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To have 100% compliance with Pre-Op Checks for Elective Urology Surgery in Operating Theatre 15, in six months: The “Urology Time-Out Script Trial”

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Objectives:

In the operating theatre, adverse events such as “wrong site” surgery can lead to disastrous outcomes for patients. We aim to address these issues and to produce a practical and sustainable intervention to improve the quality of the time-out process. Our objective was to eventually achieve 100% compliance with pre-operative checks for elective urology surgery in Tan Tock Seng Hospital Operating Theatre15 within six months in the domains of standard time-out, correct site-marking and X-ray verification.

Methods:

A Clinical Practice Improvement Programme (CPIP) team comprising of two doctors, two operating theatre nurse managers and three staff nurses was set up. Analysis of the pre-operative check processes for elective surgery was performed starting from initial doctor consultation all the way to the start of a procedure in the procedure room. It was then determined that the area to focus on would be the area where the team members exert the maximum influence for improvements.

A Standardized Time-Out Script was proposed where the three key components (time-out, site-marking and X-ray verification) were individually addressed. After induction of anesthesia, the script would be read out by the circulating operating theatre nurse before the start of the surgery, and would only permit surgery to proceed after completion of the time-out process. The nurse who was reading out the script would check the compliance of the time-out components and tick the separate check list boxes accordingly. A trial run for the script was rolled out with regular audits in the compliance of the time out- script. Shortcomings and confusing points in the script were identified and revised after another meeting. A second and final trial run was carried out subsequently for the revised time-out script. Individual and combined weekly results for each component were analyzed and presented to the team. The revised version of the time-out script was eventually incorporated into the Hospital Safety Committee’s Standardized Time-Out Form from November 2010 onwards.

Results:

The final results presented were the percentage of patients with all three components carried out (time-out, site-marking and X-ray verification) before and after the time-out script, as well as after the revised time-out script. There was a marked improvement (20 to 90%) in the percentage of patients with all three components carried out before and after the time-out script was introduced. 100% compliance was able to be achieved after the revision of the time-out script at the end of the project.

Conclusions:

Through the work and enthusiasm of a dedicated CPIP team and all members of the operating theatre who participated, we gained a better understanding of our existing pre-operative time-out system and work processes. We were able to identify the inadequacies in the work process that arose as a result of human factors and communication issues and developed interventions to improve them. Our ultimate aim was to improve the climate of patient-safety awareness so as to better care for our patients.

The time-out script was a very practical and sustainable intervention to improve our pre-operative check compliance rates. The results have been very encouraging and it has since been well received with excellent outcomes in other surgical disciplines. This pre-operative timeout script can be successfully used as an effective quality control measure in any institution or clinic where pre-procedure checks are performed.
The Factors associated with the Do-Not-Resuscitate decision or intention among Elderly Nursing Home Residents

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Objectives:

Facing death is one of the developmental tasks for elderly people. Yet, a good death or not is a critical issue for disabled senior residents at nursing homes. However, the factors affecting the do-not-resuscitate (DNR) decision or intention among disabled senior residents at nursing homes are rarely explored in the literature. Thus, this study was to investigate the factors associated with the DNR decision or intention among elderly nursing home residents in Taiwan.

Methods:

This was a cross-sectional and correlational study design using a purposive sampling to recruit equal or greater than 65-year-old residents and their family proxies (n = 177) from a nursing home of the district hospital in northern Taiwan. The measurement tools included the Barthel Index, the Short Portable Mental Status Questionnaire, the Geriatric Depression Scale, and the self-designed structured questionnaires. Data were collected by four questionnaires, face-to-face interview, and medical chart review including characteristics of elderly residents and family surrogates and DNR decision or intention. Data were analyzed using multivariate logistic regressions of SPSS 15.0.

Results:

Only nine percent (n = 14) of senior residents signed DNR during this study. Among these residents with signed DNR, less than a quarter (21.4%) of senior residents signed their own DNR forms and more than three quarters of family surrogates (78.6%) signed DNR forms for their senior relatives. More than half of these family proxies (57.1%) were sons. Multivariate logistic regression showed that age (OR = 1.16, 95% CI = 1.05 - 1.28), marital status (OR = 7.95, 95% CI = 1.33 - 47.72), cancer (OR = 9.70, 95% CI = 1.59 - 59.10), lung disease (OR = 5.44, 95% CI = 1.29 - 22.94), and muscle and skeletal disease (OR = 4.82, 95% CI = 1.12 - 20.75) were significant predictors for a resident’s DNR decision. In addition, most elderly (56.7%) and their family proxies (76.9%) agreed with signed DNR for their own and for their senior relatives. Whole family consensus toward DNR (OR = 28.80, 95% CI = 2.43 - 341.09) was the only significant factor associated with a resident’s DNR intention.

Conclusions:

Most elderly residents of nursing homes were suffering from cognitive impairment and their family surrogates made their DNR decisions. There was a discrepancy between senior residents and their family proxies on DNR decision and intention. Facilitating family consensus on a resident’s DNR to making the actual DNR decision and end-of-life care are important for elderly residents at nursing homes. Future studies can conduct a qualitative study to understand elderly residents’ and family proxies’ perspectives and to establish advanced care planning in advance. Thus, the end-of-life care and a good death were determined by elderly residents’ self-determination.
Workflow Model: A new approach to reducing Handoffs and improving Patient Safety in the Post-Anesthetic Care Unit

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Objectives:
The Patient Safety Committee consists of a team of six staff nurses in the Perioperative Department at Toronto General Hospital that questioned the current practice of patient handoffs in the Post-Anesthetic Care Unit. The objectives of the team were to: 1) Reduce the number of nurse to nurse handoffs; 2) Increase patient continuity of care; 3) Improve accuracy and details of handoff; and 4) Increase staff nurse satisfaction.

Methods:
Prospective Cohort Study

Results:
Created a new workflow model for the Post-Anesthetic Care Unit (PACU) which had the following results: 1) Increased the number of primary nurse transfers from less than 5% to over 75%; 2) Reduced the number of handoff reports within the PACU; 3) Improved accuracy of handoffs; 4) Improved nurse satisfaction with care provided to patients. (Please Note: Additional results are pending in regard to the impact on medical errors within the department and will be ready by the conference)

Conclusions:
Multiple handoffs occur in the hospital setting on a daily basis between healthcare providers. In the perioperative environment, patient handoff for each surgical patient can occur up to eight times for each visit. Communication issues have caused 70% of the sentinel events in the United States, with half taking place during the handoff process. In Canada, 185,000 medical errors occur yearly and of these approximately 38% could have been prevented. Medical errors in the perioperative setting typically occur when the focus has been put on: 1) Rapid turnovers in the operating room; 2) Tactics to increase patient volume and efficiency; and 3) Improving physician satisfaction.

Although the literature clearly indicates the need for effective and precise handoffs, it is not always implemented in practice. The Post-Anesthetic Care Unit (PACU) at Toronto General Hospital had no formal process for handoffs between healthcare providers within the perioperative setting. The following issues were being noted by staff nurses in the PACU: 1) Multiple nurses were involved in caring for a single patient in the PACU, resulting in multiple patient handoffs among the nursing staff in the unit; 2) Lack of continuity of care; 3) Occurrence of near-misses; and 4) Staff nurses felt patient safety and continuity of care was being compromised.

By implementing the new workflow model, a buddy system was created to help facilitate primary care nursing. This allowed the primary nurse to transfer their patient and provide handoff to the accepting nurse. A flexible break regimen was implemented and various roles of nurses within the PACU were adjusted. As a result, the number of primary nurse transfers increased from less than 5% to over 75% and the accuracy of the handoff process improved.
“A Workman may blame his tools”: An Audit of Difficult Airway Trolleys in Emergency Departments in Ireland

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Objectives:

The incidence of difficult intubations is significantly higher in emergency departments (EDs), where a failed airway may occur at least ten times more frequently than in other more controlled settings. This survey assessed the contents of Difficult Airway (DA) trolleys in adult EDs across Ireland and compared it with a recommended equipment list compiled by the Difficult Airway Society.

Methods:

A questionnaire was developed and mailed to 37 adult EDs across Ireland (excluding Dental, Eye & Ear and Maternity Hospitals). A reminder letter was mailed three weeks later.

Results:

The response rate was 70% (26 of 37 EDs). 57% of responding EDs have a difficult airway trolley, and 79% of these have a list of contents for the trolley. Contents of the trolley are checked either daily or twice daily in 58% of cases, and after each use in 39%. Of the total of 30 recommended items for the trolleys, only one was available in 100% of the EDs. Half of the responding EDs include paediatric equipment and one third have a fibreoptic bronchoscope. 80% of EDs have no defined algorithm for the management of the difficult airway. Only 50% of staff are trained in the use of the trolley at induction, and only 6% of all staff have attended a course on the management of the difficult airway. In 22% of cases respondents said not all staff knew the location of the DA trolley.

Conclusions:

Just over half of the adult EDs that responded to our survey have a difficult airway trolley. Even when a DA trolley is present, it is almost universally underequipped when compared to published content lists. Staff are frequently unaware of where the trolley is kept, and commonly untrained in the use of its contents. Disappointingly, the situation has not changed over the past decade and is replicated in other emergency areas such as ICU.6-8 We strongly recommend the introduction of fully equipped, checklisted DA trolleys in all Irish EDs and reiterate the NAP4 recommendation for standardisation of DA equipment and management plans for all common and predictable ED airway emergencies.4 We suspect that this problem may be replicated in other countries and suggest that national health service organisations assess the position, using this simple tool.

References:

http://journal.ics.ac.uk/pdf/1102098.pdf refers to trolleys in ICUs.
Impact of “Silence in Hospital” on Patient and Employee Satisfaction

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Objectives:

1. Study existing sound levels in patient care areas in two hospitals at different times of the day
2. Study the effect of “Silence in Hospital” on improving patient and employee satisfaction

Methods:

Module I:
Phase 1: Study the sound levels in all patient care areas at different times of the day in two hospitals
Phase 2: Identify comparable case and control areas for implementing the pilot on “Silence in hospital” in two hospitals. ‘Controls’ were areas of the hospital where no efforts were made to reduce the noise levels. ‘Cases’ were areas of the hospital where efforts were made to reduce noise levels as per the WHO prescribed guidelines (noise in patient Rooms 40 dB). Case and Control areas were matched based on the services delivered and utilization of the area, so that comparisons are simulated.

Module II:
Structured interviews were undertaken on a sample size of 50 patients and 50 employees in each of the two hospitals, to study the effect of ‘Silence in Hospital’ on patient and employee satisfaction pre and post implementation of design and practice of maintaining silence in patient care areas.

Results:

1. Module I
   1. OT & ICUs were less noisy (>90% responded positively) as compared to OPD waiting lobby and admission counter
   2. The sound levels in the “Control” areas remained the same, but in the comparable “Case” areas noise reduced after a period of two months as detailed for some areas in the table below:

<table>
<thead>
<tr>
<th>S.NO</th>
<th>PLACE</th>
<th>Initial Findings</th>
<th>Repeat Audit Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>June 3, 2011</td>
<td>August 3, 2011</td>
</tr>
<tr>
<td>1</td>
<td>OPD</td>
<td>91.5</td>
<td>63.3</td>
</tr>
<tr>
<td>2</td>
<td>WARD NURSING STATION A-1</td>
<td>81.5</td>
<td>61.2</td>
</tr>
<tr>
<td>3</td>
<td>LINEN TROLLEY</td>
<td>105.7</td>
<td>53.7</td>
</tr>
<tr>
<td>4</td>
<td>FOOD &amp; BEVERAGE TROLLEY</td>
<td>82.3</td>
<td>81.3</td>
</tr>
<tr>
<td>5</td>
<td>NURSE CALL BELL</td>
<td>79.9</td>
<td>69.3</td>
</tr>
<tr>
<td>6</td>
<td>CCU</td>
<td>78.6</td>
<td>56.9</td>
</tr>
<tr>
<td>7</td>
<td>ICU CORRIDOR</td>
<td>87.5</td>
<td>55.5</td>
</tr>
<tr>
<td>8</td>
<td>ROOM NO.213, B-2 (TWIN SHARING)</td>
<td>80.7</td>
<td>43.3</td>
</tr>
<tr>
<td>9</td>
<td>STAFF CONVERSATION</td>
<td>74.2</td>
<td>67.3</td>
</tr>
</tbody>
</table>

3. Average Noise level in hospital has decreased by: 21.5 decibel (26%) in two months

1. Module II
   1. Morning & night hours (after 10 pm) were reported to be most disturbing by 72% of patients.
   2. 90% of patients rated conversations among staff members, unwanted movements of housekeeping and nursing staff, noise of stretchers while shifting patients and food trolleys to be most disturbing sources of noise in the ICUs.

Conclusions: 1. Reduction in sound in patient care areas is possible. 2. Sound reduction improves patient and employee satisfaction
A Multi-Pronged Quality Management Approach to Improving Cardiac Mortality

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Objectives:

1. To reduce cardiac mortality for patients undergoing valve or valve and CABG surgery
2. To develop, implement, and sustain improved processes for assessment, communication and monitoring of outcomes.

Methods:

In 2006, the Department of Health data alerted leadership at one of the hospitals of the 15-hospital North Shore – LIJ Health System, New York, USA, that adult patients undergoing valve or valve/CABG surgery had a higher mortality than expected. The CEO and governing body prioritized an improvement initiative. An initial evaluation by Quality Management identified several opportunities for improvement, among them poor interdisciplinary communication throughout the continuum of care, lack of standardized protocols, and variable pre-op assessment of surgical patients. A multidisciplinary task force was established which analyzed pre-op/intra op and post op procedures among cardiothoracic providers and units and individual surgeon performance. All intra-operative and post-op deaths from 2005 (191 cases, 33 deaths) were also analyzed. Gaps in care were identified. New communication protocols were developed for effective information transfer. Pre-op, intra-op and post-op processes were standardized and improved. In subsequent years (2009-2010), a team STEPPS program was established to improve responsibility, oversight and accountability.

Results:

After the quality improvement program was initiated, overall mortality decreased from 13.61% in 2005 to 7.4% in 2006, to 3.4% in 2007, and remained below 3% for the years 2008-2010. Overall, there was an 80% reduction in mortality over the 6-year time period (95% CI). For comparative purposes, expected mortality in New York State in 2008 was 5.2%. The frequency of high-risk cases also remained constant over the review period. The low annual mortality (approximately 1% or less) from CABG alone remained constant during the review years.

Conclusions:

By developing a transparent and structured quality methodology to monitor and improve quality among a specific set of high-risk surgical procedures, mortality rates were substantially reduced over a relatively brief time period. In addition, lower death rates were sustained as the quality program became permanent. We recommend a similar approach when institutions are faced with suboptimal outcomes from complex surgical procedures.
What Near Misses tell us about our organizational management and perceptions of the healthcare team towards this approach in intensive and intermediate care

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Objectives:

Within the rubric of safety events, there is a growing interest in near misses as precursors to adverse events in healthcare. However, studies show a variable incidence of reports of near misses reflecting, probably, the extent to which individuals in healthcare poorly use near misses as learning opportunities, and this behavior remains poorly understood. Through our study, we examine information and lessons learned from the analysis of near misses on our clinical practice and healthcare team perceptions of the usefulness of this approach.

Methods:

Observational study in an intensive and intermediate care unit (18 beds) after implementation of a voluntary and anonymous near misses and incidents reporting system. The study lasted 18 months divided into three stages: 1st stage (April to September 2010), 2nd stage (October 2010-March 2011), third stage (April to September 2011). The reporting person (nurse or physician) mentions the facts, factors involved, immediate and corrective actions. A work group designs the final form of report, collects and analyses the reports and submits corrective actions at quarterly exchanges with senior medical and nursing. This exchange is also done with the healthcare team through newsletters and conferences to get feedback on their perception of near misses.

Results:

Analysis of near misses during the different stages shows that the incidence is as follows: 1st stage: 17%, 2nd stage: 23% and the third stage: 37%. They are related to failures in one of the stages of the drug chain: prescription, preparation, labeling and administration. They are detected after oral transmissions previous to nursing shifts. These observations led to the implementation of corrective actions at the 2nd stage. They target on the one hand, the drug chain by updating the protocol of: preparation, standardization of labeling according to international standard and restriction of pre-packaged syringes for emergency drugs. On the other hand, they target the restructuring of the organization of oral transmissions. The increased incidence of reports in the third stage demonstrates that the team is mindful of near misses and more vigilant. But we note four groups (G) of viewpoints on the benefit of this approach. G1: “direct action», detect near miss and act without report. G2: “walking without seeing light in the end of tunnel”, detect, act, but not perceive the impact on management. G3: “total blur”, near misses are a vague entity. G4: “closing off the Swiss-cheese holes”, detect, act, report and wait for corrective action.

Conclusions:

The near misses analysis is useful for our organizational management and clinical practices. Their report depends on change in perception of their substantial potential for harm and preventability (G4) in opposition to those who perceive that pervasiveness of near misses in our intensive practice without harm is not a sine qua non condition to report (G1) or those focusing on critical incidents as tools to implement operational actions (G2).

In our learning organization, it is important to diffuse the analysis of near misses. It promotes the culture of the useful error and determines which near misses are appropriate to be responded to as "direct action" and which ones require further action at the unit.

References:
Writing Patient Information In Plain Language: Does It Improve Readability?

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Objectives:

Patient information materials need to be comprehensible and compatible with the reading and language skills of the target population. However, many professionals who are involved in the writing of patient information materials appear to find it difficult to release themselves from their own professional perspective, and to write in a simple and plain manner. Yet, this is of paramount importance, as many patients have problems with reading and understanding health-related information.

Objectives: 1) To gain insight into current language level and understandability of a selection of patient information materials in our hospital, and 2) to investigate whether rewriting the information according to guidelines for plain writing helps to improve language level and understandability.

Methods:

We tested the 'language level' of a selection of ten patient information materials using Texamen. This instrument electronically assesses text features, and determines a language level based on the Common European Framework of Reference (CEF). Furthermore, we assessed understandability of two of the patient information materials, by interviewing 10 patients per material. Patients’ health literacy was assessed using a Dutch translation of the Newest Vital Sign. Staff of the department of patient education were trained to write in plain language, and subsequently rewrote the patient information materials. Next, 'language level' of the rewritten patient information was tested again, as well as the understandability of two of the patient information materials.

Results:

Results, that will shed light on the readability of written patient information before and after rewriting the information into plain language, will be presented at the conference.

Conclusions:

The results of this study will indicate whether the systematic assessment of language level and understandability of written patient information is feasible, and whether rewriting patient information into plain language results in better information materials.

References:

(2) Bureau Taal. www.bureautaal.nl.
Quality Approach to Quality Of Life in the Workplace

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Objectives:

HAS has included new criteria on the quality of life in the workplace in the last version of its accreditation manual. So, HAS is developing a program to raise professionals’ and hospitals’ awareness of quality of life in the workplace, in partnership with ANACT (Agence Nationale pour l’amélioration des conditions de travail) or the French National Agency to improve working conditions. The objective is to give marks and tools in order to evaluate and to improve quality of life:
- for the surveyors to investigate this issue in the organisation
- for the organisation and professionals to promote this issue
- for the labour union to facilitate the labour management dialogue

Methods:

The challenge of quality in the workplace is to debate the criteria of the quality of the work between all the stakeholders and the conditions to do it. Three working groups have been set up:
- the first with surveyors aimed to write guidelines to investigate this issue during the surveys. These guidelines have been tested in twenty hospitals. Now an experience feedback is organised to analyse the results and update the guidelines.
- the second work with providers to help hospitals to develop a quality approach to quality of life in the workplace. A questionnaire has been sent to the directors and quality managers of healthcare organisations to propose them to tell what they do on the issues and if they agree to participate in a study. We received 110 answers and we selected seven of them for the quality study. This material will serve to the working group
- the third invite labour union of workers and physicians to reflect on the necessary conditions to promote these issues, and to help hospitals to have a real policy on quality of workplace. Two workshops have been held: the first topic was to realize the diagnosis of the situation in hospitals; the second workshop, which was on the analysis of the labour union’s action, has been analyzed. A third meeting will take place on the purpose of the relations between accreditation and quality of life in the workplace.

Results:

The first results have shown that most professionals and organisations don’t know the challenge on this issue. The context is difficult for a lot of organisations: economic difficulties, restructuration of health system… The directors and the managers are already struggling, they don’t agree with the policy but they must apply it. The managers aren’t close to their team: they are in working group with the direction, on the monitor to reports indicators and to organize team scheduling.
At the opposite, the good experiences show participating management, physician implication and structured policy on this issue.

Conclusions:

HAS will design a method with the surveyors to investigate quality of life processing system tracer activity. A guideline for organisations to promote the quality of life in the workplace will be published. A document will be written with the labour union on the challenge of the issue and how to improve labour management dialogue. All of this work will be ready during October 2012, after a general meeting between the three working groups.
Clinical Impact of a Critical Pathway for Heart Failure Patients

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Objectives:

To test the impact of a critical pathway for heart failure (HF) patients on the quality of care, and on the risk of death or readmission after discharge

Methods:

The study design was a before-and-after study of patients hospitalized in 2007 and 2009 with a principal diagnosis of HF. A pathway for HF patients has been available since June 2008. It provides evidence-based recommendations for patients’ care, standard orders, and links with the echocardiography lab as well as with educational material. Inclusion of HF patients in the pathway was at the discretion of the clinicians.

Three groups were compared, namely patients admitted in 2007, patients admitted in 2009 and who were not included in the critical pathway (standard care), and those admitted in 2009 and included in the critical pathway. Prescription of betablockers, angiotensin-converting enzyme inhibitors (ACEI) and angiotensin-receptor blockers (ARB), as well as the proportion of echocardiography performed were compared between groups. Risk of death or readmission (whichever came first) was modelized with a Poisson regression, adjusting for confounding variables.

Results:

752 patients were included; 336 in 2007 and 416 in 2009, of whom 219 were treated in the critical pathway. Characteristics at baseline were similar with a mean age of 80 years, 56% of men, and a high burden of co-morbid conditions. Outcomes are shown below:

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2009, standard care</th>
<th>2009, critical pathway</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay in the acute care setting (days)</td>
<td>12</td>
<td>11</td>
<td>12</td>
<td>0.30</td>
</tr>
<tr>
<td>Transfer in rehabilitation (%)</td>
<td>30.7</td>
<td>28.4</td>
<td>29.2</td>
<td>0.85</td>
</tr>
<tr>
<td>Echocardiography performed (%)</td>
<td>51.2</td>
<td>61.4</td>
<td>73.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prescription of an ACEI or an ARB at discharge (%)</td>
<td>87.9</td>
<td>80.7</td>
<td>90.7</td>
<td>0.01</td>
</tr>
<tr>
<td>Prescription of a betablocker at discharge (%)</td>
<td>54.8</td>
<td>64.2</td>
<td>70.7</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>In hospital death (%)</td>
<td>6.3</td>
<td>5.1</td>
<td>1.8</td>
<td>0.05</td>
</tr>
<tr>
<td>90-day death (%)</td>
<td>15.8</td>
<td>16.8</td>
<td>12.8</td>
<td>0.49</td>
</tr>
<tr>
<td>90-day readmission (%)</td>
<td>42</td>
<td>42</td>
<td>33.8</td>
<td>0.23</td>
</tr>
</tbody>
</table>

1: Angiotensin-Converting Enzyme Inhibitors
2: Angiotensin-Receptor Blockers

Inclusion in the critical pathway significantly improved the prescription of betablockers and the number of echocardiographies that were performed. After adjusting for age, sex, creatinine, presence of atrial fibrillation, diabetes, coronary artery disease and length of stay, the critical pathway was associated with a relative risk of death or readmission of 0.72 (95 CI: 0.53-0.98, p= 0.04).

Conclusions:

Adherence with guidelines and prescription of evidence-based treatment in HF patients can be improved with the use of a critical pathway. Inclusion in the critical pathway was independently associated with a clinically important reduction of the rate of death or readmission after discharge.
Effect Analysis of Public Reporting of Medical Cost and Length of Stay

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Objectives:

In accordance with the increasing interest and expectation level of the citizen of quality of care, public reporting demand has grown about the nation’s medical service in terms of healthcare quality or medical cost. The aim of this study was to help support informed decision making, and to improve the efficiency of hospitals by public reporting. Although some health insurers in America have tried public reporting about medical cost and length of stay (LOS), this is the first significant study to analyze the effect of public reporting on nationalized data.

Methods:

In a bid to analyze the effect of public reporting compared with the confidential report, we used risk-adjustment multilevel analysis regression model using of time series. Using all administrative claims data of HIRA(Health Insurance Review & Assessment Service) linked to hospital admissions for operation in which the patient was discharged alive and had a LOS greater than one day during 2008 to 2010(1,395,453 cases in 2008, 1,518,492 cases in 2009, 1,616,321 cases in 2010). The intervention group was 92 public reporting surgeries selected in terms of high frequency and importance whereas the control group was confidential reporting surgery including internal medicine. Results from 2008 were reported to the public on January 2010. Cost was adjusted considering the rate of increase for medical fees in the insurance scheme, so applied extra charge referencing 2010, by 2.2% for 2008, by 2.05% for 2009. Risk-adjustment was made to control variables using sex, age and ADRG (adjacent diagnosis related group). Multilevel regression model was used to analyze the public reporting effect. In addition, O/E (observed to expected) ratio and crude data was applied to calculate the risk-adjustment mean of cost and LOS per episode.

Results:

After public reporting, public reporting surgery’s increasing rate of medical cost and LOS were more blunted compared with before. Risk-adjustment mean of cost increase in public reporting surgery by 2.8% and in confidential reporting surgery by 1.5% in 2009, and in public reporting surgery by 0.9% and in confidential reporting surgery 2.5% in 2010 compared to the previous year. Risk-adjustment mean of LOS has been annually driving decrease, mean of LOS decreased for public reporting surgery by 1.30%, for confidential reporting surgery by 2.03% in 2009 and for public reporting surgery by 1.27% and for confidential reporting surgery by 0.33% in 2010 compared to the previous year.

Conclusions:

Public reporting surgery for cost increasing rate is lower than the confidential reporting surgery for cost increasing rate compared to the previous year. Moreover, public reporting surgery’s LOS decreasing rate is greater than the confidential reporting surgery’s LOS. Therefore, the public reporting is deemed to have a positive effect on the medical cost and the LOS, and it could be utilized as a strategy or policy to save on medical costs and decrease the LOS.
‘Lessons Learnt: Building A Safer Foundation’ – A National Program for Embedding Patient Safety into Postgraduate Medical Training

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Objectives:

Patient safety is of growing concern internationally, yet the implementation of quality and safety into medical training curricula remains a challenge. The UK evidence-base is particularly lacking, and recent high-profile reports have called for the explicit integration of patient-safety training into clinical curricula. We report the development, national implementation and evaluation of a patient-safety training program for UK junior doctors (Foundation trainees).

Methods:

This was a pre-post intervention study on a whole regional clinical population. Participants included Foundation trainees (n=1076), senior clinicians (n=57) and training directors/administrators (n=40) across 19 hospitals in North West England. The intervention comprised monthly 60-minute sessions (from January–July 2011) built into the Foundation teaching program wherein Foundation trainees lead a peer-group discussion of a patient-safety incident (PSI) to analyse its contributing factors and propose potential solutions. Sessions were facilitated by senior clinicians previously trained in safety theory and PSI analysis.

The approach to implementation addressed the well-documented barriers to integration of safety training through engaging stakeholders (launch and feedback events, trainee champions appointed to lead local integration); building an expert faculty (recruiting and training senior clinicians as facilitators) and conducting robust evaluation in line with Kirkpatrick’s four levels of evaluation. Satisfaction (level 1) was evaluated through questionnaire. A combination of bespoke and validated tools was used to assess learning (level 2: knowledge, skills and attitudes). Behavioural change (level 3) was evaluated through incident reporting. Organisational impact (level 4) was evaluated via trainee engagement in quality improvement projects. Paired samples t-tests were used to test for statistical significance pre-post intervention. A p-value of <0.05 was considered statistically significant.

Results:

Participants reported high levels of satisfaction with the intervention. All agreed/ strongly agreed that ‘Lessons Learnt’ promoted an open and learning safety culture, supported its continuation locally and its implementation across UK foundation training. Objective scores of trainee knowledge significantly improved post-intervention (pre mean=50%, s.d 17%; post mean=56%, s.d 18%, p<0.001). Measures of attitudes also significantly improved post-intervention. For example ‘Telling others about a mistake I made would be difficult (1) to easy (5)’ (pre mean=3.24, s.d 0.99; post mean=3.96, s.d 0.52, p<0.001). Self-reported skills in analysing incidents also significantly improved (pre mean=3.70, s.d 0.53; post mean=3.96, s.d 0.52, p<0.001). Incident reporting significantly improved post-intervention (pre mean=0.68, s.d 1.11; post mean=1.17, s.d 1.45, p<0.001). Over thirty quality improvement projects were completed by trainees over the course of the study.

Conclusions:

This is the largest multi-centre study of a patient-safety training intervention in the UK to our knowledge, demonstrating significant improvement in knowledge, skills, attitudes and behaviours in foundation trainees – and also wider organisational positive impact. We propose that the overall ‘Lessons Learnt’ approach successfully and sustainably addresses barriers to patient-safety training and significantly enhances patient-safety culture among junior clinical personnel.
Improving the Quality of Cervical Cancer Prevention Services using the SBM-R Model

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Objectives:

Describe the Standards-Based Management and Recognition (SBM-R) method and explain the result of cervical cancer prevention results of quality improvement using SBM-R.

Methods:

To assess the quality of cervical cancer prevention services, the SBM-R assessment tool was used to conduct a baseline assessment at all 17 puskesmas in March 2010. The assessment was repeated in September – October 2011. The assessors conducted the baseline and endline assessments. The facilities were monitored by a member of the evaluation team, who ensured that all SBM-R assessment tools were fully completed.

