The International Society for Quality in Health Care

27th International Conference

10th-13th October 2010
Paris, France

Quality Outcomes: Achieving Patient Improvement

Abstract Book

Marriott Rive Gauche Hotel, Paris, France
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International Society for Quality in Health Care Ltd

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10th - 13th October 2010,
The Marriott Rive Gauche Hotel, Paris, France
15-minute oral presentations

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HAVE WE REACHED THE LIMITS OF CLINICAL GOVERNANCE?

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Objective: To review progress on clinical governance, and to examine its capacity to protect the quality and safety of care for the most vulnerable groups and individuals in society.

Methods: We examined the literature and current, international practice on five key elements of clinical governance: the relationship between clinical and corporate governance; advocating for, and developing strategies and approaches to improve, the quality and safety of care of patients; patient-centered care; risk and performance management structures; and knowledge and information exchange strategies.

Results: It is now over ten years since clinical governance emerged in the aftermath of a series of serious public inquiries into patient safety. As a framework, clinical governance has enabled governments, health systems and services to group together various existing, emerging, and at times disparate activities, under a unifying banner. While few empirical studies of the impact of clinical governance have emerged, there is a growing body of research into the five elements identified. However, error rates continue to remain unacceptably high, and an important question, first asked early last decade, “what about the patient in patient safety?” continues to remain largely unanswered. Our findings are that, while there are significant differences between and within countries in clinical governance approaches, current quality and safety structures and strategies have only limited capacity to identify and respond to the social, as well as the clinical characteristics of patients. While the links between general management structures and clinical management have strengthened and matured in some countries, the ties between these systems and those structures and programs which are intended to ensure equity and equality remain much more limited. In Australia, for example, where all clinicians have free access to professional interpreters, only one jurisdiction regularly collects and reports on the number of errors attributable to the underuse of interpreters. The quality of care for vulnerable groups remains variable. “Mainstream” services continue to struggle with the provision of adequate, let alone quality care, for people with disabilities, homeless persons, and members of refugee and indigenous communities, while specialist services express needs for more funding and staff. Attempts to include a patient centered perspective are hampered by similar problems. There have been some advances, with some services employing advocates to provide a voice for patients. We argue that improvements to the safety of care are hampered, by a lack of research and data collection particularly in these areas. Much more is known for example, about high profile errors of commission, than about errors of omission (late diagnosis, missed referrals) which seem disproportionately to affect the socially at-risk populations. Even standardized error taxonomies and the incident reporting systems upon which they are based, include minimal details of patient characteristics.

Conclusion: In the past decade health systems and services have restructured and re-oriented to provide and monitor quality care to their patients. Yet clinical governance appears to suffer from similar limitations as the health system as a whole. It lacks coherence in some places, and the internal structures, linkages, and resources to ensure that safe, high quality care is distributed in an equitable manner. In research, policy and practice, we continue to know much more about “what sort of[iatrogenic] disease the patient has” than about “the patient that has the [iatrogenic] disease”. This, we will argue, may provide one explanation as to why, despite all best efforts, error rates remain high, and clinical governance is demonstrating its limits.

GOVERNANCE FOR QUALITY AND SAFETY IN CANADIAN HEALTHCARE: EVIDENCE FROM STUDIES OF EFFECTIVE PRACTICE

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Objective: This project gathered information from available literature, along with interviews with key informants and case study visits to identify current governance practices in quality and patient safety and steps to improve governance in this area.

Methods: We searched for relevant literature between 1990 and 2007 in bibliographic databases and online search engines. Semi-structured interviews were held between February and August 2008 with 15 experts in Canada and the US. Based on these interviews, we selected and developed detailed case studies of four healthcare boards, three in Canada and one in the US, that were identified as using leading practices in the governance of quality and patient safety. For each organization we carried out interviews with key informants and analyzed relevant documents. Cross case analysis was used to generate themes reflective of leading practices.

Results: Interviews and case studies suggest that current efforts to create effective governance for quality and patient safety in Canada are in early stages. A number of critical levers for creating more effective governance for quality and safety emerged from review of the literature, interviews and case studies. First, organizations need to provide boards with better information for the board on quality and patient safety. Such information should be easily interpretable by the board and assist in determining current progress. Second, boards need to recruit and educate their members to improve the expertise on the board in quality and patient safety. Healthcare boards need to include quality expertise in their competency profiles, they need to ensure that all board members receive orientation and continuing education in these areas, and they need to recruit one or more members who have deeper expertise who can help to execute responsibilities in this area. Third, boards need to create and monitor a quality and safety plan that include specific objectives with clearly defined targets and assigned responsibility for execution. Boards need to be full partners in the development of these plans, not passive recipients and these plans should be an integral part of the larger strategic plan, not just a reaction to targets set elsewhere. Fourth, boards need to focus on improving governance skills. Board members' effectiveness in improving quality and patient safety rests on their abilities to interpret the information provided, ask good questions and maintain a consistent focus on achieving outcomes. Boards may benefit from hearing stories about patient experiences, and understanding the nature of critical events that have occurred in the organization and the system issues that they uncover. Fifth, boards need to focus on building effective relationships between the board, medical staff and senior leadership. New structures for medical staff and better alignment between quality improvement efforts carried out by medical staff and organizational quality departments may facilitate better alignment in quality and patient safety initiatives. Explicit “compacts” that identify roles and expectations may help to establish trust and effective working relationships.

Conclusion: Results from this study are being used to develop a toolkit and educational program for healthcare board members across Canada. Current attempts to hold boards accountable for performance in quality and safety will lead to frustration and failure unless boards and organizations are strengthened.
OBJECTIVE: The study describes the development of a methodology and tools to enable better costing of the implementation of improvement projects and better collection of cost effectiveness data, so that the business case can be made for investing in quality and safety improvement.

METHODS: In the wake of the financial crisis, health systems around the world are looking at tighter budgets. The Health Foundation has been looking into the question of whether improving quality saves money. Our intuition suggests that surely it must, yet the evidence is scarce. A review in 2009 (1) came to the conclusion that while there is evidence that poor quality costs money; such as additional care for patients who have been subject to an adverse event, there is little solid evidence on the costs of implementation of improvement initiatives, nor whether they have saved any money in the delivery of care. This is because these costs and savings have rarely been measured, so we know very little about cost effectiveness in this area. A business case is needed for investment of staff time or other resources. Projects seeking to improve patient safety and/or quality of care need to draw upon evidence of the cost effectiveness of similar projects and to be able to measure their own costs and savings. The Health Foundation worked with 6 healthcare organisations in the UK to develop ‘currencies’ to describe the financial benefits of improvement programmes. The currencies include cash, such as money saved on reduction in prescribing of medication, as well as non-cash resources, such as bed days and staff time. The suggested ‘currencies’ were developed through workshop discussions, involving improvement leaders and senior finance staff, drawing up suggested definitions, circulating these for comment, further workshop discussion and editing. The next step was to pilot the use of the currencies, using real financial data. This proved far more complex than anticipated and getting to the point where they could be consistently measured involved many hours of discussion and many more hours, poring over the financial data to be able to pinpoint the actual costs of the agreed measures.

RESULTS: The simpler the project the easier to demonstrate cost effectiveness of the intervention and cash savings. For example, a project to improve safety and quality by more rational pathology testing was able to demonstrate that there had been cash savings through the reduction in use of reagents and other consumables and while this was partly offset by a project officer’s salary, money was saved overall. Equally, there were projects where the costing exercise proved that the implementation cost more than the savings realised. This does not invalidate the improvement in quality but it enables informed decisions to be made, with an understanding of the costs of additional quality. For projects aiming to work across clinical systems and patient pathways, inevitably, it was more difficult to pinpoint both costs of implementation and to prove the link to the intervention when there were savings in non-cash currency such as saved bed days and reduced staff time. The difficulties of extracting the cost data provided valuable lessons on how to refine the measures and how to ensure that clinicians and quality leads can engage with finance and administration staff and get a common language, so that there is buy-in at an early stage to extracting accurate cost data on improvement initiatives.

CONCLUSION: This project has improved our understanding of how to undertake economic evaluation. While it can be time consuming initially, it is imperative that we develop effective measures, so that we can build up an incontrovertible business case for quality.


DISCLOSURE: H Crisp, The Health Foundation, Employee
Objective:
This aim of this research was to provide new knowledge about whether or how hospital boards influence quality of care; the novel research construct was informed by both the Donabedian model for assessing quality, and social cognitive theory.

Methods: We conducted a cross-sectional study of 35 boards that govern 50 hospitals using two survey instruments developed for the research. The “board characteristic survey” assessed board structures and processes for quality and patient safety oversight. The “board efficacy” survey assessed individual board member perceptions of self and group efficacy for quality and patient safety oversight. We accrued participants through announcements in the newsletters of two state hospital associations (Michigan and Tennessee). The study announcement invited interested hospitals to email the PI, (CG) who managed the three-step process to participate. First, we sent an enrollment form that collected basic information on the number of board members, the date of the meeting when survey administration would occur, and the name, address, phone and email of a designated hospital site coordinator. When we received a completed enrollment form, we sent the site coordinator all instructions, study materials, and a postage paid, self-addressed mailer to return completed surveys. We used a trackable mail service to send and receive all documents. A voluntary cohort of 35 boards provided data on their structures and processes for quality oversight. At a single board meeting selected by each board chair, individual board members completed a survey that assessed perceived self and group efficacy for the oversight role. (n=366; 72% response rate). The enrollment and data collection period extended from August 1 through December 31, 2008.

Results: Board size and composition varied dramatically, and boards reported wide variation in hours of education for quality oversight. Quality and safety monitoring processes varied less. Seventy-three percent of boards had a separate quality and safety committee and 65% of boards reported they review quality and safety at every board meeting. Perceived self and group efficacy for quality oversight was strong, irrespective of hospital or board characteristics. Most boards conveyed a definitive sense that they drive change in their hospitals, and that hospital staff know how to improve quality. The majority of board members reported they feel well equipped for their role, are comfortable discussing hospital specific quality and safety performance, and believe their hospital learns from its mistakes. Yet less than half of the 366 board members have any formal training in improvement, and fewer than a third have training in a clinical discipline. Results of multi-level modeling to assess efficacy in relationship to board structures and processes were statistically insignificant. Responses revealed diverse board structures and processes, and general patterns of efficacy portraying confidence and optimism. Yet clear tensions within boards emerged, as perceptions on key efficacy statements often diverged.

Conclusion: America spends more on healthcare than any other country, yet is near the bottom compared to other industrialized countries on quality of care. Leaders, including boards of trustees, are accountable to change this, yet there is limited empirical evidence to guide their efforts. This research is the first we are aware of to explore board structures, processes and perceived efficacy for quality and safety oversight. Although we discovered widespread board member confidence and willingness to lead, their belief that the quality of care is high and their lack of knowledge regarding specific quality metrics suggests that boards may lack the knowledge and skills needed to lead improvement efforts. If board leadership is important to improve quality, as is generally assumed, board leaders should know the variability of knowledge and skill among board members, and understand that confidence does not equate with competence.
DEVELOPMENT AND VALIDATION OF A FRENCH ORGANIZATIONAL CULTURE QUESTIONNAIRE

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Objective: To develop and validate an organizational culture questionnaire adapted to French medicine departments.

Methods:
Questionnaire development. An exhaustive Literature review was carried out. Articles with tool measuring organisational culture published in English or French language were retrieved. The research databases were: Business Source Premier, Sciences direct, Medline, Eric-Francis and Pascal. An item basis has been constructed based on gathered items from selected tools trying to encompass all organizational culture components. Then a work of classification in dimensions and under-dimensions of all the components found in the basis was carried out by a multidisciplinary working-group. The questions have been composed from selected items. Validated scales have been selected and chosen to write question as soon as possible. The face validation of the questionnaire have been conducted through: sociology and methodology expert groups, Cross validation of items, themes and dimensions by 2 methodologists, Tests on physician, nurse and nurse assistant samples. Questionnaire validation. A sample of 36 randomized medicine departments in France (5 regions) has been randomized. All the health care professionals of these 36 departments (1081) have been asked to fill in the questionnaire. The homogeneity has been studied through factorial analyses and correlation analyses; internal consistency has been studied through Cronbach; reproducibility is in progress.

Results:
Seventy published studies were analysed and 14 organizational culture tools were selected (NUCAT, OCS, HCS, Hofstede, ICQ, OCAI, OCI of Cooke, OCI of Wallach, CAST, FOCUS, Harrison OCQ, Globe, OCP, COMIC). The basis of items and themes extracted from those tools contents finally 905 items and 106 themes. They have been classified in height dimensions: Professional commitment, Performance perception of Department Functioning, Organizational culture foundations, Internal Management, Relationship and communication in peer group, Relationship and communication with patients and family circle, Relationship with other departments, Top management style. The tested questionnaire contained 131, 8 dimensions and 23 underdimensions. 885 health care professionals filled in the questionnaire. The validated questionnaire contained 83 items, 21 homogeneous under dimensions. It had a good construct validity and an good internal coherence of dimensions (Global a Cronbach = 0,93, a Cronbach > 0,70 for 12 underdimensions) and a good applicability (return rate : 80% and Completeness rate : 97%).

Conclusion: The project is investigating an important part of health care quality. It allows the production of a validated tool measuring organisational culture that can be used by medicine wards for organisation and management diagnosis and for research projects. It will add new information about organisational characteristics of medicine wards that are linked with better clinical performance. This information is useful to improve patient health care management.

Reference: Contact author
TO CERTIFY OR NOT TO CERTIFY: IMPROVING THE QUALITY AND CONSISTENCY OF ASSESSING PRACTICES

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Objective: Share the rationale and experience of Accreditation Canada’s decision to support core competencies through a surveyor certification program.

Methods:
Step 1: surveyor certification was introduced as a potential requirement for surveying Step 2: a 3 year staggered plan for certification of all surveyors was presented for feedback to the Surveyor Advisory Committee and the Physician Advisory Committee Step 3: a surveyor competencies model previously developed by the Surveyor Resources department at Accreditation Canada was integrated into the plan to establish an evaluation framework to assess successful surveyor certification Step 4: the following requirements for certification were developed by the Learning and Development Department: exam for certification of new surveyors exam for experienced surveyors annual online courses, on key topics considered as challenging aspects of the survey process Step 5: all components of the certification program were reviewed by a few key surveyors to ensure value added content Step 6: all existing communication tools (email, publications, journals) were used to reinforce and augment specifically identified topics for successful surveyor certification

Results:
The surveyor certification concept will be introduced to surveyors in 2010 beginning with certification of new surveyors in the spring of 2010 through an exam process. Experienced surveyors will be asked to voluntarily participate in 3 educational webcasts. A thorough communications plan will ensure that surveyors are aware of the new requirements so that they know about the opportunity to participate in the certification program. Additionally, experienced surveyors will be provided the opportunity to test their knowledge at the National Surveyor conference in August 2010, by participating in the new surveyor exam. The results of all exams will be presented at this oral presentation as well as the uptake and test results of educational webcasts. Reactions of surveyors to the introduction of the certification program will also be shared.

Conclusion: The opinions of the authors will be shared during this oral presentation regarding the value of the certification program based on current results. Results from tests and exams will be linked to surveyor core competencies to identify those areas where surveyors need more training. Long term objectives will be shared as well as changes to the program based on uptake and test/exam results and the link to core competencies.
DEVELOPING QUALITY STANDARDS FOR THE NHS IN ENGLAND: THE NICE QUALITY STANDARDS PROGRAMME

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Objective: To describe the aims, objectives and methods of a national Quality Standards programme

Methods: In 2008 the English Department of Health published a major policy review - the NHS Next Stage Review (High Quality Care for All) - which sets out how health care quality should be defined and assessed and recommended that the role of NICE be expanded to develop quality standards. NICE set up a pilot Quality Standards programme in 2009. A Quality Standard is a set of specific, concise statements that: a) act as markers of high-quality, cost-effective patient care across a pathway or clinical area, covering treatment or prevention; b) are derived from the best available evidence (NICE Guidance and NHS Evidence accredited sources) and c) are produced collaboratively with the NHS and social care, along with their partners and service users. Each Quality Standard has a set of 5-10 descriptive quality statements of the key infrastructural and clinical requirements for high-quality care and a set of quality measures that will allow achievement against the quality statements to be measured. The interim process guide for the NICE Quality Standards programme has been published. Four Quality Standards have been developed as part of the pilot and are to be published in the spring of 2010: Dementia, Stroke, Venous Thromboembolism (VTE) Prevention and Specialist Neonatal Care.

Results: An overview of the NICE Quality Standards programme, how clinical guidelines are used to inform their development and methodological issues encountered with the four pilot NICE Quality Standards will be presented.

Conclusion: The key issues national guideline developers need to consider when linking their work to quality standard development will be discussed.

Reference:
Objective: To describe the involvement of service users in the development and implementation of an accreditation programme in the social sector in Denmark.

Methods: The five Danish regions have decided to develop and implement a national and mandatory quality model for the Danish social sector services. The objective is to create a system for quality assurance and quality improvement, which is structured in accordance with the principles of accreditation. As in the rest of Europe the Danish social sector services is characterized by a lack of systematic approaches towards documentation and continuous quality improvement. Hence the task is to start out with a limited number of standards and a few guidelines in order to encourage the social sector services to take possession of the accreditation programme and it’s methods. Over time the number of standards may be increased. The process of developing and implementing an accreditation programme covering the social sector is - among other things - meant to support the service users’ involvement in the services. This process involves specific challenges, obstacles and opportunities. A detailed development plan has been drafted for the involvement of service users in the process: From August 2008 through April 2009 six standards were developed based on a number of meetings, consultations and workshops involving more than 150 professionals from the administrational level and the social sector services as well as representatives from organisations of service users and their relatives. From November 2009 through September 2010 audits are being tested as methods of self-assessment of different types of social services. Service users are where possible invited to take part in the self-assessment of standards of communication, service user involvement and individual action plans. By the end of 2010 the first external assessment of the social sector services will be carried out. The development and implementation of the external assessment derive from international principles and accreditation standards.

Results: The Danish accreditation programme for the social sector services will be presented: The six standards relate to the following themes: communication, user involvement, individual action plans, competence development, working environment and management. Compliance with the standards relate to four stages following the quality circle in order to initiate a continuous process of quality improvement. Service users form an important part in this process. The external assessment of the social sector services in 2010 will be coordinated with existing supervising offices in the social sector. A detailed plan of making the assessment system - over time - conform to all international principles and accreditation standards has been prepared.

Conclusion: The lessons learned from involving service users in the development and implementation of an accreditation programme for the Danish social sector services are: · Creating ownership and acceptance of the accreditation programme among the skilled professionals take a lot of effort but can be promoted by the involvement of service users. · Involving service users in assessing the quality of social services requires a variety of methods and is not always possible. · Implementation of an external evaluation system based on all international principles and accreditation standards may have to be done in successive stages to be successfull.

Disclosure: P. Rhode, Centre for Quality Improvement, Director H. Qvist, Centre for Quality Improvement, Head of Department Soerensen, L.J., Centre for Quality Improvement, Consultant
THE PREVALENCE AND NATURE OF ADVERSE EVENTS IN DEVELOPING COUNTRIES OF THE EASTERN MEDITERRANEAN

R. El Asady¹, R.M. Wilson², I. Laurzigoita³, S. Siddiqi¹

Objective: To determine the prevalence, seriousness and preventability of adverse events in selected hospitals in developing and transitional countries of the Eastern Mediterranean and African Regions of the World Health Organization

Methods: A total of 12679 medical records from 22 hospitals in six countries, were analyzed for determination of the presence of an adverse event using retrospective medical record review. An adverse event was defined as an injury sustained by the patient, causing a disability and that is the result of the health care delivery process rather than the underlying disease. The records were selected by systematic random sampling from in-patient discharge lists in each of the participating hospitals. A team comprised of trained nurses and doctors from each country conducted the review process. A two-stage review mechanism was employed, whereby each medical record was initially reviewed for the presence of one or more of a set of criteria indicative of the potential occurrence of an adverse event. Records that were flagged in this first stage review were exposed to a second, more rigorous review process, to definitively identify or rule out the occurrence of an adverse event, determine its severity and preventability. The data was cleaned and analyzed by the National Center for Healthcare Improvement, Sydney, Australia. Specific country reports were prepared and the results shared in a regional meeting with the country investigating teams and subsequently shared with national policymakers.

Results: The aggregated results show that 21% of the data analyzed in the first stage review were positive for criteria indicative of an adverse event, and 7.3% of the total number of records reviewed were positive for an adverse event. There was a wide variation across countries ranging from 2.5-18%. Of the patients who experienced an adverse event, 38% suffered from severe disability, identified as death or permanent disability. Additionally, 1.86% of the patients entering the study died as a result of an adverse event. Most (83%) of the adverse events were determined to be highly preventable. The adverse events were mostly therapeutic in nature, that is, in the areas of determining and delivering the right therapy. In addition, diagnostic errors and errors around perioperative care were common in this study.

Conclusion: This is the first systematic, multi-country effort to determine the prevalence of adverse events in the Eastern Mediterranean Region. The study recognizes the potential of underestimating the prevalence of adverse events using a retrospective study in countries where the medical recording system is at best sub-optimally functioning. The results of this study, nevertheless, demonstrate a high rate of adverse events in health care facilities in developing countries. The majority of adverse events detected by this methodology were severe and most adverse events were determined to be highly preventable. The data call for special attention to patient safety in developing countries and countries in economic transition, and warrant the pressing need for interventions that ensure the implementation of standardized policies and ensure that patients are safe in health care facilities.
IMPROVING PATIENT SAFETY: THE DIVERGENT VIEWS OF A HEALTHCARE WORKFORCE AND PATIENT SAFETY ADVOCATES

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Objective: We aimed to compare the views of health workforce staff about how to improve patient safety with those of safety advocates and managers.

