Quality and Safety in Population Health and Healthcare

13th - 16th October 2013
Edinburgh International Conference Centre

Abstracts Book
15 mins Presentations

0007 - POLITICS, PEOPLE AND PRAGMATISM: DEVELOPING NATIONAL STANDARDS FOR HEALTHCARE QUALITY AND SAFETY IN THE CONTEXT OF ECONOMIC AUSTERITY

1041 - ESTABLISHING A UNIQUE, INTEGRATED, INDEPENDENT NATIONAL HEALTH REGULATORY AUTHORITY (NHRA) IN BAHRAIN: A POTENTIAL MODEL FOR HEALTHCARE REGULATION.

1070 - VANGUARD REFERRAL NETWORK: USING A MENTORING APPROACH TO BUILD SELF-MOTIVATION TO

1098 - CHANGING BEHAVIOR: EDUCATING LEADERSHIP VIA DASHBOARDS

1113 - MATERNAL, NEONATAL AND REPRODUCTIVE HEALTH CARE: DEVELOPING AND IMPLEMENTING A QUALITY IMPROVEMENT SYSTEM FOR OUTPATIENT SERVICES IN KENYA

1145 - QUANTIFYING OUR PATIENT'S EXPERIENCE

1147 - CAN A MODEL OF PATHWAY PEER REVIEW ASSURE QUALITY AND OFFER GOOD VALUE FOR MONEY?

1204 - ECONOMIC EVALUATION OF IMPLEMENTING A CONTINUOUS MONITORING SYSTEM IN A MEDICAL-SURGICAL UNIT

1208 - BUILDING QUALITY & SAFETY ATTRIBUTES IN SYSTEMS-BASED PRACTICE FOR ENHANCING RESIDENTS’ COMPETENCY

1219 - THE RELATIONSHIP BETWEEN QUALITY OF CARE AND CHOICE OF CLINICAL COMPUTING SYSTEM: RETROSPECTIVE ANALYSIS OF FAMILY PRACTICE PERFORMANCE UNDER THE UK’S QUALITY AND OUTCOMES FRAMEWORK

1223 - UNPLANNED TRANSFERS FROM SUBACUTE TO ACUTE CARE: TIME TO MOVE PATIENT SAFETY BEYOND ACUTE CARE

1236 - PROGRESS IN JAPANESE NATIONWIDE MEDICAL ADVERSE EVENT REPORTING SYSTEM IN 2012

1278 - A BOARD MONITOR TO RECOGNISE MALFUNCTIONING PROFESSIONALS

1287 - ‘NAVIGATION’ TO SUPPORT SHARED DECISION MAKING FOR PATIENTS WITH A HIGH GRADE GLIOMA (HGG). A QUALITATIVE EVALUATION

1308 - AN AUTOMATED SYSTEM FOR REPORTING AND CLASSIFYING ADVERSE EVENTS IN A CARDIAC SURGICAL POPULATION

1309 - TOBACCO TREATMENT OUTREACH TO DISADVANTAGED SMOKERS

1331 - IMPLEMENTATION OF ACCREDITATION STANDARDS IN INTERNATIONAL HEALTHCARE ORGANISATIONS – ARE CHALLENGES FOR SMALL AND LARGE ORGANISATIONS DIFFERENT?

1354 - REDUCING SUICIDE RISK: MAKING MENTAL HEALTH SERVICES SAFER

1356 - ACCREDITATION: 4000 "RECOMMENDATIONS FOR IMPROVEMENT": DO THEY MAKE A DIFFERENCE?

1365 - PRESSURE ULCER PREVALENCE IN FOUR INDONESIAN HOSPITALS: FEASIBILITY STUDY OF THE LPZ MEASUREMENT IN INDONESIA

1367 - RAISING THE QUALITY OF CARE: AN IMPACT EVALUATION IN AFGHANISTAN

1368 - PHARMACIST-LED EFFECT OF MEDICATION RECONCILIATION IN ACUTE CARE TRANSITIONS OF 12 DUTCH HOSPITALS

1370 - MAMBULANCE: AN INNOVATIVE INTERVENTION TO REDUCE MATERNAL DEATHS IN RURAL MANAFWA AND MBALE DISTRICTS OF UGANDA

1372 - DOES HOSPITAL ACCREDITATION PROMOTE HIGH PERFORMANCE IN HUMAN RESOURCE MANAGEMENT PRACTICE?

1385 - QUALITY SYSTEMS ASSESSMENT (QSA) - TICKING THE BOX OR IMPROVING CARE?
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1424</td>
<td>A NOVEL, NATIONAL APPROACH TO BUILDING CAPACITY AND CAPABILITY IN HEALTHCARE QUALITY IMPROVEMENT IN A RESOURCE CONSTRAINED ENVIRONMENT</td>
</tr>
<tr>
<td>1452</td>
<td>ENHANCING ACCESS OF HEALTH SERVICES FOR MOST VULNERABLE CHILDREN, THROUGH QUALITY IMPROVEMENT TECHNIQUE IN COMMUNITY SETTINGS: A CASE OF BAGAMOYO DISTRICT- TANZANIA</td>
</tr>
<tr>
<td>1457</td>
<td>THE EFFECT OF HEALTH PROMOTION PROGRAM INTERVENTION FOR HIGH RISK OF HYPERTENSIVE AND HYPERCHOLESTEROLEMIA IN MIDDLE AGED AND ELDERLY POPULATION</td>
</tr>
<tr>
<td>1461</td>
<td>PATIENT CENTRED CARE – USING REAL TIME PATIENT EXPERIENCE TO CONFIRM THE VALUE OF A PARTNERSHIP APPROACH TO CARE AND TREATMENT</td>
</tr>
<tr>
<td>1477</td>
<td>REPPLICATION OF A NEW, EVIDENCE-BASED PREVENTATIVE HEALTH TRAINER SERVICE FOR PEOPLE AT RISK OF DEVELOPING TYPE 2 DIABETES</td>
</tr>
<tr>
<td>1484</td>
<td>BARRIERS AND FACILITATORS OF INSTITUTIONALISATION OF QUALITY IMPROVEMENT IN NIGER</td>
</tr>
<tr>
<td>1493</td>
<td>HOW DO STAFF PERCEIVE A NEWLY INTRODUCED ACCREDITATION PROGRAM?</td>
</tr>
<tr>
<td>1508</td>
<td>CLINICAL GUIDELINES: PERCEPTION AND USE IN AFGHAN PAEDIATRIC AND OBSTETRIC HOSPITALS</td>
</tr>
<tr>
<td>1525</td>
<td>PROMOTING CULTURE OF SAFETY THROUGH THE IMPLEMENTATION OF A STANDARDISED PEER REVIEW PROCESS</td>
</tr>
<tr>
<td>1528</td>
<td>THE EPIDEMIOLOGY OF MEDICATION ERRORS IN THE NEONATAL INTENSIVE CARE UNITS IN JAPAN: THE JADE STUDY</td>
</tr>
<tr>
<td>1543</td>
<td>PATIENT SAFETY RULES IN OPERATING ROOM: EXPLORING RULE-RELATED FACTORS ASSOCIATED WITH LEVELS OF COMPLIANCE</td>
</tr>
<tr>
<td>1548</td>
<td>PAY FOR PERFORMANCE IN THE U.S.: THE TRANSITION FROM PROMISING CONCEPTS TO NATIONAL PROGRESS</td>
</tr>
<tr>
<td>1549</td>
<td>THE EFFECTS OF A TRAINING PROGRAM ON THE HEALTH PROFESSIONALS FOR MATERNAL AND NEWBORN CARE IN THE KINGDOM OF SWAZILAND</td>
</tr>
<tr>
<td>1551</td>
<td>TESTING ACCELERATED EXPERIENCE-BASED CO-DESIGN: A QUALITATIVE STUDY OF USING A NATIONAL ARCHIVE OF FILMED PATIENT EXPERIENCE INTERVIEWS TO PROMOTE RAPID PATIENT-CENTRED QUALITY IMPROVEMENT</td>
</tr>
<tr>
<td>1558</td>
<td>TRANSFORMING COMPLEX HEALTH SYSTEMS - LESSONS FROM GREAT ORMOND STREET CHILDREN'S HOSPITAL</td>
</tr>
<tr>
<td>1617</td>
<td>THE AGING OF POPULATION AND PHYSICIAN MAL-DISTRIBUTION: A LONGITUDINAL STUDY IN JAPAN</td>
</tr>
<tr>
<td>1640</td>
<td>REINFORCED QUALITY HEALTHCARE THROUGH NATION-WIDE HOSPITAL ACCREDITATION IN TAIWAN</td>
</tr>
<tr>
<td>1645</td>
<td>CVDECIDE SHARED DECISION SUPPORT TOOL FOR PRIMARY PREVENTION OF CARDIOVASCULAR DISEASE: FEASIBILITY STUDY AND IMPLEMENTATION PLANS</td>
</tr>
<tr>
<td>1654</td>
<td>EVALUATION OF THE FIRST COMPLETED ACCREDITATION CYCLE IN DANISH HOSPITALS</td>
</tr>
<tr>
<td>1662</td>
<td>EVALUATING QUALITY INDICATORS FOR PHYSICAL THERAPY IN PRIMARY CARE</td>
</tr>
<tr>
<td>1670</td>
<td>AN ANALYSIS OF BREAST CANCER WEBSITES’ ABILITY TO MEET PATIENT INFORMATION NEEDS</td>
</tr>
<tr>
<td>1674</td>
<td>SAFECARE ESSENTIALS: RAPID MAPPING OF HEALTHCARE QUALITY AND SAFETY GAPS TO PRIORITISE INTERVENTIONS IN RESOURCE-RESTRICTED SETTINGS.</td>
</tr>
<tr>
<td>1696</td>
<td>ENGAGING VULNERABLE AND DIVERSE COMMUNITIES IN HEALTH SERVICES PLAN</td>
</tr>
</tbody>
</table>
Contents Page

1700 - INCREASING THE UPTAKE OF MATERNAL HEALTH SERVICES OF A RURAL COMMUNITY IN KENYA BY ENHANCING COMMUNITY-FACILITY LINKAGES

1702 - APPLYING THE TRIGGER REVIEW METHOD AFTER A BRIEF EDUCATIONAL INTERVENTION: POTENTIAL FOR TEACHING AND IMPROVING SAFETY IN GP SPECIALTY TRAINING?

1736 - UNDERREPORTING OF FALLS AND FALL INJURIES IN HOSPITAL INCIDENT REPORTING DATABASES: CAPTURE-RECAPTURE ANALYSIS OF FALL EVENT DATA IN AUSTRALIAN ACUTE HOSPITALS

1749 - REACH PATIENT AND FAMILY ACTIVATED ESCALATION OF CARE: 12 MONTHS ON AND THE SKY DID NOT FALL

1787 - ASSESSING THE APPLICABILITY OF AIRLINE PILOT SELECTION MEASURES FOR SURGEONS

1795 - THE EFFECTIVENESS OF THE 5-TIER PROJECT-BASED LEARNING MODEL ON STAFF ENGAGEMENT IN HEALTHCARE SERVICES

1799 - EARLY WARNING SCORE, PREVENTION OF UNEXPECTED DEATHS - A SUCCESSFUL IMPLEMENTATION

1863 - IMPROVING POPULATION HEALTH USING QUALITY IMPROVEMENT TO EMBED PUBLIC HEALTH INTERVENTIONS IN THE LOCAL HEALTH SYSTEM

1889 - THE NATURE OF PREVENTABLE HOSPITAL DEATHS: AN APPROACH TO DETERMINING THE UNDERLYING CAUSES

1890 - EMPOWERING OF PREGNANT WOMEN BY MAKING THEM REPORT THEIR OWN PRIMARY CLINICAL RECORD IN A WEB-BASED SYSTEM

1893 - LEARNING TO MAKE A DIFFERENCE: ENABLING UK CORE MEDICAL TRAINEES TO LEARN AND DEVELOP QUALITY IMPROVEMENT SKILLS THAT OFFER REAL BENEFITS TO PATIENTS

1954 - RELATIONSHIPS BETWEEN THE IMPLEMENTATION OF QUALITY MANAGEMENT STRATEGIES AND CLINICAL OUTCOMES IN EUROPEAN HOSPITALS

1967 - BOLTON RELAPSE PROJECT - USING MOBILE PHONES TO PREVENT RELAPSE

1980 - DEVELOPMENT OF A SUITE OF INDICATORS FOR QUALITY IMPROVEMENT IN MATERNITY CARE

1985 - DEVELOPING AND RUNNING A SYSTEM FOR DATA COLLECTION OF PATIENT SATISFACTION AND EXPERIENCES IN NORWAY

2023 - THE POWER OF ACCREDITATION DATA TO INFORM SYSTEM IMPROVEMENTS IN QUALITY AND SAFETY: STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT IDENTIFIED FROM THE ACCREDITATION CANADA NATIONAL AND JURISDICTIONAL REPORTING PROGRAM

2037 - SELF ASSESSMENT – WHAT DO USERS THINK?

2054 - A PROACTIVE PATIENT-CENTERED CARE MODEL IMPROVED HOSPITALISED PATIENTS EXPERIENCE AND SATISFACTION IN DENMARK

2057 - A NATURAL EXPERIMENT USING CASE STUDIES TO GENERATE HYPOTHESES ABOUT THE PLACE OF LEARNING COMMUNITIES IN THE IMPLEMENTATION OF IMPROVEMENT SCIENCE IN THE NHS

2065 - PATIENTS PERCEPTION OF THE DECISION-MAKING PROCESS IN DANISH CANCER CARE
2078 - UNDERSTANDING TEAM EFFECTIVENESS IN CLINICAL NETWORKS: A MIXED-METHODS CASE STUDY

2083 - ISRAEL'S NATIONAL PROGRAM FOR QUALITY INDICATORS IN COMMUNITY HEALTHCARE – TRENDS AND INTERNATIONAL COMPARISONS

2100 - PREPARING THE YELLOW CARD SCHEME FOR SNOMED CT ENCODED DATA

2102 - THE ROLE AND POTENTIAL OF HUMAN RESOURCES DEPARTMENTS IN HEALTHCARE ORGANISATIONS

2112 - USING PATIENTS AND STAFF EXPERIENCES IN CO-PRODUCTION FOR QUALITY IMPROVEMENT IN HEALTHCARE IN THE NETHERLANDS

2115 - INTERNATIONAL CARDIAC SURGERY BENCHMARKING STUDY: EVALUATION OF CARDIAC AND VALVE REPLACEMENT PROCEDURES TO DRIVE IMPROVEMENT

2121 - ACCREDITATION SURVEY RELIABILITY: TECHNIQUES TO ACHIEVING A CREDIBLE SURVEY OUTCOME

2128 - RERAINT MINIMISATION PROJECT

2134 - TELE-MONITORING AND READMISSION RISK

2174 - SECOND VICTIMS AFTER ADVERSE EVENTS: THE NEED FOR AN INTERNATIONAL APPROACH

2179 - POWER OF THE NHS PATIENT REPORTED OUTCOME MEASURES (PROMS) PROGRAMME TO IMPROVE QUALITY

2206 - INTEGRATED TRANSITIONAL CARE MODEL AND RISK STRATIFICATION

2210 - EMPLOYEE RESISTANCE AND CHANGE AGENT ROLE DURING ACCREDITATION PROCESS: A CASE STUDY OF A SAUDI PUBLIC HOSPITAL

2223 - IMPACT OF OPTICALLY STIMULATED LUMINESCENCE (OSL) BASED, IN-HOUSE RADIATION MONITORING SYSTEM ON TIMELINESS AND ACCURACY OF READING THE RADIATION DOSE FOR THE FIRST TIME IN A COUNTRY IN THE DEVELOPING WORLD

2228 - QUALITY UNDER QUESTION: ASSESSING THE SUCCESS RATE OF PERMA CATHETER (PERMACATH) INSERTION FOR PROCEDURES CARRIED OUT IN THE RADIOLOGY DEPARTMENT IN A TERTIARY CARE JCI ACCREDITED TEACHING HOSPITAL IN THE DEVELOPING WORLD

2242 - ADOPTING HOSPITAL BASED HEALTH TECHNOLOGY ASSESSMENT IN EU

2261 - IT-SUPPORTED TEAMLEARNING WITH NEAR-REAL-TIME FEEDBACK IN HEALTHCARE ORGANISATIONS FOR IMPROVING QUALITY, EFFICACY AND EFFICIENCY OF CARE

2276 - PATIENT EXPERIENCE OF A HOME-BASED CARDIAC REHABILITATION PROGRAM USING MOBILE PHONES

2307 - MULTIPLE SIMULTANEOUS ACCREDITATIONS: A NEW CHALLENGE FOR ACCREDITING AGENCIES

2332 - PILOTING THE PRASE (PATIENT REPORTING FOR A SAFE ENVIRONMENT) INTERVENTION

2396 - IMPROVING QUALITY AND SAFETY OF HEALTHCARE IN BOTSWANA’S HEALTHCARE FACILITIES

2417 - WHAT PROPORTION OF HIGH-COST PATIENTS’ INPATIENT SPENDING IS PREVENTABLE?

2426 - HOW CAN WE BRING TOGETHER THE WORLDS OF QUALITY IMPROVEMENT AND IMPLEMENTATION SCIENCE?

2427 - ESTABLISHING A NATIONAL HEALTHCARE ACCREDITATION SYSTEM IN A MIDDLE-INCOME COUNTRY: THE JORDAN EXPERIENCE

2428 - SUSTAINING LONG TERM HEALTHCARE QUALITY IMPROVEMENT: LESSONS FROM THE ENGLISH NATIONAL HEALTH SERVICE NORTH EAST TRANSFORMATION SYSTEM
2442 - FROM DEATH WE LEARN: A RURAL NEW ZEALAND HOSPITAL'S EXPERIENCE IN INVOLVING FAMILIES IN THE DEATH REVIEW PROCESS

2444 - CHANGES IN MEDICATION ADMINISTRATION ERRORS FOLLOWING THE IMPLEMENTATION OF ELECTRONIC MEDICATION MANAGEMENT SYSTEMS IN HOSPITALS

2478 - TESTING APPROACHES FOR GETTING KNOWLEDGE INTO ACTION

2493 - WESTERN SYDNEY LHD SURGERY STREAM: ACHIEVING TIMELINESS OF ACCESS THROUGH COLLABORATION AND LEADERSHIP

2500 - THE INCIDENCE OF ADVERSE EVENTS IN TUSCANY: RESULTS FROM A REGIONAL STUDY INVOLVING 36 HOSPITALS

2526 - 30 DAY AND ONE YEAR HOSPITAL RE-ADMISSIONS IN ARGENTINA: BURDEN, MORTALITY AND COST. EVIDENCE FROM A MULTICENTRE STUDY OF A TRANSITIONAL COUNTRY.

2531 - THE MEASUREMENT OF PATIENT EXPERIENCES – THE RELATIONSHIP BETWEEN DELIVERED HEALTH CARE SERVICE AND PATIENT EXPERIENCED SATISFACTION

2541 - DIABETES: TURNING THE CURVE TO REDUCE MORTALITY & HOSPITAL ADMISSIONS THROUGH JOINED UP ACTION

2542 - IMPLEMENTATION OF QUALITY MANAGEMENT SYSTEMS: THE ROLE OF HOSPITAL (MANAGEMENT) BOARDS

2544 - EMR-BASED MEDICATION ADHERENCE METRIC MARKEDLY ENHANCES IDENTIFICATION OF NON-ADHERENT PATIENTS

2547 - SETTING THE GROUNDS TO IMPROVE QUALITY AND HUMANISE HEALTHCARE: THE CASE OF MOZAMBIQUE

2559 - IMPROVED PERFORMANCE ASSESSMENT THROUGH A HEALTH DATA NAVIGATOR

2565 - SUPPORT EFFECTIVE GOVERNANCE THROUGH A QUALITY MANAGEMENT INFORMATION SYSTEM

2595 - DEMING CYCLE IS TICKING OVER: THE PROBLEM OF RECURRENT ADVERSE EVENTS AND THE INTRODUCTION OF THE "NO FLY" POLICY IN THE RADIATION TREATMENT PROCESS MANAGEMENT

2599 - IDENTIFYING PATIENTS FOR CARE COORDINATION EFFORTS

2608 - HEALTH ASSOCIATED INFECTIONS: ESTIMATION OF COSTS AND FINANCIAL IMPACT ON THE US HEALTH CARE SYSTEM

2614 - DEVELOPING KNOWLEDGE BROKERS TO GET KNOWLEDGE INTO PRACTICE FOR HEALTHCARE QUALITY

2628 - THE DEVELOPMENT OF AN EVIDENCE-BASED, PATIENT-CENTERED, PROVIDER-INFORMED AND ORGANISATIONALLY ALIGNED QUALITY IMPROVEMENT PLAN (QIP)

2633 - PATIENT SAFETY EDUCATION- CREATING A TIPPING POINT

2636 - ‘FROM BOARD TO BEDSIDE’ – CREATION AND IMPLEMENTATION OF A QUALITY INNOVATION FUND (QIF) AT ST. MICHAEL’S HOSPITAL
Politics, people and pragmatism: Developing national standards for healthcare quality and safety in the context of economic austerity. 
Jon Billings and Deirdre Mulholland

Objectives
In 2009 Irish healthcare was reeling from a number of service failures. Public confidence was low and emergency national austerity measures had been put in place. In this context, the Health Information and Quality Authority (HIQA) began a project to develop National Standards for Safer Better Healthcare.

The objectives of the project were to develop standards which were:
• Focused on improving the quality and safety of healthcare services for service users;
• Grounded in international evidence;
• Built on regulatory knowledge and experience;
• Scalable to service, institution and national levels;
• Relevant and meaningful to front-line staff;
• Trusted and understood by patients and the public as addressing their concerns; and
• Acceptable to the political and management systems given the economic environment.

Methods
The approach was in four main phases:
• Developing a theoretical grounding for the standards. This drew on international work on domains of performance1;
• Applying tacit knowledge2 about the capacity and capability of the healthcare system from the previous two years of regulatory activity by HIQA;
• Building a conceptual model based on a quality matrix3; and
• Drafting the standards informed by a consensus building4 process including:
  • Convening a Standards Advisory Group of key stakeholders including patient representatives, clinicians.
  • Briefings with the Minister for Health, politicians, senior government officials, managers, unions, patients groups.
  • Wide public consultation including a telephone poll of the general public.

Results
HIQA developed standards across eight themes. These included four domains of performance:
• Person Centred Care and Support e.g. access and equity
• Effective Care and Support e.g. evidence-based care and timeliness
• Safe Care and Support e.g. harm reduction and disclosure
• Better Health and Well-being e.g. health protection and improvement

Alongside these were four themes based on capacity and capability factors identified as needing development:
• Leadership, Governance and Management e.g. accountability, culture and performance management
• Workforce e.g. recruitment, training and development
• Use of Information e.g. information governance and use of effective quality information.
• Use of Resources e.g. planning, prioritisation, sustainability and considering safety implications of financial decisions

The standards were submitted to the Minister of Health for approval in June 2011 and were launched in April 2012. HIQA has since conducted a familiarisation programme within the health service in advance of beginning compliance monitoring inspections.

Conclusion
The context of the project was a major factor in shaping how the standards were developed. At the beginning patients were cynical about the value and impact of standards, front-line staff low in morale, managers concerned about implement ability and politicians wary of standards highlighting shortcomings.

The approach taken delivered standards that had legitimacy with each of these stakeholder groups. Creating standards to drive incremental improvement rather than set a ‘gold standard’ proved crucial in obtaining political and management acceptance.
ESTABLISHING A UNIQUE, INTEGRATED, INDEPENDENT NATIONAL HEALTH REGULATORY AUTHORITY (NHRA) IN BAHRAIN: A POTENTIAL MODEL FOR HEALTHCARE REGULATION.

Gayle E. Nelson 1, Una O’Rourke 2, Tam Cilgi 3
1Health Care Facility Regulation, 2Health Care Professions Regulation, 3Medicine and Drugs Regulation, NATIONAL HEALTH REGULATORY AUTHORITY, BAHRAIN, MANAMA, BAHRAIN

Objectives: Effective health care regulation provides the foundation for an efficient and high quality health care system. Around the world, healthcare regulation tends to be split across multiple agencies creating difficulties in sharing information and integrating related functions.

In time, the NHRA may well be considered to be a model regulator as it brings together the regulation of healthcare professionals, health care facilities and pharmaceutical products across all sectors in a single, integrated, independent authority. This paper will present the story of NHRA’s genesis, vision and implementation.

Methods: The establishment of the NHRA is one of a number of important reform initiatives under Bahrain’s National Economic Strategy. The project was conceived with the intention of:

1. strengthening healthcare regulation and extending it to the public as well as the private sector;
2. improving the quality of healthcare provision across all healthcare sectors; and
3. facilitating the development and growth in Bahrain, by encouraging greater private sector participation in the provision of healthcare.

The vision for NHRA was of an agency that brings together best practice in regulation across the three functional areas (professionals, facilities and pharmaceuticals) in a single authority that is independent of providers in both the government and private sectors. Previously, regulatory functions were undertaken within the Ministry of Health which funds and provides public sector facilities and services.

An extensive benchmarking study was undertaken, followed by significant consultation. Legislation was passed to establish the Authority and a Board was appointed. The Board was charged with responsibility of taking over existing regulatory functions and developing a new regulatory system that applies its rules and regulations equally across all sectors, all in a relatively short time frame. To assist with this task, a team of experienced international partners (International Development Ireland) were engaged to manage the organisation during the transition and develop NHRA’s new regulatory functions. Capacity building is an important aspect of the work of the international partners.

Results:
NHRA is operational and making good progress towards achieving its vision. A functional, matrix-style organisational structure has been approved by the Board and introduced. A new committee structure and governance arrangements are in the process of introduction. Complex transitional arrangements for staff are well underway.

The project is monitored by a project management committee which oversees the deliverables contracted with the international partners. Common systems for the licensing of all health care professionals are being implemented and standard are under revision. Most importantly, there is integration, both organisational and ICT-based between all three functional areas.

Conclusion: NHRA is set to take its place among international regulators and its unique regulatory arrangements may, in time, provide a model for healthcare regulation. NHRA will have a significant impact on the delivery of quality care to people in Bahrain as well as encouraging investment and economic development in the country.
VANGUARD REFERRAL NETWORK: USING A MENTORING APPROACH TO BUILD SELF-MOTIVATION TO

Damaryanti Suryaningsih ¹*, Evodia Iswandi ²

¹Program, Jhpiego Corporation, Jakarta, Indonesia

Objectives: Through a mentoring approach, we are working to:

1. Ensure that high-impact, life-saving interventions are offered to women in need
2. Strengthen clinical governance within the health facilities.

Methods: Indonesia has one of the highest maternal and new-born mortality rates in Southeast Asia. Data show that Maternal Mortality Rate in Indonesia is 228/100.000 and New-born Mortality Rate is 19/1000. In order to ensure that evidence-based, lifesaving interventions are provided in referral hospitals, the USAID-funded Expanding Maternal and Neonatal Survival Program (EMAS) is utilising a mentoring approach to strengthen EmONC services in 150 hospitals. As a model for high quality clinical practice and governance, Budi Kemuliaan Maternal and Child Health Hospital (BK) is mentoring 23 hospitals and 93 primary health cares in the use of performance standards, near miss audits, death audits, dashboard indicators, and emergency simulations. Target hospitals are observing good practices at BK, and teams of staff from BK are providing intensive on the job mentoring to the hospitals. BK is also using SMS and teleconferencing to provide mentoring. As soon as the 23 hospitals are meeting defined criteria in mid-2013, they will begin to mentor other hospitals using the same mentoring approach.

Results: After 4-6 months of mentoring, the 23 hospitals and 93 primary health cares have shown improved performance, as measured through their compliance with defined performance standards. Compliance with the Emergency Response standards in community health centres rose to 51.9% in the second assessment (December 2012), up from 6.7% in their first assessment (July 2012). Hospitals also demonstrated improvements after mentoring such as in Waled Hospital in West Java. Compliance with performance standards for managing obstetric and neonatal emergencies increased from 32% (July 2012) to 58% (December 2012), with the largest gains in the management of haemorrhage from 33.3% to 66.7% and obstructed labour from 38.5% to 87.5%. In the neonatal department, the most gains were achieved in Kangaroo Mother Care following mentoring and role modelling from BK. This mentoring approach in the 23 hospitals will continue until the facilities reach more than 80% compliance in each area, and are therefore able to begin mentoring other hospitals.

Conclusion: After 4-6 months of mentoring, hospitals and health centres have not only made improvements in quality, but they have demonstrated that they are willing to learn from colleagues from other hospitals and are motivated to make change. With additional time for the mentoring process to occur in the coming months, and then using those improved facilities to mentor other facilities, it will become clear whether this mentoring approach can be replicated effectively.
CHANGING BEHAVIOR: EDUCATING LEADERSHIP VIA DASHBOARDS
Yosef Dlugacz 1,*, Carolyn Sweetapple 1, MarCELLA DeGERONIMO 1
1Krasnoff Quality Management Institute a Division of the North Shore-LIJ Health System, New Hyde Park, United States

Objectives: The CEO and the governing body of the 15 hospital North Shore – LIJ Health System (New York, USA) required a methodology to measure performance outcomes across organisations, reduce variation in performance, change behaviour of clinical and administrative leadership, and motivate the clinical staff toward data-driven improvement via financial incentives.

Methods: The analytic team of the Krasnoff Quality Management Institute developed a web-based tool where primary data could be entered by individuals at System hospitals. Using advanced statistical processes, such as risk-adjusted models for comparative analysis, 64 measures (including severe sepsis, nosocomial pressure ulcers, ICU/NON ICU CLABS) are reported monthly on a System dashboard, as are control charts and run charts. The Krasnoff Institute staff provides on-going education to medical and administrative leadership about the numerators and denominators of the measures and assists them with interpreting the data so that they have an objective basis for prioritising improvement efforts. Institute analysts provide web-based education and are available for direct communication with clinicians on issues related to data collection, analysis, interpretation, and implementation.

Results: Leadership uses the dashboard as a monitoring tool and its use has led to improvements: severe sepsis mortality rate was reduced from 36.7% in 2011 to 34.6% in 2012, the nosocomial pressure ulcer index was 1.89 in 2011 and 1.4 2012, the ICU/NON ICU CLABS index was 1.73 in 2011 and 0.93 in 2012. Knowledge about care has been standardised and information effectively communicated; where indicated, policy changes have been made to improve care practices. The Chief Medical Officer for the System holds each institution responsible for variation in expectations of performance. The implementation of the dashboard helped to identify and prioritise improvement efforts. For example, the System has endorsed a partnership with the Institute for Healthcare Improvement (IHI), adopting IHI triggers for identifying complications and unexpected mortality.

Conclusion: The development of the dashboard has required all hospitals within the health system to maintain a consistent level of performance. If there is variation, explanations are required from clinical staff. Monitoring care through this objective and effective tool has resulted in standardised care as well as serving as a real-time indicator of where gaps in performance occur so that steps can be quickly taken to develop improvements. The system is able to better serve the community because information is available about specific disease populations and accountability about performance increased.
MATERNAL, NEONATAL AND REPRODUCTIVE HEALTH CARE: DEVELOPING AND IMPLEMENTING A QUALITY IMPROVEMENT SYSTEM FOR OUTPATIENT SERVICES IN KENYA

Helen Prytherch, Maureen Nafula, Patricia Odero, Joachim Szecsenyi

1 evaplan GmbH at the university hospital Heidelberg, Heidelberg, Germany, 2 Institute of Health Policy Management & Research (IHPMR), 3 GIZ Kenya Health Sector Program, Nairobi, Kenya, 4 AQUA-Institute for Applied Quality Improvement and Research in Health Care GmbH, Göttingen, 5 Department of General Practice and Health Services Research, Heidelberg University, Heidelberg, Germany

Objectives: The provision of quality outpatient maternity, neonatal and other reproductive health care services is challenged by poor infrastructure in rural areas, overcrowded facilities and shortages of staff and equipment. A large number of policy documents, including the Kenyan Quality Assurance Model for Health and clinical guidelines exist for these areas of care. However, putting the standards and recommendations that they propose into clinical practice has proved to be difficult. Moreover, previous quality improvement efforts have tended to focus upon hospital inpatients, despite the fact that the majority of contacts with the health system occur via outpatients.

The presented project aims to develop and implement a quality improvement system that is tailored to the requirements of Kenyan outpatient care in the areas of maternal, neonatal and reproductive health care. The system enables individual facilities (health centres and hospitals) to assess the quality of their own services, identify strengths and challenges, benchmark them against other facilities, and set their own quality improvement targets. The overall aim is to support facilities to better exploit their available resources and strengths to improve the quality of these health services. The project is implemented on behalf of the Gesellschaft für Internationale Zusammenarbeit (GIZ).

Methods: The quality improvement system to be developed is based on the experience of the European Practice Assessment (EPA). EPA is designed to assess quality in outpatient services across various European health systems by using indicators. Quality is assessed for each service individually. EPA is characterised by 4 +1 elements:

1. Perspectives: Quality of the service is assessed through three perspectives: patient, staff and self-assessment.
3. Feedback: The assessed quality data is transferred into indicators. These indicators are presented and discussed with the service team. Based on this discussion the service team sets its own quality targets. Continuous follow up/support is provided throughout.
4. Benchmark: The results of the assessment can be benchmarked against the average of all facilities that have completed EPA.+1.

Electronic support: An electronic and internet based tool (VISOTOOL®) is available for transferring data into indicators, for feedback and benchmarking.

The project started in 2012 with a compilation of all current Kenyan policy documents, clinical and management guidelines, and Standard Operating Procedures for maternal and reproductive health. All indicators of potential relevance were collated, reviewed by a panel of local experts and then translated into the EPA-style assessment system. During 2013 the system will be piloted in 20 facilities and finalised. A training program for the external quality experts and marketing concept are also under development to ensure sustainability.

Results: This presentation reports on the process of adapting and tailoring the EPA methodology to the requirements of Kenyan outpatient services in the areas of maternal, neonatal and reproductive health care. It will also provide preliminary results from the pilot phase, which seem to be quite promising.

Conclusion: It is possible to develop a quality improvement system that is tailored to the specific requirements of the Kenyans outpatient health system and builds predominantly on the resources locally available.
QUANTIFYING OUR PATIENT'S EXPERIENCE
Anna Fitzgerald 1,*, Melissa Lanigan 1
1Mater Private Hospital, Dublin, Ireland

Objectives: The Mater Private’s mission is to provide world class health care to everyone we treat. We want every patient to have the best possible experience whilst in our care. We actively encourage patient feedback and traditionally we collected the data in relation to our patient experience in the form of comment cards and patient forums. Whilst we valued this qualitative data, it was difficult to establish if the action plans that were put in place to address the negative issues raised were having any impact as it was difficult to measure. The Mater Private researched the possibility of quantifying the patient experience and after a rigorous selection process; we adopted Press Ganey as our vendor and HCHAPS (Hospital Consumer Assessment of Healthcare Providers & Systems) as our tool. The objectives of using HCAHPS is to produce data about patients’ perspectives of care through a method that allows for quantified, objective, valid comparisons across hospitals in relation to topics that are important to patients.

Methods: The Mater Private use HCAHPS as a tool to survey 7,500 patients in 2012 which equates to 1 in 3 patients that attended our hospital. The HCAHPS tool is a standardised reliable set of 27 standardised questions. The hospital encourages the use the principles of the Plan Do Check Act (PDCA) cycle approach to improvement initiatives which we have found to be the most productive for monitoring and improving our performances.

Results: Over 30% of patients responded to the HCAHPS survey. As a direct result of HCAHPS quantified data it was apparent that there was an issue with delays in the Cardiology and Radiology departments. Staff members were at the forefront of the improvement initiatives and directly formulated the PDCA’s for their areas. Communication plans were drawn up by the staff involved in this part of the patients care. As part of the plan, patients were informed of delays, advised where they could obtain refreshments and given an approximate time for their test. The results of this simple action were dramatic and continue to improve. The score went from 75.8% to 84.9% for the waiting times in the radiology department. The patient’s perception in relation to the courtesy of the staff was also positively affected with scores prior to the action plan at 85.6% and after at 94.5%. These small but quantifiable increases have had a very positive effect in terms of the Mater Private ranking. When compared with our international counterparts, the Mater Private moved from the 31st percentile to the 78th percentile after the PDCA was implemented in radiology and the courtesy of the radiographer moved from the 1st percentile to the 56th. In the area of inpatient care, the PDCA cycle with action plans formulated by staff had a positive effect on results in all areas of care. Small changes to processes in areas of admission and discharge information, communication between departments, colleagues and most importantly our patients has resulted in improvements in our scores.

<table>
<thead>
<tr>
<th>Area Surveyed</th>
<th>Pre PDCA</th>
<th>Post PDCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissions</td>
<td>87</td>
<td>91.4</td>
</tr>
<tr>
<td>Rooms</td>
<td>85.2</td>
<td>88.2</td>
</tr>
<tr>
<td>Nurse</td>
<td>93.5</td>
<td>94.1</td>
</tr>
<tr>
<td>Test &amp; Treatments</td>
<td>91.6</td>
<td>93.1</td>
</tr>
<tr>
<td>Personal Issues</td>
<td>91.3</td>
<td>91.9</td>
</tr>
<tr>
<td>Discharge</td>
<td>87.8</td>
<td>88.5</td>
</tr>
<tr>
<td>Meals</td>
<td>89.2</td>
<td>90</td>
</tr>
<tr>
<td>Physician</td>
<td>90.9</td>
<td>92.8</td>
</tr>
<tr>
<td>Visitors &amp; Family</td>
<td>88.4</td>
<td>91.2</td>
</tr>
</tbody>
</table>

Conclusion: Continuous quality improvement is central to everything we do in the Mater Private, and in particular, in the areas of patient care and experience. Quantifying the patients experience using HCAHPS has resulted in targeted action plans to address areas that we could improve. We acknowledge that it is early days in this process; however, results are positive as are the patients and staffs perception of the HCHAPS tool.
CAN A MODEL OF PATHWAY PEER REVIEW ASSURE QUALITY AND OFFER GOOD VALUE FOR MONEY?
Darshan Patel 1, Helen Crisp 1
1The Health Foundation, London, United Kingdom

Objectives: Policies that measure healthcare performance against specific metrics often result in pressure to focus improvement on only those dimensions of quality being measured. In some instances this causes an oversight in maintaining other unmeasured, yet critical, aspects of care quality. This can lead to disastrous consequences. Here we explore a novel model of external peer review aligned to patient pathways and ask whether it can complement and reinforce existing regulatory systems and offer good value for money.

Methods: There were three methodological stages to this investigation: a context setting literature and policy review; a consultation exercise involving 40 senior healthcare managers, specialists and clinicians on what external pathway peer review could look like; and secondary data analysis to estimate the costs and benefits associated with peer review.

Results: Currently, external peer review is sparingly used in the NHS in England. Where it has been used it has tended to focus on a single speciality setting with the aim of either providing remedial insight or sharing clinical data and methods. Very few schemes consider the entire care pathway.

The challenges posed by an ageing population and the growing prevalence of people with long term conditions suggest that peer review schemes need to be developed to better address care pathways which span between and beyond hospital specialties. In addition to providing an external ‘ballast’ to counterbalance efforts geared towards a few metrics of quality, the reports from a pathway peer review would also increase the quality of pathway information available and hence play an important role in reinforcing choice. More so, pathway peer review may also help to encourage integrated care and foster self-improving cultures.

There is a dearth of empirical evidence on the costs and benefits associated with peer review schemes. However, our secondary analysis of a study of a well-regarded peer review scheme in chronic obstructive pulmonary disease found that the benefits compare favourably against cost. Indeed, our findings show that the benefits from the scheme would exceed the costs if a ‘life year’ is valued at just £2,750.

Conclusion: These returns are, in our view, sufficiently high to be promising for other care pathways. The implication being that extrapolation across all secondary care specialties could also yield similar value for money conclusions, even before allowing for any cost savings that new ways of working would permit, or savings from current peer review work.

A criticism often levelled against the implementation of national peer review schemes is cost; however, when cost is compared alongside potential benefits this argument is significantly weakened.

This research suggests that a pathway peer review scheme may be a cost-effective and potentially highly worthwhile investment that not only helps pursue balanced high-quality integrated care, but may invigorate staff by reinforcing the role and standing of the professional ethic.

McCormick B et. al., Quality of NHS care and external pathway peer review, Centre for Health Service Economics and Organisation, 2012 (www.chseo.org.uk/papers.html).
ECONOMIC EVALUATION OF IMPLEMENTING A CONTINUOUS MONITORING SYSTEM IN A MEDICAL-SURGICAL UNIT
Sarah Patricia Slight 1,2,3*, Calvin Franz 4, David W. Bates 2,3, Eyal Zimlichman 2,3
1Division of Primary Care, University of Nottingham, Nottingham, United Kingdom, 2Division of General Internal Medicine, Brigham and Women’s Hospital, 3Harvard Medical School, 4Eastern Research Group, Inc., Boston, United States

Objectives: To estimate the cost savings attributable to the implementation of a monitoring system in a general medical-surgical unit that can detect subtle changes in a patient’s vital signs and motion, and to determine the return on investment (ROI) associated with its implementation.

Methods: The ROI model was framed from the perspective of the health care organisation. Data on costs and outcomes were obtained over a nine-month pre-implementation period (Jan 2009 - Sept 2009) from a 33-bed general medical-surgical unit in a 316-bed community hospital, and compared to a nine-month post-implementation period (Nov 2009 - Jul 2010). These included capital costs, one-time noncapital costs, and on-going annual operational costs, as well as data on reduced:

1) hospital length of stay (LOS),
2) Intensive Care Unit LOS, and
3) Pressure ulcer (stage-two and above) incidence.