The SBM-R assessment team used the tool to observe providers’ performance in five service areas (infection prevention, VIA screening, cryotherapy, the maintenance of the cryotherapy unit, and clinical breast exams) and three factors that contribute to a facility’s readiness to offer good quality services (equipment and supplies, facility infrastructure, and data management). The assessment team generally spent one day at each puskesmas to conduct the assessment, arriving early in the morning and staying until services were finished for the day.

The clinical observation checklist is divided into performance standards, such as “the provider makes appropriate arrangements for opening the VIA clinic” and “the provider correctly performs the VIA test.” For each standard, assessors noted whether providers performed as many as 15 specific steps, which are known as verification criteria. These were used to identify providers’ strengths and weaknesses by calculating how often each verification criterion was achieved during consultations observed across all 17 puskesmas. Summary scores were calculated for each performance standard and service area. Each score represents the percentage of verification criteria achieved in that standard or area. Checklists for readiness factors were also subdivided into performance standards, with as many as 26 verification criteria for each standard. For each readiness factor, assessors noted whether the facility achieved specific verification criteria, such as “cryotherapy unit is present” and “VIA Register and Positive VIA Register are completed.” The percentage of puskesmas that achieved each of the verification criteria was calculated to identify specific strengths and weaknesses across puskesmas. Summary scores were calculated for each performance standard and readiness factor. Each score represents the percentage of verification criteria achieved for that standard or factor.

Results:

Results from the 2010 and 2011 SBM-R assessments show substantial improvements in facility readiness to provide good quality services and providers’ performance over an 18-month period. Average puskesmas scores rose from 80% to 92% for supplies and equipment, from 71% to 98% for infrastructure, and from 32% to 88% for data management. Provider performance scores increased from 80% to 96%, on average, for VIA screening and from 52% to 88% for infection prevention. Cryotherapy scores, which are only available for the endline assessment, averaged 89%.

Conclusion:

Provision of healthcare facilities with the measurement tools and necessary support will result in improved quality of services. Continuous assessment of adherence to quality standards in HIV/AIDS services should be made and owned by individual healthcare facilities to ensure sustainability. Recognition should be given to healthcare facilities externally verified to achieve above 80% of the standards.
Compilation of Standardized Common Rheumatological Private Practice Case Records in Denmark

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Objectives:

To develop uniform basic electronic standard case records for rheumatological private practice in Denmark. The rheumatological private practitioners in Denmark currently write free text in their electronic case records. This routine makes it difficult to retrieve and reuse data. Based on defined quality and uniformity of examination and treatment, it would be advantageous in each medical specialty to use the same standardized case records to describe the individual patients – here exemplified in rheumatology. The standard case records must ideally be based upon the clinical guidelines to ensure that all specialist examinations use the same basic routines and therefore are uniform for the concrete entity. Patients can thereby be met with equal quality of medical judgment no matter which specialist they visit. A decided future use of these standard case records will make it easier to store data in different databases for statistical purposes, and at the same time makes it easier to measure the quality of professional routines as selected parameters can be traced. This change of routines is supposed to give the individual specialists uniform skills and hopefully form a unique shared forum for further professional development.

Methods:

The first step was the compilation of standardized case records. The project group includes two specialists in rheumatology with many years of practical and educational experience. The project group decided that 16 standard case records would cover the daily needs of rheumatological private practice. The standard case records were compiled using the background material thus ensuring that they are based upon broad evidence-based practice. The background material included: clinical guidelines, program references, course descriptions, case studies and text book material. Minimum data sets were considered for each entity. In this process it is important to distinguish between “need to know” and “nice to know”. The standard case records should cover the general requirements but not overburden with unnecessary documentation. The standard case records should also take into account what can be gathered in schematic form and where free text can be added. The standard case records will be collected on a website, which each rheumatological specialist can log on to with a secure member code and download one completed case record at a time. Collegial approval was then obtained. A draft proposal of the standard case records was discussed at a two-day meeting which 50% of the private practice rheumatologists attended and gave the thumbs-up for the project to proceed. The standard case records will be evaluated at a workshop consisting of six doctors and the project group in the nearest future. The participating doctors will be chosen by the following criteria:

1. two newly-qualified specialists
2. two experienced specialists
3. two trainee specialist doctors

Results:

The results of this workshop will be presented at the conference. The conclusion will look at four areas:

1. The participants’ experience in using the records with the standard plans
2. Whether the participants feel that the standard plans improve or worsen the work process
3. How it is to read the structured records in relation to the old unstructured records

Conclusions:

Based on the results the following conclusions can be reached:

1. to what degree the records are quality ensured
2. what it was like to use the structured records
3. what it was like to read the records
4. to what degree there is a uniformity in the structured records
Trainees’ Satisfaction with the Effectiveness of “Post-Graduate 2-Year Medical Staff Training Programs” in Taiwan
H. Y. Chiu¹, E. F. Chen¹, H. C. Su¹, W. C. Lee²*

¹Division of Primary Care Medicine, ²Chief Executive Officer, Taiwan Joint Commission on Hospital Accreditation, New Taipei City, Taiwan

Objectives:
To assess the effectiveness of “post-graduate 2-year medical staff training programs” which are implemented by the Department of Health, Executive Yuan, Taiwan (DOH) since 2007 through a trainees satisfaction survey.

Methods:
The survey subjects include 11,708 trainees (including medical staff specialized in dentistry, Chinese medicine, nursing, pharmacy, medical radiation, medical technologists, occupational therapy, physical therapy, clinical psychology, counseling psychology, respiratory therapy, midwifery and nutrition) who registered with the program from January to September 2011. The questionnaire survey contents include five perspectives: work satisfaction, hospital resources, tutor assistance, self-growth, and program support. The 5-point Likert scale was adopted for the online survey conducted from October 11th to October 31st, 2011. Regarding the degree of satisfaction analysis in this research, the sums of “highly satisfied” and “satisfied” were adopted to calculate the frequencies of the assessed data. The Chi-square test was conducted to analyze the trainees at medical centers, district hospitals, and regional hospitals, whether or not their degree of satisfaction for the program implementation produced significant differences.

Results:
A total of 8,256 trainees responded to the survey questionnaires, with a response rate of 70.51%. In terms of hospital level, 3,499 trainees (42.38%) served at medical centers, 4,244(51.41%) served at regional hospitals, and 513(6.21%) served at district regional hospitals. The trainees deemed that after undergoing the post-graduation 2-year Medical Staffs Training Programs, the clinical practice was effectively improved (6,183, 76.70%), the school education was applied in clinical work (6,080, 75.42%), and interactive communication with the group members, patients, or patients’ families was facilitated (6,195, 76.85%). The majority of the trainees (65.18%) said that given the chance they would be willing to serve as a tutor. Most of them agreed with the sustained promotion and implementation of this training program undertaken by the Department of Health (71.68%). The medical center trainees’ degree of work satisfaction ($\chi^2=30.015; P<0.001$), satisfaction for hospital resources ($\chi^2=125.912; P<0.001$), satisfaction for teacher assistance($\chi^2=91.031; P<0.001$), degree of satisfaction for self-growth ($\chi^2=46.267; P<0.001$), and program support ($\chi^2=46.445; P<0.001$) were all higher than those from the regional and district hospitals. Additionally, the analysis of the correlation between the trainees’ program implementation satisfaction and work satisfaction shows that a significant correlation has been reached. The correlation between the degree of satisfaction for the hospitals’ program implementation and work satisfaction is shown in the table below:

<table>
<thead>
<tr>
<th>Perspectives</th>
<th>hospital resources</th>
<th>tutor guidance during training</th>
<th>self-growth</th>
<th>program support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work satisfaction correlation coefficient(r)</td>
<td>.747**</td>
<td>.690**</td>
<td>.720**</td>
<td>.651**</td>
</tr>
<tr>
<td>Significance</td>
<td>P&lt;0.001</td>
<td>P&lt;0.001</td>
<td>P&lt;0.001</td>
<td>P&lt;0.001</td>
</tr>
</tbody>
</table>

Conclusions:
The degree of satisfaction of the trainees serving at medical centers, district hospitals, and regional hospitals indeed reached significance. Moreover, the trainees generally gave positive recognition for the program implementation. It indicates that if the hospital has more devotion to this program, the trainees’ overall work satisfaction will be higher.
Building One Common Language of Quality through Wiser-Driven Educational and Staff Development Activities

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Objectives:

For a quality culture to take root and take flight, all staff need to adopt a common quality language and be aware of their roles in making quality happen. Since 2009, Kowloon Central Cluster (KCC) has used WISER, meaning We Innovate, Services Excel Regularly, as a clear vision to drive the quality culture. Among all concerted efforts, the educational and staff development activities have focused on nurturing this common language of quality, contributing to the build-up of a quality culture. We have equipped our staff to go and grow through the quality journey which has remarkable success in enhancing the work processes simultaneously.

The WISER-driven educational and staff development activities are: to instill one common language of quality, WISER, in all KCC staff; and to equip clinical and non-clinical staff with LEAN tools and techniques enabling them to apply the skills learnt at work.

Methods:

The overarching educational model is composed of “Three Pillars”:

a. First Pillar: WISER Corporate Awareness Programs - WISER Awareness Workshops (WAW), Lean Facilitators Training, WISER-Link, WISER Room and WISER Learning Kits (8-Waste memo pads/WISER-boards).


c. Third Pillar: WISER Sharing Forums – Come and be WISER Sharing Forums, WISER Sharing Symposium, A3-report display boards and project sharing with non-healthcare industries.

Results:

The common language of quality was embraced in KCC. Around 25% of 8,000 staff members attended WAW and 100% of them acquired what ‘WISER’ stands for. All the six hospitals/institutions within KCC adopted and customized the common language of quality within their hospitals/institutions. WISER Tools such as “5 Whys”, “5S” and “A3-report” skills were transferred with forty-two A3 reports completed. All clinical, allied health and administrative departments have gradually become involved in leading WISER projects. The quality improvement culture has matured within the cluster of hospitals where WISER improvement projects on workflow enhancement rose from 9 (in 2009) to 77 (in 2010 and 2011). Together with senior management support and other factors, WISER projects have brought about significant and continuous quality improvement on work processes, such as a 78% reduction in waiting time for out-patient blood-taking procedures or 89% reduction in waiting time for electrolysis eye surgery.

Conclusions:

It takes years and undivided efforts to build a quality culture. Focusing on one common language of quality paves the way for success. Among all contributing factors building up the WISER culture in KCC, the WISER-driven educational, skill-based and action-learning activities have facilitated our staff to witness and experience quality requirements, improvement and achievements themselves. By continuously sharing and reinforcing their project learning stories, the ‘innovative’ and ‘regular’ quality improvement culture is therefore being sustained. Above all, our staff are provided with positive role models in pursuing the quality pathway. Apart from enhancing the service workflows, we have also realized our individual roles in beefing up the WISER culture and applying it in our (KCC) way.

References:

Nurses’ Attentiveness and Attitudes Regarding Patient Satisfaction: An International Multicenter Study

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Objectives:
To evaluate nurses’ attentiveness and attitudes regarding patient satisfaction and to assess predictors of nurses’ performance related to patient satisfaction at point of discharge.

Methods:
From January to December 2009 we surveyed nurses in four academic hospitals located in the United States (US), United Kingdom (UK), Israel and Denmark. A questionnaire examining attitudes, performance and management towards patient satisfaction was developed and validated. Bivariate analyses were conducted using chi-square tests, and multivariate analyses were conducted using logistic regression.

Results:
In all, 536 of 671 nurses returned the questionnaire for a response rate of 79.9%. Only a minority (12.1%) of nurses stated they routinely asked patients about their level of satisfaction with the hospital stay at point of discharge, with nurses in the US (18.3%) and Denmark (17.5%) being more likely to ask compared to nurses in the UK (7.4% ) and Israel (6.3%) (P=0.001). On the other hand, more than half of the responders (51.8%) across countries claimed having responded to the status of patient satisfaction or dissatisfaction within the last month (US: 54.9%; UK: 61.7%; Israel: 25.0%; Denmark: 69.9%; P<0.001)

Using logistic regression to adjust for demographics and work position, the significant predictors of nurses’ inquiry about satisfaction at discharge were: “Asking the patients about their expectations for the hospital stay”, “Documenting patient satisfaction in the nurses’ charts”, and “Remembering having received feedback from the management on patient satisfaction”.

Conclusions:
These data suggest that nurses are responsive to patients’ satisfaction status during hospitalization, but that they infrequently address this topic at discharge. These findings suggest a structured approach towards this issue is needed, engaging both nurses and managers. This approach might incorporate systematic feedback on patient satisfaction (real-time and surveys) as one dimension to increase nurses’ awareness of patient satisfaction. Further studies are needed to explore this assumption.
The WHO Multi-Professional Patient-Safety Curriculum: The Implementation of Key Modules and its Impact on Patient-Safety Knowledge and Attitudes in Medical Students at the University of the Algarve

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Objectives:
The recently published data for Portugal indicates a similar high incidence of medical error as described elsewhere globally. While the delivery of healthcare has become increasingly complex in nature and is delivered by ever more numerous and multi-professional teams the training and education of such teams has not kept pace. The University of the Algarve has a new graduate-entry medical course taught exclusively by PBL (Problem Based Learning) with a strong commitment to patient safety, admitting students from a broad range of backgrounds. The purpose of this study was to evaluate the effect of incorporating the WHO Multi-Professional Patient-Safety Curriculum on the students’ knowledge and attitude to patient safety.

Methods:
Having been recognized as a WHO Recognized Complementary Test Site, initial questionnaires were administered to the entire student body (n=91) prior to the implementation of three key modules of the curriculum, namely ‘What is patient safety?’, ‘Why applying human factors is important for patient safety’ and, ‘Being an effective team player’. The results of this intervention were then evaluated according to the criteria set out by the WHO and using previously validated tools. Areas evaluated included acceptability of topics, usability as an educational tool, perceived usefulness to students, the impact/effect on students' knowledge of patient safety and successes\ challenges experienced by our school in implementing the Curriculum Guide.

Results:
Preliminary indications are that the curriculum was very popular with both the students and faculty. There was an increase in applications to study the area in greater depth by way of special study module options, an increase in faculty offering to incorporate material in their current PBL cases, and an increased profile of the field by senior management resulting in improved facilities to support the increasing demand for simulation-based teaching. A number of students prepared research posters for presentation at our national patient-safety meeting. The introduction of the course was associated with a demonstrable increase in knowledge regarding patient safety. A number of areas were highlighted which may be of specific cultural significance: challenging authority and assertiveness, issues around disclosure of error to patients, adverse incident reporting and legal culpability. Data collection and processing is ongoing, a process that will be able to statistically better describe composites that characterize not only levels of knowledge, but also perceptions of Safety of the Healthcare System, Personal Influence over safety and Personal attitudes regarding safety before and after the teaching of the modules.

Conclusions:
The study showed that the introduction of key components of the curriculum was an effective means of increasing the knowledge and profile of this important field, well accepted by students, staff and management. It has served to highlight some areas of discussion and is worthy of further study since they may reflect important local cultural realities that may need to be addressed. It has explored the feasibility of alternative teaching techniques e.g. PBL, Simulation, Self-Directed Special Study Modules or mini research projects vs. more traditional teaching methods. This study has facilitated the inclusion of the entire curriculum at our medical school and could act as a supportive resource and model for other institutions nationally considering implementing an integrated patient-safety curriculum.
Promote the Reporting Culture of Near-Miss Medication to Enhance Patient Safety

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Objectives:

The near-miss medication is a case not reaching crisis and does not cause harm to patients. For this reason, nurses feel it is time-consuming to report the case. Therefore, they seldom and do not report the near-miss onto AIRS. However, the learning points of cases are worth sharing to prevent similar medication incidents happening in the future. So in September 2011, the Nursing Services Division (NSD) formed a working group with the objectives of a) promoting the reporting culture of near-miss medication cases b) preventing incidents of a similar nature happening in the future through organizational learning and sharing and c) appreciating nurses’ efforts and contribution in preventing medication incidents and enhancing patient safety.

Methods:

The working group developed a simple reporting form with check boxes for nurses to report near-miss medication cases. When the Department Operations Manager received the form, she/he sent an appreciation card to nurses. Then, the department investigated the case and recommended improvement measures. Every quarter, departments sent the findings and recommendations to the NSD. Subsequently, the cases and learning points were shared in various meetings. In addition, our General Manager (Nursing) sent an appreciation letter and souvenir as recognition to nurses who report and suggest improvement measures to the cases.

Results:

From September to December 2011, the NSD received 35 cases from nine departments. All cases were detected before drugs being administered to patients. The commonest types of cases related to prescribing (n=25). In six out of 25 cases (i.e. 24%), it was prescribing of the wrong duration, then followed by wrong instruction 16% (n=4). Dispensing was the second type of near-miss (17%, n=6). The two most common near-misses were wrong strength 50% (n=3) and wrong drugs 50% (n=3) dispensed. They were contributed to by failure to comply with policies 50% (n=3), similar drug name 33% (n=2) and unavailability of medicine 17% (n=1). Based on the near-miss cases, the NSD developed case studies and conducted workshops on the ISBAR (Identify–Situation-Background-Assessment-Recommendation), Assertions, Briefing and Debriefing with particular focus on medication safety. Moreover, 35 nurses received recognition from nursing management.

Conclusions:

With the simple near-miss reporting form, nurses are more willing to report near-miss cases. Besides, departments exert ownership to the cases since they analyzed, recommended and initiated improvement measures. Although nurses often are the final gatekeeper to prevent medication incidents, however, the success of medication safety depends on the effort from multi-disciplines, a culture of reporting, and organizational sharing and learning. In summary, nurses who prevented the near-miss were encouraged to report, and nurses who reported or prevented cases received recognition.
Why do People from Ethnic Minority Groups report Poorer Experiences of Hospital Care?

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Objectives:

Across many health systems and aspects of the care pathway, patient surveys have consistently shown that people from black and minority ethnic (BME) groups rate their healthcare more negatively than white people (e.g. Weech-Maldonado et al. 2003; Campbell et al. 2001). However, their lived experience of care has been less well studied. This paper reports data about BME elders’ experiences of acute hospital care, drawn from a larger study of older people and care transitions.

Methods:

In-depth interviews were carried out with 24 people from ethnic minority groups, aged 60 and above, with recent experience of a hospital stay. The study used a participatory design, with older people involved as research collaborators and informants. Previous studies using co-research approaches report that older people are likely to feel more relaxed and at ease with a peer interviewer, thus eliciting richer and more comprehensive accounts (e.g. Leamy and Clough, 2006). Thematic analysis of the data was carried out, informed by the principles of constant comparison (Glaser and Strauss, 1967).

Results:

The image of what constitutes good acute care that emerged from the analysis shared many similarities with the preferences and priorities of the older population in general. Participants placed a high value on interpersonal relationships, above all on being recognised and valued as a person, looked after by staff that were helpful and responsive and kept informed about their condition and the management of their care. However, experiences were also strongly influenced by participants’ ethnic background and, in particular, by their language skills. Language barriers were a significant obstacle to communication and interaction between patients and providers, which could exacerbate the feelings of fear and anxiety that typically accompanied acute admission. Complaints about the poor provision of culturally appropriate food and some examples of prejudicial behaviour by hospital staff were also shared.

Conclusions:

This paper has two main implications for practice. It suggests that general efforts to enhance older people’s experiences of care – e.g. through the adoption of patient-centred approaches – are likely to benefit all groups, irrespective of ethnic background. At the same time, needs and experiences are shaped by ethnicity. Language in particular appears to be a formidable obstacle to the delivery of good care, in both the technical and experiential sense. More targeted approaches are needed to improve the quality of care as it is experienced by older people from BME groups. Arguably, a clearer understanding of how ‘cultural competence’ can be embedded in mainstream care delivery is required.

References:

Effective Team Management of Diabetic Foot Discovered by Timely Review of Prolonged Hospital Stay

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Objectives:

Prolonged hospital stay for more than 30 days frequently represents an ominous sign for hospital management, because of increasing morbidity and mortality of the patients, as well as financial burden to the medical insurance. Factors responsible for it include: 1. a continuous need for active treatment, which is unsuitable for home care; 2. lack of other facilities or services other than the present hospital; 3. reluctance of the family to accept the patient. A timely review of prolonged hospital stay has gradually become a routine work for the Quality Committee in many hospitals. The review may sometimes offer the opportunity for the hospital administrators to discover the progress in management of some particular disorders in a department, when the chief overlooks it.

Methods:

Here we present an unexpected benefit of the review of prolonged hospital stay in the Department of Endocrinology and Metabolism (DEM), Kaohsiung Chang Gung Memorial Hospital, Taiwan. A review of the patients with prolonged hospital stay in DEM in 2010 shows that patients with worsening diabetic foot are mainly responsible for prolonged hospital stay in DEM. Further comparison of the clinical parameters for 149 patients with DM foot in 2004 and 134 patients in 2010 reveals the following interesting positive findings.

Results:

When grading severity of the diabetic foot according to the Wagner grade from G1 to G5, hospital stay for the patients with high grade (G4 and G5) increased remarkably from 24.6 days in 2004 to 31 days in 2010. Further analysis showed that the worsened hospitalization was counterbalanced by a decrease of below and above knee amputation rate from 32.2% to 12.6% (P<0.001). A team approach to the management of diabetic foot since 2004 in this hospital, including a diabetic expert in internal medicine, plasty, vascular and orthopedic surgeons, dieticians and diabetic educators, was effective to improve limb salvage rate, as well as a progressive decrease of Wagner grade in the population (63% for G4+G5 in 2004 vs. 32.9% in 2010, P<0.01).

Conclusions:

Our findings indicate that, despite prolonged hospital stay for limb salvage, effective management through a well-coordinated team is associated with down-grading and better life quality of the patients with diabetic foot.
Redesign how we Receive, Transcribe and Pick Medications at the Outpatient Pharmacy to Reduce Medication Errors

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Objectives:

To increase near-miss reporting rate in the outpatient pharmacy by 50% and reduce medication errors due to transcribing and picking of medications

Methods:

Previously, near misses were reported voluntarily by pharmacy staff using near-miss reporting slips that were often placed in inconspicuous areas and were seldom replenished after they were used up. As a result, reporting rates were poor and the data collected were not utilized to improve medication use processes. Prior to the project, an average of 240 near-misses were reported monthly.

This is a 6-month project which started with a staff survey on medication-safety culture at the outpatient pharmacy. The survey identified lack of awareness and low rating of patient safety as major issues resulting in the low rate of near-miss reporting. The project made use of the Accelerated Model for Improvement (AMI) to create six Plan-Do-Study-Act (PDSA) cycles which were tested over the first three months of the study. Each PDSA cycle was tested over a period of two weeks to one month and those which showed improvement were implemented and monitored over a period of three months to determine sustainability.

The team tested six PDSA cycles before implementing the final solutions. The near-miss reporting slips were modified into a table format attached to a clipboard and were made available at all checking and dispensing counters. A notice board containing latest medication-safety updates was set up in the pharmacy office to promote patient safety. The medication bin labels were color coded to reflect commonly mis-packed multiple-strength medications to alert staff who are packing. A short message service (SMS) system was set up whereby staff were alerted on latest medication-safety updates within the pharmacy. A checklist for staff working at the registration counter and pictures of expensive and bulky medications were used to improve accuracy of orders taken at registration.

Results:

Near-misses reporting rate increased by 200% (240/ month to 720/ month) and was sustainable throughout the duration of the project. Picking errors involving drugs with multiple strengths reduced by 65% within the first month. New drug information disseminated using the SMS system resulted in no near misses or medication errors for two consecutive months for the drugs involved. Wrong drug orders taken at registration were reduced by 75%. A survey conducted found that staff were generally satisfied with the changes, in particular the medication-safety notice board (average rating of 3.1 out of 5) and the SMS system (average rating of 3.2 out of 5). Although medication error rate was not reduced, it remained constant throughout the duration of the project.

Conclusions:

The changes implemented in this project were successful in increasing the near-misses reporting rate. A patient-safety culture was also created among staff at the outpatient pharmacy. The near misses reported allowed the medication-safety team to detect signals and implement precautionary measures to prevent errors from occurring. Although the results of the changes were sustainable throughout the duration of the project, long-term sustainability requires vigilance and teamwork from all staff in the pharmacy.
RECUPERARE Model applied to Serious Adverse Drug Events (SADE)

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Objectives:

We analyze through the « RECUPERARE » model originated in the nuclear industry, Serious Adverse Drug Events (SADE) to assess our recovery performance. This model is based on the hypothesis that the consequences of an incident are not only due to its causes (context, human, technique and organizational factors) but should also be linked to the organization and team’s ability to recover from it (1).

Methods:

It is a retrospective study of investigation records of 63 SADE (1999-2010). We collected data on the three phases of recuperation: detection, diagnosis and recovery. The errors are classified according to the drug-delivery process phases (prescription, preparation, administration).

Results:

Detection step: Something is going wrong!
The person who detects an anomaly in the drug-delivery process is in 65% of the cases a nurse, in 28% a physician and in 11% the patient himself. In 32% of the situations, the error-making agent detects the problem. This rate is 57% for the so-called « routine » failure, 28% for the so-called « rule » failure and 12.5 % for the so-called « knowledge » failure. A change in clinical status of the patient (54%), a return to the patient record (21%) and an anomaly detected on the material (19%) alerts the team. The delay between error and detection varies according to the phase of the drug-delivery process (median: Prescription 84h; Preparation 4h; Administration 0.25h).

Diagnosis step: we understand what happened!
The diagnosis is collegial and attributed to the physician in 52% of the cases and to the nurse in 48% of them. The diagnosis tends to be established directly after detection less often for error occurring in “preparation phase” (70% vs 90% “prescription phase” and 86% “administration phase”).

Recovery step: We take the necessary measures to minimize the consequences of the incident.
It’s a team process which needs supplementary human and technical resources. In 1% of cases, the recovery is impossible. In 21%, it is not efficient (resulting in serious damage or even death). In 73%, the recovery phase allows the patient to return to his prior clinical status. In 5%, the recovery process fails. The factors of this failure are human, contextual, and organizational. The recovery delays vary according to the type of drug.

Conclusions:

The RECUPERARE approach is relevant in order to analyze SADE. The model points out not only “what went wrong?” but also “what we do well”. Analyzing and improving the recovery steps seems to be a promising avenue to improve patient safety at hospitals.

References:

A Qualitative Study of Perceptions of Senior Managers before and after Hospital Accreditation

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Objectives:

One viewpoint is that accreditation is “an effective form of professional control that can have a positive impact on values and organisational culture”. That hospital culture can affect outcome was strongly suggested by a recent qualitative study of acute myocardial infarction mortality rates.

We were interested in exploring whether senior hospital managers underwent a change in perception of culture as a result of an accreditation exercise.

Methods:

The method of investigation was by semi-structured interview. Each manager was interviewed twice, before and after accreditation. The analysis used the systematic methodology of grounded theory, developed by Glaser and Strauss. We chose to use the ‘coding’ groups initially proposed by Glaser. Manual ‘coding’ of key points was done and then constant comparison technique was used to allow categories and then concepts to emerge.

Results:

Pre-accreditation categories:
A consistent impression of the nature of the work
There exist many resource limitations
Expectations of the future are fairly consistent
Attitudes to accreditation were highly variable
Senior and head office management was seen as having positive and negative attributes
The culture was very consistent
The concepts that emerged from these categories were:
Hospital X is a complex organisation
The culture is very much bound up in its history
The establishment of care pathways that cut across departmental boundaries is difficult
Accreditation would generate work and stress for outcomes that are maybe not sustainable

Post-accreditation categories
The process of accreditation was seen as a big deal
The attitudes to benefits of accreditation remained highly variable
The issue of resource limitation remained

The concepts that emerged from these categories were:
Accreditation was seen as being very much a task-orientated exercise
There was no impression of a change in culture

Conclusions:

This qualitative study examined the effect of accreditation on a hospital for which it was a novel event. The expectations beforehand were variable, and exposed a broad unfamiliarity with both the methods and goals of accreditation. The culture of the hospital was essentially unchanged by the accreditation, which was seen as being a task-driven exercise rather than a process-driven culture change.
Barriers and Bridges to Infection Prevention and Control in the Netherlands and Canada: Two Comparative Case Studies

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Objectives:

The overall aim of this research was to explore why some hospitals are more successful than others at reducing the acquisition rates of multidrug-resistant organisms.

Methods:

Using a socio-ecological perspective on health systems adapted from works in ecological restoration, ecosystems management and healthcare, a participatory comparative case study design was employed. The study was collaboratively conducted on a surgical unit at a Netherlands hospital with very low rates of multidrug-resistant organisms and a surgical unit in a Canadian hospital with higher rates of these pathogens. The cases were selected on the basis that they were both academic health sciences centres of similar size in publicly funded systems; yet, they reported differing rates of MDRO infections. Research methods included a total of six unit observations, nine practitioner-led photo walkabouts of the units (n=13), six photo elicitation focus groups with practitioners (n=26), and the review of relevant policies and procedures and related infection prevention and control data.

Results:

Common findings across both cases include the perceived importance of engaged leadership, the presence of environmental design issues, a lack of antibiotic prescribing restrictions, and the frequent use of workarounds that may be problematic for infection prevention and control. Disparate findings between cases include differences in ratios of hospital beds per capita, bed occupancy rates, staffing practices, equipment cleaning processes, bed cleaning systems (centralized versus manual) and the presence, in one hospital, of an active grass roots Hygiene in Practice group engaging practitioners in several ongoing activities to promote infection prevention and control. There is a lack of comparable findings between the two cases on hand hygiene audit protocols, surveillance strategies, reporting of acquisition rates, and the nature and extent of high-risk populations for community-acquired methicillin-resistant Staphylococcus aureus in the two hospitals’ catchment areas.