Methods: The views of a random sample of 1,662 staff in the South Australian health system (drawn from a survey of the state's workforce) were compared with those of 131 health safety advocates and managers who were surveyed prior to attending a workshop on patient safety. Participants answered questionnaires which included an item asking them to write their three main suggestions for improving patient safety. Suggestions were content analysed and compared using a rank order correlation and chi square analyses.

Results: Safety advocates (83.2%) were more likely to give suggestions than were members of the workforce sample (47.5%). Clinicians and managers within the workforce were more likely to make suggestions than were staff providing indirect care or lacking a managerial role. The mean number of suggestions made by those who answered the question was the same for workforce members and advocates (2.6). Advocates made most suggestions about implementing reviews and guidelines (ranked eighth in importance by workforce staff). Workforce members made most suggestions about staffing, particularly increasing staff numbers, but this received a rank of 7.5 from safety advocates. There was no relationship (rho = -0.05, df 8, p=0.912) between the importance the two groups attached to the nine categories of suggestions. Chi square analyses comparing the proportions of suggestions the groups allocated to each category revealed that advocates were significantly more likely to recommend incident reporting and implementing reviews and guidelines. Workforce staff were more significantly more likely to suggest better staffing and improved equipment and infrastructure. There were no significant differences in the proportions of suggestions made about improving staff education and supervision, teamwork and communication, management and leadership, and focusing more on patient care and specific safety projects.

Conclusion: Safety advocates have more and different views on how to improve patient safety than do members of the health workforce. Within the workforce staff with a clinical background or managerial role are more likely to express views. However their suggestions bear little resemblance to those of advocates, being focused more on tangibles such as more staff, equipment and infrastructure while advocates are more concerned with actions such as implementing reviews, guidelines and incident reporting. Both groups see education and communication as relatively important in the promotion of patient safety and clearly much needs to be done in these areas by safety advocates if their ideas are to be successfully implemented.

USING HSMR AS A TOOL TO DRIVE LOCAL IMPROVEMENT AT THE CLINICAL LEVEL

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Objective: To provide clinical programs with a framework to use locally generated hospital standardized mortality ratio¹ (HSMR) data to facilitate the identification and design of interventions to improve quality and safety.

Methods: Following the public release of Canadian hospital specific HSMR data in November 2007², we developed an internal framework to incorporate HSMR data into the hospital quality improvement plan. Each quarter, the hospital biostatistician analyzes discharge data collected by health records and uses the Canadian national HSMR regression model to calculate the expected risk of death for each patient case. A quarterly report is created for each clinical program including a summary of the program's HSMR, outstanding diagnosis groups and list of individual patient deaths sorted by lowest to highest calculated expected risk of death. Clinical programs were provided with chart analysis tools to review, at a minimum, the charts of patients that had an expected death rate of less than 10 percent. For each chart review, the IHI Mortality Diagnostic and Global Trigger tools³ are used to look for failures to recognize, plan or communicate and any adverse events. Clinical programs then develop and implement quality improvement action plans to address identified safety and quality issues. The programs report their individual HSMR and improvement initiatives quarterly to the executive team and annually to the Board of Directors. Corporate and clinical program specific HSMR results are analyzed quarterly, using linear regression to assess for significant trends over time and published on our public website.

Results: Since the implementation of our framework, the HSMR has significantly dropped from previous years (range 92-96) to 73 2009/10 (year to date) [p<0.05]. The clinical program specific HSMR's vary from quarter to quarter, ranging from 25 to 180. The average number of cases reviewed, per quarter, with an expected death rate of less than 10 percent is 32 (21-38). Chart review prompted by the HSMR improvement program has led to identification of patient safety, quality and documentation issues within each clinical program. Several quality improvement initiatives have been established as a result. Examples include systematically preventing hypothermia in trauma patients, the creation of a massive transfusion protocol to support prompt patient resuscitation, earlier activation of the rapid response team and implementation of a checklist to appropriately capture patients’ comorbidities and admitting diagnoses. Reporting of the HSMR data and improvement activities to the hospital senior executives and Board of Directors has resulted in a better understanding of the utility of the HSMR as a corporate indicator and greater accountability amongst the program leadership.

Conclusion: In Canada, the nationally reported HSMR is released to hospitals annually as a big dot corporate indicator, limiting the ability to use these data to identify and address patient safety and quality issues at the clinical level. Internally using the national regression model to generate quarterly HSMR data, our framework has enabled the clinical programs to perform targeted chart review that has led to safety and quality issue identification and improvement. Concurrently we have seen a significant reduction in the hospital HSMR and a greater appreciation of its utility. This process is transferable to other healthcare institutions to assist the incorporation of their HSMR data into local quality improvement plans.

PATIENT SAFETY CULTURE, PATIENT SAFETY REPORTING AND PATIENT SATISFACTION

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Objective: Increasing patient safety culture of the organization is one of the essential goals of the hospital. Patient safety event reporting and patient satisfaction are the common indicators for the outcome assessment of the culture improvement among the healthcare staffs and the patients respectively. This study is to find the influence of the patient safety culture on the patient safety reporting and patient satisfaction and the interaction between the patient satisfaction and the patient safety reporting in a university-based teaching hospital in Taiwan.

Methods: We modified and translated the safety attitudes (SAQ) with 5 dimensions which derived from Agency for Healthcare Research and Quality (AHRQ) as the measure for the safety culture assessment among the units of the hospital. We collected the SAQ from September 29 to October 13, 2009 and with the response rate of 76.8% (n=929). Patient satisfaction was measured in a self written survey with the structured questionnaire from July to September 2009. We collected 312, 552 and 228 questionnaires from inpatient, outpatient and emergency units respectively. The patient safety events were used the data of 2009 from the patient safety reporting system established at the hospital in 2007. We generalized the data of patient safety culture survey, patient satisfaction and patient safety reporting system by units and analysed with SPSS package.

Results: From the safety culture survey, we found that there were 54 units responded. The total positive rate were 51.6%, 50.6%, 48.0%, 44.2% and 34.2% among the dimensions of teamwork, perception of the management level, working satisfaction, safety culture of the unit, working condition respectively. The patient satisfaction survey, we collected the data of 28 units. The patient safety reporting system, we collected 345 events form 32 units in 2009. From the correlation analysis we found that the number of patient safety event occurred was significantly correlated with working satisfaction(r= -0.361, p=0.007), inpatient ward environment satisfaction (r= 0.803, p=0.001); Ever report event was significantly correlated with number of patient safety events occurred (r=0.518, p<0.001), rate of anonymous report(r= -0.419, p=0.016); Number of reporting was significantly correlated with ward environment satisfaction(r=0.752,P=0.003), number of incidence (r=0.856, p<0.001), Rate of self report by the unit occurred events was significantly correlated with patient satisfaction(r=o.711, p<0.001), number of reporting(r=0.460, p=0.01).

Conclusion: From the results we found that among the dimensions of patient safety culture, the more working satisfaction the less patient safety event occurred and all dimensions had no significant influence on the patient satisfaction. The more patient satisfaction and the more number reported, the more rate of self reports by the unit occurred events. All these finding may explain that the more mature level of patient safety culture developed in the organization, the units will more willing to reporting no matter how many events occurred. Among the dimensions with no significant finding, may result from the insufficient data of the patient satisfaction of the units and need to implement further study.

TURNING BLAMING INTO LEARNING OPPORTUNITIES – HOW PHYSICIANS’ ERROR RESPONSES IMPACT PATIENT SAFETY

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Objective: In this paper we propose a motivational model to study why some individuals see error as an opportunity for improvement and others consider errors to be blameworthy and, thus, tend to prevent their disclosure.

Methods: We draw on regulatory focus theory (Higgins, 1997) to argue that people differ systematically in how they respond to errors based on the extent to which they are motivated by the fulfillment of nurturance (promotion orientation) versus security (prevention orientation) needs. We empirically test the impact of individuals’ motivational predispositions on their response to error in a mixed method study of academic physicians at a large academic medical center in the Northeast of the United States, using qualitative face-to-face interviews, experienced-based rating, and word frequency analyses. We conducted linear (for denying, disclosure and accountability attitude) and logistic regressions (for blaming attitude), controlling for age, gender and organizational tenure.

Results: In responding to error, promotion-focused people’s motivations to self improve (extra-role response) and to attain positive outcomes drive them to openly disclose their errors and claim (individual) accountability. By contrast, prevention-oriented people are primarily motivated by fulfilling external obligations (role-conformity response) and avoiding negative outcomes, enticing them to deny errors and blame others. OLS Regression and Logistic Regression in Predicting Error Responses

<table>
<thead>
<tr>
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<th>Denying</th>
<th>Disclosure</th>
<th>Accountability</th>
<th>Blaming²</th>
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<tbody>
<tr>
<td>Model 1</td>
<td>-.121</td>
<td>.041</td>
<td>-.164</td>
<td>-1.033</td>
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<td></td>
<td>(.240)</td>
<td>(.318)</td>
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<td>Model 2</td>
<td>.073</td>
<td>.230</td>
<td>.656 (.554)</td>
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<td>(.141)</td>
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<td>Model 3</td>
<td>.23</td>
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<td>(.095)</td>
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<td>Model 4</td>
<td>.480</td>
<td>.1091</td>
<td>6.427</td>
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<td>(.548)</td>
<td>(3.011)</td>
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R² = .192, F = 1.919

Conclusion: Our motivational model of error response shows how physicians’ error responses can have their roots in individuals’ motivations. It also provides us with an assessment of the error response climate among physicians at this particular institution and offers insights where and how we will conduct an intervention to induce promotion motivation because promotion motivation has proven to be conducive to an effective error management approach. While, the majority of interventions focuses on system changes (standardization etc.), it is still the individual who decides about the adoption of changes (low error reporting rates among physicians reflect this). Inducing a “positive” motivational state not only helps to promote the adoption of system changes, but also directly influences the error response climate, presenting a less costly, but more effective and longer-lasting alternative to improving patient care and safety.

Reference: Contact the author
DO QUALITY IMPROVEMENT SYSTEMS IMPROVE QUALITY? AN ANALYSIS OF THE ASSOCIATIONS BETWEEN 'MATURITY' OF QUALITY IMPROVEMENT SYSTEMS AND CLINICAL OUTCOMES IN 43 HOSPITALS.

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Objective: Previous research addressed the development of a classification scheme for quality improvement systems in European hospitals [1]. In this study we explore associations between the 'maturity' of the hospital's quality improvement system and clinical outcomes.

Methods: The maturity classification scheme was developed based on survey results from 389 hospitals in eight European countries. We matched the hospitals from the Spanish sample (113 hospitals) with those hospitals participating in a nation-wide, voluntary hospital performance initiative. We then compared sample distributions and explored associations between the 'maturity' of the hospital's quality improvement system and a range of composite outcomes measure, such as adjusted hospital-wide mortality, -readmission and -complication rates, as well as condition-specific outcome measures for acute myocardial infarction, stroke and deliveries.

Results: Overall, 43 hospitals were included. Compared to the original sample of 113, this sample was characterized by a higher representation of university hospitals. Maturity of the quality improvement system was similar, although the matched sample showed less variability. Analysis of associations between the quality improvement system and hospital-wide outcomes suggests correlations between -0.2 (Pearson correlation coefficient; for adjusted mortality) and 0.3 (borderline significant, 0.051) for complications. Analysis at departmental level yields higher correlation coefficients and statistical significance (0.389, p=0.012, for complications after delivery; and 0.362, p=0.02, for readmissions after AMI).

Conclusion: We assessed associations between hospital's quality improvement systems and clinical outcomes. While quality improvement systems were only modestly correlated with hospital-wide adjusted mortality and readmission rates, correlations with hospital-wide adjusted complications and disease specific complications (for deliveries) and readmissions (for AMI) are more profound. Further, ongoing analysis addresses associations of disease-specific quality improvement activities and clinical outcomes, as well as psychometric testing in order to identify those aspects most related with clinical outcomes. Given the policy debate on the assessment of quality in European hospitals, this research adds pertinent knowledge regarding the organizational strategies related with quality of care outcomes [2].

ACUTE CARE HOSPITAL NURSES’ REPORTS OF RATIONING OF NURSING CARE AND INPATIENT MORTALITY: PRELIMINARY FINDINGS

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Objective: To explore the relationship between nurses’ reports of omitted care due to lack of time or other resources and inpatient mortality rates in a convenience sample of eight Swiss acute care hospitals.

Methods: A comparative cross-sectional design involving both survey-derived indicators of rationing and patient outcomes from discharge abstracts was used. A sample of 1338 nurses working in 8 Swiss acute care hospitals completed questionnaires in 2003-2004, including the Basel Extent of Rationing of Nursing Care (BERNCA), a 20-item self-report instrument developed around published frameworks describing domains of nursing practice. Early evidence of validity was provided in earlier papers [1-3]. The dependent variable was inhospital mortality among 188,123 adult patients treated in these 8 hospitals in 2003-2004, excluding psychiatric, obstetrical and long-term geriatric patients ascertained using discharge abstracts from the Swiss Federal Statistical Office (FSO) national database. Hospitals were grouped according to the average level of rationing reported by nurses working within them. Logistic regression models were then used to estimate the effect of hospital category (rationing level) on risk of-inpatient mortality. Control variables used in the models included clinical characteristics predicting risk (i.e. principal diagnosis, emergency vs. non-emergency admission, age, comorbid medical conditions) using an adaptation of the Charlson comorbidity index for ICD-10 [4]. Model estimates were adjusted for the clustering of patients within hospitals.

Results: As expected, rationing was by no means extensively reported by nurses; however, 96% reported that they lacked time or resources to perform at least one of the listed nursing tasks within the last seven days. Using cut points for aggregate hospital-level BERNCA scores based on descriptive work and validated against outcomes in earlier papers, the 8 hospitals were grouped into 3 categories: those where nurses reported no rationing, hospitals where very limited rationing of care was reported, and a third category of hospitals with somewhat higher levels of rationing were reported. Patients treated in the hospital with the highest rationing levels were observed to have a nearly doubled risk of dying during their admissions compared with those treated in hospitals with the lowest levels (unadjusted OR: OR 2.01, 95% CI 1.80, 2.26; adjusted OR, 1.80, 95% CI 1.59, 2.04).

Conclusion: While a relatively small number of hospitals were studied here, these preliminary data suggest that patients cared for in facilities with higher rationing levels experienced higher risk-adjusted in-hospital mortality, perhaps due to a greater risk in these hospitals that important aspects of care, such as close monitoring, were omitted. Taken together with earlier findings using the BERNCA, findings highlight the potential importance of rationing in explaining differences in outcomes across hospitals and suggest that continued investigation of this newer indicator of processes of care with likely organizational underpinnings in larger studies is worthwhile.

THE POWER OF COLLABORATIVE IMPROVEMENT TO INCREASE COMPLIANCE WITH STANDARDS AND HEALTH OUTCOMES: EVIDENCE FROM 12 COUNTRIES

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Objective: Assess the results of 27 improvement collaboratives in 12 countries to achieve rapid, significant, and sustained increases in quality of health care and outcomes in low and middle-income countries.

Methods: The improvement collaborative is an approach developed by the Institute for Healthcare Improvement (IHI) to overcome obstacles to the spread of evidence-based clinical practices by engaging multiple teams to work collaboratively to achieve rapid and significant improvements in processes, quality, and efficiency of a specific health care area. Between 1998 and 2008, USAID funded 54 improvement collaboratives in 14 countries, adapting the IHI approach to the resource-constrained environments in developing countries. To assess the collective impact of these collaboratives, we analyzed all self-reported time series process and outcome measurements made by participating teams meeting two criteria: 1) at least 12 consecutive months of data available, and 2) used indicators measured as a percentage of the patient population. Data from 27 of the 54 collaboratives met these criteria. Data were analyzed for 81 indicators of compliance with standards and outcomes in the areas of maternal, newborn and child health, HIV/AIDS care, family planning, and malaria and tuberculosis diagnosis and treatment. In all, 135 time series charts were analyzed, each reflecting one indicator measured in a specific collaborative (some groups of teams measured the same indicator). The 27 collaboratives ranged in duration from 12–18 months to over three years; the number of participating sites ranged from 3 to 124. This analysis focused on global results from these 27 collaboratives, which resulted from efforts at testing changes in care provision by 1,300 teams in 12 countries.

Results: We found that the studied collaboratives achieved large increases in compliance with health care standards and in some cases, in health outcomes, across all care areas addressed, regardless of the baseline level of quality. Of the 135 analyzed time-series charts, 88% attained performance levels of at least 80%, and 76% reached at least 90%, even though more than half had baseline levels at 50% or below. Across the collaboratives, regardless of baseline levels and topic area, teams achieved average increases of 51.9 percentage points (SD = 28.0, range 0–100%) per indicator. The average relative increase was 210% (SD = 350%; range 0–2400%). Almost two-thirds of the collaboratives produced consistently high levels of quality (> 80%) across all indicators tracked. Our findings also support the hypothesis that collaboratives can achieve such results rapidly and across clinical areas: Collaboratives with indicators starting at performance levels below 50% reached levels of 80% in an average of 13 months, while those starting at performance levels above 50% reached levels of 80% in 6 months. These results were generated from collaboratives averaging 27 sites each, indicating the capacity to achieve speed at appreciable scale. Transferring learning from initial sites to teams in subsequent expansion waves of the collaborative appears to have doubled the speed of improvement: Expansion teams generally achieved performance levels of 80% in about half the time the original sites had. Interestingly, the time required to raise average performance from 80% to 90% was often substantial: 34% to 140% longer than the time needed to bring performance from baseline to 80%. These collaboratives sustained performance at 80% or higher (average across all participating teams) for an average of 13.4 consecutive months, with periods of observation averaging 12 to 21 months.

Conclusion: The strength of a health system is measured in its ability to deliver good health outcomes. By achieving significant, sustained improvements in compliance with standards and outcomes, collaborative improvement is a viable tool for health systems strengthening in developing countries.
THE IMPACT OF PERFORMANCE DATA ON PROVIDER BEHAVIOUR AND QUALITY OF CARE OUTCOMES IN ACUTE HEALTH CARE: A REALIST REVIEW

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Objective: This review aimed to examine the empirical evidence on the impact of performance data on quality of care outcomes and provider (acute hospitals) behaviour as well as the barriers and drivers to using performance data for quality assurance purposes in acute health care settings.

Methods: This review followed the principles of the realist review approach, an approach developed to answer questions about complex interventions in complex systems, by synthesising evidence from qualitative and quantitative research.

Results: We included 34 qualitative and quantitative studies. The results were grouped into the following topics: The impact of performance data on quality outcomes There is some support for the impact of performance data on quality of care outcomes. However, these studies are largely based on secondary analyses of existing data sets rather than controlled experiments. In terms of how these data impact upon quality, the literature has as yet failed to adopt a unitary theoretical approach and the available studies have tested a broad range of different mechanisms by which performance data may improve quality of care outcomes. The impact of performance data on healthcare providers There is evidence that:
• Healthcare providers have a preference for data which are collected and aggregated internally
• Healthcare providers make a great distinction between ‘external’ and ‘internal’ data, and respond differently to both types.
• External data are rarely used as primary driver for continuous quality improvement
• Data are most likely to drive change if a provider is perceived as a negative outlier; providers do not respond to analyses which describe average or better than average performance

The unintended consequences of performance data The findings suggest a range of negative (behavioural) responses to public performance reports, such as tunnel vision, sub-optimisation, myopia, measure fixation, misrepresentation, gaming and ossification. Barriers to using performance data for quality assurance purposes
• The way providers view performance data affects their use of these data
• Data were often not viewed as accessible, useful, timely, valid or fair
• Users had considerable difficulties in interpreting the data
• Users felt they did not have access to appropriate level of analysis of data
• There was a lack of knowledge about what kind of data are available to them
• Top level management is important in creating an organisational improvement culture

Conclusion:
By examining health care providers’ attitudes to data use, our review has highlighted a range of barriers which could easily be addressed in any organisation, such as the presentation of data, level of analysis, system characteristics, analytical skills of data users and the availability of a central data platform. There are several recommendations, which can be made based on the evidence presented in this review:
• Data should be fed back to providers as quickly as possible
• Quality indicators should be developed in collaboration with data users to ensure these indicators provide information which is useful for the management of services.
• Data users should be supported in their data use by a data coordinator, a designated person responsible for interpreting available data.
• Performance data should be available on a central platform and actively disseminated to users.
• Data should be reported at different levels of analysis: narrative summary reports, statistical aggregates and raw data.
• Public data should describe organizational, but not individual performance.
• Individual performance is best disseminated confidentially to avoid unintended consequences.
• Much care should be placed on ensuring data are perceived as valid, useful and fair by their users if the data are to be used for quality improvement and not merely comparison purposes.
• Policies should concentrate on ensuring data are responded to in a continuous fashion, rather than simply used as tools for crisis interventions.
PRACTICES AND ORGANIZATIONAL CHARACTERISTICS OF CONSISTENTLY HIGH PERFORMING HOSPITALS

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Objective: Identify care practices and organizational characteristics of hospitals with consistently high performance across multiple clinical areas/measure sets of the National Hospital Quality Measures (NHQM).

Methods: Mixed methods were used, including statistical analysis to identify high, medium, and low performing hospitals followed by open-ended telephone interviews with hospital leadership and frontline staff involved in performance improvement. Purposeful sampling was applied to select 5 hospitals from each group (15 hospitals). A total of 42 individuals were interviewed including staff involved with data abstraction and analysis, quality directors, nursing and physician liaisons and chairs, and senior executives. Interviews were transcribed and then coded using NVivo. Within- and between-case analyses were conducted to understand trends and patterns. Cases were grouped by performance category: high, middle and low, to highlight differences among groups. Site visits were conducted with three selected high performing hospitals to document specific practices associated with high performance. 360 hospitals participating with the Quality Indicator Project and with complete data for pneumonia, heart failure, acute myocardial infarction, and surgery NHQM measure sets from 3rd quarter 2007 to 2nd quarter 2008. Composite scores were calculated for each measure set and high performers defined as those with exponentially weighted moving averages (EWMA) two standard deviations above the mean for all measure sets for all quarters. Respectively, comparison groups of low performers had all EWMA fall two standard deviations below the mean and the medium group between two standard deviations above and below the mean.