Two models were constructed: a base case model in which we estimated the total cost savings of intervention effects, and a conservative model in which we only included the direct variable cost component for the final day of LOS and treatment of pressure ulcers. Costs and benefits were converted to 2011 U.S. dollars and discounted at a 7% annual percentage rate. The ROI was calculated by subtracting the total discounted implementation costs from total discounted cost savings, then dividing the amount by total discounted implementation costs. We performed a multi way sensitivity analysis, varying annual average admissions, the real discount rate, the rate of direct variable costs, and the proportion of patients in prospective payment systems, to reflect the rates of most U.S. community hospitals. The hospital research committee approved the study protocol for this analysis.

Results: In the 5-year ROI model, the hospital spent approximately $274,000 in capital costs, $15,000 in one-time noncapital costs, and $293,000 in on-going operational costs to implement the monitoring system. Over the same time period, the system saved between $3,268,000 (conservative model) and $9,089,000 (base model), given an 80% prospective reimbursement rate. This resulted in a net benefit of between $2,687,000 ($658,000 annualised) and $8,508,000 ($2,085,000 annualised), respectively. The base and conservative models show an annual ROI of 292.8% and 92.5% (discounted over 5 years) with the hospital breaking even on the investment after 0.5 and 0.75 of a year, respectively. The average net benefit of implementing the monitoring system ranged from $224 per patient (conservative model) to $710 per patient (base model) per year. The model was most sensitive to variations in average annual admissions and, secondly, to the proportions of patients under a prospective payment system.

Conclusion: The return on investment was highly positive, with the breakeven point within a year. The net benefit remained positive even when the most pessimistic assumptions were used in the sensitivity analyses. The magnitude and timing of these expected gains may justify the accelerated adoption of this system across the remaining inpatient non-ICU wards. The use of such monitoring technologies has the potential to both improve safety and save money.
BUILDING QUALITY & SAFETY ATTRIBUTES IN SYSTEMS-BASED PRACTICE FOR ENHANCING RESIDENTS' COMPETENCY

Dr Sandhya Mujumdar1, Sophia Archuleta1, Sophia Ang1, Swee Chye Quek1
1Medical Affairs, 2Dept of Medicine, NATIONAL UNIVERSITY HOSPITAL, Singapore, Singapore

Objectives: The Accreditation Council for Graduate Medical Education-International (ACGME-I) requires that all residents demonstrate competency in systems-based practice (SBP). ACGME-I program requirements emphasise that physicians understand and practice within a larger system of patient care. Three of the six SBP expectations require that residents demonstrate awareness/competency in quality/safety, teamwork, interpersonal communication skills, as well as participate in identifying system errors & implementing potential systems solutions.

The ACGME-I framework was adopted at the National University Hospital (NUH) in 2010 necessitating education of residents on key elements of SBP, quality & safety. The aim was to introduce an effective SBP module developing residents’ competency in the key concepts of quality/safety & the ability to employ them in daily practice.

Methods: Within the resident competency literature, there are few models offering clear guidance on what constitutes an ideal module on quality and safety. A multi-disciplinary workgroup brainstormed to plan, design & develop a core curriculum to impart a standardised set of knowledge, skills & attributes. The new curriculum was divided into a basic/mandatory module & an advanced/optional one.

All first year residents attend the basic module. This includes 4 weekly 2-hour sessions, each comprising a didactic portion followed by interactive discussion using real-life scenarios &/or team-based activities. The 4 sessions are: Quality in Healthcare; Introduction to Patient Safety; Introduction to Continuous Quality Improvement; & Case Discussion which centers on a case developed specifically for class discussion, mirroring the concept originated at Harvard Law School & aiming to gauge residents’ grasp of the facts & context of the case, their views & ability to analyse pragmatically.

Two classes of residents have participated in the basic module to date- academic year (AY) 2010-2011 & AY2011-2012. Participants’ feedback was built-in to enhance the module between years. A questionnaire was administered to assess residents’ knowledge & competency after the basic module on a Likert-like scale of 1-5.

Results: % of residents rating the sessions as Agree/Strongly Agree are shown:

<table>
<thead>
<tr>
<th></th>
<th>Response rate</th>
<th>Encouraged self-directed leaning &amp; critical thinking</th>
<th>Helped me advance my clinical decision-making skills</th>
<th>Increased my confidence in day-to-day patient management</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY-2010-2011</td>
<td>n=96</td>
<td>84.4%</td>
<td>77.1%</td>
<td>76.04%</td>
</tr>
<tr>
<td>N=153</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AY-2011-2012</td>
<td>n=55</td>
<td>98.2%</td>
<td>98.2%</td>
<td>94.5%</td>
</tr>
<tr>
<td>N=76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p value</td>
<td>Pearson’s Chi Square Test</td>
<td>P=0.008</td>
<td>P=0.001</td>
<td>P=0.004</td>
</tr>
</tbody>
</table>

The module evolved as it progressed with relevant content additions & enhancements. With time, the trainers better understood residents’ needs & expectations, which helped in making sessions more targeted & interactive. As such the teaching modality was changed from mere lectures to addition of case discussions & residents identifying challenges, weak links in the system experienced on the ground. They were encouraged & engaged in providing systems solutions to these situations. This effectively enhanced their learning experiences & was reflected in the significant improvement in feedback & ratings of the sessions.

Conclusion: The SBP basic module has enabled imparting a higher level of competency-based knowledge, skills & attitudes to inculcate safer practices amongst residents. Encouraged by the interest the basic module has generated we conducted an advanced/optional 3-day workshop for second year residents on quality improvement project management in Feb & Nov 2012 where each participant must work in a team & complete a quality improvement project. This has generated 13 such projects to date.
THE RELATIONSHIP BETWEEN QUALITY OF CARE AND CHOICE OF CLINICAL COMPUTING SYSTEM: RETROSPECTIVE ANALYSIS OF FAMILY PRACTICE PERFORMANCE UNDER THE UK’S QUALITY AND OUTCOMES FRAMEWORK

Evan Kontopantelis 1,2,3,* Iain Buchan 3, David Reeves 1,2, Tim Doran 1
1Centre for Primary Care, Institute of Population Health, 2Centre for Biostatistics, Institute of Population Health, 3Centre for Health Informatics, Institute of Population Health, University of Manchester, Manchester, United Kingdom

Objectives: To investigate the relationship between performance on the UK Quality and Outcomes Framework pay-for-performance scheme and choice of clinical computer system.

Methods:
Design:
Retrospective longitudinal study.

Setting:
Data for 2007-8 to 2010-11, extracted from the clinical computer systems of general practices in England.

Participants:
All English practices participating in the pay-for-performance scheme: average 8257 each year, covering over 99% of the English population registered with a general practice.

Main outcome measures:
Levels of achievement on 62 quality of care indicators, measured as: reported achievement (levels of care after excluding inappropriate patients); population achievement (levels of care for all patients with the relevant condition); and percentage of available quality points attained. Multilevel mixed effects multiple linear regression models were used to identify population, practice, and clinical computing system predictors of achievement.

Results: Seven clinical computer systems were consistently active in the study period, collectively holding approximately 99% of the market share. Of all population and practice characteristics assessed, choice of clinical computing system was the strongest predictor of performance across all three outcome measures. Differences between systems were greatest for intermediate outcomes indicators (for example, control of cholesterol levels).

Conclusion: Under the UK’s pay-for-performance scheme, differences in practice performance were associated with choice of clinical computing system. This raises the question of whether particular system characteristics facilitate higher quality of care, better data recording, or both. Inconsistencies across systems need to be understood and addressed, and researchers need to be cautious when generalising findings from samples of providers using a single computing system.
UNPLANNED TRANSFERS FROM SUBACUTE TO ACUTE CARE: TIME TO MOVE PATIENT SAFETY BEYOND ACUTE CARE

Julie Considine 1*, Maryann Street 1, Bev O’Connell 2,3, Bridie Kent 4,5
1Eastern Health - Deakin University Nursing and Midwifery Research Centre, 2School of Nursing and Midwifery, , Deakin University, Burwood, Victoria, Australia, 3Faculty of Nursing, University of Manitoba, Winnipeg, Canada, 4School of Nursing and Midwifery, Deakin University, Burwood, Victoria, Australia, 5School of Nursing and Midwifery, University of Plymouth, Plymouth, United Kingdom

Objectives: The aim of this study was to undertake a detailed multi-site analysis of unplanned transfers from subacute to acute care within Australia. The primary outcome measure was in-hospital mortality. Secondary outcome measures were 30 day and 60 day mortality, discharge destination and serious in-hospital adverse events (unplanned ICU admission, MET call, cardiac arrest).

Methods: A descriptive exploratory approach was used. Participants were inpatients from rehabilitation or geriatric evaluation units at subacute care facilities and who required an unplanned transfer to the emergency department(s) of an acute care hospital from 1 January to 31 December 2010. The study was conducted at four health services in Victoria, Australia.

Results: In total, 431 patients were included in the study. The median patient age was 81 years and 53.4% were female. Weekend transfers occurred in 21.3% of patients and 15.3% of transfers were overnight. The median length of stay in subacute care preceding transfer was 43 hours: 29.0% of patients (n=125) were transferred within 24 hours and 83.5% of patients (n=360) were transferred within 72 hours of admission to subacute care. In the 24 hours preceding transfer, 84.9% of patients had documented physiological abnormalities (Mdn=2), and 36% of patients had three or more physiological abnormalities documented. Acute care hospital admission was required in 87.5% of patients, 3 patients died in the emergency department at the acute care hospital, and 10% of patients were returned to subacute care. Inpatient mortality for patients admitted to hospital was 15.4%. Medical emergency team (MET) activations occurred for 10.3% of patients (n=39), 1.9% of patients (n=7) suffered an in-hospital cardiac arrest and 2.1% of patients (n=8) required an unplanned ICU admission. At 30 days, 3.5% of all patients (n=15) had died and 60 day all-cause mortality was 2.3% (n=10). Significant predictors of in-hospital mortality were the number of physiological abnormalities in 24 hours preceding transfer, MET activation or unplanned ICU admission during hospital admission. For each additional physiological abnormality, the odds of in-hospital death increased by a factor of 1.35 (95%CI, 1.038 to 1.763, p = 0.026). The odds of in-hospital death increased by a factor of 3.15 if MET activation was required during hospital admission (95%CI, 1.32 to 7.52, p = 0.010) and 21.60 if an unplanned ICU admission occurred during hospital admission (95%CI, 2.14 to 218.15, p = 0.009).

Conclusion: Patients who required an unplanned transfer from subacute to acute care have high rates of hospital admission and mortality. The majority of transfers occurred in the first three days of admission to subacute care, suggesting initial discharge planning from acute care warrants greater attention to ensure safe transition of care. The number of physiological abnormalities prior to transfer was predictive of in-hospital mortality; however the frequency of physiological monitoring in subacute care was highly variable with infrequent documentation of complete physiological observations. These findings highlight the need for a systemic approach to recognition and response to patients who deteriorate in subacute care.
PROGRESS IN JAPANESE NATIONWIDE MEDICAL ADVERSE EVENT REPORTING SYSTEM IN 2012

Shin Ushiro 1,*, Hiromi Sakai 1, Junko Inoue 1, Kikuo Nomoto 1

1Division of Adverse Event Prevention, JAPAN COUNCIL FOR QUALITY HEALTH CARE, Chiyoda-ku, Tokyo, Japan

Objectives: The nationwide medical adverse event reporting system was launched by JCQHC, a neutral third body, on the basis of the government ordinance in Japan in 2004 to aim at patient safety promotion by way of informing current status of those events not only to medical institutions, government and manufacturers but to the Japanese nation. The achievement generated by the reporting system so far is reviewed.

Methods: Adverse event such as medical accident and incident is regularly reported from medical institutions which consist of institutions subject to report according to the government ordinance and other institutions participating on the voluntary basis. JCQHC collects, tabulates the data on those events and publish quarterly and annual report and monthly alert.

Results: The reporting system collected 2,882 medical accidents and 515,865 incident occurrence report and 30,823 incident descriptive reports in 2012 under the condition of anonymity from 1,322 medical institutions accounting for 15% of entire Japanese hospitals. The figure of the reporting has been rising since the reporting system was launched due to growing acceptance of the reporting system by Japanese medical institutions. JCQHC published annual and 4 quarterly reports and 12 monthly alerts in 2012 as an achievement of the reporting system. The quarterly and annual reports contain a tabulation sequentially comparable between the reports. The figure is currently made use of in comparison between the nationwide data and individual hospital data. Category "Treatment and procedure" and "Nursing care" are the most common medical accident at the initial phase of the reporting system, but recently the rate of "Treatment and procedure" declined possibly due to the promotion of patient safety. The reports carry wide variety of individual themes including case presentation, background, reported preventive measures and images related to each theme. Even the theme analysis on rare cases could be done due to the nationwide size of the system. In 2012, the themes carried in the reports were those such as adverse events related to MRI suite, adverse events related to drug under in-patient’s control, adverse events related to prescription of contraindicated drugs, and other 9 themes. JCQHC has issued 74 monthly alerts over the last 6 years. It has been increasingly popular in Japanese medical institutions as a new easy-to-understand alerting tool for Japanese medical professionals. The monthly alert is well featured as inter-disciplinary and regardless of job titles. The distribution of the alert by facsimile reaches 5,328 medical institutions accounting for approximately 60% of Japanese hospitals, while PDF format of the alerts is also posted on our website on the day of publication. In order to enhance the efficiency of the reporting system, JCQHC has launched a web-based adverse event searching system in 2010 which is currently widely utilised in many healthcare settings to create safer manuals, guidelines and medical devices and alter or alert names of sound-alike drugs.

Conclusion: The nationwide adverse event reporting system is now widely welcomed and utilised in Japanese medical society and related societies. The achievement of the reporting system is due to the growing patient safety culture and understanding and cooperation by medical institutions, government, manufacturers and other bodies related to medicine.

A BOARD MONITOR TO RECOGNISE MALFUNCTIONING PROFESSIONALS
Robert Slappendel ¹,*, Maartje de Vos ¹, Marian Smit ²
¹Quality and Safety, Amphia / TiasNimbas Business School, ²Communication, Amphia, Breda, Netherlands

Objectives: Recent years, medical errors are having increasingly more attention in the Dutch media and there are a large variety of tools developed to improve the quality of medical care. Also the Amphia hospital developed such a tool, the complaints monitor.

Methods: The monitor provides quarterly feedback reports about patient complaints in order to identify dysfunction specialists and to finally improve the quality of care. Ultimately, the national standard rules for possible dysfunction can be followed.

Results: In the Amphia hospital, a small number of specialists (11% of the specialists received more than two times the average of complaints) generate a disproportionate number of patient complaints. Especially, the analysis of these complaints is import to identify dysfunction specialists in an early stage.

Conclusion: The complaints monitor of the Amphia hospital provides useful information for the individual specialist, medical group, staff management and the Board of Directors. Important is that this method does not need hardly any additional effort or registration. It can easily be implemented in each hospital and it takes the experiences of the patient as starting point.


‘NAVIGATION’ TO SUPPORT SHARED DECISION MAKING FOR PATIENTS WITH A HIGH GRADE GLIOMA (HGG). A QUALITATIVE EVALUATION

Sarah Shepherd 1,*, Louise M. Wallace 1, Belinda Hacking 2, Sarah E. Scott 1

1Faculty of Health and life sciences, Coventry University, Coventry, 2Edinburgh Cancer centre, Edinburgh, United Kingdom

Objectives: Many High Grade Glioma (HGG) patients describe a lack of specific information about their condition, treatment and ‘what’s next’. The need for tailored verbal and written information is high in order to make sense of the situation, enable understanding and engage in shared decision-making. Navigation, a communication and decision support service, has been successfully piloted with Prostate cancer patients who demonstrated significantly more confidence and less uncertainty in their treatment decisions when compared to the control group. This study evaluates the experiences of Navigation with patients being diagnosed and treated for a HGG, over time. This study is the first to trial Navigation with HGG patients.

Methods: Patients (n=20) attending the Edinburgh Centre for Neuro-oncology being diagnosed with a HGG were invited to participate in Navigation and serial evaluation interviews. Patients were Navigated for 3 clinic appointments over 6 months; pre-treatment, post treatment and follow up. Interviews were undertaken at baseline before navigation and after each navigated clinic appointment and analysed using framework analysis.

Navigation: Prior to oncology consultations, trained non clinical Navigators helped patients create a key information and question list to use in the consultation. Navigators attended the consultation to audio record and take notes. Subsequently, patients were sent a recording of the consultation (CD) and a typed summary of key points discussed.

Results: Preliminary themes include:

- Lack of information after surgery before diagnosis: At baseline Patients presented considerable variation in knowledge about diagnosis, next steps and treatment options.
- The importance of preparation: Preparing a list of questions made patients focus on what they wanted to talk about and facilitated them to ask about more than results.
- A personalised tailored consultation: Patients reflected on the possibility of information gaps without the preparation which ensured questions were addressed in their consultations.
- Facilitating understanding and memory: Summaries and recordings were used as memory aids, most patients remembered little. This enabled patients to listen in the consultation without note taking.
- Difficult to listen again: Some patients did not listen to their CD as they described listening again to phrases doctors used in the consultation such as ‘incurable’ as too difficult.

Conclusion: Preliminary results indicate Navigation is enhancing the current service through the provision of memory aids and the individualised preparation of questions for consultations. Evaluation of the impact of Navigation on oncology consultants and primary care is being carried out.


Keywords: Shared decision making, communication, audio recording, and medical consultation.
AN AUTOMATED SYSTEM FOR REPORTING AND CLASSIFYING ADVERSE EVENTS IN A CARDIAC SURGICAL POPULATION

James A. Robblee 1, Michael Bourke 1
1Division of Cardiac Anaesthesiology, University of Ottawa Heart Institute, Ottawa, Canada

Objectives: Background
Recognising and reporting of adverse events is central to developing action plans on patient safety. Traditional efforts to detect adverse events rely on voluntary reporting and tracking of errors. However, public health researchers have established that only 10 to 20 per cent of errors and adverse events are ever reported.

The primary purpose of patient safety reporting systems is to learn from experience. It is important to note that reporting in itself does not improve safety. It is the response to reports that leads to change. Within a health-care institution, reporting of a serious event or serious “near-miss” should trigger an in-depth investigation to identify underlying systems failures and lead to efforts to redesign the systems to prevent recurrence.

Primary objective:
To develop an automated method for adverse event reporting.

Secondary objectives:
To develop metrics for reporting adverse events.
To classify adverse events based on harm to the patient.

Methods: A multi-disciplinary clinical task force agreed on the definition of a series of triggers and adverse events that are commonly seen in the Cardiac Surgical Intensive Care Unit (CSICU). A search engine was developed to interrogate a verified database for adverse events that occur in the operating room and the CSICU. The search engine was tested in low risk cardiac surgical patients. All CARE 1, 2 and 3 patients who underwent a cardiac surgical procedure between January 1 and December 31, 2011 were included in the analysis. The project was a proof of concept. The goal was to identify adverse events in the CSICU from a searchable database.

The interdisciplinary team is developing a mechanism within the organisation to classify the adverse events based on the degree of harm to the patient. The classification system to be used is based on the IHI classification of medication errors and modified for the critical care population.

All adverse events that are detected will undergo a primary review for the purposes of classification. Those events that are classified as resulting in significant patient harm will undergo a secondary review by a critical care physician. The reviews will form the basis for interdisciplinary morbidity rounds.

Results: There were 1113 low risk patients who underwent a cardiac surgical procedure in 2011. 198 patients (17.8%) had 1 or more adverse event. Included in the total were 7 (0.63%) deaths, 19 (1.71%) cerebrovascular accidents, 61 (5.48%) infections, 95 (8.53%) acute kidney injuries.

A number of triggers were identified that pre-dispose to adverse events. These included transfusion (26.5%), pre-cardiopulmonary bypass (CPB) hypotension (6.3%) pre-CPB hypertension (3%) use of 1 or more inotropic agent (40.8%) re-opening (3.4%), CSICU length of stay > 72 hours, length of ventilation > 48 hours.

It is expected that results of 2 current months will be available for the conference and will include preliminary results of the classification of harm. In addition, the data will include adverse events in high risk patients (Care 4 and 5)

Conclusion: Adverse events in the cardiac surgical population are very common. This study shows that it is feasible to use a search engine to interrogate a verified database and to determine the rate of adverse events much more accurately than traditional methods of adverse event reporting. In this study, despite a low mortality rate, 17.8% of lower risk patients had at least 1 adverse event. The information obtained can be used to critically analyse morbidity with a goal of improving patient care.
TOBACCO TREATMENT OUTREACH TO DISADVANTAGED SMOKERS
Jennifer Haas 1,*, Elyse Park 2, Jeffrey Linder 1, Nancy Rigotti 2
1Brigham and Women's Hospital, 2Massachusetts General Hospital, Boston, United States

Objectives: Low socioeconomic status (SES) and minority smokers face substantial access barriers to tobacco treatment. Interactive voice response (IVR) technology, in concert with centralised telephone counselling and free nicotine replacement, may facilitate treatment for low SES and minority smokers outside of physicians’ offices. Our objective was to develop and evaluate an IVR-mediated, personalised tobacco treatment program for low SES status and minority smokers in a randomised controlled trial (RCT).

Methods: African-American, Hispanic, and white adults were eligible to participate if they were documented as smokers in the electronic health record of a large health care delivery system in the greater-Boston area, lived in a low or moderate income census tract, and had a primary care visit within the preceding 45 days. Documented smokers were contacted using IVR up to 15 times and were asked to confirm smoking status, report current amount of tobacco use, prior quit attempts, plans to quit in next 30 days, and whether other smokers were present in the household. Individuals randomised to the intervention arm were offered up to 4 calls with a tobacco treatment specialist, 6 weeks of free nicotine replacement, and referral to community resources to reduce common life stressors. Both arms were asked to self-report smoking status approximately 9 months following randomisation. Those who completed the outcome survey were eligible for a monthly $100 drawing. Multivariate regression was used to test whether the intervention was more effective in any subgroup.

Results: To date, we have contacted 4001 patients; 45 reported that they were not a smoker, 2990 were not reached after 15 call attempts, 179 declined participation, and 252 chose to participate and have completed outcome assessment to date. Participants had a median age of 52 (range 22 – 83); 23% were African American and 19% were Hispanic; 56% had no more than a high school education. At baseline, participants smoked a median of 20 cigarettes per day. At 9-month follow-up, self-reported quit rate was 10.1% in the control group and 21.1% in the intervention group (p = 0.02). Hispanics were more likely to quit than whites (p = 0.01); there were no statistical differences in quitting based on duration of smoking, plans to quit, and whether there were other household smokers.

Conclusion: An integrated program with IVR outreach and centralised telephone-delivered smoking cessation program that includes free nicotine replacement and linkage to community resources for common life stressors may be an effective treatment strategy for contacting and engaging populations of smokers who live in disadvantaged areas outside of an office visit, particularly Hispanic smokers.
IMPLEMENTATION OF ACCREDITATION STANDARDS IN INTERNATIONAL HEALTHCARE ORGANISATIONS – ARE CHALLENGES FOR SMALL AND LARGE ORGANISATIONS DIFFERENT?

Sajid S. Ahmed ¹, Conny A. Menger ²

¹Accreditation Canada International, Ottawa, Canada

Objectives: The overall objective of this work was to review implementation of standards in international health care organisations and identify if the standards that are challenging to implement and comply are different for small and large healthcare organisations.

Methods: In 2009, Accreditation Canada International developed the Qmentum International accreditation program. This program was the result of extensive literature review, consultation and pilot testing process. Currently, there are 31 health care standard sections. Organisations are expected to implement standards relevant to their areas of service delivery and compliance to standards is assessed during the onsite survey. Small organisations were defined as health care organisations with less than 100 staff and large organisations were defined as health care organisations with more than 100 staff. As a part of this study 20 healthcare organisations located in Bahrain, Saudi Arabia, St. Lucia, Philippines, UAE, Italy, Mexico, Turks and Caicos, and Kuwait were considered and the period of the study was 2009 - 12. These organisations included representation from acute care, ambulatory, laboratory and primary care sectors. The top-25 standards with non-compliance ratings by surveyors were examined retrospectively to determine if the challenging standards are different for small and large healthcare organisations and identify if any trends exist in this area.

Results: The survey reports that were provided to the healthcare organisations after completion of the onsite visits included assessments on compliance with standards.

There was 50 - 100% non-compliance on the following standards within small organisations:

- Auditing of medical records
- Recording and reviewing of adverse and sentinel events
- Monitoring patient safety culture
- Implementing client’s advanced directives
- Utilising performance indicators for medication management
- Implementing effective hand hygiene practices
- Utilisation of guidelines in service delivery
- Comparison of results with other interventions, programs, services or organisations
- Following guidelines for sterilisation of equipment
- Monitoring of client outcomes

There was 50 - 100% non-compliance on the following standards within large organisations:

- Staff access to healthy workplace strategies
- Managing fatigue of staff
- Staff access to counselling services
- Implementation of disclosure processes
- Implementation of medication reconciliation
- Dispensing of medication in unit dose
- Evaluation of executive performance
- Discussion of organ donation with clients
- Monitoring referrals
- Strategic plan development

On further analysis, it was evident that there were significant challenges related to patient safety culture, medication management and performance management in small organisations. On the other hand, there are significant challenges related to work life balance, disclosure, governance, and medication management in large organisations. The common theme across organisations is medication management. The results show that there are disparate challenges for small and large organisations.

Conclusion: The results clearly show that there are different challenges with respect to implementation and compliance with standards within small and large health care organisations. Identification of these themes will help organisations to determine areas on which to focus their effort in order to improve quality and safety of care and services to their clients.

REDUCING SUICIDE RISK: MAKING MENTAL HEALTH SERVICES SAFER
Anna Wimberley 1, Jamie Malcolm 1
1Healthcare Improvement Scotland, Edinburgh, United Kingdom

Objectives: Healthcare Improvement Scotland is a national organisation. Our vision is to deliver excellence in improving the quality of the care and experience of every person in Scotland every time they access healthcare.

NHS mental health services have always, in some form or other, reviewed the care and treatment given to people in contact with the service who complete suicide. These reviews varied in methodology, quality and useful output in terms of learning and improvement to services.

Our objective was to establish a national suicide reporting system to improve NHS boards’ suicide reviews. Identifying national learning themes and facilitating service improvement to make mental health services safer for people at risk of suicide.

Methods: We established the Suicide Reporting System (SRS) to support NHS Boards improve the way that mental health services carry out suicide reviews, using the learning to improve and develop services for other people at risk. This is achieved by analysing NHS board’s suicide review reports to:

- Share lessons identified and risk-reduction actions implemented within mental health services, through our Learning and Improvement Review publication, and our community of practice which meets twice a year and takes forward improvement work
- Publish guidance for staff involved in suicide reviews and process tools for NHS boards to implement
- Notify the Mental Welfare Commission for Scotland if there is a potential deficiency in care
- Provide feedback to NHS boards on suicide review implementation
- Contribute to the development of Scotland’s national self-harm and suicide prevention strategy to be published in late summer 2013.

We carried out a mapping exercise in 2009 to review and report on the range of NHS board policies and approaches to implementing and learning from suicide reviews. During 2011-12 we reviewed NHS board suicide review policies and met with NHS boards to discuss improvements made.

Results: Through our analysis of NHS boards completed suicide reports, two national reviews of NHS boards’ suicide review processes, and facilitating NHS board’s service improvements, we have identified key messages:

- There has been a shift in culture away from reviews being fault finding and defensive, to learning lessons and improving services
- There is a growing consistency across NHSScotland in the way suicide reviews are carried out, with NHS boards implementing a systematic approach
- There is now a shared understanding and a similar approach across NHSScotland to effectively involve in the review process families and carers of those who have died. Involving families and carers is one of the seven themes for mental health outlined in the Mental Health Strategy for Scotland 2012–2015. The Strategy recognises the work we have taken forward through the SRS which shows that better work with families can contribute both to safety and to better outcomes.

Conclusion:
- NHS boards local suicide review processes have improved. All now include the appropriate involvement of families and carers
- There are opportunities to use NHS Board’s adverse event review mechanisms to improve the sharing of lessons from suicide reviews and of providing assurance that appropriate improvement actions are being carried out effectively
- Some of the lessons learnt to date highlight the need to develop better links with other agencies e.g. local authority, voluntary sector, police, to improve the effectiveness and learning from suicide reviews
- Reviewing and improving mental healthcare through effective suicide reviews will support NHS boards to realise the three quality ambitions as outlined in the Healthcare Quality Strategy for NHSScotland (2010). These are to provide care that is person-centred, safe and effective.
ACCREDITATION: 4000 “RECOMMENDATIONS FOR IMPROVEMENT”: DO THEY MAKE A DIFFERENCE?
Anne Depaigne-Loth 1, Vincent Mounic 1, Mohammed Makhoukh 3, Xin Chen 2
1Division of Quality and Safety Improvement in Health Care, HAS Haute Autorité de Santé - French National Authority for Health, Saint denis La Plaine Cedex, 2Université de Paris 5, Paris, France

Objectives: To investigate the impact of the recommendations issued during an hospital accreditation process. This study concerns 4109 recommendations and explores a methodology to assess their implementation and their impact.

In France as is the case in the other countries that have adopted an accreditation system to regulate the hospital sector, accreditation is challenged by its environment to account for its effectiveness. The 2700 French hospitals have undergone two cycles of accreditation. A third cycle is still being rolled out. 18 000 recommendations have been offered during the second cycle: what happened to them? Accreditation research is a growing field but few studies have addressed the precise issue of the impact of the recommendations identified in the accreditation reports (1).

Methods: The sample comprised the 612 hospitals that have completed the second and the third cycle of accreditation. The standardised data derived from the national accreditation database was used to conduct a descriptive quantitative analysis. The recommendations issued for each hospital during the second cycle were “chained” to the recommendations notified during the third cycle. A documentary review was conducted on a sample of 30 accreditation and follow-up survey reports. Two types of recommendation were investigated: depending on the severity of the non-compliance, they are qualified either as “recommendations level 1” or “reservations”.

Results: The great majority of the recommendations have been acted upon. They almost all resulted in some action and almost none of the recommendations were omitted. Only 3% of the reservations were maintained after the follow-up visit and only 2% of the recommendations level 1 were found to have been omitted. 63% of the reservations issued during the second cycle were not renewed 4 years later. 25% of the reservations were re-notified on the same subject but recast as a recommendations level 1. Qualitative analysis shows that most the 12% of the “re-notifications” cannot be attributed to a lack of response from the HCO but to difficulties in matching the level of expected performance of the new standards.

Progress is more difficult to achieve when the implementation of the recommendation involves a change in clinical practice. For example, 67% of reservations concerning medication safety were re-notified during the third cycle. Two factors explain this result: first, this domain was identified as a “high priority” in the third accreditation process/the level of expected performance was raised between the two cycles; second, the implementation of medication safety systems is hindered by the technical and cultural barriers that affect any major changes in clinical practice.

Conclusion: The study contributes to document the positive external pressure exerted by the accreditation and the effectiveness of the regulatory strategies it proposes: follow-up measures, progressive upgrading of the standards, and time given to the organisations to implement changes. This pilot study has some limitations that should be addressed. Progress cannot be attributed with certainty to the accreditation. The results should be crossed with the results from other research. The methodology will be generalised to a full cycle of accreditation and the analysis complemented.

PRESSURE ULCER PREVALENCE IN FOUR INDONESIAN HOSPITALS: FEASIBILITY STUDY OF THE LPZ MEASUREMENT IN INDONESIA

Yufitriana Amir 1,2,* , Ruud Halfens 2, Christa Lohrmann 3, Jos Schols 4
1Nursing Programme, Riau University, Pekanbaru, Indonesia, 2Health Services Research, CAPHRI, Maastricht University, Maastricht, Netherlands, 3Department of Nursing Science, Medical University of Graz, Graz, Austria, 4CAPHRI, Health Services Research Department and Department of General Practice , Maastricht University, Maastricht, Netherlands

Objectives: Even though the hospital-acquired (nosocomial) prevalence of pressure ulcer (PU) is one of the nursing sensitive care indicators for the international hospital accreditation in Indonesia, the hospitals use different instruments and data collection procedures to measure their PU prevalence. This results in difficulties to interpret and compare the prevalence rates. The aim of this study is to do a feasibility study of using the Dutch LPZ-international measurement instrument and methodology to measure the PU prevalence including prevention, treatment and structure indicators in Indonesian hospitals.

Methods: A cross sectional study was performed in four large Indonesian hospitals. The LPZ-international questionnaire and data collection procedure were used (Van Nie, Schols et al. 2013). The English questionnaire was translated into Indonesian language and back translated. The measurement was conducted by nurses who work in the care units within the hospitals. The nurses were trained by the researcher to carry out the measurement. Each patient was assessed by two nurses (one from the own care unit and one from another care unit) to increase the objectivity of the measurement. The Braden scale was used to determine the PU risk. The PU prevalence, prevention, treatment and structure indicators of all hospitals were calculated. Adult patients (≥18 years old) in the medical, surgical, ICU, CVCU units were included in the measurement.

Results: The LPZ-international measurement appeared to be feasible to measure the PU prevalence in Indonesian hospitals. Four large hospitals including 66 care units participated. 1132 patients were assessed by trained nurses. More than half of the patients (68.1%) were at risk having a PU (Braden scale score <21). 91 patients suffered from a PU and half of the PUs (56.0%) was developed in the hospitals. A quarter of at risk PU patient received prevention measures including repositioning, malnutrition treatment and education. Few patients (6.1%) used an anti-PU mattress. Only one hospital had PU prevention and treatment guideline. The prevalence rate of PUs excluding cat 1 was 6.5% and the nosocomial PU prevalence was 3.6%.

Conclusion: Pressure ulcers represent a relevant health care problem in these Indonesian hospitals. Using the LPZ questionnaire and methodology appeared to be feasible and usable. The PU prevalence in these 4 Indonesian hospitals is slightly higher than the PU prevalence reported in hospitals of other countries and measured in the same way. A larger study is needed to know the PU prevalence at national level in the Indonesian hospital sector and to explore possible solutions based on prevention, treatment and structure indicators to decline the rates.

RAISING THE QUALITY OF CARE: AN IMPACT EVALUATION IN AFGHANISTAN
Partamin Zainullah 1, 2, Young-Mi Kim 2, Eva Bazant 2, Khalid Yari 1
1 Jhpiego, Kabul, Afghanistan, 2 Jhpiego, Baltimore, United States

Objectives: A quality assurance (QA) process based on Jhpiego’s Standards-Based Management and Recognition (SBM-R) approach was introduced in 13 provinces of Afghanistan. This evaluation assessed its impact on provider performance, client and provider perceptions, and service utilisation in 4 of 16 service areas: antenatal care (ANC), postnatal care (PNC), family planning (FP), and labour and delivery (L&D).

Methods: Study design was a post-intervention comparison of three groups of facilities: 10 facilities that had participated in the QA process for 22 months (the advanced intervention group), 10 facilities that had participated for 12 months (the early intervention group), and 11 facilities that had not yet initiated the QA process (the comparison group). These 31 facilities included 9 basic health centres, 13 comprehensive health centres, and 9 district hospitals. Data were collected from July to September 2009. Assessors conducted 921 clinical observations, 87 provider interviews, and 875 client exit interviews, and collected monthly service statistics for a three-year period. Bivariate linear regression analyses compared observation and interview scores between the three study groups. A multivariate linear regression analysis was conducted to control for facility type and service utilisation level. Monthly service statistics for each service area were graphed by study group and visually inspected to identify trends in service utilisation after the launch of the QA process.

Results: In district hospitals, observed provider performance improved with the duration of the QA process for ANC (mean scores of 47 in the comparison group, 56 in the early intervention group, and 71 in the advanced intervention group, p<0.05) and FP (57, 68, and 77, respectively, p<0.05). At district hospitals, the comparison group was also outperformed by both intervention groups in PNC (52, 70, 65, p<0.05) and L&D (76, 83, 82, ns), although performance gains were not fully maintained with increasing duration of the intervention. There was no clear or consistent relationship between the QA process and provider performance at basic or comprehensive health centres. Clients in the comparison group rated the quality of care more highly than clients in either intervention group (e.g., interpersonal communication ratings of 1.35, 1.15, and 1.20, p<0.001) and were more satisfied with the care they received (1.39, 1.14, 1.18, p<0.01). Providers in the comparison group also reported greater job satisfaction than those in the intervention groups (3.8, 3.6, 3.5, p<0.01). Although service statistics showed some increases in the utilisation of reproductive health services over the three-year period, the timing was not linked with the introduction of SBM-R and the increases were not confined to the intervention groups.

Conclusion: The QA process proved effective at the district hospital level, but not at the health centre level. This suggests that the content and pacing of the QA cycle should be customised to meet the unique circumstances at different facility types. The findings also suggest that, by raising clients’ and providers’ expectations, the QA process may decrease clients’ and providers’ satisfaction with services in the short run. Finally, the lack of impact on service utilisation suggests the need to inform the community about service improvements and encourage potential clients to seek services at the facility, perhaps by strengthening coordination between the QA intervention and community mobilisation efforts.
PHARMACIST-LED EFFECT OF MEDICATION RECONCILIATION IN ACUTE CARE TRANSITIONS OF 12 DUTCH HOSPITALS

Erica M. Van Der Schrieck-De Loos 1,*, Patricia M.L.A. van den Bemt 2

1 Patient safety, CBO DUTCH INSTITUTE FOR HEALTHCARE IMPROVEMENT (a TNO company), Utrecht, 2 Hospital Pharmacy, Erasmus Medical Centre, Rotterdam, Netherlands

Objectives: The main aim of this multicentre intervention study with a pre-post design was to investigate the effect of pharmacy-based medication reconciliation on the frequency of unintentional medication discrepancies in acutely admitted patients through the Emergency Department aged 65 years and older in twelve hospitals from all regions of the Netherlands. Secondary aims were to determine the effect on medication discrepancy types and the percentage of unintentional medication discrepancies on several time points after implementation of the intervention. The study is part of the Dutch participation on the WHO High 5s Patient Safety program to reduce medication discrepancies with 75% by the implementation of an international Standard Operating Procedure (SOP) for Medication Accuracy at Transitions in Care.

Methods: Depending on the hospital’s implementation period of SOP the timeline of the study period in the two university medical centres, three large teaching and seven general hospitals was from 2010 to 2012. During the pre-intervention measurement nurses and physicians were responsible for medication history taking. After SOP implementation in nine hospitals the patient’s Best Possible Medication History (BPMH) was created by pharmacy technicians using community pharmacy information, a structured patient interview and information on the medication boxes to resolve discrepancies. In three hospitals either physicians or pharmacy technicians obtained the BPMH (mixed model). The primary outcome measure was the proportion of patients with one or more unintentional medication discrepancy. The primary outcome measure was stratified according to type of intervention (pharmacy-based versus mixed model). Secondary outcome measure was the type of medication discrepancies and percentage of unintentional medication discrepancies over time.

Results: In total 1543 patients were included. For all hospitals combined a reduction of the percentage of patients with at least one unintentional discrepancy per patient was shown: from 62% (268 out of 436 patients) to 32% (350 out of 1107 patients), resulting in an odds ratio (OR) of 0.29 (95% confidence interval (CI) 0.23-0.47). Results are adjusted for type of department and hospital and remained statistically significant with an OR of 0.20 (95% CI 0.15-0.26). The effect remained stable in time. Discrepancy types ‘omission’ and ‘dosage/strength’ occurred most frequently and were mainly influenced by the intervention. No reduction was shown in the 3 hospitals using the ‘mixed model’ (80% to 84%). A 75% reduction in medication discrepancies was achieved only in the pharmacy-based model and using medication orders as unit of analysis (79% reduction).

Conclusion: The study confirms that pharmacist-based medication reconciliation substantially reduces medication discrepancies in acute hospital admissions of elderly patients. Hospitals with a pharmacy-based intervention achieved at least 75% reduction in medication discrepancies and the SOP mainly influenced the types ‘omission’ and ‘dosage/strength’. The effect remained relatively stable in six months’ time. Hospitals expand the intervention to all patients and care transitions.

MAMBULANCE: AN INNOVATIVE INTERVENTION TO REDUCE MATERNAL DEATHS IN RURAL MANAFWA AND MBALE DISTRICTS OF UGANDA
Alakananda Mohanty¹,*
¹KISSITO HEALTHCARE, Roanoke, United States

Objectives: Achieving the fifth Millennium Development Goal (MDG5) by reducing maternal deaths remains a significant challenge in Uganda. Uganda has a high Maternal Mortality Ratio (MMR) of 438/100,000 live births with the life-risk of 1 in 27 women dying in pregnancy. One of the many underlying factors that contribute to high MMR in the country is delay in reaching an emergency obstetric care (EmOC) facility. Evidence indicates that access to appropriate health care including timely referrals to EmOC services can significantly reduce maternal deaths. With regional differences in MMR, it is estimated that 75% of maternal deaths in the rural Manafwa and Mbale districts in Uganda are associated with low utilisation of EmOC services due to multiple access barriers including distance to the nearest health centre.

Objective was to assess referral time, acceptability, and feasibility of motorcycle ambulances for referral of obstetric emergencies to the nearest Health Facility and to compare the referral delays and costs with those of a 4WD vehicle ambulance.

Methods: Five mAmbulances were placed at 3 remote rural health centres in Manafwa and 2 health centres in Mbale districts of eastern Uganda for transporting obstetric emergencies and other emergency cases to the health centres free of cost. Data was collected over a 17 month period, from January 2011 to May 2012 using logbooks, referral forms, and maternity registers utilising specially designed logbooks, maternity registers and semi-structured interviews with health workers and ambulance drivers were conducted about transport issues, referral procedures, and referral delays.

Results: The mean duration of referral to reach a health facility for all emergency obstetric cases varied between 1:01-1:09 hr. Cost per patient reduced by 6 times.

