systems such as EMR system, MIS (medical information system), CDW (clinical data warehouse), examination system, cyber education system, etc.

We informed the related people (doctors, nurses, managers, and administrators) of the monitoring results every quarter and performed activities for quality improvement such as revision of EMR program, revision of guidebooks, change in examination process, introduction of new procedures for patient safety, etc. We reviewed data and analysed the effects using indicators on maintain high rates of keeping accreditation standards and improving hospital care quality from 2011 to 2012.

Results: Total 38 indicators were improved the status, 30 indicators were maintained its level, 10 indicators were slightly worsen. 7 indicators such as hand hygiene rate, catheter associated urinary tract infection, ventilator associated pneumonia, action rate for critical value reports, time out for count in operation room, arrest to CPR time, verbal/telephone order in nonemergency situation in patient safety part were better than 2011 through the enterprise efforts to improve patient safety culture.

In human resource management category, 9 indicators concerning percentages of staffs completing essential trainings such as orientation, sedation, chemotherapy, CPR and so on, were improved, but the percentages of fire fighting safety training and education for patient rights, etc got worse than 2011.

We obtained good results in effectiveness and efficiency of care service area. 11 indicators (turnaround time for specimens, hospitalisation within 3hours for severe emergency patient, storage of drugs, counselling for therapeutice diets and medicine, follow up monitoring after nutritional support, etc) among 25 indicators became better and the others (the deferral rate of unused blood, written prescription of self-medication, waiting time of outpatients, etc) were maintained the level that we had achieved at the accreditation time.

Indicators in medical records remained high levels because we had revised EMR program since 2010. But records of significant unusual events before leaving in operating room, consent for transfusion in outpatients, etc were sometimes omitted.

The category of clinical indicators include several kinds of core measures sets such as pneumonia, stroke, AMI (acute myocardial infarction), SCIP (surgical care improvement project) and mortality rate of severity-adjusted for ICU (Intensive care units). Indicators about SCIP, stroke, etc got so much better, there was no change in indicators of pneumonia, AMI, ICU care, etc.

Conclusion: Using indicators was helpful that staffs were reminded of healthcare accreditation standards and requirements, and were motivated to improve care service. Only monitoring and feedback of indicators might be less effective than we had expected, but we thought that all of these activities meaningfully stimulate staffs’ interest and desire for the best hospital. So, we continuously monitor and feedback 78 indicators develop new indicators related to on-going improvement projects.
SMOKING cessation practices in Taiwan: community pharmacists’ knowledge, attitudes, skills, self-efficacy, and government policy

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Objectives: The aims of the study were to determine the factors influencing the current smoking cessation practices of community pharmacists in Taiwan, to examine their knowledge, attitudes, skills, and self-efficacy with respect to smoking cessation, and to assess government policy for smoking cessation counselling.

Methods: A cross-sectional and correlation survey of community pharmacists in Taiwan has been conducted from December 2012 to March 2013. A pilot study was implemented. Nineteen pharmacists completed the questionnaire developed by the authors. The content validity index of the 60-item questionnaire was .9 obtained from five experts. Cronbach’s alpha for the scale practices, knowledge, attitudes, skills, self-efficacy, and policy were .85, .93, .91, .89, .94, and .80. A phone call was made to community pharmacists inviting them to complete a questionnaire. A total of 350 pharmacists were selected by stratified randomisation from 1162 community pharmacists participating in the 2012 national-wide smoking cessation program funded by Bureau of Health Promotion, Department of Health. The study was approved by the Institutional Review Board of a medical center.

Results: This study is still in progress. The main study will be completed in March 2013.

Conclusion: Community pharmacy led smoking cessation services have been implemented in several countries including United Kingdom (UK). To our knowledge, there are no published reports in Taiwan examining the influence factors of community pharmacists’ smoking cessation practices. Based on the results of this study, extensive interventions at the professional and policy level should be implemented to reinforce the predictors and to improve smoking cessation activities among community pharmacists

Key words: community pharmacist, smoking cessation, practice, factor, and government policy.
SAFECARE: AN APPROACH TO IDENTIFY AND PRIORITISE QUALITY IMPROVEMENT OF BASIC HEALTHCARE FACILITIES IN RESOURCE-POOR SETTINGS
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Objectives: The quality of basic healthcare provided by facilities in resource-restricted settings (RRS) is variable and rarely benchmarked with internationally accepted best practice. Patients in RRS face unknown risks and health system financiers have little insight into how funds provided for quality improvement are spent. The objective of this study was to provide evidence that realistic quality and safety standards for RRS (SafeCare) can benchmark (private) facilities, provide context for relative quality improvement (QI) trajectories and identify priority areas for quality improvement interventions. This can assist patients, facility staff, authorities and investors in understanding the strengths and weaknesses of the services provided and supports policy makers in making informed decisions about best use of facilities, taking their current status into account, and their investment potential. This study reports on 157 facilities that entered the SafeCare Programme in Ghana, Kenya and Tanzania, as part of an innovative loan program for QI.

Methods: SafeCare standards (by COHSASA, PharmAccess and JCI) were recently accredited by the International Society for Quality in Healthcare (ISQUA). SafeCare entails 13 service elements that are covered by 823 process and system criteria which can be scored compliant, partially compliant, non-compliant and not applicable. The improvement process supported by these standards is dissected in 5 defined and measurable steps (levels) for QI that represent consecutive subgroups of the 823 criteria and which can be rewarded with certificates. Ordinary least squares regression was used to identify significant associations of SafeCare assessment results with facility characteristics such as geographic location, patient flows, proximity of comparable healthcare facilities and complexity of services provided. Risks for patients, staff and public health, related to non-compliance were used to identify priority criteria for quality improvement.

Results: Analyses were performed on 157 private healthcare facilities in Ghana (31), Kenya (84) and Tanzania (42), assessed over a period of 21 months. SafeCare scores for the majority of service elements were low (<40 out of 100), which is a result of non- or partial compliance for the majority of criteria and represents high risk to patient care. Standard compliance scores for the service element “Risk Management” were found to consistently be the lowest; while “Primary Health Care” and “In-patient Care” scored slightly better. Overall quality scores were significantly higher for urban facilities, facilities with higher patient throughputs and with shorter distances to neighbouring facilities. Priority areas were identified for moving upwards in SafeCare level.

Conclusion: The study indicates that the far majority of private healthcare facilities in RRS struggle with providing safe and quality healthcare. In particular issues with medication management, triage and consent processes score consistently low. SafeCare Standards allowed for benchmarking between facilities and for identification of priority areas for QI interventions. These can support policy makers, franchisors, HMO’s and private healthcare providers associations to make strategic decisions on allocation of QI resources and to measure efficiency and effectiveness in a performance-based financing framework.
EFFECTS OF THE PRESCRIBING GUIDELINES THAT RESTRICT THE PRESCRIBED NUMBER OF DAYS OF HYPNOTIC SEDATIVE DRUGS ON THE PHYSICIAN PRESCRIBED PATTERNS IN REPUBLIC OF KOREA

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Objectives:
Recently, prescription of long-term hypnotic sedative drugs of physician has become a social problem in South Korea. For this reason, the Health Insurance Review and Assessment has limited a prescribed number of days of hypnotic sedative drugs. The purpose of this study is to examine the effect on physician prescribing behaviour of hypnotic sedative drugs.

Methods:
We analysed the outpatient prescription data of triazolam, flurazepam HCl, zolpidem tartarate, zolpidem and flunitrazepam from January 2011 to December 2012.

To investigate the effect of restriction of a prescribed number of days on the prescription of hypnotic sedative drugs, the chi-square test was performed for the change of prescription rate in excess of 31 days and t-test was performed for the average prescription days per prescription.

Results:
Prescription rate of a prescribed number of days exceeding 31 days was changed from 3.32 in the first half of 2011 (before) to 2.92% in the first half of 2012(after). Prescription rate after the restriction of the prescribed number of days was statistically significant.

However, the average prescription days per prescription was increased by 0.4 days in less than 31 days prescribed group and was increased by 1.3 days in more than 30 days prescribed group. Comparison of the results of the full average prescription days per prescription was increased by 0.3 days.

Conclusion:
Percentage prescribed prescription in 31 days or longer was reduced in the present study and change of the prescription pattern of hypnotic sedative drugs was identified through a restriction of long-term prescription of psychotropic drugs. Also, the prescribed number of days exceeding 31 days was reduced but the prescribed number of days per patient was increased. Therefore, management of prescribed number of days per prescription is urgently required rather than that of the prescribed number of days per patient.
EVALUATION OF PATIENT COMPLIANCE TO PRE-OPERATION INSTRUCTIONS (POI) IN PRE-OPERATION ASSESSMENT CLINIC (POAC) FOR SAME DAY ADMISSION FOR SURGERY (SDAS) IN A SURGICAL DEPARTMENT OF A PUBLIC HOSPITAL

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Objectives:
To investigate patient compliance to POI given in POAC and factors of non-compliance.

Introduction:
SDAS is a growing trend in Hong Kong, because of decreased length of stay in hospital. However, investigations on compliance to POI, related to high risks groups including less healthy and elderly, is inadequate to reveal the whole picture. Further investigations were required.

Methods:
This is a cross-sectional and descriptive study. A registered nurse approached participants just before operation to gather data. Data on patient compliance to POI was collected. Further, demographics, and results of mini-mental state examination (MMSE), 12-items General Health Questionnaire (GHQ-12) and simple hearing examination were collected. Patients, who satisfied requirements of drug compliance (Drug dose compliance rate (DDCR)>80% and<=110%), and procedure compliance (Procedure compliance rate (PCR)=100%), were regarded as compliant to POI. Either DDCR<80%, DDCR>110% or PCR<100% was regarded as non-compliant. Period of study was 1/1/2011-30/4/2011. 184 consecutive patients for SDAS assessed in POAC of North District Hospital (NDH) were recruited. Exclusion criteria included patients who were admitted one or more days before operation.

Results:
Compliance rate of study participants was 140/184(76.09%). Univariate analysis showed “Age” (p=0.006<0.05) and “MMSE-score” (p=0.001<0.05), “Sex”(p=0.026<0.05), “Social_assistance”(p=0.026<0.05). “Attend_POAC_with_company” (p=0.001<0.05) and “Simple_hearing_test” (p=0.004<0.05) were factors of non-compliance. Multivariate analysis showed that attend POAC with company was 13.929 times more likely compliant (p=0.000<0.05).

Every year of age increased, patient was 1.054 times more likely non-compliant (p=0.006<0.05). Every MMSE-score increased, patient was 1.937 times more likely compliant (p=0.000<0.05).

Conclusion:
This is a pioneer study investigating compliance to POI of SDAS. Increasing age, altered cognitive functions, hearing impairment and receiving social assistance should be concerned, when patient undergoing SDAS. Further, attending POAC with company is necessary.
USE OF THEORY, EVIDENCE AND EXPERIENCE TO DEVELOP “THINKSAFE”: A MULTI-FACETED INTERVENTION TO PROMOTE PATIENT INVOLVEMENT IN IMPROVING PATIENT SAFETY
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Objectives: Many initiatives worldwide encourage a proactive patient role in improving their own safety, but there are questions about their effectiveness and their acceptability to either patients or healthcare staff. This may be because few initiatives involved users in their development, provided evidence for the use of theory or were subjected to robust evaluation. The present study addressed these shortcomings by using a systematic, evidence-based approach to the development of a collaborative intervention that is fully user-informed and underpinned by relevant theory.

Methods: Intervention development was guided by the Medical Research Council Framework and comprised two phases. First, evidence collation (a qualitative study eliciting patient, relative and healthcare professional perspectives about the patient role; a systematic review of current evidence for interventions to promote patient involvement in improving patient safety; scoping of on-going initiatives world-wide; and the identification of relevant behavioural theory). Second, iterative, user-driven development of the components of the intervention (a series of interactive workshops with patients, relatives, healthcare professionals and safety experts).

Results: Study phase 1: The qualitative study identified gaps in both patient and healthcare professional knowledge and understanding about the patient role in improving patient safety, as well as highlighting important environmental constraints. Key patient and healthcare professional beliefs identified as likely facilitators and barriers to patient involvement were also elicited. Literature review evidence was limited but contributed, along with examples of best practice, to informing the selection of the intervention approach. Behavioural theory, relevant to elicited experience and available evidence, suggested key behavioural determinants to target, informed the choice of behaviour change techniques and provided the basis of an evaluative framework. Study phase 2 resulted in the development of the “ThinkSAFE” approach, comprising three core patient-mediated components: a theory-based educational DVD (“A guide to patient safety for patients and their families”); a patient held “Healthcare Logbook” linked to the DVD content and including patient question prompts; and a dedicated, one-to-one “talk” session with a member of the hospital ward staff. A parallel healthcare professional intervention comprised a brief, theory-based educational session supported by the patient DVD. Patients and families are encouraged to ‘Ask’ questions and to ‘Tell’ staff when things do not seem right. Staff are encouraged to actively ‘foster’ patient involvement by saying to patients “it is OK to ask me questions” and “It is OK to tell me if you think that something is not quite right with your care, or if you think there has been a mistake”.

Conclusion: We have used a multi-pronged, systematic approach to develop a complex intervention that encourages patients and healthcare staff to work together to improve patient safety. Patients, relatives and staff were able to identify a number of patient safety behaviours that could be adopted at different points across the inpatient stay. Qualitative accounts of staff and patients further identified important support needs for both, as well as key beliefs suggested as important barriers to uptake. Underpinned by behaviour-change theory, the ThinkSAFE approach is designed to address these beliefs, and provides detailed support and guidance that promotes a mutually acceptable, collaborative approach to involving patients in improving patient safety. It is currently being piloted.
HIGH QUALITY OF MEDICAL CARE: CREATING A SAFE, EFFICIENT AND HEALTHY INTERNATIONAL AIRPORT
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Objectives: Strengthen the inter-unit co-operation and integration of medical resources to improve the quality of medical service for the travellers and workplace health management of the employees of Taiwan Taoyuan International Airport.

Methods: The Landseed Hospital Medical Clinic at Taoyuan International Airport plays an important role in guarding the health of passengers and airport employees. We offers 24-hr emergency medical care year round and the medical professionals have to arrive in the site for emergency treatment within the first ten minutes. Enhancing the efficiency of medical service to the travellers, we make effort on inter-unit co-operation among the airport companies, airlines and airport collaboration to complete the reporting network of emergency medical demand. Besides, to provide immediate and good quality of medical services, we keep on reviewing the telephone records of emergency notification and the process of medical care to improved weak points of process and shorten the time between notification-received to patient-visited. For patient referral, we have dedicated hospital to provide efficient continuing care. In the aspect of workplace health managemnt, we encourage employees participate in the Government Community Healthcare Group and implement case management of chronic disease. Prevention, screening, consultation, diagnosis, treatment, and follow-up of occupational diseases are provided for the airport employees via integration of variable facilities and manpower from the hospital. Time between notification-received to patient-visited, emergency visit rate and hospitalisation rate of participants of Community Healthcare Group, Point of contact -to-Balloon (P2B) time of travellers with acute myocardial infarction were evaluated.

Results: The average time between notification-received to patient-visited was 9.2±3.68 minutes (n=541) in 2011 but without significant change in 2012. For the referral of patients with acute myocardial infarction, the average time of Point of contact-to-Balloon (P2B) time was around 95 minutes, lower than the average standard (120 minutes) of developed countries. According to the quality indicators statistics of Government Community Healthcare Group, the emergency service visit rate of our members was 2.17% and the hospitalisation rate was 2.9% in 2011; it revealed the significant effects in our health management of employees compared to the one of other Government Community Healthcare Group 6.02% and 3.06% respectively. In the management of workplace health and occupational disease, the abnormal ratio of hearing test of the employees with noise job decreased from 3% in 2009 to 2% in 2010 and 1.3% in 2011.

Conclusion: With our high quality emergency medical service and all-dimension health care management for travellers and airport employees, the Landseed Hospital Medical Clinic at Taoyuan Int’l Airport has been certified and awarded the 2012 Symbol of National Quality- Safety and Quality in Taiwan.
REDUCE UNPLANNED HOSPITAL RE-ADMISSIONS: A MULTIDISCIPLINARY CLINICAL TEAM PROGRAM

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Objectives: Unplanned readmission to the hospital within 14 days of discharge is considered for poor quality of hospital care. We introduced a multidisciplinary clinical team program to reduce unplanned readmissions.

Methods: This study was conducted in the Chi Mei Medical Center, Liouying branch, an 870 bed hospital providing primary care in southern Taiwan since 2005. We identified four divisions that accounted for the largest number of readmissions within 14 days after discharge, which were divisions of oncology, hepatogastroenterology, pulmonary medicine, and infectious disease. The interventions for reducing readmission were performed through multidisciplinary team work, including attending physicians, nurse practitioners, clinical pharmacists and social workers. The multidisciplinary program was introduced since January 1, 2012. Five main interventions were included in the program, including:

1. medication reconciliation for high risk patients, according to Beers criteria, was carried out by clinical pharmacists,
2. discharge planning for high risk patients was carried out by a full-time nurse discharge advocate,
3. clinical nurses telephoned the high risk patients 2 to 4 days after discharge to reinforce the discharge plan and solved their simple medical questions,
4. enhance palliative home care by home visiting,
5. automatic computer reminding system for emergency physicians and patient’s attending physicians if the patient visited emergent department within 14 days of the index discharge. In this pre-interventional and post-interventional study, we compared the rates of unplanned readmissions, on a quarterly basis, from January 2011 to December 2012.

Results: A total of 24,020 index discharges in 2011, and 23,690 index discharges in 2012 were enrolled in this study. The mean rates of 14-day unplanned readmission were 5.24% in 2011 and 4.23% in 2012, a reduction of 1.01% (p<.0001) (Table1). The implementation of the multidisciplinary interventions significantly decreased the 14-day unplanned readmission rate. The overall medical expenditure reduced about 927,730 USD/year.

Table 1. Measures of Re-admission Rate Before and During Interventions

<table>
<thead>
<tr>
<th></th>
<th>Readmissions</th>
<th>Index Discharges</th>
<th>Readmission rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011Q1</td>
<td>312</td>
<td>6042</td>
<td>5.16%</td>
</tr>
<tr>
<td>2011Q2</td>
<td>315</td>
<td>6119</td>
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<tr>
<td>2011Q3</td>
<td>344</td>
<td>6004</td>
<td>5.73%</td>
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<td>2011Q4</td>
<td>287</td>
<td>5855</td>
<td>4.90%</td>
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<td>2012Q1</td>
<td>271</td>
<td>5698</td>
<td>4.76%</td>
</tr>
<tr>
<td>2012Q2</td>
<td>283</td>
<td>5086</td>
<td>5.56%</td>
</tr>
<tr>
<td>2012Q3</td>
<td>215</td>
<td>6407</td>
<td>3.36%</td>
</tr>
<tr>
<td>2012Q4</td>
<td>258</td>
<td>6499</td>
<td>3.97%</td>
</tr>
</tbody>
</table>

Conclusion: The multidisciplinary clinical team intervention effectively reduced the 14-day unplanned readmissions.
A NATIONAL FRAMEWORK FOR ACCREDITATION OF HEALTHCARE ORGANISATIONS IN ITALY

Giovanni Caracci 1,*, Barbara Labella 1, Vanda Raho 1, Antonietta Gangale 1

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Objectives: Implementing a national framework for accreditation of healthcare organisations, through identifying standards and criteria shared with Regions and Autonomous Provinces

Methods: In light of the European guidelines, which aim to promote cooperation mechanisms between Member States to ensure quality and safety of healthcare, Italy recognised, at both the National and Regional level, the need for sharing the meaningful elements of the accreditation system.

In this scenario in 2009, the Italian National Agency for Regional Healthcare Services (Agenas), the Ministry of Health and the Regions and Autonomous Provinces, started a process of analysis and comparison of the various Regional accreditation models, in order to identify elements of quality to be shared within the systems for quality assurance. The process ended with the definition of a number of standards and criteria regarded as essential and the development of guidelines to facilitate a uniform interpretation.

Both these documents were the basis upon which the final draft of a proposal shared with the Working group for reviewing legislation on accreditation, instituted by the Ministry of Health and composed of representatives of the Ministry, Agenas, Regions and Autonomous Provinces.

Results: The final draft of the document, submitted to the Standing Conference on the relations between the State, the Regions and the Autonomous Provinces of Trento and Bolzano, was finally approved with a specific Agreement on the 20th December 2012.

The document, shared among the 21 Regions and Autonomous Provinces, identifies 8 standards and 28 criteria, considered as essential for “institutional” accreditation common to all the Regional systems. These criteria must be included within the relevant legislation of each Region and Autonomous Province, and subsequently evaluated by using uniform methods throughout the country.

The document provides for the Regions and Autonomous Provinces to commit themselves to implement the Agreement within 6 months from its approval, while procedures and deadlines for adaptation to its contents, will be finalised by ad hoc working group by December 2013.

This National body, which is being developed at the Ministry of Health, will be a reference point and support tool for the Regions and Autonomous Provinces in developing and implementing standards and criteria. Furthermore, it will have the task of monitoring the new system implementation methods, also through carrying out audits by auditors/evaluators registered on a national list, at the regional accrediting bodies.

Conclusion: Accreditation, as established by the national legislation, is a tool for continuous quality improvement and for selecting providers on behalf of the INHS. It is characterised by the mandatory compliance to a set of criteria directly related to the expected quality levels, and by the temporary nature of the recognition of having met these criteria, thus requiring periodic verification. “Definition” and “management” of this complex system, introduced in Italy in the first half of the 90s, was delegated to Regions and led to a different evolution in the legislation processes and to the adoption of diverse implementation methods within the Regions.

Adopting such a document is an important achievement, since it establishes a shared framework for accreditation of healthcare organisations in Italy. Furthermore, defining standards and criteria at the national level is a common basis to ensure safe and high quality care is provided.
PRACTICAL STRATEGISTS: AN INNOVATIVE WAY FOR TRAINING LEADERSHIP SKILLS
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Objectives: CanMEDS is an educational framework describing the different roles and skills that are relevant for modern medical doctors. With the rise of clinical management, certain new skills stand out, especially leadership skills. The training of leadership skills however is weakly developed in residency programs. This paper analyses a project aimed at effectively developing medical leaders as practical strategists.

Methods: All internal medicine residents were invited by the head of the department to (voluntarily) join quality improvement sessions. The objective of these sessions is threefold:

1. to improve quality of patient care,
2. to optimise process of care,
3. to (subtly) develop leadership skills of residents.

Sessions are held 4 times a year and last for 1 hour. During these sessions residents list critical items, i.e. experiences with patient treatment and (organisational) elements of providing care that surprise and/or frustrate them. In small groups, the residents identify improvement projects and make change plans; they determine how to respond to these experiences, what changes are required, how these changes can be realised and who needs to be involved. The session ends with a clear description of the most important critical items that need to be improved (priorities), which residents are responsible (responsibilities), an action plan (activities), and necessary support (operational support). A dedicated staff member of the department plans and coordinates the sessions and monitors the progress of the individual improvement projects. The supervisor facilitates the participation and involvement of senior professionals. In this way, leading and managing health care delivery and tackling strategic issues (e.g. quality) are taught in a very practical way. Medical doctors learn how to become practical strategists.

Results: Up till now, four improvement sessions have been taken place, involving 20 of in total 45 residents’ internal medicine. Fifteen improvement projects have been completed and 17 projects are still running. Accomplished improvements include: standards for appointing chairmen during handovers; improvement of handovers during shifts; reduction of number of patients per work period for new residents; renovation of rooms for residents. Work logistics on the wards during daytime are impressively improved. Moreover, residents are very pleased with sessions. They feel that they are able to realise change and they feel they can naturally cooperate with other (senior) doctors and nurses. The staff member appears to be essential for the progress. Residents who do not participate indicate they are busy with other tasks like research, but they support the implementation of improvements.

Conclusion: This study shows that it is possible to teach residents leadership and management skills in a very practical way. Tackling strategic and organisational issues can become a natural part of medical repertoires. New residents can learn by doing and thereby support the realisation of organisational change, innovation and quality strategies.
THE EFFECT OF HOSPITAL CONTACT PRECAUTION POLICIES ON EMERGENCY DEPARTMENT (ED) FLOW AND DISEASE ACQUISITION

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Objectives: Multidrug resistant organisms (MDRO) burden healthcare systems worldwide. Efforts have been made to limit their spread via routine contact precautions for all infected or colonised patients. These practices recently have been challenged in light of growing evidence suggesting adverse effects of this practice on falls, pressure ulcers and patient satisfaction. Yet to be studied is the additional potential negative impact on ED flow which can further erode overall quality. Our objective was to evaluate the effects of two different MDRO contact precaution practices on ED length of stay (LOS) and MDRO acquisition.