Conclusions:

The findings and methodological challenges identified in this study suggest that case selection in future comparative infection prevention and control case studies should be based on an expanded list of criteria. These criteria should include comparable audits, surveillance, and reporting practices and comparable demographic and other relevant data, such as data on the agricultural practices within and demographic attributes of vulnerable populations within the hospital catchment areas.
Has there been Quality Improvement? Long-Term Trends of Quality Indicators in 58 Swiss Hospitals

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Objectives:

Long-term trends in incidence of “bad quality events” in hospital care were analyzed for pressure ulcer (PU), anesthesia complications (AC), and patients’ or after-caring institution’s dissatisfaction with discharge (DD) in order to determine potential impact of annual quality reports on service delivery.

Methods:

For PU, 179,256 inpatients discharged from 58 Swiss hospitals between 2004 and 2010 had been reported to an independent data centre. Data comprised clinical and socio-demographic variables and some hospital characteristics. For AC, 69,899 inpatient records (53 hospitals) were collected between 2001 and 2011. PU and AC events were registered via expert judgment. By contrast, DD was registered via self-administered questionnaires collected from patients and/or from after-caring institutions for a total of 15,116 patients (31 hospitals) during the period 2006 to 2010. Statistical analysis used multilevel logistic regression models for each indicator, including relevant patient and hospital characteristics and historical time. To determine correct time trends (adjusted for patient mix), random intercept and (for time effect) random slope parameters were tested for potential differences between hospitals.

Results:

PU crude incidence rates declined from 2.6% to 1.6%. Patients’ age, being female, length of stay (LOS), and impaired health state (Norton Scores) were positively related to PU risk. Health insurance coverage beyond the legal minimum (HIC) was protective against PU risk. PU incidence displayed a seasonal component. Adjusted PU incidence significantly declined during the 6-year observation period. Hospitals displayed significant differences in (adjusted) incidence rates and time trends. Higher average patient age, longer mean LOS, and higher HIC proportion within a hospital were related to lower PU incidence. Decrease of PU risk over time was steeper in hospitals treating older patients.

AC incidence rates constantly ranged below 2% before 2006. Therefore a more sensitive documentation form was introduced, leading to an (intended) “increase” of AC incidence in 2006 (> 6%), with subsequent decrease thereafter signaling quality improvements on a higher aspiration level. Adjusting for ASA-Score, HIC, gender, intubation, and a seasonal component revealed significant hospital differences in AC risk levels and slopes of decrease, which could not be explained by hospitals’ characteristics available.

DD proportion was stable over the observed 5-years (about 30%) and was curvilinearly linked to patients’ ages, linearly to LOS. Protective impacts on DD were exerted by HIC, treatment in obstetrical or gynecological wards, and involvement of patients’ GPs and/or after-caring institution into discharge management. Emergency admission, or discharge from orthopedics or internal medicine wards was linked to a higher DD risk. After adjustment hospitals still displayed significant differences, with larger hospitals displaying more DD.

Conclusions:

Service delivery can be supported by annual quality reports comparing hospitals’ results to peers. Indicators that measure procedures under apparent control of the health professionals seem more sensitive for quality changes than more complex and uncontrollable indicators like patient-reported outcomes. For the latter, external hospital comparisons seem worthwhile, however. They may discover influential treatment procedures and identify best-practice models.
Simple, Low-Cost Measures at the National Institute of Child Health’s Pediatric Intensive Care Unit in Lima, Peru, decrease Health care-Associated Infections

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Objectives:
1. Describe the benefits of systematically applying evidence-based practices to reduce healthcare-associated infections (HAIs).
2. Describe efforts to prevent sepsis and reduce infant mortality through a checklist for central line-associated bloodstream infections (CLABSI) with a standards-based performance improvement methodology (PIM).

Methods:
The National Institute of Child Health (INSN) is a government health facility serving as a referral center for critically ill children from all regions of the country, providing more than 1,000 consultations a day. It has 21 intensive care beds serving 480 hospital beds, including critical areas for cardiology, heart surgery, burn unit, and neurosurgical and neonatal wards. By 2007, INSN was treating growing numbers of children with increasingly complex conditions. Among the main causes of HAI, the hospital has reported CLABSI, surgical site and catheter-associated urinary tract infections, and ventilator-associated pneumonia. This, in turn, has increased the rates of infant mortality, morbidity, length of stay and hospital costs.

Since 2009, a group of specialists led by the INSN Quality Office has been working with the USAID/Peru Quality Healthcare project to reduce HAI rates at the Pediatric Intensive Care Unit (PICU). In July 2009, the project invited Peter Pronovost, leader of the Armstrong Institute for Patient Safety and Quality, to visit INSN to assess the capacity of the intensive care unit to track, prevent, and control HAI. Following his recommendations, a performance improvement process was implemented at PICU applying two strategies:

1. Standardization of procedures through evidence-based guidelines to insert and maintain central lines
2. Improving teamwork and communication by learning from mistakes

Key Interventions
- From 2010 to 2011, ten facilitators trained in PIM gradually strengthened the intensive care unit staff and 488 workers to implement continuous self-assessment and data analysis, and to develop and implement improvement plans.
- Standardized procedures through eight technical guidelines developed by the working teams.
- Refurbished 578.32 m² of the PICU, provided adequate equipment and disposable materials, and improved the nurse-to-patient ratio.
- Allocated $150,000 to meet strict bio-safety international standards.
- Reinforced daily work plans and goals during clinical rounds.
- Institutionalized PIM and made using it mandatory at all INSN units.

Results:
1. Reduction of CLABSI from 10.01 in 2007 to 1.66 x 1000 in 2011 among 1,314 patients who received central line therapy
2. Reduction of blood stream infection from 4.5 percent in 2010 to 1.5 percent in 2011 among same group

Conclusions:
1. Simple, low-cost measures based on evidence, teamwork, and communication safeguarding patients’ lives can prevent HAI and improve health care quality.
2. The combined process of standardizing practices and using checklists allowed teams to increase the quality of clinical procedures performed at INSN.
3. Clinical care providers agreed to change their behavior after they observed the example set by executives, directors, and employees.
4. This experience has permitted PICU staff to identify other sources of blood stream infections, mainly those associated with mechanical ventilation and the insertion of urinary catheters.

Disclaimer: The authors’ views expressed in this abstract do not necessarily reflect the views of the United States Agency for International Development or the United States government.

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Objectives:

This study aimed to improve healthcare quality by determining the association between Human Resource Management (HRM), team functioning and performance.

Methods:

A mixed-method cross-sectional study was conducted focusing on rehabilitation services in Australia. The rehabilitation field was selected due to its strong teamwork orientation. A total of 163 participants, comprising 152 rehabilitation clinicians and 11 managerial staff from seven hospitals were enrolled. Focus groups and interviews were conducted with clinicians and managers to describe HRM policy and practice. HRM areas covered were: HR planning and evaluation, work systems, staff development, and staff wellbeing. A semi-structured questionnaire was administered to members of the participating rehabilitation services in assessing team-functioning elements of team efficiency and team climate. Two measures of team performance were employed, namely: self-reported job satisfaction, and compliance with clinical indicators defined by the Australian Council of Healthcare Standards. Qualitative data from focus groups and interviews were thematically analyzed. Quantitative input from survey and clinical indicator data were analyzed statistically to explore associations. Team efficiency and team climate scores were not normally distributed requiring non-parametric methods to be applied when comparing services. The Mann-Whitney test was used to examine the distribution of team efficiency and team climate scores between services. Compliance rates for clinical indicator data were compared across all services and examined in relation to national and benchmark group compliance results.

Results:

Study findings indicate HRM to have associations with team functioning and performance. Low team efficiency linked to low clinical indicator compliance, was associated with inefficiencies in recruitment and staff evaluations. Low team efficiency, low team climate and low clinical indicator compliance were associated with ineffective recruitment, ward managerial change, and organizational structure resulting in executive management detachment from issues impacting the rehabilitation service. High team efficiency and high team climate was linked with good job satisfaction and clinical performance. The good team-functioning and performance outcomes were associated with efficient recruitment, flat organizational structure, and distinct cross-professional sub teams within the rehabilitation service work system. A lack of leadership for the rehabilitation service work system was associated with low job satisfaction. Improved management from hospital ownership change, adequate staffing, and reasonable workload were associated with high job satisfaction. Focused specialization of the service work system, and satisfaction from research activities were linked to good clinical performance.

Conclusions:

This study highlights the role of HRM often overlooked in improving healthcare quality. The results show that a holistic approach to HRM is related to teamwork and facets of performance. Influenced by local context, HRM currently has the potential to either positively or negatively affect teamwork, job satisfaction, and clinical performance. The tailoring of future HRM approaches in accordance with elements of efficiency, change, structure, leadership, staffing, and specialization, could contribute positively to desirable teamwork and performance outcomes.
Getting Knowledge into Action: The Evidence-Based Care Delivery of a Novel Sepsis Improvement Collaborative

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Objectives:

Sepsis is a life-threatening condition which claims the lives of more than 37,000 people each year in the United Kingdom1. It is well recognised that a driver diagram is a useful tool as it helps one to understand how their system works and as a result identify a change package. Our high-level aim was to develop a driver diagram, change package and measurement plan to improve the outcome of all patients with sepsis in Scotland, based on best international evidence and improvement programmes.

Methods:

Subject matter experts had previously identified best practice with regard to the management of patients with sepsis. Knowledge managers (healthcare librarians) were then asked to conduct a literature search to identify not only best international practice, ‘know what,’ but also experiential learning from what has worked well in other improvement programmes on identifying and managing patients with sepsis, or ‘know how.’ Results of the search were then presented in an innovative format and shared with the subject matter experts. A driver diagram and change package with measurement plan was subsequently developed, highlighting the ‘know what’ and ‘know how’ of best sepsis management.

Results:

The literature search highlighted international best practice, including evidence on ‘doing the right things’ (i.e. using effective interventions) as well as the experiences of other improvement programmes to support ‘doing things right’ (i.e. effective implementation). The literature review corroborated and complemented the existing knowledge and beliefs of the subject matter experts, providing the basis for the development of a driver diagram, measurement plan and change package with a SEPSIS SIX Bundle. The results of the search were themed in relation to different aspects of care delivery and presented in an easy-to-access format, enabling both a succinct and rapid overview of the evidence and improvement work or a comprehensive review of the evidence. The completed knowledge package was shared via an electronic community of practice to support collaboration and sharing throughout the implementation process. This community of practice website with its electronic resources is now freely available to every healthcare professional in Scotland2. To support the early identification and recognition of sepsis a point-of-care screening tool has been tested with further work underway to develop a mobile application and e-solution. Currently, this screening tool and SEPSIS SIX Bundle is being tested, implemented and adapted to own local context through the Model for Improvement3, across every hospital in Scotland.

Conclusions:

Knowledge managers have a key role in getting knowledge into action through the identification of evidence and similar improvement/implementation projects thus supporting the development of driver diagrams, change packages and measurement plans. Presenting results in an easily accessible electronic format saves healthcare staff time, provides a rapid overview of available published knowledge and makes it easy for frontline healthcare workers to do the right things for their patients.

References:
The Association of Patient-Safety Climate and Nurse-Related Organizational Factors with Selected Patient Outcomes: A Cross-Sectional Survey

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Objectives:

Patient-safety climate (PSC) is an important work environment factor determining patient safety and quality of care in healthcare organizations. Few studies have investigated the relationship between PSC and patient outcomes, considering possible confounding effects of other organizational features of the hospital work environment. The purpose of this study was to explore the relationship between PSC and patient outcomes in Swiss acute care hospitals, adjusting for major organizational variables.

Methods:

This is a sub-study of the Swiss arm of the multicentre cross-sectional RN4CAST (Nurse Forecasting: Human Resources Planning in Nursing) study. We utilized data from 1,630 registered nurses (RNs) working in 132 surgical, medical and mixed surgical-medical units within 35 Swiss acute care hospitals. PSC was measured with the 9-item Safety Organizing Scale, which captured RNs' engagement in patient-safety behaviors and practices. Other organizational variables measured with established instruments included the quality of the nurse practice environment, implicit rationing of nursing care, nurse staffing, and skill mix levels. We performed multilevel multivariate logistic regression to explore relationships between seven patient outcomes (nurse-reported medication errors, pressure ulcers, patient falls, urinary tract infection, bloodstream infection, pneumonia; and patient satisfaction) and PSC.

Results:

In none of our regression models was PSC a significant predictor for any of the seven patient outcomes. From our nurse-related organizational variables, the most robust predictor was implicit rationing of nursing care. After controlling for major organizational variables and hierarchical data structure, higher levels of implicit rationing of nursing care resulted in significant decrease in the odds of patient satisfaction (OR = 0.276, 95%CI = 0.113 to 0.675) and significant increase in the odds of nurse-reported medication errors (OR = 2.513, 95%CI = 1.118 to 5.653), bloodstream infections (OR = 3.011, 95%CI = 1.429 to 6.347), and pneumonia (OR = 2.672, 95%CI = 1.117 to 6.395).

Conclusions:

We failed to confirm our hypothesis that PSC is related to improved patient outcomes, which we need to re-test with more reliable outcome measures, such as 30-day patient mortality. Given the current state of research on PSC, the direct impact of PSC improvements on patient outcomes in general acute-care settings should not be overestimated. Based on our findings, general medical / surgical units should monitor the rationing of nursing care levels which may help to detect imbalances in the “work system”, such as inadequate nurse staffing or skill mix levels to meet patients’ needs.
Benchmarking Clinical Risk of Chemotherapy Processes through Standardized FMECA

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Objectives:

Within the context of the Strategic Program “Towards a comprehensive competency framework and an integrated solution for patient safety in chemotherapy”, funded by the Italian Ministry of Health, a standardized FMECA (S-FMECA) has been developed and validated in 12 chemotherapy services (Ward and Day Hospital) of nine Italian hospitals. This prospective method, able to incorporate epidemiological information on adverse events (AE) and experts’ judgments, returns the risk profile of a chemotherapy service deployed for each elementary activity. Moreover, the method benefits from the state of the art on the epidemiology of AE in chemotherapy as well as recommendations, good practices and gold standards for safe chemotherapy.

Methods:

The analysts are supported in the description of the actual chemotherapy process by a tool that shows a complete, codified and validated process mapping of all elementary activities, obtained by means of both literature review and structured interviews to main clinical actors. The same tool offers a taxonomy of 22 different error modes (EM), derived from a large literature review of 48 selected papers about medication errors. The taxonomy of EM has been assumed as the standardised reference for the identification of specific failure modes, whereas possible dynamics describing the occurrence of the EM (Phenotype) have been freely introduced by the analysts.

Rating Scales of Severity, Occurrence, and Detection have been defined to guide the analysts in calculating the risk priority number (RPN) of each activity. The Analytic Hierarchy Process has been adopted to calibrate the four-level Severity Rating Scale through experts’ judgments. A Delphi method has been used to refine the assessment among the participant units. The results have been processed and publicly offered as a validated knowledge to perform and benchmark future risk assessments in chemotherapy.

Results:

The process consists of seven phases (Patient Admission, Visit, Prescription, Preparation/Dispensing, Distribution, Administration and Patient Monitoring/Discharge). On average, “Preparation” is the phase with the higher RPN (25.44\% of the overall risk), while “Wrong Patient” is the riskiest EM, carrying 17.10\% of the total risk. In order to allow an effective benchmark analysis of risk values for each phase, clusters have been identified grouping clinical centres that have similar operational settings. It was then observed that e.g. Computerized vs. Paper-based Prescription brings no relevant distinctions in the sample in terms of total risk, while involving different risk distributions among the EM. The third and most detailed level of analysis consists in the comparison of RPNs in a single hospital, for both process phases and EMs, with the average risk values in the overall sample.

Conclusions:

The Strategic Program represents the first attempt in Italy for an integrated approach to chemotherapy safety, involving clinical, informatics, statistical, and sociological expertises. The proposed S-FMECA guarantees transparency, reproducibility, and comparability of results, related to different technological, operational and organisational settings; human and organizational factors related to chemotherapy are processed and reported as generalised knowledge of superior value. Finally, S-FMECA allows us to quantitatively evaluate the impact of biased experts’ judgments due to the use of verbal scales, partially solving one of the most important shortcomings of FMECA studies that hamper the comparability of results.
Are Protocols for Second Victim Support following established International Gold Standards?

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Objectives:

After an adverse event, not only the patient will become a victim but also the involved healthcare professional can suffer. “Second victims” in healthcare are struggling personally and professionally in the aftermath of unexpected clinical events, which can contribute to a negative impact on patient care. For this reason, second victims need to be supported through implementation of support systems on an organizational level that result in constructive changes in practice. The goal of this study is to evaluate whether current support systems, provided at an organizational level, are following the international gold standards.

Methods:

In a first phase of this study, 59 healthcare organizations in Belgium participated in an e-mail survey regarding two aspects of second victim support: first, the availability of a protocol for supporting the second victim and second, a contact person in their organization for provision of support. Based on the results of the first round, 30 organizations were asked to submit their protocols. 18 organizations submitted their protocol. A content analysis according to five items described in the gold standard of the Institute for Healthcare Improvement’s (IHI) Respectful Management of Serious Clinical Adverse Events and five items within the “Scott three-tiered emotional support model” were used as a framework to evaluate 18 protocols. The IHI report describes a “Clinical Crisis Management Plan” which addresses special support considerations for the second victim, contained in five items: (i) Is there an organizational 24/7 contact person for staff involved in the event?, (ii) Have we assessed the personal safety of front-line staff?, (iii) What are we hearing from the front-line staff?, (iv) Has the organization expressed empathy and been visible? and (v) Have front-line staff been invited to participate in the Root Cause Analysis? In the second standard for second victim support programs, the “Scott three-tiered emotional support model”, five items are recommended for effective support: Education about second victim, immediate emotional first aid, support from trained peer supporters and other internal resources, referral for counselling, monthly meetings among peer supporters to share best practices and review recent case interventions.

Results:

In this study 50.8% of the participating organizations (n=59) have a systematic plan to address the unique care needs of second victims. 12% of the organizations could not identify their respective contact person for second victim support and guidance. In 44.1% of the institutions a variety of individuals were in charge of clinician support. Only a minority of the organizations who submitted their protocol (n=18) included up to three items of the IHI standard (22.2%) or the Scott standard (33.3%). There were no submitted protocols which contained all items from the international gold standards.

Conclusions:

A minority of Belgian healthcare organizations are fully prepared to provide comprehensive support for second victims after adverse clinical events. The content analysis of the second victim protocols revealed that general hospitals can learn from psychiatric hospitals. All Belgian healthcare organizations need to improve and expand their protocols to meet the established gold standards for second victim support. Organizations should be more concerned about their workers by having a comprehensive systematic approach for support of possible second victims as this will become an important pillar in the quest for an optimal patient-safety climate.
Healthcare Workers’ Perceptions and Attitude on using an Electronic Incident Reporting System (EIRS) at Hamad Medical Corporation (HMC) in the State Of Qatar

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Objectives:

The purpose of this study is to assess HMC healthcare workers’ perceptions and attitudes toward an electronic incident reporting system (EIRS)

Methods:

It was non-experimental cross-sectional design. A questionnaire was used to assess HMC healthcare workers’ perceptions and attitudes about the new EIRS.

Results:

The main findings from this study are that doctors and nurses had positive attitudes about responsibility for reporting incidents electronically. Doctors had more negative attitudes and perceptions than nurses about reporting incidents electronically in that they don’t know how to use the system. All respondents indicated that the EIRS information was adequate for reporting incidents. It was found that nurses are reporting incidents electronically more than doctors. Doctors had a negative attitude towards reporting that their consultants/supervisors will be notified. They are not sure whether to report an incident or not, most doctors do not know what to do when the incident happens, all respondents have negative attitudes towards the corrective actions that are taken for the incident report.

Conclusions:

This is the first study evaluating the healthcare workers’ perceptions and attitude toward reporting incidents electronically. The finding of this study increases the awareness about the importance of reporting incidents among all healthcare workers. More education should be given to all HMC staff to make the system easier to report and analyze incidents data. The top authorities of HMC have the responsibility to promote and sustain incident reporting to improve patient safety. From the findings it was suggested that HMC must have training programmes for all healthcare workers about the importance, detection, analysis, reporting and follow-up of reporting incidents.
Change of Human Factors Attitude Survey (HFAS) after Crew Resource Management Training

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Objectives:

The case hospital began the healthcare-based CRM education program in 2007 for its emergency and critical care departments, the first of its kind in Taiwan. The objective of this study is to investigate local trainees’ attitudes before and after participating in the CRM education program. Specifically, the change in patient-safety culture as well as human factor-related attitudes will be assessed.

Methods:

This study conducted two surveys, respectively, for satisfaction and attitude assessments. The satisfaction survey employed 26 questions about trainees’ satisfaction regarding the training. The attitudinal survey, entitled “Human Factors Attitude Survey” (HFAS), was a joint development by the University of Texas and NASA to measure trainees’ pre- and post-attitudes toward the training. Both surveys utilize a 5-point Likert scale from 1 for strongly disagree/dissatisfied to 5 for strongly agree/satisfied. The 23-question HFAS has been applied in prior research and presented with good internal consistency.

The participants in this study took the satisfaction survey at the end of the CRM course, and took the attitudinal survey before and after the course. The satisfaction was evaluated via descriptive statistics while the attitudes were evaluated via paired t-test. 675 out of 766 questionnaires were collected. The response rate was 88.12%.

Results:

The participants in general held very positive attitudes toward the training. 93.4% of the respondents were satisfied, 93.1% agreed that it can enhance patient safety and care quality, 85.7% agreed that it can increase the confidence of clinical healthcare, 86.4% agreed that it can reduce errors in the practice, 90.8% agreed that it will change the way they do things.

The results of HFAS reported great internal consistency (Chronbach’s α = 0.947). In general, the trainees had positive attitudes. The top three questions in terms of the mean value increment are as follows: 1) “If I perceive a problem with the event, I will speak up, regardless of who might be affected.” increased from 3.81 to 4.29; 2) “Team leader and team members can improve decision-making skills through training” increased from 3.95 to 4.37; and 3) “Once team leaders have made a decision and announced it to the team, they should listen to the reservations of team members” increased from 3.90 to 4.32. The increments of these three questions are statistically significant with p of 0.000.

Conclusions:

The case hospital is the first in Taiwan that fully adopted CRM in the critical care units. The trainees reported positive reactions to the CRM program. As adoption of CRM counts on a huge amount of manpower, materials, time, and budget, it is by no means an easy accomplishment in a short time. Rather, it requires sustainable devotion of resources. Strong support from senior managers/executives is also a key factor for hospital-wide CRM training’s success. Patient-safety culture cannot be built overnight. The CRM training program is not only able to provide the healthcare team with teamwork skills, but enhance the patient-safety culture in the hospital. It is suggested that hospitals should adopt CRM to improve the effectiveness and quality of healthcare, and to reduce errors in the practice that may jeopardize patient safety.
Whether Financial Incentives could retain Doctors in Rural Areas: Lessons Learnt from Thailand

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Objectives:

Shortages of health workforce would unavoidably affect the accessibility of people to qualified services. Therefore, doctor turnover from rural health facilities was a great concern of health policy-makers in Thailand. To reduce the shortages of doctors in rural areas, the Ministry of Public Health (MoPH) has implemented the financial measures to prevent the doctors’ turnover from rural to urban areas in 2009. Doctors working at rural hospitals received a special allowance increase depending on the hardship areas and number of years in service. This study is therefore aimed at assessing the impact of this financial measure on rural retention of doctors.

Methods:

The retrospective approach was used, and individual records of 6,712 doctors who graduated during 2001-2007 from the MoPH database was retrieved over 2001-2011. Data in relation to mobility and work place were recorded. Survival analysis was used to assess rural facility retention of doctors.

Results:

Results showed that the turnover rate of young doctors was still persistent. A high proportion of doctors, at about 30%, breached the contract. The trend was still high both before and after the increase of the special allowance. Rural retention was low, especially after three years of compulsory public services. The proportion of doctors retained in rural areas after the 3-year compulsory period was about 20-24%, and this trend was repeated. The mean survival year in rural was reduced from 6.2 years of those who graduated in 2001 to 3.1 years of those who graduated during 2006-2007.

Conclusions:

The results suggested that financial incentives implemented need a well thought out plan and that to retain doctors in rural areas it needs both the financial and non-financial measures in an appropriate combination.
Patient Safety Working Group as Part of Patient Safety Management System – Experiences from the Department of Operative Care of Turku University Central Hospital

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Objectives:

Patient safety is one of the most important objectives within Finnish public health services. The basis of the patient safety work carried out in the Hospital District of Southwest Finland is a patient safety plan that is grounded on the Health Act, the Patient Safety Strategy and national recommendations. The patient safety plan, which serves to build a safety culture, is implemented systematically and the resources needed for its management come from different profit within the organization. In the Hospital District of Southwest Finland the Patient Safety Working Group (PSWG) is responsible for the efficiency of the patient safety systems of the operative care profit areas of the clinics of surgery and anesthesia, intensive care, emergency care and pain alleviation as well as for the coordination of patient safety work as part of the organizational quality control system.

Methods:

The multiprofessional PSWG consists of department management and of experts on patient safety belonging to a variety of disciplines and professional groups from the unit, clinic and hospital district levels (for example, data management, hygiene, pharmacy, institutional cleaning services and equipment and appliance maintenance). At PSWG meetings, the statistics of critical incidents in clinics or other indicator data (for example Hospital Infections, Global Trigger Tool) are dealt with in low hierarchy level discussions on a regular and systematic basis, patient safety risks are assessed, convergent modes of action are agreed upon, and the dissemination of patient safety information and staff patient safety competence are ensured.

Results:

The PSWG supports the line management of a department in the dissemination of information, the provision of care and the improvement of appliance and medicine safety and of processes that are all linked to the management of safety policy. In order to ensure patient safety, the PSWG produces regular information on patient safety for risk analyses and auditing processes carried out by the management. The analyses yield clinic-centred instructions and recommendations for clinical practice. The PSWG produces systematic patient safety information needed for running a clinic on a broad basis, at the same time steering the decision-making related to the safety management of the clinic. On a multi-professional forum acceptable risks appearing in clinical work are discussed, and clinic managers are shown methods for recognizing, assessing and controlling risks. The PSWG promotes patient safety competence in a clinic by mapping out the staff’s educational needs and by co-operating with various interest groups to provide the clinic with an open safety culture that does not assign guilt to anyone and that aims at synergies.

Conclusions:

The importance of the reactive, proactive and predictive work of the PSWG has been recognized as a coordinator of patient safety in clinics. The PSWG supports persons holding positions of trust in the line management in decision-making linked to patient safety. This multiprofessional group strengthens the clinic management’s attempts to make the staff commit themselves to improve the safety of a patient throughout the process of care. However if the patient organizations related to the work of a clinic were represented in the PSWG, the patient safety perspective might become more prominent and concrete.
Can we improve Patient Safety with Analyzing Medical Incident Reports?

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Objectives:

We propose a new approach to detect the precarious situation in medical care and solve the communication gap by analyzing tracking record. With increasing social demand for the prevention of medical incidents, the Ministry of Health, Labour and Welfare Japan started the project to collect medical incident information from 2001 and to provide information conducive to patient safety, such as measures for improvements. From 2004, the Japan Council for Quality Health Care took over the collection of incident case studies, collecting case studies from the latest collection. The results of aggregate calculations and analysis are published on the website of this organization.

Methods:

In this paper, we evaluated the degree of similarities between incident documents obtained bottom-up and the links between existing classes granted top-down. We made it possible to evaluate overall similarities regarding incident documents with the techniques of natural language processing and network analysis. The characteristic words were all selected based on actual data. Networks obtained from similarities with these characteristic words remove the effects of similarities shared in common with all documents and are formed from the overall combination of an independent degree of similarity between two documents. This kind of network is first realized by extracting characteristic words bottom-up. In cases where keywords that should be checked top-down are decided, there are instances when, after having conducted class, there is no guarantee that that keyword is not valid and a network of documents linked only by the characteristic similarities such as those described above cannot be obtained.

Results:

Under the category of “accident background,” the words “lack,” “confirmation,” “inadequacy,” “drugs,” and “instruction” rank high. Moreover, the fact that the word “nurse” ranks high suggests that there are many accidents related to nurses. Also, the words “confirmation,” “drugs,” and “double check” rank high under the category of solutions. In this research, we evaluated the degree of similarities between incident documents obtained bottom-up and the links between existing classes granted top-down. We made it possible to evaluate overall similarities regarding incident documents by using the method of network analysis. With regard to the background, the results of the analysis demonstrated that compared with abstract and solution, existing classes are inadequate for representing the characteristics of documents and that there is a need to improve classes.

Conclusions:

The characteristic words were extracted by analyzing incident reports, and the co-occurrence networks of the characteristic words were created. As a result, the language networks with the hub of the word “confirmation,” thereby revealing that inadequate confirmations on the drug labels, instructions of a physician and patient were very significant causes of accidents. In addition, the class of patient managements regarding patients’ fallings in top-down analysis is created clearly. On the other hand, some categorizes by top-down analysis don’t reflect the category by the bottom-up analysis. These results suggest the effectiveness of introducing the network analysis method. In the future work, we would like to focus on the medical reports for improving the notational rules for the names of drugs and dosages in incident reports. Also, we would like to analyze the differences of understanding of the incident reports between positions like doctors, nurses, pharmacists.
The Operation of the cDUR Program Enabling Cost Saving and Fewer Prescribed Drugs?

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Objectives:

We have been operating the cDUR program (concurrent Drug Utilization Review) in Korea, which provides the real-time information the moment when the prescription is written by doctors or dispensed by pharmacists. The cDUR program has been conducted nationwide since three pilot studies successfully done in 2008. This study analyzed the comparison of the changes in prices/prescribed amount of drugs between the initial prescribed drugs and final prescribed drugs in the cDUR program.