Conclusion: In resource-poor Uganda, mAmbulances are a useful means of referral for emergency obstetric care, particularly under circumstances where health centers have no access to other transport or means of communication to call for a vehicle ambulance and a relatively cost-effective option for the health sector. By providing on-site, designated EmOC referral transport at rural health facilities, the mAmbulances can fill a critical gap in maternal services. If implemented widely in the country, mAmbulances may also potentially help reduce cost for women and their families to access EmOC.
DOES HOSPITAL ACCREDITATION PROMOTE HIGH PERFORMANCE IN HUMAN RESOURCE MANAGEMENT PRACTICE?
Ashlea Kellner ¹, David Greenfield ²*, Sandra Lawrence ¹, Keith Townsend ¹
¹Centre for Work, Organisation and Wellbeing, Griffith University, Brisbane, ²Centre for Clinical Governance Research, Australian Institute of Health Innovation, University of New South Wales, Sydney, Australia

Objectives: Healthcare accreditation programs are intended to increase the effectiveness of hospital processes. However, there has been minimal consideration of accreditation effects on human resource management (HRM). This study examined whether hospital managers attribute their high performance in HRM with accreditation.

Methods: This study draws from hospitals participating in the Australian Council of Healthcare Standards (ACHS) Evaluation and Quality Improvement Program 4 (EQuIP 4). Hospitals participated in an organisation wide survey conducted between 2007 and 2011, and the researchers selected a sample of the highest rated performers on the HRM criteria. Thirty interviews were performed across seven hospitals. Semi-structured interviews were conducted with at least four representatives per hospital, typically two ward managers, the accreditation co-ordinator and HR manager. Questions explored aspects of the accreditation process relating to HRM to identify the areas of exemplary performance, and understand the impact accreditation has on HRM policies and processes. Interviews, conducted across 2012-2013, were recorded, transcribed and collated. The data were then thematically analysed.

Results: High performance in HRM was attributed to three interrelated factors: exemplary, positive leadership; a “culture of excellence”; and enacting industry best HRM practice. The accreditation program was not identified as a driving or contributing factor. However, accreditation standards in HRM are reported as one part of the HRM architecture that contributes to the delivery of high levels of performance. Participants viewed accreditation as useful in providing structure to assess organisational processes and for delivering evidence to external stakeholders of the hospital’s performance in HRM. Front-line managers, typically the person most responsible for providing HRM delivery to staff, do not consciously relate their HRM practices to accreditation standards. Rather, when they consider accreditation they think about clinical performance not the HRM performance issues. For some, HRM “culture and practice” have become embedded so that staff management and patient care are becoming increasingly intertwined. Other managers’ professional focus and training is about clinical care and they are less focused on HRM issues. Nevertheless, overwhelmingly, participants refer to excellent leadership being behind the drive for organisational members to strive for best practice in the area of HRM. This, in turn, leads to a “culture of excellence” within the organisation. The internal factors of leadership and culture are complemented, enhanced and made real by external ideas and “best” practices from other organisations. Participants highlighted the necessity of the three factors together - leadership, culture and practice – to enable the linking of HRM policy to organisational quality and safety initiatives. The end result of these interrelated factors is firstly, high performance in specific accreditation standards related to HRM, and secondly, higher performance with respect to accreditation standards overall.

Conclusion: Accreditation is not identified to be a driver of HRM performance. Organisations recording exemplary performance in HRM practices are internally driven and embed their practices into their organisational architecture. In doing so, they become a high performance organisation and as a result achieves high performance in their HRM accreditation outcomes.
QUALITY SYSTEMS ASSESSMENT (QSA) - TICKING THE BOX OR IMPROVING CARE?
Wendy Jamieson 1,*, Bernadette King 1, Charles Pain 1, Clifford Hughes 2
1QSA, 2CEO, Clinical Excellence Commission, Sydney, Australia

Objectives: All Health Services struggle with the need for system controls. Accreditation is emerging as a major direction in most jurisdictions. In the NSW Clinical Excellence Commission (CEC) we have introduced a QSA program to evaluate the patient safety & clinical quality systems using self-assessment, external verification and identified recommendations. The QSA assists in the preparation for accreditation. It identifies risks and highlights gaps regarding accreditation standards. In response to the QSA self-assessment findings, state-wide recommendations are made and are required to be addressed by all Local Health Districts (LHDs). These recommendations are made as a result of wide consultation regarding the QSA results. This review measured the responses to the QSA recommendations by the LHDs. From a clinical governance perspective the CEC needs to ensure that recommendations made by the QSA program are acted upon appropriately, in a timely manner and evaluated. An effective program needs to drive change and/or improvement. The QSA program will make a difference if it: a) assists in or is directly responsible for highlighting risks/areas for improvement, and b) ensures that LHDs effectively act on the areas for improvement in a timely manner. We sought to answer the question: Does the QSA make a difference or is it just a bureaucratic process?

Methods: The QSA is a state-wide multi-level self-assessment tool with internal and external verification mechanisms and involves: completion of an online self-assessment; verification of responses; feedback & reporting and development of recommendations. The QSA is completed at three levels of the system: LHD (n=19); Facility (n > 100) and clinical units (n >1,200). The external verification of the self-assessment data has demonstrated an accuracy rate of >97% since the program commencement. The CEC conducted a review to quantify how the LHDs were progressing with the implementation of the QSA State-wide recommendations. Each LHD rated the progress of each QSA recommendation using three mutually exclusive categories: a) Not Commenced; b) In Progress; and c) Fully Implemented.

Results: There were a total of 34 QSA state-wide recommendations made over the 3 years (2008-2010). 49.6% of these recommendations were considered 'Fully Implemented' by the LHDs. The annual results of 'Fully Implemented' state-wide recommendations were: 73% from 2007/2008; 42% from 2009 and 37% from 2010. These results indicate that it takes 3 to 4 years to fully implement the QSA recommendations. The State-wide recommendations with the lowest ‘fully implemented’ rate were (in descending order): Clinical Leadership Framework & Tools; Healthcare Associated Infections; Indwelling devices; Clinical Handover; and Medication safety. The factors influencing the implementation of a recommendation: a) time – the longer a LHD has had, the more likely a recommendation is to have been implemented: 73% 2007/2008 vs. 37% 2010; and b) Ease of implementation - Complaints against a clinician policy was not a complicated roll out vs. indwelling catheter care bundles (difficult). What makes a recommendation difficult to implement were: a) No framework e.g. Cleaning Audit tools; b) Auditing e.g.: laborious to monitor / audit Clinical Handover and c) Resource implications e.g. Staffing & Skill mix recommendation.

Conclusion: The strength of the QSA is that it provides LHDs with recommendations in a realistic timeframe. LHDs do not just use it as a ‘tick box’ exercise. The program identifies gaps that need to be addressed before accreditation. This improves patient outcomes and increases the chance of a successful survey outcome in each LHD.
A NOVEL, NATIONAL APPROACH TO BUILDING CAPACITY AND CAPABILITY IN HEALTHCARE QUALITY IMPROVEMENT IN A RESOURCE CONSTRANDED ENVIRONMENT

Gillian Walsh¹, Orla Mullally¹, David Vaughan¹, Peter Lachman¹,*
¹The Royal College of Physicians of Ireland, Dublin, Ireland

Objectives: To address unprecedented healthcare service challenges with contracting resources, support and participation of influential clinical leaders and healthcare professionals with improvement expertise are needed. The objective of this study is to evaluate the impact of a large scale, multifaceted, national training initiative called ‘the National QI Programme’ developed in Ireland to meet this need. The professional Colleges have been instrumental in the development and implementation of this programme and have been supported by the Quality and Patient Safety Directorate, Health Service Executive and the Irish Department of Health. This presentation will describe the collective impact of a number of parallel, mutually supporting initiatives designed to develop capacity and capability in QI, while driving improvement and delivered in the most cost effective manner possible.

Methods: The national rollout consists of a combination of comprehensive Diploma programmes, intensive hospital based programmes, north/south cross border collaborations (bringing together participants, expertise and resources from Northern and Southern Ireland), patient safety issue-specific collaborative and introductory modules for trainees. A network of QI graduates has been established to sustain engagement.

The training is based on 8 key learning themes: QI & the patient, QI theory, tools & skills, safety, flow & process management, changing culture, leading teams, healthcare value and spread & sustainability. Critically, the primary faculty members are medical professionals. The theoretical construct is supported by virtual inter-session coaching and the delivery of improvement projects. Project phases are integrated with learning objectives.

The key strategies adopted for this intervention are:
- Engagement of influential clinicians, especially consultants, through the professional colleges
- Direct intervention on strategic areas & alignment with priorities identified by funders
- Commitment to long term viability
- Establishment of critical mass of expertise locally and regionally

A mixed method evaluation is conducted on all instances of the training and informs improvements for each subsequent instance. The evaluation consists of a pre and post skills self-assessment, quantitative project outcomes, impact measures tracked over time and qualitative participant feedback.

Results:
- Significant change in healthcare improvement practice and attitudes
- Significant improvement in QI skills and knowledge
- Measurable improvement on several individual projects
- e.g. Increase day of surgery from 10% to 95% of all patients in 1 hospital,
- e.g. 60% reduction in asthma out-patient visits in 1 paediatric asthmatic clinic
- =10:1 return on investment through project cost savings
- High >77% self-reported intention to continue healthcare QI activities and training

Conclusion: Large scale national healthcare improvement training can be achieved cost effectively. Physicians can be engaged in healthcare improvement through involvement of the professional bodies. With appropriate training, a multidisciplinary approach and clinician engagement considerable improvements in healthcare quality and value can be achieved. Significant emphasis on cultural issues around change and improvement is needed in healthcare improvement training in this setting.
ENHANCING ACCESS OF HEALTH SERVICES FOR MOST VULNERABLE CHILDREN, THROUGH QUALITY IMPROVEMENT TECHNIQUE IN COMMUNITY SETTINGS: A CASE OF BAGAMOYO DISTRICT- TANZANIA

Flora P. Nyagawa 1,*, Kusekwa Sono 1, Jared Mussanga 1, Eveline Kamote 2
1University Research Co. LLC, 2Ministry of Health and Social Welfare, Dar es salaam, Tanzania, United Republic of Tanzania

Objectives: Tanzania’s Ministry of Health and Social Welfare led the development of the National Guidelines for Improving Quality of Care, Support, and Protection for Most Vulnerable Children (MVC) in Tanzania (2009). Implementation of the guidelines has been supported by several partner organisations and government agencies. In 2010, the USAID Health Care Improvement Project (HCI) started to work with implementing partners in rolling out the guidelines to different regions and implementing a community collaborative approach in Bagamoyo district to strengthen the capacity of community systems to provide care, support, and protection of most vulnerable children through the application of quality improvement methods as a demonstration site. The objective is to build capacity of community structures to increase coverage of vulnerable children with key services outlined in the guidelines.

Methods: In 2010 we conducted a baseline assessment to define gaps in quality of services delivered to vulnerable children in three wards of Dunda, Fukayose and KIWANGWA in Bagamoyo District. The baseline assessment was followed by advocacy meetings at the council level; orientation training of ward and village leaders and Most Vulnerable Children Committees (MVCC) as quality improvement (QI) teams. The MVCC were appointed community members who were responsible for identifying vulnerable children and ensuring that they received available services. The QI teams identified priority changes such as conducting home visits, updating MVC registers, having list of all MVC with their identified priority needs, mapping out stakeholders at community level, and preparing QI implementation plans. QI teams met monthly to share experiences on mobilising resources for the children and used data to determine whether tested changes yielded improvement. During these meetings they use a documentation tool to plan and document their success and challenges for sharing. Throughout the process, the QI teams were coached by council staff and ward extension officers to support and guide MVCC on the implementation of QI plans.

Results: After eighteen months of implementation of this collaborative, MVC access to health services for MVC improved i.e. access and use of insecticide treated nets improved from 15% in May 2011 to 89% by November 2012; the proportion of MVC over 5 years of age with community health funds increased from 0% in August 2011 to 58% by November 2012; MVC attending school regularly increased from 77% May 2011 to 85% November 2012 and MVC ages 0 – 5 years whose health cards/charts reflect normal growth rate for age increased from 35% in May to 100% by November 2012.

Some of the key interventions and activities that led to these improvements include the following:

- Monthly learning meetings to share and document priority changes
- MVC committees utilised data for action, e.g., supporting issuance of community health funds and distributing insecticide-treated bed nets
- Mobilising community members to support MVC and MVCCs

Conclusion: Engaging MVCCs in QI teams to apply and document quality standards is a promising strategy to enhance quality of health services that are provided to vulnerable children and their households. However, regular coaching, mentorship and supportive supervision are important factors to ensure that MVCCs/QI teams continue to provide quality health services to MVC. Working with local implementing partners has allowed the lessons from the work in the three wards of Bagamoyo to be scaled up to a larger intervention area.
THE EFFECT OF HEALTH PROMOTION PROGRAM INTERVENTION FOR HIGH RISK OF HYPERTENSIVE AND HYPERCHOLESTEROLEMIA IN MIDDLE AGED AND ELDERLY POPULATION

Meng-Ping Wu 1, Tsu-Chi Wang 2, Shu-Fang Vivienne Wu 3
1Department of Nursing, Taipei City Hospital, Yang Ming Branch, 2Department of Nursing, National Taipei University of Nursing and Health Sciences, 3Superintendent, Department of Nursing, Taipei City Hospital, Taipei, Taiwan

Objectives: To evaluate the effectiveness of a health promotion program targeting people who with high-risk of hypertension and hypercholesterolemia.

Methods: The study samples were selected from residents living in the Shilin District of Taipei City, Taiwan, aged from 50 to 70 year-old adults. All of them were physically diagnosed with high-risk of hypertension and hypercholesterolemia. We use Purposive Sampling and random assignment divided into two groups, experimental group and control group. We used a structured questionnaire as the study tool, the contents of the questionnaire including resident’s background, Chinese version Hypertension & High Cholesterol Management Self-Efficacy Scale Questionnaires; C-HCMSES, The Summary of Hypertension & High Cholesterol Self-Care Activities Questionnaires; SHSCSA, Chinese version the Perceived Therapeutic Efficacy Scale Questionnaires; C-PTES). The experimental group participants will be received a community-based health promotion program based on Bandura’s concept of self-efficacy and behaviour change. After assessing all the participant’s needs, interventional programs, based on community mobilisation, were implemented and measured. Participants completed assessments at the baseline and at a 6-month follow-up. The data of the test was analysed through SPSS version 18.0.

Results: Eighty-four participants (mean age=60.13±6.32) were evaluated throughout a 6-month study period. The results indicated that there was no change in triglyceride and LDL-cholesterol. However, the BMI (p=0.017), SBP (p<0.001), DBP (p<0.001), HDL-cholesterol (p=0.017), Self-Efficacy Scale (p=0.002), Self-Care Activities Questionnaires (p=0.014) and Perceived Therapeutic Efficacy Scale (p=0.023) had significant improvement between the baseline and the 6-month follow-up.

<table>
<thead>
<tr>
<th></th>
<th>Baseline Mean±SD</th>
<th>6-month follow-up Mean±SD</th>
<th>Differences Mean</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>24.49±3.06</td>
<td>24.17±3.13</td>
<td>0.33</td>
<td>2.49</td>
<td>0.017*</td>
</tr>
<tr>
<td>Systolic blood pressure</td>
<td>130.40±15.14</td>
<td>123.72±15.92</td>
<td>6.67</td>
<td>3.99</td>
<td>0.000***</td>
</tr>
<tr>
<td>Diastolic blood pressure</td>
<td>81.40±9.28</td>
<td>76.19±12.25</td>
<td>5.21</td>
<td>4.05</td>
<td>0.000***</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>132.98±55.17</td>
<td>121.88±69.24</td>
<td>11.09</td>
<td>1.41</td>
<td>0.166</td>
</tr>
<tr>
<td>HDL-cholesterol</td>
<td>55.98±13.11</td>
<td>59.26±17.19</td>
<td>-3.28</td>
<td>-2.49</td>
<td>0.017*</td>
</tr>
<tr>
<td>LDL-cholesterol</td>
<td>119.35±31.36</td>
<td>124.12±38.31</td>
<td>-4.77</td>
<td>-1.47</td>
<td>0.148</td>
</tr>
<tr>
<td>Self-Efficacy Scale</td>
<td>110.14±25.60</td>
<td>125.14±20.26</td>
<td>-15.00</td>
<td>-3.31</td>
<td>0.002**</td>
</tr>
<tr>
<td>Self-Care Activities Questionnaires</td>
<td>23.63±8.90</td>
<td>28.30±9.73</td>
<td>-4.67</td>
<td>-2.56</td>
<td>0.014*</td>
</tr>
<tr>
<td>Perceived Therapeutic Efficacy Scale</td>
<td>50.67±13.60</td>
<td>59.61±9.78</td>
<td>-8.94</td>
<td>-2.50</td>
<td>0.023*</td>
</tr>
</tbody>
</table>

Conclusion: This study was the first using reliable instruments to measure the effectiveness of the health promotion program based on the self-efficacy theory on people with high-risk of hypertension and hypercholesterolemia in Taiwan. The usage tended to have a positive effect on the participants’ self-confidence and helped them to maintain a higher level of both behavioural and physical health. Through promoting to the community, the program should have a good effect on common people but not constrained among chronic people or patients.
PATIENT CENTRED CARE – USING REAL TIME PATIENT EXPERIENCE TO CONFIRM THE VALUE OF A PARTNERSHIP APPROACH TO CARE AND TREATMENT

Joan Sheppard, Sandy Thomson

Objectives: Patient centred care is about a partnership approach to care planning, treatment and discharge involving the patient, family/carers and clinicians. Evidence suggests that this methodology results in increased adherence to management protocols, reduced morbidity and for patients higher levels of satisfaction. A key component of patient centred care is around communication and collaboration with the patient and/or carer rather than being clinician centric.

Methods: The Patient Experience Survey enables understanding of the views and perspectives of patients’ about the management of their care in a real time mode, rather than as part of post discharge satisfaction surveys which are more commonly used in health.

From an initial 10 questions there are now 14 questions used in this collaborative project in that has enabled the hospital’s to assess:

- The referral process including whether patient’s had a choice of hospital
- Recall of the consent process, and explanation of the risks, benefits and alternative options
- Recall of pre admission discussions covering preparation for hospital, medical history and any financial gaps
- The admission and discharge planning processes and involvement of the family/carer in these discussions
- Knowledge about the importance of hand hygiene including permission to ask all staff to wash their hands
- Recall of time out processes in theatre – patient identification and marking of site for surgery
- Management of pain and nausea in the recovery unit
- Satisfaction with post-operative management; overall satisfaction with level of care and communication
- That brochures and information provided were of benefit and could be understood; and finally
- What could we do better?

These questions can be completed by patients themselves, nursing staff from other areas, and trained volunteer consumer representatives.

Results: From a clinical governance perspective the recall of patients has provided assurance that systems are working well. The “real” time experience enables prompt action for emerging or actual problems and to provide feedback to patients that their suggestions have been listed to and actioned. In addition the questions cover a number of areas that would have been and still are subject to separate audit. Use of the tool has reduced the frequency of these individual audits as with the time to complete these.

Conclusion: The tool confirms that patients are informed, aware of their medical procedure, are able to communicate potential risks in relation to other medical conditions and they are contributing to safe care outcomes. This is evidenced by significantly reducing transfers to other hospitals for emergency management, reduced unplanned readmissions, reduced infection rates and overall higher levels of satisfaction. The Patient Experience Survey tool is a positive quality improvement strategy and supports the principles of patient centred care.
REPLICATION OF A NEW, EVIDENCE-BASED PREVENTATIVE HEALTH TRAINER SERVICE FOR PEOPLE AT RISK OF DEVELOPING TYPE 2 DIABETES

Anna Betzlbacher 1,*; Sarah Cotterill 2; Lucinda K. M. Summers 3
1NIHR CLAHRC for Greater Manchester, Salford Royal NHS Foundation Trust, 2Centre for Biostatistics, University of Manchester, 3Department of Endocrinology, Salford Royal NHS Foundation Trust, Salford, United Kingdom

Objectives: Randomised controlled trials have shown that type 2 diabetes is preventable by lifestyle modification in patients with impaired glucose tolerance (IGT). The NIHR Collaboration for Leadership in Applied Health Research and Care for Greater Manchester (GM CLAHRC) worked with NHS Bolton to translate this evidence into practice.

Following the success of the service in one locality, the GM CLAHRC supported and evaluated the replication of this service model to another health locality to see whether the model could achieve the same patient outcomes.

Methods: Working with NHS Bolton’s commissioners, GP surgeries and patients, a face-to-face service model was chosen to offer intensive and personalised lifestyle and behaviour change support, delivered by the existing, primary care-based Health Trainer (HT) service. The service was diversified to offer support to people with IGT. It was piloted and gradually adapted and spread to GP surgeries across Bolton. Feedback from patients and staff was used to continuously improve the service.

After embedding the service in Bolton, the same model was implemented in Ashton, Leigh & Wigan (ALW) utilising the existing HT service and learning’s from the first study; which meant that GM CLAHRC also worked with surgeries in validating IGT registers and identifying IGT patients. Both HT services are structured similarly with HTs working within and mainly receiving referrals from GP surgeries. Differences exist in the ethnic mix of the populations of Bolton and ALW and also in the training of HTs with Bolton’s HTs trained to take bloods and measure a patient’s blood pressure. In order to evaluate the outcomes of both services, patients’ weight, body mass index (BMI) and waist circumference (WC) were measured at baseline and at the end of the HT intervention, making use of data routinely collected in primary care.

Results: In Bolton, the first pilot study, a total of 80 participants were included in the initial evaluation with a mean baseline BMI of 31.0kg/m², mean weight of 87.0kg and mean WC of 105.3cm. After the six month intervention participants experienced a mean weight loss of 2.9kg (SD 4.5) (p<0.001), a mean reduction in BMI of 1.1kg/m² (SD 1.5) (p<0.001), and a mean WC (n=65) reduction of 3.1cm (SD 4.8) (p<0.001). In ALW, the second pilot study, a total of 77 patients were included in the evaluation with a mean baseline BMI of 32.3kg/m², mean weight of 89.8kg and mean WC of 107.6cm. Following the six month intervention, mean weight loss was 2.2kg (SD 3.5) (p<0.001), a 0.8kg/m² (SD 1.3) mean reduction in BMI (p<0.001) and a mean WC (n=60) reduced by 2.4cm (SD 4.8) (p<0.001). After the positive results of the pilot study, the Health Trainer service has spread to the whole of Bolton and, three years after the initial pilot, over 2500 IGT patients had attended an initial appointment with a HT. We are currently analysing this data.

Conclusion: Outcome data from both pilot studies suggest that patient outcomes are comparable to published studies and indicate that both local health economies and patients are benefiting from the Health Trainer service offered. Enrolment data from Bolton also indicates that the service is spreadable and can be run sustainably with a model embedded within primary care provision showing that this model could be adapted more widely. However, limitations would exist in spreading this model to HT services which are not based within primary care and where there is no strong engagement between the HT service provider and GP practices which has proven crucial in the spread within Bolton.
BARRIERS AND FACILITATORS OF INSTITUTIONALISATION OF QUALITY IMPROVEMENT IN NIGER
Maina A. Boucar 1,*, Astou Coly 2
1URC-CHS, Niamey, Niger, 2URC-CHS, Bethesda, United States

Objectives: To explore the extent, facilitators, and barriers of the institutionalisation of quality improvement in three regional health systems in Niger with varying levels of quality improvement (QI) experiences.

Methods: An observational cross-sectional study was conducted to assess 47 health facilities, some of which have been supported by the USAID Health Care Improvement Project (HCI). In addition to health providers, 47 hospital management teams, 8 district management teams and 3 regional management teams were interviewed. Information was collected on current improvement activities, barriers to and facilitators of improvement implementation, and the role of leadership. Two proxies for institutionalisation were explored: expansion of improvement activities to new services or professional groups and expansion to new technical domains not previously supported by implementation partners. Descriptive frequencies and percentages were calculated. Data from semi-structured interviews were analysed to assess factors that may have facilitated or hindered the process of institutionalisation.

Results: All health facilities in Tahoua (14) and Tillaberi (15) and nearly all health facilities in Maradi (17 out of 18) reported that they have had experience implementing improvement activities between 1993 and 2012. However, fewer than half (23 out of 47) stated that staff members were tasked with QI responsibilities. In addition, fewer than half the health facilities (19 out of 47) expanded QI activities initiated by partners to new services or categories of personnel but 68% of facilities reported having applied quality improvement in new technical domains not previously supported by implementation partners. As a result of these activities, they reported improvements in key clinical indicators, distribution of tasks, availability and continuity of service, service uptake and client satisfaction. Leadership at the community, facility, district, and regional levels was identified by key informants in all three regions as facilitating the implementation of QI in new technical domains. Expressions of leadership included technical support and encouragement, regular meetings to discuss problems encountered as well as financial and material support. Macro-level factors identified by key informants as hindering the institutionalisation of QI included lack of financial support, health personnel shortages and turnover, and absence of supervision. In addition, the insufficient documentation of changes implemented at the facility level, resistance to change (both among health personnel operating at the facility level but also clients) and lack of engagement by key stakeholders were reported as barriers to institutionalisation. Regional differences were reported with findings from Tahoua, the region with the longest history of QI, suggesting a higher level of institutionalisation.

Conclusion: Our analysis shows promising signs of institutionalisation of quality improvement in Niger and sheds light on drivers of the process. Findings also suggest that important barriers to institutionalisation exist and need to be addressed. More effort is particularly needed in leadership and assigning clear roles and responsibilities for QI. Although institutionalisation at the facility and regional is important, only institutionalisation at the central level can ensure the sustainability of gains achieved at lower levels.
HOW DO STAFF PERCEIVE A NEWLY INTRODUCED ACCREDITATION PROGRAM?
Muna Alkhazzaz¹ ²  *, Amir A. Hassan¹, Vicki Doyle¹
¹Liverpool School of Tropical Medicine, Liverpool, United Kingdom, ²Ministry of Health, Kuwait, Kuwait

Objectives: Kuwait has achieved a milestone in quality improvement by developing a hospital accreditation program that is currently being rolled-out country wide. As of yet, no studies have been conducted locally to assess the effectiveness and impact of this program. This study aims to assess the impact of Kuwait’s national accreditation program on quality improvement in public hospitals as perceived by health care professionals.

Methods: A survey was conducted in 4 public hospitals in Kuwait to assess staff perceptions of improved quality of care and services within their organisations as a result of introducing hospital accreditation. A range of criteria was used to assess staff perceptions based on the Malcolm Baldrige National Quality Award (MBNQA). The survey tool included nine scales and subscales rated on a five-point Likert scale. The 4 participating hospitals were divided into 2 groups. Two hospitals with minimal quality improvement experience as they were in the initial phases of preparing for accreditation (units with immature accreditation). Two hospitals that had participated in the pilot phase of the program and had already been awarded accreditation in the first national accreditation survey-2012 (Units with mature accreditation). The questionnaire was distributed to 12% of all health care professionals working in the 4 hospitals of which an 86% response rate was achieved, representing 10.5% (n=574) of all health care professionals working within the 4 participating hospitals. The groups were compared to measure differences in staff perceptions on the effectiveness and results of the accreditation program.

Results: Survey results highlighted marked differences between the 2 groups (refer Table).

<table>
<thead>
<tr>
<th>Leadership</th>
<th>Strategic Planning</th>
<th>Customer Focus</th>
<th>Measurement &amp; Knowledge Management</th>
<th>Staff Satisfaction</th>
<th>Staff Development</th>
<th>Operations Focus</th>
<th>Quality Results</th>
<th>Accreditation Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units with mature accreditation</td>
<td>3.90</td>
<td>3.82</td>
<td>3.44</td>
<td>3.53</td>
<td>3.42</td>
<td>3.67</td>
<td>3.79</td>
<td>3.46</td>
</tr>
<tr>
<td>Units with immature accreditation</td>
<td>3.03</td>
<td>3.23</td>
<td>2.76</td>
<td>2.62</td>
<td>2.86</td>
<td>3.02</td>
<td>3.03</td>
<td>2.74</td>
</tr>
</tbody>
</table>

(1= strongly disagree, 5= strongly agree)

Staff, working in hospitals with a mature accreditation program ranked all MBNQA criteria higher than those working in hospitals with the immature accreditation program in place; however, both groups recognised the benefits of implementing an accreditation program.

Additional data and further analysis will be presented at the conference.

Conclusion: Assessing improvements in the quality and safety of health care is not an easy task. In any quality improvement program, it is important to measure staff perceptions about program implementation and its benefits; as the current literature supports the argument that staff involvement is a key enabler for improving quality and safety in health care.

Globally there has been considerable progress in implementing quality improvement strategies; however there is still limited and contested evidence supporting the effectiveness of hospital accreditation programs. This study in Kuwait suggests that hospital accreditation is a good strategy for improving quality of care, but it needs enough time to mature, as well as involvement and buy-in from staff in order to achieve its goals. Further research will be conducted after full program implementation to better assess the impact of accreditation on quality improvement.
CLINICAL GUIDELINES: PERCEPTION AND USE IN AFGHAN PAEDIATRIC AND OBSTETRIC HOSPITALS
Hamish Graham 1, Mariam Tokhi 1, Ahmed S. Salehi 2, Anbrasi Edward 1,*  
1International Health, JOHNS HOPKINS UNIVERSITY, Baltimore, United States, 2Health Economics and Finance, Ministry of Public Health, Kabul, Afghanistan

Objectives: The role of evidence-based clinical guidelines is attracting increasing attention in Afghanistan as it seeks to strengthen its health system after decades of conflict; however there is little data on how they are used at the hospital level and how clinicians view them. The objective of this qualitative study was to determine the availability, use and perceived value of paediatric and obstetric clinical guidelines in Afghan national hospitals, and identify factors that will enable their successful implementation.

Methods: Five national obstetric and paediatric hospitals, one private hospital, and one provincial hospital in Kabul were selected purposively. Twenty-two semi-structured interviews were conducted with small groups of clinicians (paediatricians, paediatric trainees, paediatric nurses, obstetricians, obstetric trainees, and midwives) in January 2013. A total of 56 clinicians were interviewed on the types of resources used to assist clinical decision making, the availability and use of clinical guidelines, the perceived value and limitations of clinical guidelines, and barriers and facilitating factors for clinical guideline implementation. Indexing and coding of the data was used to identify themes.

Results: In paediatric national hospitals six clinical guidelines (or sets of clinical guidelines) were identified, only two of which were readily available and utilised within a single institution. Implementation of paediatric guidelines is low, despite clinicians reporting strong appreciation for the importance of clinical guidelines and a desire for more. In obstetric national hospitals there is greater availability and use of clinical guidelines, and a stronger appreciation of their role in improving quality of care. Two sets of obstetric guidelines were identified, one of which was widely available and utilised at all the study sites. In both paediatric and obstetric contexts, guidelines are generally regarded as abbreviated textbooks and rarely used ‘on the job’ (unless adapted into job aids), and are primarily valued for the training opportunities they bring with them. Six factors were identified as particularly crucial for successful implementation: clinician familiarity with and involvement in guideline development; inclusion in pre-service and specialty curriculum; formal endorsement by the Ministry of Public Health; multi-disciplinary guideline-specific in-service training; availability in the form of job aids; and ability to deliver positive outcomes that are visible to clinicians. A number of additional influencing factors were also identified, including barriers that were: guideline-specific; attitudinal; and structural (both at the institutional and broader health system level).

Conclusion: This study has important implications for the Afghan health ministry and its new Clinical Guidelines unit, particularly in the face of limited training opportunities for clinicians and reductions in external funding. It identifies key factors that influence the successful implementation of evidence-based clinical guidelines. Furthermore, it suggests that barriers stemming from lack of clinician knowledge, negative attitudes and structural deficiencies may be overcome using a participatory approach to guideline development, training and implementation. This study builds on literature on clinical guideline implementation in well-resourced settings, with findings relevant to other low-resource or post-conflict settings.
PROMOTING CULTURE OF SAFETY THROUGH THE IMPLEMENTATION OF A STANDARDISED PEER REVIEW PROCESS
Martin Reznek 1,*, Bruce A. Barton 2
1Department of Emergency Medicine, 2Department of Quantitative Health Sciences, University of Massachusetts Medical School, Worcester, United States

Objectives: Establishing an organisational culture of safety that is “just”- non-punitive, “reporting” – safe to report errors, and “learning” - eager to fix errors is crucial for medical error reduction. The objective of this study was to evaluate the effectiveness of an Emergency Department (ED) peer review (PR) process in promoting culture of safety.

Methods: A systematic, objective, non-punitive PR process was implemented to improve the identification and analysis of medical errors. All concerns of care (COCs) submitted to the ED were evaluated via the process. If a preliminary review of a COC could not rule out error with certainty, the involved practitioners were required to submit feedback related to the case. The feedback and medical records were de-identified, and a peer review committee (PRC) reviewed the case for systems and practitioner errors. The PRC was open to all ED physicians and residents, but eight board-certified physicians attended regularly to ensure accuracy and consistency. Timely feedback was given to reporters, practitioners and ED and hospital staff in general when appropriate. The PR process’ role and outcomes were regularly emphasised to staff.

A two-part study evaluated the PR implementation. In Part A, an interrupted time series (ITS) analysis evaluated the frequency of COCs submitted by healthcare providers (HCPs). Within the ITS analysis, fitted time series model curves were calculated for monthly COCs for four HCP groups (Table 1). OP served as a control because unlike the other groups, OP HCPs worked outside the hospital and were not exposed to the PR process. A standard t-test was used to test each regression parameter for a significant difference from zero, including the rate of change in reporting. In Part B, a survey including “yes, no” and Likert-type questions evaluated ED physician perceptions of the PRC’s effectiveness in identifying medical errors and its educational value.

Results: Part A - HCPs submitted 314 concerns of care over 30 months (Table 1). Parameters for HCP reporting prior to and immediately following implementation were not statistically significant. However, over the 23-month post-implementation period, the reporting frequency of the Self, EP and HP groups increased significantly compared to OP (p=0.0019, p=0.0025 and p<0.0001).

Part B – Following the PR implementation, subject completed 221 surveys (82.3% response rate) for 22 PRC meetings. 100% of the time, subjects reported the PR process met the objectives of identifying errors and improving understanding of system barriers to quality. The reported the educational value of the process to be 4.97 (5: Excellent, 1: Poor; Standard deviation 0.17).

Table 1: HCP groups and their COC submissions.

<table>
<thead>
<tr>
<th>HCP group</th>
<th>Pre-intervention (7 months)</th>
<th>Post-intervention (23 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self - ED practitioner involved in the care when the perceived management concern occurred</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
<td>ED - ED practitioner not involved in the care when the perceived management concern occurred</td>
<td>7</td>
<td>91</td>
</tr>
<tr>
<td>HP – Non-ED practitioner within the hospital</td>
<td>14</td>
<td>125</td>
</tr>
<tr>
<td>OP - Practitioner from outside the hospital</td>
<td>3</td>
<td>16</td>
</tr>
</tbody>
</table>

Conclusion: Despite the importance of culture of safety in reducing medical errors, objective reports of specific implementations that result in culture of safety improvement are extremely rare, and to our knowledge, this is the first of its kind in emergency medicine. ED physicians found the PR process in this study to be highly effective, and its implementation led to increased reporting of COCs over time. These results strongly suggest that the implementation of a systematic, objective and non-punitive PR process that provides timely feedback can lead to an improved culture of safety.
THE EPIDEMIOLOGY OF MEDICATION ERRORS IN THE NEONATAL INTENSIVE CARE UNITS IN JAPAN: THE JADE STUDY
Mio Sakuma 1,*, Yoshinori Ohta 2, Hiroyuki Ida 3, Takeshi Morimoto 2
1Hyogo College of Medicine, Nishinomiya, Japan, 2Department of internal medicine, Hyogo College of Medicine, Nishinomiya, 3Department of Paediatrics, Jikei University School of Medicine, Tokyo, Japan

Objectives: To assess the incidence and the characteristics of medication errors (MEs) at the neonatal intensive care units (NICUs).

Methods: We conducted a retrospective cohort study at the NICUs of two tertiary care hospitals in Japan. Trained research nurses and a physician reviewed all medical charts, incident reports and reconciliations from pharmacy to identify suspected MEs and ADEs. MEs are defined as errors which occurred at any step of the medication use process. ADEs are injuries that result from the use of a drug. Some MEs are associated with ADEs, which are preventable ADEs, while some have significant potentials for injuring a patient and are considered as potential ADEs. Potential ADEs are either intercepted before reaching ADEs or not intercepted but do not happen to result in ADEs. After those events are collected, physician reviewers independently evaluated them and classified them as MEs, potential ADEs, ADEs or exclusions. Physician reviewers assessed the error stage of MEs in addition to its preventability, and rated ADEs and potential ADEs according to the severity of (potential) injury. We used the methodology which had been validated and applied to both adult and paediatric settings1-3.

Results: This study included a total of 169 patients with 4214 patient-days. Ninety three of them were male (55%). The mean gestational age was 36 (weeks) and 72 (43%) were low birth weight infants (birth weight <2500g). We identified 148 MEs (35.1 MEs per 1000 patient days) and 60 patients (36%) accounted for these 148 MEs. Among these 148 MEs, 18 (12%) was intercepted before reaching the patients and the rest 130 (88%) were not. The most common stage for MEs was physician ordering (89%), followed by monitoring (11%). The most frequent drugs involved in MEs were laxatives (71%), electrolytes and fluids (14%), diuretics (4%), and anti-seizures (3%). Among MEs, 2 (1.4%) resulted in ADEs which were considered preventable ADEs, and 110 (74%) were PADEs. Preventable ADEs included a tachycardia related to overdose of theophylline and a renal failure related to overdose of diuretics. Those severities were both serious. Of the 110 PADEs, 13 (12%) were intercepted while 97 (88%) were not. Seventeen per cent of all PADEs were potentially serious and 83 % were potentially significant.

Conclusion: Medication errors were common in the NICU settings and 66% of them resulted in either ADEs or non-intercepted PADEs. Strategies to intervene MEs associated with serious ADEs and PADEs should improve patient safety in neonates at the NICUs.

References:
1. Morimoto T. Qual Saf Health Care, 2004
PATIENT SAFETY RULES IN OPERATING ROOM: EXPLORING RULE-RELATED FACTORS ASSOCIATED WITH LEVELS OF COMPLIANCE

Anthony Vacher 1,2, Julie Trichereau 1,2, Jean-Claude Ardouin 1, Yves Auroy 3

1Institut de recherche biomédicale des armées, Brétigny sur Orge, 2Centre d'épidémiologie et de santé publique des armées, Saint Mandé, 3Direction centrale du service de santé des armées, Vincennes, France

Objectives: Operating room team members are expected to comply with an increasing number of rules (guidelines, protocols, recommendations) generated by numerous authorities at different level of the healthcare organisation. This large number of rules states the problem of their compliance, particularly for those introduced in order to improve patient safety. Too often, approaches witch deal with this safety concern focused mainly on healthcare worker behaviours and not on the relevance of the rule. This cross-sectional explores the characteristics of patient safety rules related to their levels of compliance.

Methods: Twenty-five patient safety rules extracted from national guidelines and applying to all members of the operating team – surgeons, anaesthesiists, nurses and anaesthetist nurses – were assessed by 130 voluntary operating room members from eight healthcare facilities in an anonymous and self-administered questionnaire. For each rule, participants were asked to declare their knowledge of the rule and the compliance of their colleagues. They also had to assess several characteristics potentially influencing compliance on an agreement scale: usefulness (for patient safety, for patient outcome and for protection in case of litigation), ease of use and time saved by applying the rule, blame and rewards, conflict with other rules, priority given to safety in case of safety/production conflict, existing alternative practices, resources (human, material and financial) needed for the compliance, and feedback provided to operating room members. A multinomial multilevel regression was carried out to identify rules characteristics associated with levels of compliance declared by participants for their colleagues (low, from never to sometimes; moderate, from often to very often; high, always).

Results: Respondents were operating room nurses (n = 29), surgeons (n = 22), anaesthetist (n = 38) and anaesthetist nurses (n = 41). In the multivariate analysis, characteristics of the rule associated with high risk of both moderate and low compliance were: lack of usefulness for patient safety [odds ratio (OR) = 1.91 and OR = 2.79 respectively], no professional blame (OR = 2.40 and OR = 2.62) and no informal blame (OR = 1.43 and OR = 4.46) for non-compliance, priority given to production in case of safety/production conflict (OR = 2.34 and OR = 4.33), existing alternative practices (OR = 3.53 and OR = 8.28), human costs needed for complying with the rule (OR = 1.96 and OR = 5.00), lack of financial cost for complying with the rule (OR = 2.29 and OR = 5.76) and lack of feedback provided to operating room members (OR = 1.63 and OR = 2.23). Characteristics of the rule only associated with high risk of low compliance were: lack of knowledge of the rule (OR = 6.17), lack of usefulness in case of litigation (OR = 2.69) and conflict with other rules (OR = 2.42). No significant relationships were observed between low and moderate levels of compliance and individual characteristics (gender, age, experience and profession).

Conclusion: These results highlight a set of factors to be assessed by operating room members, during the design process of any new patient safety rule, in order to check its relevance. This assessment could be useful to change factors underlying non-compliance or to screen for irrelevant rules before their introduction in operating theatre.
PAY FOR PERFORMANCE IN THE U.S.: THE TRANSITION FROM PROMISING CONCEPTS TO NATIONAL PROGRESS

Leslie M. Greenwald 1,*
²DHSSPR, RTI International, Research Triangle Park, NC, United States

Objectives: Concepts of Pay-for-Performance, Value-Based Purchasing, Patient-Centred Medical Homes, Gain sharing and other approaches are a central focus of the Affordable Care Act's (otherwise known as "Obama Care") methods for reducing costs and improving quality of care in the United States. Many of these concepts were originally developed and tested as Medicare program pilot projects and demonstrations. This presentation will examine how these initial pilots and demonstrations have been applied to current larger national programs -- some successfully, others less so. The presentation will specifically focus on the factors that may influence the degree of success.