Results: 91 of 360 hospitals were distinguished as consistently high (37), middle (40) or low (14) performers. The three key differentiators of high performers were (a) concurrent data collection, analysis and management of patients in the NQHM measure populations, (b) physician buy-in, engagement and direct accountability, and (c) support and encouragement at the executive level. High performing hospitals were also more likely to set specific improvement goals, rely on interdisciplinary performance improvement teams meeting frequently, and communicate performance results in timely fashion through dashboards and posting. Regarding major barriers to successful performance, all hospitals cited manual processes due to the lack of EMRs. Additionally, low performing hospitals mentioned absence of buy in, lack of reward systems, and generally low expectations while medium and high performing ones mentioned lack of process for discharge instructions, resources, and internal education on measures. Follow-up site visits revealed a wide range of strategies to assure concurrent monitoring and management, a challenge since most measures define patient population by discharge diagnosis. High performers identify patients eligible for measures on admission, monitor and manage care during the stay, and assure complete discharge follow-through.

Conclusion: We identified three key strategies of hospitals with consistently high performance across multiple clinical areas: concurrent identification and management of patients in the NQHM measure populations; strong physician buy-in, engagement and direct accountability; and strong support at the executive level. The strategies identified can be used by low and medium performing hospitals to increase performance on clinical measures organization-wide. These strategies focus on process and do not necessarily require additional resources.

Reference: Contact the author
IS SAFER CARE CHEAPER CARE: THE COSTS OF INPATIENT COMPLICATIONS?

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Objective: The study evaluated differences in hospital lengths of stay and related resource use by inpatient complication in three acute care facilities using a common data system.

Methods: The evaluation involved three hospitals in the metropolitan area of Syracuse, New York which includes a population of approximately 600,000. The study employed the Potentially Preventable Complications (PPC) software developed by 3Mä Health Information Systems, to identify and track post admission complications for over 60 individual diagnoses. The software identifies the frequency and rate of each complication, as well as the comparison of individual hospital rates with those of hospital populations with the same inpatient severity of illness. In the current study two PPC’s were selected: urinary tract infection and pneumonia. Patients with each of these complications were identified through use of the PPC software and administrative data (2008/2009) for the three participating hospitals. The evaluation focused on identification of mean lengths of stay for patients with and without each PPC. In order to control for the impact of additional clinical variables, such as diagnosis and severity of illness, inpatient populations with and without the PPCs were identified with the same All Patients Refined Diagnosis Related Groups and severity of illness.

Results: The study data identified substantial differences in hospital lengths of stay between patient populations experiencing complications for urinary tract infection and pneumonia and those not experiencing these complications. These comparisons involved patients with the same All Patients Refined Diagnosis Related Groups and severity of illness. The data include ranges of stays based on the January – September 2008 and January – September 2009 time periods. Urinary Tract Infection Mean Length of Stay – 14.4 – 17.1 days with PPC Mean Length of Stay – 5.5 – 6.6 days without PPC Median Length of Stay – 10.4 – 14.0 days with PPC Median Length of Stay – 4.4 – 4.8 days without PPC Pneumonia Mean Length of Stay – 18.6 – 22.1 days with PPC Mean Length of Stay – 5.6 – 5.8 days without PPC Median Length of Stay – 14.0 – 16.0 days with PPC Median Length of Stay – 5.1 – 5.2 days without PPC

Conclusion: The study demonstrated that patients who experienced Potentially Preventable Complications for urinary tract infection and pneumonia experienced substantially longer lengths of stay than those who did not. These additional stays consumed considerable amounts of hospital resources, especially nursing hours, pharmaceuticals, and tests.
FROM CLINICAL GUIDELINES TO PAY FOR PERFORMANCE IN UK FAMILY PRACTICE: THE NICE QUALITY AND OUTCOMES FRAMEWORK INDICATOR PROGRAMME

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Objective:
To describe the methods of indicator development in a national quality indicator programme for primary care

Methods: The need to link evidence-based clinical guidelines to incentives for performance is increasingly being recognised at international level. The UK has two high quality national guideline programmes: NICE and SIGN and since 2004 has had a major pay-for-performance scheme for securing higher quality primary care: the Quality and Outcomes Framework (QOF) which rewards performance against criteria in 4 areas: clinical and health improvement, organisational, patient experience and additional services. To date overall achievement has been high and the UK government currently spends about £1bn ($1.5bn; €1.1bn) each year (15% of primary medical care costs) on the framework. NICE was given the role of developing and reviewing the framework’s clinical and health improvement indicators from April 2009 with the aim of ensuring relevant evidence-based guideline recommendations are used to inform the development of indicators that are clinically effective and cost effective. The interim process guide for the NICE QOF indicator programme has been published. Three meetings of the Primary Care QOF Advisory Committee took place between June 2009 and June 2010. The progressed guideline recommendations were subject to indicator development using a modified RAND appropriateness method and piloting in a representative sample of UK practices.

Results:
An overview of the NICE QOF indicator programme, how clinical guidelines are used to inform indicator development and methodological issues encountered with the first cycle of NICE QOF indicator development will be presented.

Conclusion:
The key issues national guideline and quality indicator developers need to consider when linking their work to incentives for performance programmes will be discussed.

Reference:
NICE (2009). Developing clinical and health improvement indicators for the Quality and Outcomes Framework (QOF) - Interim process guide.
INTEGRATED CHRONIC CARE: HOW TO ACHIEVE IT AND HOW TO MEASURE ITS IMPACT

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Objective: Drawing on a combination of empirical and conceptual work, this paper will describe a range of integrative processes to support the development of integrated chronic care services and propose an approach to measure the impact of such services.

Methods: The factors that support effective integration were identified through case studies on four integrated care organisations and measures to assess the impact of interventions on minimizing fragmentation of chronic care were derived through interviews among 20 international experts. Case studies: A maximum variation sample (in terms of national policy context, organizational form, and integrative approaches) was selected from institutions nominated by international experts as high performing and progressing well with integration. Data collection (Feb – July 2009) combined 10 – 15 semi-structured interviews per site (with managers and clinicians), document and literature review. Interviews explored understanding of and objectives for 'integration', external influences on integration and impact of organizational characteristics (e.g. leadership, governance, incentive and the use of data and IT) in facilitating/hindering integration. Data were analysed by means of thematic analysis and constant comparison to develop theory about generalisable methods to support integration.

Expert interviews: Twenty experts from the US (9), the UK (3), Australia (2), Canada (2), the Netherlands (2), Denmark (1), Germany (1) were interviewed by phone or face-to-face between November 2008 and February 2009. The proceedings were audio-taped and transcribed and transcripts were examined by authors to identify emergent themes. These were agreed by discussion and the data were categorized independently by two researchers, who subsequently agreed an overall classification.

Results: Across all organisations, diverse activities were in place to support integration and overcome barriers to more integrated services. These included varied organizational structures, systems and processes to identify and implement the goals of integration. These included tools and techniques to support new types of clinical practice, financial and administrative arrangements and data and IT systems to drive and monitor change. These activities could be clustered into six groups of interacting 'integrative processes': organisational; financial; informational; clinical; administrative and normative. Effective implementation of these integrative processes was dependent on strong professional leadership (particularly from doctors), clarity relating to the goals and values of integration and excellent communications. The balance between different integrative processes in use in each study site varied, but each was addressed in some way and there were common interdependencies. In the interviews experts mentioned various drivers of fragmentation on multiple levels. In minimizing fragmentation needs of patients should be taken as a starting point when addressing the drivers in a coordinative and/or integrative fashion. This should be done by a multi-stakeholder coalition. Measures should be selected from a predefined set to assess the impact of a multi-component intervention aimed at minimizing one or more drivers of fragmentation.

Conclusion: The case studies illustrate the diverse processes needed to support effective integration and suggest that organisations that are working to develop more integrated service could usefully review their ability to develop all six groups of integrative processes. Once established, the impact of more integrated services can be measured by using a set of measures which reflect the aim of the services i.e. to minimize unwanted fragmentation.
DO MEDICAL HOMES EXIST WITHIN EUROPEAN PRIMARY CARE PRACTICES? A PATIENT’S PERSPECTIVE

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Objective:
To define care domains and indicators for each domain according to the Medical Home concept and to assess the extent to which aspects of Medical Home care are currently experienced by chronically ill patients in five European countries.

Methods:
Using the findings from a systematic literature review and a web-based, modified Delphi procedure, an international expert panel (n=19, representing 8 countries) selected 51 indicators of Medical Homes, grouped into 7 care domains. The domains were adopted from the Joint Statement (1); i.e. personal physician, physician directed medical practice, whole person orientation, care is coordinated and/or integrated, quality and safety, enhanced access, and payment reform. The selected indicators were integrated into three survey instruments on a) practice organisation, b) care delivery according to the primary care physician and c) patient care experiences. We recruited primary care practices and patients with at least one from a list of 10 common chronic conditions in five European countries, i.e. the UK, Denmark (DK), Germany (GE), Belgium (BE), and the Netherlands (NETH). The results of the patient surveys will be presented here.

Results: The study sample included 6,500 patients in 159 practices. Across the countries the patient response rates ranged from 33 to 55%. Except for the UK, patients typically visit the same primary care doctor. The large majority of primary care doctors (>95% in UK, DK, NETH and BE; 83% in GE) used electronic patient records, though the functional use of IT as defined in the Medical Home concept lags behind in all countries. In our sample, primary care practices in the UK and Denmark were the best IT-adopters. Approximately 75% of the patients were positive about their primary care practice in coordinating their care. Indicators related to ‘whole person orientation’ showed consistent patterns: primary care doctors listen carefully, give clear explanations and involve patients in decision making in all countries included. On the other hand, 25-40% of the patients experienced that their primary care doctor did not show interest in psychosocial well-being or home circumstances. Approximately 60% of patients received written care plans and self management instructions. In all participating countries, 3 out of 4 patients could get primary care without out-of-pocket costs for treatment or services. German patients most often (4.8%) reported having problems with payment of care they needed. German and Dutch patients were more likely than patients in the other countries to report lower quality ratings for care provided by their primary care doctor.

Conclusion: We conclude that many features of Medical Homes exist within European primary care practices. Despite substantial differences in health care systems, patient reported indicator scores show comparable patterns in primary care practices across the five participating countries. The results will be compared with the findings from the physician and practice organisation surveys. Future research should focus on variation between practices and on the gaps between the Medical Home concept and care delivered in primary care practices.

Reference: (1) AAFP, AAP, ACP, and AOA. Joint principles of the Patient-Centered Medical Home, 2007.

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PROVIDING HIGH QUALITY AND CONSISTENT CARE FOR PATIENTS WITH HEART FAILURE ACROSS THE CONTINUUM

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Objective: The goal of this initiative was to develop an effective and standardized Heart Failure (HF) program across the North Shore Long Island Jewish Health System (NSLIJHS) to improve and systemically deploy evidence based disease management and thereby decrease HF mortalities and readmissions.

Methods: Senior leadership prioritized various HF process and outcome measures as data revealed opportunities for improvement. A multidisciplinary HF task force was formed. The task force, comprised of physicians (full-time and voluntary), nurses, pharmacists, nutritionists, social workers as well as representatives from home care, long-term care, hospice, quality management and administration, was charged with determining how to capitalize on the identified opportunities for improvement. First, the task force examined evidence based best practices for HF through a literature search and visits to various health care sites. Next, subcommittees corresponding to each phase of care identified gaps in care using flowcharts and diagrams to determine barriers to effective and efficient care and to develop ways to streamline care coordination. Algorithms of care and educational tools were then developed to support consistent training of front-line caregivers and staff at all facilities and to ensure standardization of practices, including selection of metrics to be monitored. A Hospital to Home Disease Management program was deployed in collaboration with the Home Care Network, long-term care facilities and hospice care in order to integrate the continuum. Process improvements include enhancing communication and handoffs between levels of care through weekly post-discharge phone calls by a registered nurse for a minimum of six weeks, electronic communication systems and the use of consistent patient education materials. Patient education and engagement are critical components of all stages of care. The conclusions/findings of the task force were compiled into a toolkit that serves as a roadmap for HF care at every NSLIJ site and includes a Patient Pledge to foster active engagement of patient and family, a physician order set, a readmission review tool and various educational materials, among other tools. Outcomes/results of the initiative are disseminated to all front-line caregivers on an ongoing basis through collaborative care councils.


Conclusion: Implementation of a system-wide standardized evidence based approach to HF care delivery combined with enhanced communication across the continuum has proven effective with respect to reducing readmission rates and mortality.
PATIENT-CENTERED MEDICAL HOMES IN THE US

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Objective: The purpose of this study was to describe the characteristics and capabilities of practices that have achieved recognition as a “patient-centered medical home.”

Methods: The concept of a patient-centered medical home is receiving increased attention as a potential means to improve care. Four physician organizations in the US jointly published a set of principles defining the PCMH as accessible, continuous, team-based care that focuses on the whole person with the practice taking responsibility for care coordination. Guided by input from research, advisory groups, pilot tests and public comment, the National Committee for Quality Assurance, a not-for-profit organization in the US, developed the Physician Practice Connections—Patient-Centered Medical Home standards (PPC-PCMH) to provide a standardized tool for qualifying practices for PCMH demonstrations. There are three levels of PPC-PCMH recognition. Ten foundational elements are “must-pass” requirements meant to encourage practices to begin with these elements in their transformation efforts. Practices can achieve Level 1 recognition by demonstrating at least 5 of the 10 must-pass elements and 25 of the 100 points available in the program. Level 2 requires all 10 must-pass elements and 50 points. Level 3 requires all 10 must-pass elements and 75 points. The PPC-PCMH does not specifically require the implementation of an electronic health record. This paper describes the characteristics of practices and the most common capabilities of recognized practices.

Results: As of October 15, 2009, a total of 275 practices in 21 states, representing 1,534 physicians, had achieved recognition. Of these, 39% are Level 1, 5% are Level 2, and 56% are Level 3. Practices with less than five physicians make up 53% of recognized practices. The remaining practices are primarily midsize with 35% having 5-9 physicians, 9% with 10-19 physicians, and 3% with 20 or more physicians. Sixty-two percent are adult primary care specialty. Eighty-five percent of practices use diabetes as one of the “clinically important conditions” that are the focus of care management activities. Compared to larger practices, small practices (<5 doctors) are more likely to have level 1 recognition (49% vs. 27%) and to be adult primary care practices (74% vs. 48%) but they do not differ in region or focus on diabetes. Practices varied in the capabilities demonstrated. For example, most practices met requirements for access and communication, but practices varied in which communication methods they offered. The most common access mechanisms were same-day appointments (89%), but only half of practices had secure email. Practices were more likely to track appointment processes against their same-day appointment policies than response times for telephone and email contacts. The least commonly demonstrated capabilities included population management (e.g., identifying patients needing test or visits), coordinating transitions between hospital and primary care, reporting quality measures externally, and electronic communication (such as availability of lab results or scheduling online). Practices were more likely to track quality measures (89%) compared to patient experiences (79%). Quality measures addressing indicators were tracked more frequently than patient safety measures. Access and communication topics were more frequently assessed in surveys than patient confidence in self-care.

Conclusion: Both small and large practices can implement systems to support accessible and coordinated care, however, small practices are less advanced. The PPC-PCMH offers a roadmap for practices to implement evidence-based care and meaningful use of health information technology. Efforts to support practices of all sizes to implement medical home capabilities, particularly those that will strengthen patient and family engagement in care, are needed.

Disclosure: NCQA is a not-for-profit organization. This abstract describes our program. All the authors work for NCQA. Because this abstract presents data on practices and not individuals, there is not a human subject and review by an institutional review board is
ENDEAVOR TO IMPROVING THE RATE OF EARLY REPERFUSION THERAPY IN PROPER TIME FOR ACUTE ST ELEVATION MYOCARDIAL INFARCTION PATIENTS

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Objective: To increase the rate of reperfusion therapy offered to patients with acute myocardial infarction in timely manner.

Methods: Acute myocardial infarction(AMI) is one of the major causes of death in the world, and prevalence of AMI is increasing rapidly in developing nations including Korea. It is well known that timely reperfusion in the early stage of AMI is directly related to prognosis. Following to the data of Gangnam Severance Hospital in 2003, however, the rate of reperfusion performed in timely manner was significantly low - only 7.4%. In order to improve outcomes in patients with AMI, the hospital decided to organize a team for quality improvement activities. The team was composed of cardiology and emergency medicine attending physicians and residents, nurses in ICU, emergency department, and cardiac catheterization lab, members of Office for Quality Improvement, and registrar’s employees, and it uses six-sigma method. Data were prospectively collected from patients presenting to emergency department with chest pain or epigastric pain over 30 and new onset LBBB or ST elevation on initial EKG. Parameter was the time between arrival to the emergency department and initiation of reperfusion therapy. Tissue plasminogen activator(tPA) administration after 30 minutes and Percutaneous Coronary Intervention(PCI) performed beyond 120 minutes were identified as defect. To analyze the root cause of delays, the whole process was divided into several steps and measured the time taken for each step; emergency department physicians examined the patient, order EKG, consult a cardiologist, the consultant cardiologist examined patient, contact attending physician and determine treatment, administer tPA and perform PCI.

Results: Baseline Analysis before Improvement Activities - Following to the data of 2003, an average time between arrival to ED and the start of cardiology consultation was 13.6 minutes. It also took 158.5 minutes from the start of cardiology consultation to determination of PCI. An average time between PCI determination and the initiation of PCI was 189.8 minutes. The identified causes of delay were a delay in consultation with a cardiologist at the ED, making treatment decisions, and treatment decisions to initiation of PCI. Improving Activities - For the management of patients with AMI, the hospital developed a guideline called FIRST(Fast Interrogation Rule for ST Elevation MI) and observed its compliance with the guideline. Also, cardiac catheterization laboratory adopted night and emergency duty system which allows for immediate response. ED designated beds for patient with AMI and prepared AED and emergency medications at the bedside. For the accurate documentation and management of indicator, discharge summary for patients with AMI, specialized nursing note for cardiac catheterization lab, checklist, and computerized program were developed. Result of improvement activities - After completion of the first years improvement activities in 2006, the goal was achieved by reducing the time between arrival to ED and initiation of reperfusion from 362 to 120 minutes. The rate of reperfusion performed in timely manner had increased to 72.7%. Through the continuous quality improvement process, the rate(%) of timely reperfusion increased dramatically from 72.7% in 2006 to 100% in 2007, and this rate has been maintained into 2009. The time between arrival to ED and initiation of reperfusion was found to decrease gradually over time - 107.8 minutes in 2006, 75.6 minutes in 2007, 65.8 minutes in 2008, and 54.8 minutes in 2009.

Conclusion: As a result of continuous improvement activities, the hospital achieved its goal to improve patients outcome by increasing the rate of reperfusion performed within 120 minutes up to 100%. Also, the degree of medical staff’s awareness in emergency care system was changed. The developed guideline should be reflected in critical pathway (CP) program for more organized care delivery system.

SURVEY INSTRUMENTS: A POWERFUL MEASURE OF PERFORMANCE TO SUPPORT THE ACCREDITATION PROCESS

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Objective: To profile the use of performance measures and organization-wide survey questionnaires in Accreditation Canada's Qmentum program.

Methods: Accreditation Canada released the Qmentum program in 2008. To provide a more robust evaluation and to support assessment of compliance with standards, a series of core performance measures were introduced into the program. Three web-based validated survey instruments were introduced: The Patient Safety Culture Tool, the Worklife Pulse Tool, and the Governance Functioning Tool. The 46-item Patient Safety Culture Tool is used to assess the five underlying dimensions of patient safety culture: Organizational leadership for safety, Unit leadership for safety, Perceived state of safety, Shame and repercussion of reporting, and Safety learning behaviours (Ginsburg L et al, 2009). The 21-item Worklife Pulse instrument measures the work environment, individual quality of worklife, and organizational work climate. Client organizations are encouraged to involve permanent staff in these two surveys, and minimum response rates ensure representative sampling. The Governance Functioning Tool evaluates the effectiveness of the governing board, and is completed individually by each board member.

Results: In 2008, Accreditation Canada conducted on-site surveys at 238 organizations across Canada and the questionnaire results contributed to the final accreditation decision for client organizations. Aggregate instrument data from across the country have also helped identify national and regional trends in patient safety culture, governance, and worklife and informed a publicly-released national trend report. For example, based on the national patient safety culture results (N = 35,694), priority areas for improvement were identified, including staff noting that healthcare errors often go unreported and staff witnessing co-workers performing actions that appeared to be unsafe to patients in order to save time. Accreditation Canada is now working with national patient safety partners to achieve system-wide change through the development of education and sector-specific resources.

Conclusion: The merits of using performance measures to support the accreditation program are numerous. First, performance measures and survey instruments complement the content and evaluation of standards and Required Organizational Practices (ROPs). The triangulation of information from these multiple sources provides a more robust view of organizational performance. The end result is a far more comprehensive evaluation of the organization. Secondly, the use of performance measures opens up new avenues for collecting information relevant to quality and patient safety in an accreditation process. Condition-focused or healthcare usage statistics such as hospital length of stay and readmission rates are not specific to quality improvement, whereas the survey instruments introduced into Qmentum were selected, developed and validated with a quality improvement focus. Third, the Patient Safety Culture and Worklife Pulse Tools actively engage staff members in accreditation and increase awareness of the quality improvement process. This perspective is often not objectively captured through interviews on-site but is fundamental to organizational performance, patient safety outcomes, and the overall accreditation process. A number of learnings have also been achieved. First, careful standardization of data collection and validation of the survey questionnaires is needed to ensure uptake from client organizations. Second, the reduction of duplicative reporting requirements to client organizations is a key success factor, realizing that data collection is required across different provincial healthcare contexts. Towards this end, Accreditation Canada its currently piloting a measurement tool certification process for the collection of client experience data to support the Qmentum program. Third, the large volume of information collected from the survey instruments requires careful filtering and analysis to ensure that relevant information and customized reports is provided back to client organizations. With these strategies in place, Accreditation Canada is ensuring that its surveys instruments respond to client organizations' needs and inform quality improvement planning.
QUALITY IMPROVEMENT BY ACCREDITATION IN PRIMARY CARE; PARTICIPANT OPINIONS, A QUALITATIVE STUDY.