Methods: We performed a retrospective observational interrupted time series analysis of all adult ED admissions for 1 year prior to and after an isolation policy change at a 2 campus urban hospital. Previously, all patients with a history of MDRO infection or colonisation required isolation precautions regardless of their symptoms. After the change to a symptom based policy, only patients with active diarrhoea, productive cough or wound secretions not contained by a simple dressing required contact precautions, regardless of MDRO status, except MDRO gram negative bacilli. Effect on ED LOS was assessed by calculating excess admission time (EAT), the difference between admission times for patients with MDROs compared to patients without MDROs. (Admission time = decision to admit a patient from the ED to patient arrival in a hospital bed). Pre- and post-intervention hospital MDRO acquisition rates (new colonisation or infection/1000 patient days) were compared using the standard t-test.

Results: After the IC policy change, admission times for MDRO patients did not change significantly at campus A (CA) but decreased significantly at campus B (CB). CB EAT immediately decreased 152 minutes after the policy change (p=0.073) for MRSA and 135 minutes (p=0.03) for VRE and both continued to decrease following the policy change. CA and CB MRSA acquisition remained stable from 0.71 to 0.58 (p=0.0785) and VRE acquisition increased slightly from 1.13 to 1.46 (p=0.0182).

Conclusion: Changing to symptom-based MDRO isolation immediately improved ED LOS for patients with MRSA by over 2.5 hours and by 2.25 hours for patients with VRE at CB but not CA. This difference is thought to be due to a lower proportion of private rooms at CB and a higher occupancy rate. Acquisition of MRSA was not affected. VRE acquisition slightly increased during the study period. However VRE acquisition has since decreased to a level below that prior to the study, despite the policy change remaining in place. Further investigation of these issues is warranted as there was clear benefit at one campus without erosion of quality.
THE IMPACT OF A CLINICAL PHARMACIST ON MEDICATION APPROPRIATENESS IN ELDERLY PATIENTS ADMITTED TO THE DEPARTMENT OF MEDICINE

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Objectives:
To quantify the impact of clinical pharmacy services on medication appropriateness in patients 65 years or older. Increasing patients’ age, complexity and polypharmacy increase the risk of inappropriate medications.

Background: Constraints diminish the chance of identifying and correcting them particularly in decreasing length of hospital stay and physicians’ time elderly patients are hospitalised.

Methods: A clinical pharmacist added to the team of the department of medicine (DOM) reviewed elderly patients’ charts and medications. Medication appropriateness index (MAI), potential overuse (Beers or STOPP criteria) or underuse (ACOVE or START model) were determined. Problems were recorded and communicated to the physicians, noting subsequent changes in treatment. Then, an expert physician’s panel retrospectively reviewed patients' interventions and compared agreement between pharmacist and DOM physicians.

Results: Eight clinical pharmacists (6 MSc, 2 PharmD) joined 8 DOM in academic hospitals in Israel for a total of 144 months (2009-2011) reviewing 44959 patients’ charts according to accepted criteria. In order to solve drug related problems, 36,742 recommendations were made in 17,720 charts (39%, mean 2.07 per chart). Overall, 82.4% were accepted by the treating physicians improving MAI from 4.72 (mean±SD) to 0.78 (83% improvement). Higher (worse) MAI correlated with the number of medications (MAI>5 with >9 medications/patient) and patient’s age (MAI>5 in patients over 75). There was an average of 0.97 unnecessary medications per patient which was reduced to 0.16, and underuse of 0.96 medications per patient which was reduced to 0.25. Several intriguing vignettes are reported. Analysis of a retrospective non-intervention sample and an expert panel judgment on an intervention sample supported validity and quality of the results.

Satisfaction survey was conducted during the second year of the project. 71 questionnaires were fulfilled by physicians and nurses. Analyse of the questionnaires indicate high satisfaction from the new service with an average score of 9.6 from 10.

Conclusion: Regular audit of medications of elderly patients hospitalised in the DOM by a clinical pharmacist uncovered a substantial amount of medication inappropriateness. Pharmacists’ intervention was well received by hospital physicians and led to improved administration of medications and improved patient safety.
LEARNING FROM THE TRANSLATION AND IMPLEMENTATION OF PATIENT SAFETY SOLUTIONS ACROSS DIFFERENT CARE SETTINGS: THE CASE OF THE RAPID RESPONSE SYSTEM
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1 Division of Women's Health, King's College London, 2 Guy's Hospital, King's Health Partners, London, 3 Central Manchester University Hospitals Foundation NHS Trust, Manchester, United Kingdom

Objectives: To explore the implementation and underpinning social mechanisms of rapid response systems within medical and maternity care settings in order to further understanding of their determinants of effectiveness

Methods: An ethnographic case study approach was used. Data was collected in 2009 – 2010 within five settings (two wards in the medical directorate, two obstetric units and one alongside midwifery unit) of two UK hospitals including >270 hours of observation, >80 staff interviews (doctors, nurses, midwives, healthcare assistants and managers) and documentary review. Data was coded using NVivo software. The analysis used theme building and structuring methods from the framework approach

Results: Rapid response systems had been implemented in each of the settings to standardise escalation of care. Each of the early warning scoring systems enabled team situation awareness of vital sign recordings while trigger prompts helped shape perceptions of ‘deterioration’.

In maternity, midwives used the early warning chart on a case by case basis because of a reluctance to medicalise childbirth given the low incidence of maternal complications. This discretionary approach undermined the design brief of the early warning system which was to provide a universal safety net and enable detection of those women whose deterioration in condition might otherwise go unnoticed. In contrast, in some medical settings early warning scores were observed to be part of the written and verbal vernacular. However, where this was the case, markers of deterioration not assimilated into risk scores were at risk of being marginalised making it harder for staff to escalate care without the ‘objective evidence’ provided by the score.

In both maternity and medical settings, escalation protocols provided license for escalation but only mediated some occupational and hierarchical boundaries (nurse-doctor/midwife-obstetrician). Jurisdictional battles between medical staff, which influenced escalation of care, largely lay outside the remit of these rapid response systems. Contextual features (national policy, the organisation's patient safety track record, project management resource, audit oversight) facilitated impact in both maternity and medical settings. Differing professional interpretations of the nature of the problems within each of the providers (and thus those solutions deemed appropriate) together with the ‘mixed’ evidence to date of the effectiveness of rapid response systems impeded local uptake

Conclusion: The findings from this research highlight the merit of studying how safety systems work across different care settings. Comparing and contrasting the role of the rapid response system within maternity and medicine highlights the influence of implementation processes, the social processes responsible for their intended, unintended and at times contradictory consequences, as well as those aspects of risk that appear largely resistant to the intended effects of this safety solution

ARE WE BLIND TO THE CRITICAL WINDOW FOR PREVENTION? AS SHOWN WITH A COHORT OF PATIENTS WITH DIABETES MELLITUS AND DIABETIC RETINOPATHY

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1Oxford University Medical School, Oxford, United Kingdom

Objectives: Diabetes Mellitus (DM) is a prevalent condition worldwide, leading to significant morbidity across a number of organ systems. Despite medical care shifting towards preventative strategies, blindness due to diabetic retinopathy (DR) remains a common cause of visual loss. This is a largely preventable condition with implementation of two-pronged prophylaxis of controlled blood sugar and regular screening. Yet, amongst the diabetic population, the visual consequences of DR are often misunderstood, and more importantly so are the strategies that they could take for prevention. This study aimed to assess whether patients have the correct information to self-enforce prevention strategies before development of a complication.

Methods: 62 patients, attending DR clinics over 3 weeks were asked to participate in a questionnaire survey. All patients had DM and had a diagnosis of DR. This study assessed:

1) The primary sources of patients’ medical information: Patients were asked to choose from a pre-determined list, which sources of information they would classify as their primary source.
2) The level of understanding at 2 time points: before diagnosis with a complication (the window for prevention) and after the diagnosis. Patients were asked about understanding into four areas: the meaning of DR, visual consequences, causal relationship with blood sugar and the need for regular screening.

Responses were presented on a 4-point Likert scale. Free text comments were invited throughout.

Results: 57 patients responded.

1) 42% stated their General Practitioner (GP) was their primary source of information about the progression of DR, 33% stated patient information leaflets and 25% stated the internet. 0% chose books.
2) Results for the understanding into the four key areas of DR knowledge were classified into ‘before’ and ‘after’ diagnosis. This is demonstrated in the table presented here, which shows the percentage of patients who scored either 3/4 or 4/4 for their understanding of the four categories.

<table>
<thead>
<tr>
<th></th>
<th>Before Diagnosis of DR</th>
<th>After Diagnosis of DR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meaning of DR</td>
<td>86%</td>
<td>100%</td>
</tr>
<tr>
<td>Visual consequences</td>
<td>11%</td>
<td>84%</td>
</tr>
<tr>
<td>Relationship with blood glucose</td>
<td>18%</td>
<td>86%</td>
</tr>
<tr>
<td>Need for regular screening</td>
<td>28%</td>
<td>91%</td>
</tr>
</tbody>
</table>

Free text comments indicated wishes for a stronger emphasis on the preventability of this complication, as many had considered it an inevitable complication.

Conclusion: Patients tend to rely heavily on patient leaflets and the internet, with 58% choosing one of these, rather than their GP. Prior to diagnosis, information patients have about preventability of DR is inadequate. During the critical window where preventative strategies are possible, patients are unaware of the important facts; in this case, visual consequences, a closely causal relationship with blood glucose control, and the absolute necessity to attend regular screening appointments. Following diagnosis, patients gain an excellent insight into their condition, with results showing a significant leap in understanding, suggesting patient information is readily digestible.

Overall, this study highlights two main take home messages.

1) In conditions where preventable complications arise, measures need to be taken utilise the window for prevention, often not used to its full potential.
2) Information in patient leaflets and medically informative internet sites should be as meticulously prioritised as information from the GP. Both of these are evidently heavily relied on by patients to refer to and learn from.
AWARENESS TOWARD FALLS PREVENTION REPORT ON A SURVEY OF A REGIONAL TEACHING HOSPITAL INPATIENTS IN TAIWAN
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1Nursing Department, Taipei Medical University – Shaung Ho Hospital, New Taipei City, Taiwan

Objectives: Patient safety is regarded as an important indicator of nursing care quality. Prevention patient falls has become a national policy issue. The purpose of this exploratory survey was to identifying the inpatients’ awareness of falls prevention. The research were to measure awareness of the risk and consequences of falls among hospitalisation patients. However, to determine attitudes toward falls prevention and respondents’ awareness of their own risk factors to reduce falls during hospitalisation

Methods: A cross-section study was performed, from January 1st 2012 through July 31 2012. Each patient completed a 30-item structure questionnaire. The questionnaire included demographic data and five dimension (high-risk group, medical condition, medications, hazard environment and potential risk factors). The internal consistency of questionnaire was CVI values =0.92. The level of awareness to prevent falls was from 1 to 10 (extremely lower to extremely higher). All data analyses were done using SPSS version17.0. Frequency distribution, descriptive (mean, standard deviation, Pearson correlation, A NOVA).

Results: A total of 400 copies of the questionnaire were distributed to high risk inpatients in a teaching hospital and 356 completed form returned during this time, a good response rate of 89.0%. Average age was 68.63(SD±15.56) and more than half of participants (N=224,65.3%) without falls experience. The questionnaire was distributes to equal numbers of male and female. Approximately three to ten of respondents (N=95,27.6%) were diagnosis Nervous System diseases. As a result, overall the average of awareness toward falls prevention was 3.04(SD±0.39), the lowest score was 「medical condition」(2.44, SD±0.91), on the other hand, they represented high awareness toward of hazard environment (3.55, SD±0.37). However, the follows 2 items of hazard environment factors increase chance of falling: wet floor in bathroom (1.66,SD±0.98), insufficient light in ward (1.66,SD±0.98). Potential factors prone to patient falls: going to the toilet during midnight (1.93,SD±0.93). According to this survey, it pointed out that inpatients overconfidence of pass the wet flood while they be careful and lack of awareness with patients’ medical condition lead to falling: weak legs, balance problem, hypotension.

Conclusion: Patient fall is the majority of the incidence report in hospital and lead up to increase the length of stay, cause of disability and high costs. There are various factors related to fall of inpatients. Base on the result, the healthcare provider enhanced patients’ awareness toward to reduce patient fall and provide valuable database to identify the importance issues. The healthcare providers not only provide high-quality nursing healthcare environment but also to reach the goal of patient safety when patients during hospitalisation.
RISK-ADJUSTED RE-ADMISSION RATES IN HEART FAILURE: HOSPITAL VARIATION BY LENGTH OF FOLLOW-UP AND CAUSE OF RE-ADMISSION

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Objectives: To compare hospital-level readmission rates following an index hospitalisation for heart failure (HF) for emergency readmissions at 30 and 365 days for HF and non-HF causes. Although a 30-day follow-up is the commonest, it has been criticised for lacking a theoretical basis and hospital performance may vary by time point. The management of this patient group is complicated by comorbidities, which are common, and hospital performance might therefore vary by readmission cause.

Methods: We identified each patient’s first admission for HF (index admission) from national administrative data linked to death registrations for all public (NHS) hospitals in England. Two cohorts were constructed: i) all patients, ii) those surviving 365 days from discharge. With the latter group, the problem of the competing risk of death after discharge does not arise. Hierarchical logistic regression models were constructed for each type of readmission (for HF and for any other primary diagnosis) at each time point. Covariates included demographics, comorbidities, number of prior outpatient appointments attended and missed and previous revascularisation, pacing or defibrillator implantation. Observed and predicted counts were summed by hospital and multiplied by the overall crude rate to give adjusted hospital-level readmission rates (RRs).

Results: In 2008/9 and 2009/10 combined, there were 88,760 patients having their first admission for HF during which 14,133 (15.9%) died. Of the remaining 74,627 (“all patients” cohort), 52,880 survived the following year (“one-year survivors” cohort). 18% of all patients had any unplanned readmission within 30 days, rising to nearly 50% by a year. Readmissions for HF accounted for 30% of the total at 30 days and 21% of the total at 365 days.

Adjusted all-cause adjusted readmission rates varied from 8.5% to 25.0% at 30 days and 33.4% to 56.7% at 365 days. Despite the potentially difficult issue of the competing risk of death, results for all patients were similar to those for the one-year survivors: correlations between the two cohorts’ RRs were 0.80 or higher and patterns were similar. For all causes combined, early RRs were moderate predictors of later RRs (rho=0.51, p<0.001, for 30d v 365d all-cause rates). In contrast, hospitals showed little or no correlation between their readmissions for HF and for other causes at any time point (largest rho was 0.18, p=0.03, at 7 days for all patients; for survivors this was 0.12, p=0.16).

Conclusion: Hospitals’ performance as measured by risk-adjusted unplanned readmission rates in HF patients varied widely across England but little by length of follow-up time between 30 and 365 days after discharge when all causes of readmission were combined. However, performance using HF-only readmission showed virtually no correlation with that using other causes at any time point. This suggests considerable opportunity for improvement in the management of these complex patients.

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CO-PRODUCING PERSONAL OUTCOMES FOR OLDER PEOPLE (SHINE PROJECT)
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Objectives:

To find support solutions for older people, which would help them not simply survive, but thrive at home.
Train and support staff to have personal outcome-based conversations with patients and their families using a validated method (Talking Points) followed up with peer support;

Diversify the range of solutions available for patients to access and ensure the safety, legality and sustainability of small scale enterprises;

Establish a proof of concept that co-production with older people, their families and the wider community can uncover hidden resources to help people remain well at home.

Methods: A qualitative approach interviewing patients, staff and providers was undertaken to elicit views on the approach.

Results: Fifty older people have had an outcome-based conversation with nine members of staff trained in the approach. A network of eighteen small-scale providers has been identified.

Staff comments include:
“Great to see how small changes can make a big difference to someone’s life”;

Patient Comments:
“I am doing things I want to do and feel independent”

Provider comments:
“I want to thank BRAG and the SHINE Project – the support has been excellent”

Conclusion: This is a radical culture shift, which we are only beginning to understand:

1. Staff need support and permission to do things differently.
2. Clients too need time to adjust to new ways of thinking about things.
3. There is a wealth of enthusiasm and creative solutions from local enterprises, the voluntary sector and the wider community.
4. Conversations with patients have proved very fruitful, powerful and reinforce the need to take this work forward despite its complexity.
CONCURRENT DIAGNOSIS AND OUTCOMES FOR AN INPATIENT POPULATION
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Objectives: Concurrent disorders (substance and psychiatric disorders) have become an increasingly concerning problem across Canadian mental health facilities due to the implications of cost and outcome of treatments. The reality of concurrent disorders has sparked conversations regarding the importance of integrated care within acute mental health facilities. The purpose of this research project is to examine the symptom and functional outcomes of diagnostic cohorts (various concurrent disorders compliments) within an inpatient mental health facility.

Methods: All patients admitted to an inpatient mental health facility between April 1st, 2011 and March 31st, 2012, with a completed admission and discharge assessment where included in the study (n=2043). They were assessed with the Residential Assessment Instrument - Mental Health (RAI-MH), a standardised assessment instrument administered at admission and discharge by clinical staff. A variety of scales assessing symptoms and functioning are embedded in the RAI-MH. The scales are compared at admission and discharge to track patient outcomes while in hospital. These outcomes were compared across different diagnostic cohorts, where substance-related disorders were the primary diagnosis.

Results: When comparing a single diagnosis of substance-related disorders to concurrent disorders with mood disorders, anxiety disorders, or both, patients present with similar symptoms at admission. However patterns emerge in symptom outcomes with diagnostic cohorts, where the concurrent diagnosis (i.e. substance-related, mood & anxiety disorders) have the least optimal outcomes.

Conclusion: Information on the prevalence of concurrent diagnoses within a mental health hospital, as related to symptom and functioning outcomes, will help inform decision makers on the need for integrated care practices (treating all diagnoses simultaneously) as well as for improvement within specific areas of symptom treatment. Descriptive models of concurrent diagnoses are needed to understand characteristics associated with failure to improve on outcomes, potentially highlighting areas for treatment improvement. In the long term, a deeper understanding of concurrent diagnoses may also inform prevention efforts aiming to maintain optimal mental health status.
ASSESSMENT OF THE NURSES’ KNOWLEDGE ABOUT VENTROGLUTEAL INJECTION: A BEFORE AND AFTER STUDY DESIGN

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Objectives: To assess the knowledge of nursing staff regarding intramuscular injection techniques in the ventrogluteal site, before and after professional training.

Methods: A single centre, before-and-after study design was carried out between January 2010 and July 2010 in an emergency unit in Descalvado-São Paulo, Brazil. The research was conducted in three phases. Before professional training (phase 1), 14 nurses were required to respond to a structured, self-administered questionnaire designed to identify their theoretical knowledge about intramuscular injection technique in the ventrogluteal site. Participants were also required to demonstrate the technique using a static manikin simulator. We followed an assessment tool used in previous research. In the second phase, a five hour session of professional training was conducted to two groups of nurses and included theoretical and practical contents. The theoretical content was supported by audio visual resources. There was exchange of experiences during the two groups’ discussions. The practical content addressed the aspects relating to the recognition of bony structures and muscles involved in the ventrogluteal site; cleansing the injection site; and the simulation of the technique in the static manikin simulator. We used the technique described by Potter and Perry (2009) for intramuscular injection in the ventrogluteal site as a guide. In phase three, data collection was initiated within a period of 15 days after the professional training. Therefore, we followed the same steps, and we used the same assessment tool followed in the first phase.

Results: Before professional training, the question relating to the anatomical structures involved in mapping the ventrogluteal site were answered correctly by only 20.8% of the participants. However, after professional training, 63.6% of the participants correctly answered this question. When participants were asked about the muscles involved in the ventrogluteal site, only 1 (4.2%) nurse answered the question correctly before professional training, compared with 36.4% correct answers after professional training. Also, after the intervention, 100% successfully executed the 15 steps contemplated in the assessment tool. The results are considered statistically significant, as the t-observed was higher than the t-critical (6.67 > 1.94), at 5% probability.

Conclusion: Professional training was effective in increasing the level of nurses’ knowledge, but they still struggled with terminology regarding muscle and bone structures involved in mapping the site. We believe that promoting continuing education programs configure as an important aspect for nursing professionals to acquire skills to administer medications through IM injections in the ventrogluteal site safely.
ACCREDITATION WITHIN THE COMMUNITY HEALTH AND HOME CARE SECTORS: LESSONS LEARNED AND FUTURE DIRECTIONS FOR ACCREDITATION CANADA

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Objectives: This presentation showcases how Accreditation Canada has engaged Community Health and Home Care organisations within the Accreditation program, resulting in a program that is relevant and valuable for these sectors.

Methods: The Community Health and Home Care sectors have unique challenges to ensuring quality of services and safety of clients including isolation of care, unregulated and uncontrolled settings and distinct organisational culture [1],[2]. There is also a high prevalence of preventable adverse events in home care [3], yet many community agencies do not have the capacity and resources to support an accreditation process. The community sector is becoming increasingly prevalent in health care delivery [4] and as such, community organisations are seeking out accreditation as a mechanism for improving quality and safety. To ensure that Accreditation Canada is meeting the needs of its 200 community and home care client organisations, these organisations were contacted as part of an evaluation study to determine strengths and opportunities for program improvement.

Results: Client satisfaction results from Community and Home Care organisations indicated that the creation of a customised accreditation program for the community and home care sector was seen as a success. Specifically, the creation of a Primer Accreditation program for organisations new to the accreditation process in the Community Health and Home Care sectors was seen as beneficial. The customisation of the standards was seen as critical. Opportunities for improvement identified were the language used within the standards and survey questionnaires to better reflect community-based practice.

Conclusion: The Accreditation Canada Qmentum program was shown to support and be valued by organisations within the Community Health and Home Care sectors. The accreditation program continues to be refined and strengthened in order to further engage these sectors and meet their needs. Future directions include an evaluation of the Patient Safety Culture instrument (survey questionnaire) from a community-care perspective. The standards will be further customised for community-based organisations by creating core standards for leadership, medication management, and infection prevention and control specific to community-based organisations.

References:
A NATIONWIDE SURVEY ON PATIENT SAFETY CULTURE IN JAPAN
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Objectives: This study aims to explore safety culture dimensions among health care professionals using Hospital Survey on Patient Safety Culture (HSOPSC) by developed by AHRQ (Agency for Healthcare Research and Quality).

Methods: We surveyed nationwide the situation of patient safety culture in 13 hospitals (5,760 persons) allowed for additional costs on patient safety countermeasures under the social insurance medical fee schedule. The questionnaire consists of seven unit-level aspects of safety culture including 24 items, three hospital-level including 11 items, and four outcome variables including nine items.

Results: An average number of beds was 360 beds (63 to 1,354 beds). With regard to ownership, 13 hospitals included three municipality and local incorporated agency hospitals, one public hospital, two juridical person with social insurance hospitals, six medical corporation hospitals, and one other hospital. Number of all respondents was 5,118 persons (response rate: 88.9%), and included 295 physicians (90.8%), 2,909 nurses (95.5%), and 146 pharmacists (96.7%). In terms of 12 dimensions, the overall average positive response rate (RR) for the 12 patient safety dimensions of the HSOPS was 49.2%, extremely lower than the average positive RR for the AHRQ data (61%). In terms of health care professionals, the overall average positive RR for pharmacists (46.2%) was lower than that for physicians and nurses (49.6% and 49.4%). With regard to pharmacists, the average positive RRs for eight dimensions of the 12 dimensions were the lowest among three professionals, and three average positive RRs were the highest; Frequency of event reporting (pharmacists: physicians: nurses=73.6%:53.3%:67.9%), Non-punitive response to error (48.8%:42.6%:40.4%), and Staffing (29.1%:27.0%:25.4%).

Conclusion: The HSOPSC measurement provides the evidence for assessment of patient safety culture in Japan’s hospitals. This result that patient safety culture has been in a state of development, compared with the US hospitals.