Methods: The presentation is based on review of demonstration and pilot program evaluations, and subsequent comparisons to current ACA mandated pay-for-performance, value-based purchasing, gain sharing and other projects. Methods used to assess "success" of projects includes findings from focus groups and site visits, trend performance (often relying on difference-in-difference techniques) on expenditures, utilisation and quality of care monitoring. Specific topics considered include physician engagement, availability of appropriate data sources, ability of practices to accept and manage financial risk, and administrative cost/burden.

Results: The success in translating promising conceptual approaches to simultaneously lower health care costs while maintaining/improving quality of care is mixed at this preliminary point. Some of the most promising pay for performance models have faced some difficulties in translation beyond a select group of initial health care providers who pioneered the models. Some models have not achieved the level of physician engagement necessary to impact costs and utilisation. Others have suffered from costly and complex data reporting that is difficult to understand and burdensome to providers. Rewards to participating providers are, in some cases, very small. In other cases, the ability of many practices to accept and managed potentially significant financial risk is a growing concern.

Conclusion: Initial evidence of large impacts on quality of care and cost reductions have been limited. While there is no evidence to date that these types of models negatively impact quality of care, there is also limited evidence that they are able to consistently achieve reductions in costs, utilisation and health care expenditures.
THE EFFECTS OF A TRAINING PROGRAM ON THE HEALTH PROFESSIONALS FOR MATERNAL AND NEWBORN CARE IN THE KINGDOM OF SWAZILAND

Chun-chih Chung¹*, Geng-Chang Yeh², Su-Chen Kou³, Chung-Ming Chen²
¹Bussiness Development, ²Pediatric Department, Taipei Medical University Hospital, ³College of Nursing, National Taipei University of Nursing and Health Sciences, Taipei, Taiwan

Objectives: The training program under cooperation between Taiwan and Ministry of Health Swaziland, aims to improve the ability of health professionals for maternal and new-born care in the Kingdom of Swaziland.

Methods: In August 2012, the 6 experts from Taiwan who are proficient in maternal and new-born care implemented a two-day training program in Swaziland. 55 Swazi participants came from 7 hospitals, 2 clinics, 1 health unit and 1 emergency response unit, which consisted of 12 physicians, 43 nurses and midwives. Courses included “Emergency and Intensive Neonatal Care” and “Maternal Care and Midwifery” using simulative teaching models as teaching aids in class. The modified curriculums derived from the AHA/AAP Neonatal Resuscitation Manual and WHO Midwifery training program. A written test extracted from the standard test contained in the AHA/AAP Neonatal Resuscitation Manual (6th Edition) was given to participants before and after the NRP course, as well as the midwifery written test designed by Taiwan’s expert team.

Results: The results show that the “Emergency and Intensive Neonatal Care” post-test score was 88.3 points which was higher than pre-test score 66.7 points, indicating 21.6 points raised; “Maternal Care and Midwifery” post-test score was 66.8 points, indicating 15.3 points raised, compared with pre-test of 51.5 points. The overall satisfaction scores were 4.7 and 4.8 respectively.

Conclusion: The average test scores after the training program were significantly raised. Two weeks after the program, the Taiwan expert team received a letter from a midwife in Swaziland, who was one of participants addressed that this course helped her successfully save an Apgar score 2/10 new-borns on Aug 19. The post-test scores and this successful case represented that the training program has efficiently helped to enhance both the ability and confidence of health professionals for maternal and new-born care in the Kingdom of Swaziland.
TESTING ACCELERATED EXPERIENCE-BASED CO-DESIGN: A QUALITATIVE STUDY OF USING A NATIONAL ARCHIVE OF FILMED PATIENT EXPERIENCE INTERVIEWS TO PROMOTE RAPID PATIENT-CENTRED QUALITY IMPROVEMENT

Louise Locock 1*, Glenn Robert 2, Sonia Vougiokalou 2, Annette Boaz 3

1University of Oxford, Oxford, 2King's College London, 3St George's Medical School, London, United Kingdom

Objectives:
To use a national video archive of patient experience narratives to develop, test and evaluate a rapid patient-centred quality improvement approach ('Accelerated Experience-based Co-design' or AEBCD). The intervention was an adapted form of Experience-based Co-design (EBCD), a participatory action research approach in which patients and staff work together to identify and implement improvements. The intervention retained all six components of EBCD, but used national ‘trigger’ films rather than locally collected patient narratives, shortened the time frame and employed local facilitators in order to halve the overall cycle from 12 to 6 months, allowing implementation in two clinical pathways rather than one. We observed how this affected the process and outcomes of the intervention.

Methods: An ethnographic process evaluation was conducted over a 12 month period, including 155 hours of observations, 31 interviews with participants, 229 questionnaires, as well as cost and documentary analysis (including comparison with previous EBCD evaluation reports). We tested the ‘trigger’ films alongside techniques that are part of the existing EBCD approach to stimulate quality improvement work led by staff, patients and carers in two Intensive Care Units (ICU1 & ICU2) and two lung cancer pathways (LC1 & LC2) in the south of England.

Results: A total of 96 staff members and 63 patients participated in the four AEBCD projects. The accelerated approach proved readily acceptable to staff and patients; using films of national rather than local narratives did not adversely affect staff engagement, and may in some cases have made the process less threatening or challenging. Local patients felt the national films generally reflected important themes although a minority felt they were more negative than their own personal experience. However, they served their purpose as a ‘trigger’ to discussion, and the consequent 69 co-design meetings led to 48 quality improvements across the four pathways were very similar in nature to those pursued in EBCD projects but achieved at a reduced cost. These included 14 small scale changes and the redesign of 29 processes within the pathway, four processes between pathways and one process between Hospital Trusts. The initial accelerated phase of the intervention did carry a ‘cost’ in that it involved a heavy work load and intensive period of activity for the local facilitators, but also brought benefits in terms of staff development and local capacity-building. In comparison to previous EBCD projects, similarities were observed in the nature of improvements which focused on patient experience and service quality rather than patient safety; and priority areas such as patient-doctor communication, information, relational aspects of care and consultation spaces. Further implementation plans and follow-up projects are in place across all 4 sites.

Conclusion: AEBCD delivered an accelerated version of EBCD, generating a comparable set of quality improvements. The national film acted as an effective trigger to the co-design process. Furthermore, as in previous EBCD projects, the approach was subsequently adopted in other clinical pathways in the participating hospitals. Based on the results of the evaluation, Accelerated EBCD can be recommended as a rigorous and effective patient-centred quality improvement approach.

References: Bate SP and Robert G. (2007) Bringing user experience to health care improvement: the concepts, methods and practices of experience-based design. Oxford; Radcliffe Publishing
TRANSFORMING COMPLEX HEALTH SYSTEMS - LESSONS FROM GREAT ORMOND STREET CHILDREN’S HOSPITAL

Peter I. Lachman 1,*, Katharine Goldthorpe 2
1Medical Director, 2Quaity and Safety, Great Ormond Street Hospital, London, United Kingdom

Objectives: In 2007 Great Ormond Street hospital commenced on a transformational journey with the aim of achieving Zero Harm No Waits and No waste as high-level goals. The fundamental purpose of the programme is to develop a construct of continuous quality improvement with a focus in each of the three areas. Over the past 6 years the organisation has invested in a quality improvement programme based on the Science of Improvement. The journey has had both successes and failures, all of which provide key learning points for the organisation and for those interested in organisational change. This presentation will take an in-depth look at the key factors that have led to the considerable changes made so far. In the first year the structure for improvement was established. Improvement facilitators and data analysts specialising in data for improvement were recruited and first started in a central team. In the 3rd year the improvement facilitators were embedded in the 5 Clinical Units. In the 5th year Consultants (doctors) were appointed as Patient Safety Officers and Quality Improvement Leads in each of the Units. Programmes to build capacity have been developed from the start. Training programmes were established to deliver the training across the organisation. Zero harm has concentrated on Hospital Acquired Infections, medication harm, tissue viability, surgical and procedure checklists etc. No Waits has concentrated on flow both in hospital with a focus on and outpatients using advanced access theory. No waste is a by-product of the programme. The success is based on a firm belief in the theory and method, working in micro-systems and a rigorous measurement system.

Methods: The theory upon which the intervention is based is the Science of Improvement using Profound Knowledge as described by Deming. The method used is the Model for Improvement and the place where ideas are tested and implemented is the clinical Micro-systems. The measurement system is the Statistical Process Control Chart where data is presented for improvement and not for judgement.

Results: The results are numerous and we will present some successes and some programmes that did not turn out, as we would have wanted. These could not be inserted here.

Key successes have been in the understanding of harm, a high level dashboard with innovative Harm indices. Other successes have been in the improvement of flow and decreases in CVL infections, Medication error and harm and tissue viability. There are numerous examples to be provided at the presentation.

Conclusion: Conclusion: There are key lessons from our experience.

1. A theory of change and a method for improvement is vital.
2. Clinical professions respond in different ways and involvement of doctors is challenging.
3. Distributive leadership ensures buy-in at the front line.
4. Investment in improvement has long-term benefits and helps to build sustainable change.
5. This presentation could be given in a 45 minute session.

References: The programme is based on the theory of Deming - Profound Knowledge; the method of the Improvement Guide (Langley et al) as well as writings from Dartmouth on microsystems.
THE AGING OF POPULATION AND PHYSICIAN MAL-DISTRIBUTION: A LONGITUDINAL STUDY IN JAPAN

Kunichika Matsumoto ¹,*, Kanako Seto ¹, Takefumi Kitazawa ¹, Tomonori Hasegawa ¹

¹Social Medicine, TOHO UNIVERSITY, Tokyo, Japan

Objectives: Recently the aging of Japan’s population has been advancing remarkably. And the demand for medical services has been increasing. Because the aging speed is unequal across areas, some areas may face sudden increase of the demand and the supply-demand mismatch of physicians. The purpose of this study is to measure geographical mal-distribution of physicians in Japan, taking the effect of rapid aging into account.

Methods: We extracted the number of physicians classified by municipal bodies (n=1,865) and the secondary medical areas (n=348) from ‘Survey of Physicians, Dentists and Pharmacists’. A secondary medical area is defined by the Medical Service Law as a local unit which covers all general medical services except advanced and specialised medical services. And we calculated Gini Coefficient using both cumulative percentage of physicians and the population in each of municipal bodies and the secondary medical areas. Since many municipal bodies (more than 1500) have merged into others during the past 2 decades, we readjusted the numbers of both physicians and the population in each of years according to the 2010 boundaries. And we calculated the modified Gini Coefficient using ‘weighted population’ which reflects the demand for medical services. ‘Weighted population’ was calculated by summing up population ages 0-64 multiplied by 1, population ages 65-74 multiplied by 3, and population ages 75 over multiplied by 5 according to the medical expenses per capita by age groups.

Results: Results: Gini Coefficient decreased to 2002 and has been stable in later years for both municipal body data and the secondary medical area data. But the modified Gini Coefficient has been higher the original Gini Coefficient consistently, and has been increasing from 2002.

Table: Gini Coefficient of geographic mal-distribution of physicians in Japan

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>municipal bodies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gini Coefficient</td>
<td>0.23</td>
<td>0.23</td>
<td>0.22</td>
<td>0.23</td>
<td>0.22</td>
<td>0.23</td>
<td>0.23</td>
<td>0.22</td>
</tr>
<tr>
<td>modified Gini Coefficient</td>
<td>0.25</td>
<td>0.25</td>
<td>0.24</td>
<td>0.24</td>
<td>0.24</td>
<td>0.24</td>
<td>0.25</td>
<td>0.24</td>
</tr>
<tr>
<td>the secondary medical areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gini Coefficient</td>
<td>0.15</td>
<td>0.15</td>
<td>0.14</td>
<td>0.14</td>
<td>0.13</td>
<td>0.14</td>
<td>0.14</td>
<td>0.13</td>
</tr>
<tr>
<td>modified Gini Coefficient</td>
<td>0.17</td>
<td>0.17</td>
<td>0.16</td>
<td>0.16</td>
<td>0.16</td>
<td>0.17</td>
<td>0.17</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Conclusion: Our analysis showed geographic mal-distribution of physicians become higher if we take the increasing demand of elderly for medical service into consideration. It suggested that the rapid aging might worsen the situation. Medical resource distribution policies should consider the change of demand resulting from rapid aging.
**REINFORCED QUALITY HEALTHCARE THROUGH NATION-WIDE HOSPITAL ACCREDITATION IN TAIWAN**

Jiin-Haur Chuang ¹*, Hui-Chin Wang ², Hsi-Chu Yang ², Jie-Yih Lin ²

¹Council for Quality Health Care, ²Hospital Administration, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

**Objectives:** Quality healthcare is the prime goal that any hospital administrator would like to continuously pursue throughout his or her career. In Taiwan, accreditation of teaching hospitals started in 1978 and grading of the hospital after accreditation that affected the payment to the hospital started in 1988. In last few years, the policy of hospital accreditation placed on the quality healthcare and patient safety. We examine the outcome of such a policy on the performance of our hospital.

**Methods:** In Taiwan, accreditation of quality in health care is taken place from local hospitals to medical centers every four years. The reviewers require 2.5 to 3 days to review the performance of the hospital. They will trace the data in the last three years. There are nine chapters that cover the issues from patient and family rights, management of quality and patient safety, access to care, special healthcare delivery service, safe medication management, anaesthesia and operation, infection control, laboratory and facility safety and continuity of care after discharge.

**Results:** Our hospital is a tertiary care centre with more than 2,700 available beds. Prior to scrutiny of the external evaluation, we evaluated our data and found at least 6 quotable achievements. The reports to the Patient Safety Report System increased from 1,082 in 2010 to 1,202 in 2012. There was a sharp decrease of the use of femoral vein for CVP from 74% to 6% after introduction of bundle intervention in MICU. There was an improvement of BMI from 29.7 kg/m² to 27.8 kg/m² in patients with psychiatric disorders, a drop in error of blood preparation from 7 in 2011 to 1 in 2012, a 73% decrease of the use of fluoroquinolone in Urological Clinic, as well as a decrease of needle stick injuries in ER from 14.3% in 2009 to 3.8% in 2011 after adoption of safer needle devices.

**Conclusion:** Our findings indicate that quality healthcare can be promoted in many respects through nation-wide periodical hospital accreditation that focuses on quality in health care.

**Disclosure of Interest:** None Declared
CVDecide Shared Decision Support Tool for Primary Prevention of Cardiovascular Disease: Feasibility Study and Implementation Plans

L Penn1,*, J Colquhoun1, M Lambert2, R G Thomson1

1On behalf of the CVDecide study group, Newcastle University, Newcastle upon Tyne, 2NHS, South of Tyne and Wear, United Kingdom

Objectives:
Cardiovascular disease (CVD) is a major cause of preventable morbidity and mortality. The UK NHS Health Checks primary prevention programme aims to detect and treat people at high risk of CVD, kidney disease and diabetes. A key component is effective, personalised CVD risk communication. This is challenging as people may have several modifiable risk factors. Decision aids promote shared decision making (SDM), where health professionals and patients discuss options and make decisions together, and help people to make informed choices consistent with their values. CVDecide is a computer-based decision aid, iteratively designed and developed to facilitate risk communication and SDM

We conducted a feasibility study to: assess the utility of CVDecide in clinical consultations on CVD primary prevention from the perspective of clinicians and patients; determine the likely impact on decision making and patients’ behavioural intentions; and develop plans for service implementation.

Methods:
CVDecide includes: evidence based data on CVD risk predictive equations; the effectiveness of lifestyle and pharmacological interventions and any adverse effects; and pictographic risk presentation for effective communication. The software was iteratively tested for usability with health professionals and patients. The feasibility study involved investigating health professionals’ and patients’ use of CVDecide together in clinical consultations. Quantitative data from the tool-log included patient demographics, baseline risk, tool usage and interventions discussed. Immediately before and after each clinic, patients completed questionnaires to assess: decision preference (using the control preference scale), deliberation (using the Deliberate scale), and intention and perceived behavioural control. For qualitative process evaluation we undertook individual semi-structured interviews with patients and health professionals. We considered: training and support needs, tool usability and suggestions for further refinement.

Results of the feasibility study were used to refine CVDecide and develop an evaluation protocol for service implementation across North-East England.

Results:
The feasibility study involved 3 practices, 6 health care practitioners and 24 patients. Consultation durations were 20-30 minutes. The time the tool interface was open ranged from 1 to 19 minutes with a mean (for all patients) of 4.7 minutes. Quantitative analysis pre/post consultation showed that for patients: decision preference remained mostly unchanged, deliberation showed increased readiness for decision making, and there was greater intention towards beneficial lifestyle change with increase in perceived behavioural control following the consultation.

Both patients and practitioners found the tool valuable and particularly commented on the utility to support lifestyle discussion, which provided a cue to action for some patients. Suggested improvements included embedded completion of an action plan and capacity to print a consultation summary.

Conclusion:
CVDecide provides a technically intuitive, user-friendly platform for shared decision making in the context of CVD risk reduction. Pilot testing suggests that use of CVDecide will lead to greater patient engagement with their care and may result in increased intention towards lifestyle change with respect to CVD risk reduction. Implementation with formative evaluation is underway.
EVALUATION OF THE FIRST COMPLETED ACCREDITATION CYCLE IN DANISH HOSPITALS
Carsten Engel 1, Katrine A. Nielsen 1, Charlotte Ibsen 1, Anne Mette Falstie-Jensen 1
1IKAS - Danish Institute for Quality and Accreditation in Healthcare, Aarhus N, Denmark

Objectives: The purpose of the evaluation was to obtain the views of hospitals on their accreditation experience. Subsequently this information was used to modify the accreditation programme in a number of ways.

Methods: From May 2010 to December 2012 the first cycle of hospital accreditation according to The Danish Healthcare Quality Programme (DDKM) was completed, encompassing 75 hospitals (all public and all major private hospitals in Denmark).

After the two first hospital surveys, a semi-structured interview was conducted with each hospital management. Based on this, a comprehensive questionnaire was designed and sent to hospital management’s after all subsequent surveys. In 2011 a somewhat modified web based questionnaire was launched. The questionnaire asked for rating of a number of items; free text comments were encouraged, where ratings were negative.

In addition to this questionnaire, data from other sources, such as complaints, questionnaires to surveyors, observation of surveys by IKAS staff, and spontaneous feedback was analysed.

Results:

The response rate for the mailed questionnaire was rather low (53%). After the introduction of the web based questionnaire response was 100%. Some of the findings from the web based questionnaire are summarised:

<table>
<thead>
<tr>
<th>Public hospitals (n=30)</th>
<th>Private hospitals (n=29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-10</td>
<td>9 (30%)</td>
</tr>
<tr>
<td>7-8</td>
<td>17 (57%)</td>
</tr>
<tr>
<td>5-6</td>
<td>3 (10%)</td>
</tr>
<tr>
<td>3-4</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>1-2</td>
<td>0 (0%)</td>
</tr>
<tr>
<td></td>
<td>19 (66%)</td>
</tr>
<tr>
<td></td>
<td>7 (24%)</td>
</tr>
<tr>
<td></td>
<td>2 (7%)</td>
</tr>
<tr>
<td></td>
<td>1 (3%)</td>
</tr>
<tr>
<td></td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>


Some other findings:

- Did the survey reveal relevant quality issues previously known to you? (29; 30; 0).
- Did the survey reveal quality issues previously unknown to you? (8; 51; 0).
- Has participation in DDKM helped you improve organisational quality (53; 6; 0), clinical quality (45; 13; 1), and patient experience (39; 23; 6)?

Response reported as (respondents answering “to a high extent” or “to some extent”; respondents answering “to little extent” or “not at all”; respondents answering “Don’t know”).

Conclusion: The evaluation shows a general, although not universal, positive attitude towards accreditation, but also points out a number of issues for concern. IKAS needs to be aware that for an accreditation programme to be sustainable, it must not only provide a good experience, but also value to clients. Standard development is important for an accreditor, but at certain stages, time spent on development of the survey methodology will add more value for clients than time spent on further refinement of standards.

Our evaluation has led to the following actions:

The external survey shall ensure a stringent and comprehensive assessment of measurable elements (ME) related to quality and risk management, to implementation of clinical guidelines, and to practices (organisational and clinical) proximal to patient relevant outcomes. Inevitably, this means that other ME’s are less comprehensively assessed. IKAS views this as a necessary prioritisation, well in line with what the hospitals see as value creating. The surveyors shall minimise time spent with review of documents and with interviews of large groups. Hospitals value the contact of surveyors with front line staff. Reliable and transparent assessment shall be supported by tools, such as guidance to individual ME’s and phrases to be used when writing reports. IKAS has underestimated the challenge in obtaining reliability in a programme based on peer review.

Surveyors are trained to display an appreciative attitude. While maintaining this, surveyor training and continuous development of surveyors shall ensure that surveyors can be explorative as well as appreciative. Some hospitals have assessed the surveyors as too friendly, accepting the story told by management too uncritically.
EVALUATING QUALITY INDICATORS FOR PHYSICAL THERAPY IN PRIMARY CARE

Marijn Scholte ¹,², Erik Hendriks ², Ria Nijhuis-van der Sanden ¹, Jozé Braspenninck ¹
¹Scientific Institute for Quality of Healthcare, University Medical Centre St. Radboud, Nijmegen, ²Centre for Evidence Based Physiotherapy, Maastricht University, Maastricht, Netherlands

Objectives: To promote transparency and accountability in physical therapy care, there is a need for performance indicators to describe the quality of care delivered. In The Netherlands a set of indicators has been developed that captures the quality of physical therapy in primary care setting. The purpose of the indicator set is to obtain public information on the quality of care delivered. As it is the first attempt to develop such a set, it is of great importance to evaluate the indicators properly. The aim of this study is to assess the set of indicators on construct validity, reproducibility and floor and ceiling effects.

Methods: 3,743 practices participated voluntarily in 2009 and 2010 (n=11,274 therapists). The therapists were asked to appraise by self-reporting 30 cases on 8 quality indicators related to the clinical reasoning process (diagnostics (2), goal setting (1), intervention (2)), the outcomes (2), and shared decision making (1). The assessment criterion for construct validity was consistency with previous findings; literature showed some information on the outcome indicators. Therefore it was tested with logistic multilevel regression modelling (nested data i.e. patients, therapists and practices) if age, gender and chronic care were associated to the outcome indicators. The reproducibility was tested by evaluating the Spearman’s rho correlation between the two moments of data collection (2009 and 2010). Furthermore, it was studied in a multilevel model if the indicators could discriminate on quality between therapists and practices by examining the size and stability of the between-therapist and between-practice variance in 2009 and in 2010. The presence of floor and ceiling effects was examined by the percentage of highest possible scores.

Results: The construct validity was rated positive, as all three hypotheses were confirmed. Male patients, younger patients and acute patients received higher scores on the outcome indicators than, respectively female patients, older patients and chronicle patients. The reproducibility was rated moderately positive, as Spearman’s rho was significant for all indicators and between 0.35 and 0.5. Furthermore, most indicators seem to be suitable to discriminate the quality of care due to large and relatively stable between-therapist and between-practice variance over time. Large ceiling effects were found, 30% up to 95% at patient level.

Conclusion: The indicator set could be rated positive on the construct validity and reproducibility, but the ceiling effects are worrisome as they could compromise the reproducibility of the indicators. As the therapist could select the cases themselves, selection bias maybe played an important role. Extracting data directly from electronic medical records (EMRs) could decrease the risk of selection bias. This would decrease the ceiling effects and improve the evaluative and discriminatory power of the quality indicators. It is also possible that the global nature of the indicators is responsible for the ceiling effects. More detail into the indicators can be created by evaluating the clinical reasoning process with respect to certain conditions i.e. low back pain instead of the global performance. As EMRs can also contribute to the reliability of the data it is recommended to extract quality data on one or more specific conditions from an EMR to accomplish accountability on the quality of physical therapy in primary care.
AN ANALYSIS OF BREAST CANCER WEBSITES’ ABILITY TO MEET PATIENT INFORMATION NEEDS

Emily Warren 1,*, Katharine Footman 2, Cécile Knai 3

1ECOHOST, The London School of Hygiene and Tropical Medicine, London, United Kingdom

Objectives: To measure the usefulness of commonly used informational websites against a list of needs expressed through a systematic literature review.

Methods: As part of a larger project on patient information needs, a systematic literature review was carried out on three databases (Embase, Medline and Web of Science). To create the information-needs matrix, we analysed all articles on non-site specific and breast cancers and developed a list of topics on which people wanted information.

Rather than develop a list of heath websites which may be commonly used in the UK, we evaluated the ones that people are most likely to see if they use Google, a common search engine. After clearing our internet history and deleting all cookies, we typed “breast cancer” into Google.co.uk and assessed the first page of websites (9 in total) against the information-needs matrix. We excluded image and news suggestions. In order to evaluate Wikipedia, we included information on the primary page and then any page connected directly to it.

Each website was assessed independently by two researchers, who evaluated how well the website answered each question contained in the matrix on a 3-point scale. If a question received a “no” ranking, it meant that the question was not addressed and received 0 points, “partial” meant that the topic was mentioned but not adequately explained and received 0.5 points, and “yes” meant that the question was answered on the website and details were provided, and received 1 point.

The variance between researchers was calculated for each topic, and average scores were provided. Analysis was carried out to ascertain if there was a significant variation in quality based on the website’s sector. Larger categories (e.g. disease, treatment) and codes (e.g. self-care, medications) were also analysed to see if certain themes are discussed more thoroughly than others.

Results: The research-based website scored highest, followed by government, private sector, and charity-run websites. Encyclopaedic and public websites received the lowest scores. General disease information, procedures, and side-effects received the highest scores while prognosis, decision-making and monitoring were the three lowest ranking codes. The most commonly answer question was, “What are the physical symptoms of having this type of cancer?” (89% of websites fully answered) while only 11% of websites addressed “If my cancer is incurable, is euthanasia an option?” or “How do we know if the treatment is working?” 29.1% of the questions identified through the research were not sufficiently answered by any website and no question was fully answered by all websites. 78.5% of questions were addressed partially or fully.

More detailed results will be finalised by March 2013

Conclusion: Despite recent efforts to improve information provision, patients are still unable to find answers to important questions. Improved information for patients has implications for informed consent and the well-being of the patient and their family. Particular effort needs to be made around issues relating to prognosis, decision-making, and monitoring.
SAFECARE ESSENTIALS: RAPID MAPPING OF HEALTHCARE QUALITY AND SAFETY GAPS TO PRIORITISE INTERVENTIONS IN RESOURCE-RESTRICTED SETTINGS.

Paul van Ostenberg 1*, Tobias Rinke de Wit 2, Nicole Speiker 3, Shakira Hudani 4
1Accreditation and Standards, Joint Commission International, Chicago, United States, 2PharmAccess Foundation, Cape Town, South Africa, 3PharmAccess Foundation, Amsterdam, Netherlands, 4IFC, Nairobi, Kenya

Objectives: Quality levels of healthcare facilities in resource-restricted settings (RRS) are not transparent, there is no benchmarking and patients face uncertainty regarding personal safety. Within limited budgets health policy makers in RRS require aggregate information on larger numbers of facilities to prioritise health system interventions with respect to quality improvement and risk reduction. SafeCare Essentials were specifically developed for this purpose. The objective of this study is to assess the Essentials application to rapidly detect quality gaps of large numbers of facilities in several health system interventions in Africa. In Kenya collaborations were with IFC, WHO and the Ministry of Health.

Methods: 663 healthcare facilities in 4 African countries were assessed using the SafeCare Essentials: a list of 41 criteria covering 5 Primary Risk Focus Areas: Leadership and Accountability; Competent and Capable Workforce; Safe Environment for Staff and Patients; Clinical Care of Patients and Improvement of Quality and Safety. Answers are scored on 4 levels of effort for risk reduction. SafeCare Essentials facility assessments are performed by 1-2 individuals with (para-) medical background in 2-3 hours. Essentials scores were analysed using Mann-Whitney tests and ordered logit regression.

Results: SafeCare Essentials data were collected on 663 facilities (519 Kenya, 64 Ghana, 31 Nigeria, 49 Tanzania). Assessments were performed in the context of a Kenyan nationwide survey, a community-based private health insurance intervention in Nigeria, Kenya and Tanzania and a client experience in the context of the national health insurance in Ghana. All of these programs required a way to efficiently identify quality and safety levels of larger numbers of facilities. Over the years 2011-2012, assessments were performed in 343 facilities in rural areas, 134 in peri-urban and 186 in urban areas. SafeCare Essentials identified deficiencies in patient safety in all RRS settings; in particular, different patient risk priorities were detected in rural areas, at smaller facilities and with public facilities. Facilities consistently scored highest at Clinical Care of Patients and lowest at Improvement of Quality & Safety. Criteria in the latter risk area showed relatively lower scores, suggesting dependence on prior improvements in other risk areas. Eleven criteria on the SafeCare Essentials were identified that consistently score low (in >90% of all facilities in at least one of the 4 African countries).

Conclusion: SafeCare Essentials can be used to rapidly evaluate high risk areas with respect to healthcare quality and patient safety of facilities in RRS in diverse health system interventions. Higher risks were identified in smaller and rural facilities, mostly in the public sector. A listing of specific risks will be presented. In all circumstances, the Essentials scored highest at Clinical Care of Patients and lowest at Improvement of Quality & Safety. Health policy for risk reduction in these RRS settings is recommended to prioritise quality interventions at smaller and rural facilities. These could be low-cost with a relatively high risk reduction impact, such as assigning existing staff the responsibility to improve quality and safety.
ENGAGING VULNERABLE AND DIVERSE COMMUNITIES IN HEALTH SERVICES PLAN
Jim O’Neill, Lori Lucier, Sean Meagher, John Yip
1Inner City Health Program, St Michael’s Hospital, 2Toronto Central, Local Health Integration Network, 3Public Interest, 4Yip Management, Toronto, Canada

Objectives: There is considerable evidence linking poverty, immigration and other factors to lack of access to services and poor health outcomes. St. James Town is one of the poorest neighbourhoods in Toronto and is home to multi-ethnic, multilingual populations with high rates of poverty and social challenges. It is one of the most densely populated communities in Canada with 14,000 people living within a square kilometre. A major fire in 2010 exposed significant safety risks and gaps in health and social services for high risk and vulnerable groups. In response, the local health planning authority, the Toronto Central Local Health Integration Network initiated a partnership with the City of Toronto, the United Way of Toronto, Toronto Community Housing and St. Michael’s Hospital to form the Health Access St. James Town (HASJT) project to better coordinate and enhance health services and improve community safety in St. James Town.

Methods: The HASJT project involves local residents at every step in the process including determining health care needs and gaps, and designing new services. This included targeted outreach and engagement strategies developed with 19 local residents recruited as Community Animators. The Animators connected with residents in a variety of settings to complete a resident survey including parks, supermarkets, church, school, community centre and library as well as door-to-door conversations. Over 500 surveys were completed in 11 languages.

Results: The project was successful in engaging diverse linguistic, cultural, geographic and tenant communities. The resident survey identified broad findings to help shape future health service delivery in the neighbourhood. Concrete solutions are being implemented, reflecting what residents say they need. This includes a Dental Bus to provide free dental care and a Seniors Mental Health Day Program.

A communications plan has been developed including a project website to keep all stakeholders informed of the work being done. Finally, a project newsletter has been provided in five languages for residents to stay abreast of developments.

An evaluation of the project is being conducted by Centre for Research on Inner City Health at St. Michael’s Hospital. The evaluation will provide information that will help to improve the process and help others to implement similar projects in other parts of the city.

Conclusion: Health Access St. James Town is an example of how to effectively involve communities in local health service planning in high density urban communities.
INCREASING THE UPTAKE OF MATERNAL HEALTH SERVICES OF A RURAL COMMUNITY IN KENYA BY ENHANCING COMMUNITY-FACILITY LINKAGES

Isaac C. Mwamuye 1,*, Michael Mwaniki 1, Dorcas Amolo 1, Youssef Tawfik 2

1University Research Co. LLC, Nairobi, Kenya, 2University Research Co. LLC, Washington DC, United States

Objectives: To increase the utilisation and improve the quality of antenatal care services and skilled deliveries in Kwale District, Kenya by enhancing community involvement in its own healthcare.

Methods: The Kwale quality improvement collaborative was started in January 2011 in a close partnership between the USAID Health Care Improvement Project and the Ministries of Health Kenya with 20 public and one faith-based facilities participating. Situational analysis, baseline data collection and development of indicators for improvement measurement were done by May 2011. Improvement coaches were trained in June 2011 to assist quality improvement (QI) teams to conceptualise the principles of improvement, test change ideas, monitor the impact and make informed decisions based on facility generated data. QI teams which were formed in June, comprised of health workers and community volunteers, met regularly to analyse their facility data, identify gaps, find the root cause, choose and test innovative change ideas, monitor and evaluate them to decipher whether they were effective or not.

The QI teams met in learning sessions to share their achievements, experiences, challenges and lessons. The first and second learning sessions took place in September 2011 and February 2012 respectively. The third learning session took place in August 2012.

QI teams used locally available resources to test or implement change ideas. While some started offering 24-hour coverage for deliveries, others reduced waiting time for antenatal care clients by doing process mapping. Others improved quality by enhancing privacy either by constructing new or completing stalled delivery rooms among other change ideas. Strong community linkages were formed first by incorporating community representatives into the QI teams and secondly partnering with the local administrators and community resource persons. Traditional birth attendants (TBAs) and community health workers who were sensitised on the benefits of antenatal care and deliveries by skilled birth attendants referred mothers to health facilities for antenatal care services and deliveries in addition to educating their communities on the same.

Results: Deliveries by skilled birth attendants in the district increased from 31% of the estimated number of pregnant women in January 2011 to 52% in July 2012. In some individual facilities; the increase was by more than 100%. The percentage of pregnant women completing at least four antenatal care visits increased from the baseline of 37% to 57% in August 2012. Pregnant women referred to health facilities by community members (Traditional birth attendants, community health workers etc) increased from 13 in January 2011 to 75 in August 2012.

With the enhanced involvement of community in the affairs of the health facilities and in the health status of its members, community ownership of health activities has increased significantly.

Due to the quality improvement project, data is now being interrogated at the point of generation by both health workers and community representatives hence strengthening community-facility linkages and community contribution to health care.

Conclusion: In improving the population of a community, it is paramount to have unwavering support and commitment of the community and its leaders, and hence the need to have community representation in the decision making and implementation organs of health facility and community health programs.

Partnering with traditional birth attendants and community health workers should be encouraged and guided, to make them referral agents from the community to the health facilities as well as health educators.
APPLYING THE TRIGGER REVIEW METHOD AFTER A BRIEF EDUCATIONAL INTERVENTION: POTENTIAL FOR TEACHING AND IMPROVING SAFETY IN GP SPECIALTY TRAINING?

Carl De Wet,*, John McKay,*, Moya Kelly,*, Paul Bowie*
*General Practice, NHS Education for Scotland, Glasgow, United Kingdom

Objectives: The Trigger Review Method (TRM) is a structured approach to screening clinical records for undetected patient safety incidents (PSIs) and identifying learning and improvement opportunities. In Scotland, TRM participation can inform GP appraisal, has been incorporated as part of the GP contract (QOF) from April 2013 and will be part of a forthcoming national primary care patient safety programme but the clinical workforce needs up-skilled. Additionally, the potential of TRM in GP training has yet to be tested. Current TRM training utilises a workplace face-to-face session by a GP expert, which is not feasible. A less costly, more sustainable educational intervention is necessary to build capability at scale. We aimed to determine the feasibility and impact of TRM and a related training intervention in GP training.

Methods: We recruited 25 west of Scotland GP trainees to attend a 2-hour TRM workshop. Trainees then applied TRM to 25 clinical records and returned findings within 4-weeks. A follow-up feedback workshop was held.

Results: 21/25 trainees (84%) completed the task. 520 records yielded 80 undetected PSIs (15.4%). 36/80 were judged potentially preventable (45%) with 35/80 classified as causing moderate to severe harm (44%). Trainees described a range of potential learning and improvement plans. Training was positively received and appeared to be successful given these findings. TRM was valued as a safety improvement tool by most participants.

Conclusion: To our knowledge, this was the first attempt to pilot the TRM in the GP specialty training environment and to assess its potential as an educational and improvement intervention. Our small study provides further evidence for the utility of the trigger review method as a safety improvement intervention and also describes one way to teach this approach pragmatically in primary care settings. The findings demonstrate the potential value of TRM in the GP specialty training environment in helping to deliver the patient safety curriculum and also in preparing GPs to meet current and future educational, contractual and regulatory quality improvement expectations.

De Wet C, Bowie P: A preliminary study to develop and test a global trigger tool to identify undetected error and patient harm in primary care records.
Health Foundation.
UNDERREPORTING OF FALLS AND FALL INJURIES IN HOSPITAL INCIDENT REPORTING DATABASES: CAPTURE-RECAPTURE ANALYSIS OF FALL EVENT DATA IN AUSTRALIAN ACUTE HOSPITALS

Anna Barker¹, Caroline Brand¹,², Renata Morello¹
¹Department of Epidemiology and Preventive Medicine, Monash University, ²Melbourne Epicentre, University of Melbourne, Melbourne, Australia

Objectives: Despite the importance of fall data for effective planning and monitoring of hospital falls prevention activities, reporting systems rarely capture every fall. Methods used to identify fall events in hospitals include spontaneous reporting to nurse unit managers (NUMs), documentation in medical records and incident reporting databases. Combining these data sources may improve knowledge about the frequency of falls in hospitals. The aim of this study was to estimate the incidence of falls in 26 acute wards from seven hospitals using data from these three sources.

Methods: Data were prospectively collected as part of the 6-PACK falls prevention project¹ between September 2011—June 2012. A trained data collector viewed medical records of all admitted patients on participating wards each day to record information about documented falls. They also obtained a daily verbal report from the NUM about falls known to have occurred within the previous 24 hours. Data were triangulated with falls recorded in the hospital incident reporting database. A three-source capture-recapture analysis was performed to estimate the real number of falls occurring during the observation period. The sensitivity of each source for capturing fall and injurious fall events were calculated.

Results: There were 775 unique falls and 218 injurious falls recorded for 556 patients during the observation period. The three-source analysis found 4.9% of all falls and 0.9% of injurious falls were not reported via any source. The sensitivities of each source for capturing falls were 60.7% for the incident reporting database, 84.4% for the medical record and 57.6% for the NUM verbal report. The sensitivities of each source for capturing injurious falls were 74.3% for the incident reporting database, 94.5% for the medical record and 63.8% for the NUM verbal report.

Conclusion: The most commonly used source of fall events—the incident reporting database—substantially underestimates the incidence of fall and injurious fall events. We found a 1.5 fold higher incidence of falls and a 1.3 fold increase in the incidence of injurious falls than shown by the incident reporting database. This suggests RCTs, benchmarking activities and temporal trend analysis based on incident reporting data may lead to inaccurate and misleading conclusions. The medical records were the most complete source; however capture via this method is resource intensive. Improvements in incident reporting practice are required if these data are to be used for meaningful falls analysis.

REACH PATIENT AND FAMILY ACTIVATED ESCALATION OF CARE: 12 MONTHS ON AND THE SKY DID NOT FALL
Karen Luxford 1,*, Alison Gal 1, Clifford Hughes 2
1Directorate of Patient Based Care, 2CEO, Clinical Excellence Commission, Sydney, Australia

Objectives: To evaluate patient and family engagement in activating escalation of care as a strategy to improve safety and quality. To investigate impact on clinicians - who perceived that they may be overwhelmed by responding to patient/family initiated calls in addition to standard clinician-initiated escalations.

Methods: In collaboration with patient advisors, the Clinical Excellence Commission (CEC) developed ‘REACH’ as an approach to patient and family activated escalation of care for deteriorating patients. The REACH model acknowledges that patients and families can often recognise signs of deterioration before being clinically evident. Over a 12 month period, CEC worked with 7 hospitals in NSW Australia to implement REACH in facilities with existing clinical escalation programs such as CEC’s ‘Between the Flags’. Each hospital was supported with an implementation toolkit for hospitals, education sessions, patient information, information for managers and clinicians and an evaluation program. The route for ‘call out’ activation by patients and family was tailored to each hospital’s local environment.

Evaluation data collected included clinical outcomes (mortality, transfers to ICU), numbers of clinical reviews and emergency calls, patient and family experience and acceptability to clinicians and management.

Results: Findings about implementation and outcomes will be presented as a case study of the first lead hospital to complete 12 months of implementation. Baseline acceptability surveys with staff indicated concern about the potential impact on workload; however this concern was no longer evident after 12 months. A total of 3 REACH calls were initiated by families over the 12 months – a finding that parallels international evidence. All three calls were considered appropriate by clinical staff and resulted in a change in treatment plan. Two of three REACH calls were considered by staff to have averted the need for subsequent ICU transfers. Patient and family questionnaire findings also indicated high levels of acceptability of the REACH process. Based on previous serious adverse events leading to coronial cases, such processes have the potential to save hospitals significant costs as well as saving lives.

Conclusion: REACH is a patient and family focussed quality improvement strategy that assists in the early recognition of inpatient deterioration. In line with international data (1), REACH program findings indicate that patient and family activated escalation is used infrequently but appropriately, and builds on the benefits on clinical escalation. Unlike American models, the REACH model developed in Australia provides a tailored, staged approach to escalation which encourages patients and families to initially engage with their treating doctor or nurse.

ASSESSING THE APPLICABILITY OF AIRLINE PILOT SELECTION MEASURES FOR SURGEONS

Lara Vankan¹,², Dirk De Korne¹,²,³, Jasper Kesteloo⁴, Frans Hiddema⁴
¹The Rotterdam Eye Hospital, ²Rotterdam Ophthalmic Institute, ³Institute Health Policy and Management, Erasmus University Rotterdam, Rotterdam, ⁴Institute for Aviation Psychology, Houten, Netherlands

Objectives: The aviation industry is seen as comparable to health care because of its similarities in the use of technology, the requirement of highly specialised professional teams, and the existence of risk and uncertainties (Sexton et al. 2006; Singh et al. 2006; Kao & Thomas 2007). One of the important differences, however, is related to the selection of airline pilots respectively surgeons. Surgeons are, mostly without any pre-assessment on non-technical skills, selected for the medical training while pilots undergo a strong sensomotorical and psychological selection before they are approved for the aviation school. Aviation school data shows that only about 11% of applicants meet the requirements to become a pilot. In this study, therefore, we assess the applicability of pilot selection (sensomotorical and psychological) measures for its use for surgeons.