Methods:

We used HIRA’s national data of which sample size of 748,985,951 prescriptions that were checked by the HIRA cDUR program for the period of nine months from April 2011 to December 2011. These were collected from 67,243 medical facilities. They were categorized in two different groups. The cases that were found to be improperly prescribed were put in Group 1 and the cases that didn’t include such information, simply because there were no inappropriate prescriptions, were put in Group 2. The categories that provided the information about inappropriate prescriptions were drug-drug interactions, drug-age contraindication, contraindication for drug safety, and duplicate therapy. It was calculated by comparing the differences in prices/amount of the drugs that were prescribed in the beginning and the drugs that were altered in prescription after the notification alarm.

Results:

The number of drugs in terms of amount has decreased by 1,764,916, and the cost of it has also decreased by 10,489,636,612 Korean won in Group 1 (a 45% decrease in Drug-drug interactions, 82.7% decrease in drug-age contraindication, 88.3% decrease in contraindication for drug safety and 25.3% decrease in duplicate therapy). The percentage of prescription change of categorized items by DUR program warning has also decreased. The amount of drugs in Group 2 has increased by 9,073,244, and the overall cost of them has also increased by 70,290,607,060 Korean won in contrast.

Table: Amount of drugs and cost saving shown depending if the information was given or not

<table>
<thead>
<tr>
<th>Group</th>
<th>Amount of drugs</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Initial</td>
<td>final</td>
</tr>
<tr>
<td>Group1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>139,250,11</td>
<td>137,485,199</td>
</tr>
<tr>
<td>Group2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2,758,948,969</td>
<td>2,768,022,213</td>
</tr>
</tbody>
</table>

Group 1: Notification alarm for adverse drug
Group 2: No notification alarm for adverse drug

Conclusions:

Consequently we could decrease the amount of prescribed drugs and prices, and increase patients’ safety by DUR program in Korea. Group 1 shows the corresponding results to this study. The effect of saving the cost of drugs will be even bigger with the consideration of the cost related to the social problems that arise from complications due to the inappropriate prescriptions.
Assuring Continuity of Care by Improving Communication and Information between Hospitals and Primary Care Physicians in Germany with Integrated Health Intelligence (iHI) and Team Learning

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Objectives:
Delayed or incomplete communication between hospitals and primary care physicians may negatively affect continuity of care and patient safety. The objectives are (a) to make invisible performance and quality standards of discharge summaries visible by developing an integrated Health Intelligence (iHI) Application for standardized measures, (b) to standardize the workflow for generating discharge summaries with IT-support and (c) to use the iHI Application for regular feedback workshops within the participating hospitals to identify and improve deficits in communication and information transfer by Team Learning of the hospital-based physicians.

Methods:
A "Medical Communication and Information Team" of medical doctors, IT- and medical management staff and medical typists from three German University Hospitals was created. An initial analysis comprised (a) interviews with German primary care physicians to find out their patient-related information needs at hospital discharge, and (b) interviews with physicians of the participating University Hospitals regarding the needs for timely and accurate discharge summaries. Based on (a) and (b), the team developed (c) an iHI Application for a regularly and automated feedback process about the workflow and timeliness of discharge summaries. That was followed by (d) a streamlining process with Team Learning of the "Medical Communication and Information Team" that consisted of regular feedback-based Analysis and Improvement Workshops. The constant feedback with iHI and the understanding of the weaknesses in the present process by the "Medical Communication and Information Team" aimed at initiating and accompanying a Team Learning Process to a self-directed improvement of timely and accurate patient information for assuring continuity of care.

Results:
The Team Learning Process led within six months to (a) all discharge summaries meeting the standards and content requirements defined by the "Joint Commission on Accreditation of Healthcare Organizations": reason for hospitalization, diagnosis, procedures performed and care, treatment and services provided, the patient's condition and medication at discharge, and the further treatment plan, (b) a standardized and semi-automated integration and a standardized structure of the content elements for all discharge summaries, (c) standardized workflow for generating the discharge summaries with an integrated quality control by senior physicians, (d) improved primary care physician satisfaction, and (e) a significant increase in the speed and timeliness of the information transfer (n = 3501 discharge summaries).
Month 1: Median completion times inpatient summaries: 23 days (n = 586), median completion times outpatient summaries: 48 days (n = 1053)
Month 6: Median completion times inpatient summaries: 12 days (n = 590), median completion times outpatient summaries: 28 days (n = 1272)

Conclusions:
Based on Team Learning with integrated Health Intelligence multifaceted interventions such as semi-computer-generated summaries, standardized formats and quality controls by senior physicians can be developed, implemented and self-directed by the hospital staff. Team Learning with iHI appears to be highly effective for timeliness, completeness, efficiency and overall quality of communication and information transfer and thus assuring quality and safety in continuity of care.

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Excellence in Governance: Paramount to Accreditation Canada’s Role in Promoting Quality Healthcare

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Objectives:

This presentation will showcase the role of accreditation in advancing quality health services through excellence in healthcare governance.

Methods:

In 2009 and 2010, 349 Canadian healthcare organizations participated in an on-site survey and used the Accreditation Canada Governance standards as part of the assessment. Standards compliance is assessed on-site by surveyors with senior administrative and clinical experience in health services. Governance effectiveness is also assessed through survey responses of board members to the Accreditation Canada Governance Functioning Tool as well as through an on-site survey administrative tracer where governance practices are reviewed. Patient safety is evaluated through Required Organizational Practices (ROP) compliance rates evaluated in each organization. ROPs are evidence-based practices that mitigate risk and contribute to improving the quality and safety of health services.

Results:

Canadian organizations across all healthcare sectors demonstrated a high level of performance with the Governance standards and practices. Organizations represent diverse governance structures, from appointed boards in large regional health authorities to community-based organizations and long-term care organizations where board members are recruited. Governing boards showed particular strength in using strategic information to make decisions, which includes procuring accurate and relevant information to do their work and maintaining records of decisions. The greatest opportunity for improvement relates to the need for governing bodies to regularly evaluate their own performance. Organizations that excelled in governance performed significantly better in patient-safety aspects of the program. High-performing boards had a compliance rate of 92% on their ROPs versus a compliance rate of 81% for other organizations. This statistically significant difference (p-value <0.001) emphasizes that governing boards play a pivotal role in enabling quality and safety.

Conclusions:

Based on accreditation results, governing boards were shown to be particularly effective in using strategic information to make decisions while board evaluation of their own performance remains an area for improvement. An effective governing board is instrumental to organizational performance and critical in enabling a care environment that is focused on quality and safety for clients and healthcare staff. The Accreditation Canada Governance Standards and Governance Functioning Tool were updated and released in September 2011, in response to changes in the governance landscape and best practices as identified through literature review, an expert working group, and national consultation. Standards content and survey instrument content have been enhanced to include a greater focus for the governing body on quality improvement, risk management and safety; and provided further clarity on the role of the governing body in developing the organization’s mission, vision, values, and strategic plan; and reinforced requirements that the governing body adhere to the organization’s ethical framework for decision-making. Accreditation Canada’s continuing focus on healthcare governance supports leaders of healthcare organizations and governing bodies nationally and internationally in meeting the growing demands for excellence in healthcare.
Comparison of Adverse Drug Events and Medication Error between Adult and Pediatric Inpatients: The Jade Study

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Objectives:
Epidemiology and nature of adverse drug events (ADEs) or medication errors (MEs) might be different between clinical settings and such differences, if any, might not be well paid attention to by healthcare professionals. We, thus, compared the epidemiology and nature of ADEs and MEs between adult and pediatric inpatients from large cohort studies in Japan.

Methods:
We conducted Japan Adverse Drug Events (JADE) study, which has assessed ADEs and MEs in several settings. The JADE study followed 3459 adult and 1189 pediatric inpatients from five teaching hospitals in Japan. All patients admitted to the selected wards during the study period were enrolled. Trained research nurses or physicians followed the patients with the charts as well as incident reports or reconciliation from pharmacy. In addition to patients’ characteristics, all potential events which seemed associated with medication use or its follow-up were recorded and sent to physician reviewers. Two physician reviewers independently reviewed all potential events and classified them according to the pre-specified rules. The severity of ADEs was classified into fatal; life-threatening; serious; and significant. The stage of error was classified into ordering; transcription; dispensing; administration; and monitoring.

Results:
Total patient-days included were 59383 days for adults and 12691 days for pediatrics, and the mean length of stay was 17 days and 11 days, respectively. The incidence of ADEs was 17.0 [95%CI 16.0-18.1] and 41.4 [95%CI 37.9-45.0] per 1000 patient-days among adults and pediatrics, respectively. Among 100 admitted patients, 29.2 [95%CIs 27.7-30.7] ADEs occurred in adults, and 44.2 [95%CI 41.4-47.1] in pediatrics. ADEs was 17.0 [95%CI 16.0-18.1] and 41.4 [95%CI 37.9-45.0] per 1000 patient-days among adults and pediatrics, respectively. The majority of severity was significant, but some ADEs were associated with mortality (Table). The most frequent drug classes for ADEs were antibiotics (36%), sedatives (8.6%), NSAIDs (7.7%), laxatives (7.2%), and antihypertensives (5.1%) among adults. On the other hand, those were antineoplasm agents (29%), antibiotics (28%), narcotics (8.4%), steroids (6.5%), and sedatives (3.2%) among pediatrics. The incidence of MEs was 8.7 [95%CIs 7.9-9.4] and 33.0 [95%CIs 29.9-36.2] per 1000 patient-days among adults and pediatrics, respectively. Among 100 admitted patients, 14.9 [95%CIs 13.7-16.0] MEs occurred in adults, and 35.2 [95%CIs 32.5-38.0] in pediatrics. The majority of error stage was ordering by physicians (Table).

<table>
<thead>
<tr>
<th></th>
<th>Adults</th>
<th>Pediatrics</th>
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<tbody>
<tr>
<td>ADEs, fatal (%)</td>
<td>1.6</td>
<td>0.2</td>
</tr>
<tr>
<td>ADEs, life-threatening (%)</td>
<td>4.6</td>
<td>3.6</td>
</tr>
<tr>
<td>ADEs, serious (%)</td>
<td>32.7</td>
<td>22.4</td>
</tr>
<tr>
<td>ADEs, significant (%)</td>
<td>60.9</td>
<td>73.8</td>
</tr>
<tr>
<td>MEs, ordering (%)</td>
<td>66.5</td>
<td>75.2</td>
</tr>
<tr>
<td>MEs, transcription (%)</td>
<td>0.4</td>
<td>0</td>
</tr>
<tr>
<td>MEs, dispensing (%)</td>
<td>1.7</td>
<td>0.5</td>
</tr>
<tr>
<td>MEs, administration (%)</td>
<td>14.2</td>
<td>8.6</td>
</tr>
<tr>
<td>MEs, monitoring (%)</td>
<td>17.3</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Conclusions:
The general figure of ADEs and MEs was similar between adults and pediatric inpatients. The common nature of ADEs and MEs had confirmed that such events were quite prevalent across the different settings. The relatively higher incidences in pediatrics might be associated with the practice pattern or background of patients. Because the JADE study for pediatrics was conducted after the adult study, the higher incidences might also be due to the increased awareness of healthcare providers. Further studies in other, or even same settings are needed to find out the reasons for such variation.
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Developing Clinical Leaders to Deliver Change

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Objectives:

As health services face unprecedented challenges to the ability to deliver quality care at lower cost, it is clear that any change will require the support and participation of clinical leadership. This paper will discuss how clinical leaders can be engaged and developed as future leaders for quality and safety. In Ireland the development of a cadre of clinical leaders to improve services has become a national priority. Experience from other countries is that without this, improvement gains are short-lived.

Methods:

The RCPI engaged experts in the field of healthcare quality improvement and change management to develop a bespoke course for a multidisciplinary group of clinical leaders (Clinical Directors, Directors of Nursing and Hospital CEOs) in Ireland. The programme is based on the teaching of W. Edwards Deming, but also includes other methodologies as needed. The approach focuses on a systems approach on the premise that the application of Profound Knowledge is the basis for sustainable improvement. Critically, the primary faculty members are medical professionals.

Participants take part in experiential learning sessions supported by virtual inter-residential distance learning. The theoretical construct is supported by the delivery of improvement projects, either at the macro or micro level. Project phases are integrated with learning outcomes throughout the programme. Theories of change and leadership, as well as understanding of measurement for improvement, are a fundamental part of the programme. Projects have covered flow, development of metrics, and reduction of variation and patient safety. This allows for teaching in real time so that learning is applied immediately.

Results:

Over the course of the programme the participants working in teams will have completed ten projects. The projects have a wide range of applicability - from the micro to macro systems. They include elimination of variation, improving safety and development of metrics. The programme has been evaluated and the results of this evaluation (to be completed in June) will be delivered at the presentation. Early results have shown direct changes to the way clinicians view continual improvement and to the impact of the individual projects.

Conclusions:

Early indications have suggested that use of experiential learning supported by participatory learning of improvement methodology has made a marked difference to the delivery of the programme. The clinical leaders have reported that the key issue is engagement of other clinicians. If this is achieved then change is not only possible but becomes sustainable. In order to develop capacity for improvement, activation and mobilisation of clinical leaders is essential.

References:

The Ethics of Decision-Making in Healthcare Quality Improvement Programmes

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Objectives:

Establishing and maintaining a large, national healthcare quality-improvement programme continuously requires decisions for or against new proposals aiming at quality improvement in the management of defined health issues. In doing so, decisions on how to allocate resources to quality improvement areas have to be made. We explore the decision-making process in quality improvement programmes and analyse the ethical issues arising.

Methods:

1. We first describe the decision-making process in a large, quality-improvement programme: In Germany the Federal Joint Committee (healthcare) is charged with health policy-making within a legal framework including the development of the national quality-improvement programme. Within this remit, the Federal Joint Committee continuously makes decisions on how to allocate resources to quality-improvement areas.

2. Using this case study, and drawing on published literature, we then analyse the decision-making process in healthcare quality-improvement programmes and the ethical problems arising.

3. Applying selected literature on ethics and healthcare rationing we suggest solutions for the ethical problems described and suggest a design for the decision-making process in quality-improvement programmes.

Results:

1. Until recently, in Germany decision-making in the national quality-improvement programme has been part of a political process among members of the Federal Joint Committee. This process has been criticised for being arbitrary, concealed from the public, and allocating resources inefficiently. In 2008 a working group was established to develop a procedure for identifying medical areas for quality improvement based on objective criteria. The working group developed an instrument for assessing quality-improvement proposals that adopted the OECD criteria for identifying quality indicators [1]. This instrument improved the knowledge base for decisions for or against quality-improvement proposals. It did not, however, provide answers in cases where dilemma decisions between virtually equal proposals or ethical decision-making were required.

2. Quality improvement of healthcare aims for saving lives and improving health just as the provision of healthcare itself. Using the notion of the cost-benefit ratio, quality-improvement measures can be differentiated into measures that improve quality at equal or reduced costs and those that improve quality at higher costs. The latter are frequent and require ethical decision-making or dilemma decisions similar to those in healthcare rationing.

3. Drawing on published literature on healthcare rationing and applying theories of justice and health [2] to quality-improvement programmes we found ethically acceptable ways of decision-making in healthcare quality-improvement programmes that emphasise a fair and transparent process.

Conclusions:

We conclude that decision-making in large, healthcare quality-improvement programmes involves resource allocation procedures that include – just as in healthcare provision itself – the need for ethical decision-making and dilemma decisions. The ethical problems arising cannot be solved by applying an algorithm using objective criteria. Based on the concept of Daniels [2], namely the ‘accountability of reasonableness’, methods of allocating resources to healthcare quality-improvement programmes can be developed that emphasise a fair process of decision-making.

References:
‘Your Story’ – A Consultation Tool Designed to Capture the Experiences of Children and Young People who have used Child and Adolescent Mental Health Services in Scotland

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Objectives:

Healthcare Improvement Scotland is a national organisation. Involving people with experience of health services is an integral part of everything that we do. It allows us to learn from those experiences and to ensure that services are person-centred and sensitive to people’s needs and preferences.

- The ‘Your Story’ consultation tool was designed as a framework for talking to children and young people about their involvement with child and adolescent mental health services (CAMHS).
- We wanted to find out what it’s like to use CAMHS; what helps and what could be better.
- Your Story informed the development of our standards for integrated care pathways (ICPs) for child and adolescent mental health services (CAMHS).
- We used the information obtained to ensure the standards for ICPs for CAMHS reflected what children and young people see as important and helpful.

Methods:

Our expert steering group agreed that it was essential to make sure that the final standards reflected the views of the children and young people who use CAMHS, and their parents/carers. We set up a user and parent/carer subgroup to ensure that their needs, views, and aspirations were considered at all times.

- We designed ‘Your Story’ with our user and parent/carer subgroup.
- We distributed 215 hard copies of ‘Your Story’ throughout Scotland to colleagues in health, education and third sector organisations.

Results:

We received 32 completed tools, representing 10 of the 14 territorial health boards that comprise NHSScotland. This equates to a 15% response rate from children and young people between 7–18 years of age.

- 66% of respondents told us that CAMHS workers listen to them more than their parents/carers.
- 94% of respondents said they can talk to a CAMHS worker without their parents/carers if they need to.
- 50% of respondents said they know how to get information when they need it.

Conclusions:

We received positive feedback about the consultation tool and useful information that contributed to the development of our standards for ICPs for CAMHS.

- Children and young people generally reported a positive experience of CAMHS. This is illustrated by the words they chose to describe how they felt after they started to receive help, for example ‘safe’, ‘listened to’ and ‘confident’. Interventions that are helping include: medication, talking, being listened to, or a combination of approaches.
- We learned that children and young people would like to have been seen more quickly and have had earlier access to treatment. Not all respondents were told why they needed help, and 24% of those who were given an explanation didn’t understand what they were told.

While the majority of respondents said that their involvement with CAMHS is beneficial, there is still room for improvement. The Scottish Government’s Healthcare Strategy for NHSScotland highlights the importance of safe, effective, person-centred care. In developing our standards for ICPs for CAMHS we reflected on these quality ambitions and the importance of placing the child or young person at the centre of all care encounters and decision-making. The implementation of ICPs within CAMHS will help NHS boards to provide more person-centred care, and to demonstrate robust and responsive services that support reflective practice and continuous cycles of improvement.
Implementation of Patient-Safety Practices in International Healthcare Organizations

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Objectives:

The overall objective of this work was to assess compliance with implementation of Accreditation Canada International’s patient-safety practices in international healthcare organizations.

Methods:

In 2009, Accreditation Canada International released the Qmentum International accreditation program. This program was the result of extensive literature review, consultation and pilot testing. The standards utilized within this program included mandatory requirements for implementation of nine (9) patient-safety practices called Required Organizational Practices (ROPs). These practices included client verification, control of concentrated electrolytes, hand hygiene, medication reconciliation, safe injection practices, safe surgical practices, timely administration of prophylactic antibiotics, training on patient safety, and transfer of client information at transition points. Six (6) healthcare organizations located in Bahrain, Philippines and Kuwait participated in this study. These organizations included representation from acute care, ambulatory and primary care sectors.

The following activities were carried out as part of the accreditation process:
- Readiness Assessment – to provide initial assessment of the organization’s processes and systems against Qmentum International standards
  - Education sessions – to introduce participants to the standards and accreditation process
  - Self-assessment questionnaires - filled out by individual team members with respect to the standards
  - Onsite visits – carried out by surveyors who visited the organization for 3 – 5 days, using the tracer methodology to rate the organizations against the standards

Results:

The survey reports that were provided to the healthcare organizations after completion of the onsite visits included assessments on compliance with the ROPs.

There was 85 - 100% compliance on:
- Client verification
- Control of concentrated electrolytes
- Safe surgical practices
- Transfer of client information at transition points

Between 51 – 85% compliance on:
- Hand hygiene
- Safe injection practices
- Timely administration of prophylactic antibiotics
- Training on patient safety

50% and below compliance on:
- Medication reconciliation

On further analysis, it was evident that there were significant challenges related to hand hygiene and medication reconciliation in the acute care sector whereas in the ambulatory and primary care sectors the challenges related to training on patient safety. The common thread is that these are relatively new concepts for international organizations and significant cultural shift is required to implement and sustain them across the organization. This aspect will be illustrated in detail in the presentation.

Conclusions:

The results clearly show that international healthcare organizations are recognizing their key role in increasing patient safety and minimizing risk. There are still challenges with implementing practices such as hand hygiene, medication reconciliation and training on patient safety and organizations need to place renewed efforts in these areas to increase benefits and sustainability of the accreditation process.
Users’ Views on the Role of Self-Assessment in the Australian Residential Aged Care Accreditation Process

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Objectives:
To explore users’ views on self-assessment to inform the development of a new self-assessment tool that enables assessment of performance against the accreditation standards and broader quality areas, and assist improvements in performance.

Methods:
The Aged Care Standards and Accreditation Agency commissioned an independent consulting agency to undertake the study. The research involved a purposive sample of eight large long-term care service providers located across seven Australian states and territories. A total of 21 participants with considerable experience with accreditation, particularly the self-assessment process, were interviewed for approximately two hours. The interviews involved a mix of face to face sessions and telephone interviews. The interview questions related to the organisation’s quality management systems, uses of the current self-assessment tool, strengths and weaknesses of the current tool and suggested improvements. All participating services had parent organisations and a corporate quality team. Small independent services were unfortunately unable to be recruited.

Results:
Self-assessment is used in a variety of ways, from being an annual review tool to a once-off preparation for an accreditation site visit. Although self-assessment is seen as an important and integral part of the quality assurance process there was a strong belief that it is primarily undertaken for the benefit of accreditation surveyors to help them prepare for the site visit. There was agreement that self-assessment is beneficial to the service as it enables services to record the location of documents, results and evidence and ensures it is prepared for the accreditation visit. Participants also acknowledged the feedback role that self-assessment can provide in identifying gaps and improvements but this was given a lower priority for completing the self-assessment. The participants did not believe self-assessment drives the continuous improvement process, that process is embedded in daily practice through the quality planning process. Although they acknowledged that they consider quality aspects beyond the accreditation standards, preparation for accreditation visits continues to focus primarily on the standards. Many of the participants expressed a desire for the self-assessment process and tool to move the aged care sector beyond aiming just for compliance to minimum standards to addressing broader quality issues.

Conclusions:
The participants in this study expressed a preference for a self-assessment process and tool that assists service providers to think more about principles of quality improvement and how to address broad quality issues. The self-assessment tool needs to be designed primarily for the benefit of the service provider and focus on the rewards and benefits for the user. It needs to fit in with and assist the regular quality activities of the service, and promote best practice. The corporate quality teams in this study provide services designed to reduce the administrative burden of self-assessment at the local level. Smaller services do not have access to such teams and may, therefore, require access to extra guidelines and tools designed to assist them to undertake their self-assessment and quality planning. A new self-assessment tool, based on modules or chunks of information, could be designed to fit into the users’ various needs. These modules could be used as part of Continuous Improvement activities and in preparation for site visits, and to encourage thinking outside of the standards.
Engaging Clients in Quality Improvement (QI): A Pre and Post Assessment of a Client Engagement Intervention at 12 HIV Facilities in Western Uganda

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Objectives:

To determine whether interventions enhanced client involvement in QI as well as understand providers’ and clients’ perceptions about client participation in QI activities. Additionally, we sought to determine the effect of client engagement on improvements in selected HIV care processes.

Methods:

In Uganda’s Western Region, an intervention to involve clients in QI was designed at 12 out of 25 facilities engaged in a collaborative to improve the quality of HIV services. The facilities were randomly assigned to the intervention (6) or control group (6) and baseline data on the level of client involvement collected. Intervention sites commonly implemented client representation on facility QI teams. Other interventions included training of clients on the four QI steps (problem identification, problem analysis, solution identification, testing/implementing changes); coaching visits and peer learning sessions. In the intervention group clients were engaged in selected HIV care processes such as; HIV appointment keeping, reducing client time spent at the HIV clinic and enrollment of HIV+ mothers into HIV chronic care. Interventions were implemented for six months from June to December 2011 after which time endline data were collected using a mixed-method quasi-experimental design. Quantitative data on HIV care processes was collected monthly by the 12 facilities for QI. Qualitative data was collected through semi-structured interviews with 12 health providers and 36 clients at HIV clinics. It described experiences and perceptions of health providers and clients on client involvement. Iterative, thematic analysis was applied to qualitative data to elicit themes and subthemes for interpretation. Quantitative data on appointment keeping, enrollment of HIV+ mothers and client time spent at HIV clinics was analysed using STATA Version 11.

Results:

For both groups, prior to the intervention, health providers had an interest in but hesitated to involve clients in QI for fear that friction might occur if expectations were not explicit and roles defined. Clients expressed feelings of fear and ridicule if they participated. Post-intervention, health providers were more likely to view clients as “partners in service,” and clients felt empowered by their involvement compared to the control group. One client in the intervention group said: “we (clients) had been empowered to report our dissatisfaction to health providers for effective service delivery”.

In the post intervention period, a HIV+ woman identified at the antenatal clinic was three times more likely to enroll into HIV care a month after HIV diagnosis at facilities in the control group, and about ten times (p = 0.005) more likely in the intervention group. The difference between the groups was 3.7 times higher in the intervention group (p = 0.248). Additionally, the likelihood that a HIV+ client kept an appointment was three times higher (< 0.001) in the intervention group compared to the control group OR 0.53 ( P< 0.001). Average client clinic time significantly reduced at both control and intervention group with the monthly rate of improvement being 75 minutes per month in the intervention group and 31 minutes for the control facilities (P=0.035).

Conclusions:

By providing clients the opportunity to participate in QI, care became more targeted to clients’ needs and promoted trusting relationships between providers and clients. Improvement in HIV care occurred faster at facilities that engaged clients in QI compared to facilities that did not.
Job Stress among Healthcare Workers in Japan

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Objectives:

High stress levels in healthcare workers might lead to a deterioration in safe service provision. The Brief Job Stress Questionnaire (BJSQ) has been used as an assessment tool to measure workers' job stress in a variety of industries. To evaluate the stress level in healthcare workers, we compared the BJSQ scores between the healthcare workers and the national average in the previous study. Additionally, to compare the stress traits among the healthcare workers, we compared the BJSQ scores among physicians, nursing staff, and administrative workers.

Methods:

This cross-sectional survey was conducted on healthcare workers (n = 11,694) of 20 hospitals in Japan over the period from January 2009 to January 2010 (response rate = 79.0%). All subjects were assessed with the BJSQ and Job Stress Assessment Diagram (JSAD). The BJSQ is a 57-item multidimensional job stress questionnaire to measure “Job Stressors”, “Stress Responses”, and “Social Supports”. The JSAD consisted of the 12 question items of the BJSQ and evaluated “Health Risk Associated with Job Strain”, the “Health Risk Associated with Worksite Support”, and the “Total Health Risk”. A greater health risk score is indicative of a higher possibility of health problems associated with job stressors, with a score of 100 as an average risk in a normative sample in Japan. We used analysis of variance (ANOVA) to test the differences of the BJSQ among each profession.

Results:

As for JSAD scores in the healthcare workers, the “Health Risk Associated with Job Strain” (score: 110) and “Total Health Risk” (109) were 10% higher than the national average. In the physicians, the scores of “Health Risk Associated with Worksite Support” (87) and “Total Health Risk” (91) were the lowest among healthcare professions. In the nursing staff, the scores of “Health Risk Associated with Job Strain” (114) and “Total Health Risk” (113) were higher than other professions. With respect to the result of the BJSQ, for the physicians the scores of Quantitative and Qualitative Job Overload were significantly higher than the other healthcare workers, but the scores of the other subdimensions were generally lower (p < 0.01). In regard to the nursing staff, the scores of almost all subdimensions on the BJSQ were significantly higher than the other healthcare workers.

Conclusions:

Our study had three major findings. First, in the healthcare workers, the “Health Risk Associated with Job Strain” of the JSAD was 10% higher than the national average. Second, although the physicians had the stress for the Quantitative and Qualitative Job Overload, they had the support from their supervisors and coworkers and showed mild “Stress Response”. Finally, although the nursing staff had the stress for the Quantitative and Qualitative Job Overload at the same level as the physicians, they did not have sufficient support from supervisors or coworkers and showed generally high “Stress Response”. These results suggest that the stress of the healthcare workers is generally higher than the national average, and the healthcare workers who are involved in direct care of patients are stressed from the Quantitative and Qualitative Job Overload. The healthcare workers may require supportive interventions according to each profession’s stress profile.
30 Days Readmission Rates used as Quality Indicator for Hospital Performance in Norway

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Objectives:

Readmission rates are increasingly used as an indicator of quality of care. The Norwegian Health Directorate commissioned The Norwegian Knowledge Centre for the Health Services (NOKC) to propose a suitable method for evaluating readmission rates in Norway.

Methods:

The methods and definitions are based on a similar study from Denmark in 2009, where a readmission indicator for elderly patients was developed by “Sundhedsstyrelsen”. Patient administrative data from 20 Norwegian health trusts and four private hospitals, covering all acute care hospitals, were collected. Data from the time period 2005-2009 was used and linked to the National Registry in Norway. Readmission rates in patients 67 years and older, previously admitted with a diagnosis belonging to one of the following diagnosis groups were calculated: asthma/chronic obstructive pulmonary disease (COPD), urinary infection, fracture, dehydration, constipation, gastroenteritis, rheumatoid arthritis, heart failure, anemia, pneumonia and stroke. Readmission was defined as an acute admission between 8 hours and 30 days, subsequent to a previous hospital discharge (primary admission). Logistic regression and a hierarchical Bayes model were used to estimate the readmission rates for the eleven diagnosis groups combined and presented stratified by hospital (n=57) and municipality (n=429). In addition, readmission rates after a primary admission for asthma/COPD, fracture, heart failure and pneumonia, were calculated separately and the results presented stratified by hospital. Each hospital/municipality was compared with a reference value, defined as the 10% trimmed national average. The readmission rates were adjusted for gender and age, and diagnosis group for the combined readmission indicator. Multiple hypothesis testing with a total error rate of 10% was used for outlier detection.