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PRESSURE ULCERS AND IN-PATIENT FALL RATES: RESULTS FROM 2 NATIONAL PREVALENCE MEASUREMENTS AND EFFECTS OF FIRST TIME PUBLIC DISCLOSURE MEASURES

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Objectives: Up until 2011, hospital performance data in Switzerland were scarce. Continuously rising health care costs and changes in the Swiss health care reimbursement (DRG) called for national performance data. The National Association for Quality Development in Hospitals and Clinics (ANQ) aims to measure, benchmark and publicly report performance data nationwide. The national point prevalence measurement aims to collect national data regarding hospital acquired pressure ulcers (HAPU) and in-patients falls in acute care hospitals.

Methods: ANQ, an organisation consisting of all of the important stakeholders in the Swiss health care system, developed a set of national quality indicators for acute care settings within the framework of a national quality contract. Consequently, the legal foundations regarding quality assurance were realised and hospitals adhering to the contract were obligated to participate in the measurements.

National point prevalence data regarding HAPU and in-patient falls were collected in two subsequent years. Data collection was coordinated by Bern University of Applied Sciences, Health Division, in using the method “International Prevalence Measurement of Care problems LPZ”, from Maastricht University (Netherlands). This method captures outcome, structure and process indicators regarding falls and pressure ulcers on institutional, ward and patient levels. Data analysis utilised descriptive and hierarchical logistic regression analysis (risk-adjustment). An online survey addressed to the participating hospital coordinators (who held responsibility for data collection) was used to evaluate the measurement and to explore the internal use of the data.

Results: In 2011, 112 hospitals cooperated in the first national measurement and data from 10’608 patients (response rate 68%) was obtained. Descriptive analysis showed a prevalence of HAPU degree 2-4 of 2.1%. In-patient fall prevalence was 4.3%. National risk-adjusted outcome results from both indicators revealed quite a homogeneous distribution among hospitals. Application of preventive and intervention strategies revealed more heterogeneity among hospitals. In the 2012 measurement, around 200 hospital sites delivered data from about 13’500 patients (response rate 75%). The first results will be available in the summer of 2013 and will be presented at the 2013 ISQua-Conference. In the evaluation survey, half of the 2011 coordinators answered questions regarding internal use of the data. Hospitals with well-established quality improvement system appeared to focus more on national benchmarking than on internal improvement strategies.

Conclusion: In comparison with international research, in 2011 the prevalence of HAPU was low and the prevalence of falls was slightly higher. The prevalence rates provide important health care quality information as the now aggregated national data on two (nursing sensitive) indicators and for two measurements, 2011, 2012) are available. This is a big step forward in the direction of the national monitoring of care quality. Especially in order to prevent HAPU and in-patient falls and to monitor adequate intervention and quality improvement strategies this data may be useful at the institutional level. Public disclosure of the first year measurement data is scheduled for March 2013. This will enable users (patients) to gain insight into hospital performance. Results from the evaluation survey will reveal the first impact and effects of the introduction of national hospital performance measures and public disclosure.
COMPENSATION OF CHIEF EXECUTIVE OFFICERS AT NON-PROFIT U.S. HOSPITALS: IMPLICATIONS FOR IMPROVING QUALITY OF CARE
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Objectives: While hospital Chief Executive Officers (CEOs) can shape the priorities and performance of their organisations and have the potential to profoundly affect the quality of care delivered, the degree to which CEO compensation is based on hospital quality is not well known. We sought to determine the variation in pay among CEOs of non-profit U.S. hospitals, and to ascertain whether a hospital’s structural characteristics, financial performance, technological capabilities, measured quality, or metrics of community benefit are associated with the financial compensation of its CEO.

Methods: We used Medicare inpatient data and the Medicare cost reports from 2008 to obtain data regarding hospitals’ financial performance (Medicare margins), technological capabilities (as measured by an index of advanced technologies available at each hospital), measured quality (patient satisfaction and performance on the Hospital Compare quality measures for acute myocardial infarction, congestive heart failure, and pneumonia), and community benefit (hospital-reported charity care provided). We used federal 990 tax forms, compiled by GuideStar, to build a database of compensation of hospital and hospital system CEOs in 2009. We used regression models to determine whether there were associations between measures of hospital performance in 2008 and CEO compensation in 2009.

Results: We identified 1,853 executives responsible for 2,671 hospitals. The CEOs in our sample had a median compensation of $405,768. CEOs overseeing a higher number of hospital beds, those that were associated with teaching hospitals, and those in an urban location were compensated more highly. Controlling for these structural factors, we found that CEO compensation was not associated with hospital financial performance ($7,708 of additional pay at hospitals at the 75th versus the 25th percentile of operating margins, p=0.53), though CEO compensation was strongly associated with technology: hospitals at the 75th percentile on technological capabilities compensated their CEOs $154,623 more than hospitals at the 25th percentile on the index (p<0.001). Patient satisfaction was also associated with CEO pay, with $51,160 of additional pay for the 75th percentile of performance compared with the 25th percentile (p=0.007). However, we found no association between a hospital’s Hospital Compare quality measures and CEO pay ($7,389 of additional pay at hospitals at the 75th percentile versus the 25th percentile, p=0.56). Similarly, there was no relationship between charity care provided and CEO compensation ($0 of additional pay at hospitals at the 75th percentile versus the 25th percentile, p=0.88).

Conclusion: CEO compensation at non-profit hospitals varies widely and is associated with greater use of technology and higher patient satisfaction, rather than with process quality, patient outcomes, or community benefit. Given that compensation metrics can have a profound impact on behaviour, our findings may point to an important opportunity to improve care and enhance hospitals’ focus on community benefit by tying CEO compensation to those metrics.
THE RIPPLE EFFECT: DIFFUSING HEALTH POLICY THROUGH THE USE OF ICONS
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Objectives: The effective diffusion of health policy is a major challenge that continues to perplex governments globally. For all the resources, time and effort committed to the development of policy, a key question is: how, and to what extent, does healthcare policy drive change? This study aimed to track the diffusion of a national healthcare policy, the National Safety and Quality Health Service (NSQHS) Standards, across and within the Australian healthcare system.

Methods: The NSQHS Standards, developed by The Australian Commission on Safety and Quality in Health Care (the Commission), were designed with icons to identify and brand each standard individually, and as a set. The Commission established a web-based approval process for organisations to utilise the icons. Applicants are required to provide details into a database regarding their organisation and proposed use of the icons. The database was interrogated to identify geographic location and type of applicant, and organisational department and purpose of icon use.

Results: Between June 2012 and February 2013, 168 applications had been received. Organisations from all States and Territories across Australia have adopted the use of the icons. Organisations from the four most populous States accounted for 90% of the icon use. The types of organisations using the icons included: public hospitals; private hospitals and day procedure centres; peak bodies and associations; State health departments; community health services; accreditation agencies; aged care services; and publishing companies. A diverse range of organisational departments or services have adopted the icons, including: policy units; education and training departments; quality and safety units; clinical departments, services and wards; and promotional departments. The icons are embedded into a variety of materials. Organisations are using them in documents (for example, strategic and operational plans, reports, toolkits, committee terms of reference, and meeting minutes), staff materials (for example, posters, newsletters, intranet homepage, memos, and email footers) and education and training resources, and patient care resources (for example, badges, t-shirts, and magnets). Icons are also implanted into State and regional policy and procedure documents. The icons are being used for branding or promotion of the standards and as visual reminder to staff of quality and safety responsibilities to patients.

Conclusion: The answer to our question - does healthcare policy drive change? - is affirmative. We have evidence that the NSQHS Standards are becoming increasingly embedded across and into the Australian healthcare system. The design of the NSQHS Standards with accompanying icons has been a novel strategy by which the infusion and spread of the impact of the standards can be monitored and tracked. The icons are being used as a visual stimulus signifying the quality and safety priorities for healthcare professionals; the ripples of change continue to permeate through the health system via a tangible visual phenomenon.
ASSOCIATIONS BETWEEN PHYSICAL RESTRAINT AND FRAGILITY OF THE ELDERLY PATIENTS AFTER HOSPITALISATION
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Objectives: Hospitalised elderly patients often suffer from harmful events such as fall, decline of activities of daily living (ADL) and decline of eating functions. Several clinical interventions may affect the decline of functional and nutritional status of the elderly patients. Our aim is to investigate the associations between physical restraint and the decline of functional and nutritional status of the elderly patients.

Methods: We examined secondary data analysis using dataset extracted from electronic medical record database targeting the elderly patients admitted from April 1, 2011 to March 31, 2012. We ruled out stroke patients and those who stayed less than 7 days or stayed 45 days or more. Dependent variables were if the patient had had low functional status and if the patient’s serum albumin level was below 3.0mg/dl on discharge. We used 12-point scale which measured the amount of physical and nursing support to judge if the patient had low functional status. We indicated that the patient had low functional status when this score was 5 point or more. An independent variable was if the patients got any physical restrain during hospitalisation. Age, sex, functional status on admission and serum albumin level on admission, were indicated as adjustment variables.

Results: Six hundred sixty-one inpatients were eligible for the analysis. Logistic regression analysis showed there was a significant difference between physical restraint and low functional status on discharge (Odds ratio 2.4 95%CI 1.4-4.1) when adjusted with patients case mix variables. There was also a significant difference between physical restraint and low serum albumin level on discharge (Odds ratio 2.0 95%CI 1.1-3.4). If the elderly patients had had physical restrain showed stronger associations with dependent variables than length of restrain days.

Conclusion: Our study suggested adverse effect of physical restraint on the decline of nutritional status and ADL of the elderly inpatients. Physical restraint may to be harmful to keep functional and nutritional status of the hospitalised elderly patients.
HARNESSING IMPLEMENTATION SCIENCE TO IMPROVE CARE QUALITY AND PATIENT SAFETY

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Objectives: Getting greater levels of evidence into practice is a key problem for health systems. It is compounded by the volume of research produced. There are 75 randomised trials and 11 systematic reviews published every day. Implementation science is an emerging field dedicated to improving take-up and adoption of research evidence. The literature has not been synthesised recently. We wanted to answer a question. What does the implementation science literature have to say about improving quality of care and making care safer for patients?

Methods: We conducted a targeted search of key journals to examine implementation science in the quality and safety domain. Of the 461 references retrieved, 52 were considered relevant following the application of exclusion criteria. Non-research articles, research in developing countries, articles evaluating the effectiveness of tools, methods and interventions, and those without a focus on implementation were excluded. The included articles were subjected to a two-part content analysis. Firstly four reviewers extracted and documented the key characteristics of the papers. Following this an automated data mining software program identified the themes and concepts in the full texts.

Results: The literature indicates that implementation science consists of three components: uptake (the extent to which evidence gets into practice); spread (the way best practices diffuse across health systems); and time (the duration for take-up and spread to achieve outcomes). Eight success factors of implementation emerged: preparing for change; capacity for implementation – people; capacity for implementation – setting; types of implementation; resources; leverage; desirable implementation enabling features; and sustainability. Obstacles in implementation are the mirror image of these: for example when people fail to prepare, have insufficient capacity for implementation or when the setting is resistant to change, then quality of care is at risk, and patient safety can be compromised.

Conclusion: This review of key studies in the quality and safety literature discusses the current state-of-play of implementation science. It identifies the facilitators and barriers of implementation. Implementation occurs within complex adaptive systems striving to deliver high quality, safe care. This study provides a foundation on which future implementation success can be achieved and barriers overcome.
A NEW FRAMEWORK FOR EVALUATING CONSUMER AND COMMUNITY ENGAGEMENT IN HEALTH CARE SYSTEMS: RESULTS OF A META-REVIEW

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**Objectives:** Despite an increasing international support for consumer and community engagement (CCE), there is yet no clear consensus on the best method for evaluating CCE in health care systems. The aim of this meta-review is to develop a framework for evaluating CCE in health care systems.

**Methods:** Using a total of 47 phrases and 11 MeSH terms, a comprehensive search of six databases was undertaken (PubMed, Embase, EBM reviews, CINAHL, APA PsycNET, and Scopus). No time or geographic limits were placed on the searches. Studies were excluded if they were not systematic reviews, did not focus on evaluation and measurement of CCE in health care systems, or were not available in English.

**Results:** Three systematic reviews were identified that met the inclusion criteria. They incorporated evaluation methods for CCE in health care systems, utilising evaluation frameworks, and measurement indicators and methods. The benefits and challenges of identified evaluation methods are discussed. The findings of these reviews inform the development of a new evaluation framework, which incorporates four areas for evaluation: planning; process; outcome; and impact; and suggests evaluation methods for each area.

**Conclusion:** The new framework will enhance practical application of methods for evaluating CCE in health care systems, crucial to the success of CCE initiatives. Areas for further work are identified.
REDUCING ALL CAUSE RE-ADMISSION RATES FOR A HOSPITAL SYSTEM: THE MEDSTAR EXPERIENCE

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Objectives:
1. To develop effective strategies to decrease readmissions in MedStar hospitals.
2. To demonstrate effectiveness of strategies to decrease readmissions in MedStar hospitals.

Methods: MedStar created a system wide initiative to standardise readmission reduction efforts. In May 2012, a 10 point plan was standardised and implemented across the entire system to target high risk patients. This 10 point plan consisted of the following for targeted patients:

1. Discharge medication reconciliation prior to discharge. Medication refill issues would be also addressed before the patient left the hospital.
2. Targeted CHF patients would be given scales and taught how to use these and who to call in case there was major weight fluctuation.
3. Discharge summaries would be faxed to PCP’s for follow up within 48 hours of discharge.
4. An appointment with a PCP within 5 days of discharge.
5. Transitional care clinics would be created for patients without a PCP or unable to see one within 5 days.
6. When discharged home, home health nurses will follow up within 48 hours.
7. All entities would meet with local nursing homes to improve handoff and collaboration of care.
8. Telephone follow up within 48 hours of discharge.
9. Monthly reports were to be generated to each hospital.
10. Each MedStar Hospital would have a site specific readmissions leadership team which would meet monthly to discuss progress in readmission reduction.

In addition to this 10 point plan, a strategic initiative to expand palliative care services across the hospital system was implemented. Readmission rates will be compared for seriously ill patients in the intensive care unit of the pilot hospital with and without palliative consultation.

Results: Results will be fully ready by the conference. Preliminary data is promising.

Conclusion: The strategies implemented by MedStar hospitals have been effective in reducing all cause readmissions and improving quality of care within our large hospital system.
IMPLEMENTATION OF A MULTIDISCIPLINARY INPATIENT DIABETES TEAM IS ASSOCIATED WITH COST SAVINGS AND DECREASED HOSPITAL RE-ADMISSIONS

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Objectives:
1. to understand how a co-diagnosis of diabetes negatively impacts hospital course and safe discharge
2. to describe how a multidisciplinary diabetes team can improve both patient care as well as patient and staff education
3. to identify the key groups within a hospital that need to be mobilised to effect broad changes in clinical practice and organisational culture

Methods: As the epidemic of diabetes continues to grow, increasing numbers of patients with diabetes (DM) are being admitted to hospitals. It is known that DM as a coexisting condition can increase the length of stay and readmission rates across many diagnosis-related groups (DRG’s). Patients with DM who are admitted for other conditions may be at risk from both hyper and hypoglycaemia. Poorly controlled DM during hospitalisation affects wound healing and infection rates. Inpatient hypoglycaemia is associated with increased morbidity and longer hospital stays. A dedicated inpatient Diabetes Team was created at a large tertiary care teaching hospital to help address these issues. The team consisted of a full-time hospital-based endocrinologist, nurse practitioner and certified diabetes nurse educator. The team provided medical consultation as well as patient and staff education. The Diabetes Team members served as the champions for an interdisciplinary Diabetes Task Force which included nursing, hospitalists, medical informatics, quality, pharmacy, dietary services, administration, case management and social work. The Diabetes Task Force met monthly to review unit-based data on patient safety as well as unit-based reports of documented DM education. Recommendations by the Diabetes Task Force led to significant changes being made to the computerised physician order entry (CPOE) system to promote safe and effective insulin use. Discharge processes were examined and adjusted to promote safer discharges of inpatients with DM. An intensive staff education project on the impact of DM in the hospital was undertaken which included:

a) formal grand round presentations to both physician and nursing staff,
b) targeted in-services to resident physicians, pharmacists, mid-level providers and administrative staff; and
c) the development of evidence-based decision-support tools that were widely distributed to clinicians throughout the hospital. The Diabetes Team met bi-weekly with quality to review administrative data, assess the impact of various DM initiatives and identify new opportunities for improvement.

Results: For inpatients with either a primary or secondary diagnosis of diabetes, we saw a reduction in the following measures from FY 2011 (n = 9791 cases) vs. FY 2012-Nov 2012 (n = 8718 cases):

- Average length of stay ↓ from 6.60 to 6.44 days
- Excess days per case ↓ from 1.26 to 1.17 days
- 30 day readmission rate ↓ from 16.8% to 15.5%

For patients with a primary diagnosis of DM (FY 2011 n = 551 cases; FY2012-Nov n = 515 cases, the effects were even more pronounced:

- Average length of stay ↓ from 7.55 to 6.93 days
- Excess days per case ↓ from 2.13 to 1.50 days
- 30 day readmission rate ↓ from 18.8% to 16.1%

Conclusion: A multidisciplinary Inpatient Diabetes Team, focussed not only on direct patient care but also on staff education, improved processes and patient safety, can have a significant impact on hospital cost and utilisation. Active engagement of interdisciplinary staff, in addition to support from hospital leadership, has been crucial to the success of this team’s efforts.
INFUSING THE PRACTICE OF WORKING COLLABORATIVELY IN TEACHING HOSPITALS: EASIER SAID THAN DONE
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Objectives: The benefits of interprofessional practice (IPP) are widely extolled but not always easy to realise in the complex clinical-organisational environment of hospitals. This study aimed to explore factors inhibiting doctors’ ability to participate in collaborative interprofessional practice (IPP) for improving patient safety.

Methods: A framework was developed from the literature to gather data from in-depth interviews and ethnographic observations. Four fields within the framework were investigated: culture; communication; collaboration and competency. Thirty two junior doctors from three large Australian teaching hospitals participated in the study. The doctors were at different stages of their postgraduate training. They comprised a mix of Australian and international medical graduates. A thematic analysis was applied to the data against the fields investigated.

Results: Diversity in the medical training and the national and ethnic cultures of participants revealed differences in doctors’ understanding of the connections between IPP and patient safety. Most doctors were not averse to the concept of collaboratively working with nurses and other health professionals. However, their communication with them was hindered by the silos of professional cultures. This results in issues of disrespect through doctors’ poor understanding and appreciation of the roles and expertise of other non-medical health professionals. This was especially evident in the international graduates. These issues have the potential to directly impact the extent to which an environment of collaboration can be effected to offer a safer patient journey. Related problems associated with communication included a tendency for doctors not to read nurse’s notes for ward rounds to be conducted typically with doctors only. Junior doctors have the responsibility of conveying patient treatment orders to senior nurses leaving open the possibility of error in the transmission of information. Communication intra-professionally was shown to be problematical. Many junior doctors lack confidence in communicating with senior clinicians. There is a reluctance to ask questions of clarification about clinical matters. This translates to inadequate support and missed opportunities for learning. The consequences of the issues identified are important to consider in the context of competency, safety and risk management. The multiplicity of tasks completed daily by junior doctors removes them from the wards and their patients. They are subjected to the pressures of time and competing demands limiting opportunities for interacting with nurses and other health professionals involved in the treatment and care of patients.

Conclusion: The barriers to doctors working inter-professionally are manifest in the research findings. To address the barriers and make progress with the uptake of IPP for improving safety requires collective commitment to the pervasion of its principles at the governance level in teaching hospitals. Improved communication between junior and senior doctors is a prerequisite for safer care and optimised learning opportunities. Greater understanding of the specialised expertise of other health professionals involved in patient care is a further factor in strengthening the mutual respect required for successful enactment of more effective, collaboratively-oriented, patient care.
REDUCING FALL INCIDENCE RATE AND INJURY IN HEMATOLOGY AND ONCOLOGY WARDS

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Objectives: Falling is the most common cause of accidents in haematology and oncology wards; this may lead to adverse outcomes such as injuries, prolonged hospitalisation, and increased medical expenses and healthcare insurance costs. The incidence of patient falls was 0.15% and the fall-induced injuries rate were 59% in 2011, higher than 0.11% and 27% in 2010 in haematology and oncology wards. One of the accidents induced intra-cerebral haemorrhage in 2010 and one case of bone metastasis underwent an operation for tibia fracture in 2011. Of these patients, 27.69% were not classified as at high risk of falling before their falls. There were 57.62% of the high risk patients insisted on getting out of bed without any help. The main objective of this project was to reduce fall incidence rate and injury in haematology and oncology wards.

Methods: To better identify patients with a high risk of falling in hospitals and to promote the use of effective tools to enhance the awareness of falling among those at risk, a pictorial form of the Evaluation Table of Risk Factors Resulting in Falling Incidents was made. Patients and family members were invited to participate in identifying risk factors, with the identification process for high-risk patients being conducted on Fridays and when there was a change of patients’ consciousness. In addition, the wards housing high-risk patients were given warning signs stating watch your step with relevant images. Education sessions were conducted for patients and their families on how to prevent falling accidents, and the standard procedure for preventing falling accidents was put into effect.

Results: The results showed that the incidences of falling and fall-induced injuries decreased to 0.14% and 38.89% in 2012, respectively, with no severe injuries. The percentage of fall patients classified under the non-high-risk group fell to 11%. The proportion of high risk patients who insisted on getting out of bed without any help was down to 52.00%.

Conclusion: Prevention of falling is an important topic in a haematology and oncology wards which requires the collaborative efforts of the medical team, patients, and family members. It is not easy to avoid all falls, but early identification of risky patients through effective evaluation and encouraging patients and their family members to participate in prevention-related activities could effectively reduce the incidence of falling and the resulting severity of injuries, therefore enhancing the safety of patients.

References:
A NEW APPROACH TO ANALYSING ACCREDITATION DATA TO STIMULATE ORGANISATIONAL PERFORMANCE IMPROVEMENT

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Objectives: Information routinely collected by healthcare accreditation agencies as a result of accreditation surveys is underutilised, partly due to the lack of appropriate analytical procedures. We introduce and illustrate a novel general method for measuring and evaluating performance of health care organisations (HCOs) as reflected by accreditation survey outcomes.

Methods: We consider a set of outcomes obtained through accreditation survey visits as informative markers characterising the state of different areas within an HCO. Using a sequence of regression models, these markers are further related to measurable factors that are not accounted for by accreditation visits, but relevant for measuring and evaluating HCO performance. The method is illustrated using accreditation outcomes awarded by the Australian General Practice Accreditation Limited (AGPAL) to 3941 general practices (GPs) located in six states and two territories across Australia. Organisational indicators identified by survey visits are modelled as a function of socio-economic conditions specific to each GP location and measured by the Socio-Economic Indexes For Areas (SEIFA). The statistical significance of association patterns is further characterised by the corresponding p-values, accounting for multiple testing.

Results: The application of the introduced analytical procedure identified two accreditation outcome indicators within GPs that are significantly associated with the corresponding socio-economic conditions. Firstly, ‘Our practice has a height adjustable bed’ indicator tends to be not met for GPs located in economically deprived geographical areas. This result is consistent with the conclusion from the independent survey conducted by the Royal Australian College of General Practitioners: "The survey strongly suggests that cost was the overall factor that deterred most GPs from purchasing height adjustable beds". Secondly, ‘At least 50% of our active patient health records contain a health summary’ indicator tends to be not met for GPs located in areas with better socio-economic conditions. This result is open for interpretation; perhaps GPs in these areas are busier than others, and this is the outcome of a time factor.

Conclusion: The suggested analytical procedure for measuring and evaluating performance of HCOs is capable of identifying already known phenomena as well as new never-noticed aspects which are thus open for further investigation. This analytical approach is flexible enough to accommodate data structures obtained from accreditation surveys conducted against different types of HCOs.
POPULATION PERSPECTIVES ON PATIENT SAFETY: ANXIOUSLY AWAITING THE GREAT LEAP FORWARD

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Objectives: Despite the impressive developments of the patient safety movement in recent years, some key questions in patient safety theory and practice remain unresolved and underexplored. This paper examines a framework for understanding the risks and responses to patient safety at a population level. It argues that one important reason that the rate of errors has not reduced significantly at a global level is because the patient safety movement has focused on micro-scale errors within a macro systems framework, but ignored the equally meso-level of population patterns and dynamics.

Methods: This paper is a conceptual piece with an empirical base. It applies frameworks and theories from sociology and philosophy, as well as patient safety research, to understand the mechanisms by which population level indicators of harm can assist health services to address potential causes of error which lie with broader social cultural and economic relations.