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Objective: The objective of our study is to report on the opinions of the participants regarding the process and outcomes of the accreditation program in the Netherlands.

Methods: Since 2005, general practitioners (GPs) can voluntarily take part in an accreditation program in the Netherlands, which is aimed at quality improvement by means of SMART improvement programs based on feedback. Feedback is given on clinical indicators, practice management and patient experience. To gain insight in the opinions of the participants regarding the instrument itself and the outcomes, 61 practices filled in an evaluation form about the accreditation between November 2007 and February 2008. Additionally, in-depth interviews were held with 29 of these practices between April and June 2008. All included practices were involved in a pay-for-performance program in which participation in the accreditation program was the first step. Topics from the evaluation form and interviews included data collection, the content of the instrument used, supervision, and making plans for improvement. The data were analysed using Atlas.

Results: Generally, practitioners were content with the accreditation process and would be willing to participate again. They were especially positive about the insight that they gained. Participants often reported that they thought they delivered care of a high quality, but noticed that reality was somewhat less positive. For broader implementation, however, there are improvements to be made. These improvements include the amount of time investment for data collection and writing improvement plans. Participants thought that the indicators regarding practice management were about small and unimportant things and should be examined on their relation with quality of care. They also thought that some items were too strict; for example good alternatives that were not based on the guidelines were disapproved. Furthermore, participants believed that the standards for accreditation should be clear; they got the impression that different facilitators used different standards.

Conclusion: We gained insight in the opinions of participants regarding the accreditation process and therefore achieved the objective of the study. The results show that there is a balance between measurability and quality; indicators that are measurable do not cover all aspects of ‘quality’ that participants think should be measured. We should try to measure as many aspects of ‘quality’ as possible within the boundaries of measurability. We could also inform the participants better on our process of developing the indicators set, so that users understand what is measured and why. Another discrepancy is found regarding the strictness of the indicators. In order to leave no room for interpretation so that facilitators and accreditators all use one standard, indicators should be very tightly formulated. But this also means that there is no room for alternatives that are not based on the guidelines. General practitioners want the best of both worlds: all practices should be measured with one standard but the standards should not be too strict so that alternative solutions are possible. A third issue that came up in this study is about time investment. In order to facilitate a broad implementation, the instrument should not be too time consuming. But on the other hand it should cover a broad scope of different topics in order to give an acceptable representation of the broad areas of work covered by a general practitioner. Making accreditation programs work is balancing between content and feasibility.

DEVELOPING A PATIENT CENTRED ACCREDITATION PROGRAMME FOR ONCOLOGY SERVICES

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Objective: Existing accreditation standards for oncology services were reviewed and found to be too process driven and not patient focussed.

Methods: An existing set of accreditation standards for hospitals was used to assess a number of radiotherapy and oncology services in England. Whilst these standards were sufficient robust to assess for quality of service and safety they did not put the patient at the heart of the assessment process. The standards were developed around process and disciplines rather than across the patient pathway and journey of care. The existing set of standards were reviewed, dismantled and reformatted to mirror the patient pathway and journey of care. A large number of external published government requirements for patient safety and best practice guidelines from Royal Colleges have been issued, as well as reports of adverse incidents. These documents were reviewed and where possible mapped into the revised standards and new criteria added as appropriate.

Results: The results of the revised standards showed that whilst there is a great deal of guidance from Government and Royal Colleges these rarely reference each other and often duplicate initiatives. A more patient focussed approach ensures multi-disciplinary working and co-ordination of activities. The revised standards were sent to a consultation group made up of oncology professionals from oncology services, professional bodies and Royal Colleges for comment and review for applicability. The feedback from the group was very positive and comments included, 'more logical', 'easy to interpret and work with', 'more patient focussed', 'meaningful' and 'a helpful tool for patient centred care'.

Conclusion: The creation of a bespoke set of accreditation standards for oncology services showed that there is a requirement for a more patient focussed approach to specialty accreditation. Oncology services welcome a set of standards which includes other initiatives to reduce the burden of inspection and duplication of effort. Whilst multi-disciplinary team work is undertaken it is not always linked to the patient pathway and journey, having this built into the standards promotes team work and sharing of knowledge and ideas. The standards reflect the patient pathway and journey make the implementation process logical and also the assessment process follows the patient through treatment and care.

QUALITY AND PATIENT SAFETY HOSPITAL EVALUATION SYSTEM: THE EXPERIENCE OF LOMBARDY REGION (ITALY)

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Objective: To valuate the effects of the three year project on quality and patient safety in Lombardy Region hospitals (Italy) run on 190 hospitals referring to about 120 standards of the Joint Commission International Accreditation Standards for Hospitals (third edition)

Methods: Since 2004, Lombardy Region (about 10 million inhabitants) has promoted an evaluating system of the hospitals quality based on JCI standards. Almost 200 hospitals have been involved. In the first project the standards were related to the areas of access to care, patient rights, human resources and quality and patient safety. Altogether about 60 standards and almost 200 measurable elements have been implemented. In the second project the first set of standard has been reviewed and new areas were added. The new areas are medication management, anesthesia and surgical care, care of patient. Almost 60 standards were added to the previous set. The evaluating method is based on site visits and quarterly self-evaluations performed by the hospitals. During the 2008 support visits have been carried out in order to support the evaluating process. During 2009 education and training were provided. During 2010 all hospitals will be visited by JCI consultants.

Results: Both the self evaluation activity and the support visits allowed to identify major issues as: lacking of leadership, problems with the structure for quality improvement and patient safety and difficulties related to the professionals involvement. The support visits raised up problems related to patient safety: patient identification, management of high risk medications, safe surgery, hand hygiene. The methodology used during the on site visits allows to identify opportunities of improvement in each hospital. The findings and recommendation allow the regional authority to better understand the how patient safety is managed inside each hospital.

Conclusion: Thanks to the use of this methodology (self assessment and on site visits) Lombardy Region has started a process to sustain the quality improvement and patient safety activities throughout all the hospitals of the regional health care system. Regional accreditation standards will be modified according to the results of the evaluation process.
ANALYSIS OF THE OUTCOME OF ACCREDITATION OF PRIVATE HOSPITALS IN MALAYSIA WHICH HAVE UNDERGONE THE 3RD CYCLE OF THE NATIONAL HOSPITAL ACCREDITATION PROGRAMME

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Objective: To describe the outcome and performance of all the private hospitals in Malaysia which have gone through the 1st, 2nd and 3rd Cycles of the National Hospital Accreditation Programme and been accredited.

Methods: The Malaysian Hospital Accreditation Programme relies on standards developed by healthcare professionals themselves. The standards were developed by consensus in 1999 covering 20 services, revised in 2003 to cover a total of 24 services and again in 2009 as a 3rd Edition. While the previous standards gave emphasis on structure and process, the current edition includes a standard on Patient and Family Rights and provides more emphasis on patient safety and outcome of care. They also incorporate the Private Healthcare Facilities and Services Act 1998 and its Regulation 2006, ISQua philosophy and principles and also WHO Strategies on Patient Safety. The current standards generally comprise of 5 main Areas of Concern which are Organisation & Management, Human Resource Development & Management, Policies & Procedures, Facilities & Equipment, and Safety & Quality Improvement Activities. The standards relate to both clinical and non-clinical services. The hospital rated itself against the standards during multiple self-assessments before the ratings are verified using evidences gathered on site by external surveyors. At the end of the cycle, the hospital is awarded a 3-year Accreditation status for substantially complying with the standards, or a 1-year Accreditation status for partially complying. However, a non accreditation status is given if it does not comply with a significant number of the standards. Once the Accreditation status expires, hospitals seeking to be accredited must go through the same process in subsequent cycles using the most current standards.

Results: By the end of 2009, a total of 5 private hospitals have gone through the 1st, 2nd and 3rd cycles of the external assessment process and been accredited. In both Cycles 1 and 2, all of them obtained a 3-year Accreditation status while in Cycle 3, 4 obtained the 3-year Accreditation status while 1 was given a 1-year Accreditation status.

Conclusion: Only those ready to comply with the requirements of the standards are evaluated. Out of the 5 private hospitals, 4 of them were assessed during Cycle 3 using the 3rd Edition Hospital Standards. 1 of these 4 hospitals partially complied with the Governance, Leadership & Direction Standard, and Facility & Biomedical Equipment Management & Safety Standard and was thus given a 1-year Accreditation status. However, this hospital was then allowed to undergo a focus survey to address areas of partial or non compliance. It needed to substantially comply in all these areas to obtain the additional 2 years. Standards are revised to be more refined and specific to take the Accreditation system to a higher level and hospitals need to continuously improve to meet them. Hence, the opportunity to be resurveyed, its voluntary nature, self-assessment, the peer review process of standards development and external evaluation, among others demonstrate that the programme seeks to improve healthcare by educating its clients and inculcating a culture of safety and continuous quality improvement in the healthcare community.
A BREACH IN PATIENT SAFETY DUE TO BREAKDOWN ON HEALTH INFORMATION TECHNOLOGY

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Objective: The objective was to investigate possible violations to patient safety during unexpected breakdown of health information technology (HIT) in order to qualify the contents of a future regional HIT contingency plan and clinical procedures for handling breakdown at the regional hospitals.

Methods:
According to national Danish legislation clinicians in hospitals must report adverse events to a national database. In the database of Central Denmark Region 158 reports on patient safety events related to breakdown on HIT were identified during a 2½ years period. 79 events were related to electronic medical records and the interaction with laboratory HIT, 65 events were related to radiology HIT (RIS/PACS/Web1000) and the last 14 events were related to other minor HIT systems. The region has more than 500 large and small HIT systems. 150 of the 158 events were assessed according to Safety Assessment Code Matrix; 14 % of the events were categorised as moderate-major incidents; none were categorised as catastrophic incidents (permanent damage or death). However the possible consequences of the incidents were judged by the involved clinicians to be permanent damage or death in 15 % of the incidents, and 31 % could have had moderate-major influence for the patient. A multi disciplinary team of 27 persons involving hospital managing directors, clinical managers, technical managers, front line clinical staff, technicians, risk managers etc. performed an audit. The audit was split into three meetings; focusing on indentifying the problem, finding solutions, and qualifying the solutions. The 27 auditors were divided into smaller groups, according to the HIT systems investigated. They were given a number of representative cases and asked to focus on analysis of the cause of the problems and suggestions for implementation of actions to control the problems related to a HIT contingency plan. An extensive literature review was performed to support decisions on actions for improvement.

Results:
We found a patient safety breach in existing procedures for handling breakdown and insufficient HIT reliability on the vital systems used. Further we found; · A need for establishing a regional well working contingency plan for HIT · A need for a communication structure to accompany the future HIT contingency plan · That clinical procedures and the HIT contingency plan need interplay · A need for establishing a new organisation around the HIT contingency plan to ensure a responsible well working cross professional team working together when the plan is executed · That there are specific indentified preconditions for the HIT contingency plan to become a success · That the regional patient safety organisation and the HIT department need to work proactively closer together on a regular basis That a risk assessment analysis of the systems used and an analysis of the HIT reliability need to be investigated to classify and identify the systems which will be part of the plan.

Conclusion: We concluded that the primary focus for the region is to invest in HIT reliability and a common regional HIT contingency plan including a predefined communication structure for when the plan is executed. To consider both clinical and technical workflow the effort needs to be inter sectorial. The audit definitely brought together and shaped a basis for a closer cooperation and understanding of each others problems and preferences between the technicians, the clinicians and managers and the risk managers - a priceless gain for the patient safety culture!
NATIONAL INITIATIVES TO IMPLEMENT HEALTH INFORMATION TECHNOLOGY: LESSONS LEARNED FROM THE CANADIAN EXPERIENCE

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Objective: To summarize, through interviews with key Health Information Technology (HIT) policy and opinion leaders, the Canadian nearly 10-years HIT policy experience and derive lessons learned for other countries as they go through similar initiatives.

Methods: We have developed a semi-structured interview instrument to delineate the key policy strategies used to stimulate national HIT implementation and adoption in Canada. Based on our literature search, we have included policies related to 1) national plan for interoperability, 2) technical infrastructure and information standards, 3) HIT vendor engagement, 4) financing and incentives, 5) health professional adoption, 6) improving safety and effectiveness in health care, and 7) public health. On each of these we have attempted to understand the informant’s perspectives on how well policy addressed this issue in Canada, concerns regarding this, practical examples from their jurisdictions and main lessons learned moving forward. We have identified and interviewed 29 key leaders in IT policy in Canada. This sample was chosen to provide views from different stakeholder groups representing national/regional agencies, quality/safety institutes, health professional groups, and HIT vendors. Three Canadian provinces (Alberta, Ontario and British Columbia) were selected to assess regional perspectives. Interviews were recorded, transcribed and analysed using qualitative analysis methodology. We have chosen to apply the Grounded Theory approach, building codes, emerging themes and finally concepts out of which hypotheses were formulated based on the conceptual ideas (reversed engineered hypothesis).

Results: The informants rated health professional adoption as the most important policy domain for a successful national HIT implementation. Policy relating to HIT potential to improve patient safety and healthcare effectiveness and relating to the implementation of interoperability were also mentioned as crucial policy domains. Informants also believed that government should take an active role in promoting health professional adoption. In specific, a structured program is necessary that should not only include policy addressing financing through incentives, disincentives, and setting standards, but also provide leadership, engagement of physicians during planning and the support of change management. Furthermore, health professionals need to understand the added value of HIT solutions through a strong quality of care “business case” that will push adoption forward. This was mentioned by some as more important than financial incentives or disincentives. Regarding interoperability, informants thought that while significant, interoperability at the national level is not a priority and efforts should be focused on achieving effective regional interoperability first. Regarding financial incentives to promote Electronic Medical Record (EMR) adoption, informants made it clear that they should be part of the equation formulating a comprehensive adoption strategy and that these should be tied to predetermined quality outcomes. Concerning setting technical infrastructure and data standards, Informants thought that this can only be successfully implemented and adopted through strong leadership and structure; building consensus, gaining buy-in and integrating legacy systems and IT silos.

Conclusion: A comprehensive national policy framework has a pivotal role to play in addressing many of the challenges in successful and cost-effective implementation of IT in health care. National policy should set national and international standards for interoperability, defining a common vision across multiple health care jurisdictions, impacting the HIT industry to be responsive to local needs and in facilitating adoption of EMRs. The creation of a climate for a successful nationwide implementation of EMRs rests with the strategy, funding model and implementation approach established through national leadership. We believe that the experience gained in Canada throughout the last decade, and the collective insights described and discussed in our study, should supply policymakers in other countries with additional perceptions as each set the policy framework that would move HIT forward.
IMPLEMENTING EHEALTH INITIATIVES FOR QUALITY IMPROVEMENTS IN AUSTRALIA

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Objective: eHealth initiatives are one of the major drivers in the health sector to deliver patient safety and quality improvements, which the World Health Organization (WHO) has identified as having a major impact on healthcare delivery by enabling the provision of cost effective and secure use of information and communication technologies (ICT) for patient care. This paper shares some examples from Australia.

Methods: For example, in Victoria an eHealth program called HealthSMART has been deployed for the last seven years. This is a $360 million whole-of-health ICT strategy to modernise and replace ICT systems throughout the Victorian Public Healthcare Sector. The objective is to provide key clinical benefits by creating the foundation for an electronic record in public hospitals. Methods utilised by this program for delivering eHealth projects include: active collaboration between public healthcare provider and government authorities. HealthSMART have several eHealth projects, however the implementation of a clinical system is directed to improve quality in Medication Management, Pathology and Radiology ordering. At present this implementation use a state wide footprint design for pathology and radiology orders/viewing; during 2010-2011 the remaining eight planned health agencies are expected to complete the clinical systems implementation.

In New South Wales, an Electronic Medical Record called eMR will be deployed over the next three years for over 80,000 clinicians across the state. This is a multi-year program to replace the paper medical record with an online record which tracks and details a patient’s care during the time spent in hospital. The aim of this eHealth project is to improve the delivery and quality of patient care as well as streamline clinical workflow. This project is viewed by the NSW authorities as a major drive for their ICT strategy.

Results: The key performance indicators (KPIs) identified in the healthcare quality literature using Clinical Systems or an eMR implementations include: improve in quality of healthcare by reducing medication errors; Reduced redundant pathology tests by minimising transcription errors; Reduced clinician administrative tasks, resulting in more time spent with patients; Improvements in turnaround times for medication orders; Increased use of less expensive drugs and tests; Reduced delays in patient discharge from speedy availability of test results; and Reduction in additional bed-days associated with adverse events.

Conclusion: In conclusion, eHealth projects are allowing the right collaboration between clinicians, hospital leaders, managers of patient care services, and government authorities to ensure the right engagement of the health sector. From a healthcare perspective, this governance structure makes available opportunities for an ongoing collaboration between key decision makers and users of new ICT devices in the sector. This paper shows the opportunities that eHealth initiatives provide to quality improvements projects for patient safety. This type of programs becomes a catalyst for change and best practice for daily practice. ICT in health is viewed as clinical tools for patient safety in the sector, which are changing the manner patient care is provided. Therefore, these types of projects must be encouraged and supported by groups, organizations and professional that are part of quality improvement projects.

2) eMR Program (2010) Accesed on 11th February, 2010 on program website
Acknowledgement: The authors of this paper acknowledge that the content is their professional assessment of eHealth initiatives as examples in Australia, and this does not represent the position of government.
PATIENT INVOLVEMENT IN MEDICAL DECISIONS: EXPERIENCES AND PREFERENCES OF PATIENTS WITH CHRONIC SKIN DISEASES

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Objective:
The purpose of the study was to examine experiences and preferences regarding patient involvement in treatment decisions among a sample of patients with chronic skin diseases and to evaluate the reliability of the Italian version of the Shared Decision Making Questionnaire-9 (SDM-Q-9).

Methods:
The Control Preference Scale evaluating patient’s preference for involvement was self-completed by a sample of patients with chronic skin diseases treated at a dermatological referral center in Rome, Italy. In addition, the original German SDM-Q-9 has been translated and cross-culturally adapted into Italian. The SDM-Q-9 was completed by patients immediately after the medical encounter and a retest was performed after 20 days using the same questionnaire in order to assess reliability. Socio-demographic and clinical data were also collected. Physicians provided information on diagnosis and disease severity.

Results: A total of 289 eligible patients were invited to participate and 200 completed both the baseline and the retest questionnaires (response rate 69.2%). Among participants 50% were male and the median age was 46 years (range 19-79). Disease severity according to the physician was mild, moderate and severe in 50.5%, 31.0%, 18.5% of cases, respectively. At the Control Preference Scale 66.9% indicated a preference for participating in treatment decisions, 27.5% wanted to leave decisions entirely to the doctor and 4.6% preferred making decisions alone. Significantly more patients with higher educational level compared to lower educational level preferred to be involved in decision-making (78.0% versus 56.9%; Fisher’s exact p=0.009). The proportion of patients preferring to be involved was somewhat higher among women compared to men (75.8% versus 66.7%) and among patients with sever diseases versus moderate/mild diseases (76.5% versus 69.9%), but without reaching statistically significant values. Test retest of the SDM-Q-9 showed an intraclass correlation coefficient of 0.66 (95% CI 0.58-0.74). The median SDM-Q-9 value was 70.4 (range 0-100), on the transformed scale ranging from 0 to 100, with higher scores indicating higher levels of SDM. The median SDM-Q-9 value increased with increasing levels of disease severity going from 63.0 to 74.1 to 81.5 among patients with mild, moderate and severe diseases (Kruskal-Wallis test p=0.004). The median SDM-Q-9 value was significantly higher among patients who preferred to be involved in decision-making compared to patients preferring to leave decisions entirely to the doctor (74.1 versus 55.6; Kruskal-Wallis test p=0.029).

Conclusion: Our study showed that the majority of patients want to be involved in treatment decisions, however it is noteworthy that SDM is not always the preferred model for all patients. A relatively high proportion of our sample did not want to participate in health decisions. Levels of involvement appear to be in line with patients’ preferences, as shown by higher levels of SDM among patients preferring to participate. The SDM-Q-9 can be a valuable instrument for assessing patient involvement.

PATIENT PARTICIPATION AND ITS IMPACT ON QUALITY OF CARE AND PATIENT SAFETY

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Objective:
We sought to examine the prevalence and types of participation activities by hospitalized patients, and the association of participation with patients’ reported quality of care and physician-confirmed adverse events (AEs).

Methods:
Telephone interviews with 2,025 Massachusetts adults hospitalized in 2003 were performed to ascertain patients’ participation in their care, their assessment of quality of care, and the presence of AEs. Physician reviewers rated the severity and preventability of the AEs identified by survey and chart review among 788 surveyed patients who also consented to medical record review. We analyzed the number of participation activities per patient (range 0-7), dichotomizing patients by high (5-7 activities) and low (0-4 activities) participation. We analyzed the demographic and clinical characteristics of the sample, stratified by level of participation (high vs. low) using t-test, chi-square, and Fisher’s exact test, as appropriate. We created separate multivariable logistic regression models to analyze the relationship of types of participation activities and number of activities with patients’ overall assessment of the quality of care during the hospitalization. We created similar models to examine the association of participation with the presence of AEs, serious AEs, and preventable AEs. All models adjusted for demographic and clinical variables that were significant in the bivariate analyses (age, sex, hospital teaching status, overall health, and Charlson score). Models adjusted for respondents’ perceived patient safety self efficacy.