Results:

The highest readmission rates were observed for asthma/COPD, heart failure and pneumonia, and these three groups covered 2/3 of all readmissions. For the eleven diagnosis groups combined, eight hospitals had lower and eight hospitals had higher readmission rates than the reference. One municipality had a significantly lower readmission rate than average, whereas 30 municipalities had higher readmission rates. For the majority of hospitals and municipalities, however, the differences were small and insignificant.

Conclusions:

The results from the present study show local variations in readmission rates in Norway, both between hospitals and municipalities. This is in accordance with data published from countries where readmission rates are used as a quality indicator. We have not assessed whether the readmissions registered in the present study were avoidable. However, several studies have demonstrated the effect of various interventions to reduce readmissions rates. Based on these findings we suggest the model used in the present study can be used to follow readmission rates as a quality indicator in Norway.
Major Quality Improvements in a short time through Managerial Focus - Development and Implementation of a New Nursing Documentation System in Six Months, while at the same time Enhancing Documentation Quality

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Objectives:
Following the merger in 2007, the Mental Health Services of the Capital Region of Denmark became the largest psychiatric hospital in Denmark. The merger meant that, within the framework of this hospital, 2500 nurses carried out documentation in a minimum of 20 different, local systems. At many locations, systems did not ensure adequate collection of data; furthermore, the systems did not request that nursing plans be prepared. This was reflected, for example, in lack of data regarding:
- Fall risk (international patient-safety goal)
- The patient’s ability to communicate
- Preparation of nursing plans
The missing data and the different systems resulted in continuity problems, when patients were transferred between departments. Furthermore, the failing data collection and the difference in documentation systems represented a threat to successful accreditation as one, joint hospital; the accreditation survey was to be carried out by JCI in May 2011. These issues became clear in JCI’s mock survey in October 2010. Consequently, the challenge for the hospital was to develop and implement one joint nursing documentation system within a very short timeframe.

Purpose:
Create a nursing documentation system that:
- supports higher data collection quality
- supports a systematic approach to the clinical decision-making process
- enhances patient safety

Improve integration with other documentation

Methods:
- Establish a traditional project organization
- Hold focus group interviews
- Develop a new concept/material and a users’ manual
- Carry out implementation (local instruction, local resource persons)
- Collect data (audits)
- Edit material and manual

Results:
- 2500 RNs/nursing staff members now use one joint documentation system
- The quality of data collection has increased substantially
- Higher goal compliance in audits; this includes focus points regarding patient safety
- Demand for standard plans based on joint, clinical nursing guidelines
- The joint basis has clarified the challenges of the Mental Health Services of the Capital Region in regard to developing nursing staff competencies. This has led to a massive number of training activities, such as:
  - Training of triage nurses
  - Training of nurse practitioners
  - Competence development of resource persons
  - Courses in preparing qualitative nursing plans

Conclusions:
Major changes can be made in a short time, provided there is intensive backing from management. A uniform concept makes it easier to find relevant data about the patient. A uniform, systematic concept clarifies the competence-related and organisational challenges of multidisciplinary treatment. A systematic concept helps secure the collection of data.
A Six Sigma Approach to Reduce Non-Productive Time in OT

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Objectives:

To use elements of a Six Sigma model to reduce non-productive time (NPT) in Gastro Intestinal Surgery OT

The study focuses on the reduction of NPT between Patient In time and Induction Begin time, Induction End time and Incision In time, Patient Out time and OT Readiness time.

Methods:

In a five-phase study using DMAIC (Define, Measure, Analyse, Implement & Control) model, business case, value analysis, brainstorming, FMEA (Failure Mode & Effect Analysis), RPN (Risk Priority Number) calculation identified causes and solutions. In the Six Sigma analysis process sigma, target sigma and achieved sigma was calculated.

Results:

The null hypothesis of no difference in old and new Non Productive Time between Patient In time and Induction Begin time was rejected using 2test since the p-value was below 0.05 at 95% confidence level.
The null hypothesis of no difference in old and new Non Productive Time between Induction End time and Incision In time was rejected using 2test since the p-value was below 0.05 at 95% confidence level.
The null hypothesis of no difference in old and new Non Productive Time between Patient Out Time and OT Readiness Time was rejected using 2test since the p-value was below 0.05 at 95% confidence level.

In the case of reduction of nonproductive time between Patient In time and Induction Begin time, process sigma and target sigma was 0.91 and 2 respectively. In the control phase achieved sigma was 2.55, i.e. more than target sigma.
In the case of reduction of nonproductive time between Induction End time and Incision In time, process sigma and target sigma was 0.96 and 2 respectively. In the control phase achieved sigma was 2.22, i.e. more than target sigma.
In the case of reduction of nonproductive time between Patient out Time and OT Readiness Time, process sigma and target sigma was 0.67 and 2 respectively. In the control phase achieved sigma was 3.28, i.e. more than target sigma.

Conclusions:

The Six Sigma project in OT resulted in reducing NPTs, helping to take more cases, patient discharge becoming more systematic, and reducing chaos regarding scheduling OT cases. Starting a daycare lounge also contributed to the benefits. The application of Lean Six Sigma can reduce nonproductive time in OT with high EBITDA (Earnings before Interest, Taxes, Depreciation and Amortization) was $600000.
Measuring Efficiency of the Enhanced Recovery after Surgery (ERAS) Pathway in Colorectal Surgery

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Objectives:

Colorectal resection is a frequent major abdominal surgery especially due to the high incidence rate of colorectal cancer with 47.2 per 100'000. Enhanced Recovery After Surgery (ERAS) is a multimodal perioperative care pathway that is designed to achieve early recovery by attenuating the stress response. This is achieved by more than twenty evidence-based interventions covering all areas of the patient’s journey throughout the surgical process. These elements notably include preoperative counselling, no preoperative liquid fasting and provision of clear carbohydrate liquids until 2 hours before surgery, standard anaesthetic techniques, avoidance of peri and postoperative fluid overload, no routine use of drains and nasogastric tubes, enhanced pain treatment as well as early postoperative feeding and mobilization. The purpose of the study was to measure the efficiency before and after ERAS implementation by comparing the length of stay, complications, and readmissions rate.

Methods:

The ERAS pathway was implemented in our institution for colorectal surgery by an interdisciplinary (surgical, anaesthetist and nursing) team according to the quality improvement Deming cycle and an interactive audit system. The first 50 consecutive patients subjected to this ERAS pathway (ERAS group) were compared to 50 consecutive retrospective patients that were operated on one year before its introduction (control group). The compliance to the ERAS pathway was defined as the number of elements fulfilled divided by the total number of elements. Primary length of stay (LOS), readmission within 30 days, and complications within 30 postoperative days were compared. Quantitative variables were compared using the Mann-Whitney test and categorical variables were compared using the Fisher exact test.

Results:

Both control and ERAS groups were comparable in terms of age (p = 0.995), gender (p = 0.689), and ASA physical status score (p = 0.47). The compliance to the ERAS pathway was 40% in the control group and 71% in the ERAS group. Primary LOS was shorter in the ERAS group than in the control group: median 7 (interquartile range 5-12.25) versus 10 (7-18) days (P = 0.0025). The readmissions rate within 30 postoperative days was similar in both groups (2 patients each). The total numbers of complications were 60 and 49 (P = 0.64) and the numbers of patients with major complications were 11 (22%) and 6 (12%) (P = 0.29) in the control and ERAS groups respectively.

<table>
<thead>
<tr>
<th></th>
<th>Control group (n=50)</th>
<th>ERAS group (n=50)</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>Compliance (%)</td>
<td>40%</td>
<td>71%</td>
<td>0.0025</td>
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<tr>
<td>Primary LOS (median)</td>
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<tr>
<td>Readmissions within 30 days (no)</td>
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<tr>
<td>Total number of complications (no)</td>
<td>60</td>
<td>49</td>
<td>0.64</td>
</tr>
<tr>
<td>Total patients with major complications (no)</td>
<td>11</td>
<td>6</td>
<td>0.29</td>
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Conclusion:

Successful implementation of an ERAS pathway, as shown by an increased compliance rate, significantly reduced the length of stay without increasing readmission within 30 days. The total number of complications and the number of patients with major complications after colorectal surgery were lowered.
Impact of Community Factors on Readmission Rates

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Objectives:

Readmissions among the elderly are common and expensive, and have thus become a major target for interventions by policymakers in the U.S. and elsewhere. Starting in 2012, the Centers for Medicare and Medicaid Services (CMS), the largest payer of healthcare in the U.S., will penalize hospitals with high readmission rates.

If readmissions are primarily affected by the quality of hospital care, such an approach would be reasonable. However, critics argue that the variations in readmission rates are driven less by the quality of the hospital's care and more by community-level factors such as socioeconomic status and supply of primary care. Empirical data here would be immensely helpful. Therefore, we sought to understand to what extent variations in readmission rates across communities are driven by the quality of hospital care in those communities versus socioeconomic factors and supply-side factors.

Methods:

We used national Medicare data to examine readmission rates across the 306 major healthcare markets (as defined by the hospital referral region or HRR) for heart failure (CHF) and pneumonia. We used data from the Dartmouth Atlas to examine the relationship between community poverty levels, racial makeup, and supply of physicians and hospital beds on readmission rates. We also examined the impact of patient case-mix and hospital quality performance on readmission rates. Finally, using multivariable models, we examined the degree to which community-level variations in readmission rates are driven by variation in the sickness of the population, the quality of the hospital care, the supply of physicians and hospital beds, and the socioeconomic makeup of the population.

Results:

Readmission rates across healthcare markets ranged from 10% to 32% for CHF and from 8% to 26% for pneumonia. In models that examined the degree to which variation between HRRs was explained by different community-level factors, we found that for CHF, supply-side variables (physician and bed supply in the community) were most important (explaining 17% of the variation) followed by socioeconomic status (poverty rate and racial makeup) at 9%. Differences in hospital quality explained 5% of the variation in readmission rates and differences in case-mix explained 4%. The results for pneumonia were comparable: 14% of the variation between HRRs was explained by SES and 11% by supply-side variables, while only 4% was explained by hospital quality and 4% by case-mix.

Conclusions:

Community-level SES variables and supply-side variables play a much larger role in explaining variations in readmissions than the quality of hospital care or underlying sickness of the population. These findings suggest that the current federal initiatives that focus on penalizing hospitals for high readmission rates may not be properly targeted. Focusing on community-level factors such as the supply and mix of physicians and targeting efforts towards poor and minority communities may be more fruitful approaches to reducing readmissions. Otherwise, we are likely to penalize those providers in poor communities that care for the underserved, inadvertently worsening underlying disparities in care.
Organisational Self-Assessments compared with Survey Team Assessments: An Accreditation Mechanism to Improve Quality

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**Objectives:**
To empirically evaluate healthcare organisations’ (HCOs) self-assessment ratings and accreditation survey team ratings

**Methods:**
Archival data analysis of HCOs’ and survey team assessments held by the Australian Council on Healthcare Standards (ACHS). Data, collected between 2007-2010, cover 286 private and 336 public organisations from across Australia and correspond to 1535 accreditation assessments. Ratings are based on a five-point scale and awarded with respect to 14 mandatory and 31 non-mandatory criteria of the ACHS Evaluation and Quality Improvement Program (EQuIP), version 4. Statistical testing was used to evaluate the significance of observed agreements and disagreements between the two ratings. The significance level was set at 5% overall and 5%/45 = 0.11% when multiple testing was employed.

**Results:**
Differing assessment patterns were observed between mandatory and non-mandatory criteria. The average rate for which the ratings were in disagreement was 12.1% for mandatory and 15.0% for non-mandatory criteria. For mandatory criteria the proportion of negative disagreements, that is, when survey team assessments are lower than the HCOs self-assessments, was higher compared to the proportion of positive disagreements: 6.9% versus 5.2% (p=5.591e-10). The reverse result was observed for non-mandatory criteria with the positive disagreements rate higher than negative disagreements rate: 8.5% versus 6.6% (p=1.164e-10). There are four mandatory and eight non-mandatory criteria identified that have significantly different disagreement assessment rates from the corresponding average, even at the strict multiple testing adjusted significance level (Table 1). Seven and five disagreements relate to the clinical and support function areas, respectively. Significant spikes in disagreement rates were observed for four criteria (items in bold in the table). Lowest levels of disagreement were identified for four criteria, however when disagreement levels are low, when disagreement occurs it is of significance (items in italics in the table). Further examination of the criteria displaying significant disagreements reveals that HCOs and the survey teams are rating differently items that relate to consumer interaction in the clinical function area.

**Table 1:** EQuIP mandatory and non-mandatory criteria that have significantly different disagreement assessment rates
Legend: \textbf{bold} = Significant spikes in disagreement rates; \textit{italics} = lowest levels of disagreement

<table>
<thead>
<tr>
<th>EQuIP Function Area</th>
<th>Mandatory criteria</th>
<th>Non-mandatory criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical</td>
<td>Care evaluation (15.7%)</td>
<td>Community information on access and services (7.7%)</td>
</tr>
<tr>
<td></td>
<td>Infection control (19.9%)</td>
<td>Consumer rights and responsibilities (8.4%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Access and admission (8.8%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blood and blood component systems (20.2%)</td>
</tr>
<tr>
<td>Support</td>
<td>Continuous quality improvement (17.3%)</td>
<td>Recruitment and selection systems (9.5%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health promotion (22.6%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Research (31%)</td>
</tr>
<tr>
<td>Corporate</td>
<td>Corporate and clinical policies (7.9%)</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions:**
Reviewing HCOs against survey team assessments provides a further mechanism for accreditation agencies and HCOs to improve quality in the future. For accreditation agencies the information provides the opportunity to review trends in surveying, education programs and training. For HCOs it provides a useful guide on areas requiring an increased level of vigilance and attentive review. This study is one demonstration of how the potential of accreditation databases can realise rich sources of new knowledge to improve quality and safety.
Advancing Safety, Science and Service in Community Care Through Technology

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Objectives:

Central Community Care Access Centre (CCAC) proactively drives client safety and quality health outcomes by:
- Implementing leading practices in e-health and health assessment technology to support outcome-based client care
- Enabling evidence-based decision-making through databases and software that routinely and systematically measure clients’ health status and outcomes
- Ensuring consistent, accurate client information is available across the continuum of care with multiple care partners. These innovations also support system sustainability through efficiencies and value for dollar services.

Methods:

- CEO chaired implementation of Client Health Related Information System (CHRIS), a standardized database initiative across Ontario’s CCACs, supported by mobile technology that enables case managers to work from client's home rather than CCAC office.
- Implemented Resource Matching & e-Referral (RM&R) electronic health system with Central region hospitals, including first in Canada to automate referrals from emergency departments to community care and implement entire hospital sites at once.
- Studied use of Resident Assessment Instrument for Home Care (RAI-HC) data to support quality improvement through evidence-based case management. Used RAI-HC data to measure and validate outcomes in initiatives such as Balance of Care, Cluster Care Pilot, Convalescent Care and a Short Stay specialized population model.
- Developed Medication Management Support Services (MMSS) to decrease falls, emergency room visits and number of clients with uncontrolled pain, through standardized in-home medication management, supported by mobile technology and web-based software.

Results:

- CHRIS enables more comprehensive data in one client electronic record, simplified service provider interactions and faster establishment of client service delivery
- RM&R supports streamlined, reliable patient referral transmissions, enabling seamless client transitions and health system flow. It provides a single source of region-wide referral information. Central hospitals that have implemented RM&R report a referral completion rate of 91% - 95%, exceeding the 90% target. CCAC has met target of accepting its 2,600 monthly referrals within two hours.
- RAI-HC informs quality care planning and evaluation through objective client-centred assessments and solution-focused data interpretation. RAI-HC data review resulted in inclusion of MAPle and PSW utilization on CCAC’s balanced scorecard, supporting service provision to those with highest needs. RAI-HC data helped Central CCAC develop a Short Stay specialized population model, now being adopted provincially.
- 88% of MMSS clients report decreased ER visits, 71% decreased falls, 51% decreased pain. Annually MMSS saves Ontario’s Drug Benefit program about $100 per client. MMSS was a finalist in the 2010 Innovations in Healthcare Expo.

Conclusions:

The use of innovative technologies has allowed the Central CCAC to change how the organization provides care by specialising in population health needs. The adoption of the new client care model (based on a population needs) was made possible by data from the various technological systems. It provided the CCAC with a granular understanding of client profiles which has informed the organization’s service delivery model. This has supported the organization’s ability to better meet clients’ needs, service utilization and population growth, better utilization of community resources, streamlined caseload distribution and enhanced resource management.
2001

Evaluation of a Highly-Structured Electronic Nursing Record

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Objectives:

A highly-structured electronic nursing record (HSENR) was developed in a fast, agile design process on the basis of existing paper records, documentation guidelines and a previous electronic prototype. During two participatory design workshops with representatives from the 12 regional hospitals and the quality organization, a prototype was drafted. In a third workshop, the prototype was tested in a full-scale simulation. Adjustments were made according to the findings, and yet another full-scale simulation workshop, approved the HSENR for pilot implementation in one hospital. After three weeks of an intensive introduction and training period, the HSENR was implemented in a small university hospital, where 285 registered nurses should use the system in daily work practice.

It was a managerial demand that the HSENR should be thoroughly evaluated during the two months of the pilot period. The evaluation should then form the basis for a decision on dissemination of the system to substitute the paper records in the rest of the hospitals in the Capital region of Denmark. This abstract elaborates on the design, and highlights the most important results of the evaluation.

Methods:

The evaluation was constructed to assess the usefulness, usability and effectiveness of the HSENR, including adoption into the work processes and physical work-environment. The evaluation was designed as follows:

Clinical observation before and after implementation documented the nurses’ work flow, usability, and time consumption in documenting patient data. This was conducted with the use of semi-structured observation guides.

Tests by simulation in a highly controlled environment established to assess the actual time consumption and usability issues, by removing all contextual variables.

Two focus group interviews informed the preparation of a questionnaire survey. A third focus group interview was aimed at collecting information about usefulness for other healthcare professionals.

A questionnaire survey assessed the user satisfaction with the HSENR. Furthermore, we collected comments and information on attitudes toward usability, effectiveness, usefulness.

A quantitative and qualitative record audit performed on randomly chosen paper records and HSENR records assessed the level of completeness and quality of content.

Results:

Main results of the evaluation showed that:
83% of the nurses think HSENR supports documentation of patient data. 64% thinks that it gives better quality of documentation, which is concurrent with audit results.

68% have experienced problems with access, such as response time and login. Nurses work on laptops, but only 1/3 of the nurses will bring them into the patients. Reason is lack of placement for the laptop or consideration on patient contact.

Others stress the positive issues with the shared view with the patient.

Test and observation showed that documenting complex patients took 10% longer, on non-complex patients HSENR proved to be faster than on paper.

For 88% of the nurses, the overall experience with documenting in HSENR was good or very good. 9 out of 10 of the nurses recommend dissemination of the HSENR.

Conclusions:

A thorough evaluation of new technology constitutes the foundation for managerial decision on implementation of the technology. In our case we found that HSENR supports the documentation of patient data and provides better quality of content. Despite experiences with lack of access, the nurses recommend dissemination of HSENR to the rest of the region’s hospitals.
Development of a Cross-Specialty Organisation to Improve the Screening and the Management of Malnutrition in Hospitalised Children

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Objectives:

Malnutrition in hospitalised children is frequent and severe. We aimed to measure the impact of an intervention for nutrition support in a French University Hospital on the management of malnutrition in hospitalised underweight children.

Methods:

The study design was a cluster-randomised trial in six paediatric units. The multifaceted intervention was implemented over an 18 month period, and included:
- A computerised clinical decision support system for the screening and management of malnutrition integrated into daily medical practice. In cases of malnutrition, paediatricians received a computerised alert and recommendations for the appropriate prescriptions.
- A computerised alert for each child screened integrated into daily dietician practice.
- Outreach visits of paediatricians by dieticians to recommend the appropriate prescriptions and follow-up.
- Meetings to educate paediatricians, nurses and auxiliary nurses in the clinical practice guidelines of the French National Nutrition and Health Programme.

Every child underweight aged one month to 18 years old, hospitalised for more than 48 hours was included. Weight for height (WFH) and height for age (HFA) were used for nutrition assessment. Appropriate management, according to the French guidelines, were studied based on three endpoints: appropriate weighing by a nurse or auxiliary nurse (weekly if moderate malnutrition, daily if severe), analysis of malnutrition causes by a paediatrician, coordination of the nutrition support by a dietician. Mixed models were computed to compare outcomes between the intervention and the control group. Age, sex, level of malnutrition, chronic diseases, complications, and length of stay were considered for calculating adjusted Odds Ratio (ORa).

Results:

1158 underweight children were included, ranging from 28 to 318 according to the unit. Mean proportion of appropriate weighing was 45% in the control group and 59% in the intervention group (p=0.681). Causes of malnutrition were reported in 20% and 42% respectively (p=0.247), and there was a coordination of the nutrition support by a dietician in 27% and 47% respectively (p=0.423). The intervention had a significant impact on analysis of malnutrition causes (ORa=4.39, IC95% [1.62 to 11.89], p=0.034) and a positive impact on coordination of the nutrition support (ORa=3.52, IC95% [1.34 to 9.24], p=0.051). No effect was observed regarding the appropriateness of weighing (ORa=1.32, IC95% [0.25 to 7.06], p=0.756).

Conclusions:

Implementation of a multifaceted intervention to screen and manage malnutrition among hospitalised children improved the analysis of malnutrition causes by paediatrician and the coordination of the nutrition support by a dietician. These results suggest that intervention may have influenced paediatricians’ and dieticians’ behaviours, on the contrary of nurses and auxiliary nurses’ practices. A computerised clinical decision support system is effective in improving the care of underweight children at hospital but it should target every healthcare worker who is involved in the management of malnutrition.
End-Of-Life in the Intensive Care Unit

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Objectives:

In intensive care units, death occurs after a medical decision of treatment limitation in a great majority of patients. In our unit, about four patients a week pass away after a medical decision of treatment withdrawal. The end-of-life care for these patients and their relatives in this context is ethically, practically and emotionally complex. Lack of internal recommendations and reported difficulties among caregivers on how to proceed and the role of each one in these end-of-life situations have led us to initiate a reflection on that theme.

The project’s objectives were:
- To clarify the role of each caregiver in our unit when taking part in end-of-life situations.
- To develop practical recommendations regarding the management of end-of-life situations for both nursing and medical teams.
- To implement these recommendation as a standard of care.

Methods:

A research-action was undertaken in several stages by a workgroup in which every single profession of our unit was represented and included:
- A thorough review of the current literature of the topic of interest.
- The development of internal recommendations focused on end-of-life care in our unit.
- The creation and hosting of workshops that were attended by every single member of our unit.

Results:

- An algorithm clarifying the different steps and the role of each professional involved in end-of-life care in our unit was created.
- Practical recommendations were noted in a written report that was validated by both nursing and medical senior personnel of our unit.
- Between April and October 2011, 23 workshops were conducted. These workshops were led by pairs of members of the initial work group, involving each time two professions (a nurse and a receptionist, a doctor and an assistant nurse, a nurse and a doctor, etc. ...). To this date, 136 nurses, 34 assistant nurses and 32 doctors have attended these workshops, representing respectively 86%, 85% and 73% of all professionals in our unit.

Conclusions:

We hope that this approach will permit the unification of the various practices among the professionals in our unit, therefore helping to reduce the emotional burden generated by these difficult situations.

Our next step will be to implement an evaluation of the workshops using a questionnaire that will be submitted to every single member of our unit twelve months after the completion of the last workshop. These questionnaires will also allow us to test the knowledge of internal recommendations regarding end-of-life care among all the caregivers. Indicators allowing us to investigate the degree of adherence to the procedure of all the medical and nursing professionals in our unit (observation of the procedure, degree of satisfaction, etc. ...) will be noted and analysed.
E-Health to Support Mental Health Integrated Care Pathways Development across Scotland

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†Mental Health Integrated Care Pathways, HealthCare Improvement Scotland, Kilwinning, United Kingdom

Objectives:
The key objectives of the E-Health/ Mental Health Integrated Care Pathways (ICP) project were to explore:
- The definition of an ICP standard relating to the development of a local e-health strategy for mental health services.
- How the setting of a set of key ICP data monitoring points for NHS Boards would drive NHS Boards in Scotland to move towards an electronic patient record which facilitated the collection of clinical data and the reporting of ICP audit and variance information.

Methods:
In 2008 NHS Quality improvement Scotland set a series of ICP standards for mental health services across Scotland. NHS Boards were tasked with the development of the ICPs to meet the standards for generic care and five key mental health conditions. Two of the key standards related to the following issues:
- The development of a local e-health strategy to support the implementation of ICPs
- The collection of set data standards to support ICPs
- The ability to produce audit and variance information associated with the ICPs to support service improvement.

The author worked with two NHS boards to identify how they could collect some simple ICP data point information and use the information to both aid patient care and improve the service provision in the local area. These data points related to the following issues:
- The recording of an ICD10 diagnosis, the provision of post-diagnostic information and the offer of post-diagnostic support.
- The assessment of need for a psychological therapy.

The NHS Board were asked to explore how these data points could be collected within the electronic patient record and to demonstrate how the audit of this information was shared with clinicians and used to improve the quality of care relating to that particular aspect of the ICP.

One NHS Board had a mature, well-used mental health e-health system and the other NHS Board had a system which was used in their general hospital but not in mental health services.

Results:
NHS Board A, which had a robust system used in mental health and a good relationship with its supplier, was easily able to develop the system to record the audit and variance data. It was able to demonstrate an improvement in both of the audit areas. Detailed results will be available in the oral presentation.

NHS Board B, which used the general hospital system, was unable to collect and report on any of the data points due to the following reasons
- Lack of flexibility in the clinical system
- Service structure and the inability to define how best to collect the information in a structured fashion.

Conclusions:
The setting of a set of national standards relating to e-health and ICPs along with a national support framework from Healthcare Improvement Scotland was able to move some NHS Boards to develop their e-health systems appropriately to support their ICP development. There are, however, some key success factors in making this happen in these board areas
- Strategic leadership and ownership
- Coordination by a key individual and their team
- e-health system enthusiasts
- Supplier relationship

Exploring and Optimizing Surgical Patient Flows in an Eye Hospital

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1Department of BioMechanical Engineering, Delft University of Technology, Delft, 2Rotterdam Eye Hospital, Netherlands

Objectives:
To explore surgical flow of cataract patients in order to optimize the surgical trajectory and improve patient satisfaction

Methods:
In 2010, 7164 cataract surgeries were performed in the Rotterdam Eye Hospital. The whole day-care surgical trajectory from check-in to leaving the hospital demands many steps, involving many professionals. Currently, the process is disturbed by the absence of actual patient-tracking information and manual checking between the pre and postoperative ward and the operating room. In order to optimize the patient flow, it has to be explored first. Study design: This study entails two main elements: observations and location of cataract patients by means of RFID technology (Radio Frequency IDentification). Based on these data, DORA (Digital Operating Room Assistant) will be developed. DORA will inform the health professionals and the patient’s family ‘real time’ on the patient’s location and the anticipated time for e.g., leaving the ward, start of surgery, returning to the ward, and leaving the hospital.

Results:
Much time and planning was spent on setting up the RFID technology (e.g., consent and active involvement of professionals and patients, technology, usability) as this technology will become part of DORA. DORA will be self-regulating without active intervention of the professional. Data are collected on 100 cataract patients and will be analyzed by May. Preliminary results of the observations of 15 patients show that the whole surgical trajectory can be divided in 13 main parts, which together will take approximately 3-4 hours (see Table). Additionally, at least eight professionals are involved in the whole trajectory. The results show that waiting at the holding and recovery is relatively long. Currently, patients are brought and picked up after phone calls between ward nurses and nurse anesthetists, which sometimes are delayed due to time constraints and care for other patients. DORA will automatically display the patient’s location making the phone calls obsolete and reminders (e.g. by SMS) can be built in to signal staff.

<table>
<thead>
<tr>
<th>Part</th>
<th>Location</th>
<th>Action</th>
<th>People involved</th>
<th>Average time [min]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Desk</td>
<td>Check in (2h before)</td>
<td>1 receptionist, family</td>
<td>1-2</td>
</tr>
<tr>
<td>2</td>
<td>Waiting</td>
<td>Wait</td>
<td>family</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Intake room</td>
<td>Welcome / intake</td>
<td>1 nurse, family</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Waiting room</td>
<td>Wait</td>
<td>family</td>
<td>20-60</td>
</tr>
<tr>
<td>5</td>
<td>Ward</td>
<td>Change, get in bed</td>
<td>1 nurse, 2 nurses, family</td>
<td>3-5</td>
</tr>
<tr>
<td>6</td>
<td>Corridor</td>
<td>Transport &gt;holding</td>
<td>1 nurse, family</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Holding</td>
<td>Prepare for surgery</td>
<td>1 nurse anesthetist / 1 anesthetist</td>
<td>Actions: 10 &amp; Wait: 10-60</td>
</tr>
<tr>
<td>8</td>
<td>OR</td>
<td>Surgery</td>
<td>surgeon /1 (nurse) anesthetist /2 OR nurses</td>
<td>20-30</td>
</tr>
<tr>
<td>9</td>
<td>Recovery</td>
<td>Recover</td>
<td>1 nurse anesthetist / 1 anesthetist</td>
<td>10-60</td>
</tr>
<tr>
<td>10</td>
<td>Corridor</td>
<td>Transport &gt;ward</td>
<td>1 nurse anesthetist / 1 anesthetist, 2 nurses</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Ward</td>
<td>Recover, Remove IV lines, change</td>
<td>1 nurse, family</td>
<td>30</td>
</tr>
<tr>
<td>12</td>
<td>Waiting room</td>
<td>Wait / recover</td>
<td>family</td>
<td>30</td>
</tr>
<tr>
<td>13</td>
<td>Intake room</td>
<td>Postoperative agreements</td>
<td>1 nurse, family</td>
<td>1</td>
</tr>
</tbody>
</table>

Conclusions: Time spent at the holding and recovery can be reduced by approx. 50% to optimize the surgical trajectory
Quality of Care for Whom? Do we receive Quality Care regardless of where we live and who we are? Equity Aspects on Cardiac Care Services in Sweden

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Objectives:

The objective was to assess whether patients received quality cardiac care services regardless of geographic location, age, gender, educational background and country of birth, as well as regardless of psychiatric co-morbidity.