Results: Responses to patient safety problems are largely centred on three major shifts in the delivery of health services: evidence based medicine/clinical practice; health systems and service level reporting of and response to errors; and systematic research into the causes of and responses to errors. These shifts have been underpinned by an increased public scrutiny of errors through mechanisms such as public inquires, media attention and patient engagement mechanisms. The inquiries speak to underlying patterns of harm, many of which are directly linked to the vulnerability of populations and population sub-groups including women, the elderly, children, people of lower SES, people with disabilities and people from immigrant backgrounds. In addition, we know, for example, that many groups are routinely under-represented in most types of health research. Few countries routinely collect or publish data on population level differences in errors, and most do not do report on these findings regularly. Pockets of evidence exist, and these support findings from inquiries: from the US, Iezzoni’s work highlights significant differences in the rates of errors of both omission and commission for women with disabilities. Studies in New Zealand show differential rates of errors for the indigenous Maori community, and international studies showed an association between immigrant status and error rates. Even less is known about the risks and rates of errors for a variety of other groups.

Conclusion: As a community of scholars and practitioners, our focus has largely been on addressing errors from the perspective of systems and the services, and while the emergence of patient-centred care has been a step forward in shifting the focus from clinicians to consumers, patients are more than a collection of individuals. The body of evidence to date shows that members of vulnerable groups receive worse care, much later than the ‘general’ population. Our work to date shows that not only in all likelihood is that pattern replicated in terms of the safety of care, but it is likely to be exacerbated by current approaches to practice and gaps in research. Our work shows that this is exacerbated by significant gaps in research. This ISQUA conference has the opportunity by a ‘tipping point’ to move the field beyond individuals and systems and into the middle ground to examine the population-level factors involved in risk characteristics and error rates at a population level.
IMPROVING STEMI PATIENT TREATMENT TIMES USING LEAN THINKING PROCESS RE-DESIGN

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Objectives: Timely treatment for acute cardiac patients is seen as the ‘holy grail’ for emergency and cardiac health care professionals, with the achievement of recognised international benchmark treatment times for patients experiencing ST-segment elevation myocardial infarction (STEMI) demonstrating a reduced mortality rate. Achievement of this benchmark time to treatment, however, is not uniform or always close to best practice times, raising concerns and questions about why there is such a gap between the benchmark treatment time and the realities of clinical practice. This patient care improvement project undertaken by the cardiac and emergency health care teams at Cabrini Hospital in Melbourne, Australia, 2010-2012 aimed to answer the following questions:

1. Does the introduction of Lean Thinking Process Redesign reduce the “Door to Balloon Time” (D2BT) for STEMI Patients?
2. Does the introduction of Lean Thinking Process Redesign enable achievement of benchmark STEMI patient treatment time?

The key benefits to the field of study and clinical practice were the identification of strategy and description of clinical practice process design, protocols or pathways that improved time to STEMI treatment; that went beyond the ‘what’ of clinical treatment to the ‘how’ of effective implementation. Such protocols offer a practical and replicable, or adaptable, ‘blueprint’ for setting up effective systems of care for STEMI patients. The ‘how to’ guide can be used in a range of clinical environments, and ensure the practice guidelines encompass treatment from the patient’s point of view in addition to the input and experiences of all personnel and roles important to that patient’s experience.

Methods: A quasi-experimental design was used to address the questions posed in this project. In what was effectively a ‘before and after’ study, there was non-equivalent group comparison of D2BT before and after the introduction of the Lean Thinking redesign of STEMI patient treatment access and care protocols; an interrupted time series, with measurements taken pre- and post-intervention. The design involved the introduction of a process manipulation or redevelopment, and observing or testing what happened as a result.

To answer the first question of whether Lean Thinking Redesign Processes improved D2BT for STEMI patients, comparison was made between the mean D2BT before and after the intervention, with a mean time after intervention statistically significantly lower than the mean time before intervention indicating success. In relation to the second question of whether Lean Thinking process redesign enabled the achievement of benchmark STEMI patient treatment times, it was a matter of seeing if benchmark time was achieved – that 75% of patients had a D2BT less than 90 minutes.

Results:

1. The mean D2BT before the intervention was > 90 minutes and the mean D2BT for the first year after intervention was < 90 minutes.
2. Prior to intervention, less than 75% patient achieved a D2BT of 90 minutes. After and since the new STEMI protocol introduction, more than 75% patients achieve a D2BT of less than 90 minutes.

Conclusion: Using Lean Thinking redesign methodology to identify the barriers to the patient’s treatment and positive experience was the first step towards improvement. Working together to remove those barriers and then to develop and implement an agreed, standardised clinical pathway around activity that added value for the patient, meant that the multidisciplinary team caring for this patient group was able to both achieve a significant reduction in time to treatment and demonstrate clinical practice better than international benchmark.
THE SPASTICITY MANAGEMENT PROGRAMME IN SURGICAL DEPARTMENT OF SHATIN HOSPITAL
Chan Yuk Fong 1, Chui Yuk Poon 1,*, Sau Ha Chan 1, Choi Wah Chan 2
1Surgery, 2Physiotherapy, Shatin Hospital, Shatin, Hong Kong

Objectives: In 2012, there are 415 patients suffered from intra-cerebral haemorrhage and brain injury in our department. Spasticity is a common feature of stroke. It causes pain and limits the movement of the contracted joint. The patients with spasticity require significant management to restore their quality of life. Totally, 33 patients were recruited for the management programme in 2012.

The spasticity management programme is a multidisciplinary team approach to manage our spasticity patients. Our surgical rehabilitation team includes neurosurgeons, nurses, physiotherapist, and occupational therapist. This programme facilitates higher functional level and pain due to spasticity. The management also corrects posture, prevent joint contracture and pressure sore of the patients.

Methods: Patients under this programme have different severity with contracted joint. Assessment includes AROM, PROM, tone and pain for the affected joints. The rehabilitation team implements intervention according to different level of spasticity. There are three levels of therapy provided to our patients. Level I therapy mainly is stretching and passive exercise to muscle. Splints are offered for the affected limbs to facilitate limbs function. Level II is the application of oral antispastic drug for spastic tone with no joint contracture. Level III is the invasive treatment with Botox injection and intrathecal balfacen injection to improve condition.

Results: There are sixteen patients with level I and thirteen patients with level II were recruited in the programme within 2012. Twelve patients with level III received therapy from 2007-2012. Level I patients were slightly increase in tone after one month’s therapy and slightly decrease in pain. Level II were deteriorated in passive range of tone. Level III patients were improved in passive joint range of movement, tone, resting posture of the limbs.

Conclusion: The results showed that spasticity management programme can improve patients’ contracture and pain control. A multidisciplinary team approach can identify functional care goals in the management of spasticity. The improvement of the spasticity facilitates their quality of life. In the future, we would plan the new guidelines for enhance the spasticity management.
THE FUTURE PROJECTION OF COST OF ILLNESS FOR BREAST CANCER
Yukiko Uezono 1*, Kunichika Matsumoto 1, Kayoko Haga 1, Tomonori Hasegawa 1
1Department of Social Medicine, Toho University School of Medicine, Tokyo, Japan

Objectives: In 2011, the total number of female patients with breast cancer was the highest among all cancers in Japan. And its social burden is also high. Moreover the mortality rate has been increasing consistently. The purpose of this study is to make clear the future change of social influence of breast cancer using the cost-of-illness (COI) method.

Methods: We estimated the COI of breast cancer (ICD10 code: C50) in Japan at 2008, 2014 and 2020. In this study, we used government office statistics and the COI method developed by Rice DP to estimate burden of disease. The COI consists of three parts; direct cost, morbidity cost and mortality cost. Direct cost is a medical expense of breast cancer. Morbidity cost is an opportunity cost for outpatient visit or hospitalisation. Mortality cost is measured as the loss of human capital (human capital method). As for future projection we predicted COI using two methods. The first method was “fixed model estimation”, that is, the estimation that assumed health related indicators (mortality rate, number of times of outpatient visit per population, number of times of hospitalisation per population, and average length of stay) were fixed. We used those values at 2008, and only future population estimation was used as a variable. The second method was “variable model estimation”, that is, the estimation where health related indicators changed at the same pace as in the past 12 years, in addition to the change of population and age structure. Future health related indicators are estimated using a linear approximation or a logarithmic approximation. We adopted an approximation with the higher coefficient of determination.

Results: COI was estimated 1,286 billion yen in 2008 (92 yen =1 US$). As for future projection, our 2 models showed different results respectively. The fixed model suggested that COI would be stable. With the variable model where health related indicators’ change was taken into consideration, COI was expected to increase. Average length of stay of breast cancer have decreased but mortality rate, number of times of outpatient visit per population, and number of times of hospitalisation per population would continue to increase. The number of deaths was estimated to increase in both models. But mortality cost was estimated to show opposite result respectively. Estimation result is shown in Table 1.

Table 1: COI of breast cancer in Japan billion yen

<table>
<thead>
<tr>
<th>Method</th>
<th>2008</th>
<th>2014</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘fixed’ method</td>
<td>direct cost</td>
<td>1,686</td>
<td>1,750</td>
</tr>
<tr>
<td></td>
<td>morbidity</td>
<td>472</td>
<td>476</td>
</tr>
<tr>
<td></td>
<td>mortality</td>
<td>4,340</td>
<td>4,315</td>
</tr>
<tr>
<td></td>
<td>total COI</td>
<td>6,498</td>
<td>6,541</td>
</tr>
<tr>
<td>‘variable’ method</td>
<td>direct cost</td>
<td>1,686</td>
<td>1,696</td>
</tr>
<tr>
<td></td>
<td>morbidity</td>
<td>472</td>
<td>426</td>
</tr>
<tr>
<td></td>
<td>mortality</td>
<td>4,340</td>
<td>4,652</td>
</tr>
<tr>
<td></td>
<td>total COI</td>
<td>6,498</td>
<td>6,771</td>
</tr>
</tbody>
</table>

Conclusion: According to our estimation using 2 models, COI of breast cancer would be stable or increase. In spite of increase of mortality rate, average age of death of breast cancer would contribute to the decrease of mortality cost per capita. When making health policies these results should be taken into account.
ENHANCING SAFER BLOOD TRANSFUSION SERVICES NATIONALLY TO ENSURE PATIENT SAFETY
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1Quality Health, MSQH, Petaling Jaya, Malaysia

Objectives: To assess the effectiveness of hospitals compliance to established national standards for blood transfusion services.

Methods: This is a retrospective study of 136 hospitals nationwide that implements the national standards for blood transfusion services between 2009 to 2012. Blood transfusion service standards is one of the many standards that hospitals need to comply in order to be accredited by Malaysian society for Quality in Health- the Malaysian accreditation body for healthcare facilities and services.

Results: 124 (91.2%) hospitals achieved substantial compliance in the blood transfusion service standards. 12 (8.8%) hospitals achieved partial compliance against the same standards. None had non-compliance.

Conclusion: It was observed that the implementation of national standards across the healthcare system nationwide is achievable and effective in enhancing safer blood transfusion services.
PATIENTS AND FAMILIES EXPERIENCES TO IMPROVE CARE PATHWAYS FOR CHRONIC DISEASE AT THE END OF LIFE: THE DEVICE OF NARRATIVE MEDICINE

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1Crisp, Università Politecnica delle Marche, 2Health Care Regional Agency, Ancona, Italy

Objectives: The study has been carried out within a project funded by the Italian Ministry of Health concerning the development of care pathways for advanced heart failure and chronic obstructive pulmonary disease. The aim was to conceive and implement a tool for the collection of illness narratives of patients with a chronic disease in an advanced stage and their families, in order to improve care pathways.

Methods: The study included the following steps:

1) review of the national and international literature on palliative care and on illness narratives,
2) design of research questions for the narrative interview,
3) interviewers training, participants recruitment and conduction of the interviews,
4) analysis of the collected material. Particular emphasis was placed on the relational perspective, investigating how patients and their relatives perceive the disease and how they copy with it, how they relate with their “changing self”, the relationships within the family, social relations and the relationship with health professionals. The recruitment of patients was based on clinical criteria for advanced HF and COPD. The study involved 10 patients and 10 relatives (5 for each disease) in treatment at the University Hospital of Ancona. Narrative interviews were collected at patients’ home (separately for patients and caregivers) and lasted on average 30 to 60 minutes. The interviews have been transcribed and analysed through an interpretative grid.

Results: In all illness narratives the disease is described as a deep biographical rupture with the past life, which not necessarily coincides with the diagnosis, especially if the latter occurs when the symptoms are still silent and the consequences are short and perceptible. Clinical trajectories are often tortuous: frequently (70%) it emerges an underestimation of the symptoms presented and inappropriateness in the diagnosis or in treatments. The relationship with health professionals who are currently attending on patients is very good. The ideal health professional is described as characterised by professionalism, availability, mildness and closeness. In evaluating the quality of services the relational component assumes, therefore, a significant importance. The central reference for all respondents is the specialist. The GPs is consulted mainly for the prescriptions (40%) and for this reason patients consider them unwilling to pay attention to their health conditions (70%). The centrality of hospital specialists causes some discomfort because each hospitalisation or medical examination requires great organisational and physical efforts for patients. It should be also underlined that no one receives home health care and that there is a lack of structured interdisciplinary team for the supervision of patients. Illness narratives will be shared and discuss with health professionals in order to identify possible improvements.

Conclusion: In the case of chronic disease at the end stage the "cure" is to be understood as a "caring" process, aimed at improving or maintaining a good quality of life for both the patient and his family. Therefore, the design of health care pathways cannot avoid considering subjective experiences of the disease. Narrative based medicine can be a useful device to draw out participant’s account of a serious chronic disease as experienced by him, as well as to find out needs, resources deployed expectations and satisfaction with health services. This could be an innovative way of evaluating and improving health services for the end of life, involving patients and their families in the perspective of a co-production of health care pathways.
THE EVOLUTION OF QUALITY AND SAFETY: THE CASE OF THE CARE HOME
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2WMG, University of Warwick, Coventry, United Kingdom

Objectives: A shared vision across nursing homes is to provide high quality, holistic and integrated care. However, the associated strategy deployment may prove problematic without a shared understanding of what quality and holistic care is. In England, the Care Quality Commission (CQC) regulates all healthcare related services against a set of 26 outcomes, 13 of which are specific to care homes. Traditionally, care homes strive to meet the regulators standards but as the care model evolves to encourage active participation of residents, a contemporary approach to quality and safety is required.

The purpose of this work is to explore the perspectives of key stakeholders on quality and safety in the care home.

Methods: A case study approach was adopted and a charity run care home with a 20 bed capacity was recruited. Interviews were conducted with multiple key stakeholders including the care manager, the patient representative and relatives. Furthermore, observations were made of the quarterly relatives meeting and monthly staff meeting. Finally, documentary analysis was undertaken pertaining to quality and safety.

Results: Differences in perspectives of quality and safety exist between key stakeholders. Staff tend to describe quality and safety in relation to lagging outcomes measures such as harm and the process of risk reduction, placing greater priority on the operational activities that prevent harm and reduce risk. Whereas patients describe quality and safety in terms of the positive structural conditions to encourage safety such as the experience of an extended family.

Conclusion: Consequently, associated governance structures should reflect a comprehensive view; otherwise care provision will be suboptimal. Efforts to explore and understand multiple key stakeholder perspectives including the residents and their relatives would support care home organisations to deliver a more end user focused vision.
FROM RISK TO SAFETY: DEVELOPMENT OF A NEW INITIATIVE TO ASSIST CORRECT GAUZE COUNTING IN OPERATION THEATRE

Foonyee Chan 1,*, Ellen Wong 1, Hing Yu So 1
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Objectives: Retention of swabs (gauze) or surgical instrument was identified as the most frequently reported sentinel event by Joint Commission in 2010 and by Hong Kong Hospital Authority in 2011/12. A new surgical counting tool was designed to eliminate the swab-counting risk in operation theatres after a retained gauze incident in NTE Cluster (NTEC) of Hong Kong Hospital Authority.

Methods: Methods:

1. Establishment of a working group: a staff-initiate group consisting of experienced operation theatre managers, experts, nurses and the risk management team was assembled. It aimed at exploring a safe, effective but a low-cost tool which could replace the existing gauze rack. The new tool should facilitate accurate and rapid swab counting during operations, compromise with infection control, allow full visualisation by operation team and assist in blood loss estimation during surgery.

2. Design of a new system: The working group analysed the local incidents, reviewed international literatures, and studied the local near-miss incident during the trial of Sponge Accounting system. A local designed transparent-plastic gauze container, therefore, was developed. The working group also designed a swab holding trolley to facilitate the counting process.

3. Pilot and evaluation: Due to budget constraint, only two types of container (long and short raytec gauzes) and few holding trolleys were piloted for 6 weeks in early 2012. All scales of surgical procedures were welcomed in trial of the new tool. An evaluation questionnaire was distributed to surgeons, anaesthetist and nurses after pilot. Total 83 questionnaires were returned. 80% agreed the new system assist in blood loss estimation during operation, 60% agreed that the new system could reduce chance of counting error, 60%>68% agreed the new system was easy for clear counting, neat and tidy and saving time in counting. Some staff claimed that it was difficult to adopt two counting systems (gauze rack for abdominal swab and new tool) in a time during pilot. The staff also provided comment to modify the design of container and holding trolley.

4. Modification: Upon to the evaluation result and staff's feedback, the gauze containers were modified. The abdominal swab container was designed. A colourful long gauze container was used. The holding trolley was simplified. The modified gauze containers and holding trolley were fully implemented to replace the gauze rack in operation theatres in NTEC by phases in October 2012.

Results: Results: After the modification, the staff showed more acceptance of the new tool. An initial comment from the staff showed that the new containers could save their time and assist them much in estimating blood loss for very complicated emergency operation. The minor staff also felt happy for easy cleaning of swab trolley. The staff attitude towards the new tool became more positive. Another evaluation would be conducted in March 2013 for continuous improvement of new tool. Some hospitals from other clusters of Hong Kong Hospital Authority also showed interest of the new tool and could pilot in their operation theatres in 2013,

Conclusion: Conclusion: A success of a risk reduction program is not a matter of a small group of people. It is everybody's business in the organisation. Staff initiation, engagement and recognition is very crucial. With the efforts, input and participation of NTEC colleagues, our risk management team aims at twitching the painful incident from risk to a safer environment for our patients and staff.
THE PARTNERSHIP METHOD, SAFETY WALK-AROUND, PILOTSTUDY
Dorthe Doehl Poulsen¹,*, Birgitte Østergaard¹
¹Department of Surgery, Roskilde and Køge Hospital, Roskilde, Denmark

Objectives: At the department of surgery, Roskilde and Køge Hospitals, Region Zealand, patient safety is systematised on basis of the Danish Accreditation Model, DDKM 1, which includes 16 patient safety standards with appertaining guidelines. Managers and employees are working determinedly with the implementation of the guidelines, and the achievement of aims is evaluated continuously by a monthly gathering of data, by intern and extern survey and by system tracing. However, the employees express that patient safety walk-arounds have turned into a method with a primary focus on control opposed to dialogue and learning. It happens that managers often inquire about specific areas of patient safety, most frequently on the basis of DDKM 1 standards, but give no room for dialogue. This indicates that other or maybe undetected aspects of patient safety cannot be identified.

Methods: Questions: How can managers and employees work together, and with a starting point in clinical practice, identify areas of patient safety which are not included in the 16 patient safety standards?

Questions: How can the communication between managers and employees improve as a means to help identifying other or new areas within patient safety than the ones already encompassed in the DDKM 1 standards? Hospital managers, department managers, a patient safety ambassador, a quality consultant and the specialist of clinical nursing team up for a day with employees in the ward sections. They form partnerships and jointly carry out the clinical work and identify conspicuous areas of patiently safety regularly. 3 areas or challenges are prioritised. All partnerships meet with employees from the concerned section. Jointly, 2-3 areas are prioritised and hereafter plans of action are completed.

Results: In 2012, 2 patient safety walk-arounds where completed on the basis of this partnership method. On the whole, 35 areas of patient safety were identified – thereof 19 areas that were not encompassed in DDKM 1. Following evaluation showed that managers experienced the patient safety walk-around as a joint experience that created a common language. The dialogue became more personal and in-depth.

The employees experienced that a joint clinical practice gave the individual employee the opportunity of setting the agenda. The dialogue was constructive, there was more time to be present and the managers showed a greater interest in the daily issues.

Conclusion: By using the ‘Partnership Method’ is was possible for managers and employees to jointly identify areas of patient safety that are both encompassed in the DDKM 1 and points to other areas of focus with patient safety. Managers as well as employees expressed that the ‘Partnership Method’ greatly strengthened the dialogue between managers and employees.

References: Den Danske Kvalitetsmodel: Akkrediteringsstandarder for sygehuse, version 1. IKAS
STUDENTS IN NURSING AND MIDWIFERY AS "SECOND VICTIMS" IN HEALTH CARE
Eva Van Gerven 1,*, Martin Euwema 2, Walter Sermeus 1, Kris Vanhaecht 1
1Department of Public Health, 2Work, Organisational and Personnel Psychology, University of Leuven, Leuven, Belgium

Objectives: Recent studies show that serious adverse events occur in one out of seven patients. However not only the patient, but also the involved health care provider can be traumatised after such an event. In this case, the involved health care providers are referred to as “second victims”. Students in health care can become second victims as well.

Methods: A quantitative study was used to determine the prevalence of second victims among students nursing and midwifery and the impact of adverse events. The study was performed within 9 Dutch-speaking colleges in Belgium which provide a bachelor degree in Nursing and Midwifery. A web survey was via email and student intranet to all nursing and midwifery students.

Results: Almost one out of five of 970 bachelor students have personally experienced an adverse event in the last six months, of which 3% with a deadly outcome. 41% have experienced an adverse event within the team of which 8% with a deadly outcome. 56% says this had an impact on their professional life, 18% says it also impacted their personal life. 23% thinks daily about being involved in an adverse event.

Conclusion: Second victims can experience symptoms as stress, low self-esteem, sleeplessness, burnout, etc. Because of impaired functioning, they are more likely to make another mistake. The training coordinators of the participating colleges will be invited to discuss the results of this study during an information session.

Policy advise will be formulated so that support during internships of students nursing and midwifery can be organised accordingly. Students will receive more and appropriate support after experiencing an adverse event. This could prevent negative consequences such as stress, low self-esteem or leaving the education entirely. It is very important to provide support for students in health care who were involved an adverse event. Support is necessary to prevent more mistakes, impaired functioning or even leaving the profession/education entirely. We have to care for our health care providers if we want to care for our patients.
USING PATIENT COMPLAINTS AS PREDICTORS OF PATIENT SAFETY INCIDENTS

Helen L. Kroening 1, Bronwyn Kerr 2,3, Iain E. Yardley 4,*

1 Honorary Research Assistant, Royal Manchester Children's Hospital, 2 Associate Medical Director, Central Manchester Foundation NHS Trust, 3 Clinical Genetics, 4 Paediatric Surgery, Royal Manchester Children's Hospital, Manchester, United Kingdom

Objectives: Patients and their families are currently an underused resource in patient safety improvement. The aim of this study was to establish whether high-level patient safety incidents (HLIs) are predicted by patient complaints and whether analysis and monitoring of complaints offers an opportunity to prevent HLIs from occurring.

Methods: The study was carried out in a large, public-funded, specialist children’s hospital in the UK. All level 4 (potential or actual significant harm) and level 5 (potential or actual severe harm) incident reports received between April 2012 and September 2012 were identified using risk department records. All patient complaints between November 2011 and June 2012 were identified using the complaints department database. These date ranges were chosen to give a manageable number of reports to analyse and create a lead time to HLIs during which complaints could have been received. It also allowed the inclusion of only HLIs and complaints with a completed investigation process. HLIs were categorised according to the location and clinical service they occurred in and by the nature of the incident (e.g., medication error, staffing levels or communication errors). Complaints were categorised in the same way. A qualitative analysis was then carried out looking for common factors in HLIs and complaints occurring in the same location or service.

Results: Sixteen high level incidents and 52 complaints were identified and all were analysed. There was a significant mismatch in the location of HLIs and complaints. The paediatric intensive care unit generated the most HLIs (5) of any clinical area but received only 2 complaints. By contrast, the orthopaedic (10), emergency (6) and respiratory (5) departments received the most complaints but generated only 0, 1 and 1 HLIs respectively. One HLI occurred when an administrative staff member had not been replaced while on prolonged leave. Complaints from a patient about a delay in their investigations led to the discovery of 43 un-actioned radiological investigation requests. Although no patient harm was apparent, this was classified as a level 4 incident as there was potential for significant harm. The complaint leading to the HLI being reported had been preceded by six other complaints over a six-month period relating to delays in radiological investigations in the same department.