Results: Of the 2,025 patients surveyed, 99.9% of patients reported positive responses to at least one of seven measures of participation. The majority of patients knew about their medical problem, were able to talk with health providers, found a doctor or nurse to provide needed information, had clinicians who described risks and benefits of treatment, participated in decision making, and had visitors who helped make sure their preferences were respected. In contrast, only 39.4% checked regularly to make sure they received the correct medications. High participation levels (use of >4 activities) were more common among men, patients with better self-rated health status, those not admitted via the emergency department, those treated in teaching hospitals, and those with confidence in their ability to protect themselves from medical errors. High participation was strongly associated with patients’ favorable ratings of the hospital quality of care (adjusted OR 5.46, 95% CI 4.15-7.19). Among the 788 patients with both patient survey and chart review data, there was an inverse relationship between participation and adverse events. In multivariable logistic regression analyses, patients with high participation were half as likely to have at least one adverse event during the admission (adjusted OR = 0.49, 0.31-0.78).

Conclusion: Most hospitalized patients participated in some aspects of their care. Participation was strongly associated with favorable judgments about hospital quality and reduced the risk of experiencing an adverse event.
WHAT DO RESPONDENTS THINK ABOUT WHEN COMPLETING PATIENT SATISFACTION SURVEYS?

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Objective: The current study aimed to identify the nature and extent of problems associated with the interpretation and understanding of the questions from the Irish Society for Quality and Safety 2004 questionnaire. The questions that have demonstrated high levels of non-response were specifically of interest using a qualitative cognitive interviewing technique known as “Think Aloud” (Ericsson & Simon 1980, 1987, 1993).

Methods:
The study employed the “Think Aloud” qualitative method of cognitive analysis which is commonly used to gather data on the complex cognitive processes that underlie common tasks such as problem solving and decision making and provides a unique source of information on cognitive processes. The study involved eight participants (three male; five female) ranging in age from 21 years to 87 years who had recently been discharged from hospital. Each participant was asked to complete the 47 item scale measuring patient perception of care taken from the 2004 ISQSH inpatient satisfaction questionnaire which took approximately 30 minutes. The participants were required to verbalize (think aloud) all of the thoughts that occurred to them as they read, understood and answered the questions. Each interview was coded and transcribed for qualitative analysis. Themes and categories were identified using content analysis.

Results: Common themes identified: Comprehension problems: As the respondents read the questions it was apparent that some questions were consistently being misinterpreted and respondents were having difficulty in understanding the nature of the question. Particular words were causing problems and participants tended to guess the meaning and answer accordingly or collapse their response into the “Not Relevant” category. Difficulties formatting answer: Some respondents found it difficult to format their opinion to fit the current 5-Point Likert scale. This difficulty was particularly focused around the absence of a midpoint on the scale and as a result respondents tended to force their answer in the positive direction of the scale or use the “Not Relevant” option. Identical questions/ Repetitive meaning: Different questions were evidently interpreted similarly and processed in an identical manner. This was apparent when the respondents were formulating their response as they were retrieving and analysing the same information to answer different questions. In some cases the participant pointed out that questions were similar which resulted in them automatically giving the same answer without processing the question. “Not Relevant” as “Waste Bin”: The most notable finding was the misuse of the “Not Relevant” response category. In the current survey the “Not Relevant” option was intended to provide the respondent with an alternative option as opposed to agreeing or disagreeing with the statement. For example, the respondent may not have been able to comment on the statement because they were not exposed to this particular aspect of care. However, respondents were using this category as a response to problems encountered with the question such as memory recall difficulties and misinterpretation of the questions.

Conclusion:
The current study supported previous research in identifying common difficulties associated with completing self-report questionnaires (French, 2007). The findings from this study guided the redesign of the revised inpatient survey questionnaire which will be used in the 2010 Irish inpatient survey. The novel approach also proved valuable in providing further validation for the tool to be used in future patient surveys for gaining an insight into patient experience with care.

CONSUMER ENGAGEMENT IN DECISION-MAKING: EXPERIENCES IN LONG TERM CARE

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Objective: To demonstrate how an expectation that consumers are involved in decision-making and planning can influence service provision

Methods: In Australia there are over 150,000 people aged 65 years and older in residential aged care homes funded by the Australian government. It is an expectation that these residents have choices, and are involved in decision-making and planning of care and services, and assessing the performance of service providers against the Aged Care Accreditation Standards. Under legislation assessment teams must meet with a minimum of 10% of residents and/or their representatives during a site audit and, although not legislated, it is the Aged Care Standards and Accreditation Agency’s policy that at least 10% of residents/representatives are also interviewed during interim site visits (support contacts). Recently an assessment tool that specifically uses information gathered from resident/representative interviews to direct enquiry about the home’s performance against the Accreditation Standards was introduced. This tool (module 13) requires assessors to interview at least 20% of residents/representatives. During the period March 2009-December 2009 a total of 4,943 support contact visits were conducted. Of these, 254 visits used module 13 to engage residents/representatives in in-depth interviews about their experiences and satisfaction with the home’s consultative processes and the care and services provided. To examine the involvement of residents/representatives in decision-making and their level of satisfaction data was collected from two sources: i) feedback from quality assessors who had used module 13 on a number of occasions and, ii) thematic analysis of a 10% sample of site reports for visits based on module 13.

Results: · In general residents/representatives reported they are involved in decision-making processes. The issues they most commonly raised were associated with so-called ‘quality of life’ matters. · Assessors commented that the use of resident interviews was much more difficult in homes where there were higher levels of acuity and cognitive deficiency. · Assessors reported many residents seemed reluctant to complain and required considerable prompting when asked about whether they accessed comments and complaints mechanisms. · Residents/representatives identified issues of concern that assessors were able to raise with management.

Conclusion: Undertaking resident interviews provides important information about how they perceive their level of involvement in decision-making, choices and planning their care. This approach is consistent with assertions that consumers have a right to be informed about services, treatments, care and options, and calls for increased consumer participation in these activities. In the context of this paper consumers (residents) and their representatives were interviewed to ascertain if their level of engagement in decision-making processes and the planning of care and services met their needs and the requirements of the accreditation standards. Although no incidents of non-compliance with the accreditation standards were identified using resident interviews as the primary line of enquiry, assessors reported that on many occasions they were able to identify issues of particular concern to individual residents and, with the consent of the resident, have these matters resolved in consultation with the management of the home. This is a significant outcome for residents. The reluctance of some residents to complain highlights the vulnerability of recipients of some health related services, particularly the frail elderly who are physically dependent on staff, and reminds us of the need to embrace an effective comments and complaints process free of prejudice and with multiple points of access.
Objective: In line with “Every Child Matters” (Children Act 2004), which states that all children and young people should “make a positive contribution in the decision making processes that impact upon their lives”, our aim was to adapt an existing adult outpatients’ feedback questionnaire for use with young outpatients, to give actionable feedback to hospitals on issues which are important to the younger patient population.

Methods: Building on an existing adult outpatients’ questionnaire, two paediatric inpatient questionnaires (2004 and 2007) and previous qualitative research (9 focus groups) with young inpatients and their carers, two draft outpatients’ questionnaires were designed. One was aimed at parents of younger outpatients aged 0-7yrs (P1), and the other at young patients aged 8 yrs and older (YP1). To maximise comprehension and encourage completion by children with minimal parental intervention, the lower age limit of the YP1 was raised from 5 to 8yrs from the most recent paediatric inpatient survey. Furthermore the survey was designed to appeal to a younger population by using pictures and colours. Ten cognitive interviews were conducted with children aged 8-15yrs to test the YP1 questionnaire, focusing particularly on clarity of language and ease of question completion. Although parents were present at all interviews, their contribution was limited at our request.

Results: The cognitive testing identified question areas which interviewees found difficult to comprehend. Younger children in particular had difficulty grasping time concepts. Consequently, any time-specific questions (eg how long did you wait at the hospital?) were incorporated in a parents section of the YP1 questionnaire. This section allowed parents/carers to give their feedback without influencing the young patients’ views. Furthermore, the use of long, multi-faceted questions was avoided in the final version (“there’s a lot of little questions in the big questions”) and, as younger children found it difficult to effectively link questions, each one had to work as a standalone question. The interviews also revealed that certain topics were of more importance to children, and therefore recall was better. These included the hospital environment, entertainment, and the doctor’s manner. The revised questionnaires were mailed out to 1191 young patients and their parents/carers (YP1: 563; P1: 635) at a pilot hospital site. A total of 446 questionnaires were returned, yielding a response rate of 37% (YP1: 35%; P1: 39%). To determine the contribution of the young patient, the YP1 survey asked who completed the questionnaire. 60% were completed by the child alone, indicating that children had a high level of engagement. A further 26% were completed by both the child and parent together, with only 11% being completed by the parent alone. This shows a considerable increase in child-only completion relative to the previous inpatients surveys (50% in 2004; 51% in 2008), demonstrating the effectiveness of modifying the questionnaire and adjusting the age range of the YP1.

Conclusion: Findings demonstrate the importance of effective cognitive testing and consultation with young people when developing user-friendly surveys for this population, to ensure their needs are met. Questions that are comprehensible and relevant to their age group will maintain interest and engagement. This will ultimately improve response rates and encourage child involvement in survey completion.
THE SURGICAL SCORECARD: A TOOL TO IMPROVE SURGICAL QUALITY OF CARE

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Objective: The surgical scorecard can be a critical feature of a surgical quality improvement program.... as used in a major Canadian academic health sciences centre, it will be demonstrated to emphasize that accurate data can be easily accessed in a timely way, and lead to meaningful quality improvement.

Methods: For 20 years, surgical services at the University Health Network in Toronto have employed a Business Unit model in which each specific surgical interest area is responsible for quality, finances and workload, and reports to a Directorate led by the Director of Surgical Services. It was recognized in 2002 that the key to running an expensive operation in 11 different but interrelated surgical business units, was the acquisition and publication of timely performance data in a monthly surgical scorecard. Since its inception, the surgical scorecard has progressed, and now includes monthly reporting of perioperative efficiency data (such as utilization, booking accuracy, turnover times, late starts, late finishes) patient quality of care data (count discrepancies, breaks in sterility, return to surgery within 24 hour, surgical checklist compliance), and financial parameters (completed cases which are volume-funded, actual and budgeted expenses). The scorecard is presented publicly in ways that are color-coded and are easy to interpret at a glance; medical directors and nurse managers are able to discern departures from targeted outcomes that are significant, and act accordingly in order to correct deficiencies. These corrections are discussed at meetings amongst members of each business unit, and if appropriate, are brought to the overseeing program management committee. Any creative approaches to solving the many and varied problems are therefore publicized to all business units in the hope that improvement strategies can be shared. In the last five years examples of improvements as a result of regular data gathering and scorecard use are: 1. Adjustment of OR allocation to meet targets of volume-funded cases and therefore financial imperatives 2. Revision of OR time to recognize utilization disparities amongst divisions 3. Development of strategies to decrease OR cancellations 4. Improvement of booking accuracy, OR starts and finishes 5. Adjustment of the OR day to accommodate more complex cases. 6. Improvement of percentage of “1A” cases started within 2 hours of booking 7. Improvement in instrument cart completeness 8. Improvement in preoperative surgical package completion 9. Increased staff satisfaction in employee opinion surveys 10. Incorporation of efficiency target reporting to Ministry of Health 11. Incorporation of mandatory reporting such as checklist use

Results: see previous

Conclusion: The surgical scorecard will be demonstrated to emphasize that accurate data can be easily accessed in a timely way, and lead to meaningful surgical quality improvement.
THE RELATIONSHIP BETWEEN PATIENT SAFETY AND HOSPITAL VOLUME

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Objective: The objective of this research was to benchmark trends in adverse hospital-acquired events in three common surgical procedures and examine the relationship between hospital volume and adverse hospital-acquired events.

Methods: Using Patient Safety Indicator (PSI) criteria from the Agency for Healthcare Research and Quality (AHRQ), hospital-acquired adverse events were identified in the Nationwide Inpatient Sample (NIS) database for abdominal aortic aneurysm (AAA), coronary artery bypass graft (CABG) and Roux-en-Y gastric bypass (RYNGB) between 1998 and 2006. Patients were identified using DRG and ICD-9 code procedure codes and limited to elective procedures in patients 18 years and older. Hospitals were classified as low-volume (LVH) and high-volume (HVH) based on Leapfrog Group recommendations. Trends were analyzed using joinpoint regression and parallel and coincident tests for pairwise differences were performed between LVH and HVH.

Results: During the 10 years analyzed, we identified 292,417 (35% HVH) AAA, 2,108,351 (42% HVH) CABG and 470,929 (60% HVH) RYYGB cases. The proportion of procedures performed at HVH significantly decreased over the time period for all three procedures. Overall, significantly lower risk-adjusted mortality rates higher comorbidity scores were observed in all HVH compared to LVH. AAA and RNYGB had significant decreases in mortality for both LVH and HVH.

Of the 16 non-obstetric PSIs, Central-venous catheter-related bloodstream infections (#7), Postoperative hemorrhage or hematoma (#9), postoperative physiologic and metabolic derangement (#10), postoperative respiratory failure (#11), post-operative pulmonary embolism or deep vein thrombosis (#12), and postoperative sepsis (#13) showed significant differences in trends between LVH and HVH. LVH had overall higher rates of PSIs, with the exception of PSI#3 and PSI#12 in CABG, which had increasing trends in HVH and decreasing trends in LVH (p<.05).

AAA showed decreasing trends PSI#7 for both LVH and HVH, and LVH had significantly decreasing trends for PSI#9 and PSI#10 (p<.05). RNYGB had significantly decreasing trends in both LVH and HVH for PSI#2, PSI#6, PSI#7, PSI#10, PSI#11, PSI#12, PSI#15 and PSI#15 and an increase in PSI#9 and PSI#13.

Conclusion: These data present a clear relationship between hospital volume and mortality in select surgical cases. However, the relationship between hospital-acquired adverse events and hospital volume is unclear. While the majority of PSIs were decreasing in both high volume and low volume hospitals, the difference in trends between low volume and high volume hospitals were non-parallel and non-coincident. This study highlights trends in Patient Safety Indicators for 3 common surgical procedures and highlights areas of focus for future studies to identify pathways to reduce hospital-acquired events.
DEVELOPING QUALITY OF CARE INDICATORS WITHIN THE DUTCH NATIONAL PROJECT TRANSPARENT CARE PROJECT.

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Objective: Developing disease-specific, quality of care indicators based on Evidenced Based Medicine Guidelines (EBM Guidelines) that provide patients and healthcare insurance companies information about the delivered quality of care in Dutch hospitals.

Methods: The CBO has a long history of working on a variety of projects focussed on improving the quality of Dutch healthcare. The CBO focuses on indicator-development and introduced in 2004 a method of consensus-based development of quality indicators. The CBO used the Appraisal of Indicators through Research and Evaluation (AIRE) instrument for developing its method. Within the Dutch National project Transparant Care this following method has been applied.

14 (disease-specific) Multidisciplinary working groups followed all steps above. The CBO provided methodological and administrative guidance to the working groups. Parallel to the indicator development, the development of the EBM-guideline was still in progress. The figure below shows the relationship between both processes.

Results: - 14 disease-specific EBM-guideline based indicator sets, of which 13 are currently being implemented nationwide in Dutch hospitals. The set for Chrohn and Colitis Ulcerosa will follow in 2011.
- All involved stakeholders are formally committed in implementing and measuring the indicators and publishing the results of the measurements.
- With the publication of these indicator sets, a tool is offered for:
  1. hospitals to improve their quality of care on the topics of the indicator sets.
  2. patients to support in decision-making on the healthcare provider/hospital of their choice (patient empowerment).
  3. health insurance companies to use the outcome of the indicators in the negotiation with healthcare providers/hospitals.
- Synergy between the development of indicators and the development of the guidelines, resulting in refinement and sharpening of the indicators and the guideline recommendations as well.
Lessons learned for the CBO on:
1. Process management during the development of indicators.
2. Specifying and improving the CBO-method itself and the indicator development in relation to evidence based guideline development.
3. Insight in a theoretical model in how to update and maintain indicators.

**Conclusion:**
The project goals are achieved, however time will show whether patients will use the obtained information in their decision making process and if health insurance companies will use the information as well for negotiations on price and quality with hospitals. The fact that the development of indicators is part of the EBM-guideline development process, results in an optimizing effect on both recommendations and the indicators. But it also lead to in a bigger need in fine tuning with the guideline workgroup, which resulted in a pressure on both the project budget and project planning.

- Throughout the development process an experienced barrier was dealing with registration issues: is (the lack of) registration leading or secondary in prioritizing and choosing the topic of indicators?
- It is still unknown if the implementation of these indicator sets will lead to improvement of the quality of care. According to the authors, stakeholders and hospitals have a shared responsibility to:
  1. assure quality improvement by integrating the indicators in tools for professional quality like audits and clinical dashboards.
  2. maintaining and updating the indicator sets regularly.
- This project provides recommendations for (amongst others) the need for a structure to maintain indicator sets up to date. For possible stakeholders and timing: see figure below.

**Reference:**
VALIDATION OF A SAFETY COMPOSITE INDICATOR ON ADVERSE DRUG EVENTS CONTROL (ICALIAM)

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¹Statistique, CCECQA, PESSAC/FRANCE, ², CCECQA, Pessac/FRANCE, ³, CCECQA, PESSAC/FRANCE, ⁴, OMEDIT, bordeaux/FRANCE

Objective: Drug supply chain and adverse drug event (ADE) safety management is a top priority in France. Epidemiological studies on ADE have been conducted but there was no indicator on structure and process. The quality and safety regional center (CCECQA) and the regional healthcare product observatory (OMEDIT) took advantage of annually collected information about medication quality and safety activities for control and financing reasons to elaborate a safety composite indicator in acute care (ACS) and rehabilitation care (RCS) settings.

Methods: A standardized form was fulfilled by all 131 setting in 2008. The validation was conducted in two stages: exploratory (correlation, Principal Component Analysis, Cronbach's coefficient alpha) and confirmatory (Structural equation models (SEM) using PLS approach). An additive score ranging from 0 to 100 was calculated for each institution based on the weights of each question according to their importance. They were compared by correlation to the scores obtained by the SEM.

Results: Two separate validation analyses were performed in the 78 ACS and in the 53 RCS. Two similar composite indicators were found, on "Drug supply chain safety" (Securimed) and "adverse drug events management policy" (PLIM). The PLIM indicator was composed of 15 items and three dimensions (quality and risk management initiatives; operational local Pharmacy and Therapeutic Committee; practice/prescription evaluation initiatives). The Securimed indicator was composed of 12 items in acute care and 10 items in rehabilitation care, grouped into two dimensions (computerized prescription, pharmaceutical analysis). The internal consistency of the two indicators was good in the two types of setting (Cronbach’s alpha > 0.70). Composite global indicators ICALIAM (graph 1) was built for ACS and RCS from PLIM and Securimed. The MES enabled to validate our composite indicators with models of good quality. They have also showed that PLIM had more impact on ICALIAM than Securimed whatever type of institutions. The ICALIAM score was between 14 and 100 with an average of 44 to ACS and between 7 and 100 with an average of 56 for the RCS. ACS were better on the PLIM while RCS were better on Securimed. These scores were strongly correlated with those of SEM confirming their construct validity.

Conclusion: The CCECQA and the OMEDIT in Aquitaine developed structure and process composite indicators from routinely collected data without any additional data collection. These indicators were resumed at the national level for a next generalization.
MEASURING QUALITY AND INFORMING PATIENTS AND PRACTITIONERS – A GERMAN SET OF INPATIENT QUALITY INDICATORS

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Objective: The Helios hospital group is a for-profit provider of hospital services and runs about 60 hospitals in Germany. Since 2000 the group developed an outcome-driven quality management system, based on indicators derived from administrative data. The indicator set developed by the Helios group is being applied by over 400 hospitals in Germany and Austria. It is also used as basis for national indicators in Switzerland. We illustrate the underlying reasons for selection and development of the minimum indicator set.

Methods: Due to the implementation of a DRG reimbursement system in 2004, the quality of discharge data in Germany increased largely. It has become more accurate, and much more complete with respect to secondary diagnoses and procedures. Helios uses these data to calculate medical key performance and quality indicators of its acute care hospitals. A continuing process of defining, applying, discussing and redefining these figures has been conducted. Up to now, the Helios group developed more than 1100 indicators for internal quality management, supported by the company’s medical expert boards. Currently, about 140 indicators have been chosen as an minimum indicator set appropriate for external publication and comparison. These indicators cover about 30% of all in-hospital episodes. They refer to 30 treatments or diseases, relevant due to volume or importance within a medical specialty. Outcome indicators like in-hospital mortality are compared to age- and sex-standardized expected rates based on hospital data of the German Federal Statistical Office, as far as available. For such indicators, hospitals of the group are required to perform better than the German average. Goals for indicators without available federal data are defined evidence-based. Volumes are published for all indicators.

Results: The indicator set, as in use today (version 2), has been published first-time in 2005. Examples for the covered quality indicators are: § Acute myocardial infarction mortality rate * § Heart failure mortality rate * § Percutaneous transluminal coronary diagnostic or intervention mortality rate * § Stroke mortality rate * § Pneumonia mortality rate * § Cholecystectomy laparoscopic surgery rate § Colorectal resection for cancer mortality rate § Abdominal aortic aneurysm surgery mortality rate § Maternal mortality rate under delivery § Rate of vaginoperineal laceration under delivery § Hysterectomy laparoscopic or vaginal surgery rate § Total hip replacement mortality rate § Hip fracture mortality rate * § Total nephrectomy mortality rate § Artificial respiration mortality rate § Septicemia mortality rate * Standardized by age and sex for comparison with the German average All quality indicators are generated from readily available administrative data without any additional data collection. A version 3 is in preparation and will cover additional areas like, for example, heart surgery, thoracic surgery, multi organ surgery etc. A modified version of the indicators can also be used for analyzing long term data from insurance companies. This extends the scope beyond the in-hospital stay and enables measurement of long term outcome (for example 5-year mortality for cancer patients, 5-/10-year revision rates for hip replacement etc.).