Methods:

Unique Patient Identifiers made it possible to co-run data from different national registers including the Prescribed Drug Register, the Cause of Death Register and the Patient Register, six Health Care Quality Registers, the Education Register and the Population Register. The National Guidelines (NG) indicated which treatments should be prioritized and those that should not be used at all.

Results:

Mortality in cardiovascular diseases has declined over time, but is still higher among men and persons with primary or secondary schooling compared with those with university education. This national assessment highlighted several areas for which cardiac care services complied with the NG regardless of where patients were treated. This applied to antithrombotic treatment after an Acute Myocardial Infarction (AMI), as well as for treatment with beta-blockers. However, more than half the AMI cases died before they reached hospital. The case fatality rate among those who died without being hospitalized varied more than the case fatality for hospitalized cases.

Considerable regional variations were found in areas where patients were also undertreated. For example, only 40 percent of patients with atrial fibrillation and additional risk factors received warfarin to prevent clot formation and stroke. Only 65 per cent of patients received reperfusion treatment after an ST-segment elevation infarction within the set target time. A few gender differences were noticed, for example more men than women were treated with RAAS-inhibitors among heart failure patients. This also applied to highly-specialized invasive procedures such as implantable defibrillators and biventricular pacemakers. Further analysis also revealed that Swedish-born AMI patients, to a greater extent than those born outside the European Union, were prescribed with adequate secondary preventive treatments. In addition, patients with psychiatric illnesses who got an AMI did not receive the same treatment as other AMI-patients. They also had an increased risk of dying six months after an AMI.

No unjustified variations in treatments between age groups were found.

Conclusions:

The Swedish system should provide equitable health services. However, quality of care often depends on where patients live, their gender, their education, their country of origin and their health in general. In order to address these inequities, population-based and targeted strategies should be adopted. The National Board of Health and Welfare will undertake further analysis in order to contribute towards more equitable health services.
Healthcare Reform in Newfoundland and Labrador, Canada: A 10-Year Trend of Acute Care Registered Nurses’ Perceptions of Quality and Patient Safety and Measurements of Attitudinal and Behavioral Intentions

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Objectives:

The objectives of the study were (1) to examine how registered nurses (RNs) perceive the impact of healthcare reform in acute care settings, (2) to monitor changes in select organizational culture factors (emotional climate of the workplace, practice-issues and collaborative relations), perceived healthcare quality including patient safety, and nurse outcomes (i.e., trust in employers, general job satisfaction, organizational commitment, and likelihood of staying with current employers), (3) to monitor changes in associations between culture variables, perceived quality and nurse outcomes following continued and extensive healthcare reform over time (i.e., 2000-2010), and (4) to further test a theoretical model linking culture to perceived healthcare quality.

Methods:

A non-experimental predictive survey design was used to study a random sample of RNs (N=192) employed in the acute care setting in the province of Newfoundland and Labrador (NL), Canada in 2010. The response rate was 29% (192/661). Data collected included demographic characteristics, select organizational culture factors, perceptions of healthcare quality, and nurse outcomes using previously validated instruments. The data was compared to findings obtained as part of an ethically approved program of research examining the implications of reform for NL acute care institutions [1-2].

Results:

Scores for most variables were low indicating negative perceptions of the organizational culture, healthcare quality, and nurse outcomes. Significant moderately positive intercorrelations were observed (p < 0.001) over time. Although findings from other samples of RNs [2] indicated some improvement from 2000 to 2005, the current findings suggest deterioration in organizational culture, healthcare quality, and nurse outcomes scores, four years after a second exposure to pervasive transformation of the health system in 2006. The temporal sequence of scores suggests that further health system reform had adverse effects on nurses’ attitudes and outcomes. The emotional climate of the workplace and collaborative relations emerged as significant predictors of healthcare quality, a finding similar to the 2000 and 2005 samples. Trust in employer emerged as a significant predictor in 2000 and 2010. Closer examination of the 2005 sample characteristics indicates that it was significantly different from the 2000 and 2010 samples which may have altered the results.

Conclusions:

Despite the growing body of research designed to systematically monitor the impact of organizational change on nurse outcomes, there is no consensus on what facilitates nurses’ acceptance of and adjustment to change. Acute care nurses working in NL continue to perceive negative repercussions resulting from changes in the healthcare system suggesting the supportive mechanisms instituted to buffer the impact of change between 2000 and 2005 have had limited success. Further intervention is required to enhance organizational culture and trust which may subsequently lead to improvement in perceptions of healthcare quality.

References:

1. Restructuring acute care hospitals in Newfoundland and Labrador. Parfrey PS, Barrett BJ Gregory D. *Journal of Health Service Research and Policy*
DUR for Providing Real-Time Safe Drug Management and Information in Korea

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Objectives:

In 2011, the Health Insurance Review & Assessment service (HIRA) expanded the usage of Korean Drug Utilization Review (KDUR) to all medical institutions and pharmacies in Korea in order to inform and prevent drug abuse in real-time at a prescribing and dispensing level. This study was performed in order to explain and evaluate Korea’s DUR.

Methods:

KDUR is targeting all the medical institutions including the clinics and pharmacies. The business process of KDUR between medical institutions and pharmacies is described below.

1. Physicians send patient's prescription to HIRA's DUR system.
2. HIRA compares this data with patient's previous prescription information database and DUR criteria database. In case there is inadequate drug, HIRA provides warning message to physician’s computer screen immediately.
3. If the prescription is inappropriate, physicians change or cancel the prescription. If there is unavoidable reason to use prohibited drug, physicians have to fill in the reason and can prescribe.
4. Pharmacists have to follow the same procedure. However, pharmacists must reconfirm and dispense when they find out inappropriate drugs.

***Review criteria***

HIRA’s DUR system manages drug safety and illegal drug ingredients information (review criteria) officially announced by the Korea Food & Drug Administration (KFDA).

HIRA reviews drug-drug interactions, drug-age contraindication, drugs prohibited to administer to pregnant women, drugs banned for safety reasons, ingredient duplication (not therapeutic duplication)

Results:

Currently, December 2011, 64,236 institutions (97.1%) out of 66,133 medical institutions and pharmacies are joining DUR system. In detail, 240 general hospitals, 42,513 clinics, 1,541 community health centers, and 19,942 pharmacies are participating in DUR.

In 2011, HIRA reviewed 42,348,000 prescriptions in prescribing level, and 40,872,000 prescriptions in dispensing level. Of the reviewed prescriptions, DUR gave warning messages at 6.2% at the prescribing level, and 2.4% at the dispensing level. For those warned prescriptions, 26.5% of physicians and 3.5% of pharmacists changed or canceled improper prescription.

Conclusions:

KDUR system has been launched successfully nationwide. As of December 2011, 97.1% of medical institutions and pharmacies are participating in DUR. HIRA is considering the expansion of review criteria, for instance, therapeutic duplication, allergic information, and optimal duration of therapy.
Multidisciplinary Care for Patients with Amyotrophic Lateral Sclerosis at Geneva University Hospitals, Switzerland

A.-C. Heritier Barras 1,*, D. Adler 1, R. Iancu Ferfoglia 1, J.-P. Janssens 1 and ALS-multidisciplinary team 1HUG, Genève, Switzerland

Objectives:

Amyotrophic lateral sclerosis (ALS) is a neurodegenerative disease leading to a progressive loss of motor function affecting walking, speaking, deglutition and respiration. Affected people die most often of respiratory failure two to three years after diagnosis. There is to date no curative treatment, and thus supportive and palliative measures are the main goals of patient management. Given its incidence and prevalence, around 30 people are affected simultaneously in the Geneva area. Prior studies suggest that a multidisciplinary approach improves patients’ quality of life and survival.

Methods:

As of April 2010, Geneva University Hospitals have implemented a multidisciplinary longitudinal follow-up of patients with ALS. Every three months, patients and caregivers attend a day-clinic evaluation which includes the interventions of neurologists, pulmonologists, nutritionists, physiotherapists, occupational therapists, speech therapists, nurses, social workers, and a specialist in palliative care. This multidisciplinary approach helps the patient to:
- have access to several specialists within one day and at the same place
- anticipate complications such as respiratory failure, weight loss, swallowing problems, motor handicap, speech difficulties
- adapt his environment to the progression of his disease to maintain the highest level of autonomy
- receive administrative and financial support
- discuss and express wishes as to advanced directives.

Results:

To date, 40 patients aged from 41 to 76 years (17 women, 23 men) have integrated the multidisciplinary follow-up on an outpatient basis. Seventeen patients were electively put under non-invasive ventilation when indication criteria were met. During discussions about invasive ventilation, no patient has so far decided to undergo elective tracheostomy. Advanced care planning was discussed with most patients and was used to avoid inappropriate admissions to the ICU. Ten patients underwent a gastrostomy. Sixteen deaths were recorded so far. Death occurred at home for four patients, in a long-term facility for seven patients, in a medical ward for four patients and in the intensive care unit for one patient.

Conclusions:

In comparison with a more classical approach, this multidisciplinary approach gives a place to each member of the medical team and allows a holistic approach to the patient. Family and people directly in charge of the patient at home such as occupational therapists, physiotherapists and home nurses can also share information and experience with the hospital team on a regular basis. Specialists in medical bio-ethics and intensive care regularly join the multidisciplinary team to share reflections on sensitive topics such as criteria for tracheostomy or assisted suicide.

In the near future, a computerized database, including a prospective evaluation of quality of life and quality of care, will help us to evaluate the impact of our management on the patients’ quality of life, and justify the continuance of this approach.
Defining Patient Expectations for an Academic Healthcare Institution through Public Consultation: A Qualitative Approach

M. P. Law¹, P. McKernan²*, D. Sinclair³ and St. Michael’s Hospital Patient Declaration Committee
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Objectives:

The objective of this study was to create a patient declaration of values through a novel qualitative inquiry process. The impetus for this project was Bill 46, Excellent Care for All Act, 2010 in Ontario, Canada which legislated that healthcare organizations create a declaration of values by way of engaging their respective communities.

Methods:

In order to reach the community and gather information that was free of assumptions and guiding language, one qualitative question was asked of participants: ‘When you think of a great hospital, what do you think about?’ Participants were provided with the opportunity to list ten points and add comments if desired. The online survey was a direct link from the hospital’s main page website and the comment cards were distributed in five languages throughout the hospital. Priority population groups were identified and targeted to complete the survey. The data analysis technique used was a thematic analysis through the steps outlined in the constant comparative method using open, axial and selective coding.

Results:

There were 1033 respondents to the survey which resulted in 5295 single responses. The first stage of open coding resulted in the identification of 36 categories. Further portioning and clustering of the data allowed for 15 overarching themes within four main categories. Through the data analysis it appeared that the value statements followed the patient experience through the entire interaction with the hospital. Respondents outlined aspects of a “patient first” approach where patients are the number one priority and family is part of the healthcare experience. The human experience in the hospital was also supported by comments outlining the importance of being treated equally with respect and dignity from all hospital staff. The second category focused on individuals’ arrival at the hospital and outlined respondents’ value of a clean environment with good signage, access to parking and transit. It was important to respondents that the hospital was welcoming and bright with a comfortable area for visitors and patients to wait. Being treated by highly-skilled professionals who were caring and compassionate, having access to state of the art technology and having information communicated to them in a timely fashion and in a way that was easily understood were identified. In the services they received, patients valued efficiency, privacy, and staff that worked as a team and having a clear understanding of the next steps in their care when leaving the hospital.

Conclusions:

Overall findings indicate a high level of congruence between what our patients expect and the existing evidence from the patient satisfaction literature and the current online NRC Picker survey being used by the hospital. The Patient Declaration has been a foundational project informing quality-improvement initiatives across the hospital. St. Michael’s strategic plan framework places our Patient Declaration as an overarching document. The patient relations process has been revised to reflect our Patient Declaration. This serves as a way to help identify gaps between patient expectations and experiences of care. The Patient Declaration has been mapped with current patient-satisfaction surveys, and most recently the Patient Declaration has been incorporated into the hospital’s quality planning process.
Procedural Sedation Complications and Training for Doctors

C. W. Lau on behalf of Procedural Sedation Safety Committee, W. S. Chan on behalf of Cluster Procedural Sedation Committee, C. W. Kam on behalf of Cluster Clinical Skills Training Centre, P. F. Tang on behalf of Cluster Procedural Sedation Safety Committee & Cluster Quality & Safety Division

Hong Kong Hospital Authority, Hong Kong, China

Objectives:

Overseas data showed that overall procedural sedation-related complication rate is around 4.5%. The rates of desaturation and hypotension are around 1-2% [1]. Although there is no clinical data on the number of procedural sedations performed and the related complications in the local context, serious complications related to sedation do occur locally. In 2009, the Hong Kong Academy of Medicine published a Guideline on Procedural Sedation [2]. In alignment with the guideline, NTWC Procedural Safety Sedation Committee was established to enhance the safety of procedural sedation conducted in our cluster. The policy for procedural sedation was set up in July 2010 under the joint effort of representatives of various departments. Our objectives were to:

- Collect procedural sedation related data
- Enhance knowledge and safety of procedural sedation in the cluster to meet the international and local standards

Methods:

Two whole-day train-the-trainer procedural sedation training workshops were organized in May & June 2010 in collaboration with the Hong Kong College of Anaesthesiologists. The workshop contents included lectures, problem-based learning discussions, hands-on practice of airway management and resuscitation techniques. A series of 3-hour training workshops for doctors who need to perform procedural sedation were subsequently run in the cluster in 2010 & 2011. With the implementation of NTWC Policy on Procedural Sedation in April 2011, all procedural sedations in the cluster must be performed by credentialed doctors under the required standards of care, including appropriate monitoring and discharge guidelines. A checklist for procedural sedation was also promulgated in the cluster. The attending doctors and nurses have to fill in one checklist for each procedure and the total number of procedural sedations has been sent to Nursing Services Division for performance indicators. Where there is a complication, it is reported to committee coordinators by filling the complication form and any adverse events would be reported through the Advanced Incident Reporting System.

Results:

A total of 21 procedural sedation training workshops were organized in 2010-2011. Altogether 301 doctors attended the workshops, representing 74% of doctors who may need to perform procedural sedations in the cluster. During the period from April 2011 to Dec 2011 where the new policy is in force, the overall sedation-related complication rate is low (0.16% of hypotension, 0.23% of desaturation) which is comparable with international standards. All the complication cases are monitored and reported to cluster committee for cause analysis and subsequent improving plans.

Conclusions:

1. The use of a checklist serves to remind both doctors and nurses of the points to note in performing procedural sedation. The completed checklists and incident reports also provide the database with the information to facilitate further analysis on the number of procedural sedations performed and complications involved.
2. Cluster policy and checklist, together with training workshops help to improve the safety of procedural sedation to meet the international standards.

References:

To Improve the Admission Registration Process so as to Reduce Process Time and Deliver Timely Care to Patients

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Objectives:

To improve the registration process for urgent admissions done by Attendants and reduce overall time taken by 38% so as to deliver timely care to our patients

Methods:

The team started by collecting data on urgent admissions from outpatient clinics over one month and found that 43% of patients required an Attendant to assist with registration. We interviewed stakeholders to gather the reasons and reviewed the entire admission registration process. The team then defined the process and mapped the workflow from start to end. We monitored the activity of 26 patients over two weeks to derive the average time taken per process (32 minutes) and the longest transaction (55 minutes). To set our target, the team surveyed stakeholders for feedback on acceptable turnaround time (20 minutes).

To identify root causes, we used an Ishikawa diagram coupled with multi-voting. We then brainstormed for solutions, which were evaluated using criteria linked to the organisation’s objective to provide quality care. Possibilities were reviewed using a decision matrix and ideas with the highest scores were implemented.

Instead of getting staff to wait and register at Admissions, forms were faxed to Admissions for registration and staff just had to collect and send the completed forms to the ward, completely eliminating the waiting process. The new workflow was piloted and monitored over four weeks. Results showed that the new process took just three minutes, achieving 91% reduction! However, due to logistics and other challenges, just 42% of the cases were completed using the new workflow and there remained cases that took 45 minutes. Sustainability was an issue.

The team revisited the various solutions and after further brainstorming, a second workflow was created. This diverts staff to the Same Day Admission Centre for registration. There, waiting time is minimal after 11 am, coinciding with the time for outpatient admission registration. The new flow was piloted for another month.

Results:

The new workflow reduced unproductive time spent by staff waiting at Admissions and resulted in faster delivery of admission folders for timely care of patients in the wards.

Annually, the project saved 243 hours that could be more effectively deployed. Staff spent just 12 minutes on admission registration compared with 32 before intervention, achieving reduction of 63%! In addition, pre-implementation, 8% of the cases took 20 minutes or less; post-implementation, the number rose to 100%, fully meeting stakeholder expectations.

Intangible results included enhanced patient care through more timely treatment, reducing anxiety for patients and caregivers and greater job satisfaction as staff did not have to wait or go from pillar to post. Staff could spend more quality time attending to patients and clinic activities. There was also less congestion and shorter waits at Admissions Office and resources at the SDA were optimised. Overall, improving the timeliness of care supports the hospital’s commitment to quality patient care.

Conclusions:

A simple change in workflow can deliver desired results. Yet, as it changes the way staff used to work, the initial solution failed to deliver consistent results. By tweaking the process to remove hassles faced by staff, results measured after three months showed that average process time remained constant at 12 minutes with all cases being completed within 20 minutes. Effectively addressing staff concerns contributed significantly to more consistent and sustainable outcomes and timely care for our patients.
Safety Culture in a University Hospital: Results of a Questionnaire Survey

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¹Medical Direction, University Hospital of Lausanne (CHUV), Lausanne, Switzerland, ²Comité de Coordination de l’Evaluation Clinique et de la Qualité en Aquitaine, Pessac, France, ³Institute of Social and Preventive Medicine, Lausanne University Hospital (CHUV), Lausanne, Switzerland

Objectives:

The direction of our university hospital recently issued guidance about critical incident reporting and disclosure to patients, promoting a non-punitive attitude, alongside the recommendations of the Swiss Patient Safety Foundation. We wanted to assess the state of development in safety culture among the healthcare workers of the nine clinical departments in our institution.

Methods:

The French validated version of the Hospital Survey On Patient Safety Culture (HSOPSC) was sent by the electronic system Surveyworld™ to all physicians, nurses and occupational therapists of our hospital, along with two reminders within a period of six weeks. Its 40 questions are grouped into 10 dimensions, which are considered as “developed” (D) if positive responses amount to ≥75%, and “to improve” (I) if ≤50%. Results were analysed by clinical departments.

Results:

A total of 1,678 responses was received (global participation rate 32%, ranging between 26.6% and 34.9%). Completing the name of department of work was facultative for confidentiality reasons, and 59.9% of respondents did not fill in this item. Only one dimension was considered as D “work in team within the service”, while five were considered as I, the weakest being “work in team between services”. The scores were only slightly different between the nine clinical departments. The perceived security level was rated as “very good” by the majority of responders from six departments, and “acceptable” by the other three. Only a few respondents in each clinical department (0 to 10%) stated having declared more than five incidents in the last 12 months, while the majority (44 to 88%) had not used the system.

Conclusions:

This first institutional survey showed that safety culture could be improved in many ways in our clinical departments. Results indicate that confidence in the stated hospital policy is not yet effective, as the majority of respondents did not indicate in which department they worked. Several dimensions of the HSOPSC questionnaire will have to be targeted by interventions to improve scores and make them match the perceived security level.
Validation of a Measure of Youth-Friendly Primary Care Services

D. M. Haller, A. Meynard, N. Perone, F. Narring and HUG-Foundation fami collaboration for family medicine in Bosnia & Herzegovina

Primary Care Research and Teaching Unit, University of Geneva, Department of Community Medicine and Primary Care & Department of Pediatrics, Department of Community, Primary Care and Emergency Medicine, Geneva University Hospitals, Geneve, Switzerland

Objectives:

To develop and validate a questionnaire to measure the youth-friendliness of primary care services from an adolescent client perspective.

Methods:

Initial development was in English but as the tool was to be used in a trial in Bosnia and Herzegovina (BiH) it was validated in the language of this country. Items were adapted from two sources: a service quality assessment tool from the World Health Organization and an Australian questionnaire to assess youth-friendly primary care services. A panel of English-speaking experts reviewed the list of items for face validity. Following a translation/back-translation process items were pre-tested with adolescent patients from a primary care service in BiH. The stability and construct validation were then conducted with 60 young people from six different health services in BiH. Item Response Theory was used to select items for the final questionnaire.

Results:

The validation process led to a 49-item tool with eight subscales (the YFHS-WHO+ questionnaire). Test-retest stability at one week was excellent (mean Kappa. 0.93). Construct validation was supported by the fact that services with the highest and the lowest scores on the questionnaire were also those that had many, respectively little youth-friendly characteristics as assessed by experts on a pre-defined evaluation grid. Services seeing a higher proportion of adolescents also had higher scores on the questionnaire.

Conclusions:

This study supports the validity of the YFHS-WHO+ questionnaire for assessing the level of youth-friendliness of primary care services for research purposes. Further validations in English, French and other languages will allow wider use of this tool in the future.
Critical Analysis of Current System and Processes in ENT One-Day Surgery

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Objectives:
The operation room is one of the most complex work environments in healthcare. Previous studies show that mostly adverse events occur in surgery and that 3-22% of surgical patients experience an adverse event. The risk may be even greater when turnover is high and the patients are children. In most ENT treatments, the patients are children. The procedures are often short, so the turnover of patients is very high. This quality-improvement project started by request of the ENT physicians of two associated hospitals in the Flemish part of Belgium. The aim of this study was twofold. Firstly, to evaluate the processes in ENT one-day surgery by using the ‘Scenario Analysis of Failure modes, Effects and Risks’ (SAFER), the Dutch modified version of the ‘Healthcare Failure Mode & Effect Analysis’ (HFMEA) method, and to redesign the processes to improve patient safety. Secondly, to evaluate the use of the SAFER method in this project.

Methods:
In two one-day clinics, a multidisciplinary team consisting of a quality coordinator as team leader and all the relevant disciplines observed the care process. A flow diagram was made and potential failure modes were identified and scored using a hazard scoring matrix. Using a decision tree, failure modes for which recommendations had to be made were identified.

Results:
In both hospitals similar potential failures were detected. We were able to define five categories of failure modes which required remedial action. The two major failure modes were the absence of an active identity check during the whole process and the need for standardization of the pre and post-surgical check-ups. In both hospitals the process has therefore been redesigned through the implementation of an active identity check protocol. In one hospital a surgical safety checklist (SCC) was also implemented. In the other hospital the SCC was already in use, but needed optimization. A third failure mode was the range of terminology and abbreviations for the ENT pathology in daily communication and in the operation booking program. The range in the operation booking program was so large because every combination operation and every misspelling was given a new registration term. The list of 361 registration terms was reduced to 30 terms used for the registration of 12660 procedures. Related to this different terminology there was also an important logistical problem for the correct delivery of sterile material to the OR. The solution was checked together every set of ENT instruments, registered every instrument separately into the software, accompanied by a photograph, using a standardized term and an order reference number. Finally, the sets could be completed. The last failure mode was a ‘too early’ discharge of the child from the recovery. To avoid this in the future a discharge checklist was developed and implemented. Although the SAFER is a time-consuming method, this systematic approach by a multidisciplinary team was found to be useful for the identification of failure modes which need immediate remedial action. The involvement of all relevant disciplines and the creation of an open safety culture were regarded as the most important success factors for the use of the SAFER.

Conclusions:
The prospective risk-analysis tool, the SAFER, was a useful instrument for detecting failure modes. Different failure modes were found and multiple improvements were implemented.
Towards Optimal Patient Involvement in Guideline Development Groups

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Objectives:

Patients are increasingly involved in clinical practice guideline (CPG) development. The inclusion of patient representatives in guideline development groups (GDGs) is the most common approach in the Netherlands. By their involvement, patients have the opportunity to share their views and experiences (consultation), and to incorporate their input into CPGs (decision-making). Although the importance of this approach is emphasized, successful patient involvement in GDGs appears to be difficult.

In this study, we systematically evaluated patient involvement in GDGs for oncological CPGs, and we tested and validated acquired insights. The goal was to contribute to optimization of patient involvement in GDGs.

Methods:

The evaluation consisted of a desk study and 35 semi-structured interviews with stakeholders in CPG (including patient representatives). The acquired insights were used to monitor and evaluate four ongoing guideline development processes. These were validated through a triangulated approach (e.g. observations, document-analyses, interviews). Two patient representatives were included in the research team.

Results:

The evaluation revealed that successful patient involvement in GDGs depended on a broad scale of factors (classified on three levels: procedural, conditional and individual). The factors were used to develop strategies facilitating patient involvement, ranging from preparation meetings to regular reflections with the GDG and dialogue sessions to strengthen the input of patient representatives. These strategies were tested and further optimized.

Conclusions:

The study highlights the factors that promote successful patient involvement in GDGs. Moreover, it provides successful strategies – complementing current approaches - for all involved parties which optimize patient involvement in GDGs.
Reducing Sepsis Mortality by Achieving High Reliability

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Objectives:

Describe how North Shore-LIJ decreased severe sepsis/septic shock mortality and is achieving high reliability in sepsis recognition in its Emergency Departments.

Methods:

Sepsis is one of the most serious problems facing healthcare organizations. Considering the fact that there are over 750,000 new cases of sepsis diagnosed in the US each year and that it is the leading cause of in-hospital mortality for our health system, it is a strategic priority for our organization. In 2009, North Shore-LIJ senior leadership convened a multidisciplinary Sepsis Task Force from the Emergency Departments and Intensive Care Units of its 12 acute care hospitals, to investigate sepsis mortality and make recommendations for change. The Task Force adopted the Institute for Healthcare Improvement (IHI) Sepsis Bundle and developed an internal web-based tool to facilitate data collection and provide reports to each of the hospitals detailing compliance with the bundle elements. A subcommittee of ED clinicians convened to further define the sepsis continuum and developed an ED-specific algorithm to guide evidence-based best practice in the ED. From this an ED-specific practice guideline and enhanced triage criteria (“Super SIRS Criteria”) were developed to facilitate early recognition and expedite treatment of ED patients with Severe Sepsis and Septic Shock. Other initiatives tested by some of our hospitals to improve reliability in sepsis identification and enhance compliance with the Sepsis Bundle are “Code Sepsis” and the Modified Early Warning System (MEWS). To further motivate reductions in sepsis mortality, build capacity and provide strategic guidance, North Shore-LIJ entered into a formal Strategic Partnership with IHI in 2011. Through this partnership, North Shore-LIJ will utilize IHI's proven methods in improvement science to reach its goal of becoming a top decile performer in sepsis care. To that end, each hospital has a dedicated Sepsis Improvement Team to perform continuous, rapid cycle, small tests of change through PDSA cycles to develop highly reliable processes at all facilities. These improvement teams will also be supported by Six Sigma Master Black Belts from our Corporate University, the Center for Learning and Innovation (CLI) who will offer assistance and training on a variety of quality-management methodologies. In addition, funding for a three-year grant from the US Department of Health and Human Services’ Health Resources and Services Administration will be used to create a training module for all emergency and critical care nurses in our health system in proper identification and management of patients with sepsis.

Results:

<table>
<thead>
<tr>
<th>North Shore-LIJ Severe Sepsis/Septic Shock Cases Identified in the Emergency Department November 2011</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe Sepsis/Septic Shock Cases Identified in the Emergency Dept.</td>
<td>305</td>
</tr>
<tr>
<td>Blood Cultures Prior to Antibiotics</td>
<td>80.7%</td>
</tr>
<tr>
<td>Antibiotics Within 180 Minutes of Sepsis Identification</td>
<td>63.6%</td>
</tr>
<tr>
<td>Severe Sepsis/Septic Shock</td>
<td>36% Decrease (Q1 2008 vs. Q2 2011)</td>
</tr>
</tbody>
</table>

Conclusions:

North Shore-LIJ has reduced severe sepsis/septic shock mortality by more than 30% over the past three years by exploring sepsis beyond the confines of the ICU and through the leadership and commitment of the ED leadership. By increasing compliance with the sepsis bundle in the ED and improving sepsis recognition on the medical-surgical units, North Shore-LIJ plans to further reduce sepsis mortality and become highly reliable in caring for patients with sepsis.
Improving Diabetes Care through Policy Formulation: A Case Study of the Expert Advisory Group for Diabetes

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Objectives:

Ireland does not have a national strategy for the provision of diabetes services akin to the policies and frameworks developed in other European countries [1]. In 2006, the Health Service Executive (HSE) established an Expert Advisory Group for Diabetes (EAG), to act “as the HSE’s primary source of operational policy and strategic advice”. The aim of this study was to examine the formulation of their recommendations, a top-down approach to improve the quality of diabetes care.

Methods:

A case description was built through qualitative interviews and documentary analysis. Fifteen in-depth interviews were conducted with a purposive sample of stakeholders and members of the EAG. The topic guide was informed by three theories of policy formulation; Rational Model of Decision Making (2), the Advocacy Coalition Framework (ACF) (3) and Multiple Streams Theory (4). Thematic analysis was conducted using the theoretical assumptions as analytical tools. NVIVO software was used for data management.

Results:

In keeping with the rational model, the EAG process followed a logical process: identifying priorities, developing recommendations and putting forward a strategy for approval by the HSE. However this theory became less useful as the process moved from approval to implementation. There was a lack of clarity around what constituted a decision and who made decisions within the health system. The ACF assumption that advocacy coalitions share ‘policy core beliefs’ although members often disagree about secondary beliefs, reflected the decision-making dynamic within the EAG; “I think we were all there with the same purpose but how we went about it, how the problem is going to be solved might be slightly different.” From this theoretical perspective the economic recession is considered an external shock which constrained the resources available and pushed implementation down the agenda.