Another HLI (level 5) resulted from the severity of a child’s asthma not being recognised and acted on, leading to a cardiopulmonary arrest and significant hypoxia. Early warning scores had been ignored and no escalation of care initiated. Two further HLIs related to failures in timely recognition of critical illness. In the months preceding these HLIs, two complaints had been received from parents who felt that their children’s respiratory conditions had not been taken seriously and care not escalated appropriately. No other HLIs were preceded by complaints of the same nature. Similarly, most complaints did not give information that could have been used to avert a patient safety incident.

Conclusion: In some instances, complaints clearly signal problems with quality and safety of care and if acted on promptly could avert or mitigate high-level incidents. These complaints however are the minority and are not currently reliably identified.

For complaints systems to function reliably as “early-warning” systems for potential patient safety incidents, mechanisms to prospectively identify complaints that do signal critical failings need to be developed.
Objectives: The objective of the paper is to present the process and difficulties for building a national comparative quality indicator on thrombolytic therapy for acute ischemic stroke patients in France.

Methods: In 2012, the French National Authority for Health generalised a set of quality indicators (QIs) related to the management of acute stroke patients, after their experiment in a panel of hospitals. QIs evaluated the delay for a first imaging, the percentage of patients with appropriate administration of aspirin, with a re-education evaluation and its delay, the delay for a mutation to a rehabilitation care sector, and the quality and content of the medical record. As in other initiatives, the percentage of patients with an appropriate thrombolytic treatment was another QI we aimed at measuring. Appropriate thrombolytic treatment is the rate of thrombolytic treatment carried out on time (4h30 after the first symptoms) beyond eligible patients to thrombolysis. Date and time of first symptom and first medical contact data were necessary for the calculation, but happened to be difficult to record. One reason is that patients or their relatives are not always able to tell the precise time of symptoms. Instead, another indicator, less strict, but allowing comparison and benchmarking, was computed: number of patients’ records with date and hour of first symptoms. This QI also is an essential step to be able to measure the appropriate rate of thrombolytic treatment.

A data collection from 80 medical records for each acute care hospital was led.

Results: 497 acute care hospitals collected data and 25772 medical records were analysed. On the 22175 ischemic stroke records analysed, only 2035 (9.2%) where eligible for thrombolytic therapy, meaning that only about 6 data were available by hospital. There were 39% of patients’ records for which delay between first symptom and first medical contact was not computable. National mean of the QI measuring date and time of first symptoms is 76%, meaning in 24% of cases no information concerning the occurrence of symptoms was found in the medical record.

Conclusion: The rate of appropriate thrombolytic treatment is an essential data to assess the initial care of patients with acute ischemic stroke. However, data necessary to compute this QI are hard to obtain. Hopefully a better traceability of data will eventually allow the computation of this QI in order to compare hospitals. This is the reason why the National Authority for Health and professional bodies chose to publicly release data concerning traceability of occurrence of symptoms. There is still room for improvement for this criterion in France.
IMPROVING ON THE SAFETY OF EXPOSED INFANTS UNDER NON-ADHERENCE TO NEVIRAPINE SCHEDULES IN KABARWA HEALTH CENTRE III IN BUKEDEA DISTRICT-UGANDA

Stephen Okioror 1*, Goretti Amongin 2
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Objectives: INTRODUCTION

The national PMTCT program recommends that during post-partum, a mother who is eligible for ART i.e. CD4 cell count less than or equals to 350 or WHO clinical stage III and IV and has chosen either Breast feeding or replacement feeding, the infant should take daily Nevirapine (NVP) until 6 weeks of age. For mothers not eligible for ART and has opted for breast feeding, infants need to take daily NVP until one week after stopping breast feeding. (All our clients in care fall in this category). For those on replacement feeding, the infant takes daily NVP from birth until 6 weeks of age. All the above is what the program calls option A post-partum. The same is applicable for option B for infants. In Kabarwa Health Centre III, all exposed infants are on breast milk because of economic constrains. Fortunately, all the mothers are not eligible for ART. With the help of our data, most of the exposed infants who were enrolled in care had received NVP syrup but appointments were not followed. Some received the syrup once, other twice and stopped. This is not accepted by the standard because these children should take the syrup until one week after stopping breast feeding. To improve on the safety of the uptake of nevirapine among the exposed infants. To retain exposed babies in care

Methods: Intervention - During our quality improvement meetings, we identified some of the possible causes to the high drop rate:

1. Some mothers upon testing negative stopped coming for refills after 6 weeks (first PCR),
2. Some mothers were not clearly explained the duration of taking the medicine,
3. Stock out of supplies affected medicine intake,
4. Other staffs supplied the NVP syrup without documenting in the register,
5. Some staffs did not know the doses the children were to take.

The team then came out with some possible solution to the identified problem;

1. During health education and counselling sessions the mothers were explained clearly the importance of continuing with the appointment after 18 months of age.
2. With the help of VHTs, lost babies were followed and those found were brought back into the program.
3. The team also agreed that it was a collective responsibility to know how to fill the register by all the facility staff and the work should not be left entirely to the EID focal person alone.
4. Networking with other implementing health facilities also helped solve the problem of stock out of NVP syrup and also to minimise expiries from other health facilities.

Dosing charts were supplied by our implementing partners (BAYLOR) and now displayed on the wall. This has eased work.

Results:

<table>
<thead>
<tr>
<th>Month</th>
<th>Sept 11</th>
<th>Oct 11</th>
<th>Nov 11</th>
<th>Dec 11</th>
<th>Jan 12</th>
<th>Feb 12</th>
<th>March 12</th>
<th>Apr 12</th>
<th>May 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. expected for 5th visit</td>
<td>11</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>No. of infants who turned up for the 5th visit</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>%age.</td>
<td>18.2</td>
<td>16.7</td>
<td>0</td>
<td>33.3</td>
<td>50</td>
<td>60</td>
<td>40</td>
<td>75</td>
<td>83.3</td>
</tr>
</tbody>
</table>

Conclusion: Lessons
1. Continuous professional development within the health unit can play a role in solving simple manageable issues
2. Team work is a key for any success to be achieved
3. Networking with other health units can reduce unnecessary expiries of medicines
4. Job aids in health facilities can solve the problem of doubt especially in dosages
5. Community Participation and involvement is a key to better outcomes

References: References:
- Uganda National Paediatric ART guideline 2011
- Ministry of health exposed infant register
- Feeding algorithm for HIV exposed infants
RESPONSES TO THE YEAR 2011 MAJOR FLOOD INCIDENT IN THAILAND: A CASE STUDY OF A TERTIARY-CARE HOSPITAL IN BANGKOK

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Objectives: To explore issues, as well as preventive and corrective measures, related to patient safety and quality of care deployed by a tertiary-care hospital due to the disastrous flood incident in Thailand in the year 2011.

Methods: A case study was conducted on a 1400-beds, university-affiliated, tertiary-care hospital in download Bangkok. Data were collected by interviews with responsible hospital executives and review key documents related to the Thailand’s major flood incident during October to December 2011, including hospital plans, minutes of executive meetings, and patient-care statistics. Findings from different sources were triangulated for accuracy and reliability.

Results: The flood incident, which lasted around three months involving 65 out of 77 provinces nationwide and causing hospitals in or close to the flood areas to shut down. Although the flooding finally did not reach this hospital location, the incident eventually led to disruptions and potential disruptions of a number of key hospital supplies. Risks to patient safety were, therefore, reviewed and prioritised, particularly for those in intensive care units and those needing continuous hospital-based medication or interventions, such as chemotherapy and haemodialysis. A number of action plans were re-examined, and some were first-hand formulated. The hospital worked proactively with key suppliers and providers to ensure sufficiency of electricity, clean water, oxygen and gas, food, drugs and IV fluid, and critical medical supplies. Moreover, some 1200 medical and other hospital staffs along with their families living in or near flood areas were allowed to move into vacant hospital rooms, as they became reserve on manpower. Resource consumption rates associated with volumes of outpatient and inpatient services were estimated as plans for reducing high resource-consuming services were deployed step-by-step, starting with deferring elective surgery. A dilemma arose on whether, which and when patients should be transferred or stay with the hospital to ensure patient safety. Eventually inpatient transfer to outside hospitals was prioritised based on criteria on severity and survival likelihood. A dedicated call center was also established for coordinating patient care and referral. A total of 51 inpatients were transferred with no death during transfer, while the hospital admitted 29 referral patients during the critical period. In-hospital mortality rates remained stable during the period. The hospital’s emergency department remained open and kept fully functional throughout the period of the flood incident, however, since many other hospitals in the city area needed to shut down. Nonetheless, after the event, the hospital has decided to reformulate a new systematic approach to deal with major disruptive events, to manage the incidents and maintain continuity of critical processes.

Conclusion: In addition to quality management for daily operation, a hospital needs to have systematic business continuity plans to manage emergent major disruptive events to ensure patient safety.
EFFECTIVE USE OF QUALITY INDICATORS IN ANAESTHESIA: STRUCTURE AND PSYCHOMETRIC PROPERTIES OF AN EVALUATIVE SURVEY

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Objectives: The Francis Inquiry and NHS reforms pose quality monitoring as an important future focus of many organisations. Developing effective quality monitoring and feedback programmes for individual clinicians is necessary to support the revalidation agenda. Research suggests that local initiatives involving quality indicator monitoring and feedback to clinicians represent an effective quality improvement strategy. The success of initiatives is likely to be dependent upon clinician’s perceptions of their purpose and utility along with the reliability and credibility of indicators. We report a study to validate a survey measure designed to quantify clinicians’ perceptions of the effectiveness and acceptability of an individual quality monitoring and feedback programme. The underlying dimensionality of scales designed to measure effectiveness and context for effective engagement with the programme is explored.

Methods: The survey was developed and piloted by a multidisciplinary team comprising clinicians and researchers. 89 anaesthetists across 2 NHS Trusts completed the measure. Internal consistency was assessed using Cronbach’s α and t tests to ascertain item discrimination. To investigate the hypothesis that there would be identifiable latent factors underlying the scales, exploratory factor analysis was used to investigate the underlying survey dimensions with variables isolated into factors based on factor loading. Two separate analyses were performed to ascertain the latent factors underlying perceptions of quality indicators and feedback within the programme (Section C), and departmental climate (Section D). During development of the survey, three latent factors were hypothesised: quality indicator effectiveness, feedback adequacy and usefulness of information for improvement.

Results: Scale reliability analysis showed excellent internal consistency (α 0.91-0.97), particularly supporting grouping of items pertaining to perceived effectiveness of quality indicators and feedback. In the first factor analysis, which addressed the scales designed to measure perceived effectiveness of the quality monitoring and feedback programme, 2 latent variables were identified, explaining 80% of the total variance. These were defined as: “Presentation of data” and “Usefulness of data to achieve quality improvement targets”. These findings were consistent with 2 of the 3 proposed survey dimensions. In the second analysis, the scale “Perceived local departmental climate for effective use of feedback” was examined resulting in 3 latent variables, explaining 66% of the total variance. Based upon interpretation of high-loading items, these were defined as: “Open culture for proactive data use”, “Data Interpretation” and “Knowledge for measurement driven improvement”.

Conclusion: This study supports the validity and reliability of the survey constructs. It is possible to measure multidimensional concepts such as perceptions on performance feedback using multi-scale items. Exploratory factor analysis suggests that departmental climate for effective use of feedback is multidimensional; comprising the need for an open culture for constructive use of data, capability for effective periodic review and interpretation of data from quality indicators and clinician knowledge and skills for using the data effectively to drive improvement. This survey represents an important tool in the analysis of feedback initiatives, aiding the identification of key factors to tailor the design of future interventions and promote effective, actionable feedback from quality indicators to improve care processes and outcomes.
RISK-BASED REVALIDATION OF WHO? THE SEARCH FOR “HIGH-RISK” PHARMACY PRACTITIONERS
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Objectives: In the United Kingdom, the Department of Health has proposed that the health care professions arrange periodic revalidation of their members’ fitness to practise. A key principle of such a scheme is that it should be proportionate to the level of risk that it addresses. However, this proposition raises a question for the implementation of risk-based revalidation: how should the relative risk of registrants be assessed? Our objective was to investigate how high- and low-risk pharmacists might be distinguished in practice.

Methods: We carried out two studies. In the first, we conducted semi-structured interviews with thirty-two stakeholders (pharmacy staff, managers and service users) to obtain their views about the nature of risk in pharmacy practice and the characteristics of high- and low-risk pharmacists. The interview data were subjected to template analysis in order to elicit qualitative themes. These were supplemented by risk rankings of 12 fictitious pharmacists from a card-sorting exercise conducted during the interview. In the second study, we used both the interview data and findings from previous work 1 to create a postal questionnaire assessing the presence and level of practitioner risk factors. This questionnaire was administered to all registered pharmacists in Northern Ireland. Data from returned questionnaires were subjected to multivariate analyses of variance in order to establish the pattern of risk factors across the workforce.

Results: In the first study, three main themes were generated from the interview data: individual characteristics; task characteristics; and organisational characteristics. The ranking scores identified pharmacists trained outside the United Kingdom as being perceived to be particularly high risk; however, the level of risk was proportional to the extent to which the country of training differed from the United Kingdom in terms of pharmacy systems and cultural norms. In the second study, a main effect of pharmacist role was found [F (20, 818) = 6.06, p < 0.001, Wilks’ lambda = 0.76], such that some risk factors were more prevalent amongst community pharmacists, while others were more prevalent amongst hospital pharmacists. However, interactions were found between role and other pharmacist characteristics, including the level of seniority and level of patient contact.

Conclusion: The findings from the two studies suggest characteristics of pharmacists that could increase their level of practice risk; for example, having direct patient contact or being trained overseas. However, our work also highlights contextual factors that complicate attempts to identify high-risk practitioners. These include the limited availability of demographic and performance data about pharmacists, as well as variation between pharmacy employers with regard to the handling of fitness to practice concerns. With this in mind, the implications of our work are two-fold. Firstly, the findings provide an initial framework for assessing fitness to practice risk factors. Secondly, they indicate ways in which the data collected by pharmacy employers, educators and regulators can be used to inform decisions about the targeting of regulatory resources.

DEVELOPMENT OF PATIENT SAFETY CULTURE SURVEY ANALYSIS FRAMEWORK USING THE ADAPTED MSI PATIENT SAFETY CULTURE SURVEY 2007

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Objectives: Create an analysis method for the Patient Safety Awareness Survey, adapted from the Modified Stanford Instrument (MSI-2007), as used by the Accreditation Canada International and translated to Brazilian Portuguese. The MSI Patient Safety Culture Survey is designed to capture staff perceptions of patient safety culture in their healthcare organisation (ref 2). It consists of an inquiry on the perceptions and opinions of the institutions personnel about patient safety awareness with questions related to leaders’ actions on safety, team work, distressed, work satisfaction, work conditions and safety environment. The survey evaluated the level of accordance to each subject.

Methods: The survey was translated and adapted to Brazilian Portuguese and applied to all personnel working at our Organisation two major units, comprising around 110 survey subjects. The Instituto de Oncologia do Vale is an outpatient cancer center with facilities in three cities in São Paulo State, Brazil. The results were analysed in three different ways: globally; for each unit; and for each unit according to working area:

a) patient care or
b) administrative personnel.

Surveys were applied during 2011 every three to four months, for a total of four surveys, as part of our Biannual Strategy Deployment for Patient Safety (Hoshin Kanri).

Answers were classified as 1 (totally agree) to 5 (totally disagree). In order to better identify the topics which might need to be worked on, we established a colour system to identify strengths and weaknesses of our condition: blue, yellow and red; from good perception of patient safety requirements (blue); average perception (yellow); and poor perception (red: attention required).

Results: The colours system used to grade the answers allowed us to easily detect the problematic areas among 140 items analysed by the survey. Effort in analysis improvement could be directed to these areas specifically, saving us time and useless work. The division of our staff in two mains categories provided a more realistic approach to the areas which needed to be worked on or not. We used a colored framework (too large to be displayed here, but will be available as A3 hand-out) to identify areas requiring attention and this framework was tied to our value stream action plans.

In the first survey we had 52 areas requiring attention, then dropped to 19, again to 15, and finally 12 on our final survey. Noteworthy, these last 12 areas were all graded as average and most of them reflected problems outside our own value stream maps (ref 1).

Conclusion: The survey reflected the continuous understanding and the increasing strength of patient safety awareness throughout the organisation. The evaluation method clearly pointed areas for improvement, and supported actions in order to understand and improve safety into specific organisational areas and sites to act upon, when needed.

References:
2. MSI Patient Safety Culture Survey 2007; accessed at:
   http://www.yorku.ca/patientsafety/psculture/questionnaire/MSI%20version%202007_FINAL.pdf
CONTINUOUS MONITORING OF PATIENT SATISFACTION IN AMBULATORY SURGERY PROVIDES CLUES FOR IMPROVING QUALITY OF CARE
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Objectives: An on-going prospective questionnaire survey, initiated in November 2012, aims to guide care providers at all levels in an ambulatory surgical unit on specific areas for improvement. Patients’ expectations in a same-day surgery ambulatory unit may vary substantially from those in an overnight-stay hospital surgery. In a short span of time, the patient must receive the adequate information to enable trust and confidence towards the health system, as well as reduce his/her anxiety regarding the surgical procedure itself, and this sets a major challenge (1).

Methods: A modified version of the Picker Patient Experience questionnaire, adapted to the activities in this specific unit, was posted 3 weeks after the patient’s discharge during a period of 8 consecutive weeks. All patients undergoing same-day surgery in this unit were included in the survey. The questionnaire contained 47 items assessing patients’ degree of satisfaction. Each item was coded for statistical analysis as a dichotomous “problem score”. Regression analysis was performed using a logistic multivariate model.

Results: Overall response rate was 57% (96/168). Among those, 11 refused to fill out the questions due to bad health, unwillingness to participate, or not speaking French, resulting in the 84 true respondents (54%) over 8 weeks of monitoring. There was no effect of age or gender on the satisfaction outcomes. Although all patients were satisfied with the overall care (32% excellent, 39% very good, 29% good), dissatisfaction related to waiting times between admission, operation and discharge was noted, with 24% not having been informed about a possible delay in schedule of surgical procedure. Nine per cent answered “No” or “partially” to the item “surgeon or doctor’s answers to patient’s questions were clear” which was a major determinant in explaining patient’s feeling of not being treated safely (CI: 1.6-5.8; p-value<0.001). Furthermore, 44% disapproved with the item “surgeon or anaesthesiologist explained clearly how patient would feel after surgery” which was significantly related to the patient not sure about recommending this hospital to friends/family (CI:0.3-1.6, p-value=0.004).

Conclusion: These findings highlight the need for improving communication strategy and skills to ensure that the patient knows what to expect. Accurate preoperative information enhances trust and confidence, thereby higher patient satisfaction with the care rendered. Obviously, there is room for improvement as far as communication is concerned.

References: Lloyd, RC. Improving Ambulatory Care Through Better Listening. J Ambulatory Care Manage.2003;26:100-109
THE EFFECT OF BUNDLE CARE TO DECREASE THE MICU CENTRAL LINE ASSOCIATED BLOODSTREAM INFECTIONS
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Objectives: The results of the study will help to understand and find evidence to support the central line bundle intervention to decrease the central line associated bloodstream infection (CLABSI).

Methods: The CLABSI is one of the healthcare associated infections. The central catheter usually uses as vascular access for medication, parental nutrition and hemodynamic monitor. Although these catheters can provide clinicians many therapeutic benefits, infective pathogens also can invasive into body through these central catheters and induce subsequent unnecessary infection. Therefore, we should pay much attention on the CLABSI. The blood stream infection rate of medical intensive care unit of Kaohsiung medical university hospital was increasing progressively during 2011 Jan- May with average rate (4.7‰). Therefore, we start our central line bundle intervention to reduce the CLABSI since 2011 September. The principles of bundle intervention were included:

(1) hand washing,
(2) maximal barrier precautions (head to toe),
(3) skin preparation with 2% chlorhexidine,
(4) avoidance of femoral insertion sites,
(5) dressing was changed every 48 hours if using a gauze dressing and every 7 days if using a transparent dressing, (6) daily review of line necessity with prompt removal of unnecessary lines by doctors and nursing staff.

Results: After the bundle care intervention started on 2011-September, the average CLABSI rate to date was decreased from 4.7‰ to 2.76‰. The duration of catheter use was decreased from 6.7 days to 5.8 days. The incidence of central catheter was also decreased from 62.1% to 54.66%.

Conclusion: With training course, education, simplified check list and visualised illustrative card, our team could be familiar and correct implemented bundle care. One of important element in this project was organisation support made inter-team with good interaction. The essential factor was physicians and nurses assess necessary in central venous catheter. We used positive feedback and announce CLABSI rate immediately to enhance staff felt a part of team. Our results had shown bloodstream infection (BSI) bundle care can decrease the CLABSI rate of medical ICU effectively. Furthermore, the BSI bundle care was applied to all ICUs of our hospital successfully. We hope that the BSI bundle care can be applied to all our hospital wards, including operation room and emergency room.
EXCEPTION REPORTING IN THE FRENCH HOSPITAL QUALITY AND SAFETY INDICATORS FRAMEWORK: DISCRETIONARY EXCEPTION REPORTING OF CHRONIC HEMODIALYSIS PATIENTS
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Objectives: We adapted the UK Quality and Outcomes Framework exception reporting concept to French hospital quality and safety indicators (QIs) and studied the impact of exempting patients from reporting on the results of chronic haemodialysis quality indicators.

Methods: In 2012, 10 QIs assessing quality of hospital care in chronic haemodialysis were generalised at a national level and publicly reported by the National Authority for Health (HAS). Data required for each QI calculation were obtained using retrospective review of 60 patient medical records randomly selected in 304 hospitals (14507 records were analysed). To accommodate the fact that not all patients fit into population averages, nephrologists were permitted to use their clinical judgment to remove inappropriate patients from achievement calculations for all QIs. Exception reports guidance notes were given to doctors. For each hospital and each QI we calculated the exception reporting rate (ERR) as the number of excepted patients divided by the number of eligible patients. The overall rate for a hospital was obtained by summing exceptions for all QIs and dividing by the sum of eligible patients. The impact of exempting patients from reporting on the results of chronic haemodialysis QIs was studied using adjusted odds ratios (OR) relating selected patient characteristics (age, gender) for binary QIs. To account for within-hospital correlation and the hierarchical structure of the data, we used generalised linear model and generalised estimation equations to estimate the parameters of the model. We compared the results of composite quality scores using adjusted linear mixed model.

Results: The median ERR across hospitals was 7.7% varying from 7.6% for “dialysis prescription orders” to 8.2% for “monitoring of iron status in patients taking erythropoiesis stimulating agents”. The median ERR across all 10 QIs was 3.8% (min 0% max 100%) (Inter-quartile range 0-10.1%). Considering the impact of exempting patients from reporting on QIs results we found that “exception reported patients” (ERP) had significantly poorer results than “average patients” (AP) for 6 QIs: “anaemia management”, “nutrition management”, “vascular access”, “dialysis adequacy”, “laboratory tests”, “dialysis prescription orders” (table). The first 4 QIs are publicly reported excluding ERP from calculations. On the contrary, the 2 others are publicly reported including ERP (ERR = 7.7%). Collected during data medical record review, reasons for exception reporting were logistical and clinical (contraindication or intolerance, patient unsuitable).