Methods: First, a document study was performed to compare pilot selection measures and available competence models for surgeons. Second, a sample of surgeons, residents and interns from an eye hospital in the Netherlands has been assessed using instruments that are validated for aviation, respectively Computerised Pilot Aptitude and Screening System (COMPASS) and Checklist Professional Profile (CPP). The COMPASS tests on the 6 competences: eye-hand-foot coordination (control), eye-hand-coordination (slalom), short term memory, mental arithmetic (mathematics), spatial orientation and multi-tasking. The CPP is a 225-item test measuring 9 competences: personal stability (resilience, stress tolerance, impulse control), conscientiousness (ambition, accuracy, perseverance), leadership (dominance, persuasiveness, assertiveness), executive orientation (accuracy, empathy), team orientation (teamwork, autonomy), decision making process (accuracy, need for variation), communication (assertiveness, empathy), service orientation (empathy, helpfulness) and sociability (openness, need for variation). Medical scores are compared with pilots data from an aviation school and a training institute in the Netherlands.

Results: The preliminary results (n=52 surgeons, n=700 pilots) seem to show that surgeons and pilots are comparable professional entities, having comparable scores on COMPASS items slalom, memory, maths and multi-tasking as well on the CPP items assertiveness, openness and need for variation. Medical respondents, however, have lower scores on control and spatial orientation, as well on resilience and dominance. Medical respondents simultaneously show higher scores on helpfulness, empathy, accuracy and autonomy. Remarkably, medical professionals do appreciate the testing tool in itself, due to the focus on individual competence and generating a possibility to feedback and benchmark their results.

Conclusion: Based on this preliminary data, the pilot selection tool seems to be an appropriate tool to identify sensomotorical and psychological safety competencies for surgeons. However, substantiated conclusions cannot yet be drawn due to the limited number of respondents. During the ISQua Conference we will be able to share more detailed results and conclusions.

THE EFFECTIVENESS OF THE 5-TIER PROJECT-BASED LEARNING MODEL ON STAFF ENGAGEMENT IN HEALTHCARE SERVICES

L.W. F. CHAN 1,*, V. MOK 2, A. OR 3, A. CHENG 2

1 Quality & Safety, 2 HOSPITAL AUTHORITY, KOWLOON CENTRAL CLUSTER, Kowloon, Hong Kong

Objectives: On-going developments in healthcare services are placing great demands on the workforce. If high quality care is to be maintained, the Education and Development (E&D) practitioners need to provide staff with appropriate knowledge and skills. Training barriers such as time constraint, accessibility and inadequate staff engagement prevent E&D from reaching its full potential. Engaged employees demonstrate positive attitudes and behaviours at all areas of work. To improve the staff engagement level becomes the strategic goal for the design of training programs. The objective of the study was to evaluate the effectiveness of a 5-tier project-based learning’ model under our hospital ‘WISER Tools Learning Series’ on improving the level of staff engagement. The model is composed of five domains namely managers’ support for training (Management Support), Six Sigma and/or Lean skills (Classroom-based Training), project coaching and mentoring (Training-based Mentoring), team collaboration (Teamwork) and recognising trainees’ learning outcomes (Recognition).

Methods: This was a quasi-experimental trial. Programs that do not have project-based learning components were grouped as a control group (CG). Other programs with project-based learning components were grouped as an experimental group (EG). The participants were identified and recruited from reviewing the training attendance records of respective programs. All of their identities were blinded and they were asked to complete a questionnaire focusing on the five domains. The mean scores were compared between the above two groups.

Results: 84 subjects (33 in CG and 51 in EG) were used for data analysis. The respective response rates were 48.5% and 73.9%. The overall mean scores of Management Support, Classroom-based Training, Training-based Mentoring, Teamwork, Recognition and all domains were 3.84, 3.84, 3.79, 3.96, 3.75 and 3.83 respectively. A comparison of the results indicated EG was exposed to have better outcomes on staff engagement than CG. EG significantly scored greater than CG in Classroom-based Training (difference (d)=0.48, p<0.01), Training-based Mentoring(d=0.33, p<0.05) and overall(d=0.2, p<0.05) using Independent-Samples T Test. The mean scores of Recognition in both CG(d=0.29, p<0.01) and EG(d=0.22, p<0.01) were significantly lower than the target score level by using One-Sample T Test (agree level=4).

Conclusion: The strategic framework of designing the content, delivery modes and learning platforms of training programs and activities is crucial to improve and enhance the staff engagement level in healthcare services. In the midst of high stress and time-restricted work environment, the project-based learning model is designed with five critical success factors interlocking one with another. The current study suggested that this 5-tier model is overall effective in enhancing the level of staff engagement. Throughout the entire learning journey, our trainees are enchanted, enabled, energised, empowered and cheered with the motives and skills at various check points. Among the domains, Classroom-based Training and Training-based Mentoring are perceived to be more effective, emphasising the practicality, accessibility and on-going support of a mentor-led training program design. Recognition was rated low in both groups compared to other domains’. Further studies may be explored to focus on the importance of managers’ recognition for staff’s learning activities in relation to the employee engagement level. To feel being valued and to take pride in one’s learning outcome are powerful motivators to engage our employees and more efforts are suggested to be dedicated to this Recognition domain.
EARLY WARNING SCORE, PREVENTION OF UNEXPECTED DEATHS - A SUCCESSFUL IMPLEMENTATION
Bjørn Hesselbo 1, 1,*, Anne Gram 1
1Unit for Quality, Bispebjerg and Frederiksberg Hospitals, Copenhagen, Denmark

Objectives: Through analysis in 2009-2010 of adverse events and via tracers and reviewing of medical records of deceased patients with Global Trigger Tool at University Hospital Bispebjerg, capital region - Denmark, it became evident that there was a potential for development in terms of establishing uniform, systematic and clinical observations of patients and / or responses to critical observations. The hospitalised patients risked being critically ill - without being detected and without intervention. On that basis it was decided to start a project with the following objectives.

The purpose was:
- Rapid implementation of a uniform process for monitoring and risk assessment of all admitted patients and elective patients (a scoring system) – purpose 1
- To investigate in and prevent unexpected deaths – purpose 2

Project goals:
- To develop a comprehensive guideline on risk assessment and systematic observation of all patients and ensure consistent, systematic observation, both in the individual sections and cross sections based on the ABCDE principles (Airway, Breathing, Circulation, Disability and Exposure)
- To ensure that all departments follow the guideline and use the same form
- To educate physicians and caregivers in systematic and correct risk assessment, as well as increase clinicians' skills in order to enable respond to critical observation findings
- Full implementation in 3 months

Methods: Steering committee with selected leaders and a vice director as chairman was established. Project-team with clinicians from all clinical departments (physicians and registered nurses) to develop an implementation plan that would include:

- Clinical guidelines
- Common registration form
- Training plan
- Description of work processes
- Assessment of existing equipment
- Communication plan
- Timetable
- Monitoring plan (through audits and SPC)

It was decided to clinicians in the project had the time and resources to the task. Everyone in the project-team was dedicated to the project.

Results: Results - purpose 1
1. Early Warning Score was implemented in only 3 months which applied to purpose 1 is rapid implementation
2. High compliance on key basic indicators
3. All patients receive a form (98-100 %) and over 80 % have correctly calculated score of the vital values (82-94 %).

Results - purpose 2
1. It is still too early to conclude on the prevention of death.
2. A project protocol is written for scientific studies to investigate further.

Conclusion: The processes of rapid and targeted implementation through designated and motivated clinicians have been satisfactory. It was very important for the process that all the clinicians dedicated the time, a great interest and resources. Back up and feed-back from leaders and steering committee is vital.

Both physicians and nurses expressed great satisfaction with a common starting point for dialogue. This method can be advantageously used in the implementation of other projects.
IMPROVING POPULATION HEALTH USING QUALITY IMPROVEMENT TO EMBED PUBLIC HEALTH INTERVENTIONS IN THE LOCAL HEALTH SYSTEM

Stuart A. Green 1,*, Karen J. Phekoo 2, Cathy Howe 2, Ruth Barnes 3


Objectives: The study describes how quality improvement (QI) initiatives facilitated by CLAHRC for Northwest London have improved public health outcomes, reduced inequalities and improved service quality in North West London. Evaluation of the initiatives from a public health perspective demonstrates impact on whole populations and “hard to reach groups”, offering a "bottom-up" approach to reducing inequalities where national policy has had limited impact.

Methods: Several QI initiatives were developed over 18 months to address public health issues:

- An identification and advice programme for low risk alcohol consumption in an acute medical setting
- Delivery of a complex primary care intervention to reduce emergency admissions for patients with sickle cell disease (SCD)
- Development of a screening tool to identify diabetic foot in an acute setting
- Improving access to primary mental health services for black and minority ethnic (BME) communities through link workers
- Using social marketing to improve access to primary mental health services for people in deprived areas

The projects used QI tools and techniques to explore current problems and develop potential solutions, coupled with more traditional research techniques such as focus groups, surveys and data set analysis. Central to the QI tools was the model for improvement, with real-time analysis of changes in care processes using statistical process control. It also provided for reflection to assess and modify approaches to improve access and/or uptake of interventions.

Results: The acute sector projects demonstrated improved uptake in screening for low risk alcohol use (from 67% to 80%) and screening for diabetic foot (from 0 to 20 patients a week). In the community improved access increased referrals to mental health services from deprived areas (from 17 patients per week to 43). Similarly improving access to mental health services via link workers increased weekly BME referrals (from 3 per week to more than 5). Work with SCD patients to explore barriers to primary care access resulted in the development of interventions to improve patient experience and reduce emergency department use. The interventions are now being used by more than 17 practices whilst an evaluation is underway to look at their effectiveness.

Conclusion: Early evaluation of the QI initiatives from a public health perspective demonstrates improvement in access and uptake. As evidence in the literature shows that improving access and uptake of these interventions has a positive impact on clinical outcomes it is logical to assume that outcomes will improve across the sector.

Combining public health and QI approaches to align services more closely to local needs can improve outcomes for individuals and populations, inform planning and help monitor progress and QI offers tools for flexible implementation and evaluation at both process and outcome levels. Integrating measures of health equity within QI projects ensures that inequalities are tackled within the system, complementing policy-driven approaches.1

Public health in England has a strategic role to improve health and reduce inequalities nationally, within local authorities and in clinical commissioning groups. We therefore advocate this systematic approach to embed change and effective monitoring.

THE NATURE OF PREVENTABLE HOSPITAL DEATHS: AN APPROACH TO DETERMINING THE UNDERLYING CAUSES

Helen Hogan 1,*, Frances Healey 2

1Department of Health Services Research and Policy, London School of Hygiene and Tropical Medicine, 2Patient Safety, NHS Commissioning Board, London, United Kingdom

Objectives: Reduction of serious preventable harm in NHS hospital patients is a key priority in the UK. A recent large-scale retrospective case record review of 1000 deaths in ten English acute hospitals identified 5.2% of deaths as preventable. To enable exploration of the nature of these preventable deaths we developed a new approach to content analysis based on principles of root cause analysis and tested the reliability through a double review process.

Methods: A retrospective case record review of 1000 hospital deaths in 2009 was carried out in ten randomly selected acute hospitals. For each of 52 deaths judged to be preventable reviewers wrote a narrative account describing the problems in care (patient harm resulting from acts of omission (inactions) or from acts of commission (affirmative actions)) and identified any associated contributory factors.

The narrative accounts were analysed using a content analysis approach based on the principles of root cause analysis. In stage one; change analysis was used to map problems in care. This process describes “problem free” care and allows identification of harm events by making comparisons with “what should have happened”. Each problem in care elicited was categorised as a “Care Delivery Problem” (problem arising in the process of care) or a “Service Delivery Problem” (problem arising as part of the whole process of service delivery). In stage two, contributory factors were identified using the National Patient Safety Agency’s Contributory Factor Classification Framework.

The method was applied to the first five cases to test feasibility. Two independent reviewers (HH and FH) met to discuss any discrepancies in their findings and make adjustments to the approach. A third of all preventable death cases were then double reviewed to test inter-rater reliability.

Results: We identified an average of 3.1 (SD 1.5) problems in care and 5.2 (SD 2.5) contributory factors per case. Agreement on problems in care was found in 71% of cases (Kappa coefficient = 0.64 indicating substantial agreement) and for contributory factors in 64% (Kappa coefficient= 0.56 indicating moderate agreement).

Conclusion: Whilst analysis of narrative accounts of problems in care cannot be expected to identify the full range of contributory factors that might be discovered through interviewing the clinical staff involved, it is able to identify a range of care and service delivery problems and their associated contributory factors with good inter-rater reliability. This approach to analysis is therefore potentially a useful methodology for prioritising and tailoring improvements to patient care to address the underlying causes.
EMPOWERING OF PREGNANT WOMEN BY MAKING THEM REPORT THEIR OWN PRIMARY CLINICAL RECORD IN A WEB-BASED SYSTEM
Karen M. Lyng1, Mette Simonsen2, Hanne K. Hegaard3
1Unit for Clinical Information and Data, IMT, CAPITAL REGION OF DENMARK, 2of obstetrics, 3of obstetrics, Rigshospitalet, Copenhagen, Denmark

Objectives: We have developed a highly structured web-based patient questionnaire that is transformed to a patient record. The aim of this study was threefold:

1) to empower patients
2) to support efficient consultations when the pregnant women meets the health professionals for the first time and
3) to establish a quality and research register on antenatal care.

Methods: A project team was established with actors from the antenatal care unit at a large university hospital with app 6.000 deliveries p.a. and the regional IT enterprise. The current antenatal care process of referral and primary history taking was studied in detail, based on this, the existing record and the visions for change we designed and tested a paper based questionnaire. A safe method for reporting of personal data in a web-based questionnaire was developed in cooperation with a private vendor, subsequently the questionnaire was digitalised as web forms that when filled out can be transformed into a textual record.

When the pregnant woman at 8-9 weeks of gestation makes an appointment for a nuchal fold scan, she is asked to give her e-mail address to the hospital. 2 weeks later the pregnant woman a link to the web-questionnaire and she completes it on-line. The data are automatically transferred to the hospital Pregnancy Register and converted to a ½ page text note which is transferred into the hospitals EPR system. In this way the record is present in a draft version when the pregnant women come for the first visit in the obstetric department.

Results: The web questionnaire was released for pilot implementation in October 2012. During the first three-month a total of 1600 women have been referred to the hospital for antenatal care. E-mails have been sent to them all on a weekly basis. 82% of the women have responded.

We have just started the post-implementation evaluation of the effect of the system. In the evaluation we examine both the effect the system may have on the health professionals work and make interviews with the pregnant women on their perception of the questionnaire. Our preliminary results indicate that both the pregnant women and the health professionals meet the self-reporting system with contentment. The women are filling out the questionnaire meticulously and can bring forward any worries they may have. Until now we have only received positive comments on the system from the pregnant women. Further the system supports the health professionals work process and saves time for a more efficient cooperation in the consultation situation.

Conclusion: In traditional quality register development focus is on collecting data from existing sources such as an EPR system. In this case we have turned the tasks around and started with designing the clinical registry and subsequently translated the collected data into EPR notes.

Our preliminary results indicate that the pregnant women are very good at reporting issues that should be taken into account in the consultation. Instead of starting the consultation only on basis of the referral notes both midwives, physicians and the women have a well-informed starting point. This subsequently leads to more efficient consultations; the consultations are not used to collect legally required data on unproblematic issues, but can be focused on the women’s experienced problems and worries. Thus the questionnaire and record have made it possible to provide better and more efficient care for the pregnant women.
LEARNING TO MAKE A DIFFERENCE: ENABLING UK CORE MEDICAL TRAINEES TO LEARN AND DEVELOP QUALITY IMPROVEMENT SKILLS THAT OFFER REAL BENEFITS TO PATIENTS

Emma Vaux

Joint Royal Colleges of Physicians Training Board, Royal College of Physicians, Reading, United Kingdom

Objectives: To support the learning and development of new and relevant skills in quality improvement (QI) methodology by junior doctors to enable them to deliver effective QI projects at the frontline.

Methods: The Royal College of Physicians/Joint Royal Colleges of Physicians Programme Training Board, sponsored by The Health Foundation Learning to Make a Difference (LTMD) programme initially ran as a pilot from August 2010 to May 2011. Core Medical Trainees (CMTs) in 5 deaneries were offered the opportunity to undertake a QI project in place of a mandatory clinical audit. Participating trainees were asked to identify a specific area for team or individual improvement and to complete and report on their project within their 4-6 month post. Each trainee was supported by a consultant supervisor, LTMD practical toolkit, LTMD website resources and the central implementation team. Following the pilot’s success, this approach is being spread to all deaneries for CMTs to undertake a QI project within each of the training years and was incorporated as part of their curriculum from August 2012.

Results: In the pilot a total of 61 trainees completed 46 QI projects. Supervisors strongly endorsed the projects. 91% (31/34) of trainees said they would undertake another QI project and 100% found the work a valuable exercise. Moreover, although the emphasis of the project was on trainee learning and development of new skills, the results showed that there was a local impact on patient care. 88% (30/34) of trainees assessed their QI project objectives as having been achieved. In addition, 85% of trainees and 88% (12/14) of supervisors considered their projects as having had a significant impact on clinical practice. One example was a project on the prevention of hospital acquired pneumonia (HAP), which produced an estimated financial cost saving of 45 bed days and £1,800 of antibiotic costs per week and a human saving of nine patients per week from developing HAP. Using the adapted Kirkpatrick’s Model for the evaluation of learning and training, the LTMD approach stands up well in comparison to other evaluations of workplace-based assessments that are currently in use in the UK. With changes in patient care evident from some of the trainee QI project outcomes, LTMD has demonstrated more evidence of benefit to patients’ care compared with any of the current workplace-based assessments.

The continued challenge is the on-going implementation of the right infrastructure and support for CMTs and their supervisors at both deanery and trust level. LTMD is now supported from 2013 by Health Education England ‘Better Training Better Care’ programme enabling the establishment of clinical leaders in quality improvement to further aid adoptability and sustainability of this exciting and rewarding training opportunity.

Conclusion: The LTMD programme demonstrates the acceptability and feasibility among participants of developing new skills in QI methodology and its practical application in their delivery of clinical practice whilst making a visible, real-time difference to patient care. Work continues to embed this training opportunity across all deaneries. Sharing of the learning from the LTMD programme implementation is on-going with other specialties and grades to enable the potential for all trainees to learn and develop QI skills necessary as a doctor in the 21st century, not only for the trainee’s benefit but most importantly for the benefit of their patients.

References: E Vaux, S Went, M Norris and J Ingham Learning to make a difference: introducing quality improvement methods to core medical trainees Clinical Medicine 2012, Vol 12, No 6: 520–525
RELATIONSHIPS BETWEEN THE IMPLEMENTATION OF QUALITY MANAGEMENT STRATEGIES AND CLINICAL OUTCOMES IN EUROPEAN HOSPITALS
Rosa Sunol¹, Onyebuchi A. Arah², Cordula Wagner³, Oliver Groene⁴,*
¹Avedis Donabedian Institute, Barcelona, Spain, ²UCLA, Los Angeles, United States, ³NIVEL, Utrecht, Netherlands, ⁴Health Services Research and Policy, London School of Hygiene & Tropical Medicine, London, United Kingdom

Objectives: Considerable resources are spent on implementing hospital and departmental quality management strategies. Yet, the evidence on the factors associated with the uptake of hospitals of quality management and the impact of quality management systems on clinical outcomes is limited. We investigated associations between hospital level quality management systems and the implementation of quality strategies at department level and the effect of both on clinical outcomes.

Methods: We employed a cross-sectional, multi-level study design that randomly recruited hospitals and their patients from the Czech Republic, France, Germany, Poland, Portugal, Spain, and Turkey between May 2011 and January 2012. We developed a set of algorithms to measure clinical indicators for the four conditions (acute myocardial infarction, Stroke, hip fracture and deliveries) based on their level of evidence, and extracted data from patient charts using standardised methods. Subsequently, we designed composite indicators to measure clinical effectiveness in the four conditions. As explanatory variables we used measures of the maturity of quality management systems at hospital and departmental level. We used directed acyclic graphs to represent and guide the modelling of the complex relationships between explanatory and outcome variables and fitted multivariate linear and logistic mixed models with random intercept by hospital, and adjusted for fixed effects at the country and hospital level.

Results: Overall, 9021 patients admitted to 74 hospitals contributed data to the study (acute myocardial infarction n=2019, hip fracture n=2288, deliveries n=2337, stroke n=2377). The associational analysis found weak positive but mostly uncertain relationships between hospital-wide quality management strategies and measures of clinical effectiveness in the four departments. However, at departmental level we found strong associations between maturity of quality management and measures of clinical effectiveness for acute myocardial infarction (odds ratios from 1.4-2.1), stroke (1.4-16.8) and hip fracture (1.3 – 3.5), and deliveries (avoidance of complications: 0.7). Specialised expertise and responsibility, evidence-based organisation of the pathway and implementation of patient safety strategies were strong predictors for clinical effectiveness.

Conclusion: The weak effect of hospital level quality management on clinical outcomes can be expected given that hospital level quality management is more distal to clinical care delivery. As expected, given the proximity to care delivery, implementation of quality management strategies at the departmental level is strongly associated with better clinical outcomes.
1967

BOLTON RELAPSE PROJECT - USING MOBILE PHONES TO PREVENT RELAPSE
Julie Aulton 1,*, Graham Mallinson 2, Renate Kalnina 2
1 clinical advisor, 2 d2Digital by Design, Manchester, United Kingdom

Objectives:
Bolton’s Relapse Project uses mobile phone technology in 2 ways in order to address these problems:

• to improve communication between service and client by providing text message appointment reminders and requesting confirmation of attendance.
• to support clients to put into practice the personal strategies that support cognitive and behavioural change, via daily individualised motivational text messages.

Project objectives were:
• an improvement in the client engagement rate, across providers,
• reduced representations for treatment over a one year period.
• positive feedback from clients and service personnel regarding the mobile phone system.

Alcohol Misuse and dependency has huge health and social implications for not only the individual but their family (including children) and friends; by supporting clients to maintain sensible drinking or abstinence, a range of harms and associated costs to society can be avoided

Bolton Alcohol Services identified a high attrition rate of clients shortly after detoxification from alcohol and a subsequent high re-referral rate.

Using mobile phone technology the services were able to improve support and achieve better outcomes for clients.

The project objectives were:
• an improvement in the client engagement rate.
• reduced representations for treatment over a one year period.
• positive feedback from clients and service personnel regarding the mobile phone system.

Methods: Clients are sent daily questions about their thoughts and behaviour in relation to their drinking and asked to respond in one of three ways; 1 to say they are doing OK, 2 to say they are struggling or 3 to say they are having difficulty. The clients reply elicits a personalised response, aimed at their self-reported level of need.

Example:

Text question: How are you dealing with any cravings or urges for alcohol today?
Client Response 1:
Automated reply: Well done Graham I’m glad you are coping well.
Client response 2:
Automated reply: Try and distract yourself by doing some gardening Graham.
Client response 3:
Automated reply: Thank you for your response the services will be in touch with you as soon as possible.

The services access an internet based dashboard where they can monitor individual responses and are alerted to those who have indicated a level 3 response.

Results: Quantitative evaluation indicated that:

- engagement rates for clients enrolled the project were 72% compared to 57% for those clients who were not engaged with the project
- re-referral rates for clients engaged on the project was 2% compared to 9% for those clients who were not engaged with the project.
- 100% of client engaged with the project attended the aftercare service
- 69% of clients engaged on the project were successfully discharged compared to 41% of clients not engaged on the project.

Qualitative evaluation indicated that both service users and staff placed a great deal of value on the project furthermore a number of unintended consequences were identified that enhanced service user experience and staff skills.

Conclusion:
Bolton’s relapse project has undoubtedly enhanced the efficiency of the alcohol treatment system; by utilising mobile phone technology to support evidence based service delivery, more clients have been able to make the necessary changes to their thoughts and behaviours in order to achieve their longer term goals.
DEVELOPMENT OF A SUITE OF INDICATORS FOR QUALITY IMPROVEMENT IN MATERNITY CARE

Hannah E. Knight 1,2,*, David Cromwell 2, Jan van der Meulen 2, Ipek Gurol-Urganci 2
1Royal College of Obstetricians and Gynaecologists, 2London School of Hygiene and Tropical Medicine, London, United Kingdom

Objectives: Several recent publications have documented wide variation in maternity care in the UK and considerable deviation from national clinical guidelines. The aim of this project was to develop a suite of robustly-defined, case-mix adjusted quality indicators derived from routine administrative data that can be used to measure clinical practice in English maternity units.

Methods: We assessed the adequacy of existing quality measures used in Europe, the USA, Canada, Australia and New Zealand. Indicators were shortlisted and reviewed by an expert panel according to specific evaluation criteria: validity; statistical power; fairness and technical coding.

The selected indicators were derived for all medium and large maternity units in England using 2011/12 Hospital Episode Statistics data. Indicators were adjusted for differences in case-mix using logistic regression models that incorporated demographic and clinical risk factors available in the dataset: maternal age, ethnicity, socioeconomic deprivation, parity, previous caesarean section, gestational age, presentation, birth weight, hypertension, diabetes, and placenta praevia/abruption.

Funnel plots were used to explore variation in indicator values between maternity units and determine whether differences were more than would be expected due to chance.

Results: 194 existing quality indicators were identified from 33 sources. 94% either did not meet the evaluation criteria or were not possible to derive from the routine database.

Five process and six outcome indicators were selected for inclusion in the final suite, covering the following themes: induction of labour; mode of delivery; perennial tears and emergency readmissions.

Adjustment for case mix had a marked impact at the unit-level, with indicator values for individual units shifting by -37% to +53%; however, adjustment did not significantly reduce the overall amount of variation between units. Amongst the adjusted indicators there was, on average, more than a twofold difference between the 10th and the 90th percentiles, ranging from a 1.6-fold difference in the proportion of induced labours resulting in emergency caesareans section, to a fivefold difference in the rate of emergency readmission within 30 days.

Conclusion: This study highlights the importance of defining clinically meaningful indicators to support quality improvement. Second, the findings demonstrate that unadjusted rates should not be used to compare outcomes between hospitals because of the considerable impact that adjustment has on the identification of outliers. Nonetheless, even after adjustment, we found evidence of considerable variation in intrapartum care among English maternity units which cannot be explained by maternal characteristics or clinical risk factors.
DEVELOPING AND RUNNING A SYSTEM FOR DATA COLLECTION OF PATIENT SATISFACTION AND EXPERIENCES IN NORWAY
Tomislav Dimoski 1,*
1NORWEGIAN KNOWLEDGE CENTRE FOR HEALTH SERVICES, Oslo, Norway

Objectives: “FS-systemet” is a system for retrieving data from the patient administrative systems (PAS).

Norway has one of the most restrictive privacy protection policies. “FS-systemet” has been reviewed (legally and technically) on several occasions by independent review groups and The Data Protection Agency in Norway. “FS-systemet” has been successfully used in Norway since 1995.

The “FS-systemet” has been used by repetitive national projects as well for the small innovative research projects.

Methods: The “FS-systemet” allows collection of patient administrative data (PAS) from all Norwegian health trusts about selected discharged patients or patients with policlinic consultations. PAS provides type of admission (acute or planned), primary and secondary diagnoses and procedures, time of admission and time of discharge. All permanent residents in Norway have a personal identification number which enable linking PAS to the National Population Register, National Health Registry and other health quality registries.

Results: The development of “FS-systemet” started for a small innovative research projects in 1995. From 2000 to 2012 national patient experience survey were conducted annually. Many more research projects followed. Patient Satisfaction Questionnaires have been sent to more than 550.000 patients from all health care sectors in Norway. More than 280.000 responded to the surveys.

The data has also been used in many scientific publications, including PhD dissertations.

Conclusion: A basic system for national quality indicators for patient satisfaction and experiences in Norway was established in 2011. To make reliable comparisons between institutions it is necessary to apply a universal data collection method in all including institutions.

“FS-systemet” meets this requirement in Norway.

References: http://www.kunnskapssenteret.no/Publikasjoner?language=english&reportsandnotes=1&sectionurl=403
http://www.kunnskapssenteret.no/Publikasjoner/Methodological+development+and+evaluation+of+30-day+mortality+as+quality+indicator+for+Norwegian+hospitals.1246.cms?onepage=1
http://www.kunnskapssenteret.no/Ansatte/237.cms
THE POWER OF ACCREDITATION DATA TO INFORM SYSTEM IMPROVEMENTS IN QUALITY AND SAFETY: STRENGTHS AND OPPORTUNITIES FOR IMPROVEMENT IDENTIFIED FROM THE ACCREDITATION CANADA NATIONAL AND JURISDICTIONAL REPORTING PROGRAM

Wendy Nicklin 1, Bernadette MacDonald 1, Jonathan I. Mitchell 2
1Accreditation Canada, Ottawa, Canada, 2Policy and Research, Accreditation Canada, Ottawa, Canada

Objectives: This presentation showcases the value of accreditation data in contributing to system improvement through the creation of national, jurisdictional and customised reports focused on quality and safety.

Methods: 288 Canadian organisations participated in an on-site survey as part of the Accreditation Canada Qmentum program in 2011. Data from all healthcare organisations were analysed for system trends, strengths, and opportunities for improvement.

Given a particular focus on the safety of healthcare services in Canada, emphasis was placed on the Accreditation Canada Required Organisational Practices (ROPs). Key components of the on-site survey, the ROPs are evidence-based practices that mitigate risk and contribute to improving the quality and safety of health services.

Results: National analysis of trended safety data was publicly-released in the 2012 Canadian Health Accreditation Report, which demonstrated high safety performance across all sectors. Of the 36 ROPs in the Qmentum program, 31 showed compliance rates of 75% or greater. The three ROPs with the highest national compliance rates were: ensuring policies and procedures meet infection control guidelines (97%), delivering client safety training (96%), and having a reporting and follow-up system for sentinel events, adverse events, and near misses (96%). Rates for four new ROPs introduced to respond to significant safety risks were also reported. Overall national compliance rates were: 94% for home safety risk assessment, 85% for workplace violence prevention, 79% for use of the safe surgical checklist, and 50% for venous thromboembolism prophylaxis for at-risk clients.

To date, twelve reports have been prepared for Ministries of Health and stakeholder group to showcase system performance, strengths, opportunities for improvement, and benchmarking comparisons across Canada. Using a process to tailor the report contents to the information needs of the particular jurisdiction or group, each report involves a consultation phase. ROP data are included as well as reporting by quality dimensions, standards sets, the leading practices identified, and instrument data on governance, work life and safety culture.

Conclusion: National accreditation data trends continue to inform Accreditation Canada’s reporting products as well as the information provided to health care organisations. As one example, while the medication reconciliation ROP demonstrated the most notable improvement over the past three years, it still remains the top opportunity for improvement (conducting medication reconciliation at admission, 50% across Canada, and at transfer/discharge, 60%). To bring to light this important safety concern, Accreditation Canada led a publicly-released joint report in 2012 with three other national organisations entitled Medication Reconciliation in Canada: Raising the Bar. The report profiled how the Canadian healthcare system is progressing with medication reconciliation, the patient populations at greatest risk, and resources to help organisations implement medication reconciliation.

All organisations ultimately have a responsibility to utilise their aggregate accreditation data to contribute to identifying trends and areas of priority. Accreditation Canada continues to report on quality and safety trends in order to contribute to improved healthcare system performance. By mining significant data collected as part of the accreditation process, Accreditation Canada is able to better support healthcare organisations across Canada and internationally in achieving safer quality care.
SELF ASSESSMENT – WHAT DO USERS THINK?
Mark Brandon \(^1\*,\) Victoria Crawford \(^1\)
\(^1\)Aged Care Standards and Accreditation Agency Ltd, Parramatta, Australia

Objectives: To explore users’ views on self-assessment in long term care in Australia, to inform the development of a new self-assessment tool that enabled assessment of performance against the accreditation standards and assist improvements in performance.

Methods: The Australian Government organisation responsible for accrediting long term (aged) care homes commissioned an independent consultant to undertake the study. The research involved a review of 17 organisation’s websites associated with self-assessment, a literature review and a purposive sample of eight large care home providers located across Australian. A total of 21 participants with considerable experience with accreditation, particularly the self-assessment process, were each 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: The website and literature reviews and the interviews showed that self-assessment is used in a variety of ways, from being a routine 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 a large majority of participants believe 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.

Conclusion: 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 user’s 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.
A PROACTIVE PATIENT-CENTERED CARE MODEL IMPROVED HOSPITALISED PATIENTS EXPERIENCE AND SATISFACTION IN DENMARK

Marianne Lisby 1,*, David W. Bates 2, Ronen Rozenblum 2
1Centre of Emergency Medicine Research, AARHUS UNIVERSITY HOSPITAL, Aarhus, Denmark, 2Brigham and Women’s Hospital, Boston, United States

Objectives: To examine the impact of an interventional patient-centred care model designed to address patient needs, concerns and expectations in order to improve patient satisfaction during hospitalisation.

Methods: Based on our previous study1, a structured, pro-active, patient-centred care model (Patient-Satisfactive model™) was developed comprising interpersonal communicative steps between clinicians and patients for the purpose of improving in-hospital patient satisfaction. The model incorporates clinicians’ efforts to ascertain, address and document the individual patients’ needs, concerns, expectations and perceptions throughout hospitalisation and engages patients in the care process. Elements, considered as essential building blocks of patient-centred care and main determinants of patient satisfaction.

A prospective, cluster-randomised, controlled trial was performed in a University hospital in Denmark which included 835 adult patients from 3 medical and 3 surgical departments throughout the months, March-October 2012. All communicative patients hospitalised > 24 hours were asked at discharge to fill out a satisfaction survey. The questionnaire consisted of 20 items from the Danish National Patient Satisfaction survey and 17 items adopted from the US questionnaire (HCAPS). The questionnaire was pilot-tested prior to study start. The study’s main question was ranked by the patients on a scale from 0 to 10. After a 3 month pre-intervention period, the departments were randomly assigned to a control or intervention group. The intervention group consisted of 2 medical and 1 surgical departments and the control group of 1 medical and 2 surgical departments. Only nurses in the intervention group were trained to deliver the Patient-Satisfactive model™. The questionnaire was analysed using the “difference in differences” method for continuous variables and Chi² test for items using binomial and ordinal scales.

Results: The mean score for meeting patients’ expectations during hospitalisation increased significantly from 7.30 (95%CI, 6.94;7.66) in the pre-intervention, to 9.22 (95%CI, 9.07;9.36) in the post-intervention group: mean difference of 1.92 (95%CI, 2.33; 1.51). In comparison, no change was observed in the control group pre-period 8.27 (95%CI, 7.93; 8.63) and post-period 8.25 (95%CI, 7.94; 8.57): mean score difference of -0.18 (95%CI, -0.45; 0.49). This corresponds to a highly significant relative increase of 26% in the intervention group (P <0.001). In addition, significantly more patients in the intervention group assessed their overall experience of the department as very good or good compared to patients in the control group (P=0.01). In general, all questions related to patient satisfaction and expectations, were significantly improved in favour of the intervention group. Of interest, patients mentioned a handshake, a welcome and a bed with their name plate on as important markers for the “first” experience of the department/hospital.

Conclusion: This simple and interpersonal patient-centred care model remarkably increased the extent to which patient needs, concerns and expectations were met as well as their overall satisfaction with the hospitalisation. Thus, the findings indicate that the Patient-Satisfactive model™ has the potential to improve patient experience in real-time.

A NATURAL EXPERIMENT USING CASE STUDIES TO GENERATE HYPOTHESES ABOUT THE PLACE OF LEARNING COMMUNITIES IN THE IMPLEMENTATION OF IMPROVEMENT SCIENCE IN THE NHS
John Gabbay 1, Andree le May 1, Jonathan Klein 1, Con Connell 1
1 University of Southampton, Southampton, United Kingdom

Objectives: If clinical teams are enabled to act as learning communities they may find it easier to make use of improvement science (IS) when implementing quality improvements (QI). We set up four such groups, funded by The Health Foundation, to work on varied improvement tasks in a range of organisational environments. We used an array of qualitative methods to generate hypotheses about the factors that impact on such learning.

Methods: We followed the progress of improvement tasks in COPD, dementia & elderly care services in four clinical areas all with a strong espoused culture of QI. Using a variant of Guba & Lincoln’s “4th generation evaluation” we conducted 138 semi-structured interviews, multiple observations, 3 focus groups & 9 learning events. We thematically analysed the emerging qualitative data, including formative & summative evaluations, to iteratively develop “rich descriptions” of the improvement & associated learning processes & generate hypotheses.

Results: The four groups’ actual organisational cultures were unexpectedly much more varied than the espoused cultures had suggested, giving a range of environments that provided a natural experiment. The most successful learning & improvement was in the group with a longstanding QI culture based on improvement science. The other three groups were unable to capitalise on “hard” IS methods (Table) such as PDSA, process mapping, or “Lean” methodology.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Achieved inpatient elderly care aims &amp; more</td>
<td>Agreed new dementia training approach but not yet acted upon it</td>
<td>Group unable to use intended improvement methods but COPD care improving</td>
<td>Significant changes in dementia care pathways</td>
</tr>
<tr>
<td>Organisational environment</td>
<td>Fully supportive QI structure &amp; culture used by the group, despite recent restructuring traumas</td>
<td>New grouping; little connection with prevailing QI cultures &amp; structures in parent organisations</td>
<td>Organisational upheavals; Different approach to QI (eg performance manage “bad apples”)</td>
<td>Stand-off between key parties; no use of available QI structures Improved mainly through commissioning &amp; pathway redesign out with this project</td>
</tr>
<tr>
<td>Improvement science?</td>
<td>Embedded in the project &amp; fostered by the organisation Group requested soft skills training for clinicians</td>
<td>Not used, although potentially available from the main organisation</td>
<td>Enthused the group but not accepted by their managers</td>
<td>Not used</td>
</tr>
<tr>
<td>Learning community?</td>
<td>5 both the group itself &amp; wider community of staff</td>
<td>2 only during the facilitated learning events</td>
<td>4 core group only</td>
<td>1 only during the facilitated learning event</td>
</tr>
</tbody>
</table>

We found that local knowledge & “soft” organisational skills, including communication, assertiveness, negotiation, leadership, political, knowledge management, time management, prioritising, stress management, administrative & educational skills were more often absent in the unsuccessful cases, & that skilled facilitation was essential to maintain the learning communities except where the QI culture was already very strong. The “4th generation evaluation” methods & the facilitation of learning events (sometimes content as well as process-based) proved helpful in focusing the improvement tasks & the learning.

Conclusion: Two main (testable) hypotheses emerge:
1. Organisational & personal skills are an essential precursor to the application of “hard” IS skills & must be well developed if the latter are to succeed.
2. Learning communities function more effectively when facilitated.

Achieving sustained improvements with IS may require specific interventions:
1. for learning soft skills; and
2. to systematically facilitate the QI process.
PATIENTS PERCEPTION OF THE DECISION-MAKING PROCESS IN DANISH CANCER CARE

Janne L. Knudsen 1,*, Cecilie Sperling 1
1Quality and Patient Safety, Danish Cancer Society, Copenhagen, Denmark

Objectives: The disclosure of a cancer diagnosis and the decision about treatment are significant events for a patient. If quality in these processes is to be achieved patients’ needs, values and preferences have to be respected. This is the core of patient-centeredness (1,2). If neglected it can lead to low understanding and recall of information, poor compliance to care and reduced health outcome. Knowledge about cancer patients’ experiences and preferences concerning the disclosure of diagnosis and the decision-making-process are scarce. The objective of the presentation is to present and discuss the results from studies involving cancer patients in Denmark.

Methods: In 2010 and 2012 the Danish Cancer Society conducted national surveys of cancer patient’s perception of quality of care. The participants were adults with a first-time cancer diagnosis:

- The first clarifies the patient perspective from first symptom to end of treatment. 6.720 newly diagnosed patients were invited. 65% responded.
- The second mainly addresses health problems, needs and experiences after the initial treatment until 2 years after. 6.701 patients were invited. 64% responded.

The surveys were comprehensive. They included items about the delivery of care, involvement and preferences about being involved in decision about treatment. Age, gender, diagnoses and education were selected as common background variables. Multiple logistics model was used.

Results: The study populations are representative with only minor exceptions.

Delivery of the diagnosis:
Every 10th receive the diagnosis by letter or phone. Face to face delivery is mainly managed at hospital by a physician, unknown to every second in advance. Nearly half of the patients do not experience the diagnosis to be delivered in an appropriate manner. Both organisational and interpersonal factors have an impact on patient experiences. Factors related to the interpersonal context have the strongest impact on the overall assessment of care. Significant differences are seen in accordance to cancer disease and patient characteristics. The specific results will be presented.

Decisions about treatment:
Every 3rd were not adequately involved in the decision about cancer treatment. Three out of four prefer shared decision-making. Every 8th prefer to make the final decision based on being informed by the physician of pros and cons. Only few patients prefer not being involved. The results are significant correlated with age, gender and level of education. The results will be presented.

Conclusion: The patients’ experience of the disclosure is strongly associated to their overall assessment of care, and the relationship with the health professional is of greatest importance. Patient with cancer wants to a much higher degree to be involved in the decision-making process about treatment in accordance with the principles of shared decision-making. The interpersonal factors have to a much higher degree to be taken into account aiming at patient-centred care. The results show, that there is no one - fits all model. They show that interaction between patient and health professionals has to improve and the organisational prerequisites have to support this, if quality is to be achieved.