Conclusion: Administrative data can be used to measure outcome for many important diseases and procedures. Indicators can be defined for in-hospital outcome and successfully be used for improvement processes. If insurance data are available, the method can easily be extended to long term indicators, which on the one hand results in more exact and better standardized indicators (e.g. real 30- or 90-day mortality instead of in-hospital mortality only) and on the other hand enables measurement of important long term outcome indicators, which cannot be derived from a single hospital’s data alone.
IDENTIFICATION OF POTENTIALLY PREVENTABLE COMPLICATIONS USING THE NEW COUNTRY-WIDE REPORTED PRESENT ON ADMISSION INDICATOR FOR SECONDARY DIAGNOSES IN BELGIUM.

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Objective:
Use of Potentially Preventable Complications is now a reality in Belgium where Present on Admission (POA) indicator is mandated: this enables the documentation of Potentially Preventable Complications (PPC) rates and comparison with California norm for a sample of Belgian discharges.

Methods:
The Belgium Ministry of Health has mandated the POA indicator in January 2008. We selected a representative sample of acute care inpatient discharges in for the whole year 2008 in Belgium and hence generated admission APR DRGs (DRG system used for payment in Belgium). The State of Maryland is introducing in October 2010, for fiscal year 2011, a new prospective method of Pay for Quality that takes into account Many categories of potentially preventable complications (adding to the 12 HAC conditions CMS targets). (1) This will tackle the perverse incentive allowing currently hospitals treating not only more complex cases, but cases with higher levels of complications, to get paid more than hospitals that have less complication rates. The State of Maryland will reduce payment inside the limits of the annual inflation adjustments for all its public and private hospitals using the PPC indicator as prime methodology and, as adjustment, the extra amount it cost for treating each and all of 50 complications identified by the PPC software. We applied the logic of PPC that isolates combinations of DRGs and selective diagnoses that may not be preventable to create PPCs that are identified during same stays. (2) We then computed standardized complications rates (SCR) adjusting for the case-mix of the sample by APRDRG and subclasses of severity of illness (SOI) subclasses: we used expected rates for same granularities of DRG-SOI from the State of California 2007.

Results:
The rate of new secondary diagnoses not present on admission is 6.47% (n: 117,186 sdx) out of the large sample of 459,471 discharges from which we selected a representative sample of 105,155 discharges (7.44% sdx not present on admission). The observed number of PPCs is 778 for the 68,320 discharges at risk for PPC, with the expected number at 1,103 PPCs from the California norm, resulting in a standardized complication rate (SCR) of 0,708, hence 29.5% less than the norm- but not statistically significant (p>0,05 with a confidence of 95%); while the 33,823 surgical discharges had 2,544 PPCs in relation to 1,970 PPCs expected from the norm, with a SCR statistically different at 1,29 (p<0,05 -95% certainty). The most frequent PPCs are listed in Table 1.

<table>
<thead>
<tr>
<th>PPC</th>
<th>Number observed</th>
<th>SCR</th>
<th>Significance (P&lt;0,05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-op hemorrhage</td>
<td>689</td>
<td>2,12</td>
<td>*</td>
</tr>
<tr>
<td>Puncture/laceration per op</td>
<td>508</td>
<td>2,77</td>
<td>*</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>488</td>
<td>1,09</td>
<td>*</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>257</td>
<td>0,99</td>
<td>N.S.</td>
</tr>
<tr>
<td>Resp problems+mech ventilation</td>
<td>227</td>
<td>0,61</td>
<td>*</td>
</tr>
<tr>
<td>Cardiac arythmias</td>
<td>196</td>
<td>1,4</td>
<td>*</td>
</tr>
<tr>
<td>Post-op infections</td>
<td>194</td>
<td>2,0</td>
<td>*</td>
</tr>
</tbody>
</table>

Conclusion:
Potentially Preventable Complications (PPC) indicators are powerful outcome measures introduced for Pay-for-Quality. It has a promising future as it corrects a basic flaw of the DRG payment system that pays more if complications arise. It necessitates however the introduction of Present on admission flag for all secondary diagnoses. This study demonstrates the feasibility of its use for Belgium and also enables identification of relevant areas to investigate for possibly better documentation of the POA flag and/or the quality of care.


Disclosure: 3M HIS has developed PPCs and also has been the main consultant for the state of Maryland for PPC payment rate adjustments.
VARIATIONS IN MORTALITY AMENABLE TO HEALTH CARE: GOING BEYOND DEMOGRAPHICS TO HEALTH SYSTEMS PERFORMANCE

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Objective: “Mortality amenable to health care” (MA) is a composite measure of deaths before age 75 from complications of conditions that are potentially avoided by timely effective care and prevention. Nolte and McKee designed MA, which accounts for 25-33 percent of total deaths, as a whole system indicator sensitive to variations in health care system performance and have used it to compare 19 OECD countries over two time periods. Recently, MA has been criticized as probably reflecting primarily socio-demographic vs. health care issues, as does total mortality. It is difficult to assess this criticism across countries because there are few available standardized indicators of health system performance. In the United States (US), which has the poorest average performance of the 19 OECD countries on MA, it has been possible to assess MA by state; and there are many standardized indicators related to demography, socioeconomic status, and health care delivery.

Methods: We used data on MA, poverty, race, insurance and health system indicators assembled for The Commonwealth Fund Commission on a High Performance Health System’s “State Scorecard”. These data were collected on the populations by state of the US. We performed tests of bivariate association and regressions to examine relationships of health system factors to MA, and multivariate log-log regressions using Stata, to control for demographics and socioeconomic status.

Results: There is over two fold variation in MA across the US states and District of Columbia and a strong association of MA with several demographic and socioeconomic variables, particularly the percentage of the population that is below 200 percent of the federal poverty level and the percentage black. These in turn are significantly correlated with rates of uninsured and poorer performance on key quality indicators for hospital and ambulatory care. There are strong bivariate relationships of MA and several health care-associated variables. Controlling for the percentages of the population that are poor and/or black, there remain statistically significant strong relationships between MA and the following: percent of adult asthmatics with an emergency room or urgent care visit in the past year; Medicare hospital admissions for ambulatory care sensitive conditions; Medicare 30-day hospital readmissions; percent of long-stay nursing home residents with a hospital admission; percent of short-stay nursing home residents with a hospital readmission within 30 days; and percent of adult diabetics who received recommended preventive care.

Conclusion: This study provides evidence that variations in MA are related to health system factors as well as to key demographic and socioeconomic variables. It also provides the first evidence that health system factors remain significant for death rates controlling for poverty and race. The study provides support for using the indicator within the US to track efforts to improve health system performance and to estimate potential gains from reforms to enhance timely, effective care and improve public health. It is also likely that there are similar implications for measurements of MA within and between other countries.

INTERNATIONAL COMPARABILITY OF PATIENT SAFETY INDICATORS IN 13 OECD MEMBER COUNTRIES: ADJUSTMENT BY SECONDARY DIAGNOSES

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Objective: The objective of the 2009 Patient Safety Indicator analysis of 13 OECD member countries was to identify potential explanations for variation in PSI rates across countries.

Methods:
As part of the Health Care Quality Indicators project of the Organization for Economic Co-Operation and Development (OECD) (1), we explored methods to improve the international comparability of patient safety measurement by evaluating Patient Safety Indicators (PSIs) originally published by the US Agency for Healthcare Research and Quality (AHRQ). Two previous pilots with up to 16 participating countries showed the feasibility of the method and demonstrated a marked correlation between non-obstetric PSI rates and the mean number of coded secondary diagnoses (2). A quantitative model to adjust for coding differences was investigated performing a retrospective cross-sectional study using hospital administrative data. The study population consisted of adults discharged from acute care hospitals in Belgium, Canada, Denmark, Germany, Italy, Ireland, New Zealand, Norway, Singapore, Spain, Switzerland, the United Kingdom, and the United States of America (US) in 2006 or 2007 (except that Danish cases were from 2008). The number of eligible discharges across the 16 countries varied between 0.43 and 32.81 million.

Results:
Age and sex-standardized rates varied across countries. An ordinary least squares unweighted regression model was estimated for each PSI using the mean number of secondary diagnoses among denominator cases (separately reported for each indicator) as the predictor variable ($R^2$=23% to 74%). Estimated country-specific residuals were linearly transformed into adjusted PSI rates with the same mean value as the unadjusted but standardized rates. Variation among PSI rates decreased substantially after this adjustment. Coefficients of variation dropped as expected from 92.4 to 72.9 for “catheter related bloodstream infections”, from 89.8 to 45.9 for “postoperative sepsis,” from 67 to 56.8 for “accidental puncture or laceration”, from 63.7 to 43.7 for “postoperative deep vein thrombosis and pulmonary embolism”, and from 47.3 to 42.4 for “foreign body left after procedure”. Ranking of countries was altered such that six countries moved more than two ranks for the indicator “catheter related bloodstream infections”, and five countries moved more than two ranks for the indicator “postoperative deep vein thrombosis and pulmonary embolism”.

Conclusion:
Between-country variation in the mean number of secondary diagnoses reported is associated with differences in measures of health system performance that are based on administrative data and can confound unadjusted international comparisons. Performance measures that have been statistically adjusted for under- or over-reporting of secondary diagnoses are less variable than unadjusted measures and illustrate the effect that adjustment can have on country rankings. International comparisons of health system performance based on unadjusted patient safety indicators are problematic due to suspected coding or ascertainment bias. This model could be used as an interim approach to provide comparable information on hospital quality and safety across different countries. Over the long term, policymakers should create incentives to improve accurate and complete documentation of hospital diagnoses (including complications of care).

Reference:
ASSESSMENT OF INDICATOR USABILITY - A DECADE OF EXPERIENCE FROM THE DANISH NATIONAL INDICATOR PROJECT

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Objective: Showing when and how measuring clinical quality leads to improvement

Methods: Overall quality improvement was assessed by single measures; aggregated process measures and short term mortality.

Results: The Danish National Indicator Project (DNIP) was started 10 years ago. Evidence based disease specific quality indicators have been developed from national clinical guidelines by multi professional clinicians appointed by the scientific societies for a still increasing number of diseases. As of 2010 the diseases are stroke, diabetes, hip fracture, schizophrenia, acute gastrointestinal surgery, COLD, depression, heart failure and lung cancer. Quality indicators have been implemented in all Danish hospital units in Denmark. Participation is mandatory for all public hospitals and relevant clinical departments and units treating patients with the covered diseases. The project relies on direct data collection followed by monthly feedback of indicator results to clinicians and management and yearly public release of audited results. In the following table selected results from 2005 and 2008 are presented. 2005 (the 3rd year of data collection) is chosen as the base year as stable and valid data collection was achieved from this year. Also presented are selected results over time.

<table>
<thead>
<tr>
<th>Disease</th>
<th>2005 Mean patient age</th>
<th>Proportion recommended care provided to patients</th>
<th>Proportion of patients dying within 30 days</th>
<th>2008 Mean patient age</th>
<th>Proportion recommended care provided to patients</th>
<th>Proportion of patients dying within 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>72.0</td>
<td>0.63 (0.63; 0.64)</td>
<td>0.12 (0.11; 0.12)</td>
<td>71.3</td>
<td>0.73 (0.72; 0.73)</td>
<td>0.10 (0.10; 0.11)</td>
</tr>
<tr>
<td>Bleeding ulcer</td>
<td>72.0</td>
<td>0.79 (0.78; 0.80)</td>
<td>0.11 (0.09; 0.14)</td>
<td>71.9</td>
<td>0.83 (0.82; 0.84)</td>
<td>0.10 (0.09; 0.11)</td>
</tr>
<tr>
<td>Hip fracture</td>
<td>82.7</td>
<td>0.56 (0.55; 0.57)</td>
<td>0.10 (0.10; 0.11)</td>
<td>83.1</td>
<td>0.85 (0.85; 0.85)</td>
<td>0.11 (0.10; 0.11)</td>
</tr>
<tr>
<td>Heart failure</td>
<td>72.1</td>
<td>0.54 (0.52; 0.55)</td>
<td>0.21 (0.19; 0.23)*</td>
<td>70.7</td>
<td>0.65 (0.65; 0.66)</td>
<td>0.16 (0.15; 0.18)*</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>42.0</td>
<td>0.80 (0.80; 0.81)</td>
<td>0.83 (0.83; 0.84)</td>
<td>42.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Proportion dying within 365 days.

Graph 1: Lung cancer indicator
Percentage of patients with hospital diagnostic delay of less than 28 days
Quarterly regional results

Graph 2: Selected results - units in one region
Percentage of patients receiving all relevant interventions (All-or-None)
Dedicated hip fracture unit in place from before 2005

Graph 3: Stroke, proportion of patients receiving all relevant interventions - unit level
Quarter
Conclusion:

1) Patterns of indicator results developing over time illustrate the interplay between various determinants of quality improvement – some of these determinants are; professional consensus on the importance of indicators; continuous good data quality; continuous auditing; management involvement, and structural changes. Example 1 as shown in graph 1; no professional consensus on the minimum delay of diagnosis of lung cancer patients leading to no improvement for a number of years – strong political pressure caused by media alarm after publication of result lead to immediate improvement. Example 2 as shown in graph 2; Introduction of dedicated hip fracture units within departments of orthopaedic surgery in one region lead to immediate marked improvement Example 3 as shown in graph 3; purely professionally driven improvement without pressure from media or management/political resulting in steady improvement – starting at different levels – in all departments.

2) The general results from the Danish Indicator (table 1) on overall outcomes of the DNIP show marked improvement on processes but only modest improvement in survival rates. Since the majority of the process indicators are developed as mirroring the national – evidence based - guidelines this raises the question if short term mortality is a relevant outcome measure for conditions in the elderly patient population. Alternatively if standardization of care by evidence based guidelines causes real improvement in care.
FAILURE MODE EFFECTS ANALYSIS (FMEA) FOR MORPHINE PRESCRIBING PRACTICES

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Objective: To identify and prioritize potential failures during the morphine prescribing process, with the objective of improving patient safety by identifying and acting upon those parts of the morphine prescribing process which are most in need of change.

Methods: Background: A review of 4000 voluntarily submitted reports of medication incidents by 11 (CAPHC) member organizations found 294 reported incidents with an outcome of harm. Morphine is a high alert drug that, if associated with drug errors has the potential to cause harm to a patient. Morphine had the highest reported incidents causing harm in a paediatric population (8.8%). At the Children’s Hospital of Eastern Ontario (CHEO), medication related events represent the highest percentage of patient safety incidents. Since the hospital’s implementation of an online Safety Incident Reporting System in January 2007, a total of 2406 safety reports have been posted in which 671 (28%) were medication incidents. Of these, there have been 38 morphine related events (5.7% of medication incidents). Due to the voluntary nature of the Safety Reporting System, the recorded number of 38 reported events is likely an underestimation. Although not the sole contributing factor, prescribing practices contributed to a number of these incidents. Process: A failure mode effects analysis (FMEA) is a team-based systematic and proactive approach for evaluating a process to identify where and how it might fail and to assess the relative impact of different failures. Practitioners in the system know the vulnerabilities and failure points so a multidisciplinary panel convened and was represented by physicians, nursing, and pharmacy. The multidisciplinary team met to diagram the process of prescribing morphine and to brainstorm potential failure modes and predict their effects should the failures occur in real-time. Following this, the team identified causes of failure modes and prioritized these using severity, detectability and frequency as scores, which the key stakeholders will use to re-design the morphine prescribing process and implement changes hospital-wide.

Results: A total of 70 failure modes have been identified and scored. The panel focused on processes associated with the written order process and for which potential changes could be implemented. Following this, the team identified causes of failure modes and prioritized these using severity, detectability and frequency as scores. Single point weaknesses are steps so critical that their failure would result in a system failure or adverse event. These were found to be distributed across the entire process (n = 23). Secondly those scored with severity 5, meaning a severe or catastrophic effect should a failure of the step occur (n = 12). Finally, risk priority number (RPN) which is calculated based on frequency, detectability and severity (n = 5).

Conclusion: Identifying the potential failures in morphine prescribing is the first step in improving the process with the ultimate goal of decreasing adverse events and improving patient safety. The scores have been used by the key stakeholders to re-design the morphine prescribing process and implement changes hospital-wide. Strategies and recommendations include the following: 1) development of corporate dosing guidelines; 2) development of a verbal order policy; 3) promotion of pre printed orders hospital wide; and 4) support for computerized physician order entry with forcing functions.
10-YEAR TRENDS IN HOSPITAL ADMISSIONS FOR ADVERSE DRUG REACTIONS IN ENGLAND

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Objective:
Adverse drug reactions (ADR) are a cause of morbidity and mortality. A potentially useful source of information on them is national hospital administrative data whose utility is dependent on levels of recording. We analyzed trends in hospital admissions associated with ADRs in English hospitals between 1999 and 2008 to investigate changes in the recording in administrative data and association with mortality.

Methods: Data from the Hospital Episode Statistics (HES) database were examined for all English hospital admissions (1999/00 to 2008/9) with a primary or secondary diagnosis of an ADR recorded. HES uses ICD10 for coding diagnoses. The number of admissions and in-hospital mortality rate with a primary (codes including ‘adverse drug reaction’, ‘drug-induced’, ‘due to drug’, ‘due to medicament’, or ‘drug allergy’) or secondary diagnosis of ADR (ICD-10 Y40-Y59) were obtained and analyzed. Further analysis for the year 2008/9 was performed with regard to age, sex, the proportion aged >65 yrs and total bed days.

Results: Between 1999 and 2008, there were 557,978 ADR-associated admissions, representing 0.9% of total hospital admissions. Over this period the annual number of ADRs increased by 76.8%, and in-hospital mortality rate increased by 10% although this stabilized from 2004 onwards. In 2008/9, there were 6,830,067 emergency admissions of which 75,076 (1.1%) were drug related. Systemic agents were most implicated (19.2%), followed by analgesics (13.3%) and cardiovascular drugs (12.9%). There has been nearly a two-fold increase in nephropathy and cardiovascular consequences secondary to drugs and a 6.8% fall in mental and behavioural disorders due to drugs. The number of ADRs recorded in any secondary diagnosis field increased 105.8% during the study period. The three fastest growing ADRs as external causes were drugs related to: gastrointestinal system (182.8%), water-balance (178.2%), and systemic agents (146.2%). In contrast, the only reported rate that showed a decrease was under the category of bacterial vaccines (-48.5%). In 2008/9, 58.5% of hospital admissions in which there was an external ICD-10 code for ADR occurred in people aged 65 years and over. The admission burden was highest for mental and behavioural disorders due to drugs (94,579 total bed days), but the in-hospital mortality rate was highest for lung disorders due to drugs (17.2%). The highest admission burden was associated with systemic agents (Y43, 112,667 total bed days), but the in-hospital mortality rate was highest among ADRs due to agents affecting blood constituents (Y44, 9.4%).

Conclusion: ADRs have a major impact on public health. Our data suggest the number of ADR admissions has increased at a greater rate than the increase in total hospital admissions. At least some of this is likely to be due to improved diagnostic coding. However, in-hospital mortality due to ADR admissions also increased during the period. Our report should prompt policy makers to implement further measures to reduce ADR incidence and their associated in-hospital mortality, and methods to improve the recording of ADRs are also warranted. Data such as HES could then serve for monitoring safety efforts.
ELECTRONIC MEDICAL RECORD; INFLUENCE ON PATIENT SAFETY AND CLINICAL WORKFLOW

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Objective: The objective was to investigate possible violations to patient safety caused by the use of electronic medical records (EMR) in order to recommend solutions to identified patient safety problems.

Methods: According to Danish legislation clinicians must report adverse events to a national database. In the database of Central Denmark Region 484 reports on patient safety events related to the EMR were identified (EMR has been chosen as the region’s single-stranded medication system). The reports covered a period of 1½ years. The events were reviewed and grouped by an expert panel according to aspect of: human factor, technology, and organisation. Based on the grouping further investigations were made, and the most frequent problem was found to be violation of existing instructions, guidelines, and rules related to the use of the EMR system; all together 181 events. The problem is known in the scientific literature as “workaround” meaning a conscious or unconscious bypass of a recognised problem in a system. A multi disciplinary team of 33 persons involving front line clinical staff, technicians, managers etc. performed an audit based on the London protocol. The audit focused upon: 1. Lack of control of prescription and cave in the EMR 2. Established parallel paper based systems to the EMR; a violation to the single-stranded medication system 3. Lack of approving patients’ medication in the EMR at admission 4. Problems with verbal prescriptions; a violation to the single-stranded medication system 5. Delayed registration of prescriptions and administration in the EMR. The 33 auditors were divided into smaller groups, according to the five problem areas above. They were given a number of representative cases and asked to focus their analysis on the cause of the problems and suggestions for implementation of actions to control the problems. An extensive literature review was performed to support decisions on actions for improvement.

Results: We found a need for improvement both related to technical solutions and clinicians’ culture in order to secure that implementing EMR improves and does not violate patient safety, and the following actions were taken: · Systematic work with patient safety culture directed by local leaders · Implementation of advanced decision support in the EMR · Wider use of mobile IT hardware at the bed side · Use of prospective clinical workflow, and risk analyses in connection with changes in the software · Establishing standardised procedures for ward level implementation of changes in procedures · Enhanced management focus concerning the single-stranded EMR. The result of the analysis, and the suggested action plan was approved by the Central Denmark Region board of directors and is disseminated through two workshops. One targeted local risk managers and the hospital health care IT-organisation and another targeted the clinical managers from the hospitals. The mentioned groups are responsible for implementation of the recommended actions.