<table>
<thead>
<tr>
<th>QI</th>
<th>Unadjusted QI - AP</th>
<th>Unadjusted QI - ERP</th>
<th>Adjusted OR for binary indicators - p values for composite scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaemia management OI</td>
<td>65</td>
<td>51</td>
<td>1.4 (1.3-1.6)</td>
</tr>
<tr>
<td>Nutrition management PI</td>
<td>78</td>
<td>67</td>
<td>1.4 (1.1-1.8)</td>
</tr>
<tr>
<td>Vascular access PI</td>
<td>87</td>
<td>76</td>
<td>1.5 (1.3-1.8)</td>
</tr>
<tr>
<td>Dialysis adequacy PI</td>
<td>79</td>
<td>65</td>
<td>1.6 (1.4-1.8)</td>
</tr>
<tr>
<td>Laboratory tests PI</td>
<td>75</td>
<td>65</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Monitoring of Ca-P product PI</td>
<td>89</td>
<td>85</td>
<td>1.2 (1.0-1.5)</td>
</tr>
<tr>
<td>Monitoring of iron status in ESA+ patients PI</td>
<td>74</td>
<td>76</td>
<td>0.9 [0.8-1.1]</td>
</tr>
<tr>
<td>Serology for hepatitis PI</td>
<td>88</td>
<td>85</td>
<td>1.1 [0.9-1.5]</td>
</tr>
<tr>
<td>Dialysis prescription orders OI</td>
<td>77</td>
<td>68</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Access to trans-plantation PI</td>
<td>70</td>
<td>72</td>
<td>1.0 [0.8-1.2]</td>
</tr>
</tbody>
</table>

PI=Process Indicator / OI=Outcome Indicator

Conclusion: Exception reporting could be a good strategy to engage hospital physicians in quality improvement. Indeed, the provision to exception report enables them to exempt “non-average patients” from calculations for mandatory publicly reported QIs. In addition, it could protect patients from inappropriate or over-treatment. At last, data collection is facilitated and less time consuming. The important variability of ERR across QIs could reflect either a gaming mechanism or insufficient exception reports guidance.
REDUCING RECORDED CENTRAL VENOUS CATHETER DISLODGEMENT INCIDENTS AND THE UTILISATION RATE IN THE NEUROSURGICAL INTENSIVE CARE UNIT

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Objectives: The central venous catheter was used for injecting high permeability drugs and monitoring the hemodynamic status. The utilisation rate of central venous catheter was approximately 61.8% to 77.3% and the indwelling duration was about 5 to 7 days in our neurosurgical intensive care unit. The dislodgement rate was 0.85% to 1.54% during May 2010 and October 2011. The incident occurred once per month in average. The integrated care model, developed by our ad hoc group, using the resources, decreased the average dislodgement rate of the central venous catheter to 0.5% or less, and, accordingly, reduced the usage of central venous catheter.

Methods: The ad hoc group was set up in November, 2011, and expected to reduce central venous catheter dislodgement rate by using the resources integrated care model, as well as reduce the usage of the central venous catheter. The project period was from November, 2011 to May, 2012. In our unit, the possible reasons of the central venous catheter dislodgement incidents were:

a) catheter is overloaded and indwelling length is not appropriate,
b) patients self-extricate the catheter
c) the catheter is not well-fixed,
d) the lack of the communication platform for health care providers to discuss the purpose of catheter replacement and to review the current situation of the catheter dislodgement.

Interventions are as follows:

a) standardise the fixed method and length of a central venous catheter and picture with this standardised procedure retained at the nursing station or the car’s computer desktop,
b) provide the administration of sedation, protection constraints, or removal of catheter according to individual patient and specific disease,
c) reconfirm the position and the fixed sutures of the catheter during every shift transition, and
d) set the shift whiteboard, mark a fixed position, and record the days of the central venous catheter replacement; medical team communicate and discuss the medication and the goal of therapy which are related to the necessity of catheter replacement daily

e) use the central venous catheter usage and monitoring record, and nurses assess the purposes, bleeding / hematoma situation, fixed suture condition, dressing, and obstruction of the central venous catheters, daily, (vi) produce ICU indicator management traffic light posters, posted in front of the nursing station, and display the accumulative days without dislodgement and the monthly utilisation rate of the central venous catheter.

Results: During November, 2011 and May, 2012, the central venous catheter dislodgement rate was 0%, and the utilisation rate was about 38.9% to 56.6%. when applying to other ICU, till September 11, 2012, the accumulative days without central venous catheter dislodgement are344 days in our unit, and the accumulative days without central venous catheter dislodgement are 268, 275, and 779 days respectively in other adult ICUs.

Conclusion: By repeated propaganda and team communication, the health care team confirmed the important items and the goal of treatment during the project implementation. The purpose of the project was achieved by the way of the teamwork. Our expectation is to keep using the resource integrated care model to improving the quality of medical care in the future.

References:
NURSING-INITIATIVE ASSESSMENT AND MULTIDISCIPLINARY COLLABORATIVE HIGH-RISK PATIENT CARE
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Objectives: To establish a simplified, real-time high-risk patient assessment, to strengthen the high-risk alertness and multidisciplinary communication & collaboration, to ensure the patient safety.

Methods: Purposively sampling was used. Multidisciplinary healthcare providers in a regional hospital of northern Taiwan were included. Nurses were the message-provider and other healthcare team members were as the message-receiver. And following approaches were implemented.

1. Integrated multidisciplinary consensus regarding the high risk criteria of nutrition, functional status, suicide/self-harm, smoking and discharge preparation into the nursing-initiative assessment.
2. Modified and integrated multidisciplinary workflow into hospitalised patient journey.
3. Purchased of wireless device (nursing information system, nursing mobile cart, smart phone) and built up hospital-wide Wi-Fi access environment.
4. Education on healthcare members.

Results:
1. A new Cloud High-Risk Nursing-based Assessment System (n-CHRNbAS) was set up. It’s operating easily and information transform automatically anywhere any time within the nurses performed monitoring. Nurses thought that the n-CHRNbAS makes nursing document simplified, and less interruption within care. The average nurses monitoring time decrease 6.33 minutes/patient/day, estimates total savings were 1,582.50 hours of monthly nurses work time in a 500 beds general hospital. Thus nurses can work efficiently, make the time return to direct patient care, and patient satisfaction elevated.
2. Physicians can search and read the patients’ data and information by diversified approaches like smart phone, nursing informatics cart, personal computer, or panel PC as available. It improves the communication, and sharing the real-time patient information among healthcare team members.
3. Strengthening the risk alertness of healthcare team members, the high risk initial screening assessment rates and reporting cases both increased. Multidisciplinary interventions and continuous follow-up were performed in timeliness.
4. The patient satisfaction improved, it’s 1.3% higher after intervention 2012.

(1) The nursing-initiative assessment and multidisciplinary collaborative high-risk patient care model was set up. The assessment information was encoded by nurses, and transporting automatically at anytime and anywhere, simultaneously, high-risk alert patient list were output.
(2) The system makes nursing document simplified, and less interrupts while nursing care. It strengthened the risk alertness of healthcare members, the high risk initial screening rates and reporting cases both increased.
(3) Multidisciplinary healthcare members were able to read the information by diversified approaches as available. It improves the multidisciplinary communication.
(4) Multidisciplinary interventions and continuous follow-up were performed in timeliness.

Conclusion: Nowadays, medical resources and nursing manpower are important scarce resources. Nursing-initiative assessment and multidisciplinary collaborative high-risk patient care model is an effective strategy to identified the nutrition, functional status, suicide/self-harm, smoking, and discharge preparation high-risk patient in advance. Simplify nurses working and without repeated transcribing ensure patients’ data and information accuracy, and the automatically real-time transporting also improve multidisciplinary communication and collaboration. Finally, this improves the patient safety and nursing-friendly workplace.
SKIN CARE OF THE ELDERLY IN CHESHIRE HOME, SHATIN
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Nursing division, Cheshire Home, Shatin; Nethersole School of Nursing Faculty of Medicine, Chinese University of Hong Kong, Hong Kong, Hong Kong

Objectives: To investigate the effects of emollient therapy on skin conditions among the elderly in the long-term care setting.

Methods: It is a quasi-experimental study by comparing an intervention group against the control group. It was a 8 week study from Dec 2011 to Feb 2012. The targets were the elderly 65yrs or above in the Infirmary Unit of SCH. In intervention group, emulsifying ointment was used as body wash which was followed by an emollient mixture of emulsifying ointment, vaseline, aqueous cream and olive oil. In control group, commercial body wash and skin moisture products were used. The Overall Dry Skin Score (ODS) and the Dry Skin Area and Severity Index (DASI) are used as an assessment tools.

Results: The mean age of the subjects was 81.62 ranging from 65 to 97 years. 58 participants completed the study with 30 and 28 of them in the intervention group and the control group respectively. Most of them were female and totally ADL dependent. Before the intervention, more than half of the subjects had mild to moderate skin dryness, especially on the lower extremities. Only a small number of them had severe skin dryness problems. By comparing the ODS scores between the two groups at different time points, there was significant improvement in the skin condition of the subjects in the intervention group at the end week (p=0.034 by Mann-Whitney U test). The DASI of the intervention group had dropped dramatically indicating that the skin conditions of the subjects in the group were greatly improved. However, statistical difference between the intervention and control groups was only noted in the left hands.

Conclusion: There are findings which suggested that emollient therapy was effective in improving skin hydration of the elderly. However, the study was limited by small sample size, so caution should be taken in the interpretation of the findings.
INFORMATION TRANSFER AND COMMUNICATION DURING THE MORNING ROUNDS IN SURGICAL DEPARTMENTS: AN OBSERVATIONAL STUDY ON THE USE OF SBAR
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\textsuperscript{1}Department of Public and Occupational Health, EMGO Institute for Health and Care Research, Amsterdam, \textsuperscript{2}NIVEL, Netherlands Institute for Health Services Research, Utrecht, Netherlands

**Objectives:** To study the structure and completeness of the information transfer between nurses and physicians during the morning rounds on surgical wards after the implementation of the SBAR-communication tool.

**Methods:** In collaboration with the care professionals, we adjusted the SBAR-tool (Situation, Background, Assessment, and Recommendation) for use in the participating surgical wards. The tool was implemented amongst the nurses of three surgical wards in Dutch hospitals. Presentations about the background and the use of the SBAR-tool were given, along with example cases. The nurses then received a pocket-size SBAR-card describing the relevant topics to discuss during the morning rounds.

An observation protocol was developed to observe the use of the SBAR-tool during the morning rounds. The observation protocol consisted of two different parts; the first part was about the process of the morning rounds. To illustrate, information was collected on who takes the lead during the rounds and whether the care professionals participating in the rounds gave their opinion about the suggested treatment. The second part of the observation protocol included the topics of the SBAR structure and whether they were discussed for each individual patient by the care professionals (physicians and nurses). Observations of the morning rounds were done approximately once a month on the three surgical wards from September 2008 until September 2009. Descriptive statistics were used to analyse the results.

**Results:** In total, 43 morning rounds were observed in which 719 patients were discussed by the care professionals that participated in the rounds. The observations showed a substantial variation in the way the morning rounds were conducted between the hospitals, such as the average time per patient (range 2-21 minutes) and the performed tasks. There were also similarities; in 36 of the 43 rounds one of the care professionals took the lead, usually the ward physician or the surgical resident, never the nurse. In 30 rounds there were (almost) no interruptions. During 17 rounds the nurses asked questions regularly and the participants gave their unasked opinion regularly during six rounds. The results of the individual patient observations showed that all the elements and structure of SBAR were discussed and used for 20 patients (3%). The Situation was discussed for 86% of the patients, the Background for 58%, the Assessment for 73% and the Recommendations for 84% of the patients. The specific timeframe for a required action was addressed for 32% of the patients and for 5% the actions were reported back for confirmation.

**Conclusion:** Although some elements of the SBAR were often discussed for individual patients by the care professionals, the SBAR structure was rarely used completely to structure the information transfer and communication between the nurses and the physicians. This finding may be explained by the existing differences between the three surgical wards, the force of habit during the morning rounds as well as the fact that the physicians rather than the nurses were leading the morning rounds.
RECIPIENTS OF HEALTHCARE AND NURSING SERVICES PROVIDED BY MUNICIPALITIES IN NORWAY FOR 2011
Solveig Marie Herbern 

Objectives: The data presented in this abstract are from the IPLOS register. The IPLOS register (IPLOS) is a pseudonymous register, containing detailed information about all applicants and recipients of health- and care services at home and in nursing homes in Norwegian municipalities over time. The objective of this abstract is to show the difference between the number of recipients of municipal healthcare services provided per 31.12.11 and the services throughout the entire year.

Methods: The user’s registered need for assistance in 15 different activities of daily life is used to generate a manageable representation of the relationship between the user’s healthcare needs and his or hers received services. The result is three levels of need of care that are used to categorise the recipients, this because the functional level scores in the IPLOS register is a minimum data set and does not cover all factors that affect needs for assistance. However, by standardising the 15 ADL measures with score values, the results can be used for statistical purposes, and to show the healthcare service needs for groups of recipients (i.e. statistically robust groups). Because the recipients may have had several services during the course of the year the sum of recipients of the different service-combinations is higher than the total sum of recipients (463 263 vs. 335 070). The service-combinations “Both home-nursing care and home-based assistance in daily living” and “Other home-based services” are based on the services the recipients receive throughout the year. A recipient that for example has received home-nursing care at one point, and then home-based assistance in daily living at another point over the course of the year will be portrayed in “Both home-nursing care and home-based assistance in daily living”, this recipient should ideally have been counted on each of the separate services. The result is that the service-combinations “both” and “other home-based services” is slightly overrepresented, but the problem is marginal.

Results:

<table>
<thead>
<tr>
<th>Recipients of healthcare and nursing services provided by municipalities per 31.12.11, together with flow through 2011.</th>
<th>Number of recipients per 31.12.11</th>
<th>Sum</th>
<th>Low/ limited need of care</th>
<th>Medium to high need of care</th>
<th>Extensive need of care</th>
<th>Undeclared need of care/ not relevant</th>
<th>Total number of recipients throughout 2011</th>
<th>Flow of recipients through 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>268 813</td>
<td>100</td>
<td>38</td>
<td>32</td>
<td>22</td>
<td>8</td>
<td>335 070</td>
<td>1.2</td>
</tr>
<tr>
<td>Only home-based assistance in daily living</td>
<td>43 346</td>
<td>100</td>
<td>63</td>
<td>21</td>
<td>10</td>
<td>6</td>
<td>45 321</td>
<td>1.0</td>
</tr>
<tr>
<td>Only home-nursing care</td>
<td>70 166</td>
<td>100</td>
<td>48</td>
<td>35</td>
<td>8</td>
<td>9</td>
<td>105 473</td>
<td>1.5</td>
</tr>
<tr>
<td>Both home-nursing care and home-based assistance in daily living</td>
<td>63 570</td>
<td>100</td>
<td>26</td>
<td>50</td>
<td>23</td>
<td>1</td>
<td>91 737</td>
<td>1.4</td>
</tr>
<tr>
<td>Other home-based services</td>
<td>48 300</td>
<td>100</td>
<td>49</td>
<td>22</td>
<td>9</td>
<td>21</td>
<td>118 197</td>
<td>2.4</td>
</tr>
<tr>
<td>Time-limited stay in nursing home with 24-hour care</td>
<td>9 199</td>
<td>100</td>
<td>13</td>
<td>41</td>
<td>41</td>
<td>5</td>
<td>54 122</td>
<td>5.9</td>
</tr>
<tr>
<td>Permanent residence in nursing home with 24-hour care</td>
<td>34 232</td>
<td>100</td>
<td>2</td>
<td>17</td>
<td>80</td>
<td>1</td>
<td>48 413</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Conclusion: There are 268 813 recipients of municipal health and nursing care per 31.12.11 in Norway, and 66 257 recipients more throughout the year. This represents a considerable number of recipients to the municipalities in Norway. One can also see that there is considerable flow through the “time-limited stay in nursing home” service compared to the other service categories; this is also the purpose of this service. In addition the table gives a good representation of the “care ladder” in the way that 80% of the ones with extensive need of care are in a permanent place in a nursing home, and 63% of the ones with limited need of care only have home-based assistance in daily living. And of totally 335 070 recipients of services through 2011, only 14 % lives permanently in a nursing home, this is a part of the governments goals, people should be able to live at home as long as possible.

References: The IPLOS register, Statistics Norway.
IMPACT ON THE PROFESSIONAL PERFORMANCE OF A SKILLS ACCREDITATION PROCESS BASED ON A PORTFOLIO MODEL: THE ACSA MODEL

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Objectives: To analyse the influence of the Professional Skill Accreditation Process on the healthcare professionals performance.
To compare the degree of compliance of individual objectives between professionals who haven’t initiated their professional skills accreditation process and those who have initiated or finished their accreditation process.

Methods:
1. Subject of study: healthcare professionals with an university degree
2. Scope: Andalusian Health Service (SAS)
3. Timeframe: January 2009 - December 2011
4. Sample size: 50332 healthcare professionals
5. Type of design: exploratory analysis
6. Instrument:
The individual objectives of the healthcare professional derive from their unit’s objectives and these reflect the Health System strategic direction. Therefore, nowadays, the degree of compliance of individual objectives is the most reliable sign for measuring the professional performance. The data related to the degree of compliance of individual objectives were obtained by SAS. The maximum score that can be achieved by a healthcare professional is 10 points.

The Andalusian Agency for Healthcare Quality (ACSA), accredited by ENAC and ISQUA, is an organisation which belongs to the Public Health System. ACSA has developed a voluntary Professional Skills Accreditation Programme to recognise the excellence of healthcare professionals. This programme is based on the professional skills assessment with a portfolio methodology. The data related to the accreditation of the professionals were obtained by Me_jora P, the Accreditation Programme web application.

Results: The following table shows the average score of individual objectives in professionals who haven’t initiated their professional skills accreditation process, professionals who have initiated it and in those who have finished it:

<table>
<thead>
<tr>
<th>Year</th>
<th>Professionals who haven’t initiated their professional skills accreditation process</th>
<th>Professionals who have initiated their professional skills accreditation process</th>
<th>Professionals who have finished their professional skills accreditation process</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>average score of individual objectives: 7,7044</td>
<td>8,2716</td>
<td>8,6574</td>
</tr>
<tr>
<td></td>
<td>standard deviation σ: 1,47406</td>
<td>1,23976</td>
<td>1,1211</td>
</tr>
<tr>
<td>2010</td>
<td>average score of individual objectives: 8,30502</td>
<td>8,72502</td>
<td>9,09739</td>
</tr>
<tr>
<td></td>
<td>standard deviation σ: 1,350476</td>
<td>1,079281</td>
<td>0,948633</td>
</tr>
<tr>
<td>2011</td>
<td>average score of individual objectives: 8,08397</td>
<td>8,53728</td>
<td>8,95986</td>
</tr>
<tr>
<td></td>
<td>standard deviation σ: 1,471831</td>
<td>1,217059</td>
<td>0,96178</td>
</tr>
</tbody>
</table>

P-value=0,00.

Professionals who have initiated their professional skills accreditation process have better results than professionals who haven’t initiated it. Professionals who have finished their professional skills accreditation process have the best results. The averages differences are statistically highly significant in all cases (confidence interval 99%).

Conclusion: The obtained results make evident the professional performance improvement in those professionals who have initiated or finished their professional skills accreditation process with the ACSA Model.
IDENTIFYING SURGICAL ADVERSE EVENTS IN OPHTHALMOLOGIC SURGERY THROUGH THE ANALYSIS OF RETURN TO THE OPERATING THEATRE AND RE-ADMISSIONS

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Objectives: to assess the performance of identifying adverse events associated with ophthalmologic surgery by the analysis of returns to the operating theatre (ROT) and readmissions (R), identified using the hospital computerised information system.

Methods: ROT/R occurring 30 days or less after surgery or discharge from a hospital stay in ophthalmology from April to July 2011 were identified using the hospital information system. An epidemiologist reviewed computerised charts in order to categorise ROT/R into: adverse event-associated (AE-ROT/R), non-adverse event associated, or undetermined ROT/R. All charts were then reviewed by an ophthalmologic surgeon. The proportion of hospital stays with ROT/R, and positive (PPV) and negative (NPV) predictive values of ROT/R categorisation into AE-ROT/R by an epidemiologist as compared to the surgeon's judgment (used as gold standard) were calculated.

Results: There were 37 (6.2%) ROT/R among 598 stays. The results of categorisation by the epidemiologist and the ophthalmologic surgeon are displayed below:

<table>
<thead>
<tr>
<th>Epidemiologist's categorisation</th>
<th>Surgeon's categorisation (gold standard)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AE-ROT/R</td>
<td>AE-ROT/R</td>
</tr>
<tr>
<td>Non-AE-ROT/R</td>
<td>Non-AE-ROT/R</td>
</tr>
<tr>
<td>In determined or Non-AE-ROT/R</td>
<td>In determined or Non-AE-ROT/R</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
</tr>
</tbody>
</table>

PPV was 82%, 95CI [48-98] and NPV was 92%, 95CI [75-99]. Adverse events were: mass remaining inside the interior chamber after surgery (n=3), haemorrhage (n=2), nucleus luxation requiring the use of a fragmatome (n=2), retinal detachment (n=2), other (n=2)

Conclusion: our methods helps to identify serious (i.e. associated with readmission or reoperation) adverse events in order to assess their frequency and type. The good epidemiologist-surgeon reliability and especially the good NPV suggest that the identification of potential AE could be performed by the epidemiologist, therefore avoiding time loss for surgeons. This method may be of interest in the process of selecting AE to be analysed in a morbidity-mortality conference, and could provide an indicator of quality in health care useful to assess the efficacy of improvement measures identified by the morbidity-mortality conference.
USE OF TEAM DEBRIEFING TO IMPROVE TEAMWORK IN THE OPERATING ROOM

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Objectives: Crew Resource Management (CRM) and Medical Team Training (MTT) have contributed to a reduction in adverse events. CRM and MTT are perceived as intensive interventions with a high impact on the work floor. As both are complex time consuming interventions, the CRM concept was used to develop a team briefing and debriefing to improve teamwork and communication thus reducing the number of incidents in the operating room (OR). The post-operative debriefing is important to discuss incidents and is therefore the focus of this study.

Objectives: To study if and how the postoperative debriefing was performed and how actual usage could be enlarged to improve teamwork and communication and enhance patient safety.

Methods: Evaluative study design. Surgical team members from five hospitals were asked to complete a questionnaire and state their opinion on the current situation regarding the debriefing. The questionnaire consisted of two parts. The first part comprised questions to elicit information on content and format of the debriefing, and if and how the information was registered. The second part consisted of questions on if and how the information gathered could be used to improve surgical processes. Most questions were dichotomous (yes or no). Some questions enabled respondents to provide additional information to point out anomalies in the debriefing process and share their thoughts on how to optimise its output.

Results: 87 (54% response) questionnaires were completed, representing all OR disciplines. Preliminary results show that the debriefing takes place in 80% of cases with most team members present at the end of the surgical intervention just after wound closure. The surgeon is always present, the nurse anaesthetist in 92%, and the OR-nurse in 88% of cases. In all hospitals the anaesthetist is absent during most debriefings, which could be explained by the so-called ‘two-table’ system that is used in the Netherlands. The anaesthetists leave the OR to prepare the next patient for surgery. Although documentation of the debriefing was registered, in digital systems or mostly written down in patient records, only 11 respondents confirmed that the information resulted in actionable knowledge to improve safety. Causes mentioned: lack of attention by the surgical team (n=44), lack of communication about the outcome of the debriefing (n=51), lack of feedback improvements by management (n=52), and lack of time (n=14). Ninety per cent of respondents suggested using ‘event-based’ information as feedback to the entire OR-organisation and active participation of the OR-manager to enhance participation of team members. Most respondents (n=54) suggested to introduce formal multidisciplinary meetings to discuss the outcome of the debriefing, some (n=14) suggested to perform the debriefing at the end of the aesthetic procedure as this is a critical moment in the procedure. Most respondents (n=53) indicated that digital registration would be the best way to document the contents of the debriefing, preferably with a standardised list of subjects.

Conclusion: Although the debriefing is regarded as useful, there is room for improvement. Communication could be improved by discussing the outcomes in multi-disciplinary meetings and shared with the entire OR organisation. Active involvement of OR management enhances team members participation. For digital registration it is advisable to include subjects, which are seen as highly important in the local situation.
IMPROVING LIVER TRANSPLANTATION SURVIVAL RATE THROUGH PHARMACEUTICAL CARE INTERVENTION BY PHARMACISTS
TS Wang 1,*, TY Wei 1, TH Yeh 1, SH Sun 1
2Far-Eastern Memorial Hospital, Taipei, Taiwan

Objectives: According to information provided by Taiwan's National Health Insurance database from 2008 and 2009, the average 3 month survival rate for liver transplantation was 90.69% and one-year survival rate was 85.64%. Teamwork between all health professionals is important because organ transplant patients need long-term medical care. Immunosuppressant pharmacotherapy is a critically important aspect of post-transplant patient care. Our medical center is engaged in liver transplantations since 2009. This study was to construct a liver transplant patient care model by pharmacists to improve the quality of medical care.