UNDERSTANDING TEAM EFFECTIVENESS IN CLINICAL NETWORKS: A MIXED-METHODS CASE STUDY
Deborah E. White 1,*, Jill M. Norris 2, Laurie Beverley 2, Karen Zwicker 3
1Faculty of Nursing, University of Calgary, 2Alberta Health Services, 3Ward of the 21st Century, University of Calgary, Calgary, Canada

Objectives: With a stronger global focus on patient safety and quality improvement initiatives, Clinical Networks (CNs) have been established as a structure to improve quality of care by addressing issues of safety, accessibility, effectiveness, and efficiencies of the healthcare system. While significant resources have been invested to support the operation of CNs, there is little understanding about the factors contribute to their effectiveness (Haines et al., 2012). This pilot study addresses this gap through a qualitative evaluation of two CNs in Alberta Health Services.

Methods: A prospective comparative case study approach was used. Data from documents and observations of CN meetings were collected over 10 months. CN members and leaders were also invited to participate in semi-structured interviews (n=45). Due to the evolving nature of the CNs, data collection and analysis were conducted simultaneously. A thematic analysis of documents, observation notes, and interview transcripts were completed. Triangulation with multiple data sources, researchers, and the literature contributed to a rich description of CNs.

Results: Four interconnected themes emerged from the data:

1. structure and accountability;
2. engagement and sharing of knowledge;
3. role of leadership;
4. measuring impact.

Different priorities within geographic zones and CNs left participants questioning who had the authority to implement changes, spread initiatives, and how to message decisions. Many felt that “the right people [were] at the table,” but that improvements were required. This included more representation across geographical zones and diversity in type of stakeholders (i.e., frontline, patient advocate) to assist CNs in accomplishing goals and initiatives, and improving uptake and sharing of knowledge to a wider audience. There were no formalised plans in place for engagement and information sharing. As such, information was not always disseminated outside the core team meetings. “There isn’t a common thread … it’s another form of…siloing.” Regardless of leadership level, participants felt the role of leaders was to provide vision, direction, alignment, and resources to support the work of CNs. Several also felt facilitation skills were important and assisted in “keeping people on track.” While many saw leadership as “very supportive, strong,” some viewed executives as not fully engaged in prioritising, providing resources, communicating, and acknowledging. Some viewed the ability to evaluate CN initiatives demonstrated the value of CNs. Although members emphasised the importance of evaluation, efforts in doing so were not always considered at the inception of a task. “I don’t actually get a sense that there’s any sort of plan in place for any of the things we’re working on.” Some were also worried about resources (i.e., human resources, information technology) and how CN initiatives “get in cue” with all other priorities. Despite challenges, CNs achieved several accomplishments such as development and implementation of clinical pathways (e.g., adult depression), education and workforce improvement initiatives (e.g., training standards), and data collection and monitoring (e.g., performance indicators).

Conclusion: To facilitate success, CNs need multiple layers of leadership, clear articulation of the CN structure and accountability, and a plan for engagement and dissemination of knowledge. This research provides important information about the factors that health leaders, policy makers, and practitioners need to consider in developing, implementing and evaluating CNs across and within diverse health regions.
ISRAEL'S NATIONAL PROGRAM FOR QUALITY INDICATORS IN COMMUNITY HEALTHCARE – TRENDS AND INTERNATIONAL COMPARISONS

Dena Jaffe, Orly Manor

1Israel National Program for Quality Indicators in Community Healthcare, Hebrew University-Hadassah, Jerusalem, Israel

Objectives: The Israel National Program for Quality Indicators in Community Healthcare (QICH) provides policy makers and the public with information on the quality of community healthcare in Israel. The following study examines 5-year trends in QICH indicators (2006-2010). Quality indicators were compared with other national primary care indicators from the United States, United Kingdom, Canada, OECD and European Union.

Methods: Electronic patient records are collected annually for the entire Israeli population from all four health plans in Israel – Clalit Health Services, Leumit Health Fund, Maccabi Healthcare Services, and Meuhedet Health Fund and are presented for the years 2006-2010. Data are aggregated to create the national indicator set. Quality indicators are reported annually across six key clinical fields in community healthcare: asthma, cancer screening, immunisations for older adults, child and adolescent health, cardiovascular health, and diabetes.

Results: Over the past five years the quality of healthcare in Israel has improved in most areas of disease prevention and care. Noteworthy are the increased rates of documentation of height and weight in children and body mass index (BMI) for adults. Among children age 7 years, rates increased from 44% in 2008 to 63% in 2010 and for adolescents ages 14-18 years, rose from 18% in 2006 to 62% in 2010. For adults ages 20-74 years, BMI documentation rates increased by 51% (absolute change) from 27% in 2006 to 78% in 2010. In the US, BMI documentation rates for 2010 range from 41% to 50% according to the type of healthcare provider. Over the 5-year time period colon cancer screening rates in Israel increased by 19% (absolute change) (28% in 2006 to 47% in 2010). Although these rates are higher than those in other European countries such as Greece (2008, 4%) and France (2008, 21%), they have not yet achieved the rates in the US (2008, 50%) or Germany (2008, 54%). For influenza vaccination (seasonal) for elderly, rates in Israel increased from 44% in 2006 to 57% in 2010. These vaccination rates were similar to the OECD average of 56% (2009), higher than the European Union average of 26% (2008) and lower than the rate in Canada (2009) and France (2008) of 67%. Adherence to guidelines for the secondary prevention of cardiovascular disease for heart patients was defined as treatment with beta blockers for up to five years following a percutaneous coronary intervention or coronary artery bypass graft. These rates remained at about 69% from 2006-2010 and are lower than the reported rates of 73%-77% in England, Scotland and Wales (2010/2011). In comparison with rates for diabetes care with similar indicators from the US and UK, adherence to standard practice in Israel is fairly high. Documentation rates of levels of blood pressure, cholesterol, and blood glucose, influenza vaccination, and periodic eye examination increased over the five-year assessment period and for several indicators reached levels of over 90%. Similarly, measures of secondary outcome improved over time. For example, the per cent of adult patients with uncontrolled diabetes (HbA1c >9%) in Israel is 14% while in the US is 29% and in the UK 12%.

Conclusion: While numerous factors affect international comparisons, the quality of healthcare in Israel has improved in areas of disease prevention and care, and is comparable or higher than those in other Western countries. The systematic and routine assessment of QICH is essential for understanding the state and direction of quality if care in Israel.
PREPARING THE YELLOW CARD SCHEME FOR SNOMED CT ENCODED DATA

Donna Truran 1,*, David Hansen 2, Paul Barrow 3, Patricia Mozzicato 4
1 Australian e Health Research Centre, CSIRO, Marsfield, 2 Australian e Health Research Centre, CSIRO, Brisbane, Australia, 3 Vigilance and Risk Management of Medicines, Medicines and Healthcare products Regulatory Agency (MHRA), London, United Kingdom, 4 Chief Medical Officer, MedDRA Maintenance and Support Services Organisation (MSSO), Chantilly, United States

Objectives: The Yellow Card Scheme [i] collects reports of adverse drug reactions (ADRs) from healthcare professionals; these are subsequently coded using MedDRA. Developments to increase collection of ADRs directly from clinical systems, where medical terms are coded in SNOMED CT, has the potential to significantly increase the quality of data available for detection of potential medicines safety issues. To enable the automatic generation of an ADR from the electronic health record, a map between the terms in SNOMED CT and MedDRA is required.

Methods: MedDRA contains approximately 70,000 terms for coding information in an adverse reaction report and for subsequent analysis of those data. A patient’s symptom can be an adverse event (e.g.: headache). SNOMED CT is a clinical terminology with over 300,000 concepts and with a description logic that allows for complex queries of clinical data. The researchers used a SNOMED CT mapping tool, Snapper [ii], to map between MedDRA Version 15.1 Preferred Terms (PTs) and SNOMED-CT (January 2013 release). A sample of MedDRA PTs was selected (n=2000), comprising the terms most frequently used in UK ADR reports on the MHRA Sentinel database (terms occurring in the range = 11 – 5798 individual ADR reports, coverage = 93% of UK reports).

The MedDRA terms were firstly auto mapped using the Snapper tool constraining SNOMED-CT content to the Clinical Finding hierarchy. A dual independent mapping approach was taken, with two terminologists from CSIRO producing maps that were then compared. Human review was undertaken to validate the auto maps and to determine that all SNOMED-CT and MedDRA terms were equivalent in meaning (one-to-one, bi-directional mapping). Analysis of the dual-map outcomes was undertaken:

1) comparing maps produced by CSIRO; and
2) comparing our consensus maps and with those previously produced by the National Library of Medicine [iii]

Results: Preliminary results show that Snapper auto mapped all 2000 MedDRA terms to SNOMED-CT (100% candidate maps returned). Dual-map comparisons reveal that CSIRO terminologists rarely differed in their selection of SNOMED CT concepts equivalent to the MedDRA PT (n=19; 99% concordance). Of the 2000 original MedDRA terms, 1986 achieved an equivalent SNOMED-CT concept as a map target accurately preserving the meaning of both preferred terms (99% complete). Fourteen (14) MedDRA terms require advice from MHRA and MSSO before maps can be confirmed. Comparisons with NLM SNOMED CT-MedDRA maps show some differences to this map product (n=62, concordance= 97%). These are attributable to differences in mapping methods and the use of different MedDRA and SNOMED CT versions and editions.

Conclusion: This initial mapping of 2000 terms showed that bi-directional maps between the most used MedDRA terms and SNOMED CT is possible, with high clinical accuracy. Further analysis is being undertaken to increase map completeness with dual mapping being undertaken by MSSO and MHRA experts. This work demonstrates that mapping strategies can be applied to data collected directly from clinical systems which ensures the accuracy and relevancy of data for surveillance purposes. Future studies will focus on constructing maps between SNOMED CT and the remaining MedDRA content to ensure comprehensive coverage thereby improving ADR data available to the Yellow Card Scheme.

References:
THE ROLE AND POTENTIAL OF HUMAN RESOURCES DEPARTMENTS IN HEALTHCARE ORGANISATIONS

David Pereira ¹, David Greenfield ¹, Geetha Ranmuthugala ², Jeffrey Braithwaite ¹
¹Australian Institute of Health Innovation, University of New South Wales, Sydney, ²School of Medicine, University of Queensland, Toowoomba, Australia

Objectives: The management of human resources is a crucial element in promoting healthcare quality and safety. Effective Human Resource Management (HRM) practices have been found to positively influence outcomes connected to organisational commitment, service delivery and patient care. However, realising these outcomes consistently remains a challenge. This study investigated the role and potential of Human Resources (HR) departments in healthcare organisations.

Methods: A qualitative cross-sectional study was conducted with 152 clinicians and 11 HR department staff from seven hospitals in Sydney, Australia. Focus groups and interviews were conducted with clinicians and HR staff between March and November 2010. Clinicians addressed questions on how much influence the HR department has on their team and how they would react to further management influence. HR staff commented on how clinicians are influenced by the HR department and on how useful it would be for the HR department to increase its involvement in clinician management. Both clinicians and HR staff presented their views on HRM in healthcare organisations. Data were thematically analysed to determine common threads and interrelating implications.

Results: Clinicians reported the HR department being involved principally with staff recruitment, payroll and resolving employee issues. HR staff highlighted the role of the HR department to: provide policy and procedure guidance; resolve staff grievances; facilitate managers in their duties; educate on the inappropriateness of workplace bullying and harassment; deal and negotiate with unions; and protect the organisation. With regards to increasing HR department involvement in staff management, clinician and HR staff responses were mixed. The majority of clinicians were against increasing HR department involvement in staff management, perceiving that the HR department lacks an appreciation of clinical matters. However, some clinicians welcomed HR department efforts for better recruitment efficiency, promoting manager accountability and increasing development opportunities. Some HR staff indicated that additional HR department involvement would be useful in management areas of planning, evaluation and professional development but such efforts would depend on the availability of resources. Other HR staff were against increasing HR department involvement in staff management, citing the risk of creating a bureaucratic environment and the need for clinical managers to fulfil their responsibilities. Communication and consultation were key issues cited by clinical staff as important aspects in healthcare HRM. Indicating HRM to be important in managing healthcare professionals, HR staff perceived that the HR department adds value to HRM by providing advice and guidance to frontline and senior managers.

Conclusion: There is a lack appreciation among clinicians for the HRM role played by the HR department. Consequently, there is the opportunity for HR departments to more effectively promote their role, and evaluate issues related to improving organisational, team and clinical outcomes. There exists common ground between clinicians and HR staff with regards to improving staff development and developing the competence of clinical managers. Healthcare organisations could build upon the common HRM expectations to utilise the HR department’s potential to enhance work environments, and consequently improve service quality.
USING PATIENTS AND STAFF EXPERIENCES IN CO-PRODUCTION FOR QUALITY IMPROVEMENT IN HEALTHCARE IN THE NETHERLANDS
Femke De Wit, Femke Vennik, Ilse Raats, Kor Grit
1CBO, Utrecht, 2Institute of Health Policy and Management, Rotterdam, Netherlands

Objectives: This study investigates a) whether systematically involving patients and staff experiences in co-designing healthcare leads to meaningful improvement of hospital care, and b) the actions and measures needed to facilitate the process of co-design and to embed this approach and its results in the organisational structure and culture of hospitals.

Methods: In the Netherlands 1 Haematology and 3 Oncology departments participated in a project to improve the quality of care through the use of patient participation methods. All participants chose Experience Based Co-Design (EBCD, Bate & Robert 2007) or a variation of this method. Key element of EBCH is the collaboration between staff and patients, not only at the start of the project (identifying and sharing experiences) but also in the follow-up (prioritising and designing improvements). The idea of co-production was reflected within the formation of the project teams, which consisted of at least a manager, quality staff officer, healthcare professional, and nurse and patient representatives. The teams were responsible for the content and progress of the project. They were supported, trained and monitored by a national expert team that consisted of researchers, facilitators and representatives from a patient organisation. This co-design quality improvement project was studied using in-depth semi-structured interviews (N=15) with members of the project teams, observations during the 12-month project (e.g. project team meetings, events with patients and/or staff) and document analysis (e.g. of action plans, minutes of meetings).

Results: All teams showed great enthusiasm for the concept of co-production with patients, despite the considerable investments in time, budget, facilities (such as camera supplies) and personnel that are required. A notable fact was that three of four teams made adaptations to the EBCH approach as described by Bate & Robert (2007) to adjust to local conditions. This facilitated the implementation of the approach. To create an new awareness amongst staff and patients about the positive effects of co-design, it seems necessary to make deliberate choices in how flexible the method is applied. Key elements such as building trust and creating an equal playing ground are essential for the success of the method. Systematically involving patients and staff experiences in a co-design process led to quality improvements such as information about waiting time in waiting rooms, building a larger consulting room and information leaflets explaining the whole care process a patient is facing.

Conclusion: As experiences of patients and staff are the starting point for creating co-produced solutions in healthcare (by means of EBCH), the improvements are felt to be meaningful. In order to facilitate the process of co-design and to create a new awareness of meaningful collaboration between staff and patient’s careful staging of the different steps in the process is needed. Flexibility in the implementation of EBCH facilitates local adaptation of the method.

INTERNATIONAL CARDIAC SURGERY BENCHMARKING STUDY: EVALUATION OF CARDIAC AND VALVE REPLACEMENT PROCEDURES TO DRIVE IMPROVEMENT
Claudia Jorgenson 1,*
1Joint Commission Resources, Oak Brook, United States

Objectives: The International Cardiac Surgery Benchmarking (ICSB) pilot project was designed to develop a sustainable program to support the improvement of outcomes of cardiac surgical procedures in participating organisations. The project also was designed to enable hospitals to evaluate the current status of their coronary artery bypass graft (CABG) and valve surgery risk-adjusted mortality rate and encourage them to implement and measure rates of improvement using an adaptation of the New York State Department of Health (NYSDOH) Cardiac Surgery Reporting System (CSRS) model.

Methods: Fifteen (15) Joint Commission International - (JCI-) accredited organisations participated in the project. Each organisation must have performed a minimum of 200 CABG and/or valve-related procedures within a one-year time frame. Data analysis was performed on six quarters of data collected beginning 1 October 2009 through 31 March 2011. Logistic regression was used to develop a predictive model of 30-day mortality. This statistical method was used to develop models separately for patients undergoing isolated CABG, valve-only, and a combination of CABG and valve surgeries. 30-day mortality is the dependent or outcome variable; the patients’ preoperative characteristics are the independent or risk factors. The risk factors used were the same as those used to compare 30-day mortality among New York state hospitals performing cardiac surgeries. Once developed, the models were used to calculate the probability of mortality for each patient in the database. These probabilities were then added for all the patients at each participating hospital to arrive at the expected mortality rate, based on the patients’ risk factors at each hospital. A hospital’s risk-adjusted rate was calculated as the overall ICSB mortality rate multiplied by the quotient of the observed mortality divided by the expected mortality rate. A confidence interval (CI) was calculated for each risk-adjusted rate to quantify the variability of a hospital’s risk-adjusted rate. A CI statistically identifies the range of values that might be expected for a hospital’s risk-adjusted mortality rate that could be explained by random variation alone. The CI width is proportional to the number of cardiac surgeries submitted for a hospital.

Results: Three of the 15 participating organisations performed qualifying cardiac surgeries on fewer than 100 patients during the 6 quarters for which data were analysed. The incidence of extensive aortic atherosclerosis and peripheral vascular disease was remarkably lower for patients in the ICSB population than for patients in the New York population for isolated CABG surgery and valve and CABG surgery combined. The incidence of COPD and renal failure was lower in the ICSB population for all three types of surgeries analysed. Although the overall mortality rate for isolated CABG was similar to the New York 2005-2007 rate, the lower prevalence of co-morbidities in the ICSB population yielded expected mortality rates that were lower than the overall rate when using the New York hospitals as the comparison group. Onsite reliability testing for 14 of the 15 participating organisations demonstrated rates from 70% to 98%, which improved following changes organisations implemented as a result of participating in ICSB.

Conclusion: JCI believes this pilot was successful regarding the number of surgeries performed, the ability of hospitals to fully participate without on-site training and support, and the reliability of the data reported. The pilot was also effective in helping to identify weakness of the program which can be used to improve the report process and develop an enhanced program.
ACCREDITATION SURVEY RELIABILITY: TECHNIQUES TO ACHIEVING A CREDIBLE SURVEY OUTCOME

Lena Low 1,2,*, Jeffrey Braithwaite 2, David Greenfield 2
1The Australian Council on Healthcare Standards, 2Australian Institute of Health Innovation, Centre for Clinical Governance, University of New South Wales, Sydney, Australia

Objectives: To identify the influences that impact on surveyors participating in the hospital-based survey process and to identify how they deal with those influences.

Methods: The foundation for the research was the hospital-based accreditation program conducted by the Australian Council on Healthcare Standards (ACHS). Data was obtained from two main sources: interviews of eight medical clinicians (MC) surveyors and a case study exercise involving over 400 surveyors, formed into survey teams, and drawn from multi-disciplinary backgrounds including MCs, nursing, allied health and administrative health professionals.

The interviews comprised seven questions that were purposefully designed to be non-directive and open ended, thereby allowing the MC surveyors an opportunity to describe the influences they encounter on survey. The case study exercise included a description of six scenarios that could realistically occur during a survey and the survey teams were asked to document the influences contained within the scenarios and describe how they would deal with them. Thematic analysis, based on grounded theory and supported by automated content analysis, was used to analyse the interview transcripts and case study responses.

Results: Surveyors were able to identify a range of influences that impacted the survey process which have been classified into fourteen types. These influences were as follows: the surveyor’s professional and personal background; the conduct of the survey team; the composition of the survey team; leadership and the role of the survey coordinator; ACHS support and training; planning and management of the survey, approach to survey (peer review and collaborative); the attitude of staff and management; the status of the organisation undergoing survey; reputational influences; politics (federal, area, local); preconceived opinions; the accreditation program; and the surveyors awareness of the need to be objective. The surveyors were aware of a range of related techniques to address the influences and demonstrated their ability to implement them appropriately.

Conclusion: Reliable, credible survey results are critical to the health care accreditation process. An in-depth understanding of the types of influences that might bias the results and how surveyors deal with these influences is important to accreditation agencies. This study identified a range of influences that can impact the survey results whilst, at the same time, identifying a range of techniques which surveyors employ to mitigate this risk.
RESTRAINT MINIMISATION PROJECT
HM Lee, KS Tang, II Mak, MY Wong
1Anesthesia and Intensive Care, 2Quality and Safety, HOSPITAL AUTHORITY, Hong Kong, Hong Kong

Objectives: Restraint is widespread used in ICU despite it is increasingly being questioned by many studies. Inappropriate use of physical restraint is proven to cause various problems to patients including delirium, loss of dignity and physical injuries. Standardisation of using restraint and regular reviewed by an established team might help to reduce the inappropriateness of restraint application.

The aim of this project is to decrease the inappropriate application of physical restraint in ICU

Methods: The project included:

1. To conduct a prevalence study on physical restraint in ICU before implementation of the project
2. To develop an objective scoring tool to aid nurses in making restraint decision

The scoring tool consists of 19 items based on patients’ behaviour, muscle power and types of medical devices being used. Each item had its own score. Patients would be categorised into three colour zone (red, yellow, green) depended on the total score. In red zone, restraint would be considered to be necessary for the best interest of patients. In yellow zone, decision of using physical restraint was subjected to nurses’ judgment. In green zone, restraint would not be used.

A prospective clinical audit on using the scoring tool was started from Sept 2012 to Dec 2012 during the ICU morning ward round. Definition of inappropriateness of using restraint included:

1. Patients were under muscle relaxant infusion
2. Patients were quadriplegia
3. Patients were diagnosed to be brain dead
4. Patients were totally alert and co-operative
5. Discordance between the use of restraint and the categorised colour zone.

Results: 555 ICU patients were involved in the evaluation. Compliance rate of using the scoring tool is 80%. 40% of patients were physically restrained at the time of audit; the prevalence rate is similar to the background rate which was 35% according to the prevalence study. Inappropriateness was much improved from 12% to 5% after implementation of the project. Among those patients classified as yellow, 40% of them were not restrained.

Conclusion: By using an objective tool to aid nurses in making restraint decision can help to reduce the inappropriate use of physical restraint in ICU.
# TELE-MONITORING AND READMISSION RISK

Niki D. Shah 1,*, Mae Centeno 1, Clifford Fullerton 1, David Ballard 2

1Institute of Chronic Disease and Care Redesign, 2Institute for Health Care Research and Improvement, Baylor Health Care System, Dallas, United States

**Objectives:** To determine which parameters are significant in indicating increased risk of readmissions in the geriatric population based on utilisation of tele-monitoring.

**Methods:** The Deerbrook Charitable Trust awarded Baylor Health Care System a $3 million grant to develop a comprehensive transitional care program for Heart Failure (HF) and Pneumonia (PNE) geriatric patients. As part of the overall intervention, tele-monitoring was used to assess the daily disposition of the program participants. A series of 6 questions were asked daily to address acute care needs related to HF/PNE with supplemental surveys addressing depression, frailty, appointment adherence and medication compliance were asked at regular intervals during the program to assess the holistic condition of the patient. Patients could either use the telephone or log-in online to key in their responses. Patients who had a HF or PNE clinical variance were flagged in the tele-monitoring system and designated members of the interdisciplinary care team contacted the patient to address the specific clinical/social issues.

**Results:** Of the patients that were eligible for the tele-monitoring program: patients that completed the program had a readmission rate of 14%, those that participated but did not complete the program had a readmission rate of 47% and patients that refused tele-monitoring altogether had a readmission rate of 24%. Criteria that excluded patients from tele-monitoring were: mentally unable, hard of hearing, admission to rehabilitation services/hospice/skilled nursing facility.

<table>
<thead>
<tr>
<th>Readmitted Patients</th>
<th>Non Readmitted Patients (Telemonitoring Completed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>72% of patients reported a clinical variance such as shortness of breath, dizziness or chest pain the day before or the day of their readmission</td>
<td>N/A</td>
</tr>
<tr>
<td>41% of patients reported they were mildly depressed</td>
<td>8% were moderately to severely depressed, 22% were mild to minimally depressed</td>
</tr>
<tr>
<td>69% of patients were classified as high risk on the Activities of Daily Living scale (ADL)</td>
<td>57% of patients were classified as high risk on the Activities of Daily Living scale</td>
</tr>
<tr>
<td>90% of reported they had their prescriptions filled and were taking their medications</td>
<td>100% of patients reported they had their prescriptions filled and were taking their medications</td>
</tr>
<tr>
<td>50% of patients reported they had a follow-up appointment with their primary care provider</td>
<td>60% of patients reported they had a follow up appointment with their primary care provider</td>
</tr>
<tr>
<td>98% of patients had at least 5 days of reported clinical issues</td>
<td>49% of patients had at least 5 days of reported clinical issues</td>
</tr>
<tr>
<td>36% of patients discontinued the tele-monitoring program before its completion</td>
<td>N/A</td>
</tr>
<tr>
<td>27% of patients that were eligible for tele-monitoring did not engage</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**Conclusion:** Technology is increasingly becoming a tool used in patient care. Understanding its potential and limitations are important when making clinical and operational decisions. As part of a transitional care intervention for geriatric patients, tele-monitoring can assist the care team in proactively identifying patients who may have a higher propensity to be readmitted. Survey questions around number of clinical issues and ADL assessments were better indicators of readmission than others. As individual variables, survey questions may not be a robust indicator for readmissions but as a whole, the survey results create an overall summary for the care team that would indicate whether a patient is high risk. Common issues and barriers for patients in the program were: difficulty with using the phone/internet, understanding the questions, admission to hospice/rehab, enrolment in a tele-monitoring program through a home health agency, homelessness or lack of phone and expiration.
SECOND VICTIMS AFTER ADVERSE EVENTS: THE NEED FOR AN INTERNATIONAL APPROACH
Eva Van Gerven 1,*, Reema Harrison 2, Craig White 3, Kris Vanhaecht 1
1Department of Public Health, UNIVERSITY OF LEUVEN, Leuven, Belgium, 2Institute of Psychological Sciences, University of Leeds, Leeds, 3NHS Ayrshire and Arran, University of the West of Scotland, Ayr, United Kingdom

Objectives: Adverse events within the health care setting can lead to two victims: the patient & family and the involved health care professional(s). The objectives of our initiative was to launch a knowledge sharing & research network among institutes who have expertise in this topic.

Methods: We searched for literature in the electronic databases Medline, Embase and Cochrane. We searched from the start of each database until September 2010 for English-language articles. Identified references of the selected articles were manually reviewed for additional articles. Both the general concept and the support systems for second victims were explored. Based on this literature review the lead researchers were contacted. Next to this search method experts were contacted via the Institute for Healthcare Improvement in Boston.

Results: A total of 32 research articles and 9 non-research articles were identified for this review. Nurses, medical doctors and all other health care professionals can be traumatised after being involved in an adverse event. The second victim phenomenon was first described by Wu in 2000. The prevalence of second victims after an adverse event is estimated up to 50%. The reaction of the second victims can be emotional, cognitive and behavioural. They can respond with serious emotional distress. In the aftermath of the adverse event health care providers use different coping strategies, which has an impact on their patients, colleagues, and themselves. After the critical clinical event, defensive as well as constructive changes have been reported in practice. Support strategies include support organised at the individual, organisational, national or international level. A common intervention identified support for the clinician to be rendered immediately. Most important support guidelines are the clinical crisis management plan of the Institute for Health Care Improvement, the ‘forYou’ programme of the University of Missouri and the Medically Induced Trauma Support Services (MITSS) toolkit.

Conclusion: The second victim experience can have a significant impact on clinicians, colleagues, and subsequent patients. Because of this broad impact it is important to offer support for second victim coping. In the aftermath of adverse events, clinician support has been noted to promote professional recovery and to promote constructive changes within health care systems. When an adverse event occurs within a healthcare organisation, it is critical that support networks are in place to protect both the patient and involved healthcare providers. To improve the quality of care and to sustain a culture of patient safety, there is a need to support health care clinicians who are suffering as second victims. Several international institutes and universities are comparing results of second victim research and have launched a new European research network to collaborate, share knowledge and launch scientific studies on this health policy topic. The ERNSTV group is the European Research Network on Second & Third Victims and consists of researchers from leading universities in Belgium, England, France, Italy, Scotland, Sweden, Switzerland and the United States.
POWER OF THE NHS PATIENT REPORTED OUTCOME MEASURES (PROMS) PROGRAMME TO IMPROVE QUALITY
Elizabeth A. Lingard 1, Simon J. McInerney 1, Mark F. Lambert 1
1North East Quality Observatory System, Newcastle upon Tyne, United Kingdom

Objectives: The NHS Patient Reported Outcomes Measures (PROMs) Programme in England was introduced in 2009 to provide PROMs for four elective surgical procedures including hip replacement, knee replacement, groin hernia repair and varicose vein surgery. Use of PROMs data to compare providers by average health gain reported following these elective procedures is becoming more common. The aims of this project were to ascertain what proportions of these elective surgical procedures have PROMs data included in the models that generate the average health gain scores and the extent to which this varies between providers.

Methods: National PROMs data for NHS-funded hip replacement, knee replacement, groin hernia repair and varicose vein procedures from 1 April 2011 to 31 March 2012 are included. Outcome measures collected preoperatively and six-months after surgery include the generic EuroQol (EQ-5D) score for all procedures and condition-specific scores for hip (Oxford Hip Score, OHS), knee (Oxford Knee Score, OKS) and varicose vein surgery (Aberdeen Varicose Vein Questionnaire, AVVQ). All data is available on the NHS Information Centre (IC) website, which provides the total number of eligible Hospital Episode Statistics (HES) episodes for each procedure and the number of modelled records for each of the outcome scores (provisional data for 2011/12, updated 14 February 2013).

Results: The table below reports the number of eligible HES episodes for each procedure and the number that have complete PROMs data that was included in the models reporting adjusted health gain. Nationally, a higher proportion of hip and knee replacement procedures have EQ-5D data (49.0% and 48.2% respectively) compared to both groin hernia (31.3%) and varicose vein surgery (24.4%). There are consistently higher rates of condition-specific scores with OHS (54.4%), OKS (52.6%) and AVVQ (25.9%). For all scores reported there is wide variation between providers in the proportion of eligible HES episodes that have PROMs data included in the models.

<table>
<thead>
<tr>
<th>Procedure - PROM</th>
<th>Eligible HES Episodes (number)</th>
<th>Modelled Records (number)</th>
<th>National Rate (%) = Modelled / Eligible HES</th>
<th>Provider Rates (%) Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hips - EQ-5D</td>
<td>72,352</td>
<td>35,423</td>
<td>49.0</td>
<td>6 to 90</td>
</tr>
<tr>
<td>Hips - OHS</td>
<td>72,352</td>
<td>39,333</td>
<td>54.4</td>
<td>7 to 97.5</td>
</tr>
<tr>
<td>Knees - EQ-5D</td>
<td>77,463</td>
<td>37,337</td>
<td>48.2</td>
<td>7.8 to 95.8</td>
</tr>
<tr>
<td>Knees - OKS</td>
<td>77,463</td>
<td>40,784</td>
<td>52.6</td>
<td>8.6 to 96.7</td>
</tr>
<tr>
<td>Groin Hernia - EQ-5D</td>
<td>70,786</td>
<td>22,133</td>
<td>31.3</td>
<td>2.3 to 80</td>
</tr>
<tr>
<td>Varicose Vein - EQ-5D</td>
<td>27,101</td>
<td>6,612</td>
<td>24.4</td>
<td>6.3 to 60</td>
</tr>
<tr>
<td>Varicose Vein - AVVQ</td>
<td>27,101</td>
<td>7,012</td>
<td>25.9</td>
<td>6.3 to 62.1</td>
</tr>
</tbody>
</table>

Conclusion: The results indicate that adjusted health gain reported by the NHS PROMs programme only represents the outcomes of approximately half of the hip and knee replacements, a third of groin hernia repairs and a quarter of varicose vein surgery. There is also wide variation between providers and no indication of how representative the patients with complete PROMs data are of the overall population of patients undergoing these procedures. Adjusted health gain data has become a nationally accepted method of comparing providers of these procedures and driving quality improvements in care. The NHS IC reports PROMS participation and response rates based on number of questionnaires returned regardless of the completeness of the data, which is misleading. This study highlights that current coverage of procedures with complete data limits the power of the PROMs data to either compare providers or drive improvements in care. Further work needs to be undertaken to first improve the quality of the data before it can be used robustly to compare providers.

References: 1PROMs data can be downloaded from: http://www.hesonline.nhs.uk/
INTEGRATED TRANSITIONAL CARE MODEL AND RISK STRATIFICATION
Mae Centeno 1, 2, Clifford Fullerton 1, Nikita Shah 1, David Ballard 2
1 Institute of Chronic Disease and Care Redesign, 2 Institute for Healthcare Research and Improvement, Baylor Health Care System, Dallas, United States

Objectives: To design and implement a multidisciplinary Transitional Care Model utilising risk stratification to determine appropriate patient interventions with the aim of reducing 30-day readmissions.

Methods: As part of a grant from the Deerbrook Charitable Trust, $3 million in funding was allocated to a project focused on the development of an integrated transitional care model (TCM) for patients 65 and older with primary diagnosis of heart failure (HF) and/or pneumonia (PNE) discharged to home. Following identification and referral into the program, the Advanced Practice Registered Nurse (APRN) conducts a patient assessment to determine eligibility for the program. The APRN meets with the patient to discuss available options for transitional care. Next, readmission risk was determined using an internally-developed tool comprised of 14 variables, resulting in patients being categorised as low, intermediate, or high risk for readmission.

All patients, regardless of risk level, receive multidisciplinary support from the RN as well as a social worker and pharmacist. All patients also received remote monitoring services. Every day the patient or family answers a set of clinical questions by phone or through the internet. Questions to assess depression, frailty, follow-up appointments and medication compliance are included at various timeframes. Any type of variance shows up as an alert which are communicated to the team through a secured site. The alerts are addressed by the specific members of the team. The intermediate risk patients receive a phone call from a nurse at day 3, 7 and 21 days post discharge to assess clinical status as well as identify barriers to care. Patients identified as high risk for readmission receive additional support of home visits from the APRN for 90 days, with the first visit occurring within 24 hours of discharge.

The multidisciplinary team huddles once a week to review patient statuses and perform a discharge plan for patients completing the program. If patients are readmitted to the hospital, the team conducts a root cause analysis to identify gaps in processes and reasons for readmissions.

Results: Since June 2012, 220 patients have been risk stratified. Of those, 192 patients risk stratified high while 28 patients stratified as intermediate risk. The average age of enrolled patients is 80 years, with at least 4 co-morbidities and 14 prescriptions. Interventions by the social worker were provided to 93% of the participants while the pharmacist identified post-discharge medication discrepancies in 52% of the patients resulting in changes in their medication regimen.
Of the 205 patients enrolled in remote monitoring, only 144 participated. Barriers to participation include: difficulty understanding the questions, access to phone or internet and physical disabilities.

The high risk group had a 30-day readmission rate of 19.4% compared to 21.4% for the intermediate risk. None of the readmissions were related to medication discrepancy.

Conclusion: Among high and intermediate risk patients discharged from the acute care hospital, tiered intervention improves efficacy and allocation of resources. The APRN intervention with assistance from a multidisciplinary team received by the high risk group seems to be more likely to reduce readmissions in the elderly. With the limited capacity of APRNs, evaluation of when and how to maximise remote monitoring in the care of the elderly is warranted.
EMPLOYEE RESISTANCE AND CHANGE AGENT ROLE DURING ACCREDITATION PROCESS: A CASE STUDY OF A SAUDI PUBLIC HOSPITAL
Fadwa Bawazir 1, 2, 3,*
1DBA candidate, Newcastle University, Newcastle Upon Tyne, United Kingdom, 2Healthcare Accreditation Department, Central Board for Accreditation of Healthcare Institutions (CBAHI), Jeddah, Saudi Arabia, 3DBA Candidate , Grenoble Ecole de Management, Grenoble, France

Objectives: Many change models looked at resistance in a generalised manner and failure to implement change has been blamed on the employees. In times where change is the constant factor in any organisation, it is necessary to explore employees’ reactions in a more transparent manner.

This study aims at exploring employees’ attitudes towards healthcare accreditation process and what have influenced these attitudes. The study also hoped to shed the light on the role of change agents in provoking the reactions of employees, through a framework that approaches resistance in a new light.

Methods:
Conceptual framework
The study explores recent works on resistance where researchers discussed that most works on resistance were biased and one sided, that is towards change planners and executers. Many current researchers have different perspectives on the traditional approaches addressed in change models designs: change is typically faced by resistance and resistance is undesirable. Many scholars started to view resistance as a reaction that may have come from a positive stand point such as concerns with how change is managed or the wellbeing of the organisation. There are also views of resistance as coming from a place of ambivalence and/or ambiguity of proposed changes. Scholars who viewed change as a positive reaction framed it as a form of feedback or conversation about change. Other scholars discovered that resistance viewed undesirable due to biases by change planners and change agents to validate their failures.

Method
An interpretive approach with inductive research design where data was gathered through case study interviews to explore the reactions of employees towards change initiatives implemented in hospitals through preparations and completion of accreditation requirements.

The semi structured interviews were conducted in the largest public hospital in Jeddah that has multiple accreditations. Interviewees were mix of senior and junior employees from different departments and services with exclusion of support services and engineering staff.

Results:
Initial findings
Eighteen healthcare professionals were approached. Responses varied among the different professionals in the hospital. Two administrative employees refused the interview: one made excuses not to attend; the other simply did not provide any feedback.

There appears to be consensus that change agents have a role in provoking favourable or other kinds of reactions from employees during the times of change. Number of interviewees mentioned that preparations were done only when the survey is approaching.

A medical staff consultant stated that accreditation is done for a show. Another senior staff mentioned that accreditation was forced onto the hospital instead of having it initiated from within, which he expressed as a cause of obstacles in meeting deadlines and unwelcomed reactions by employees.

Change agents were interviewed and they reflected that change could have been approached in a different manner given more time and resources. (15 more interviews are planned with further analysis of the findings will be done prior to the conference)

Conclusion: It is too simplistic and naive to say that employees resist change for the sake of resisting. There are many factors that influence their reactions to implementation of accreditation requirements amongst which the role played by change agents. The case projected that though there are attitudinal issues of some employees, there are also apparent unfavourable reactions due to planning and execution that are attributed to change agents and organisational governance and leadership.
IMPACT OF OPTICALLY STIMULATED LUMINESCENCE (OSL) BASED, IN-HOUSE RADIATION MONITORING SYSTEM ON TIMELINESS AND ACCURACY OF READING THE RADIATION DOSE FOR THE FIRST TIME IN A COUNTRY IN THE DEVELOPING WORLD
Naqvi Syed Mansoor 1,*, Sohail Syed M 1, Tasneem Abdul H 1, Zaman Massee Uz 1
1Radiology, Aga Khan University, Karachi, Pakistan

Objectives: Improve and maintain the personnel radiation monitoring system, for all radiation workers, and ensure compliance with the national nuclear regulatory authority, Pakistan Nuclear Regulatory Authority (PNRA).

Methods: Personnel radiation dosimeter is a mandatory regulatory requirement for all radiation workers in healthcare and the Aga Khan University & Hospital (AKUH), Karachi-Pakistan, the only tertiary care teaching hospital accredited with Joint Commission for International Accreditation (JCIA), is complying with the regulations of PNRA. Earlier the personnel radiation monitoring was done through the film badges and later we switched to the Thermo Luminescent Dosimeter (TLD); both outsourced. Finally we switched to in-house OSL facility in 2012.

The major issues faced with the TLD services were accuracy and timeliness, which impacted our radiation monitoring related safety practices. Secondly in the year 2008 the TLD service providers (providing dose reading services) switched to a new system and required AKUH to get adapted accordingly. This required a major investment as one extra badge was needed for every radiation worker and for about 400 radiation workers the estimated additional funding required was approximately US$ 40,000.

As there was no alternate facility available locally, we decided to establish in-house facility to ensure accuracy, avoid delays and conduct research, as desired. We strived to acquire the emerging radiation dosimeter technique, OSL. The institutional leadership realised the need and the OSL system was acquired by the end of the year 2011.

The system was installed and calibrated. The calibration was verified by the manufacturer. Permission to establish in-house radiation dosimeter facility was also taken from PNRA. For personnel radiation dosimeter, OSL badges were distributed among radiation workers hospital-wide. A special set of detectors, Nanodots, was used for the radiation dosimeter for Total Body Irradiation patients in Radiation Oncology department. Dates for the distribution and collection of the dosimeters were fixed department wise. Coordinators were assigned in all the departments to ensure timely submission and to address not only the personnel dosimeter but also others issues related to radiation protection.

Results: The OSL badges were received timely from all over the hospital as per fixed schedule. The system reproducibility and linearity were also checked and found within acceptable range of 5%. Radiation exposures for all the workers appeared well below the regulatory occupational limit of 20mSv/year. The Nanodots also showed the beam distribution and verified the dose distribution during TBI procedure.

Conclusion: The in-house dosimeter system has not only empowered AKUH with the timely, consistent, accurate and accountable personnel radiation monitoring facility but also has provided a resource to perform radiation dosimeter for patients undergoing diagnostic radiology, radiation oncology and nuclear medicine procedures. We are currently the only institution in private sector with in-house radiation monitoring system in Pakistan.
QUALITY UNDER QUESTION: ASSESSING THE SUCCESS RATE OF PERMA CATHETER (PERMACATH) INSERTION FOR PROCEDURES CARRIED OUT IN THE RADILOGY DEPARTMENT IN A TERTIARY CARE JCI ACCREDITED TEACHING HOSPITAL IN THE DEVELOPING WORLD

Amin Rajani \(^1\), Sohail Syed M \(^1\), Tanveer ul Haq \(^1\), Asif Bilal \(^1\)

\(^1\)Radiology, THE AGA KHAN UNIVERSITY HOSPITAL, DEPT OF RADIOLoGY, Karachi, Pakistan

Objectives: To monitor and assess procedure failure/complication rates for Perma Catheter (Permacath) insertion and take appropriate actions to preclude failures / complications, if needed.