Conclusion: Patient safety work concerning EMR requires establishment of analysing/surveillance teams consisting of front line clinicians, informatics experts, technicians, and patient safety officers. When it comes to health care informatics patient safety work should prioritise bridging of the clinical and technical cultures.
DOES THE USE OF CPOE/CDS-SYSTEMS LEAD TO MORE SAFETY IN DRUG PRESCRIPTION?
A HEALTH TECHNOLOGY ASSESSMENT

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Objective: Which parameters are useful to evaluate the effects of CPOE/CDS-systems and what are the effects of CPOE-systems in regard to these parameters?

Methods: The conceptual design of this HTA-report is a systematic literature review. The systematic literature search (DIMDI-HTAsuperbase and HTA- and Cochrane-databases) in German and English including publications since 2002 yielded 791 abstracts. Out of these abstracts eight medical and four economic publications were included following a two-part selection process according to standard, predefined criteria. 49 publications were added by hand search. A total of 180 publications are used as background literature (including publications on social, ethical and legal aspects), 139 publications are excluded. For the discussion of legal aspects, relevant texts of law are also used. Data extraction and assessment of included publications follow predefined criteria.

Results: All reviews and studies included show that the use of CPOE-/CDS-systems can lead to a reduction of medication errors. Minor errors can be eliminated almost completely. The effect of CPOE-/CDS-systems on the rate of adverse drug events (ADE) is evaluated in only two primary studies with conflicting results. It is difficult to compare the results of these economic studies because they evaluate different settings, interventions and time frames. In addition, the documentation often is not fully transparent. All four studies included measure costs and effects from the perspective of a hospital or hospital affiliation. The adherence to guidelines, communication, patient care and personnel satisfaction can also be affected positively. However, the literature also reports negative effects, as by the use of CPOE-/CDS-systems new errors can be generated. This makes continuous revisions of the system, as well as data-updates necessary. Concerning the cost-benefit-ratio from the hospital perspective, the two qualitatively best economic studies show contradictory results. Therefore, a positive cost-benefit-ratio for individual hospitals cannot be assumed, particularly as the study results cannot be generalized. Concerning social aspects, the experience of institutions in which the implementation of CPOE-systems lead to problems showed that the importance of considering the socio-organisational context had greatly been underestimated: the implementation of new software systems can bring about new or changing roles, duties and responsibilities within different professions. This in turn can lead to a reorganization of processes that sometimes are accompanied with unexpected or unintentional outcomes.

Conclusion: If the implementation of CPOE-/CDS-systems is well planned and conducted, the system adapted to the needs of the institution and continuously reviewed, and data used are updated on a regular basis, the rate of medication ordering errors can be reduced considerably by using CPOE-/CDS-systems. However, it is not clear how this results in a reduction of adverse drug events (ADE). Prospective, systematic multi-centre evaluation-studies with clear methodology are needed, which include an analysis of the userfriendliness and of social and technical aspects of the system. Such studies should evaluate the impact a CPOE-/CDS-system has on ADE-rates and mortality. A detailed description of the system used and of the hospital evaluated is essential. If possible, costs and cost effects should be surveyed and documented transparently.

MONITORING MEDICATION ERROR EVENTS THROUGH ELECTRONIC SYSTEM NOTIFICATION

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Objective:
To describe the dynamic monitoring of medication errors through the electronic system of notification in a private hospital.

Methods:
Event notification is a process that ensures the record of events that are considered in the design and analysis of management indicators. For this, the institution has a system event notification computerized, accessible to all employees. The errors reported are classified according to type of error, accountability and consequence, according to the recommendations of the NCC MERP - National Coordinating Council for Medication Error Reporting and Prevention. An analysis of trends is performed and support the formulation of actions to minimize or eliminate the risks. The errors that result in harm to the patient reclassified as serious adverse events, and subjected to a root cause analysis.

Results: In the year 2009 944 medication errors were reported and classified according to the consequence: 6.4% near miss, 27.3% did not reach the patient and 66.2% reached the patient and 2.1% were reclassified as serious adverse events. According to the type of error, 26.3% were due to delay in administration, 16.4% drug is not administered, 10.3% wrong dose, 10.1% wrong medication, 10.1% allergic non documented, among other types. Accountability corresponds to 49.3% nursing errors, 35.2% pharmacists, 8.3% physician and 7.2% others.

Conclusion:
The electronic system makes it easier for professionals to dynamic reporting and analysis of events from medications errors. Considering the possibility of underreporting, it is important to emphasize the increase in quality and safety because of the involvement of healthcare professionals in the discussion, analysis and actions to improve the process.
PARTICIPATION IN AN E-PHARMACOVIGILANCE SYSTEM TO MONITOR AMBULATORY PATIENTS FOR ADVERSE DRUG EVENTS

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Objective: Because there is growing apprehension about the limitations of passive surveillance systems to detect adverse drug events (ADEs) resulting from prescription medications in clinical practice, our objective was to examine our early experience with the “reach” of an interactive voice response (IVR)-based e-pharmacovigilance system that interoperates with a patient’s electronic health record EHR to actively monitor patients taking drugs recently approved by the Federal Drug Administration (FDA).

Methods: Adult, English-speaking patients receiving a prescription for a target medication from a primary care physician at one of 11 participating primary care clinics in the greater-Boston area were eligible to participate. Target medications were selected based on FDA approval within seven years of the start of the study and included: gabapentin, zolpidem, risperidone, losartan, valsartan, olanzapine, raloxifene, sildenafil, zolpidem, quetiapine, irbesartan, infliximab, etanercept, montelukast, rosiglitazone, modafinil, pioglitazone, aripiprazole, vardenafil, tadalafil, rosvastatin, aliskiren. Patients were called between November 2008 and June 2009, with a follow-up call 3 months later if the target medication was still listed on the patient’s active medication list. The standardized phone script consists of a series of questions that use branching logic conditioned on prior responses, and included questions about adherence and a pre-specified list of symptoms derived from a checklist that has been used successfully in prior work to assess symptoms that are potentially associated with ADEs among ambulatory patients.

Results: 902 patients participated, representing 43.3% of contacted patients and 25.7% of potentially eligible patients with a working phone. Of patients contacted, those who were at least age 66 years were most likely to participate (50.6%), and those age 46 – 55 years were least likely to participate (33.6%). Hispanics had the lowest rate of participation (24.5%) of any racial/ethnic group, were more likely than any other racial/ethnic group to not have a working phone, and had the highest rate of hanging up on the call. Patients receiving medications for more personal conditions (e.g., erectile dysfunction) were less likely to participate than those taking other types of medications. Of the 902 patients who completed the initial survey, 723 (80.2%) were eligible for re-survey 3 months later because the target medication was still listed as active in their medication list in the EHR. Seventy percent of patients contacted participated in the follow-up survey which represented 52.9% of potentially eligible individuals.

Conclusion: IVR technology can be used to reach large numbers and a meaningful proportion of patients to perform ambulatory e-pharmacovigilance. Our study suggests that an IVR system can be integrated with an EHR to provide e-pharmacovigilance for a broad spectrum of patients. Future work will address whether data collected using this type of system can be effectively and accurately used to detect ADEs for public health purposes, or lead to meaningful changes in patient management resulting from earlier recognition of medication-related problems.
MEDICATION RECONCILIATION FOR MEDICAL INPATIENTS: EXPERIENCE IN AN ACUTE HOSPITAL IN HONG KONG

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Objective: To study the clinical impact of a model of combined medication reconciliation and clinical pharmacy interventions in preventing medication errors and adverse drug events (ADEs) in a medical admission ward in Pamela Youde Nethersole Eastern Hospital (PYNEH), which like other Hong Kong Hospitals, had never been provided with such service.

Methods: A pilot project was conducted at a 37-bed acute admission medical ward in PYNEH, a 1600-bed public acute hospital serving 0.6Mn population. All medical records of patients admitted to the Study Ward (to which resident doctors were rotated on a quarterly basis) were prospectively assessed by a designated Clinical Pharmacist (CP) who would conduct interventions on Study Patients whenever required. Exclusion criteria were: Patients transferred from other wards or institutions, those admitted or discharged during weekends, and those who are not communicable. Unintended medication discrepancies (UMD) were defined as those identified by CP and agreed with attending doctors as the differences between the best possible home medication list with the actual admission/discharge medication orders and/or clinical interventions recommended by CP on medication reconciliation which were adopted by attending doctors. Severity index was classified based on Overhage¹. Baseline data on UMD was taken from the same ward for one month before the study. Primary outcomes were the number of patients with ≥1 UMD on admission and/or discharge. Secondary outcome was to assess the potential clinical impact of these UMD on improving patient safety.

Results: Baseline data on 173 admission medical records in November 2008 showed that 51 records (29.5%) had UMD, representing a total of 50 potential errors (by item) per 100 admissions (mean number of medications per admission: 5.1). The study was conducted in April-September 2009 on 1961 records on admission/at discharge. At least one UMD was found in 421/1961 records (21%), representing 30 potential errors (by item) per 100 admissions and 16 per 100 discharges (mean number of medications per admission and discharge: 5.82 and 5.93 respectively). If unresolved, most (96%) would have led to minor-to-significant outcomes but 4% could have been potentially serious and even lethal. Error rates in the 2 consecutive quarters in the study, involving seven doctors in two rotations, were similar. This model of combined medication reconciliation and clinical pharmacy interventions, with a team approach of CP-led drug education/advice to doctors and nurses, could optimize drug use for hospitalized patients and avert potential harm arising from UMD.

Conclusion: A model of comprehensive medication review with reconciliation at admission/discharge followed by clinical pharmacy intervention has significantly prevented medication errors and improved patient safety in a medical ward of PYNEH. The presence of a dedicated clinical pharmacist in the ward has strongly encouraged the collaboration of multidisciplinary teams and immediate attention to patients' drug treatment. Implementation of this model should be considered in all hospitals to improve patients' safety. Error rates involving two rotations of doctors who had never been exposed to clinical pharmacy service were similar, demonstrating the probable range of errors generated by resident doctors in PYNEH medical wards. The doctors' rotation system posed a threat to the continued sustainability of the model, but this may be mitigated by structured training of doctors and nurses by clinical pharmacists in the future. To further improve the model, clinical pharmacists could also follow-up patients post-discharge with a view to reducing drug-related re-admissions.

Reference: 1. Overhage JM and Lukes A. Practical, reliable, comprehensive method for characterizing pharmacists’ clinical activities. AJHP 1999(Dec);56:2444-2450
REVIEW OF THE IMPACT OF THE MEDICATION SAFETY OUTPUTS OF THE UK NATIONAL PATIENT SAFETY AGENCY

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Objective:
An assessment of the quality and impact of medication safety alerts issued to the NHS in England and Wales

Methods: A multi-method study comprising (1) comparison with international medication safety bodies (2) semi-structured interviews with staff of the NRLS and major stakeholders in the DH, NHS, Royal Colleges and Pharmacy bodies; (3) focus groups and interviews with NHS Chief Pharmacists, GPs and practice staff and (4) an electronic survey of medical, nursing and clinical governance directors.

Results: The NPSA has created a rigorous, well-structured, and appropriate process for identifying topics for analysis and notification. 81% of respondents to the survey of senior NHS managers and clinicians were of the view that the topics chosen addressed the issues presenting the highest risk to patients and 77% were of the view that they had resulted in safer care for patients. Pharmacists expressed some frustration at the difficulties of engaging clinicians in medication safety and the survey showed on average 50% awareness of the alerts amongst medical directors. There is a need to differentiate between large complex alerts requiring behaviour change in many thousands of staff from those which are very much simpler to execute. In relation to the former, there was a plea that solutions should be road tested before publication and it was felt that mandatory completion targets are not helpful. Reliance on the national adverse event reporting system does not capture information on risks in areas such as primary care which are poor reporters of adverse events. In hospitals, communication with Junior doctors is a major source of concern as is the standard of their prescribing.

Conclusion: Medication alerts issued by the NPSA/NRLS have stimulated significant work to improve medication safety and are believed to have had an important impact on patient safety. The NPSA should consider opportunities to work with key constituents earlier in the process, prioritize threats, enhance dissemination, support board-level accountability, build measurement and evaluation capacity and use its considerable authority to influence professional education.


Disclosure: Research funded by National Patient Safety Agency
HOW IS A TOOL DEVELOPED FOR THE AEROSPACE INDUSTRY BEING USED TO PREVENT A LEADING CAUSE OF ABO INCOMPATIBLE TRANSFUSIONS?

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Objective: To reduce the number of mislabelled blood grouping specimens in the Outpatient Pathology Department (OPD) at the Peter MacCallum Cancer Centre by employing Failure Mode and Effect Analysis (FMEA).

Methods: The project team used FMEA on the labelling of blood grouping specimens in the Outpatient Pathology Department to: • Map the process of labelling a specimen tube. • Determine the potential failure modes. • Identify the causes and effects of the failure modes. • Evaluate the risks associated with the failure modes. • Identify the current controls. Hospital staff identified as the subject matter experts mapped every step in the process of labelling a specimen tube. Observational audits of blood taking in the OPD were undertaken and the blood grouping specimen non conformance data collected in the 12 months prior to this change management project was examined by the project management team.

Results: The following failure modes were identified: • Physical environment – interruptions and workflow issues • Human factors – errors in positive patient identification • Specimen tubes – poorly designed tube labelling These were prioritised according to their detectability, frequency, and the seriousness of their consequences. Proposed corrective actions were assigned to the high risk failure modes and processes around these high risk failures were redesigned. The FMEA tool was used to measure the effectiveness of the redesigned process before the implementation of the proposed corrective actions. The output of a FMEA is the Risk Priority Number (RPN) which is calculated as the product of three quantitative ratings, each one related to the effects, causes and controls. The highest RPN achievable is a score of 1000 which indicates that the failure is undetectable, is almost inevitable and the consequence is catastrophic. Interruptions and workflow issues achieved the highest RPN of 630 followed by errors in positive patient identification with a RPN of 300. Poorly designed tube labeling was assigned the third highest RPN of 180. LEAN methodology, ‘5 S’ was used in the redesign of this area. Improvements implemented included the introduction of appropriate signage advising no interruptions during specimen collection, the screening of the cubicle during blood taking to ensure patient privacy and to create a physical barrier to deter interruptions, and the implementation of a no interruption procedure. These interventions have resulted in a 61% reduction in the number of interruptions during specimen collection. A patient Information Blood Transfusion Brochure advising our patients to check their details on the specimen tube and request form was developed and visual cues/prompts were introduced in the OPD to support appropriate patient identification. A blood specimen tube which fulfils the labelling requirements recommended by the FMEA has been trialed in several areas in the hospital. The recalculated post corrective action RPNs show a dramatic decrease for all three failure modes. Interruptions and workflow issues achieved the greatest reduction with an RPN of 90. The RPN for errors in positive patient identification was halved to 150 and poorly designed tube labelling attained the lowest RPN of 40.

Conclusion: Our experience has demonstrated that FMEA is a simple and effective method to proactively identify failure modes and prioritise risk reduction strategies. We have achieved a reduction in the RPNs of the three failure modes by redesigning the process and developing corrective actions. In the 4 months since the implementation of the corrective actions the number of rejected blood grouping specimens in the OPD has reduced by 67% representing a significant decrease in the risk to patient safety.

SURGICAL PERFORMANCE - A MULTISOURCE ASSESSMENT TOOL

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Objective: The Royal Australasian College of Surgeons (RACS) has developed and implemented a multisource tool suitable for assessing the competence and performance of consultant surgeons, with the goal of improving the safety and quality of surgical care.

Methods: In 2008, RACS published a framework for the assessment of surgical competence and performance \(^1\). The framework was built on the nine RACS surgical competencies and was developed using the Non-Technical Skills for Surgeons (NOTSS) model \(^2\). The Surgical Competence and Performance guide was distributed to all surgeons and hospitals in Australia and New Zealand, with the intent that it would be initially used predominantly for self-reflection and self-assessment. Subsequently, and over a period of six months the College has developed a multisource assessment tool based on the framework described in this Guide. The project has followed three steps: (a) a comprehensive review and evaluation of multisource feedback methods used in health care and surgery, (b) development of a practical and cost-effective assessment tool suitable for use in the surgical workplace, and (c) an implementation trial. Extensive consultation has taken place with surgeons throughout the project, prior to rolling out the program for all surgeons in Australia and New Zealand.

Results: The project has achieved the following results: (a) developed a multisource assessment tool that has the capacity to include feedback from peers, other health professionals and patients, (b) undertaken implementation trials that have demonstrated its acceptability to surgeons, (c) considered ways in which the assessment tool may be used to address specific needs, such as surgeons in private practice and in solo practice, (d) presented potential models for integration of multisource feedback with Continuing Professional Development requirements, (e) demonstrated that it is possible to assess competence and performance of practising surgeons in a routine and non-intrusive manner, and (f) enabled the early identification of potential underperformers, thereby facilitating appropriate support and/or remediation.

Conclusion: Surgical performance is increasingly under public scrutiny, and its measurement is a complex and sensitive issue. Apart from a RACS requirement for surgeons to participate in mandatory annual audit of their operative practice, there has been no model for routine and comprehensive assessment of competence and performance particularly in the important area of non-technical skills. This project has made a significant contribution to the body of knowledge about assessment of surgical performance by demonstrating that it is possible to develop and implement a simple and acceptable performance assessment tool that can be used for practising surgeons. This has the potential to be valuable to both the College and employers when questions are raised about an individual clinician's fitness to practise, or for reasons associated with patient complaints or poor surgical outcomes. For the first time, it also provides the capacity to routinely monitor performance thereby detecting early signs of underperformance and improving the quality of surgical care and patient safety.

PATIENT SAFETY CULTURE AND HEALTH CARE WORKERS’ JOB RELATED STRESS AT ACUTE CARE HOSPITALS IN JAPAN

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Objective: Patient safety, including the measurement of patient safety culture, is becoming a top priority for the health care system especially in developed nations. A safety culture relates to various factors, and stress is considered to be one of them. For example, perceived safety risk and dissatisfaction with the safety culture among offshore oil workers, railroad employees, and other blue collar workers have been associated with greater job stress. With regard to health care workers, the relationship between safety culture and stress was indicated in a report of the WHO in (PLEASE ADD HERE YEAR OF THE PUBLISHED REPORT). However, little is known about the relation between safety culture and job related stress of health care workers. Therefore, the purpose of this study is to evaluate the relationships between the patient safety culture and job related stress of hospital staff in Japan.

Methods: In this cross-sectional survey, all healthcare workers of 13 acute care hospitals in Japan were requested to answer the Hospital Survey on Patient Safety Culture (HSOPS) and the Brief Job Stress Questionnaire (BJSQ) over the period from January 2009 to November 2009. The HSOPS was originally developed by the US Agency for Healthcare Research and Quality, and it is composed of 42 items that are divided into subscales to measure 12 sub-dimensions of the safety culture: (F1) Frequency of Event Reporting, (F2) Overall Perceptions of Safety, (F3) Supervisor/Manager Expectations & Actions Promoting Safety, (F4) Organizational Learning-Continuous Improvement, (F5) Teamwork within Hospital Units, (F6) Communication Openness, (F7) Feedback and Communication about Error, (F8) Non-punitive Response to Error, (F9) Staffing, (F10) Hospital Management Support for Patient Safety, (F11) Teamwork Across Hospital Units, and (F12) Hospital Handoffs & Transitions. The BJSQ consists of 57 items that cover among others “Job Stressors”, “Stress Response” and “Social Support”.

Results: A total of 6,383 health care staff (female 75.5%) completed the questionnaire. The overall response rate was 74.3%. Nurses constituted the largest group of respondents (61.7%). Administrative workers were the second largest (10.7%), and physicians were the third largest (8.4%) group. The remainder of the respondents included pharmacists, dieticians, physical/occupational/speech/orthoptic therapists, technicians, janitors, and others. In order to measure the relationship between the safety culture and the job related stress, correlations were calculated among the 12 sub-dimensions of the HSOPS and the 3 dimensions of the BJSQ (Table). In regard to each of the 12 HSOPS sub-dimensions, BJSQ’s “Job Stressors” showed generally moderate negative correlations, “Stress Response” showed generally small negative correlations and “Social Supports” showed almost no relationship at all, although “Supervisor/manager expectations & actions promoting safety” showed a moderate correlation towards “Social Supports” (r = .47).

Conclusion: The results suggest that the hospital safety culture relates to job related stress in acute care hospitals. Particularly “Job Stressors” have been associated with the safety culture. These findings indicate that managing stress is of high importance and relevance for patient safety. Further studies are needed to clarify the factors related to a hospital’s safety culture.
**ASSESSMENT OF EMERGENCY PHYSICIANS’ NON-TECHNICAL SKILLS**

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**Objective:**  
To produce a observational framework for the assessment of non-technical skills in the Emergency Department

**Methods:**  
Stage 1: A review of the published literature was undertaken to identify the methods used by research teams who have produced observational tools in other areas of medicine. This was also instrumental in producing a long list of non-technical skills relevant to medical practice. Research specific to Emergency Medicine, such as that demonstrating the association between non-technical skills and safety, was also reviewed. The relevant generic skills and leadership curricula were analysed in detail to ensure the tool reflected these competencies. The findings were combined to produce a provisional framework which was trialled in the Emergency Department (ED) to determine the feasibility of observing in this complex environment. Stage 2: Interviews were conducted with 22 ED medical and nursing staff of various grades. A series of open-ended questions were asked to elucidate the attitudes and behaviours that positively or negatively contributed to teamwork and safety, especially when working under pressure. Subsequently, 20 hours of observation were completed in 2 London ED’s. Transcripts and field notes from the 2 studies were coded separately to identify the non-technical skills that contributed to teamwork and patient safety. A panel of Emergency Medicine specialists and behavioural psychologists then used the data to produce a taxonomy of skills and corresponding exemplar behaviours.