Methods: This study constructed a liver transplant patient care model, including physicians, nurses, pharmacists, dieticians and other healthcare professionals. This study was led by one of the clinical pharmacist. All patients who had received a liver transplant from November 2010 to June 2011 were included in this study. Pharmacist provided inpatient and outpatient medication education for the patient. In addition, pharmacist provided consultation with physicians and nurses. The pharmacist designed clinical forms including patient drug records and medication diaries. The study outcomes measured were survival rate, rejection rate, infection rate, patients’ medication adherence, and physician, nurses consulting acceptance.

Results: There were 150 face to face medication education services provided to 10 liver transplant patients. Each transplant patient received on average 17 minutes (range 10-35 minutes) of medication education. For these 10 liver transplant patients, 3 month survival rate was 100%. Two of 10 patients (20%) were readmitted into the hospital due to infection and no one was admitted to hospital due to rejection. Unfortunately, one of 10 patients (10%) died eleven months post-transplant. All transplant patients received medication education from pharmacists, to monitor CNI drug blood concentration were up to 90% the proportion of the target range. For clinical pharmacy services, pharmacists provided 34 consultations, including dose adjustment (58.8%), drug information provision (32.4%), assessment of adverse drug reactions (5.9%) and assessment of drug interactions (2.9%). All consulting of physicians and nurses acceptance were 100%.

Conclusion: The liver transplant patient care model provided comprehensive patient care. The medical team communication and cooperation improved liver transplant patient care efficacy and safety. With the pharmacists’ participation with the transplant team, patient understanding of medication and treatment complications were enhanced. This substantially benefits the transplant patient care. Therefore, on-going liver transplant patient care model would improve the survival rate of transplant patients.
REGIONAL COMPARISONS OF A MORE HEALTH-ORIENTED HEALTH-CARE, QUALITY AND EFFICIENCY, COMPARISONS BETWEEN COUNTY COUNCILS 2012
Marianne Aggestam

1The National Board of Health and Welfare, Stockholm, Sweden

Objectives: In 2012 the National Board of Health and Welfare published for the first time a comparative study that identified and compared indicators in the health care system that promotes a positive health development from a patient perspective and equality of health development in the population as a whole. The regional comparison tries to answer how the health care system works with health promotion and early disease prevention, a reoriented health care that focuses not just on the technical or pharmacological treatment of a disease but, combines it with above mentioned aspects. Of special concern are actions that strengthen and maintain the physical, mental and social well-being, involvement and security, as well as patient's ability to reach positive effects in the treatment process. The aim in the long term perspective is to improve public health in a general sense and reduce mortality and morbidity and increase health-related quality of life for patients with an on-going treatment. Dimensions to consider within the health-oriented framework are; a positive health development for patients; an equal health development in the population as a whole; a positive health development for health care professionals to work more health oriented and finally a health oriented strategy to manage a more effective health care system. These dimensions are known and described in the Ottawa Charter for Health Promotion (1986) by the World Health Organization

Methods: Most of the Swedish health care is publicly financed. The National Board of Health and Welfare therefore need to continuously monitor and evaluate the health care system in public reporting. One way to monitor the health care system is to compare performance assessments on national and local levels. Regional and local comparisons is a method that have been in use since 2005 in Sweden and the comparisons are based on performance indicators published on a yearly basis. These indicators reflect different perspectives in health care for the purpose to encourage and to continuously improve performance.

Results: The report includes a selection of 30 indicators that reflect and compare results on a regional level, how professionals in the health care advice and support patients to reduce for instance, unhealthy habits like smoking that cause about 10 per cent of the burden of disease in Sweden. To monitor and treat risk factors to targeted groups of patients with diabetes or stroke is important in order to reduce complications. Some risk factors have been identified and are frequent among patients who are between 30 and 60 years of age treated for diabetes in primary care. More than half of the women and half of the men have obesity with BMI over 30. One out of four patients is smoking and physically inactive. That such a large proportion of patients with diabetes have these risk factors is worrying. To reduce smoking among patients affected by stroke is important since they can be affected by a larger risk of other cardiovascular diseases. About 45 per cent of smokers have successfully quit smoking three months after their stroke; the preventive actions need to be more considered.

Conclusion: The comparison is a first step in the development of how to monitor health orientation in the Swedish health care system. For instance, further development of indicators that reflect patient-reported outcome measures (PROM) concerning their health development before and after treatment and patient reported experience measures (PREM) concerning actions that reinforce empowerment are of interest in monitoring this field.

References: The Ottawa Charter for Health Promotion, 1986, World Health Organization, Ottawa, Canada
INTRODUCTION OF A TRIGGER PROGRAM TO AID RECOGNITION AND ESCALATION OF DETERIORATING PATIENTS IN GENERAL WARDS: EARLY OUTCOMES AT AN ACADEMIC MEDICAL CENTER IN SINGAPORE

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Objectives: To introduce a simple recognition and communication tool (the “Trigger”) to help patient care teams (nurse, junior and senior doctor) identify, assess and definitively manage potentially unstable patients on general wards.

Methods: Planning and implementation of this project followed the Rapid Improvement Event (RIE) method recommended by the NHS Institute for Innovation and Improvement, in use in our 1069-bed hospital since 2008. Pre-RIE core-team activities encompassed literature review, qualitative opinion survey and agreement on the scope of the project. The RIE itself was used to map process, identify barriers to recognising and managing deteriorating situations on general wards, widen the scope of consultation and agree action. The concept of a “Trigger” was chosen for its simple critical meaning and to link a mental process model around which to introduce communication tools, training materials, documentation and publicity. Core interventions included redesign of the hospital’s colour-coded vital sign chart and a short clinical pathway for notification and initial assessment of patients with abnormal vital signs (Triggers). Following a pilot on two general wards and following training of 80% or more of all relevant nursing staff the Trigger process was rolled out to all adult medical and surgical wards (non-ICU) from mid-September 2012. Trigger calls were made for the following reasons: respiratory rate ≥30, SpO₂ <93% with a FiO₂ >0.28, pulse ≥130, systolic blood pressure < 90 mmHg, acute change in mental status or serious nursing concern. We aimed to study early death or Intensive Care Unit (ICU) admission, defined as either outcome within 7 days of a trigger.

Results: Between October and December 2012, 274 Trigger events were documented in 250 patients, 244 of whom contributed outcome data. [19 patients triggered twice, one three times and one four times]. 70/244 patients (28.6%) died or were admitted to ICU within one week. 35/244 (14.3%) were admitted to ICU of whom 33 (13.5%) were admitted within 48 hours. 35 of 42 deaths occurred outside the ICU. Monthly rates of Trigger events were calculated per 1000 discharges and ranged from 3 per 1000 in non-High Dependency Unit general surgical patients to 85 per 1000 amongst haematology-oncology patients, with a hospital-wide rate of 20 per 1000 adult discharges. Respiratory rate was the most sensitive indicator of either outcome. No single trigger was less than 25% sensitive for ICU admission or death.

Conclusion: The RIE method addressed system issues relating to deteriorating patients. The Trigger pathway emphasised the afferent component of the rapid response process and was successfully implemented in clinical areas, as evidenced by hospital-wide rates. Success of the program is attributed to support from senior management, initiation and involvement of all key stakeholders from the start and a successful pilot. Sustaining the program will be the key to its success. Early outcomes of Triggered patients can be used to justify the implementation of this process.
IN SITU SIMULATION IN A PEDIATRIC EMERGENCY DEPARTMENT IMPROVES PATIENT SAFETY
Tommaso Bellandi 1,*, Sara Albolino 1, Marco De Luca 2, Francesco Mannelli 2
1Centre for Patient Safety, Tuscany Region Department of Health, 2Emergency Department, Meyer Children Hospital, Florence, Italy

Objectives: To analyse the variation in performance (technical and non-technical-skills) in the treatment of a paediatric patient in anaphylactic shock, through the use of an integrated approach with in situ simulation and systems analysis of critical incidents in the department of a children hospital.

Methods: Setting: the red room of the emergency department at Meyer Children Hospital in Florence, Italy. Meyer is an academic hospital and centre of referral for the Regional Healthcare Service of the Tuscany Region (3.5 mln citizens).

Participants: 15 doctors and 15 nurses distributed in 5 interdisciplinary groups, employed at the Department of Emergency of the Meyer hospital.

Intervention: A prospective study with the repetition of 5 sessions of high fidelity, in situ simulation of the scenario of anaphylactic shock in a paediatric patient, before and after a systems analysis of critical incidents (Vincent, 2010) conducted on the case studies treated during simulation. At the end of each scenario a structured debriefing was performed regarding the observed shortcomings in technical and non-technical skills, assessed through the use of the protocol of the World Allergy Organization (2010) and the Harvard Children hospital approach to in situ simulation (Weinstock et al, 2005). Then a systems analysis was conducted on the issues raised by the errors that the participants reported using the hospital incident reporting forms. The analysis led to the development of improvement actions, including the definition of a specific clinical pathway for the treatment of anaphylaxis, the creation of a set of reminders in the patient record and also displayed on a poster in the red room. Once these actions were implemented, 6 months after the first simulation, the same doctors and nurses, distributed in different groups, performed a new simulation with a similar scenario of anaphylactic shock. The absolute number of errors committed before and after the intervention were compared by calculating the percentage change, or (pre error - error post) / pre X 100 errors. The Fisher exact test was calculated to test the statistical significance of the association between intervention and chance for error. Statistical analyses were performed using Stata / SE 12.1.

Results: Statistically significant differences were found between the performance of the groups before and after the systems analysis. The post groups showed a clear reduction of errors in prescription (p <0.001) and administration (p <0.001) of drugs for the management of anaphylactic shock (in particular adrenaline). The best result was obtained in the analysis of communication: no communication error in the 5 post groups (p = 0.0119), with an improvement in 100% of the groups analysed.

Conclusion: This study showed that the use of high-fidelity simulation in situ, combined with a structured analysis of critical incidents, can result in a significant improvement of the performance in the management of anaphylactic shock in a paediatric patient. This kind of intervention is time-consuming and requires trained instructors for in situ simulation and a system in place for patient safety management.

References:
THE IMPACT OF HOSPITAL CORPORATISATION OF GOVERNMENT PUBLIC HOSPITAL ON IT’S QUALITY
Atiek Heru Maryanti 1,*, M. Ahmad Djojosugito 2, Fatema Rachmat 2
1Biomedical Engineering, University of Indonesia, 2Biomedical Engineering, Biomedical Technology Postgrad Program University of Indonesia, Jakarta, Indonesia

Objectives: This research was based on a scientific question, weather a policy of corporatisation of a public hospital, will affect the quality of its service. The research is a preliminary research on how policies affect the cost and how the cost affects the quality. The research was done in one clinical department of a corporatized public hospital.

The background of the study is that, in Indonesia, as a developing country, which has a low coverage of health insurance, most of the patients (rich or poor) have to pay their own health care expenditure out of pocket. Since 2003, a policy of hospital corporatization of government public hospitals was implemented. In the corporatized hospital, the management give autonomy to the clinical department to use its revenue for additional incentive for doctors and nurses, as well as for procuring medical equipment, after considering the profitability of the equipment in accruing the department’s revenue. However there is a centralisation of financial administration in the administrative director. The aims of this policy was to enhance the clinical department to be able to achieve a better cost recovery in the department. With this policy clinical department may run their “private wing”. The government had an assumption that the autonomy policy to the clinical department can enhance a better quality (in public and private services).

Methods: Research was done in the department of cardiology of a corporatized public hospital, by reviewing the cost and the quality of the services, before and after the corporatization. The clinical and financial data, in the department of Cardiology, during one year of 2002 and of 2010 were reviewed. The review of the quality was in term of the input (efficiency of new medical equipment investment), of the process (punctuality of service) and of outcome (mortality rate, patient satisfaction and doctors satisfaction). Evaluation of the efficiency of service was done by calculating the unit cost of the service, by calculating the unit cost of each treatment. The cost of input was then compared with cost of the output.

Results: The findings showed that, the self-financing procurement of new medical equipment which was “profitable” to the service, which cause the availability of the desired equipment, can cause doctor’s motivation in providing a better service as well as enhancing the doctor’s satisfaction. In term of process, there were the better punctuality in the service especially the in private wing. In term of outcome, there was no difference in patient satisfaction; however there was a lower patient satisfaction in the private wing. However there was a better doctor’s satisfaction, even there was no significant difference in mortality rate. The relationship between the cost and the quality was still difficult to be identified, since there were a lot of factors affecting the cost and the quality.

Conclusion: The effect of corporatization was more on the motivation of the doctors which may cause the betterment of the quality of care. Unit cost calculation of the services before and after corporatization showed a better efficiency. The better quality, in term of doctor’s satisfaction and in term of the efficiency was also depicted. However the cost of the betterment of the quality still cannot be calculated.
LEARNER ENGAGEMENT IN PATIENT SAFETY ONLINE EDUCATION: FACILITATORS AND BARRIERS
Siobhan McCarthy 1,*, Gillian Walsh 2, Ann O'Shaughnessy 2, Ciaran O'Boyle 1
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Objectives: Application and integration of learning from patient safety education forms a major challenge (1). Educators are challenged to reflect upon “how they teach” and “what they teach” and to consider how this contributes to professional behaviour (2). Objectives were to reflect upon the findings of a process evaluation of a Patient Safety Online Programme for Doctors, to identify facilitators and barriers to learner engagement and application of learning.

Methods: The online programme consisted of five modules: introduction to patient safety; understanding adverse events and near misses; open communication; caring for the second victim and learning from adverse events and near misses. A pre and post online questionnaire measured knowledge, attitude, skills, safety climate and programme experience among basic specialist trainees of the Royal College of Physicians of Ireland. Sixty-three basic specialist trainees completed both pre and post questionnaires. Data was analysed using SPSS and a thematic analysis of qualitative data was conducted.

Results: Factors which facilitated learner engagement in the patient safety online learning programme were inclusion of case studies based on real life events, interviews with family representatives whom have been affected by medical error, interviews with medical representatives, use of video clips and interactive features. There were significant improvements (p<0.05) in respondents’ attitudes, knowledge and skills following programme completion. There were no significant changes (p>0.05) in respondents’ perceptions of safety culture following the programme.

Conclusion: Patient safety online education facilitates improved self-rated knowledge, attitudes and skills and can form an engaging learning experience. However, this research suggests that educational interventions need to target the culture of the training environment to help promote application of learning. Patient safety online education needs to be tied to practice based initiatives to help to reduce the potential effects of underdeveloped safety cultures on learned professionalism.

References:
APPLICATION OF A WATER SAFETY PLAN IN A HOSPITAL FACILITY AND ASSESSMENT OF ITS EFFICACY
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Objectives: The Water Safety Plan (WSP) methodology, which aims to enhance the safety of drinking water supplies, has been recommended by the World Health Organization since 2004. As there is a lack of systematic evidence for the effectiveness of WSPs in improving water quality and safeguarding health, the need for research has emerged. We describe the results of a three-year monitoring programme applied to the water distribution system of a Hospital in northern Italy where two cases of legionellosis had occurred. The objective was to evaluate both clinical outcomes and the efficacy of a water safety plan in controlling Legionella pneumophila colonisation of the hospital water system.

Methods: The plan involved: active clinical surveillance for Legionella pneumophila infections; implementation of an HACCP system to identify critical points in the various water networks and the type of sampling and analysis to be carried out; monitoring of the water system through systematic water sampling at the end-points of use of the hot water distribution system, in order to assess various chemical-physical and microbiological parameters, including Legionella pneumophila colonisation.

Results: Application of a check-list at the beginning of the study revealed several inadequacies at certain critical points: 41% of the water samples examined displayed Legionella pneumophila values between $10^3$ and $10^4$ CFU/L. Moreover, the concentration of free chlorine in the water of the hospital plumbing system was consistently < 0.2 mg/L, while the temperature of the water at the outlet points proved insufficient to control contamination (mean value: 37.7±5 °C). After implementation of the WSP in all parts of the hospital, including planned maintenance of the network and hot water hyperchlorination, the overall microbiological quality of the water was seen to have improved. Moreover, the number of transgressions regarding Legionella pneumophila declined steadily in terms of both concentration and the percentage of deficient outlet points. Another argument for the efficacy of the WSP is the fact that no cases of nosocomial Legionnaires' disease were recorded.

Conclusion: Identification of the sites and causes of inadequacy and the application of remedial intervention enabled the microbial quality of the water to be significantly improved over 3 years of observation. Moreover, the risk-management plan adopted appeared to discourage further cases of nosocomial legionellosis. The overall outcome therefore reveals the importance of WSP in providing safe water, which is vital to ensuring patient safety and reducing costs, in that waterborne infections increase morbidity, mortality, treatment costs and compensation claims, and prolong hospitalisation.
WORKFLOW DYNAMICS AND NURSES' MANAGEMENT OF INTERRUPTIONS
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Objectives: Recent studies suggest that health professionals working in a range of settings are interrupted frequently, and that this may lead to errors. Existing studies have generally framed interruptions as isolated, one-off events in which an individual is forced to switch from a ‘primary’ task, to a ‘secondary’ one, and, possibly, back again. Health professionals are thus viewed as ‘passive recipients’ of interruptions and the remembering of the interrupted task is seen as the key issue. This study examines how nurses actively manage interruptions within the flow of daily work. The research aimed to develop a deeper understanding of interruptions, and the strategies that nurses use to handle them.

Methods: Our ethnographic method combined unstructured observations and semi-structured interviews of nurses in three settings:

1) A Day Chemotherapy Centre,
2) Accident and Emergency; and
3) A Surgical Ward.

Around thirty hours of unstructured observations were conducted in each setting, and the researcher made free-text notes on a smartphone. He captured detailed data about observed events to provide a minute-by-minute account of nurses’ work. Interviews explored nurses’ perceptions of the work environment and the strategies they used to manage the workflow.

Results: Consistent with existing research, the study found that nurses do face frequent interruptions, from a variety of sources. Accident and Emergency was the most dynamic environment but nurses in all settings faced considerable challenges in managing the workflow. In contrast to other research, the study found that nurses were often managing multiple ‘active’ tasks when interrupted, not just a single ‘primary’ task. Nurses’ tendency to multitask, together with characteristics of existing and additional tasks, and other aspects of the work context (e.g. the availability of resources, the physical environment) played a crucial role in determining how they handled interruptions. Rather than being ‘passive recipients’ of these events, nurses actively managed them. They did this by switching between tasks at appropriate and convenient times (instead of always switching immediately after interruption), and by using other strategies such as delegation. The tasks that nurses switched to/from were often on-going tasks and few could be regarded as isolated, one-off events. Overall, nurses’ switching and task management behaviour suggested that rather than being solely concerned with performing the interruption (the ‘secondary task’), and resuming the original task (the ‘primary task’), nurses were concerned more generally with maximising the efficient use of resources – including their own time – to best manage the multiple, competing demands made of them. Such demands were thus far more extensive than the need to remember the interrupted task; nurses also had to plan, prioritise and make decisions. In addition, they used a variety of tools (including medical records and status boards) and strategies (including routines and heuristics) to help manage cognitive demands and to support multitasking.

Conclusion: Interruptions occur in a particular context. For nurses working in complex healthcare settings, this context is likely to be a busy and dynamic one, involving the management of multiple tasks. Nurses consider how to manage interruptions within this multi-task context, and decide how to maximise the use of resources to best meet the demands made of them. Those interested in designing safer healthcare systems that are resilient to interruptions, might take more account of context when studying these events. Interruptions need to be understood as part of the dynamic workflow, and considering them in isolation may not lead to workable solutions.
COMPARISONS OF HEALTH AND SOCIAL CARE FOR OLDER PEOPLE IN SWEDEN
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Objectives: Comparisons of health and social care for older persons in Sweden: Two different publications, two different target groups. In 2007, the Government commissioned the National Board of Health and Welfare, NBHW, to develop a system for comparisons in care of older persons. Potential users, users, families and relatives, care personnel, managers, private and public providers and local and national politicians should all have easy access to comparative data about service and care.

Purpose
The NBHW publishes two different reports. One report contains indicators with information on a local level and addresses the leaders and providers caring for older persons. The purpose is to stimulate the development in long-term care. The other report contains quality data in special housing and home-help care on a unit level. The data in the Elderly Guide is presented on the Internet and addresses older persons in need of health and social care as well as their relatives. The purpose is to provide comparable information about the different units including what they offer to accomplish quality in care.

Methods:
One report addresses the older persons in need of health and social care, the Elderly Guide and the other report, Quality in care of older persons, is directed towards the providers and politicians in charge. The possibility to describe, analyse and evaluate the development in care of older persons is to a large extent based on data from quality registers and national official statistics. To present information on a unit level, data is mainly gathered through a yearly survey, which addresses the different units in the country. The results of a national user survey that covers all municipalities in Sweden complement the data used in the two different publications.

Results:
The report Quality in care of older persons includes a selection of 35 indicators that reflect on and compare results between county councils and municipalities. It was obvious that the self-reported health had a great impact on most of the indicators. The Elderly Guide presents information about more than 2 600 nursing homes (95 per cent) and almost 2 100 home health services (86 per cent). The visitor can find information about units in any municipality in Sweden. The Guide contains a selection of 50 different indicators and the visitor can compare the results with other units within the municipality. Average data on a national level is also presented.

Conclusion:
The comparisons published in the report Quality in care of older persons contains national, regional and local data and is part of the development on how to monitor health and social care for the older persons in Sweden. A user friendly web site for older persons in need of health and social care is a work in constant progress. The content has been developed in collaboration with older persons that recently started to use home help care, also involving their relatives.
IMPROVING THE QUALITY OF HIV/AIDS SERVICES IN HOSPITAL-BASED SETTINGS: USING MULTIPLE QI TEAMS TO STRENGTHEN THE CONTINUUM OF CARE

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Objectives: Since 2005, the Uganda Ministry of Health (MOH) has implemented a national quality improvement (QI) program called the Quality of Care Initiative (QoC) for HIV/AIDS care. Initiated in 2010, the US Agency for International Development (USAID)-funded Strengthening Uganda’s Systems for Treating AIDS Nationally (SUSTAIN) project, managed by University Research Co., LLC (URC), supports 16 hospitals in the country to provide comprehensive HIV/AIDS services, including counselling and testing, care and treatment, prevention of mother-to-child transmission (PMTCT), and HIV-tuberculosis (TB) co-infection management.

HIV services are provided at multiple service delivery units within each hospital, including the antenatal care clinic, maternity unit, out-patient department, laboratory, and dedicated chronic care clinic for HIV-positive clients. SUSTAIN has been working with teams at all project-supported hospitals to improve systems and processes within and among each of these service delivery points with the aim of strengthening the continuum of care for people living with HIV.

Methods: Guided by the National Quality Improvement Framework, SUSTAIN initiated support for hospital teams to apply QI methods for performance improvement in November 2011. After SUSTAIN provided on-site training, each hospital formed multiple QI teams. These teams focused on improving enrolment into care for exposed infants, HIV-positive pregnant women, and clients accessing counselling and testing within the hospital. The teams also worked to improve treatment completion rates for tuberculosis and retention in care for HIV-positive clients.

Six to eight QI teams, each focused on a specific process within the HIV continuum of care, worked at each hospital. The multidisciplinary teams included healthcare workers from the key service delivery point and from other units involved in the process of care to be improved. In addition to each QI team, the hospitals also formed an integrated HIV service improvement team which provided oversight and coaching support to the QI teams. SUSTAIN conducted routine coaching visits to support the QI teams and monitor progress.

Results: In a period of 10 months, hospitals improved the proportion of HIV-infected infants less than two years of age initiated on anti-retroviral therapy (ART) from 58% to 79%. The proportion of HIV-positive women attending antenatal care who were enrolled into chronic care clinics increased from 34% to 79%. In addition, the proportion of patients who completed TB treatment improved from 50% to 60%, and patient retention on ART after one year improved from 64% to 82%.

Conclusion: Working within hospital settings where HIV services are provided at multiple points by several different teams presents unique challenges to ensuring the continuum of care for people living with HIV. Formation of multiple QI teams can improve linkages among hospital units, thus ensuring that HIV-positive clients have access to the required services for optimal clinical outcomes.
HOSPITAL PATIENTS INJURIES FROM FALL: RISK FACTORS & COST ANALYSIS
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Objectives: The purpose of this study is to verify risk factors and costs of falls and serious injuries suffered by patients in Brazilian Hospital.

Methods: This is a retrospective design to study risk factors and costs associated with serious injuries from falls, from January 2010 to March 2012. It was used risk analysis to study patient falls. To compare the risk factors between the fall patients with serious injury and the others who did not develop injury we use Fischer’s exact test, with a significance 0.05. For cost analysis we used the average cost and standard deviation classified by injury type.