Methods: Methodology: Following a sentinel event involving an admitted patient and subsequent Root Cause Analysis (RCA), the quality of the used Permacath was questioned. In April 2011, as part of action plan of the RCA, it was suggested to make and monitor a quality indicator to assure failure of Permacath. Failure implied return of patient with decreased functionality within 48 hours of insertion. Quality indicator was followed till December 2012 on monthly basis. Benchmark was set as per international standard.

The project methodology used for this quality initiative was PDCA (Plan, Do, Check. Act), as follows:

PLAN: Define and Plan the audit

Formed a team of key stakeholders (Radiologist, Imaging technologists, Nurses and Administration). Data was reviewed in order to identify the gaps and areas of improvement. Reviewing the data it was identified that the current brand in-use was adapted from last year only and that was based on informal feedback from different stakeholders. The issues were mainly related to shape (straight versus curved).

DO: Implement the audit

To implement, we referred international literature and discussed with internal stakeholders. The conclusion was development of a monitoring template with number of insertions and incidence of complications.

CHECK/STUDY: Check for improvement

Evaluation of all the procedures, requiring Permacath insertion, was done and comparison was carried out after getting individual feedback from various radiologists performing the procedure. Currently we are using only curved shape catheters; however, previously we used straight shape catheters. Based on informal feedback from the referring physicians, and the results, it was decided to continue with the recently introduced (from 2010) shape and size (12.5Fr & 14.5Fr).

ACT: Improve and hold the gain

The Permacath performance monitoring indicator was maintained from mid-2011 till December 2012 and the evaluation period neither showed any failure nor any decreased functionality was noted during hemodialysis.

Results: Audit started from 2nd quarter of 2011, and in the initial quarter only, one out of 24 Permacath procedures, was reported failed. From quarter 3 of 2011 till end of December 2012, procedure success rate remained 100%. There were very few instances when patient reported with complaint of low flow, which usually were found functioning upon examination. Frequency of referrals has also decreased over the period. The overall result achieved is in compliance with the targets set for the measurement. In total 105 procedures were carried out, out of which 38 were of size 12.5Fr and 67 were of size 14.5Fr; only one procedure resulted in failure which concludes overall success of 99.05%.

Conclusion: It was a wise decision to initiate monitoring of Permacath performance especially due to the fact that the brand (with new shape) had been introduced only a year ago but performance had not been documented. Though the earlier brand in use was also an internationally recognised brand and was in use at various institutions throughout the world. However, in our case, the referring physicians as well as the interventional radiologists were not satisfied and had already replaced that brand. The performance monitoring gave us confidence to continue with the brand in-use.

ADOPTING HOSPITAL BASED HEALTH TECHNOLOGY ASSESSMENT IN EU
Jean-Blaise Wasserfallen \textsuperscript{1,2}, AdHopHTA working group \textsuperscript{1}, AdHopHTA Working Group \textsuperscript{2}, AdHopHTA Working Group \textsuperscript{2}

\textsuperscript{1}Medical direction, UNIVERSITY HOSPITAL OF LAUSANNE (CHUV), Lausanne, Switzerland, \textsuperscript{2}Gestio d'Inovacio, Fundacio Clinic, Barcelona, Spain

Objectives: In the last years, several hospital based HTA initiatives have emerged in Europe; but they:

a) have been never examined systematically, thus limiting the possibility to learn from all these heterogeneous experiences
b) produce knowledge which is not easily accessed or transferred to other EU hospitals;

These are the problems that AdHopHTA addresses. The work needs to be coordinated with the EUnetHTA Joint Action, bringing forward a more comprehensive HTA strategy across health system levels. The AdHopHTA project aims at strengthening the use and impact of excellent quality HTA results in hospital settings, making available pragmatic knowledge and tools to boost adoption of hospital based HTA initiatives. As a secondary aim, the project will create an adequate network of the existing and upcoming hospital based HTA initiatives as well as liaison with national and regional HTA agencies.

Methods:

- To perform a critical analysis of current formally established hospital based HTA initiatives
- To provide a set of principles for best practice in hospital based HTA initiatives
- To advance a framework for setting a collaboration among current hospital based HTA initiatives and deployment to other interested EU hospitals
- To promote the collaboration and coordination of HTA initiatives with National/Regional HTA organisations and pan-European HTA initiatives (e.g. EUneHTA)

Results: Expected results are:

- Portfolio of current patterns and types of hospital base HTA, highlighting their strengths and external validity. This represents new information, not studied formally before.
- A handbook with best practices and an accompanying toolkit for high quality hospital based HTA products, based on research on informational needs for hospital decision-makers (either managers or clinicians) and the quality of undertaking and use of hospital based HTA.
- New models for efficient and effective collaboration between hospital based HTA and national/regional HTA organisations, at present not widely established.
- A database for hospital based HTA initiatives and products, complementing EUnetHTA JA Planned and On-going Projects database (POP), added with information on finished, on-going and planned hospital based HTA products.

Conclusion: Potential implications will be:

- The best practices handbook and toolkit for deployment will be instruments to facilitate the start of hospital based HTA programmes in EU hospitals and worldwide
- Availability of improved tools for hospital based HTA (e.g. mini-HTA 2.0) to be disseminated in Europe and worldwide
- Improved quality and efficiency of current hospital based HTA programmes thanks to the best practice principles developed and the availability of data on hospital base HTA products across Europe
- Better liaison with National / Regional HTA programmes resulting in better alignment and complementarities of assessment activities and efficient use of resources
- Set up of the basis for a European network of hospital based HTA
- Development and promotion of teaching activities through the availability of portfolio of models of hospital based HTA programs as well as business case studies on management of health technologies in hospitals setting.
IT-SUPPORTED TEAMLEARNING WITH NEAR-REAL-TIME FEEDBACK IN HEALTHCARE ORGANISATIONS FOR IMPROVING QUALITY, EFFICACY AND EFFICIENCY OF CARE

Martin Holderried 1,2*, Uta Herter 1, Friederike Holderried 3, Christian Ernst 1

1 Institute of Health Care & Public Management, UNIVERSITY OF HOHENHEIM, Hohenheim, 2 Department of Strategic and Business Development, 3 Faculty of Medicine, TUEBINGEN UNIVERSITY MEDICAL CENTER, Tuebingen, Germany

Objectives: An important challenge for healthcare providers is to improve quality of care, motivation of medical staff and patient satisfaction while lowering the treatment costs at the same time. Nevertheless several studies show that change management is often ineffective. The objectives are (a) to implement a software tool for generating real-time information about key performance indicators (KPIs) and performance measures (PMs) that enables (b) a learning process by the internal actors (e.g. nurses, doctors, controllers) for (c) successful and continuous process improvement in Healthcare Organisations.

Methods:

a) Considering the literature and the needs of the various departments at Tuebingen University Medical Centre, interdisciplinary teams of internal actors (e.g. medical staff, management, IT) developed management scorecards and dashboards with key performance indicators (KPIs) and performance measures (PMs) that are easily interpretable by medical staff and management.

b) The scorecards and dashboards were integrated in a business intelligence platform for generating daily updated interdisciplinary clinical, operational, and financial information for the internal actors.

c) Regular feedback workshops were implemented using the real-time KPIs and PMs for a better understanding of the strengths and weaknesses within the present workflow; and

d) For streamlining the processes by the internal Teams based on the real-time feedback with the Business Intelligence Platform.

Results: The KPIs and PMs vary across the departments and depend also on the professional context. Examples for KPIs and PMs are: § admission and re-admission rates, § post-operative bleeding rates, § planned interventions and planned intervention times related to done interventions and intervention times, § intervention times related to anaesthesia times, § daily number of patients and daily admission time of in and out-patients related to wait time, staffing system, and duty hours, § number of emergencies, § time from discharge to sending the discharge letter, § capacity utilisation of inpatient beds, § patient length of stay related to G-DRG, § blood products utilisation.

Within a few weeks after implementation of the Business Intelligence Platform with real-time information used in regular interdisciplinary feedback workshops we could show a team learning process with significant improvement of most implemented KPIs and PMs within a few months (e.g. reduced timeliness of discharge summaries by 43%, increased planning reliability of operations by 27%, reduced length of stay by 9 %, etc.). In addition the feedback workshops led to an increased interest and development of further indicators by the hospital staff.

Conclusion: IT-supported Team Learning with clearly defined and easily interpretable data about the present workflow, clinical, administrative and financial information can be used for feedback workshops.

The periodic interdisciplinary feedback workshops with discussing the real-time key performance indicators (KPIs) and performance measures (PM) improve the problem identification and solution finding and most of all lead to an interdisciplinary Team Learning process. Thus IT-supported Process Optimisation is a formula for success in improving quality, efficacy and efficiency of care in Medical Centers.

PATIENT EXPERIENCE OF A HOME-BASED CARDIAC REHABILITATION PROGRAM USING MOBILE PHONES

Marliene Varnfield 1, Mohan Karunanithi 1, David Hansen 1
1 Australian e-Health Research Centre, Herston, Australia

Objectives: Cardiac rehabilitation (CR) programs, which involve comprehensive health behaviour interventions, have been well documented for its effectiveness in reducing cardiac related mortality and morbidity in post MI patients. Despite demonstrated benefits and high advocacy by multiple professional organisations, the utilisation of CR programs has been significantly poor. The main reasons that limit the uptake to and completion of centre-based CR programs are facilitating factors such accessibility, travel and parking, dislike of group-based exercise sessions, and work or domestic commitments [1]. A range of alternative CR models, including home-based interventions, have been implemented to improve uptake and adherence to CR programs.

This paper reports on the patient experience of a smart phone, home based CR program developed for a public health system. The program was designed to support patients and empower them to overcome the limitations of traditional CR models.

Methods: We developed a comprehensive six week CR model, based on a mobile phone platform. The smart phone was used for health and exercise monitoring (with health diary and built-in step counter applications), delivery of motivational and educational materials and messages to the patients, and for performing weekly phone consultations and goal setting with a CR Mentor. In addition, a web-portal gathers patient health parameter entries to allow personalised feedback, guidance and support to the CR patients. The program was recently tested against the traditional centre based model of CR in a randomised controlled trial (RCT). Following consent, post-myocardial infarction patients were randomised to the control, centre-based (n=60) and the intervention, CAP (n=60) CR programs. This paper reports on the user experience of the components delivered in the CAP CR program. User experience of the components delivered in the CAP CR components were assessed at the end of their six week CR program using Likert 5-scale questions in an Evaluation Questionnaire (EQ).

Results: Patients that participated in the randomised control trial were aged 37 to 81 (mean±SD in both arms 55±10 yrs). Patient adherence rate through the six-week CR program was significantly better in the intervention group compared to that of the control (93% versus 71%, respectively, p<0.05, Chi Sq.). Results from the EQ are presented as percentages of participants who agreed with the statements

<table>
<thead>
<tr>
<th>Statement from Questionnaire</th>
<th>Step Counter</th>
<th>Wellness Diary</th>
<th>Text Messages</th>
<th>Multimedia Videos</th>
<th>Relaxation audio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivated me in reaching my goals</td>
<td>95</td>
<td>87</td>
<td>80</td>
<td>85</td>
<td>70</td>
</tr>
<tr>
<td>Component was easy to use</td>
<td>100</td>
<td>97</td>
<td>97</td>
<td>90</td>
<td>83</td>
</tr>
<tr>
<td>Component was useful to me</td>
<td>97</td>
<td>89</td>
<td>74</td>
<td>86</td>
<td>74</td>
</tr>
<tr>
<td>Long term follow up of health parameters was important (with named application)</td>
<td>70</td>
<td>74</td>
<td>63</td>
<td>86</td>
<td>65</td>
</tr>
<tr>
<td>I have learned to better understand my daily activities</td>
<td>84</td>
<td>89</td>
<td>80</td>
<td>90</td>
<td>61</td>
</tr>
<tr>
<td>I will recommend the application to others</td>
<td>95</td>
<td>87</td>
<td>94</td>
<td>97</td>
<td>91</td>
</tr>
</tbody>
</table>

Conclusion: Our study evaluated the patients experience in the use of the technology components delivered in a home-based CR program. The technology components had a large positive effect on users, through increased awareness of their disease and in motivating them to reach their goals. They also found the mobile application to be easy to interact with and useful to their rehabilitation progress. The increased adherence found with the mobile phone-enabled home based CR is reflected by the positive patient experience in using the technology components delivered in the CR program.

MULTIPLE SIMULTANEOUS ACCREDITATIONS: A NEW CHALLENGE FOR ACCREDITING AGENCIES

Stephen Clark \(^1\)*
\(^2\)Group CEO, Quality Innovation Performance (QIP), Brisbane, Australia

**Objectives:** To discuss the trend occurring in Australia whereby health and community service organisations are requiring accreditation under multiple sets of standards yet demanding a streamlined approach to accreditation service delivery. To discuss how Quality Innovation Performance (QIP) has engaged technology to develop a solution to enable multiple accreditations to be conducted simultaneously – without duplication of client work effort, thereby supporting clients to implement meaningful quality improvements to their services.

**Methods:** The Australian Government has implemented national health reforms in recent years to prepare for future challenges, encourage sustainability and deliver better health care for all Australians. National health reform has resulted in an expansion of accreditation and quality improvement services across community and health care services. The reform aims to encourage organisations to deliver better access to services and improve accountability, resulting in better responsiveness to local community needs. Quality, safety and quality improvement form a large component of the national health reform across the entire health and human service continuum from community services and primary health care to secondary and tertiary health organisations. This presentation describes how QIP identified the need for a streamlined accreditation service offering multiple accreditations under a diverse range of Standards, including Australia’s National Safety and Quality Health Service (NSQHS) Standards and discusses how QIP enabled technology to develop a solution to meet this demand.

**Results:** The seamless solution developed enables multiple accreditations to occur simultaneously and reduce complexity, regulatory burden and workload for the organisation being accredited.

**Conclusion:** In an environment where increasingly health and community service organisations are requesting to be accredited under multiple sets of standards, the technological solution developed enabling multiple accreditations to occur simultaneously has provided a strong foundation for QIP’s future growth.
PILOTING THE PRASE (PATIENT REPORTING FOR A SAFE ENVIRONMENT) INTERVENTION

Jane O’Hara 1, Rebecca Lawton 1, Gerry Armitage 2, Laura Sheard 1
1Yorkshire Quality & Safety Research Group, BRADFORD INSTITUTE FOR HEALTH RESEARCH, Bradford, United Kingdom

Objectives: Patients are uniquely positioned to observe safety issues in wards, and are known to report useful information otherwise currently undetected (Ward & Armitage, 2012). No system currently exists that routinely and systematically collects patient safety information from patients across the hospital setting. This paper will present the results from a pilot trial of the PRASE (Patient Reporting and Action for a Safe Environment) Intervention. This intervention has been designed and developed by researchers, patients and staff over the past three years (Ward et al, 2011). It is the first intervention specifically designed to systematically collect information from patients about the safety of their care, which ward staff can use to make targeted safety improvements. The study objectives were:

1. test if the PRASE intervention was acceptable to patients and staff on hospital wards;
2. test how the intervention might be used in practice; and
3. test if the intervention facilitated any improvements in patient safety indices over a 6-month period.

Methods: This pilot study used a cluster randomised wait-list control trial design, in a large acute hospital based in the North of England. Six wards across different specialties were randomly assigned to either the intervention or control group condition, on a 2:1 ratio. Patients on selected wards were asked to provide feedback using the two component tools within the PRASE intervention:

a) the Patient Measure of Safety (PMOS) - which collects information about contributory factors to potential future error (Giles et al, in press); and
b) the Patient Incident Reporting Tool (PIRT) - which collects information from patients about specific safety concerns they have experienced during their hospital stay. This data was collected from 20-30 patients per ward, at baseline, at 3-months and at 6-months. Following the baseline and 3-month data collections the data was fed back to the ward staff, within a written structured feedback report.

Staff were asked to form multi-professional action planning groups to consider the patient feedback, and make action plans to target changes with a view to improving patient safety and the patient experience. Other routinely collected patient safety data was also measured to explore changes across the study period. Finally, a small process evaluation was conducted to explore how the intervention was used by staff, and how it could be improved.

Results: The pilot will be completed in March 2013. Results of the trial will be presented, with examples of the action planning process. Results from the process evaluation will also be explored, with reference to how the intervention will be improved going forward.

Conclusion: This trial represents the first test of a novel patient-led patient safety initiative. The PRASE Intervention has the potential to be both an innovative means of measuring the patient perspective on the safety of their care, as well as a way of galvanising patient-centred improvements in hospital safety.

IMPROVING QUALITY AND SAFETY OF HEALTHCARE IN BOTSWANA’S HEALTHCARE FACILITIES
Motshegwana O. Tebogo 1,*, Baile A. Moagi 1, Jacqui Stewart 2, Andy Omoluabi 3
1Health Inspectorate, Ministry Of Health, Gaborone, Botswana, 2The Council for Health Service Accreditation of Southern Africa, Howard Place, 3Management Sciences for Health, Pretoria, South Africa

Objectives: To improve quality and safety of healthcare services delivery in the public healthcare facilities in Botswana through accreditation.

Methods: Two hospitals and four clinics participated in phase:

1. Council for Health Services Accreditation of Southern Africa and Management Sciences for Health provided technical assistance. Baseline assessments were conducted (March-April 2010) using international accreditation standards, followed by facilitation. An improvement in service delivery was observed at these facilities and an additional five hospitals were enrolled in the program in July 2010 in phase
2. A facilitated accreditation program using internationally accredited standard was initially employed and later replaced by a self-evaluation and sampled validation program using a web-based information system. Self-evaluations and sampled validations were conducted at intervals of two months and six months respectively (latest validation having been carried out in October 2012). Training on leadership and quality improvement (QI) was provided to facility-based teams supplemented by regular support visit. QI methodologies were applied to address identified gaps from baseline and validation visits. To achieve accreditation, all services must score 80 out of 100 with compliance to all critical criteria.

Results: The average score at phase 1 and phase 2 facilities was 39 (range 36-42) and 38 (range 34-47) at baseline respectively. At the third and fourth validation visits, the average score improved to 73 (range 69-79) for phase 1 and 62 (range 57-67) for phase 2 facilities. Main impediments requiring intervention include provision of corrective and preventive maintenance of infrastructure and making facility environment secure and safe.

Conclusion: The accreditation process conducted in a systematic approach, guided by evidence-based standards and measurable targets, and coupled with leadership development, has enabled significant improvement in service delivery as evidenced by increase in the average scores; creation of robust quality improvement teams ensured the sustainability of the program.
WHAT PROPORTION OF HIGH-COST PATIENTS’ INPATIENT SPENDING IS PREVENTABLE?
Karen E. Joynt 1, Atul A. Gawande 1, E. John Orav 2, Ashish K. Jha 1
1Health Policy and Management, 2Biostatistics, Harvard School of Public Health, Boston, United States

Objectives: A small proportion of patients account for a substantial proportion of healthcare spending in the U.S., and the single biggest driver of costs in this group is inpatient hospitalisations. As a result, many interventions targeting high-cost patients have focused on case management, aiming to prevent hospitalisations for common medical conditions; however, there is a surprising lack of data on the proportion of inpatient hospitalisations among high-cost patients that are potentially preventable.

Methods: We sought to determine the proportion and dollar value of preventable hospitalisations among the high-cost Medicare population, and to determine if these patterns differ from non-high-cost Medicare beneficiaries. We assigned standardised costs to each inpatient and outpatient service contained in standard 5% Medicare files from 2009. Patients under the age of 65, those with any Medicare Advantage enrolment, and those who died during in 2009 were excluded. Costs were summed across the year and across settings for each patient in our sample. We defined those in the top decile of cost as “high-cost” patients. We then used the Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs) to identify potentially preventable hospitalisations. These PQIs define potentially preventable hospitalisations as those that occur from conditions such as heart failure, diabetes, hypertension, and asthma, for which good outpatient care can potentially prevent the need for hospitalisation. We calculated the proportion of short-stay acute-care hospital costs that were accounted for by these preventable hospitalisations for the high-cost and non-high-cost patient groups. All costs are projected to the total Medicare sample.

Results: There were 1,710,989 patients in our 5% Medicare sample. High-cost patients were older (median age 75 versus 73), more often male (43.2% versus 39.3%), and more often black (12% versus 9%) than non-high-cost patients, and had a significantly higher burden of comorbid illnesses. Inpatient spending, projected to the total Medicare population, was $90.3 billion. The 10% of Medicare patients that made up the “high-cost” cohort accounted for 72% ($65 billion) of all inpatient spending. However, within the high-cost group, only 9.7% of the spending ($6.3 billion) was due to preventable hospitalisations, while the remaining 90.3% ($58.9 billion) was spent on other causes of hospitalisation. Within the non-high-cost group, though their overall spending was significantly lower, a slightly higher proportion of hospitalisations were potentially preventable (14.7%, or $3.7 billion).

Conclusion: Though high-cost patients account for the majority of inpatient spending, fewer than one in ten of their hospitalisations are potentially preventable through better outpatient care. Thus, focusing just on interventions such as case management may not be optimally targeted, and may not achieve meaningful reductions in spending for these patients. We may also need strategies that make hospital care more efficient so that each episode of inpatient care is less expensive regardless of its cause.
 Objectives: Ensuring evidence is translated into practice change is at the heart of improving the quality of health care delivery. In 2011, the Cancer Institute NSW provided funding to the University of Sydney to establish a major Translational Cancer Research Centre (Sydney Catalyst). Sydney Catalyst includes a number of major cancer centres and research centres and aims to improve health outcomes for people affected by cancer. A key priority for Sydney Catalyst has been the adoption of a model or framework to support the translation of new research findings into practice and to facilitate more evidenced informed health care for people with cancer. This paper presents the findings from a review of models, frameworks and terminologies used to describe the translation of evidence into practice.

Methods: A comprehensive review of peer publications and grey literature was conducted of frameworks and models that support the translation of evidence into practice. Models and frameworks were assessed with regard to their suitability for use by Sydney Catalyst.

Results: Over 70 frameworks and models have been described that support the translation of evidence into practice. In addition, numerous terms have been used to describe this translation including translational research, innovation diffusion, knowledge translation, implementation science, quality improvement and improvement research. Considerable confusion exists between whether these terms represent different approaches to translating evidence into practice or simply represent different ways of describing the same approach. In particular the authors identified a tension between quality improvement and implementation science. In many instances quality improvement is associated with local data driven improvement projects with a focus on patient outcomes whilst implementation science is often focussed on the study of individual interventions and the use of rigorous research methodologies.

Conclusion: Sydney Catalyst has selected the Knowledge to Action Framework\(^1\) as a base model as we believe it most readily allows for the integration of the best of quality improvement methodologies with the rigorous research and evaluation associated with implementation science. The paper will describe how these methodologies have been integrated and how the Knowledge to Action Framework has been adapted to support this integration.

ESTABLISHING A NATIONAL HEALTHCARE ACCREDITATION SYSTEM IN A MIDDLE-INCOME COUNTRY: THE JORDAN EXPERIENCE
Altea Cico 1, Edward Chappy 2,*
1 University Research Co., LLC, Bethesda, United States, 2 University Research Co., LLC, Amman, Jordan

Objectives: To describe an effective approach to establishing a national healthcare accreditation system in a middle-income country based on implementing a system in Jordan.

To discuss lessons learned to guide other countries to establish successful national healthcare accreditation systems.

Methods: Review of project work plans and performance reports, consultant trip reports, assessment reports of the Health Care Accreditation Council (HCAC) and conclusions made during the end of project event; held interviews with staff and stakeholders involved.

Results: The Health Care Accreditation Council (HCAC) is an independent, not-for-profit accreditation agency that was legally organised within Jordan in 2007. Since that time, the HCAC has developed an effective structure to carry out the mission of improving health care and services through an accreditation process. The HCAC has developed several sets of healthcare standards, an accreditation implementation program and a surveyor certification program. All elements of the accreditation program are ISQua-accredited. In addition, HCAC has promoted the development and implementation of national patient safety goals. The U.S. Agency for International Development (USAID)-funded project that has supported the development of the HCAC is terminating, as the HCAC is generating revenues to sustain itself and is functioning to enhance healthcare quality improvement in Jordan.

Conclusion: Project work to establish the Health Care Accreditation Council, the national healthcare accreditation organisation in Jordan, and the acceptance of accreditation as a quality improvement benchmark, began in 2005. A long-term strategic approach was used with steps and key indicators to measure success. The HCAC was established in 2007 and is now organisationally and financially sustainable. Other middle income countries can learn from the work conducted in Jordan when they are preparing to establish national accreditation systems.
SUSTAINING LONG TERM HEALTHCARE QUALITY IMPROVEMENT: LESSONS FROM THE ENGLISH NATIONAL HEALTH SERVICE NORTH EAST TRANSFORMATION SYSTEM

Jonathan Erskine 1,*, Michele Castelli 1, David Hunter 1, Adrian Small 2

1Centre for Public Policy and Health, Durham University, Stockton-On-Tees, 2Newcastle University Business School, Newcastle-upon-Tyne, United Kingdom

Objectives: We have previously reported on early findings from an evaluation of the North East Transformation System (NETS) (Hunter et al 2012). This paper enlarges on those findings, focusing on factors that promote or inhibit sustainable, long term quality improvement through use of the NETS, both within individual organisations in NHS North East and at regional level. We examine recent progress in our study sites (n=14) and compare their success in implementing and sustaining their quality improvement programmes with exemplars elsewhere in the English NHS and in other health systems.

Methods: The paper draws on qualitative analysis of 3 phases of semi-structured interviews conducted with NHS staff, extensive documentary materials, and observational fieldwork. The theoretical framework is based on Pettigrew’s ‘receptive contexts for change’ model (Pettigrew 1992). Interview transcripts and documentary materials were coded to reflect the 8 factors Pettigrew identifies as key to a healthcare organisation’s ability to initiate, implement and sustain transformational change. An inductive coding framework also captures data specific to the NETS programme. International literature has provided points of comparison with healthcare organisations that are similarly engaged in long term quality improvement activities and large-scale transformational change, elsewhere Europe and North America.

Results: The NETS organisations signed up to implement a Vision for each organisation (and for the region), a Compact to encourage changes to clinical and managerial culture, and a Lean-type Method to provide staff with tools to effect changes in processes and work practices. A small number of study sites have successfully embedded the principles of the NETS and now appear to have a critical mass of NETS-trained staff. These sites now conduct their own internal NETS training, and offer the same to NHS organisations elsewhere. Other study sites have made slower progress, due to external pressures or lack of resources. There is evidence that the differences between the study sites are also due to the extent of the attention paid to the Vision and Compact elements of the NETS programme by senior leaders.

Conclusion: This study accords with recent findings from an international literature review (Kaplan 2010), and suggests that programmes intended to bring about long lasting improvements to the services offered by complex healthcare organisations are unlikely to succeed if they concentrate on quick fixes or mechanistic implementation of improvement ‘tools’, or if the organisations do not understand and accept the lengthy timescales involved. Establishing a quality-oriented organisational vision, as well as a programme to align staff culture with the fundamental values of the institution, is more important than the choice of improvement methodology. Healthcare policy makers will fail to guide their health system towards better quality outcomes if they do not have regard to these points and thereby prevent healthcare organisations from establishing a long term approach to quality improvement.

FROM DEATH WE LEARN: A RURAL NEW ZEALAND HOSPITAL’S EXPERIENCE IN INVOLVING FAMILIES IN THE DEATH REVIEW PROCESS
Sandy Blake 1, Anna Lawson 1, Sue Penfold 1
1Whanganui District Health Board, Whanganui, New Zealand

Objectives: From death we learn: A rural New Zealand hospital’s experience in involving families in the death review process

Families tell us that when a loved one dies they often feel abandoned and unsupported; that once death has occurred the hospital’s job is over and their loved one is forgotten. We recognised that the death of a patient is an opportunity to reach out to families, to invite them to tell us of any concerns they have regarding the care received, and to give us feedback about their experience as a family in our hospital. In fact, an opportunity for us to learn and improve our standard of patient care.

Methods: Method

In the spirit of the philosophy of openness with patients and their families, the families are advised that we will review the death of their loved one to see if there are any lessons we can learn and share with them. To this end, the customer relations and complaints co-ordinator writes to the family of the deceased patient two weeks after their death. When this process commenced, some doctors were concerned that sending a letter to a bereaved family would only add to their grief, or be seen as insensitive, so it was with some reservations that the first of these letters went out to families in June 2010.

The letter content includes:

- an offer of condolence
- an explanation of the death review process
- a request for feedback about the care received and the family experience
- an offer to share the review findings

Information from responses to the letters have been analysed, actioned and shared throughout the organisation.

Results: Findings

Far from families being upset or offended, this initiative was widely supported and appreciated. To date, the response from families has been positive and many have contacted the customer relations and complaints co-ordinator to thank her for the letter. The vast majority of families have no concerns whatsoever; rather, they take the opportunity to express appreciation for the care delivered to their loved one.

A number of families ask to meet to discuss their loved one’s care, simply because the sorrow around the death meant that they didn’t take in the information given to them by the clinical staff at the time, and they want to understand how and why their loved one died. The meetings are organised and facilitated by the customer relations and complaints co-ordinator and are attended by the death review officer who talks the family through the final admission and answers questions. Often the treating doctor is included in the meeting. We have found that the meetings are hugely beneficial for families, particularly in enabling them to have some closure around their loved one’s death. The meetings can also be emotional and humbling for the staff involved.

Of the approximately 440 letters sent from start of the initiative in 2010, less than ten resulted in formal complaints. The fact that we have made the approach to the families, inviting them to tell us of any concerns meant that, going into the complaint investigation process, the family is more open to a positive resolution.

Conclusion: Conclusion

The hospital board is supportive of this process continuing. The most rewarding aspect of this initiative is hearing the stories of lives well lived from the many elderly folk who have responded personally to these letters in the past two years. It is a real privilege to hear these stories and confirms that Whanganui Hospital is more than just a health provider. We are also an integral part of the lives of the people who make up the city and district of Whanganui.
**Changes in Medication Administration Errors Following the Implementation of Electronic Medication Management Systems in Hospitals**

Johanna I. Westbrook, Ling Li

1Centre for Health Systems and Safety Research, Australian Institute of Health Innovation, University of New South Wales, Kensington, Sydney, Australia

**Objectives:** To assess the effects of the introduction of electronic medication management systems on the rate and type of medication administration errors at two hospitals.

**Methods:** Controlled before and after study at two major teaching hospitals in Sydney, Australia. A sample of 153 nurses was observed preparing and administering 4176 medications on six wards before the introduction of an electronic medication management system (eMMS). The interventions were the CSC Medchart at hospital A and Cerner eMMS at hospital B. Both systems had very limited decision support. In the post period we observed 73 nurses performing 3275 administrations on both the three intervention and three control wards. Observers were trained and used specialised software [1] on handheld computers to record medication administration data during observations. Observational data were compared against patients’ medication charts to determine the occurrence of medication administration errors. Error rates were calculated using the number of errors divided by the total number of administrations applicable for each error category. Changes in error rates pre and post intervention were determined using the following calculation:

\[
\text{Error rate change} = \frac{(\text{Rate}_{\text{intervention_post}} - \text{Rate}_{\text{intervention_pre}})}{(\text{Rate}_{\text{control_post}} - \text{Rate}_{\text{control_pre}})}
\]

**Results:** At baseline the medication administration error rate was 30.2 per 100 administrations. The four most frequent medication administration errors at baseline on both control and intervention wards in order were: wrong intravenous (error rate: 46.2 per 100 administrations), wrong timing (19.6), wrong volume (for injectables, 12.0) and wrong dose rates (3.0). Of these top four error categories, the eMMS was expected to have a significant impact on timing errors as the eMMSs make it much easier for nurses to identify when doses are due and these are also flagged in the system. Following eMMS introduction we found that among all 13 error categories we examined, the wrong timing error rate experienced the greatest decline by 3.35 per 100 administrations (95%CI: 0.01-6.69, \(p<0.05\)) compared with control wards over the same period. Combining changes across the 13 error categories showed that there was a significant reduction in the overall rate of medication errors on the intervention wards of 4.24 errors per 100 administrations (95%CI: 0.15-8.32, \(p=0.04\)).

**Conclusion:** This is one of the few studies to quantify the impact of eMMSs on medication administration errors. The introduction of the eMMSs was associated with a significant reduction in wrong timing errors, one of the most frequent types of errors occurring at both hospitals prior to eMMS. IV administration errors were frequent. Decision support which could assist nurses administer these more complex medications should be a focus of attention. Comparisons with published changes in prescribing error rates from these two hospitals demonstrates the eMMSs had a significantly greater impact on reducing prescribing error rates.[2]

**References:**
TESTING APPROACHES FOR GETTING KNOWLEDGE INTO ACTION
Karen Ritchie 1, 2*, Ann Wales 3
1 Knowledge and Information Unit, 2 Knowledge and Information, Healthcare Improvement Scotland, 3 Knowledge Services Group, NHS Education for Scotland, Glasgow, United Kingdom

Objectives: The Knowledge into Action review, initiated in January 2011, was designed to define a new national approach for optimising the use of knowledge to support the aims and priorities of NHSScotland. The objectives of this major review were: to identify how to support practitioners to apply knowledge to practice to deliver safe, effective, person centred care; and to integrate effective use of knowledge in quality improvement work. New approaches to supporting getting Knowledge into Action were tested through a series of short change projects.

Methods: Training and support in quality improvement methods was provided by GE Healthcare. Fourteen tests of change projects, identified and led by knowledge services staff working for NHSScotland, were run during a 3-4 month period. The focus of these tests of change encompassed the proposed package of change to support better use of knowledge i.e. the following topics: evidence search and synthesis; actionable knowledge; transforming the use of the library space; relational use of knowledge; developing a knowledge broker network; and, underpinning national support, leadership and culture. One or more tests of change were initiated to address each of these topics with the exception of transformation of the library space.

An evaluation framework was established which assessed: reach; reactions; knowledge, attitudes, skills and aspirations; practice/behaviour changes and outcomes. Information on the activities involved, resources required, output produced and barriers and facilitators was collected via a standard template.

Results: The key resource to deliver the test of change projects was staff time with considerable input of time required to deliver projects testing search and synthesis services and developing cross organisational knowledge management approaches. The range of activities reported included: development and delivery of training and support; networking meetings; service redesign work; research and data-gathering; and, survey development and implementation. Most of the projects demonstrated that they had reached both the internal and external groups intended. Some projects were at too early a stage to demonstrate successful reach to their intended audience. There was good evidence of changes in staff knowledge, attitudes, skills and aspirations indicating that the majority of projects had the potential to influence policy or practice at some level. Hard measures of impact on patient care were provided in the search and synthesis projects and these would indicate that, in some instances at least, knowledge services input can have a direct impact on patient care.

Conclusion: Overall, the test of change projects provided examples of implementation that have been built on in defining the implementation of the Knowledge into Action initiative. There were good examples of engagement both of knowledge services staff and clinical and quality improvement collaborators which indicate the potential for sustainable change.
WESTERN SYDNEY LHD SURGERY STREAM: ACHIEVING TIMELINESS OF ACCESS THROUGH COLLABORATION AND LEADERSHIP
Kim Hill 1, *, Deanne Turner 1  
1Executive Medical Services, Western Sydney Local Health District, Sydney, Australia

Objectives: To deliver a patient-centred accessible surgical program in Western Sydney Local Health District (WSLHD); and improve timeliness of access for elective surgery patients in accordance with Australian National Elective Surgery Targets (NEST).

Methods: WSLHD took an organisational approach to achieving definitive care for patients requiring planned surgery according to clinician-assigned clinical urgency categories. Key strategic component was reducing day of surgery cancellations, which was among highest within peer group; associated with decreased quality of patient experience, rework for rescheduling and resource utilisation inefficiencies. A deliberate District-wide approach was taken, bringing together medical nursing and administrative staff as a leadership team via a newly established Surgery Stream Taskforce. Organisational priority was reinforced visibly by decision that the Chief Executive would personally chair the Taskforce. The organisational change strategy involved:

- Executive leadership with engaged clinical and managerial staff
- Clear targets, structured reporting and suite of reports
- High visibility of progress and interventions, good feedback loops
- Targeted reviews to overcome barriers

Key innovations were:

- Model of collaboration - the Stream became known as a place for open and frank discussion about agreed priorities; data provided by individual hospitals and reviewed together to learn together
- Data-based identification of underlying reasons for cancellations examined by the Stream jointly. Communication gaps between services (not previously recognised) and value of escalation to senior staff in problem-solving to prevent cancellation identified for action.
- Re-designed reporting system with daily reports tailored to newly defined NEST priorities; underlying different detail levels accessible as needed. Reports forwarded each morning; staff have this advice easily available at start of the working day.
- Reports have predictive component with due date, expected admission date and previous cancellations -staff can plan. Circulation of reports was key change - now go to Heads of Surgery, Anaesthetics and Nurse Managers of Operating Theatres, and Booking Office staff - to staff across the whole elective process for timely action.

Results: In past year, WSLHD performance improved from being among the worst performing to now in to 25% of Local Health Districts in New South Wales. Day of Surgery Cancellation Rate for elective surgery patients has fallen from 5.5% in January 2012 to 2.0% in January 2013; and for the same period, NEST Category 1 (admission within 30 days) have increased from 96.5% to 100%; and Category 2 (admission within 90 days) from 88.8% to 96.1%. Changes have resulted in more certainty and improved timeliness of access to elective surgery for patients. Clinical risks and rework of rescheduling a patient, who has fasted, arrived and waited at the hospital and made domestic arrangements for their stay in the hospital and post-surgery recovery, have been reduced as a result of this initiative. The Surgical Stream has also seen internally as a positive example of the direction that WSLHD is taking in terms of organisational collaboration and teamwork. It has also fostered positive relationships between staff when other operational and strategic matters have arisen in WSLHD.

Conclusion: Establishing this model of organisational leadership and collaboration, a District-wide Surgery Stream Taskforce with strong Executive leadership, clear targets, data-based discussion and structured reports with regular, high visibility feedback has facilitated partnership between clinicians and managers in delivering timely, accessible care for elective surgery patients.
THE INCIDENCE OF ADVERSE EVENTS IN TUSCANY: RESULTS FROM A REGIONAL STUDY INVOLVING 36 HOSPITALS
Sara Albolino, Tommaso Bellandi, Riccardo Tartaglia, Annibale Biggeri
1Tuscany Region, centre for clinical risk management and patient safety, 2Biostatistics Unit, Centre for Oncology prevention, Florence, Italy

Objectives: The main objective of this study is to define the incidence of adverse events and their preventability and consequences in a representative sample of patients in Tuscany Region with 39 hospitals and about 4 millions of inhabitants. We compare teaching hospitals performances with local hospitals performances.

Methods: It is a multi-centric study, based on the retrospective analysis of a sample of clinical records of all the discharges in 2008. The clinical records have been analysed through the methodological tools elaborated by Vincent and colleagues. The method is composed of two tools: the modular Review Form 1 (RF1), for the first screening and the modular Review Form 2 (RF2), to verify if an adverse event occurred to that patient during that stay. The clinical records have been randomly selected. 10589 clinical records have been analysed as the total sample.

Results: The study defines: the incidence of adverse events for the hospitals of the entire Tuscany Region, the preventability and consequences of adverse events, the distribution on specialties of adverse events and on phases of the delivery of care. We define the differences in the incidence of adverse events among the teaching hospitals and the local hospitals. In the following table we present a selection of the main results. All the results will be presented during the conference.

Table 1: incidence of adverse events

<table>
<thead>
<tr>
<th>Geographical area</th>
<th>Area</th>
<th>RF1</th>
<th>RF2</th>
<th>cases with AE</th>
<th>%</th>
<th>CI (95%)</th>
<th>Nr. AE</th>
<th>%</th>
<th>CI (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local hospitals</td>
<td>Centre</td>
<td>2371</td>
<td>217</td>
<td>31</td>
<td>1</td>
<td>0.085-1.764</td>
<td>33</td>
<td>1.4</td>
<td>0.920-1.863</td>
</tr>
<tr>
<td></td>
<td>North</td>
<td>2957</td>
<td>261</td>
<td>55</td>
<td>1</td>
<td>0.137-0.235</td>
<td>57</td>
<td>1.9</td>
<td>1.432-2.423</td>
</tr>
<tr>
<td></td>
<td>South</td>
<td>1738</td>
<td>140</td>
<td>42</td>
<td>2</td>
<td>0.169-3.139</td>
<td>48</td>
<td>2.8</td>
<td>1.991-5.332</td>
</tr>
<tr>
<td>Teaching Hospitals</td>
<td>Careggi Florence - Centre</td>
<td>1.512</td>
<td>118</td>
<td>104</td>
<td>9</td>
<td>5.602-8.154</td>
<td>142</td>
<td>9.4</td>
<td>7.921-10.862</td>
</tr>
<tr>
<td></td>
<td>Pisa - North</td>
<td>1.521</td>
<td>181</td>
<td>83</td>
<td>5</td>
<td>4.315-6.659</td>
<td>96</td>
<td>6.3</td>
<td>5.089-7.534</td>
</tr>
<tr>
<td></td>
<td>Siena - South</td>
<td>606</td>
<td>72</td>
<td>35</td>
<td>5</td>
<td>3.912-7.633</td>
<td>43</td>
<td>7.1</td>
<td>5.051-9.124</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>10705</td>
<td>989</td>
<td>350</td>
<td></td>
<td></td>
<td>419</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: preventability of adverse events

<table>
<thead>
<tr>
<th>Level of preventability</th>
<th>Centre</th>
<th>North</th>
<th>South</th>
<th>Careggi</th>
<th>Pisa</th>
<th>Siena</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certain</td>
<td>2.38</td>
<td>4.55</td>
<td>0.00</td>
<td>2.86</td>
<td>2.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Highly probable</td>
<td>19.05</td>
<td>12.12</td>
<td>3.39</td>
<td>5.00</td>
<td>4.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Probable</td>
<td>40.48</td>
<td>39.39</td>
<td>8.47</td>
<td>15.71</td>
<td>14.00</td>
<td>15.71</td>
</tr>
<tr>
<td>Lowly probable</td>
<td>66.67</td>
<td>75.76</td>
<td>28.81</td>
<td>40.71</td>
<td>41.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Rare</td>
<td>83.33</td>
<td>84.85</td>
<td>59.32</td>
<td>52.14</td>
<td>73.00</td>
<td>77.14</td>
</tr>
<tr>
<td>Impossible</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

The consequences of adverse events are: Prolonged stay: local hospitals – Centre 72 (cases), North 47, South 34; teaching hospitals – Careggi 73, Pisa 59 cases, Siena 34 cases. Disability: local hospitals – Centre 17, North 18, South 12, Careggi 40 cases, Pisa 10, Siena 12. Death: Centre 54, North 59, South 18; teaching hospitals – Careggi 10, Pisa 9, Siena 1.