The three streams of the Multiple Streams Theory illuminated the phases of the EAG process. Defining diabetes as a problem was the result of a number of factors including comparison with the standard of care in other countries. The criteria for judging the viability of alternatives distinguished between those policy ideas which obtained approval and those which were put on hold. There were also changes in the political stream including faltering support for change from within the health system; “in order to do it the way other countries do it, it is going to require investment. Our report sketched out the sort of investment it might need and that just frightened them away.”

Conclusions:

The Multiple Streams model of policy formulation appeared to offer the most comprehensive explanation of the dynamic EAG process, in particular illuminating why some recommendations were implemented while others did not survive the process. The case study highlights some of the constraints on the policy process including fleeting support and interest in topics and the instability of the economic environment which accounted for the gap between formulating policy and implementing change in diabetes care in Ireland.

References:
Risk Analysis of the Medication Process in a Medical Intensive Care Unit

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Objectives:

The objective of this study was to identify and analyze associated risks inherent in the high-alert medication process in order to improve patient safety in a 6-bed medical intensive care unit of an academic medical center affiliated to Tehran University of Medical Sciences (TUMS).

Methods:

A Bow-Tie analysis was performed by a multidisciplinary team (two specialized nurses, an intensivist, a Ph.D student of health services administration and a pharmacist) in the high-alert medications process. Twenty five types of medication used in this unit were selected for detailed analysis. A brainstorming strategy was used to determine all possible top events (an unwanted error or event that take places) in the whole process of medication. A list of potential top events or risks in the five steps of the medication process was identified through literature review. A total of 511 top events were identified in selected medications. In our definition, the medication use process encompassed prescription, transcription, preparation, administration and monitoring. Conducting a literature review, a checklist was designed for potential causes of medication errors in ICUs. Regarding this checklist, for each top event, all possible causes (both active failures and latent conditions) that could lead to or contribute to this top event and the consequences of it were identified. Bow-Tie Diagrams were drawn with assistance of Bow-Tie Pro software. To prioritize the risks, probability of possible causes and severity of possible consequences were determined and risk scores were calculated using a risk matrix. Then risks with highest priority were specified. Both existing and future preventive barriers (protective measures in the left side of the model which were in place to prevent a top event from occurring) and recovery measures (barriers in the right side of the model which were in place to mitigate the consequences of the occurrence of a top event) were discussed. Risk was evaluated in terms of the existence of preventive and recovery barriers, the number of barriers and the effectiveness of barriers. Escalation factors (conditions that have a negative effect on barriers or recovery measures) were identified and discussed. A number of improvement strategies were suggested in order to strengthen preventive and recovery barriers and to mitigate the negative influence of escalation factors. Considering the ALARP (as low as reasonably possible) concept in risk control, the most cost-effective strategies were finalized by the team.

Results:

A systematic risk analysis in the high-alert medication process led to the development of risk-reducing strategies. Related action plans were drawn up and sent to the quality improvement committee of the hospital.

Conclusions:

Our work confirms that Bow-Tie methodology is a feasible tool for prospective risk assessment in the medication process in ICU, even before the occurrence of adverse events. This prospective risk analysis gave insight into certain risks and led to a list of recommendations. Some changes were implemented, however the implementation of all suggested actions needs approval from the quality improvement committee of the hospital. One of the secondary outcomes of this study was improved awareness among ICU workers of possible hazards and risks in the medication process.
Correlation between Reperfusion Rate and Mortality of AMI (Acute Myocardial Infarction)

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Objectives:

This study aimed to assess the impact of appropriate care process on care outcome through analyzing the correlation between timely reperfusion and mortality of AMI.

Methods:

We used the Korea National Health Insurance Claims Data and the clinical data documented by hospitals of all patients admitted to hospitals through emergency room from January 2008 to December 2010 with AMI. The subjects of this study were 81 hospitals (10,889 patients) in 2008, 104 hospitals (15,035 patients) in 2009 and 114 hospitals (15,840 patients) in 2010. AMI reperfusion rate is composed of two process measures (fibrolytic therapy received within 60 minutes of hospital arrival and primary percutaneous coronary intervention within 120 minutes of hospital arrival). Pearson's correlation analysis was applied to determine the correlation between the reperfusion rate and 30-day mortality rate of AMI.

Results:

The correlation coefficient between the reperfusion rate and mortality for the three years were -0.27 (p=0.0157) in 2008, -0.31 (p=0.0013) in 2009, and -0.40 in 2010 (p<0.05). There were weak negative correlations.

Table 1: Correlation between reperfusion rate and mortality of AMI

<table>
<thead>
<tr>
<th>Year</th>
<th>Reperfusion rate (%)</th>
<th>Mortality (%)</th>
<th>Correlation coefficient</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 (n=81)</td>
<td>86.7</td>
<td>8.2</td>
<td>-0.27</td>
<td>0.0157</td>
</tr>
<tr>
<td>2009 (n=104)</td>
<td>91.5</td>
<td>7.1</td>
<td>-0.31</td>
<td>0.0013</td>
</tr>
<tr>
<td>2010 (n=114)</td>
<td>95.1</td>
<td>7.4</td>
<td>-0.40</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Conclusions:

This study found that there was inverse relation between reperfusion rate and mortality of AMI. Based on this result, continuous evaluation of process measures for AMI is needed to reduce mortality of AMI.
Using an Electronic Alert System to Improve the Administration of Prophylactic Antibiotics

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1Surgery, 2Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan

Objectives:

Using a computer-based electronic alert system to effectively improve the administration of prophylactic antibiotics during an operation

Methods:

Hand washing, appropriate and judicious use of antibiotics, antiseptic skin preparation, atraumatic wound care, instrument decontamination and sterility are factors effective in preventing surgical site infection (SSI). Prophylactic antibiotics (excluding vancomycin and fluoroquinolone) should be given to the patient within one hour of incision. Repeated administration of the drug at one to two half-lives or use of a drug with a long half-life during lengthy operations also reduces infection rates. In order to appropriately use prophylactic antibiotics, an alert system is built into the operating theatre (OR) information system. The half-life of most commonly-used prophylactic antibiotics is documented in the system in advance. The time of skin incision and first dose of prophylactic antibiotics is recorded in the system by the circulating nurse. An alarm will pop up if operations are longer than two half-lives of the antibiotics, and re-dosing will be given. Two educational symposia on appropriate use of prophylactic antibiotics were held for surgeons.

Results:

During the period from September 2009 to December 2011, 0.90±0.026% (mean ±SD) of all patients (range 83.9-94.3%; 95% CI, 0.89–0.91) received prophylactic antibiotics within one hour of incision. Before the launch of the electronic alert system, 77.4% (range 61.0-91.0%; median 78.5%; 95% CI, 0.70–0.85) of the patients did not receive re-dosing when the operations were longer than two half-lives of the antibiotics. During the five months after establishment of the system, 45.8% (range 38.0-58.0%; median 47.0%) of the patients did not receive re-dosing. However, the rate of not re-dosing decreased to 15.9% (range 7.0-28.0%; median 14.0%; 95% CI, 0.12–0.20) in the following 13 months.

Conclusions:

Although most surgeons understand that re-dosing of antibiotics is important to prevent SSI, surgeons would concentrate on the surgical procedures and forget to do so during the lengthy operations. The electronic alert system can effectively remind the surgeons and team members and improve the repeated administration of prophylactic antibiotics.
Does Training in Family Medicine in Hong Kong Help in the Quality of Care and Empowerment of Patients with Chronic Illness?

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1Family Medicine, Hospital Authority, 2School of Public Health and Primary Care, the Chinese University of Hong Kon, Hong Kong, Hong Kong, China, 3Section of general practice and primary care, University of Glasgow, Glasgow, United Kingdom

Objectives:

In Hong Kong, enhancement of the primary healthcare system, especially for chronic illness and preventive care, was being emphasized by the government in the latest healthcare reform proposal. However, many patients with chronic illness were concerned whether primary care doctors were adequately trained or skilled to deal with chronic diseases [1]. This study aims to determine if training in family medicine helps in enhancing the quality of care and empowerment for these patients. It also aims to assess if the quality of care by doctors with family medicine training is comparable to that by doctors with other specialist training.

Methods:

This is a cross-sectional questionnaire survey based on the widely-used validated Chinese version of the Consultation and Relational Empathy (CARE) Measure as well as the Patient Enablement Instrument (PEI) for evaluation of quality and outcome of care in the perspective of patients attending the primary care clinic or the specialist clinics. Data were collected from patients with chronic illness attending the 31 doctors in public primary care clinics, and public secondary care clinics specialized in internal medicine or psychiatry. The CARE measure and PEI score will be compared among the four groups of doctors: those without any specialty training, those with family medicine training, medical specialty training or psychiatric specialty training.

Results:

The mean score of CARE measure among doctors who had attained fellowship level in family medicine training was 38.3, which was above the mean score of 34.6 for local primary care doctors in general in a recent study [2]. Their mean PEI score was 4.91, which was similar to the mean PEI score of 4.86 in another local study on a public primary care clinic [3]. Correlation of the CARE measure with different factors was examined – only PEI was found to be significantly correlated to CARE score. Other factors including patients’ age, gender, education, income, number of chronic illnesses and episodic illness were not found to be significantly correlated to CARE.

The results of other doctors were being processed and will be released later. Data will be analyzed to assess the correlation of family medicine training to the CARE measure and PEI score.

Conclusions:

The preliminary data demonstrated that doctors with family medicine training were having higher than average patient rating in quality of care and patient enablement. Patient enablement was significantly correlated with the quality of care. Further data processing and analysis will be conducted to evaluate the correlation of family medicine training to the quality of care and patient enablement.

References:

C.A.R.E. Multidisciplinary Falls and Fractures Prevention Intervention Program for a Rehabilitation Setting

N. Shkuratova, S. Howell, H. Jones, J. Butchers and The Epworth Healthcare Brighton Rehabilitation falls prevention group

Objectives:
This paper reports on the 12-month outcomes of a multidisciplinary falls and fractures prevention intervention program developed for the rehabilitation setting. The aims of the falls prevention program were to: 1) significantly decrease the number of falls and the rates of falls per 1000 occupied bed days during inpatient stay in a rehabilitation setting and 2) to sustain the reduction of falls over a 12-month period. The Communication, Assessment, Response/Recovery, Education falls prevention intervention program (C.A.R.E.) was designed for ambulatory patients within a rehabilitation setting, encompassing early assessment of risk, multidisciplinary responses, and therapy to ‘treat’ the underlying causes of falls.

Methods:
The C.A.R.E. program was implemented in November 2010. This program involves each member of the multidisciplinary team (Rehabilitation consultants, Physiotherapists, Nursing Staff and Occupational Therapists) in falls reduction interventions with the entire team linking seamlessly to ensure optimal outcomes for the patient.

The key elements of the multidisciplinary program are:
A falls risk assessment by a physiotherapist of all patients within one hour of admission to the rehabilitation unit using a falls risk-assessment tool tailored for the rehabilitation context. Once patients are assessed as at risk of a fall the following actions are implemented:
A room environment assessment by an occupational therapist within one hour of risk assessment;
Notification of falls risk to all members of the multidisciplinary team, the patient and their family;
Falls risk signage and information posters in high-risk patients’ rooms;
Call bell response by any member of the multidisciplinary team within 2 minutes
Continuous supervision of patients in toilets and bathrooms
Half-hourly nursing rounding during the day and hourly at night;
Twice daily, 45-60 minute, evidence-based, individualised balance treatment program;
Falls risk re-assessment at 48 hourly intervals.

Outcome measures are: falls per month, rate of falls per 1000 bed days, number of falls in high-risk areas such as bathrooms and falls overnight.

Results:
During the first 12-month period, there was a 60% reduction in average number of falls per month: 13.3 pre-implementation (April-Sept, 2010) and 5.3 post-implementation (April-Sept, 2011). The rate of falls per 1000 bed days was 6.7 pre and 3.0 post-implementation, representing a 55% reduction. These outcomes included a 60% reduction in falls in bathrooms and 90% reduction in falls overnight. No falls were reported for patients assessed as low risk. The patients’ satisfaction surveys demonstrated that 80% of patients reported higher confidence in their ability to prevent falls and 90% felt that the fall prevention strategies they had learnt would assist them on their return home.

Conclusions:
This targeted, multidisciplinary program has had a significant impact on the incidence of falls, and has demonstrated multidisciplinary cooperation, acceptability, and feasibility within the rehabilitation context. The intervention, through its integration into everyday practice and its focus on patient and family involvement, has built into it the underpinnings of sustainability. Ongoing research is required for further validation of the risk-assessment tool and evaluation of the short-term and long-term outcomes of the balance treatment program.
Interventions for Hand Hygiene in Moderately Compliant Intensive Care Units: A Stepped Wedge Trial to Improve Hand Hygiene among Healthcare Workers in 11 Sites in Argentina.

E. Garcia Elorrio 1,*, V. E. Rodriguez 1, C. Giuffre 2 on behalf of ADECI´s collaborative hand hygiene group
1Quality and Safety, IECS, 2ADECI, Buenos Aires, Argentina

Objectives:
To improve healthcare worker hand hygiene adherence in intensive care units where moderate compliance has been already reached

Methods:
A stepped wedge trial was conducted in 11 intensive care units (ICU) from mid/large size hospitals in the city of Buenos Aires with active infection control programs. This study was funded and technically supported by the Small Grant Program for Patient Safety Research from the WHO. A preliminary qualitative module assessed barriers and facilitators present in the participating sites and helped to adapt the intervention to increase local adoption. The WHO instrument on knowledge on hand hygiene was used to assess the current level of knowledge and define focused strategies to improve understanding. The components of the intervention were designed by and delivered through infection control nurses. They were trained in the basics of evidence-based medicine and critical appraisal of current literature, and the use of reminders and feedback in order to standardize knowledge and deliver the intervention. These individuals subsequently interacted with the healthcare workers of each facility in a sequence provided by blinded randomization.

The multimodal intervention was comprised of a selection of interventions characterized by being evidence-based, low cost and suggested by qualitative research: a) leadership commitment (a signed letter from leaders and executives Walk-rounds), b) surveillance of materials needed to comply with hand hygiene and alcohol consumption, c) utilization of reminders, d) a story board in each ICU to show the letter, results, and photos of the healthcare team, e) hand hygiene compliance results feedback. The hand hygiene compliance assessment was done monthly by blinded direct observations to measure if changes occurred from August 2011 to February 2012. Data collection was done using the WHO tool kit by direct observations by blinded trained observers and the primary endpoint was the proportion of hand hygiene opportunities correctly carried out. Statistical analysis was conducted using descriptive analysis and using generalized mixed linear models to adjust for differences in timing and participant characteristics. The WHO and an independent local board evaluated ethical considerations and informed consent.

Results:
The study enrolled 348 participants (comprised of nurses (63.1%), physicians (29.6%) and healthcare workers (7.3%)) during seven months of observation in 11 sites. Hand hygiene in the control group was 66.2% (2562/3869) vs. 74.2% (3772/5086) in the intervention group. The model for analysis was adjusted for time and provider characteristics. Univariate analysis showed association between the intervention and hand hygiene compliance (OR 1.15; 95% CI 1.11-1.19). The effect was still present after adjustment by calendar time and calendar time plus providers’ characteristics (age, gender, profession), (OR 1.07; 95% CI 1.02-1.12). One site dropped its participation since it couldn’t sustain the intervention during the study period.

Conclusions:
This study finds that a multimodal intervention to improve hand hygiene compliance is effective in ICUs with active infection control programs. The intervention is highly reproducible due to its low cost, and has proved to be effective in a variety of settings. We recommend that this intervention be applied to settings where intermediate results for hand hygiene compliance have already been reached.
Does Implementing a DVT/PE Prophylaxis System Reduce the Incidence of Hospital VTE/PE?

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1Health Care Policy & Research, 2Internal Medicine, 3Pharmacy, Mayo Clinic, Rochester, United States

Objectives:

To evaluate the impact of multi-phase quality-improvement efforts focused on improving venous thromboembolism prophylaxis (VTEP) regimens using order sets and electronic reminders on the rates of chemical and mechanical prophylaxis and on the incidence of hospital-acquired venous thromboembolism (VTE).

Methods:

All inpatients aged 18 years of age or older in a two-hospital teaching institution from 2005-2011 were included. Interrupted time series analysis was used to compare the rates of prophylaxis and hospital-developed VTE in four time periods: 1) Baseline: Jan 1, 2005 - Dec 31, 2006. 2) Paper order sets: Jan 1, 2007 – Feb 9, 2009. Paper-based VTEP sections were developed and included in major post-operative and admission order sets. 3) Electronic order sets with mandatory VTEP sections: Feb 10, 2009 – Dec 16, 2009. Paper-based orders converted to computer-based electronic order system on staggered basis. All order sets required a VTEP decision plan. 4) Electronic reminder: Dec 17th, 2009 - March 31, 2011. An electronic reminder was incorporated to remind the clinician for a VTEP decision plan when one was not in the electronic medical record. Prophylaxis data was extracted from the electronic records by patient day. Chemical prophylaxis was based on medications provided. Mechanical prophylaxis was obtained from nursing flow sheets documenting device usage. During the electronic order timeframes, we were also able to determine whether the issue was addressed among those not on prophylaxis. Hospital VTE rates were based on administrative databases. VTE present on admission was excluded from the rates.

Results:

Data is provided in the table below. Overall, the prophylaxis rate increased progressively from baseline to order set to electronic orders, however, it decreased with decision support. Chemical prophylaxis did increase each in each phase. A sample chart review indicated that VTEP plans were documented for 85% of hospitalized patients prior to phases 3 and 4. After the reminder logic was set, the percent of days with prophylaxis addressed increased from 80.3% to 86.6%. Meanwhile, mean monthly rates of VTE went from 4.8 per thousand discharges (23.4 VTE/month) at baseline to 5.7 (28.1/m) at paper-based intervention to 5.3 (23.7/m) at electronic order set inclusion to 4.1 (17.2/m) during the electronic reminder phase (p=0.002). Improvements were seen in both surgical patients (6.8/1000 baseline, 5.7 final) and medical patients (2.8/1000 baseline, 2.1 final).

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>%of Days on Prophylaxis</th>
<th>Either on or Not Indicated</th>
<th>DVT/PE Case Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline:</td>
<td>56.44%</td>
<td>NA</td>
<td>0.47%</td>
</tr>
<tr>
<td>Paper:</td>
<td>61.45%</td>
<td>NA</td>
<td>0.54%</td>
</tr>
<tr>
<td>Electronic:</td>
<td>62.09%</td>
<td>80.26%</td>
<td>0.51%</td>
</tr>
<tr>
<td>Active:</td>
<td>60.36%</td>
<td>85.58%</td>
<td>0.38%</td>
</tr>
</tbody>
</table>

Conclusions:

Venous thromboembolism (VTE) prophylaxis is an essential component of safe inpatient care, yet it has been deployed sub-optimally in many hospitals, including our own previously. Prior VTE prophylaxis improvement projects resulted in marked improvement, but it was not until both mandatory electronic order sets and electronic reminders were implemented across the system that significant improvements were observed in VTE outcomes. It remains intriguing that these drops in outcomes occurred although the actual rate of prophylaxis declined with decision support. We see that a higher proportion of patient days had VTE prophylaxis addressed. Currently, we can only speculate that those not addressed were lower risks than before support tools were in place. Further analysis is ongoing.
Global Patient Safety Alerts - Sharing for Learning

E. Pollock \(^{1}\), S. Kossey \(^{1}\), H. MacLeod \(^{1}\)

\(^{1}\) Canadian Patient Safety Institute, Edmonton, Canada

Objectives:

In 2011, the Canadian Patient Safety Institute (CPSI) launched Global Patient Safety Alerts, an innovative information-sharing resource to help healthcare organizations around the world to prevent and mitigate patient safety incidents.

Methods:

Frontline healthcare providers and healthcare organizations around the world are looking for and developing solutions to patient safety incidents and challenges. Many are making their learning from patient safety incidents public, in the form of alerts, advisories, and recommendations. After a global environmental scan, twenty-three organizations from seven countries agreed to submit information to the Global Patient Safety Alerts repository. Expert reviewers have reviewed, indexed, and summarized over 680 alerts and advisories and over 3,400 recommended actions to reduce risk – all related to specific patient safety incidents that had occurred within the contributing organizations. This information is contained in a web-based, publicly accessible and searchable repository, available in both French and English.

Results:

Within Global Patient Safety Alerts, users have access to actual and specific patient safety incidents that have occurred, and learning from these that will aid in the prevention and mitigation of patient safety incidents in other organizations. Users can learn what has worked for others and share their own experiences, insights, and solutions with healthcare providers, organizations, patients, and the public. Global Patient Safety Alerts is a mechanism for global sharing for learning.

Conclusions:

With a recent and positive independent evaluation, over 80,000 page views and distinct users from more than 40 countries, Global Patient Safety Alerts is helping healthcare stakeholders to start conversations about patient safety incidents and solutions and learn from the experience of others.
Variability in use of the WHO Surgical Safety Checklist and relationship with teamwork and the timing of antibiotic prophylaxis in UK operating theatres

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Surgery and Cancer, Imperial College London, London, United Kingdom

Objectives:

In February 2009, the Department of Health mandated use of the WHO Surgical Safety Checklist [1] in all NHS Trust operating theatres in the UK. There is growing evidence that the use of such Checklists improves patient outcomes [1]; however, there is little research on the impact of Checklists on the function of healthcare teams. The current study aimed to evaluate variability in use of the WHO Surgical Safety Checklist and the relationship this has with the quality of teamwork and the timing of antibiotic administration in the operating theatre.

Methods:

A total of 543 real-time observations of full surgical procedures in the specialties of general surgery, orthopaedics and urology were carried out between April 2010 and April 2011 across five NHS Trusts in England. Use of the Surgical Safety Checklist was assessed during each case using a Checklist Usability form to capture information on how the TIME-OUT portion of the Checklist was conducted (e.g. which items were checked, who led the Checklist, who paused, who was present etc). Teamwork was rated during each case using the well validated Observational Teamwork Assessment for Surgery tool [2]. Data on the timing of antibiotic prophylaxis was also captured in 519 of the cases observed.

Results:

On average, only two thirds of the items on the Checklist were checked during TIME-OUT. Furthermore, team members were missing during the TIME-OUT in over 50% of cases and team members failed to pause in over 60% of cases. Checklist usage was positively related to teamwork during the case. For all theatre sub-teams (i.e. surgeons, anaesthetists and nurses) a significant positive relationship was observed between the amount of information shared during TIME-OUT and teamwork during the procedure. Furthermore, the quality of Checklist usage predicted antibiotic timing (p< 0.01). The more Checklist items verbally checked at TIME-OUT the more likely antibiotic timing was in accordance with recommended protocol (i.e. 0-60 minutes prior to incision).

Conclusions:

While the Checklist was almost always used as required, it was not always used in the intended fashion (i.e. that the entire operating theatre team should pause before a procedure to check through the items together). We have shown a positive relationship between good Checklist practice at the start of a surgical procedure and appropriate antibiotic usage and teamwork during the procedure. We conclude that using the Checklist is necessary but not sufficient - rather the quality of Checklist usage is the likely driver of improvements in surgical safety.

References:


The Implementation of an Electronic Document of the Braden Scale to assess the risk of developing pressure ulcer among hospitalized patients

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1Risk Manager, Hospital Mãe De Deus, Porto Alegre, Brazil

Objectives:

Pressure ulcers represent one of the major complications affecting hospitalized patients. According to the “National Pressure Ulcer Advisory Panel”, in the U.S., more than one million people hospitalized for PUs develop another. No world, different scales are used to evaluate the risk of PUs, which can help to identify patients at high risk, implementing preventive measures that often contribute to a positive outcome when there is no development of PUs in hospital. In the study institution since 2003, the Braden Scale is used to evaluate the risk of patients developing pressure ulcers. By 2008, this rating system was manual. Given the importance that all patients hospitalized in the institution were to be evaluated during the first 24 hours, in 2009 we devised a project to implement the electronic Braden Scale. In an attempt to measure if the measure contributed to the membership, the purpose of this study is to verify that the digitization of the Braden Scale helps to improve the assessment of the risk of developing pressure ulcers in the first 24 hours of hospitalization.

Methods:

Through the t-test were compared, one by one, the percentage of patients evaluated during the first 24 hours, between periods (before: January 2006 to February 2009, during: March to December 2009 and after: January 2010 to July 2011). Data analysis was performed using the SPSS version 13, considering a significance level of 5%.

Results:

The average rating from January 2010 was 88.15%, standard deviation of 2.97, and this value was significantly different when compared to the previous period, when the average was 75.18%, standard deviation of 11.22, p value <0.005, in addition to being significantly different when compared to the period of implementation, where the average was 69.94%, standard deviation of 8.45, the value of p <0.005, which indicated differences in this period. However, the variability is maintained prior to and during implementation and reduced after implementation. It can be seen that the values of standard deviations

Conclusions:

With the computerization of the Braden Scale, there is one development considerable to complete the form, which facilitated the care with patient identified as high risk. Observed, that during the deployment, in March 2009 until its effective fitness system, there was a decline in ratings. This reduction, probably occurred, overdue introduction this one new technology, and changes the evaluation process standard, providing opportunities for professionals involved in patient care, know the new assessment tool, who later helped in the planning of care. It was perceived that after the adjustment period, there was a significant growth effect of assessments. Moreover, the computerized system helped the adequate completion of professional, which ensures a secure record and a more agile of the patients.
Clinical Governance Assurance by NHS professionals for nurses, midwives and careworkers working as flexible workers

A. O'Brien 1 on behalf of GGI, K. Barraclough 2, P. Khaira 3, M. Verghese 4 and Good Governance Institute (GGI) Working Group
1Dir of Clinical Governance and Ops, 2Governance, 3Complaints Manager, 4Clinical Advisor, NHS professionals, Watford, United Kingdom

Objectives:

The tailored Quality Report is compiled to give NHS service providers assurance that all staff supplied on temporary contracts meet all identity, criminal record, registration, employment and competence checks.

Methods:

NHS provider Trusts are legally required to ensure staff meet employment checks but may lack the systems to support this. NHS professionals have provided a tailored quality report to provide support to the NHS Trust’s own compliance systems. This reflects the guidance outlined in the GGI Board Assurance Prompt - flexible workers in healthcare organisations, which was the basis of a Poster displayed at ISQUA Dublin 2010. (Good Governance Institute, July 2011). The report also makes explicit the expectations on flexible workers and on senior NHS Trust staff supervising them in respect of induction, shift allocation, health and safety, handover, record keeping and end of shift.

Results:

The tailored reports have been well received by NHS Trusts providing as it does the number and types of complaints benchmarked against other trusts. It provides valuable assurance and helps Provider Trusts to ‘up their game’ in meeting both statutory requirements and the confidence of patients, staff and commissioners. Examples of the findings for individual Trusts including benchmark material are available for the presentation, as will results of audits of compliance with the guidance.

Conclusions:

The conclusion is that the quality report is a valuable assurance support to NHS Trust providers and helps to reassure NHS Boards, Managers and staff that flexible staff can be as competent and integrated as permanent staff. This is important in providing opportunities for strategic decision-making in developing and expanding the permanent/flexible workforce.

References:

2. Board Assurance Prompt - flexible workers in healthcare organisations, Good Governance Institute, July 2011 (www.good-governance.org.uk)
3. Making the most of frontline staff, Audit Commission 2010
Supporting Clinical Audit in Botswana

T. Gothusang¹, on behalf of Clinical Audit Office, F. Madzimbamuto¹
¹Clinical Audit Office, University of Botswana School of Medicine, Gaborone, Botswana

Objectives:

The aim of this presentation is to describe the setting up of a Clinical Audit Office in the University of Botswana School of Medicine to support clinical teaching and service by staff and students. Clinical audit is a quality improvement tool. Its use is well established in Europe and North America to drive improvement in clinical services. There has been a slower uptake and utilization of clinical audit in Africa, with the quality of published audits variable.

Methods:

The University of Botswana (UB) has recently established a new School of Medicine (SOM). The Ministry of Health in Botswana has been having its referral and district hospitals accredited by Council for Health Services Accreditation of Southern Africa (CoHSASA). This includes quality-improvement standards that have to be met. Simultaneously, the curriculum of the University of Botswana School of Medicine [UBSoM] includes training in clinical audit at undergraduate and postgraduate level. A clinical audit office has been set up in the school funded through the Medical Education Partnership Initiative [MEPI] awarded to UBSoM. This paper describes the role of the Clinical Audit Office in supporting the clinical audit activities in the school and the hospitals. Most of the hospitals that conduct audits are those that are undergoing the accreditation programme. One of the requirements of that programme is for the facility to have in place a documentation audit system in order to meet the quality-improvement standard. UBSoM has started working with hospitals that are used as training sites for university students. These hospitals are all preparing for accreditation and face similar challenges. In the process UBSoM is assisting hospitals to establish audit committees or re-activate existing but dormant ones. The data is expected to show performed audits, reasons behind performing those audits, implementation of audit plans, outcomes of remedial action and future planned audits. The future audits will, to an extent, rely on audits that have previously been done. In the process of selecting topics, a tool has been designed to assess the relevance of chosen topics and their benefit to the facility and the communities served by the identified facilities.

Results:

Training workshops and meetings with hospital staff
These are being designed around the needs of each institution and initially planned around multi departmental Heads of Departments
Production of training manual
Establishment of Clinical Audit Register
The UBSoM Clinical Audit Office has been accepted to be part of the Clinical Audit and Research Committee of the Princess Marina Hospital [the main referral hospital]. More up to date data will be provided at time of presentation

Conclusions:

This is the first year of the UBSoM Clinical Audit Office. We have been able to train some postgraduate trainees and hospital staff. The combined programmes of CoHSASA and our clinical audit office have helped to increase awareness of clinical audit and the need for them. We have also been able to define the support needs across several clinical sites in the country to enable the office to develop its programmes for the second year. For Clinical Audit to be successful as a quality-improvement process tool it is essential to create an environment that is accepting of clinical audit and to have the support services of expertise and management services.