Results: Incidence rate of falls in the period was 1.55 falls per 1000 patient-day. Regarding injury incidence, the rate of serious injury was 1.47% falls. The odds to elderly (over 60 years old) inpatient fall rate is 2.14 higher than the nonelderly. Comparing risk factors of faller patients with and without severe injury, it was observed that positive history osteoporosis (p. value 0.02) and prior history falls (p. value 0.05) was statistically significant when comparing the two groups. The cost analysis of the severe injuries connected to falls is neurological damage (1), musculoskeletal injury (5), fracture of femur (4) and wrist fracture (1). Each case was individually evaluated regarding its consequences. To study that cost data of everyday materials and medicines, use of equipment, tests, treatments and use of Prosthesis and Orthesis was collected. The general average cost was US$ 9,236.345 and the SD US$ 762.16 for the all Hospital Network. When was grouping by type, the cost of extradural hematoma by fall was US$ 8,880, the cost of femur fracture treated by hip Arthroplasty was US$ 9,644.315 and the SD US$ 886,7 and the cost of wrist fracture was US$ 9,184.72.

Conclusion: Injuries from falls in hospitals are a constant concern of the authorities in Health and Hospitals. Institutions working with Risk Management and Quality Program already include in their prevention plan this event. Even so its incidence is increasing. Besides the financial implications for the health institutions involved in injuries from falls, it is not possible to measure the implications for family and society regarding this outcome. This study shows a kind of approach of this complex problem and the importance of developing initiatives to control and improve the care process of this situation.

References:
4. Vass, C; Sahota, O; ET AL. Refine (Reducing Falls in In-patient Elderly) - a randomised controlled trial, Trials, 2009.
ORGANISATIONAL CULTURE ASSESSMENT ON RISK MANAGEMENT AND SAFETY IN HEALTH CARE. EVALUATION OF THE MEDICAL STAFF IN ACCREDITED HOSPITAL IN BRAZIL

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Objectives: To evaluate the organisational safety culture of medical staff at a private hospital in city of São Paulo, Brazil.

Methods: The study was conducted at a JCI Accredited and Re-Accredited private hospital with a cardiological focus with approximately 230 beds. This is a cross-sectional observational study. The assessment of safety culture was through AHRQ Hospital Survey on Patient Safety Culture questionnaire, translated into Portuguese, applied to the employee medical staff.

Results: 98 questionnaires were sent out. 38 (39%) were completed in the period between March and April 2011. Among these, 39% conduct their activities in several hospital areas, 24% in emergency, ICU 16%, 11% in medical clinic, 11% in other areas. 89% (34) work in direct care for the patients and 11% (4) perform administrative activities. 84% work more than 20 hours a week in the hospital. The percentage of positive responses according to each dimension of the questionnaire is shown in Table 1.

The overall safety of patients was considered excellent by 24% of respondents, 63% very good and 13% acceptable. None of the respondents considered it poor or failing. The number of events reported by interviewees in the 12 months preceding the survey were 0 (none) to 84%, 1 or 2 to 8% and 3 to 5 for the remaining 8%.

Table 1. Patient Safety Culture Composites

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<table>
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<tbody>
<tr>
<td>Teamwork Within Units</td>
<td>72%</td>
</tr>
<tr>
<td>Supervisor Expectations &amp; Actions Promoting Patient Safety</td>
<td>58%</td>
</tr>
<tr>
<td>Management Support for Patient Safety</td>
<td>77%</td>
</tr>
<tr>
<td>Organisational Learning-Continuous Improvement</td>
<td>78%</td>
</tr>
<tr>
<td>Overall Perceptions of Patients Safety</td>
<td>62%</td>
</tr>
<tr>
<td>Feedback &amp; Communication About Error</td>
<td>45%</td>
</tr>
<tr>
<td>Frequency of Events Reported</td>
<td>53%</td>
</tr>
<tr>
<td>Communication Openness</td>
<td>45%</td>
</tr>
<tr>
<td>Teamwork Across Units</td>
<td>68%</td>
</tr>
<tr>
<td>Staffing</td>
<td>45%</td>
</tr>
<tr>
<td>Handoffs &amp; Transitions</td>
<td>72%</td>
</tr>
<tr>
<td>Non-punitive Response to Error</td>
<td>18%</td>
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Conclusion: In general, the evaluated medical staff reported a good or excellent overall organisational security. Good results for teamwork and transfers between the different units of the hospital, encouraging continuously improvement and organisational learning, with support from senior management of the hospital were observed. However, it is observed that the dimensions related to open communications, feedback and communication about errors, frequency of events reporting and non-punitive responses to them are those which were evaluated more negatively, as well as actions to promote safety by leadership.

In any organisation, communication among employees within their own units, among different units and different hierarchical levels appears as one of the main challenges for the improvement of processes, quality and safety in health care. Furthermore, only few events are reported, which may be related to a punitive culture feeling.

Thus, for the professional category studied, even in an Accredited and Re-Accredited hospital by JCI, there is a clear opportunity and a need for improvement of communication processes, error notification and change from a punitive culture, or at least its perception, for individual errors, to a culture in which errors are treated not as personal failures, but as opportunities for improvement in the system and damage prevention.
CONTINUOUS QUALITY IMPROVEMENT WITH AN INTERDISCIPLINARY TEAM AND TIMELY FEEDBACK IMPROVE THE COMPLIANCE OF RESUSCITATION BUNDLES FOR SEPTIC SHOCK

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Objectives: Early hemodynamic optimisation in septic shock has been recommended for more than a decade. Several studies suggested that continuous quality improvement (CQI) based on the Surviving Sepsis Campaign guidelines were associated with better outcomes. The main purpose of our study was to determine the impact of a hospital-wide CQI initiative with timely feedback and interdisciplinary team activation, measured by compliance with the resuscitation bundle, and the outcomes of patients with septic shock in a Taiwan tertiary hospital.

Methods: This was a prospective, interventional cohort study. There 123 patients with septic shock who diagnosed at the emergency department between April 2012 through December 2012. Study periods were divided into baseline period (screening only) for four months, timely feedback period for three months, and interdisciplinary team activation period for two months. Compliance with resuscitation bundles and in hospital mortality was compared among the three periods.

Results: Compliance with central line insertion and monitoring of central venous pressure increased from 13.0% during baseline period to 61.5% and 68.4% during timely feedback and interdisciplinary team activation periods (p < 0.05) and central venous oxygen saturation (ScvO₂) increased from 2.2% during baseline period to 35.9% and 50% during timely feedback and interdisciplinary team activation periods (p < 0.05). Compliance with all elements of the sepsis resuscitation bundle significantly increased from 2.2% during baseline period to 35.9% and 50% during timely feedback and interdisciplinary team activation periods (p < 0.05). In hospital mortality rate was 34.8%, 48.7%, and 31.6% during baseline, timely feedback and interdisciplinary team activation periods.

Conclusion: In our study, the compliance of resuscitation bundles for septic shock was improved significantly after the intervention of a hospital-wide CQI initiative with timely feedback and interdisciplinary team activation in a developing country.
IMPACT OF SAFETY PROCEDURES COMPLIANCE IN THE RISK OF DEATH IN LOW MORTALITY DRGS

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Objectives: Patient Safety is one of the five quality dimensions assessed within SINAS [1]. It is measured under two different perspectives: safety procedures (ex-ante) and adverse events incidence (ex-post).
The purpose of this study was to evaluate the impact of safety procedures compliance in the risk of death in Low Mortality DRGs within the hospitals assessed by SINAS.

SINAS – Sistema Nacional de Avaliação em Saúde (National System of Health Quality Assessment), the Portuguese system for assessing multidimensional healthcare quality, created by ERS– Entidade Reguladora da Saúde (Health Regulation Authority).

Methods: Safety procedures assessment:
SINAS assesses whether institutions comply with guidelines and have protocols established regarding the improvement of patients’ safety through the application of a questionnaire in the form of a checklist, based in guidelines form Joint Commission International (JCI), the Agency for Healthcare Research and Quality (AHRQ) and the National Quality Forum (NQF), divided in several categories, from safety culture to clinical risks and hazards management, including infection.
From the data collected through the filling of the checklist, a ratio of compliance is calculated for each hospital. This ratio is a structure indicator, corresponding to the number of conditions observed on the total number of conditions inquired.

Death in Low Mortality DRGs

The SINAS adverse events incidence assessment process was based upon a selection of indicators out of those developed by the Agency for Healthcare Research and Quality (AHRQ). Although SINAS@Hospitals assesses eight indicators, for the purpose of the present study only Death in Low Mortality DRGs was considered.

Death in Low Mortality DRGs: Numerator: Discharges during the year of 2011 with disposition of “deceased”.
Denominator: Discharges during the year of 2011, 18 years and older, in DRGs or MS-DRGs with less than 0.5% mortality rate, excluding patients with any code for trauma, cancer, or immuno-compromised state.

The population studied included all inpatients discharged during the year of 2011, on a sample of 15 hospitals form the 163 included on SINAS Data Base, on a total of 41821 episodes, divided into: Population 1 - inpatients in hospitals with >=90% compliance on SINAS Safety Procedures assessment. Population 2 - inpatients in hospitals with <90% compliance on SINAS Safety Procedures assessment.

Results: Population 1, including a total of 14377 episodes with Low Mortality DRGs had 19 patients discharged as “deceased”; Population 2, including a total of 27444 episodes with Low Mortality DRGs had 59 patients discharged as “deceased”. Analysis found that the safety procedures compliance was associated with significant improvement in death in Low Mortality DRGs. (OR [Odds Ratio]: 0.61; 95% CI [Confidence Interval]: 0.36-1.03; P [Yates value]: 0.08).

Conclusion: When comparing the results for the two populations, inpatients in hospitals with >=90% compliance on SINAS Safety Procedures assessment (Population 1) have a significant lower risk of death in Low Mortality DRGs (1-0.61=0.39*100=39%) than inpatients in hospitals with <90% compliance on SINAS Safety Procedures assessment (population 2).
THE IMPACT OF IMPLEMENTATION OF MULTI-STAGE INFECTION CONTROL STRATEGIES TO IMPROVE CENTRAL LINE-ASSOCIATED BLOODSTREAM INFECTION IN INTENSIVE CARE UNIT

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Objectives: Central Line-Associated Bloodstream Infection (CLABSI) in our intensive care units (ICUs) is the most common and important health care-associated infections indicators. From July to December 2009, we found the significant increase in the trend of the CLABSI density (8.63 per 1,000 central line (CL) days, 36/4172 ) in our ICUs and it was higher than other peer hospitals. The use of a central line insertion and care bundles has been shown to reduce the incidence of CLABSI. Therefore, we tried to implant the multi-stage infection control strategies to improve our CLABSI infection density in our ICUs.

Methods: Surveillance for CLABSI was conducted by trained infection control nurses using U.S. CDC definitions and device-day measurement methods. There are eight ICUs in our hospital with total 98 beds. The study was divided into three periods. In 2010, our department of infection control set the central venous catheter (CVC) insertion check list, started to record the CVC insertion date on the chart sheet, and took the instructional videos of CVC insertion. In 2011, we established inter-professional team for CLABSI prevention. We took the second edition of instructional videos for CVC insertion and daily care. We hold series educational programs of CLABSI prevention for our staffs. In 2012, we promoted and established on-line information systems for statistical analysis, real time feedback to our clinical units, and measurement for performance.

Results: Before intervention, our ICUs CLABSI density was 8.63 per 1,000 CL days. After intervention, our ICUs CLABSI density was 7.10 per 1,000 CL days (58/8165) in 2010, 7.41 per 1,000 CL days (61/8234) in 2011. Finally, our ICUs CLABSI density decreased to 5.14 per 1,000 CL days (41/7982). Compared with the pre-intervention period, our ICUs CLABSI density decreased from 8.63 per 1,000 CL days to 2.27 per 1,000 CL days significantly (p=0.04).

Conclusion: This study shows that implementation of multi-stage infection control strategies was associated with a significant reduction in the CLABSI density in ICU.
IMPROVING THE EFFICIENCY OF THE MANITOBA QUALITY ASSURANCE PROGRAM

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Objectives: The Manitoba Quality Assurance Program (MANQAP) is responsible for assuring that all diagnostic facilities in the province are held to quality standards established by the Program Review Committee (PRC) of the College of Physicians and Surgeons of Manitoba (CPSM). MANQAP carries out on-site inspections, monitors external quality controls, develops standards and works with stakeholders to ensure that high quality diagnostic testing is provided to all Manitobans. The program is funded by the Government of Manitoba and by revenues received from privately owned diagnostic facilities.

In order to improve clarity, increase effectiveness and efficiency and decrease costs associated with inspections and reports arising from these inspections, MANQAP has developed the following processes:

Methods: Narrative reports have been discontinued and a Yes/No/Not Applicable questionnaire system introduced. An MS Excel based pre-inspection questionnaire is sent out several weeks in advance of an inspection. This questionnaire is based on the entire set of relevant standards. The Y/N/NA answers are entered by the client and then compared with actual observations during the on-site inspection. An interim report is given to the client on the day of inspection. A copy of this report is entered into a MS Access database and a copy is also reviewed by PRC which decides the accreditation status of the facility and sets deadlines for any remediation (90 working days usually). As remediation documentation is received by MANQAP the database is amended. When all remediations are satisfactorily completed the report goes back to PRC for their review and final accreditation status.

Results: This new method reduces ambiguities, decreases costs and allows rapid access to information on any facility at any time using the MS Access database.

Conclusion: Once testing of this new process is complete, the system will become entirely electronic using tablet PCs or iPads during the on-site inspection which have been loaded with pre-survey questionnaire answers from the site in question.
ANALYSIS OF INTRAVENOUS TROMBÓLISES OF AIS REALISED AT PUBLIC EDUCATION HOSPITAL FROM BRAZIL
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Objectives: Acute Ischemic Stroke. (AIS), has a large socioeconomic impact, mainly due to its sequelae. Intravenous Thrombolysis with Alteplase (rt-Pa) has the evidence class I, level A, so its principal objective is early repayment of the blood flow in the affected area, resulting in improved clinical and functional from patient. The National Ordinance N. 664, 12 April 2012, provides for the beginning of thrombolysis therapy, the time interval up to 4h and 30min from the start of symptoms to infusion of the drug. To report our experience about the performing intravenous thrombolysis in ischemic stroke, according to the institutional protocol, at Sumaré State Hospital.

Methods: A descriptive exploratory and retrospective study. We analysed the records of all adult patients undergoing thrombolysis for Acute Ischemic Stroke. (AIS) with intravenous Alteplase (rt-Pa) in the year 2009 to 2012, at Sumaré State Hospital, which is a reference to five municipalities in the region. State Hospital Sumaré, the implementation and management of stroke protocol began in 2007 with the objective to determine the epidemiological profile of patients, identify patients requiring thrombolysis, and as a consequence, optimise in-hospital treatment. Data were recorded in an institutional database, which allowed the descriptive statistical analysis. The use of data obtained approval of the health institution where the study was realised.

Results: During the period, we analysed the medical records of 41 patients, 19 (46.34%) women and 22 (53.66%) men, with an average age of 60 years old. Among the cases, two patients for intravenous thrombolysis was not indicated because there was no precise time of onset of symptoms. All indicated for thrombolysis tomography were performed within the allotted time less than 30 minutes; and in 13 (77%) were thrombolized in the time interval provided by the protocol (60 minutes). Thirty-three patients (82%) had clinical improvement and discharge, according to the modified Rankin scale, and 53% of these already with independence for self-care (Rankin <= 3).

Conclusion: The study highlights the high frequency of patients with the better clinical after completion of thrombolysis, with noticeable improvements in functional capacity. The failure to identify the warning signs for family and home services, causing a delay in the search emergency medical service; linked to problems in transportation and patient referral to a specialist service, influences the prognosis of the patient. The implementation of institutional protocol for intravenous thrombolysis in ischemic stroke, based on scientific evidence, ensures the safety of the procedure.

References: Data base from Sumaré State Hospital.
ASSOCIATION OF AVOIDABLE HOSPITAL ADMISSION RATES AND PREVALENCE - A METHODOLOGICAL APPROACH OF PREVALENCE ADJUSTMENT

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Objectives: Population-based hospital admissions for certain chronic conditions are assumed to be sensitive to ambulatory care and serve as a proxy for quality of primary care. Institutions such as the Agency for Healthcare Research and Quality (AHRQ) or the Organization for Economic Co-Operation and Development (OECD) use these indicators - based on the principal diagnosis of an adult hospitalization - for public reporting. Marked geographic variations occur across OECD countries, e.g. the 2009 COPD hospital admission rates vary between 71 (Portugal) and 364 (Ireland) per 100,000 population. We found similar regional variations across German states, e.g. for hypertension and diabetic amputations the admission rates of Thuringia – the state with the highest rates - are about three times higher compared to the states with the lowest rates (Berlin and Hamburg). We investigated whether regional variations in hospital admissions for selected ambulatory care sensitive conditions correlate with regional prevalence estimates, and whether adjustment for prevalence reduces regional variation. For prevalence adjustment we used a quantitative model according to the OECD’s reporting of patient safety indicators.

Methods: We performed a retrospective cross-sectional study using 2010 hospital administrative data from the German DRG database administrated by the Federal Statistical Office. The study population consisted of patients 15 years or older discharged from 1758 acute care hospitals across all 16 German States. Prevalence data (12 month prevalence) were estimated from 2009 and 2010 nationwide telephone health surveys which are regularly performed and part of the German health monitoring.

Results: We found significant correlations between the prevalence of hypertension and the age-sex-standardized hypertension admission rates (Pearson’s CC 0.86), the prevalence of chronic bronchitis and COPD admissions (CC 0.59), and between the prevalence of diabetes and hospitalizations for diabetic long term complications (CC 0.87) and diabetic lower extremity amputations (CC 0.74). An ordinary least squares unweighted regression model was estimated for each admission rate using the prevalence as the predictor variable (R²=34% to 75%). Estimated state-specific residuals were linearly transformed into adjusted admission rates with the same mean value as the unadjusted but standardized rates. Variation among admission rates decreased substantially after this adjustment. Coefficients of variation dropped as expected from 29.9 to 15.5 for “hypertension”, from 15.7 to 12.7 for “COPD”, from 30.9 to 15.4 for “diabetes with long term complications”, and from 30.1 to 20.2 for “diabetic amputations”. Ranking of states was altered such that eleven states moved more than two ranks for the indicator “COPD admissions”, six states moved more than two ranks for “diabetic amputations”, and four states moved more than two ranks for “hypertension”. The model was not applied to asthma (CC 0.30) and chronic heart failure (CC 0.26) admission rates because these were uncorrelated with the prevalence data.

Conclusion: Regional variation in potentially avoidable hospitalizations may be confounded by regional differences in disease prevalence. Further research is needed, why this effect relates to some but not all chronic conditions. Performance measures that have been statistically adjusted are less variable than unadjusted measures. Information on prevalence should be considered in comparative reporting of potentially avoidable hospitalizations.
IMPROVEMENT OF THE PROCESS OF TRANSPORTATION FOR SURGICAL SPECIMENS AFTER OPERATION
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Objectives: Our aim is to make the safe and exact transportation process for surgical specimens from the operation room through the department of pathology after surgery; we try to build the system of transportation for surgical specimens with SMS mailing service, which was automatically connected with EMR system, and thereby improve patient safety in the operating room.

Methods: In the process of a doctor delivering the specimen and goes through the receipt process, he or she may lose it or make receipt error of some kind. When the specimen is not received properly after the completion of the operation within a fixed time, development of SMS program to solve the problems promptly through SMS notification to the proper doctor is being planned.

Usually after operation, only 80% of total surgical specimens were received within 3 hours. First SMS mail was sent 3 hours after operation, and then 2nd SMS mail was sent 5 hours after operation to the doctor on duty. Regular monitoring was noticed twice a day, and the active feedback to the surgical department was made by department of pathology, if it was not received until 5 hours. Delayed receipt of surgical specimens was monitored and shared the data of monitoring with all surgical and pathology departments.

Results: After 2 months monitoring and active feedback, delayed receipt of surgical specimens was decreased by 20% cases than usual. There is no lost of surgical specimens in the operation room.

Conclusion: SMS reporting system is very convenient, effective and safe method to reduce the loss and delayed receipt of surgical specimens. Regular monitoring and active feedback was certified the rapid report of pathologic result. This has led to the prevention of inspection delay and accurate performance of the inspection, so it has greatly contributed to improving patient safety in the operating room.
A QUALITY IMPROVEMENT (QI) PROJECT OF SEVERE SEPSIS AND SEPTIC BUNDLES CARE BY BREAKTHROUGH SERIES LEARNING PROGRAMS AND STRATEGY OF TEAM RESOURCE MANAGEMENT

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Objectives: To assess the results of a quality improvement (QI) project designed to improve safety of severe sepsis and septic shock bundles care (included resuscitation bundles care and management bundles).

Methods:
Design:
Single center prospective observational.
Setting: 12-bed medical intensive care unit.

Participants:
Pulmonary/critical care visiting staffs, fellows, residents and nursing staffs, respiratory therapists

Interventions:
Severe sepsis and septic bundles care performed during a period of 6 months by the medical intensive care unit team were analysed to identify interventions that would improve quality of the program. The staffs participated the breakthrough series (BTS) collaborative learning program by Taiwan Joint Commission on Hospital Accreditation. By segmental process analysis, the procedure of bundles care was subjected to iterative change. Major components of process improvement were development of a combined team approach, a mandatory checklist, poster, revision of computerised medical order suites, and use of team resource management (TRM) tactics including situational awareness and recognition of adverse situations, communication and crosscheck techniques, give and receive performance feedback, management of stress, workload and fatigue, creating and maintaining team structure and climate, leadership, risk management and decision-making, handoff strategy (Concerned, Uncomfortable, Safety- CUS and Introduction, situation monitor , assessment, recommendation -ISBAR) and the plan-do-study-act cycles (PDSA). Quality analysis and improvement included compliances of resuscitation and management bundles care.

Results: For a 6-month period (from February, 2012 to ), the compliances of resuscitation and management bundles care increased from 17.8% and 11.1% to 45.7% and 37.5%, respectively.

Conclusion: The current safety paradigm of patient with severe sepsis and septic shock is still based on ways to limit human variability in otherwise safe systems, promoting stringent compliances of severe sepsis and septic shock resuscitation and management bundles. This study showed the feasibility and utility of adapting t to support the broad implementation and sustained use of bundles care in ICU settings by participating the BTS learning programs. In addition, TRM focuses on improving inter-professional cooperation and team performance and thus patient safety. Even though evidence of TRM on medical errors and patient outcome is still scarce, the parallels between the critical processes in aviation and Intensive Care suggest that a well-adapted medical TRM training has potential for the ICU environment.

“GONNAE NO DAE THAT” – A NOVEL FEEDBACK MODEL FOR HOSPITAL PRESCRIBING ERRORS

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Objectives: Prescribing errors account for the largest number of potentially preventable adverse drugs events in hospital and are a patient safety priority. Despite work on incidence and causation, little is known about effective interventions to reduce harm to patients from such events.

Methods: We have piloted “Gonnae no dae that”, a novel feedback model aiming to tackle the low perceived importance and lack of self-awareness associated with prescribing errors. We aim to learn from each other’s’ mistakes. It delivers personalised, no-blame analysis of errors through regular, brief, practitioner-led presentations. Solutions involve prescribers in identifying systemic weakness, and highlighting contributory cultural attitudes.

Results: A questionnaire was distributed during the “Gonnae no dae that” pilot. All responder felt feedback to be invaluable. Interestingly, it also illustrated that only 25% of prescribers were aware of making a prescribing error in the preceding 4 months, yet nearly all could recall a colleague’s error over the same period. Other than correcting the prescription, a third of responders admitted to not reporting the error nor providing informal feedback to colleagues. Learning point’s to-date includes high-risk medication, the importance of medicines reconciliation and improving dissemination of knowledge of un-missable drugs such as anti-epileptics.

Conclusion: “Gonnae no dae that” is becoming an established feature of on-going medical education at Hairmyres Hospital. Its tone and consistently positive message are quite distinct from the sentiment associated with traditional significant event or root cause analyses. It has proven to be a foundation for promoting good practice and an accessible route to engage with clinical governance locally. It continues to highlight system and knowledge weaknesses that become the target for subsequent interventions. On-going development of the feedback model focuses on sustainability, enhancing personalised feedback, collating a ‘drug errors’ handbook. This model is simple, effective and reproducible in other care settings.