Conclusion: The study shows a higher significant incidence of adverse events in the teaching hospitals comparing to the local hospitals but it underlines a higher number of preventable adverse events on the local hospitals comparing to the teaching hospitals.


Jorge T. Insua, Rebeca Villalon

Health Information Systems, Hospital Universitario Austral, Universidad Austral, Pacheco, Argentina

Objectives: Hospital re-admissions and readmissions less than 30 days are being used as quality / safety and hospital efficiency indicators. There is no standardised measurement of this problem for transitional countries in the LAC region.

Methods: A cross sectional analysis discharges representative of 1 year output of the 3 hospitals (years 2007-2008) was obtained. Using a Minimum Discharge Data Set (MDS), designed and extracted from 3 non-profit hospitals with information systems. The registry obtains cost and result indicators, harmonised according to WHO and HCUPS (USA) terminology, groupers (Clinical Classification Software-CCS single level-SL, 2009) of primary diagnosis (Dx1) and secondary diagnosis (Dx2), (CCS [descriptive term]), average length of stay (ALOS), total costs (CT$) mean and median per discharge cost ($, 25P-75P-percentiles), in international dollars PPP, (UN Data: 1Arg$ = 1.608 IS PPP, 2008) were obtained. The 30-day readmission rate (ReH<30) is defined as: the number of stays with at least one subsequent hospital stay within 30 days (n)/ the total number of hospital stays in the one year period observed (N). 90 days and 365 day readmissions follow the same definition with corresponding change in n. Denominator excluded <1 years old and dead patients in index admission. In-hospital deaths, surgical and medical discharges, urgent and elective and age stratified results (≤18; 19-64 and 65 years old) were extracted.

Results: Excluding discharges < 1 years old, 52573 discharges with 2206 deaths (4, 20%) (95%CI 4, 02-4, 37%), lead to 50367 one year index discharges from the three hospitals (HUA, HIBA, HPC). Among them 29 265 patients had only one admission (58.1%). We found 22,133 re-admissions within 1 year, a rate of 43.94%; and found 9105 readmissions in 30 days, a rate of 18.08% (95% CI 17,74-18,41), of which 3884 (41,65%) where patients over 65 years old (ReH<30: 7,71% (7,48-7,94) , p<0,001) and 1724(18,93%) where ≤18 years old (ReH<30: 3,42% (3,26-3,58), p<0,001). According to the type of admission 2161 where elective (55, 42%) (ReH<30: 4,29% (4,11 -4,47), p<0,001) and 1201 where urgent (44,57%)(ReH<30: 2,38% (2,25-2,52), p<0,001). Reasons for admission where medical in 7805 (83, 84%) (ReH<30: 14,98% (14,66-15,29), p<0,001) and surgical in 1262 discharges (13,24%),(ReH<30:2,50% (2,37-2,64), p<0,001). 649 deaths occurred in patients with hospital readmissions at 30 days (7.12%) (95%CI 6, 60-7, 66), a 28.9% of all annual hospital deaths. Total costs of ReH<30 (CT $) was (IS PPP 88 443 851) is 14, 25% of total hospital cost. The average discharge cost was IS 9 614); the median discharge cost was 2399.84 (I$ 3857,6 ) (25 P Q1 = IS 1571; 75 P Q3 = IS 9064). 12 507 discharges occurred in less than 90 days (22, 15%). Of those < 90 days ReH, 905 died (7, 23%) (95%CI 6, 78-7, 69).

Conclusion: 30 day re-admissions are a prevalent problem for quality/safety, with a considerable direct medical hospital cost. We obtained the first standardised readmissions estimate in the LAC region. Future research should address their readmission preventability and generalizability of this sample to other country's hospitals.

References:

THE MEASUREMENT OF PATIENT EXPERIENCES – THE RELATIONSHIP BETWEEN DELIVERED HEALTH CARE SERVICE AND PATIENT EXPERIENCED SATISFACTION

Mette T. Sandager \textsuperscript{1,} *, Morten Freil \textsuperscript{2}, Janne L. Knudsen \textsuperscript{1}

\textsuperscript{1}Quality & Patient Safety, THE DANISH CANCER SOCIETY, \textsuperscript{2}Danish Patients, Danish Knowledge Centre for User Involvement in Health Care, Copenhagen, Denmark

Objectives: Although the validity of data derived from patient satisfaction survey has often been questioned, they are increasingly being used for the evaluation of health care services and for decision making purposes. The objective of the study is to illustrate the important determinants for and factors influencing the association between received health care and patient reported satisfaction.

Data from two nationwide surveys of cancer patients’ experiences will be used to exemplify the identified associations.

Methods: A literature search was conducted with the purpose of identifying studies concerning the association between received health care and patient reported satisfaction and the factors influencing this association.

The survey data used for exemplification are derived from two nationwide population-based surveys of Danish cancer patients focusing on the experiences with received health care. 4346 patients (response rate 65 \%) and 4401 patients (response rate 64 \%) participated in the surveys focusing on the period from first symptom to ended primary treatment respectively the period from ended primary treatment and afterwards. 2568 patients participated in both surveys.

Results: The knowledge emerging from the literature emphasises the fact that patient reported satisfaction is a multidimensional and subjective concept. The association between delivered health care service and patient reported satisfaction is influenced by:

Expectations: The literature identifies expectations as an important determinant of patient satisfaction. Satisfaction can either arise when experiences confirm high expectations or when experiences disconfirm low expectations.

In the national survey cancer patients were asked to rate a suboptimal hypothetical clinical situation. The lowest educated were significantly more positive in their ratings indicating lower expectations within this group.

Patient characteristics: Patient characteristics such as age, gender, educational level, socioeconomically status and health status are all well-proven effect modifiers of patient satisfaction, which is confirmed by the survey results.

Questionnaire construction and timing of survey: The design of the questionnaire (e.g. neutrality, specific vs. general questions) affects patients’ answers. Patients’ satisfaction change over time and the timing of surveys is therefore of great importance. Patient satisfaction tends to decrease over time, which is confirmed by the survey results. Cancer patients reported higher level of satisfaction when asked 4-5 months after the time of diagnosis compared to two years after the diagnosis.

Perceived terms of the health care professionals: The literature shows that patients do not want to put blame on health care professionals through negative evaluations and therefore rate their treatment and care according to the terms of health care professionals

Conclusion: The association between delivered health care service, patient satisfaction and patient reported satisfaction is not straight forward - this is demonstrated through the literature and confirmed by the results of the national survey of Danish Cancer patients.

Measures of patient experienced quality are important information but there are several challenges with regard to analysing and interpreting these types of data. The awareness of influencing factors is especially important when data are used for decision-making purposes.
DIABETES: TURING THE CURVE TO REDUCE MORTALITY & HOSPITAL ADMISSIONS THROUGH JOINED UP ACTION

John R. Bullivant 1,*, Nikki Joule 2, John Clarke 3, Andrew Corbett-Nolan 4
1Chairman, Good Governance Institute, Dinas Powys, 2Policy, Diabetes UK, London, 3Public Affairs, novo nordisk, Crawley, 4CEO, Good Governance Institute, Battle, United Kingdom

Objectives: Diabetes affects all our populations, is and will be a major claim on our health services. In England the recent structural reorganisation provides threats and opportunities with local Government now leading on setting local priorities through Health and Well Being Boards (HWBBs). These new boards are partnerships with health and others but are not well established and have varying approaches to priority setting and then enabling change.
The presentation combines two projects one (Good Governance Institute, GGI) focusing on governance and the other (Diabetes UK, DUK) of public involvement in priority setting.

It has three objectives:

1. Identifying the proportion of HWBBs that have established diabetes as one of their strategic priorities and of them how many Clinical Commissioning Groups (CCGs) in the HWBB areas have adopted diabetes as a commissioning priority.
2. Investigation through interviews the varying approaches to translate a priority into commissioning and action to reduce mortality & hospital admission.
3. Identify improved methods of turning the curve (an established visioning and change methodology in diabetes prevention, management and support outside of hospital admission.

Methods: On line and email survey of HWBB & CCG strategic objectives in three surveys covering London, the SE and rest of England (total 60 Boards)
Workshops to identify current means of priority setting and to introduce ‘turning the curve’ methodology.

Results: We have found that only 1/3 of HWBBS have identified diabetes as one of their core strategic objectives and ensured CCGs included in their commissioning priorities. The workshops have identified varying methods of priority setting and enabling commissioning and action. Many of these have potential but there is no single best practice. The workshops also introduced the turning the curve methodology and encouraged reps of HWBBS & CCGS to include in their local development and planning. A repeat survey of priorities will confirm if diabetes has been added to more HWBB priority plans

Conclusion: There is considerable variation in the commitment to diabetes by both HWBBs and local CCGs. Turning the Curve seems to offer a means of visioning change and the GGI maturity matrix challenges HWBB and CCG boards to question if they have a joined up approach themselves for this and other conditions.

References: Pathway Governance Guide no 2 Diabetes, GGI/IHM 2010
Developing boards and senior teams: the how to do it guide, NHS London October 2010
IMPLEMENTATION OF QUALITY MANAGEMENT SYSTEMS: THE ROLE OF HOSPITAL (MANAGEMENT) BOARDS
Daan Botje, Niek S. Klazinga, Rosa Suñol, Cordula Wagner

1 Organisation and quality of health care, NIVEL, Netherlands Institute for Health Services Research, Utrecht, 2 Social Medicine, Academic Medical Centre, University of Amsterdam, Amsterdam, Netherlands, 3 Avedis Donabedian University Institute, Autonomous University of Barcelona, Barcelona, Spain

Objectives: Hospitals are putting tremendous efforts in implementing evidence-based management systems and organisational innovations for patient-centred care. Having a hospital quality management system is a prerequisite to successfully implement these innovations. Previous studies showed that the effectiveness of implementing innovations was not only associated with the Hospital (management) Board’s commitment to quality, but also with external pressures such as accreditation, legislation and market competition.

Recent studies in the US, Canada and Europe have shown that the implementation of quality management systems differs tremendously between hospitals. Therefore, our objective was to determine whether the level of implementation is influenced by the Hospital Board’s commitment to quality of care and external pressures such as accreditation and legislation.

Methods: Our study was a cross-sectional international comparative survey in Europe. Data collection took place in 2011. Questionnaires measuring Board behaviour and hospital quality management consisted of previously validated scales if possible, and were deployed in seven European countries using a forward-backward translation strategy. We approached CEOs and quality managers in 210 hospitals in Czech Republic, France, Germany, Poland, Portugal, Spain and Turkey.

Results: We obtained data from 188 hospitals, showing a large variation in the development of hospital quality management systems, of the Hospital (management) Boards’ commitment to quality of care, and the influence of external pressures. Using a linear multivariable regression model at hospital level with random incept by country (adjusted for confounding effects at hospital level), results show that quality management systems are more developed when Hospital (management) Boards were more committed to quality of care. We found no mediation effect of perceived external pressure.

Conclusion: Our results show that Hospital (management) Boards can influence the implementation of quality management systems, provided that they are committed to quality of care. As a hospital quality management system is a prerequisite to deliver high quality patient-centred care, it provides hospital Boards with the opportunity to comply to their legal accountability for quality of care by facilitating its development and implementation.

EMR-BASED MEDICATION ADHERENCE METRIC MARKEDLY ENHANCES IDENTIFICATION OF NON-ADHERENT PATIENTS

Ran Balicer^1,2,*, Shepherd R. Singer^3, Morton Leibowitz^2,3, Moshe Hoshen^2
^1Department of Epidemiology, Ben-Gurion University of the Negev, Beer-Sheva, ^2Clalit Research Institute and Chief Physician Office, Clalit Health Services, Tel Aviv, Israel, ^3Department of Medicine, New York University School of Medicine, New York, United States

Objectives: Traditional methodologies for measuring adherence rely only on sequential pharmacy data, and overlook patients filling one or no prescriptions. Identification and characterisation of this subgroup of non-adherent patients prescribed medications is crucial to building appropriate interventions. Statins, as one of the most widely-prescribed medications with proven preventive efficacy, are ideal for studying adherence because they have a single indication and are given long term. To determine the proportion of patients prescribed statins who never fill a prescription, identify who they are, and compare their LDL control to adherent and non-adherent patients identified by a traditional dispensary-based adherence measure.

Methods: We retrospectively examined statin use among patients prescribed a statin in 2008 and followed through 2010 in a 4-million member health fund with full electronic health record coverage. Statin adherence in patients over age 21 was tracked for 2 years utilising a new, validated adherence measure based on both written and dispensed prescriptions. Number of adherent and non-adherent patients and changes in LDL over the study period were compared with a traditional, dispensed-only pharmacy-based measure. Adherence below 20% was considered non-adherence.

Results: A total of 67,517 patients received 1,386,270 written prescriptions over the 3-year period. While the traditional adherence measure identified 7,999 patients as non-adherent, the new measure identified 18,917. Thus, 10,918 patients (1 in 6 patients prescribed statins) would be overlooked using existing adherence methodologies. Changes in LDL levels of non-adherent patients were 11.9 and 14.1 mg/dl with the traditional and new measures, respectively, compared to 48.3 mg/dl, p < 0.001 in adherent patients. Patients identified as non-adherent by the new measure were similar to those identified by existing methods as non-adherent, but different from adherent patients in age (52.0 ± 13.2 and 52.9 ± 12.4 among non-adherent patients vs. 56.4 ± 12.6 for adherent patients, p < 0.001), low socio-economic status (51.0%, and 58.0% vs. 45.1%, p < 0.001), minority ethnicity (26.1% and 31.0% vs. 19.6%, p < 0.001), and residence in periphery areas (15.7% and 16.7% vs. 14.5%, p < 0.001).

Conclusion: Addition of written-prescription data to dispensing data in determining adherence measures more than doubles the number of non-adherent patients identified. Non-adherent patients detected by the new adherence measure did not achieve LDL reduction, were younger, of lower social-economic status and more likely to live in the geographic periphery than adherent patients. The unique demographic profile of these additionally-identified non-adherent patients makes them an appropriate target for interventions to improve adherence.
SETTING THE GROUNDS TO IMPROVE QUALITY AND HUMANISE HEALTHCARE: THE CASE OF MOZAMBIQUE

Isabel A. Nhatave 1,*
1Quality Improvement and Human Resource Development, MCHIP, Maputo, Mozambique

Objectives: Describe and share the process through which Mozambique MoH is establishing platforms for the implementation of the National Strategy for Quality Improvement and Humanisation of Healthcare (QIHH).

Methods: The reported work was conducted in all 11 provinces of Mozambique and was based on the recommendations from the National Strategy for QIHH. Data was obtained through a literature review of published and unpublished documents developed from March 2011 to December 2012 (MoH policy documents and activity reports). A non-structured questionnaire with open-ended question was also applied with key informants to obtain information on implementation of QIHH interventions.

Results: Conducted 1 national and 3 regional QIH committee meetings, trained 164 members of the QIH committees, and conducted follow up visits to strengthen the capacity of the QIH committees for better participation and to support the quality improvement and humanisation of healthcare process. The results were the dissemination of the National Strategy for Quality Improvement and Humanisation of Healthcare and the creation of 1 national QIH Committee chaired by the Minister of Health with 44 members from MoH, religious leaders, community leaders, representatives from Traditional Medicine, civil society, NGOs and donors agencies11 provincial QIH Committees led by the Health Provincial Directors; 44 District QIH committees led by the Health District Directors; and 110 health facility QIH committees. Monthly coordination and follow up meetings are conducted by the committees at all levels, resulting in an improved interaction between community-user-National Health Service-partners-government with increased participation in developing solution for the challenges faced by the health sector and substantial reduction in client complaints.

Conclusion: Implementation of Quality Improvement and Humanisation Committees is a promising strategy for generating and strengthening partnership between communities - users of the National Health Service, partners and government; lessening challenges; and accelerating quality improvement and humanisation of healthcare.
IMPROVED PERFORMANCE ASSESSMENT THROUGH A HEALTH DATA NAVIGATOR
Juliane Winkelmann 1,*, Maria M. Hofmarcher 1
1Health and Care, European Centre for Social Welfare Policy and Research, Vienna, Austria

Objectives: In light of fiscal constraints and increasing demand for health and social care everywhere, performance assessment of health systems is crucial to improve our understanding of patterns of health care provision and to inform the development of health care policies through reliable cross-country comparisons. While a range of studies have investigated the performance of health systems across countries, policy lessons are often limited or speculative largely due to constraints in the availability and reliability of appropriate data. Researchers typically face a trade-off between the use of very detailed national data which are often not suitable for cross-country comparison and the deployment of a limited set of aggregate international data which are often inappropriate to address specific research questions, in particular related to diseases with high and increasing volume of care and cost involved, e.g. chronic disease. EuroREACH aims to address this challenge by improving access to and use of health care data to enhance comparative research on the efficiency, equity and quality of health systems. EuroREACH is an international coordination action of nine partner countries funded by the European Commission FP7 programme.

Methods: The project reviewed available data sources and informs about the quality of data through a standard set of appraisal criteria by providing insights into conditions for data access, coverage, quality as well as possibilities for data linkage. Moreover, the project conducted a case study on diabetic care to highlight opportunities as well as challenges when comparing patient-level, disease-oriented data across Estonia, Israel and Finland.

Results: The final outcome of the project, the Health Data Navigator, is a digitised compendium of available national and international health data sources with a particular focus on patient-level and disease-oriented data. Importantly, the Health Data Navigator provides a toolbox guiding researchers in performance assessment by proposing a framework to ensure high quality research when comparing data across countries.

Conclusion: The results indicate that cross country performance analysis still faces various challenges in different issues such as data comparability, classification, linkages, coverage, governance, and access to databases. However, experiences from the EuroREACH case study suggest that comparative analysis using person-level administrative data on the use of health services in the three countries is possible and can provide unique, relevant and sufficiently reliable information on performance parameters.

References: www.euroreach.net
SUPPORT EFFECTIVE GOVERNANCE THROUGH A QUALITY MANAGEMENT INFORMATION SYSTEM
Breda Doyle¹, Pamela Fagan², Maire Brookfield³, D Roche¹
¹Best Practice Development, Bon Secours Hospital, Tralee, Co. Kerry, ²Operations, Health Care Informed (HCl), Headford, Co. Galway, Ireland

Objectives: Support the development of an effective governance system for the Bon Secours Hospital, Tralee (BSHT), Co. Kerry, Ireland, through the utilisation of a Quality Management Information System.

Methods: The project commenced with process mapping of key processes relating to process (documented) control, incident reporting and management, audit scheduling and management, management of quality improvements plans, management of customer complaints and the management of staff training. Information gathered from process mapping allowed proposals for the integration of Q-Pulse, quality management software, in BSHT to be identified. These proposals were reviewed and approved by the BSHT Project Team, and this report then formed the basis for the remainder of the project.

The Quality Management Information System (QMIS) was specifically customised to meet the needs of BSHT using the agreements from the Process Mapping Report. Following customisation of the system, education and training sessions were provided to staff which was tailored to meet their varying needs and responsibilities. Staff were provided with the opportunity to see the Q-Pulse system in action, identify their roles and responsibilities in relation to it and determine how it integrated with the processes in BSHT.

Results: Value for Money
- Reduction and elimination of duplication, of staff resources involved in Policy, Procedure, Protocol and Guidelines (PPPG) research and development.
- Reduction of staff meetings and face to face discussions in the approval of PPPG’s.
- Potential clinical claims costs. The two most prominent reasons for systems negligence in cases decided against healthcare providers are ineffective communication and clearly defined processes.

Clinical and Social Care Governance
- A demonstrable system of care, and support, process approval by local management, and the senior management.
- Monitoring of process control of all management structures

Risk Management
- Ease of access to the most current PPPG’s for all staff
- Controls to ensure appropriate approval of clinical care processes
- Communication of standardised, current processes of care across the organisation.
- Auditing of PPPG implementation
- Monitor of rectification of PPPG non-conformance
- Automatic notification to staff of changes in processes
- Monitoring of staff acceptance of changes in processes

Quality Assurance
- Improved staff communication
- Fulfilment of key regulatory requirements including document control, PPPG acceptance and PPPG implementation
- PPPG acceptance audit trail

Conclusion: Through the implementation of an integrated Quality Management Information System, the project resulted in key changes to the quality and patient safety management processes and an effective governance system. The process for the management of controlled documents was defined and developed. For audits relevant management staff have access to schedule and manage an audit and raise quality improvement plans. For incident management, staff have access to report an incident, which is automatically notified to the relevant Head of Department for follow up. The process for management of complaints was defined to allow for the Best Practice Department, to manage the formal complaints and all staff to log locally resolved complaints and positive feedback, via specifically designed wizards. The process for management of staff training was defined to allow Managers with responsibility for staff training, to scheduled training events and manage individual staff records.
DEMING CYCLE IS TICKING OVER: THE PROBLEM OF RECURRENT ADVERSE EVENTS AND THE INTRODUCTION OF THE "NO FLY" POLICY IN THE RADIATION TREATMENT PROCESS MANAGEMENT

Eric G. Lenaerts¹, Marie Delgaudine¹, Philippe Coucke¹,*
¹University Hospital of Liege, Liège, Belgium

Objectives: To set-up a safety barrier allowing interruption of the process «Radiation Treatment Preparation». The aim of this procedure is to ensure security and quality of patient care.

Methods: We used the «process improvement methodology» in order to promote high quality care. The operational Quality System used in the Radiotherapy department is based on the spontaneous reporting of precursor events by the staff. Since its introduction into the clinical setting, the quality assurance program has collected 3590 reports between December 2008 and January 2013. An Experience Feed Back Committee analyses systematically all reported events in order to initiate corrective actions. The efficacy of these corrective actions is systematically checked according to the principle of Deming (Plan, Do, Check, Act). Nevertheless, some precursor events do occur on a regular basis, even though corrective actions have been adapted. Deming Cycle is ticking over. These recurrent precursor events are very complex to manage. It takes long time to understand the basic causes and to launch the most effective actions. Every recurrent precursor event that could affect the quality of patient care must be considered with the highest attention by the management. We focused on the process «Radiation Treatment Preparation» for which recurrent reporting of «Delay in receiving treatment files» before the first treatment session for patients are observed every month. Treatment files are stamped «delayed» when information mandatory for starting the treatment are not available at the linear accelerator 2 days before the date of the first treatment session.

Results: Over a period of 50 months (December 2008-January 2013), 3590 reports of precursor events were registered (monthly mean value of 74.8 ± 26.5). The «Radiation Treatment Preparation» process requires full attention of every collaborator in each professional sector (physicians, physicists and therapists). There were 549 declarations for «Delay in receiving treatment files» which corresponds to 15.3% of total declarations. Monthly numbers are: mean value of 11.4 ± 8.5; min-max values of 1-46; median value of 10. A variety of corrective actions have been undertaken to reduce the number of this particular precursor event, and according to Deming’s principle efficacy of the action taken was checked and the corrective actions adapted. Nevertheless, we observed a stable number of such reports, which by the way seems to be similar in other large radiotherapy departments worldwide. To tackle this problem, the management team of the department intends to introduce the “No Fly” policy into this critical process to guarantee the quality of care for patients. The activation of «No Fly» policy warns staff immediately not to force the execution of the process even if there is a time constraint as according to Reason’s model a succession of latent and active failures ultimately leads to an accident or an error. This policy allows to interrupt the execution of the process and to postpone the start date of the treatment up to 2 days to assure safety and quality.

Conclusion: The «No Fly» policy has emerged as an alert procedure in the radiotherapy department to deal with recurrent precursor events that could affect the quality of care for patients. Obviously, in the meantime, the quality management team and collaborators in each professional sector are still working together to analyse basic causes and to initiate new effective actions.
IDENTIFYING PATIENTS FOR CARE COORDINATION EFFORTS
James M. Naessens 1,*, Lindsey R. Haas 1, Herbert C. Heien 1, Paul Y. Takahashi 2
1Health Care Policy & Research, 2Primary Care, Mayo Clinic, Rochester, United States

Objectives: Patients with complex health needs are increasingly the focus of population health management. The current mechanism for identifying which patients should receive which interventions is unclear. In order to improve the value of primary care, proper identification for care coordination must be a central component. Coordinating and ensuring patient-focused care may help reduce hospitalisation rates and lower emergency department visits. In this paper, our objective was to develop a practical model that identifies high-risk/complex primary care patients and enhances the current practice based algorithm (Minnesota Complexity Tiering). This model will help care coordinators function in a more patient-focused manner, opening up opportunities among a complex patient population.

Methods: Retrospective cohort analysis using the Primary Care population at Mayo Clinic Rochester Minnesota, we identified all patients 18 years or older who had an assigned primary care provider on January 1, 2010. Multivariable logistic regression models were developed on and verified using a split-sample design with 50% of patients in each sample. We extracted predictors based on patient status at assignment from 6 categories: social environment, medical condition counts (Minnesota Complexity Tiering), psychiatric and substance abuse issues, medications, specific chronic conditions, and prior year use of specialty and acute care services. We determined the outcome variable as the occurrence of hospitalisation or emergency (ED) visit during the subsequent 1 year. The final model was based on a stepwise selection algorithm including all possible two way interactions. Because the order of selection can matter, predictors were randomly placed into the stepwise algorithm and repeated 20 times. In each iteration the algorithm chose the same set of predictors thus showing stability in the final model.

Results: A total of 90,411 patients were identified at baseline. Overall, 16,253 (18.0%) experienced an ED or Hospital admission in the following year with event rates similar in the derivation and the validation sets. Of the 76 major independent predictors, 46 were found to be simultaneously significantly associated with ED or Hospitalisation. Mental health and substance use were identified as significant issues among the 18-64 age group of complex patients (47.0%, 9.6%), whereas multiple chronic diseases, use of narcotics and anticoagulants predominated in older patients (>64). In the derivation cohort, rates for ED and hospitalisation combined were 45.2% in top patients identified by our current clinical model and 53.2% in top patients identified by the enhanced model. Discriminatory power was good (c-statistic, 0.700) and the validation dataset gave promising calibration results (c-statistic, 0.703) similar to that of the derivation dataset. In addition to better identification of patients likely to be hospitalised or attended in the ED, the new model can identify patients who may benefit from pharmacy consultations, mental health advice, social service support, specialty-primary care coordination and chronic disease management, enabling us to better identify the primary issues that lead these patients to high-cost health care.

Conclusion: A population-derived algorithm provided the ability to predict future emergency admissions or hospital admissions in patients 18 years or older. The model can be implemented to identify high-risk patients for care coordination, for whom interventions designed to improve outcomes may be beneficial, and coordinate interventions to improve population health, in the most efficient, effective manner.
HEALTH ASSOCIATED INFECTIONS: ESTIMATION OF COSTS AND FINANCIAL IMPACT ON THE US HEALTH CARE SYSTEM

Eyal Zimlichman 1,2,*, David W. Bates 1, Daniel Henderson 1, Charles R. Denham 3
1Brigham and Women’s Hospital, Boston, United States, 2Sheba Medical Centre, Ramat Gan, Israel, 3Texas Medical Institute of Technology, Austin, United States

Objectives: Health-care associated infections account for a large proportion of the harms caused by health care and are associated with high costs. Better evaluation of the costs of these infections could help providers and payers to justify investing in prevention. To estimate the costs associated with the most significant and targetable health-care associated infections and estimate their economic burden to hospitals in the United States.

Methods: For estimation of attributable costs a systematic review of the literature was conducted using PubMed for the years 1986 through June 2011. Studies performed outside the U.S. were excluded. Inclusion criteria included a robust methodology of comparison using a matched control group or an appropriate regression strategy, generalizable populations typical of inpatient wards and critical care units, methodological consistency to CDC definitions, and soundness of handling economic outcomes. Two review cycles were completed, with the latter iteration carried out from June to July 2011. Selected publications underwent a secondary review by the research team. For health-care associated infections incidence estimates, we used the National Healthcare Safety Network of the Centers for Disease Control and Prevention. Using Monte Carlo simulation, we generated point estimates and 95% confidence intervals for attributable costs and length of hospital stay.

Results: On a per-case basis, central line associated blood stream infections were found to be the most costly health-care associated infection at $44,601 (95% CI $30,100-63,517) followed by ventilator associated pneumonia at $30,357 ($25,560-37,968), surgical site infections $20,235 ($18,402-22,067), C. difficile infection $10,986 ($8,876-13,214) and catheter-associated urinary tract infection $873 ($587-1,158). The total annual costs for the five major infections were $8.8 billion ($7.0 – 10.8 billion), with surgical site infections comprising the largest contribution to overall costs (36.3% of total) followed by ventilator-associated pneumonia (26.4%), central line associated blood stream infections (20.4%), C. difficile infection (16.6%) and catheter-associated urinary tract infections (<1%).

Conclusion: While quality improvement initiatives have decreased health-care associated infections incidence and costs, much more remains to be done. The fact that surgical site infection constitute the largest slice of Health-care associated infections related costs nationally, and with the fact that less progress has been made in preventing these infections, suggest that research and quality improvement efforts are needed in this area. As hospitals in the U.S. will be realising savings from prevention of these complications under payment reforms they may be more likely to invest in such strategies.

Disclosure of Interest: E. Zimlichman Grant / Research support from: This study was sponsored by the Texas Medical Institute of Technology (Austin, TX) as part of a donation promoting research on patient safety, D. Bates Grant / Research support from: This study was sponsored by the Texas Medical Institute of Technology (Austin, TX) as part of a donation promoting research on patient safety. , D. Henderson Grant / Research support from: This study was sponsored by the Texas Medical Institute of Technology (Austin, TX) as part of a donation promoting research on patient safety. , C. Denham Grant / Research support from: This study was sponsored by the Texas Medical Institute of Technology (Austin, TX) as part of a donation promoting research on patient safety.
DEVELOPING KNOWLEDGE BROKERS TO GET KNOWLEDGE INTO PRACTICE FOR HEALTHCARE QUALITY
Ann Wales 1, Annette Thain 1
1NHS Education for Scotland, Glasgow, United Kingdom

Objectives: Knowledge brokers mediate the translation of knowledge into healthcare practice. This study aimed to define knowledge, skills, behaviours and attitudes associated with the knowledge broker role, and how to develop this role to support healthcare improvement.

Methods: The literature was searched for studies which describe roles focused on translating knowledge into healthcare delivery. The practice of knowledge brokers was defined by identifying key activities within each report, then mapping common activities. These practices were analysed to define a knowledge broker capability framework, describing knowledge, skills and attitudes, and mapping these against core components of healthcare improvement. The framework helps us to map the current capabilities of librarians and others in NHSScotland and to identify the capabilities needed for different improvement projects. A programme of learning is being designed to develop a coordinated knowledge broker network to support national improvement initiatives. A logic model and isolation analysis will help define the knowledge broker contribution to these improvements.

Results: Knowledge brokers collaborate as networks to combine 3 key approaches to help translate knowledge into practice:

Problem-solving: defining questions, identifying, analysing, combining and communicating knowledge.

Facilitating relationships and networks to exchange experience and practice.

Embedding sustainable use of knowledge in systems, e.g. through education and work processes. These capabilities align with the core components of healthcare improvement – understanding of context; human behaviour; customer needs; healthcare as process and the nature of knowledge.

Key elements of the knowledge broker capability framework include:

Knowledge: Customer knowledge needs and preferences; How knowledge flows through healthcare processes; context of healthcare; sources and types of knowledge for research, practice and experience; leading and facilitating change; knowledge management technology including clinical systems; research design and analysis; theory of networks and collaboration; adult learning theory.

Skills & behaviours: Communication; Collaboration; Capturing knowledge from research, practice and experience; describing and organising knowledge; analysing, evaluating, interpreting knowledge; combining and presenting knowledge; structuring knowledge to embed in systems; facilitating exchange of knowledge; supporting organisational change; facilitating learning; generating innovation.

Attitudes: Collaborative leadership; entrepreneurial; innovating; solution-focused; customer-centred; analytical and attentive to detail.

A self-assessment tool based on this framework helps to define capabilities across our current network of health librarians. A programme of learning will develop these staff into a network of knowledge brokers to help practitioners apply knowledge to improve delivery of care. The framework helps us to identify knowledge broker capabilities required to support improvement projects – for example: Implementing decision support in diabetes; supporting the national sepsis improvement collaborative; producing education packages for guideline implementation. Each project requires all 3 knowledge broker approaches, and multiple capabilities. This confirms the need for a networked approach combining complementary strengths. A logic model has been defined to help us to analyse how the knowledge broker role contributes to each of these improvements.

Conclusion: This study breaks new ground by defining the knowledge broker role, how it can contribute to improvement, and how existing roles can be developed to provide this support.
THE DEVELOPMENT OF AN EVIDENCE-BASED, PATIENT-CENTERED, PROVIDER-INFORMED AND ORGANISATIONALLY ALIGNED QUALITY IMPROVEMENT PLAN (QIP)

Patricia Mckernan 1,2, Eman Leung 2, Douglas Sinclair 1, Chris Hayes 1
1St. Michael’s Hospital, Toronto, Canada

Objectives:
In 2010, the Government of Ontario (Canada) passed the Excellent Care for All Act, mandating all Ontario hospitals to develop and make public annual Quality Improvement Plans informed by:
1. The results of patient and employee surveys.
2. Data related to the patient relations process.
3. Aggregate critical incident data.
4. Hospital based quality indicators covered by legislation.

With ‘Quality Care Through Knowledge’ as its strategic objective, St. Michael’s Hospital (SMH) in Toronto employed rigorous quantitative and qualitative research methodologies and evidence-informed change ideas to develop its first evidence-based, patient-centred, provider-informed and organisationally aligned Quality Improvement Plan for year 2011/2012. Here, we report the rigorous process with which SMH developed its 2011/2012 QIP.

Methods:
Mixed research methodologies were undertaken to triangulate quantitative and qualitative data from the following sources:
1. St. Michael’s Patient Declaration[1],
2. NRC Patient Satisfaction results,
3. Patient Complaints received through the Patient Affairs Office,
4. Critical incident data,
5. Interviews of Executive Steering Group and the Corporate Council Chairs;
6. Interviews of program directors, clinical/service managers, and clinical & corporate quality leads.

Results:
The triangulation of data analyses based on:

1) Patient declaration narratives,
2) Patient satisfaction narratives and ratings,
3) Patient complaint narratives; and
4) Critical incident reports resulted in themes consistently pointing to communication breakdowns between shifts, between units/departments, and between SMH and the community, as a key factor contributing to the lowest patient satisfaction scores, patients’ complaints and the most frequently reported category of critical incidents in 2011.

When the above analyses were presented to the council chairs, the analyses of their interviews revealed that improving care transitions and coordination throughout the patient journey was a worthy corporate objective and a strategic direction of quality for SMH. The analyses also informed the identification of QIP indicators at critical points of transition along the patient journey, including: transition from home at admission, transition to acute care, and the transition out of acute care at discharge. Also identified as indicators were quality-critical issues related to the overall safety, satisfaction and efficiency of the inpatient experience.

Based on the strategic objectives and QIP indicators generated from interviewing the council chairs, the corporate and clinical quality leaders developed change ideas based on research evidence, while interviews with different program directors, service and clinical managers provided the basis for the implementation plans of the resulting change ideas.

Conclusion:
The current presentation demonstrated that a rigorous mixed methods research approach can inform the development and implementation of an evidence-based, patient-centred, provider-informed and organisationally aligned QIP.

PATIENT SAFETY EDUCATION- CREATING A TIPPING POINT
Abigail Hain 1,* Hugh Macleod 1
1Canadian Patient Safety Institute, Ottawa, Canada

Objectives: This presentation describes system level patient safety education initiatives aimed to enhance clinical and educator capacity and capability in the science of patient safety and quality improvement.

Methods: The Canadian Adverse Events Study [1] drew significant attention to the problem of preventable patient harm in the Canadian healthcare system. Much work has taken place in Canada as a result of these findings, as well as in response to various sentinel cases and grass roots clinician led campaigns such as Safer Health Care Now! Despite work in this area, a gap in clinician understanding of the nature and the scope of patient safety and quality improvement science; and more significantly, a lack of awareness of the current prevalence of preventable patient harm remains.

In response to noted system level needs for clinician education in the realm of patient safety and quality improvement, the Canadian Patient Safety Institute partnered with North-western University to customise a comprehensive patient safety science curriculum for practicing Canadian healthcare professionals (Patient Safety Education Program-Canada). The education program leverages powerful peer to peer learning in the practice environment to affect change in attitudes, knowledge and skills. Trainers take the extensive curricula material, invigorated commitment and new knowledge to their organisation for a customised embedment and alignment to current quality and patient safety structures and initiatives.

Building upon this initial patient safety education work with, CPSI recently went on to partner with the Royal College of Physicians and Surgeons of Canada to further customise and develop patient safety education programming for post graduate medical school deans- the Advancing Safety for Patients in (Medical) Residency Program (ASPIRE) is being offered in the spring of 2013 as a train the trainer 4 day program. A diverse curricula design team developed customised programming aimed to support medical school faculty development.

Results: The PSEP-Canada train the trainer certification program has been deployed in four provinces in Canada with over 400 trainers now embedded across the country. Pre-post-test and conference evaluation results indicate enhanced knowledge of safety science concepts as well as a shift in trainer attitude toward a personal commitment to lead positive change. Exemplar case stories are tracing organisation wide program impacts reported in the form of cultural shifts (pre-post culture surveys), frontline engagement (champion networks), enhanced quality improvement initiatives attributable to the program implementation.

Conclusion: It is entirely possible to create a deep, significant and impactful wave of change – a tipping point. Healthcare professionals often feel defeated and overwhelmed by system issues that lead to preventable patient harm, arming frontline informal and formal peer leaders and educators with a knowledge base and enhanced skills in patient safety science is essential.

‘FROM BOARD TO BEDSIDE’ – CREATION AND IMPLEMENTATION OF A QUALITY INNOVATION FUND (QIF) AT ST. MICHAEL’S HOSPITAL

Chris Hayes 1, Eman Leung 2, Patricia McKernan 1
1St. Michael’s hospital, Toronto, Canada

Objectives: As the result of a very unique partnership between the Board, Foundation and hospital the QIF was created to meet the following objectives:

1. Foster alignment of QI projects with the hospital’s corporate objectives
2. Support and build front-line capacity to execute innovative QI projects
3. Understand the factors needed to create a framework for sustainable QI

The results herein describe the first year of the QIF working with 15 self-identified teams.

Methods:
These teams were supported centrally through:

1) A customised methodology adapted from the Institute for Healthcare Improvement’s 90-DAY Research and Development Process; and
2) Interventions that were tailored (according to each team’s results of the NHS sustainability assessment and semi-structured interviews) to improve the immediate organisational environment within which each team conducted its improvement work.

To assess the effectiveness of the intervention in improving the conduciveness of each team’s environment to the achievement and sustainability of QI work, NHS sustainability assessment was conducted again at the end of the first year of the QIF.

QIF outcomes including a) achievement of QI team project goals and associated outcomes and b) improvement of patient satisfaction scores (NRC Picker Survey) among inpatient units involved with QIF projects in relation to units that were not involved with QIF projects.

Results: There were 29 submissions from front-line teams to the QIF. 15 teams were selected, funded and supported.

The results from the NHS sustainability assessment at baseline resonated with the results from the discourse analysis of interviews of QI teams, revealing gaps in leadership engagement, technical infrastructure, while highlighting the critical importance of well-composed clinical improvement teams with frontline engagement.

The differences in NHS sustainability scores before and after the intervention were used to assess the effectiveness of the intervention. The result indicated a 20% increase post-intervention.

The impact on patient care was measured via local project successes. Breakthrough results included reduced blood culture contamination by 117%; increased hand hygiene compliance by 35%; reduced time to administer pain medication by 50% and pain scores by 65%; saved 33 hours/month communicating discrepant diagnostic imaging findings; reduced accidental removal of chest tubes by 93% and improved adherence of checklist to 75%; increased knowledge of abuse screening among orthopaedic surgeons and residents by 23%; increased chest compression depth by 20%; increased cleaning of high-touch areas by 23%; reduced RN spent waiting for MD to return page by 68%.

In terms of broader organisational impacts, the results indicated that inpatient areas involved with QIF team projects exhibited an 11% improvement on the overall mean of the organisation’s 8 lowest score items on the NRC Picker Patient Satisfaction Survey relative to inpatient areas that were not involved in the QIF.

Conclusion:
Supported by the QIF, our multimodal approach ensured QI work was well aligned within the corporate quality agenda. The QIF learning’s enabled QI teams to transform the environment through the three 90 day phases of the project. All teams:

1) achieved their goals and deliverables,
2) were enabled to understand how to transform their environment for success,
3) together represent a community of practice excellence in QI within St. Michael’s.

Overall the vision and initiative of the Board of and the Foundation has established a ground-breaking partnership “From Board to Bedside”, and serves as an example of the value the Board of can bring to an organisation’s QI journey.