References:

A Controlled Trial of Crew Resource Management Training at Emergency Departments: a mixed model analysis on explicit professional oral communication (EPOC)

I. Van Noord 1,*, M. C. de Bruijne 1, C. van Dyck 2, C. Wagner 1
1Public and Occupational Health, EMGO Institute for Health and Care Research - VU University Medical Center, 2Faculty of Social Sciences, dept. of Organizational Science, VU University Amsterdam, Amsterdam, Netherlands

Objectives:

To evaluate the effect on Explicit Professional Oral Communication (non-technical skill behavior) of a classroom-based Crew Resource Management training at Emergency Departments (EDs) in The Netherlands.

Methods:

A non-randomized controlled trial with two intervention EDs and two control EDs was conducted. The training comprised a two-day, highly interactive, classroom-based course. Training was given between January and April 2009. Training took place in multi-professional groups. Direct observations were done to assess non-technical skills (NTS) of nurses and emergency physicians by means of the Explicit Professional Oral Communication (EPOC) scoring form. EPOC is based on the Royal Dutch Airline non-technical skills list SHAPE (Self, Human Interaction, Airplane, Procedures, Environment) of which the categories S, H and E were translated for use in healthcare. S comprised Assertiveness, H comprised Working with Others, Task Oriented Leadership and People Oriented Leadership, E comprised Planning and Anticipation and Situation Awareness. Each time a healthcare worker showed a specific item of EPOC this was scored on the observation form. Furthermore, EPOC kept track of the number of work-related interactions during the observation period. Observation scores were calculated by adding up the number of tallies within each category divided by the number of interactions between the observed person and healthcare workers. Our outcome measures were an overall sum score of EPOC items and sum scores on the categories of EPOC (S, H and E). Linear and logistic mixed model analyses were done. Models were corrected for the outcome measurement at baseline, number of days after training, patient safety culture at baseline, and error management culture at baseline.

Results:

At baseline, 149 persons (127 nurses and 27 emergency physicians) were eligible for observation (79 in the intervention and 70 in the control group). 85 (57.0%) subjects were observed both during baseline and post training measurement and included in the analyses. Within these subjects 178 (89.4%) of a total of 199 observations (107 in the intervention group, 92 in the control group) were done. As a result of missing data, mixed models with adjustments for culture covariates were built on 65 observations (60.7%) of the intervention group and 71 (77.2%) of the control group. The EPOC outcome measure Self (assertiveness) was hardly observed and therefore excluded from the analyses. Statistically significant effects of the training were found on Human Interaction ($\beta = .27$, 95% C.I. .08 - .49) and the overall EPOC score ($\beta = .25$, 95% C.I. .06 - .43), but not for Anticipation on Environment (OR = 1.19, 95%C.I .45 - 3.15) when adjusted for all culture covariates, meaning that approximately 25% more explicit communication was shown after CRM training.

Conclusions:

Interactions will increase as things get busier and more crowded at departments. So a small increase in NTS could have a significant impact on patient safety. We believe 25% more explicit communication in trained persons is a clinically relevant difference as human error contributes to more 60 per cent of all adverse events in the ED. The CRM based explicit oral communication intends to prevent communication errors. Thus the increased explicit oral communication found in our study will probably lead to a decrease in communication errors and their related adverse events. More research is needed to assess patient outcomes and whether effects are sustained.
Contribution of a Scientific Society to Knowledge: The SADECA Case

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¹Knowledge Management, Andalusian Agency for Healthcare Quality, ²Consejería de Salud, ³Andalusian Agency for Healthcare Quality, Seville, ⁴Facultad de Enfermería y Fisioterapia, Universidad de Cádiz, Cádiz, Spain

Objectives:
The Andalusian Society for Healthcare Quality (SADECA) is a scientific society whose mission is the promotion and dissemination of culture to improve the quality of care throughout the healthcare scope. SADECA is a transversal scientific society, because it does not focus on just one specialty but it is composed of all health professionals involved in health care: doctors, epidemiologists, managers, researchers, nurses, economists, etc. The objective of this paper is to describe the methodology followed by SADECA to define a set of indicators of quality and safety for comprehensive care for patients with melanoma.

Methods:
2. Teamwork: All working group members belong to the Andalusian Public Health System: four experts in healthcare quality management, one expert in knowledge management, four oncologists, one pathologist and four dermatologists.
3. Consensus technique used: Metaplan is a Nominal Group Technique (NGT) for finding solutions to problems involving all participants in a working group of any kind.
4. Roadmap: 12 months from March 2011
5. Research Question: In meetings, working group members responded to the following research question: What indicators of structure, processes and results guarantee the quality and safety for a patient with melanoma?
6. Debugging: Following the global visualization of the results obtained by the group, a data debugging was conducted in a working session using a Nominal Group Technique (NGT).
7. Prioritization: The results were prioritized by individual vote of each of the participants (0-9 points) according to three criteria: importance, magnitude and feasibility.
   The results of the prioritization phase were: [Structure indicators: 6.90 to 8.63], [Process indicators: 5.9 to 8.8], [Results indicators: 5.5 to 8.7]
8. Defining and metrics: Once prioritization and synthesis of information finished, a card for each indicator was developed with the following items: Indicator Code; Criterion (STRUCTURE / PROCESS / RESULT); Definition; Exceptions; Statistical nature; Sources and evidence; Assessment recommendations; Threshold; Calculation and equation.
9. Final proposal: After the construction of indicators cards an online questionnaire was used to reinforce the consensus outcome. Thus a new evaluation of indicators based on their importance, feasibility and measurement capability was established. Five were eliminated.

Results:
Final proposal includes a set of 29 indicators of care quality and patient safety for patients with cutaneous melanoma. Construction sequence indicators shown in the following table:

<table>
<thead>
<tr>
<th></th>
<th>Structure</th>
<th>Process</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation of indicators</td>
<td>27</td>
<td>39</td>
<td>37</td>
</tr>
<tr>
<td>Summary of information</td>
<td>7</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>After online questionnaire</td>
<td>5</td>
<td>14</td>
<td>10</td>
</tr>
</tbody>
</table>

Outcome of the process described above is a book (130 pages) containing a set of 29 indicators on quality and safety for care of patients with cutaneous melanoma (5 indicators for structure, 14 for process, and 10 for results).

Conclusions:
In addition to institutional issues, scientific societies are intended to promote science and ensure the progress of a specialty or a specific area of knowledge through exchange of experiences and research. The experience described regarding to SADECA case is a good example of this.
Falls and Pressure Ulcer Prevalence in Swiss acute care hospitals: results of the first national scale quality assessment

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Objectives:

Comprehensive data on the quality of healthcare in Switzerland are still scant. Therefore in 2011, the Swiss National Association for Quality Development in Hospitals and Clinics (ANQ) defined relevant quality indicators and developed a “National Quality Contract” for acute care hospital settings. In order to initiate, evaluate, monitor and support the development of healthcare quality, prevalence data focusing on the indicators “falls and pressure ulcers” were needed.

Methods:

A point-prevalence measurement was conducted in all Swiss acute care hospitals adhering to the ANQ “National Quality Contract”. The instrument used for data collection was the International Prevalence Measurement of Care Problems questionnaire, known as the LPZ (Landelijke Prevalentiemeting Zorgproblemen) from Maastricht University in the Netherlands. It contains items (institutional, ward and patient level) about policy, prevalence, prevention and treatment regarding the indicators falls and pressure sores. It also allows for identification of the number of patients having acquired pressure ulcers and/or having experienced a fall during the hospital stay. The German Version of the LPZ questionnaire was adapted for the Swiss-German dialect speaking regions and was also translated into French and Italian for use in the French and Italian-speaking regions of Switzerland. Data collection was coordinated and organized by the Bern University of Applied Sciences. Local coordinators, who were responsible for the in-hospital training of the measurement teams and management of the data collection, participated in a preparatory course organized by the Bernese research team.

On November 8th 2011, every hospitalized patient over 16 years of age in Switzerland was interviewed and examined by the measurement teams. Data was entered into the LPZ internet database, was analyzed using descriptive statistics and was then adjusted for risk. Due to the different structural and patient characteristics in hospitals, multivariate analysis (multilevel hierarchical model) was used to compare the prevalence rates of falls and hospital-acquired pressure ulcers for all patients and patients at risk in the hospitals.

Results:

112 hospitals participated in this first national measurement. This represents approximately 80% of all acute care hospitals in Switzerland. Due to the mandatory procedure of written informed consent, the response rate of the participating patients was rather low (68%). Data from 10,679 patients were collected. The risk-adjusted results will be available in the summer of 2012 (upon publication of a national report) and may be presented at the 2012 ISQua conference.

Conclusions:

The results will, for the first time on a national scale, provide important healthcare quality information. It will become possible to gain insight into fall and pressure ulcer prevalence rates in Swiss acute care hospital settings. This data may also be useful at the institutional level by promoting care quality assessments and development efforts. At the national level, results may be used for long-term policy evaluation and development, especially in regard to implementation of the new healthcare financing model (SwissDRG).
Patient Satisfaction with the Tuberculosis Control Program in Rio de Janeiro Metropolitan Area, Brazil

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Objectives:

The objective of this work was to evaluate patient satisfaction in the Tuberculosis Control Program (TCP) in Rio de Janeiro Metropolitan Area, identifying aspects for tuberculosis healthcare quality improvement.

Methods:

A cross-sectional study was developed. The population of interest included patients that were at least 18 years old, with two or more outpatient visits in the TCP in five municipalities of Rio de Janeiro Metropolitan Area. A sample was selected from the set of healthcare units, after its division into two geographic strata: healthcare units located in Rio de Janeiro City and healthcare units in the other four municipalities contemplated (Duque de Caxias, Nova Iguaçu, São João do Meriti e São Gonçalo). In the first stratum, healthcare units were selected with proportional probability to the monthly average number of outpatient visits. In the second stratum, given the reduced number of healthcare units (only five), all were included. In the healthcare units, temporal clusters were selected with equal probability, defined per day-round or day-round-doctor of attendance. In the temporal clusters, patients were selected with equal probability. Therefore sample design is complex, involving stratification and conglomereration, with patient selection in two (temporal cluster and patient) or three stages (healthcare unit, temporal cluster and patient). Sample size was defined in terms of 300 patients in 15 healthcare units, and five patients were selected systematically in each temporal cluster. Sample weights were calculated as the inverse of the probabilities of inclusion in each sample stage. A semi-structured questionnaire, focusing on clinic, socio-demographic and the service aspects relevant for patient satisfaction, was applied among the patients through interviews between February and July 2010. The study was descriptive, and estimates of the universe of patients were obtained using SAS statistical package (SAS®), version 9.1.

Results:

Patients were predominantly males (57.7%), and, in the average, 40.9 (±0.7) years old. Almost 40.0% anos had not completed the fundamental school level, and the mean treatment time registered was 4.1 months. Majorly, the type of treatment of self-administered (70.0%) in contrast to the recommendation of privileging DOTS. Of the total of visits, 25.8% corresponded to patients with previous treatment of tuberculosis, and among them, 32.0% had not concluded the treatment before. In general, the outpatient visits generated high level of satisfaction, underlining aspects such as medication provision, and respect to patients by the health professionals. The highest levels of non-satisfaction were related to waiting time for attendance, and cleaning conditions of the healthcare units. With regard to healthcare improvement suggestions, the most important were to increase the number of doctors (70.0%) and to perform the necessary exams in the same place of attendance (55.1%).

Conclusions:

The study indicates the need for changing structural and organizational aspects of care, providing practical subsidies for improving TCP effectiveness.
Online Construction of Continuous Education Itineraries in Clinical and Care Management

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Objectives:

To facilitate the design of plans of individual development and formative itineraries adapted to the needs of the organization in a collaborative environment

Methods:

The strategy of formation in Andalusia places the professional as protagonist of his development. The process for the management of plans of individual development departs from the identification of every professional of his needs of development, by means of the self-evaluation on the competences map before formed and individualized.

The implantation of the corporate web tool for the management of individual development plans last year, has allowed the configuration online of the specific maps of competences of each one of the working places and in every welfare service. Between them, there was defined the competences map of the persons in charge of clinical and nurses management, that it has derived in the self-evaluation of more than 2000 professionals in only four months, on which the individual gaps have been detected and has allowed to determine priorities in an automatic way those with major margin of improvement.

In addition, we could have obtained the average profiles of the set of professionals and to design a formative itinerary in terms of results of learning weighted and adapted to the individual needs. The competences map is composed by 11 competences that group 26 specific skills and 104 requirements distributed in four progressive levels of domain for every practice. In addition, it has associated annual aims with every practice.

The web tool makes an offer of roadmap of progressive development based in the translation of the elements of map of competences in formative elements: Competences = aims general educational, Concretes Practices = specific aims of learning, Requirements = awaited progressive, Objective results = indicators of impact of learning.

Results:

More than 2000 professionals of the sanitary management have already his route of individual development, based on three formative modules that gather 11 competences and 106 options of continuous education related to results of direct application to the daily practice.

Direction and management: leadership, planning, efficient management of the resources and capacity for the capture of decisions

Attention to the citizen: management of the quality and the safety of the patient, work orientated to indicators of health and communication.

Develop professional: learning and improvement continues of the practice, promotion of the development of the professionals, teaching, and scientific and investigative capacity.

Conclusions:

The employment of a corporate web tool has allowed us to know in a short time which is the situation of item of the clinical chiefs of service and nurses of the sanitary public system of Andalusia and to have prioritized information online to give response to the needs of the professionals and of the organization. The same exercise is realized nowadays by each of the clinical and nurses groups, after the configuration online of more 4000 maps of competences on which more 35000 professionals are self-evaluated.
Evaluating the potential effect of Accreditation on Danish Hospitals' Performance and Clinical Outcomes for chronically ill patients

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Objectives:

- **Aim:** Evaluate the potential effect of adopted hospital accreditation models on Danish hospitals’ performance, and clinical outcomes of chronically ill patients.
- **Hypothesis:** Danish hospitals that have experienced two accreditation models (the American accreditation Model “JCI” along with the Danish Quality Model ”DDKM”) would have better performance, and clinical outcomes in relation to chronically ill patients, compared with hospitals that had only been accredited by “DDKM”.

Methods:

A national study using data on hospitals’ accreditation scores linked to data on national clinical indicators for hospitalized chronic patients. Hospitals would be grouped according to the type of adopted accreditation process into two groups: One group for hospitals that have DDKM only as the main accreditation model. The other group will be for hospitals (mainly in the capital region) that had been accredited by the JCI before being accredited by DDKM accreditation model in 2012. Comparisons are planned to be performed between hospitals grouped by the type of accreditation.

**Conditions and Outcomes:** clinical outcomes for patients with Stroke, Heart Failure, Diabetes, COPD, Stroke, Acute Upper Gastrointestinal Bleeding, Hip Fracture, and Lung Cancer will be compared between hospitals with one accreditation model against hospitals with two accreditation models.

**Settings:** All accredited Danish hospitals are included in this research project, while pediatric, nursing and long-term care facilities are excluded.

**Statistical analysis:** Linear regression models would be developed for continuous outcomes, while logistic regression models would be developed for binary outcomes. Identified possible confounders/predictors to be adjusted for their effect in the statistical models are hospital size and volume of patients, length of accreditation by JCI (number of accreditation cycles), region/municipality, patients and municipality socio-economic level (education, poverty, and economic levels), municipality population size, and municipality elderly population.

Results:

Up to now, almost all Danish hospitals have been accredited by the Danish Quality Model along with some private hospitals as well as one psychiatric hospital in Norway (N= 54). Hospitals in the main capital region of Copenhagen (11 hospitals), will be accredited by DDKM between January and June 2012 while they are already accredited by JCI. Thus, the results of this study are expected to be released by the autumn 2012.

Conclusions:

The results obtained will help in understanding the extent and nature of accreditation effect on hospitals’ performance and clinical outcomes for chronically ill patients along with relevant predictors/factors that might have an influence or interfere with such effect. Nevertheless, this will be one of the very first studies to evaluate the potential effect of accreditation on hospitals’ performance and clinical outcomes at the national level.
Investigating Nurses' Reporting Intention of Medical Incidents

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Objectives:

This study presents an extended technology acceptance model (TAM) that integrated variables including the information literacy, the knowledge of patient-safety goals, the understanding of the reporting system, the disclosure of medical errors into the model, and personality of healthcare staff to investigate what determines the acceptance of the reporting system by nurses.

Methods:

The proposed model was empirically tested using data collected from a survey at a regional hospital in Taiwan. 411 questionnaires were distributed to nurses and 351 were collected. The response rate was 85.4%. A confirmatory factor analysis was performed to examine the reliability and validity of the measurement model and the software AMOS 19.0 was used to evaluate the causal model. That is, an explicit evaluation of uni-dimensionality can be accomplished with a confirmatory factor analysis (CFA) of individual measures as specified by a multiple-indicator measurement model. A paradigm for scale evaluation incorporating CFA for the assessment of uni-dimensionality is outlined here along with methodology to assess other measurement properties such as convergent validity, discriminant validity, composite reliability, and average variance extracted. A measurement model is tested first followed by a structural model of interest.

Results:

The results indicated that perceived usefulness, perceived ease of use, disclosure of medical errors, and understanding of the reporting system had a significant effect on nurses' intention to use a medical incident reporting system. Among them, perceived ease of use had the most contribution. Understanding of the reporting system had a direct effect on perceived ease of use, perceived usefulness and disclosure of medical errors. Perceived ease of use had a direct effect on perceived usefulness. The results of fitting the structural model to the data indicate that the model had a good fit as indicated by CFI(=0.997>0.9), TLI(=0.991>0.95), and RMSEA(=0.027<0.06). An overall coefficient of determination is calculated for each endogenous variable.

Conclusions:

The proposed model provides a means to understand what factors determine the behavioural intention of nurses to use a medical incident reporting system and how this may affect future use. In addition, understanding the factors contributing to behavioural intention may potentially be used in advance of system development to predict the acceptance of the medical incident reporting system.
Proposed Law on Healthcare Quality in Poland and Institutional Settings of Healthcare Quality Policy in EU Member States

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Objectives:

Currently, the issue of healthcare quality in Poland is regulated in a number of Acts with the lack of a national quality policy. To date, the introduction of quality requirements has not been associated with the measurement, reporting and evaluation. The purpose of this study is to identify organizational characteristics introduced in the proposed Law on the Quality of Healthcare in Poland in comparison with quality of care strategies followed by other EU Member States, first of all United Kingdom and Italy.

Methods:

The comparative analysis of quality of care policies in EU Member States based on a review of the published and grey literature and the assessment of regulations proposed in the draft Act on the Quality of Healthcare in Poland. The work was undertaken as the part of the International Research Project on Financing Quality in Healthcare InterQuality, (http://www.interqualityproject.eu/), founded by European Community’s Seventh Framework Programme for Research and Technological Development FP7/2007-2013 under grant agreement n° No261369.

Results:

Approaches to quality of care vary within countries. Unlike in Austria, the Netherlands and the United Kingdom, the proposed Polish regulations apply only to the public hospitals. The new law stipulates that regular reporting on quality standards and clinical indicators should be developed. The assessment of compliance with the quality standards forms the basis for provider’s categorization of funding level, rating highly the accredited units. Data on clinical indicators will be only analysed and made publicly available. As in most EU countries, an independent Agency for Quality in Healthcare will be set up in order to monitor and evaluate quality measures as well as to support the accreditation process. Hospitals will be obliged to develop, implement and carry out an internal quality management system and to assess its effectiveness. Under this system the provider is expected to report all adverse events to the Agency.

Conclusions:

The proposed regulations are intended to establish mechanisms conducive to increasing the quality of healthcare services in Poland. Within the EU, the solutions to promote healthcare quality vary significantly. It results from fundamental differences in organisation of health systems as well as the influences and interests of the various stakeholders. Despite a number of ongoing research initiatives on quality of healthcare in Europe, a systematic approach to investigate the institutional settings of healthcare quality systems is still needed. We would like to suggest a discussion on this topic during the forthcoming 2012 ISQua conference in Geneva.
Improvements in the Surveyors Qualification Program through the ISQua Surveyor Training Programme


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Objectives:

To describe the improvements implemented in the Surveyors Training Programme (PROCEV) of the Andalusian Agency for Healthcare Quality (ACSA) during the process of accreditation by ISQua Surveyor Training Programme.

Methods:

To guarantee the maximum level of quality in the process of accreditation of healthcare centres, ACSA performs training for surveyors in Spain and Portugal. Our current staffing is 102 surveyors in both countries.

In September 2010, ACSA began the process of accreditation of our PROCEV with ISQua Surveyor Training Programme. After a preliminary analysis of our level of compliance with the standards, we plan to carry out our self-assessment in 12 months (until September 2011).

We established a working group led by the Coordinator of PROCEV. This working group served a dual purpose: the establishment of areas for improvement and internal self-assessments.

The first internal self-assessment using the form provided by ISQua was held in November 2010. This first self-assessment identified the main lines of work to adapt our PROCEV to ISQua Surveyor Training Programme. In May 2011 a second self-assessment was conducted, focusing on the implementation of the improvements identified previously and identifying potential non-compliance. A progress report was issued and a schedule of improvements was designed. In August 2011 was the last self-assessment, which should provide the basis for the final self-assessment to be sent to ISQua.

Results:

The most significant improvements that have arisen during the accreditation process PROCEV:

- Identification of functional maps of surveyors who collect their functions, tasks and competencies associated with each task. This functional map is the basis for training and establishing criteria for qualification.
- Development of a Management Tool Qualification in our online integrated management of the processes of accreditation of healthcare centres, ME_jora C, thus ensuring the confidentiality and quality of records.
- Another technological development is the Virtual Community of Surveyors, which includes an application for technical training and a Community of Practice for Surveyors as a space for collaborative learning and professional development through sharing of experiences.
- PROCEV Quality System: A system of quality management with reference to a Quality Manual and other procedures; an unified scorecard, and the Committee on Qualifications of Evaluators as a decision-making body and control.

In February 2012 we received notification of the decision of the International Accreditation Programme's validation panel recommendation of PROCEV accreditation.

Conclusions:

The ISQua Surveyor Training Programme is a valuable tool for improving the quality of programmes for qualification and training of surveyors, establishing a framework for implementing improvements.

The ACSA Surveyors Training Programme was strengthened by the implementation of improvements to management level, resources and support technologies, facilitating maintain the rigour and quality of our work in Spain and Portugal.
Are Chronic Conditions (CC) related to Patient-Safety Indicators (PSIs)? Cross-sectional study of the Argentine-Health Care Cost and Utilization Project (A-HCUP)

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Objectives:

Costs of patient safety events are leading priorities for patient-safety research in Low and Middle Income Countries (LMIC), and co-morbid Chronic Conditions (CC) are poorly assessed; our objective was to determine if the incidence, case-specific mortality and cost of selected PSIs among hospital discharges, was related to the presence of CC.

Methods:

Using the Argentine-Health Care Cost and Utilization Project (A-HCUP), in a research consortium, obtained primary (Dx1) and secondary diagnosis (Dx2). Patient Safety Indicators (PSI). algorithms selected Decubitus Ulcer (PSI #3), Post Operative Sepsis (PSI#13), and other infections due to healthcare (PSI#7). Mortality, length of stay (ALOS), healthcare costs per discharge ($) as well as total hospital costs (CT$), International dollars (IS PPP, UN Data: 2008 1 Arg$ = 1.608 PPP dollar). A cross-sectional analysis of 1 year output of the 3 hospitals (2007-2008), obtained the selected PSI incidence, costs and mortality results; controls are the PSI (-) group. The presence of CC was determined by the methods of CC of AHCQR, if CC+ among Dx2, categorized a CC(+) discharge vs a CC(-). Univariate and bivariate analysis of risk for PSI incidence, mortality and costs were performed by Odds ratios and 95%CI (Wolf’s method). Single proportion 95%CI, medians (Q1,Q4) and means were used as appropriate.

Results:

85 patients with at least one of the three PSI indicators (PSIs #3,#7,#13) where obtained among 45466 discharges of patients ≥19 years old, of whom 28 (32.9%) died in hospital. Mean age: 65.03 years, Median age (25-75 percentiles-P): 72 (53.78) years; 45.8% females. CT$ was 6,273,776 IS PPP, and median cost was $ 46.403; ($ 9.762-$ 89.802) and mean costs $73.809,(95%CI $17.871), median ALOS was 19.12 days while average ALOS was 28.36 days. Mean discharge cost ($) difference of PSI+ to CC+ was $59.336. The odds of having a PSI was higher in three categories of CC: CC+ in second secondary diagnosis (2Dx2), OR = 2.38 (95%CI 1.54-3.66); CC+ among fifth (5Dx2), OR= 6.72 (CI 4.29-10.54), and CC+ in eight secondary (8Dx2), OR =10.41 (CI 5.84-18.55), (p<0.01). The PSI-related mortality was also higher according to CC+, being OR =5,966 (2.698-13,190) in the stratum of those CC+ in below than 5Dx2 and for the stratum above OR =10,266 (CI 4,639-22,720) (p<0,01).

Conclusions:

Chronic conditions are significant determinants of adverse events. Selected patient safety (PSI #3,#7,#13) events are much more frequent, costly and deadly, according to the presence of chronic conditions.

References:


Value and Impact of International Hospital Accreditation in Spain

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Objectives:
This study examines the impact of Joint Commission International (JCI) hospital accreditation on the value (quality) and economic cost of hospital services in the Asturias and Andalusia regions of Spain.

Methods:
Employing a retrospective controlled design, we matched the two general JCI-accredited hospitals with equivalent non-accredited control hospitals in the same autonomous region in Spain. Control hospitals belong to the same complexity cluster. We identified quantitative indicators from the national and regional health authorities’ datasets that represented clinical or managerial quality and could be reliably measured for an individual hospital. These were: readmission rate within 7 or 30 days of discharge, average length of stay for hospitalization, average pre-surgery length of stay, rate of Caesarean sections (% of deliveries).

As hospitals need two years on average to prepare for accreditation, we grouped the years for each accredited hospital and its control into two time periods in relation to the initiation of accreditation. For Asturias, where the hospital was accredited by JCI in 2008, the pre-initiation was the 4-year period 2002-2005, and the post-initiation period was the 4 years of 2006-2009. For Andalusia, where the hospital was accredited in 1999, the pre-initiation period was 1995-96, while the post-initiation period was 1997-99.

To remove other effects from the analysis (e.g. changes in law, health policies, technology, and general environment over the study period), we used difference-in-difference analyses and tested statistical significance with 2-way ANOVAs. We calculated savings for indicators for which outcomes could be valued in monetary terms and the difference between accredited and control hospitals was statistically significant. To examine longer term impacts, we also conducted supplemental analyses around reaccreditation, which occurred in Andalusia in 2009.

Results:
The matching generated 4 control hospitals in Asturias and 6 in Andalusia. In Asturias, the results showed statistically-significant changes in the accredited hospital (p<0.05) related to 3 indicators: (1) Length of stay: JCI-accredited hospital showed a reduction of 0.70 days or 8% compared to controls (annual monetary savings of €2,675,000). (2) Caesarean sections: The accredited hospital had a reduction from 23.5% to 16.5% (or relative decline of 30%) compared to controls (annual monetary savings of €77,000). (3) Readmissions: The rate of readmissions within 7 days of the previous discharge showed a favorable trend (p<.10) with a reduction of 0.0028, a relative improvement of 7% (annual monetary savings of €75,000). Total annual savings for this accredited hospital were €2,827,000.

In Andalusia, data were available for 2 indicators—average length of stay and rate of caesarean sections. Both showed improvements relative to control hospitals. Annual savings were €234,000 from shortened length of stay and €288,000 for fewer Cesarean sections for a total of €522,000. The magnitude of the improvement and annual savings were greater in Asturias than in Andalusia. The reaccredited hospital did not improve further, but maintained its high performance.

Conclusions:
Because of the dynamism within the hospital sector, analyses of policies such as accreditation need controlled studies such as this. We found JCI accreditation did provide value and cost-savings to hospitals in both regions. Both JCI hospitals improved relative to controls after initiation of accreditation. The hospital with the greatest potential for improvement achieved the largest gains.
Does Cancer Care Accreditation really improve Quality Performance among Cancer Centers?

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Objectives:
Cancer care accreditation in Taiwan has been implemented in 2007. However, the influence of cancer care accreditation on attendees’ quality performance has not been well examined. We thus attempted to build a series of quality indicators for evaluation and to assess the performance change among cancer centers through accreditation.

Methods:
This retrospective cohort study included 40 cancer centers from 2004 to 2008. First, we developed performance evaluation indicators by modified Delphi method. Taiwan cancer registry, national healthcare insurance research database, death certified registry were used to evaluate the performance among accreditation attendees. Additionally, a semi-structured questionnaire was established to collect related information from 1092 clinical professionals (response rate=61%). Multivariate logistic regression models were used to examine the relation between cancer care accreditation and quality performance.

Results:
Performance-evaluation indicators were developed by modified Delphi method, including 5 structure indicators, 10 process indicators and 8 outcome indicators. Attendance of cancer care accreditation was associated with a significant improvement in the aspects of structure and process of care, including the culture of organization, courses of professional training, workforce in nursing and pharmacy, multi-disciplinary teamwork, data quality of cancer registry, nutrition assessment, chart writing, and duration between diagnosis and treatment. On the other hand, even after controlling for age, sex, stage, Charlson Comorbidity Index, the region and ownership of healthcare settings, accreditation attendance was associated with a moderate reduction in the odds of 1-year all-cause mortality among liver cancer, lung cancer and colorectal cancer, while no significant impact on breast, cervical or oral cancer patients.

Conclusions:
Implementation of cancer care accreditation has short-term benefit for healthcare quality.