**Results:**  
An observational framework was produced that consists of 4 categories and 12 elements (see table below). Each skill was linked to a definition and illustrated by both positive and negative exemplar behaviours. A rating scale of to 4 (or ‘Not Observed’) was applied and space was given to note examples of good/poor practice.

<table>
<thead>
<tr>
<th>Category</th>
<th>Element</th>
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<tr>
<td>Leadership &amp; Management</td>
<td>Maintenance of standards</td>
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<td>Workload management</td>
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<td>Authority &amp; assertiveness</td>
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<td>Teamwork &amp; Cooperation</td>
<td>Team building</td>
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<td>Exchanging information</td>
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<td></td>
<td>Teaching and feedback</td>
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<tr>
<td>Decision Making</td>
<td>Option generation</td>
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<td>Selecting &amp; communicating options</td>
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<td>Outcome review</td>
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<tr>
<td>Situation Awareness</td>
<td>Gathering information</td>
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<td></td>
<td>Understanding &amp; communicating</td>
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<td>Anticipating</td>
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Table : Non-technical skills taxonomy for Emergency Physicians

**Conclusion:** Arguably the most important implication for developing this observational framework is the possibility of raising the profile of non-technical skills in everyday practice in the ED. Work is ongoing in several countries to develop skills taxonomies for use in the simulated environment but this invariably centres on the critically ill patient. Whilst undoubtedly important, teamwork skills are more commonly employed outside of the resuscitation room and this observational tool reflects this. Trainees currently receive no appraisal of leadership or teamwork skills. The tool will be most beneficial when used to structure immediate and detailed feedback using concrete examples, rather than simply used to produce a score. The observational framework is currently in the process of being validated and work is planned to assess the reliability, usability and acceptability of the tool.
ENHANCING INTERPROFESSIONAL EDUCATION USING SIMULATION – REALIZING A STATE-OF-THE-ART FACILITY

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Objective: To evaluate the effectiveness of the integrated use of simulation and interprofessional education (IPE) in the delivery of health education within a unique new state-of-the-art learning and assessment centre facilitating an opportunity to ultimately improve the quality of patient-care and outcomes.

Methods: As enhanced simulation and interprofessional collaboration have become more prevalent in the health care curriculum, facilities have been designed to facilitate effective learning and assessment. With a focus on patient-centred care, health professionals now have the opportunity to engage in collaborative learning in simulated real-life settings. Facilitated focus-group interviews with architects, functional programmers, students, faculty, clinical and educational partners and technology and facility services vendors helped create the design and flow of the spaces. Additionally, site-visits to other simulation centres also provided comparators to adopt or avoid in the design of the spaces. The planning, design and implementation for this new state-of-the-art facility was implemented over a 4-year period, with the technology and equipment outfitting and the migration of curriculum for this collaborative learning to be realized now the organizational challenge.

Results: Our results indicate that from concept to reality the creation of this new facility has provided the medium and appropriate culture for interprofessional collaboration and simulation to go beyond just co-existing. Curriculum redesign and the migration of curriculum to a new environment has taken time to unfold, and these new learning spaces allow for an expedited and natural synergy amongst a variety of health care professionals, educators, students, and evaluators. Quantitative data comparing the conceptual plans to actual construction, implementation, and the outfitting of technologies and resources has been compiled, as has data from debriefing sessions with architects, contractors, and engineers. Of note is a twenty percent cost escalation for labour given delays, rework, and misinterpretation of design concept. Qualitative data sources include faculty and student feedback, logistical challenges pertaining to scheduling and utilization, and executive leadership navigation challenges have also been summarized. We have found that simulated learning in health care enhances student learning, prepares students more fully for the real-life clinical environment without risk of patient error, and aids in the development of collaboration and communication skills as a result of working as part of an interdisciplinary team. It also provides educators in a wide range of health professions the opportunity to effectively evaluate a student's level of preparedness and competency using just-in-time debriefing before entering the clinical environment, thereby reducing the risk to patients. Further, we found that at least fifty percent more time and developmental resources are required for faculty to work to adapt to this new learning environment and to creatively utilize these spaces in the adaptation of their curriculum. Finally, the physical design of the spaces must be flexible and non-discipline specific and more rigorous planning and thorough evaluation of audio-visual and technology solutions is imperative.

Conclusion: The realization of this state-of-the-art facility has provided a 'sand-box' for interprofessional learning and a studio for creativity in teaching. The organizational challenge moving forward is to encourage full participation of the simulation studio and assessment facilities by all health care educators, and to engage faculty and partner institutions to utilize this facility as a platform for ongoing redesign of teaching methods and for further research. The multiple stakeholder interests are varied, but they are consistently aligned in the focus on providing the evaluative evidence necessary to support and link IPE using simulation as an effective means to enhancing learning and patient outcomes.
IMPACT OF COMMUNITY PHARMACISTS’ EDUCATIONAL INTERVENTION ON PATIENTS’ ASTHMA CONTROL

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Objective: An evaluative study was conducted to assess the impact of a pharmacy-based educational intervention on patients’ control of asthma over a 12-month period.

Methods: Asthma patients (aged 18-50) were consecutively recruited in community-pharmacies and randomized into an intervention group and a reference group (without intervention). Patients in the intervention group received an educational training from the pharmacist at inclusion. A self-questionnaire was completed by patients at inclusion and 12 months later. Asthma control level as measured by the Asthma Control Test was measured at inclusion and 4, 8 and 12 months later. Patients’ perceived ability to influence asthma disease (Locus of Control, LOC) was assessed by a 10 cm visual analogic scale (0%: I have no influence on asthma changes - 100%: asthma changes only depend on me). Changes after intervention in control status, LOC, self-declared adherence to inhaled corticosteroids, understanding of asthma therapy and medical resource use were investigated. These changes were compared between intervention and reference groups. Finally, analyses were also conducted in a sub-sample of patients with inadequate control level at inclusion.

Results: 125 patients were included in the intervention group and 28 in the reference group (mean age 35, females: 64%). After intervention, percentages of patients with correctly controlled asthma significantly increased from 39% at inclusion to 64% 12 months later (p<0.001). Parallel improvements were observed after intervention on patients’ perceived ability to influence asthma disease (p=0.0004) and in perceived burden of asthma in daily life (p=0.004). Likewise, improvements in understanding of therapy were noted. When the analyses were restricted to initially uncontrolled patients, nearly half of them were correctly controlled 12 months after intervention. The main findings for other outcomes were also confirmed in this sub-group.

Conclusion: After pharmaceutical intervention, a sustained improvement of asthma control was obtained over a 12-month period, in parallel with enhanced confidence in patients’ ability to influence the course of their asthma.

Disclosure: Study funded by the French Council of Pharmacists
Objective:
To analyse how health technology assessments (HTAs) can provide valuable support for disinvestment decisions.

Methods:
Traditionally, the focus of health technology assessments has been upon how to provide decision makers with sound evidence when considering the introduction of new technologies (pharmaceuticals, medical devices, procedures). The majority of health care technologies in use today has, however, never been introduced on the basis of an HTA. Recently, the term disinvestment in health care has been gaining prominence internationally. It relates to the processes of (partially or completely) withdrawing health resources from existing healthcare practices that are deemed to deliver little or no health gain (effectiveness) for their cost, and thus do not represent efficient health resource allocation. Another aim of the process would often be to give room for new costly technologies; i.e. so called “reinvestment”. In Norway a National strategies for quality development have been in place since the mid 1990s. The present strategy, covering the period 2005-2015, underlines amongst others that quality implies that decisions about treatment has to be based on reliable and updated knowledge about the safety and effectiveness of the measure under consideration. Early in 2007 the Department of Health established the National Council (NC) for quality improvement and priority setting in health care, an advisory body consisting of 25 health care executives. In June 2007 the NC was asked to consider surgical treatment of obstructive sleep apnoea syndrome (OSAS). The request was based upon a survey, published in a HTA-report that revealed large differences in treatment of OSAS between the four Nordic countries. Moreover, the report also demonstrated a lack of clinical evidence of surgery. A case study of the disinvestment process related to OSAS in Norway was performed. Particular attention was paid to the impact of HTAs on the NC’s advice, and the subsequent alteration in clinical practice.

Results: The NC emphasized in its decision that Norway in contrast to the other Nordic countries had mainly relied upon surgery, the least efficient and safe treatment-option according to the HTA-report. Following the advice, changes were made in clinical guidelines, financial incentives, and contractual arrangements with private providers. As a result, the number of surgical OSAS-procedures dropped by 1/3 between 2005 and 2008. Further reduction is expected in 2009/10.

Conclusion:
To remove outdated technologies is a difficult task, as little systematic evidence in the form of HTAs often exists to guide the decision. Instead one frequently has to rely on expert groups to perform the evaluation. The case of OSAS in Norway shows, however, that HTAs can provide valuable support for disinvestment decisions. Moreover, the case illustrates that quality and safety arguments are just as, or even more, important for disinvestment as pure economic ones.

Reference:
EVALUATION OF THE USE OF RESOURCES IN THE NATIONAL POPULATION BASED CANCER SCREENING PROGRAMMES AND ASSOCIATED SERVICES

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Objective: An evaluation of the existing national population based screening programmes for cervical and breast cancer and the colonoscopy services in the public hospitals was carried out, in order to assess the feasibility of commencing a colorectal cancer screening programme from within existing resources.

Methods: A health technology assessment of a national colorectal cancer (CRC) screening programme carried out in 2008 by the Authority concluded that a programme, based on biennial FIT testing would be highly cost-effective when compared with a policy of no screening (ICER €1,696/QALY) saving approximately 900 lives per year. The National Cancer Screening Service proposed a CRC screening model based on construction of dedicated centres for the provision of the (12,000 to 15,000) colonoscopies required by the programme at a cost of €13-14 million, pre-implementation costs of €7.2 million and annual operational costs of €15-18 million. In challenging economic circumstances, this level of expenditure was not feasible threatening the establishment of the programme. The Authority was requested to explore (and report within a 4 month time-frame) alternative models for implementation building on existing resources. We used an innovative combination of HTA and value-for-money assessment techniques to review the existing cancer screening programmes to see what efficiencies, or cost saving opportunities, could be gleaned to offset against the cost of the new screening programme. We also evaluated the capacity of the existing symptomatic colonoscopy services to absorb the additional requirements of the screening programme, and we assessed existing quality assurance of these services. Data collected via a survey of all hospitals, almost 100 structured interviews, expert advisory and focus groups as well as a review of the literature was analysed.

Results: Arising from the efficiency review, an alternative model for the provision of the diagnostic resources required in the programme was described. This included using existing colonoscopy infrastructure over an extended working day, training additional colonoscopists including advanced nurse practitioners and utilising management/administration capacity within the existing cancer screening programmes. Cost efficiencies were identified through better use of existing resources without compromising the quality of the current and proposed screening programmes. Possible funding opportunities through private insurance were also identified. The overall cost of the programme delivered through the alternative model would be substantially less than the costs of that previously described with savings in capital, implementation and running costs identified. In the model, the additional colonoscopy requirements of the programme would be delivered in 8-12 centres in the country under service level agreement with the National Cancer Screening Service. Integrating the existing symptomatic and new diagnostic services in a small number of centres would provide an opportunity for the development of quality assured colonoscopy across both services. Implementation of the national population-based colorectal cancer screening programme based on the alternative model has now commenced.

Conclusion: It is clear that in Ireland, at least, there is a need for HTA to address broader issues of implementation including efficient delivery models and funding opportunities to ensure that interventions identified to be cost-effective can be adopted. Otherwise the opportunity presented by HTA, to inform decision-making that ultimately saves lives and outlines efficient and cost-effective approaches to improve our health service, may be lost. Efficiency reviews of health services must not compromise their quality and safety. This study describes an opportunity for the development of quality assured services in tandem with greater efficiencies.

RAISING THE BAR PILLAR BY PILLAR: CANADIAN PROVINCIAL CANCER AGENCIES COLLABORATE TO ENHANCE THE SAFE DELIVERY OF CANCER CARE AND TREATMENT.

H. Logan
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Objective: The objective of the Canadian Association of Provincial Cancer Agencies (CAPCA) four pillar safe care platform is to promote the safe delivery of cancer care with the support of CAPCA member organizations from coast to coast.

Methods: Twenty two days after receiving a 96 hour infusion of fluorouracil in 4 hours, a 43 year old woman undergoing cancer treatment died as a result of drug toxicity and organ failure. The Canadian Association of Provincial Cancer Agencies – an inter-provincial organization that facilitates and supports provincial/territorial cancer agencies and programs through effective leadership, collaboration, communication and advocacy for cancer control - responded to this and other similar incidents by establishing a pan-Canadian Systemic Therapy Safety Committee. Under the guidance of this expert committee of oncology nurses, pharmacists, medical and radiation oncologists, and human factors specialists, a four pillar safe care platform was established. Each pillar addresses one or more of the significant opportunities to improve the safe delivery of cancer care.

Research: CAPCA and a number of Canadian cancer and safety agencies are supporting ground-breaking research to identify safe practices for ordering, preparing, labeling, verifying and administering IV chemotherapy in the outpatient setting.

Outpatient IV Chemotherapy Standards: In partnership with Accreditation Canada and the Canadian Partnership Against Cancer, CAPCA is actively participating in the development, testing and implementation of a new standard for IV chemotherapy delivery in the outpatient setting. CAPCA will ensure that the IV chemotherapy research findings are integrated into the standards development process to directly link research to clinical practice.

Incident Reporting and Learning: CAPCA is working with provincial cancer agencies and programs to: a) raise awareness of the National System for Incident Reporting (NSIR); b) identify processes for rapid analysis of reported incidents from the oncology setting; and c) disseminate important findings and risk mitigation strategies across CAPCA member agencies and programs.

Overdose Management Protocol Development: CAPCA will address the absence of an overdose protocol for fluorouracil and other chemotherapeutic agents by: a) working with the developer of the most commonly used poison information database, Thomson Reuters, to propose the addition of a quick reference clinical management summary, or b) if that is not possible, by seeking approval and funding to develop clinically oriented agent-specific chemotherapy overdose management protocols, on a pilot basis. CAPCA is committed to playing a leadership role in cancer control. However, partnership, collaboration, and a willingness to find common ground will be imperative for successful implementation of the safe care platform. CAPCA has, therefore, created strong partnerships with:

- The Canadian Healthcare Human Factors group to ensure that a systems-based approach is integral to each pillar of the safe care platform;
- The Canadian Partnership Against Cancer, who is supporting the development of national outpatient IV chemotherapy standards as part of its overarching commitment to system performance and quality improvement; and
- Communications and public affairs staff from provincial cancer agencies and cancer programs to ensure rapid dissemination of important patient safety related information.

Results: Full implementation of the safe care platform will take 18-24 months. CAPCA is already engaging more fully with the patient safety community and establishing networks that will extend the reach and deepen the impact of the safe care platform.

Conclusion: CAPCA's safe care platform will contribute new knowledge, establish a standard of care for outpatient IV chemotherapy, enhance shared commitment for patient safety across Canada's cancer agencies and programs, and provide access to critical information while maximizing the use of existing resources.
EXPLAINING VARIATION IN READMISSIONS: THE IMPORTANCE OF PROPENSITY TO ADMIT TO HOSPITAL MORE GENERALLY

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Objective: Hospital readmissions are of major policy interest because they occur frequently, vary across settings and reducing them offers the potential to simultaneously reduce spending and improve quality of care, yet little is known about the factors that account for variations in readmission rates or where targeting policy is likely to be most successful.

Methods: We used 2006 national United States Medicare claims data to examine 14, 30 and 60 day risk-adjusted readmission rates after hospitalization of elderly Medicare beneficiaries admitted for congestive heart failure (CHF) and pneumonia across 306 local regions, known as Hospital Referral Regions (HRRs), as identified in the Dartmouth Atlas. We examined the variation in rates across the local regions and the amount of variance explained by 1) differences in comorbidity (the presence or absence of 29 clinical conditions including renal failure, diabetes, asthma, among others) of patients hospitalized within the HRR; 2) measures of discharge planning (a chart based measure for patients discharged with CHF and a patient survey based measure ascertained from the hospital version of the Consumer Assessment of Health Plans Survey (H-CAHPS) 3) supply side factors (number of active physicians, number of primary care physicians, and number of specialists in cardiovascular or pulmonary medicine, all per 100,000 population in the region); and 4) the overall population based annual all-cause admission rates in the HRR among elderly Medicare beneficiaries in 2005 and 2007.

Results: Variance in Readmission Rates Across HRRs for Congestive Heart Failure and Pneumonia Explained by Co-morbidity, Publicly-Reported Measures of Discharge Planning, Supply Side Factors and General Propensity to Admit Patients

<table>
<thead>
<tr>
<th>CHF Readmission Rates</th>
<th>PN Readmission Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>14 Days</td>
</tr>
<tr>
<td>Readmission Rates of patients admitted January 1 to June 30, 2006</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.1%</td>
</tr>
<tr>
<td>1. Case-mix</td>
<td>0.3%</td>
</tr>
<tr>
<td>2. Chart-based and patient-survey based measures of discharge instructions</td>
<td>2.1%</td>
</tr>
<tr>
<td>3. Supply-side variables</td>
<td>1.4%</td>
</tr>
<tr>
<td>4. All-cause 2005 and 2007 Admission Rates</td>
<td>20.5%</td>
</tr>
</tbody>
</table>

Among Medicare beneficiaries hospitalized for CHF, 15%, 24%, and 35% of them were re-hospitalized within 14, 30 and 60 days after discharge (Table). Thirty day readmission rates ranged from 11% in Ogden, Utah to 35% in Texarkana, Arizona (inter-quartile range 22.0% to 26.4%). Variations in co-morbidity explained 0% of the variance in 14 day readmission rates across local regions, 3% of the variance in 30 day rates and 7% of the variance in 60 day readmission rates. Measures of discharge planning explained 2%, 7% and 9% for 14, 30 and 60 day readmissions. Supply side variables explained 1%, 4% and 6% of the variance in 14, 30 and 60 day readmissions respectively. All-cause admission rates explained 21%, 30% and 39 % of the variance in readmissions at 14, 30 and 60 days. When we controlled for all-cause readmission rates the range (the difference between the highest and lowest HRR) in 30 day readmission rates decreased from 24% to 18%. Our findings for pneumonia were qualitatively similar (Table).

Conclusion: Rates of readmission vary considerably across local regions. Co-morbidity, supply side variables and publicly reported measures of discharge planning explain little of the regional variation. However, general propensity to hospitalize explains a substantial portion of the variability. In targeting readmissions, it is tempting to focus on closely related aspects of care such as discharge planning and timely follow up, but our findings underscore the importance of general propensity to hospitalize patients. Broader payment reform and other interventions directed at the underlying propensity to use hospitals services may be necessary to reduce readmissions.

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THE IMPACT OF CONTINUITY OF CARE IN THE COMMUNITY ON HEALTH OUTCOMES

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Objective:
The present study's goal was to assess various measures of continuity of care in primary care and their impact on health outcomes.

Methods: A random sample of adult patients (≥19 years old) enrolled in Clalit Health Services (CHS), the largest healthcare provider organization in Israel, who visited the primary care clinic at least 3 times during 2009 were included in the study. Previously described measures of continuity of care within the primary care setting were calculated for each patient. These measures included the Usual Provider of Care index (UPC), Continuity of Care index (COC), Modified Modified Continuity Index (MMCI), and Sequential Continuity (SECON). Health outcomes assessed included meeting quality indicators of preventive care (screening for smoking, obesity, hypertension, breast and colorectal cancer), the number of non-primary care consultations, number of outpatient visits, number of visits to the emergency department (ED), the number of hospital admissions, the total number of in-hospital days, and the costs of these services. In addition, the costs of medications were assessed. Continuity of care indices were analyzed both as continuous variables and as dichotomous variables, with patients in the lowest quartile of each index compared to patients in the other 3 quartiles.

Results: 1,713 adult patients were included in the study (mean age: 48.9 ± 19.2 years, 42.1% males). The median number of visits to the primary care physician in this sample was 6.0 (range: 3 – 57). 70.9% had at least one chronic condition, e.g. Hyperlipidemia (39.8%), hypertension (27.8%), diabetes (14.3%) and chronic ischemic heart disease (10.6%). The levels of the four continuity of care indices were high (Mean + SD) - UPC: 0.75 ± 0.25, COC: 0.67 ± 0.30, MMCI: 0.81 ± 0.21, SECON: 0.70 ± 0.31. In the multivariate analysis, the UPC index was significantly associated with an increased number of visits to the ED (p=0.019) and an increased cost of these visits (p=0.018). The COC index was significantly associated with a decreased number of visits to the ED (p=0.001) and a decreased cost of these visits (p=0.002). The MMCI was significantly associated with an increased cost of non-primary consultations (p=0.03). The SECON index was significantly associated with a decreased number of visits to the ED (p=0.004) and a decreased cost of these visits (p=0.005). Other outcomes, including preventive care measures, were not associated with continuity of care in the regression models.

Conclusion: Some indices of continuity of care (COC and SECON) were inversely associated with the number of ED visits and their cost. Other indices were paradoxically associated with increased utilization of healthcare services. Future studies in patients with chronic disorders or the elderly are needed in order to validate and expand the findings reported in the present study.
IMPLEMENTATION OF COMPLEX, TRANSORGANISATIONAL AND MULTIDISCIPLINARY MEDICATION CLINICAL GUIDELINES IN A 1200 BED/EIGHT CENTER HIGHLY SPECIALISED UNIVERSITY HOSPITAL.

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Objective:
- To map the level of compliance with seven clinical guidelines regarding the medication process and the use of a computerized medication module four months after the clinical guidelines were adopted.
- To evaluate if the system tracer methodology is a useful tool in the implementation process of complex, transorganisational and multidisciplinary clinical guidelines.

Methods:
Quality improvement consultants carried out semi-structured interviews following the system tracer methodology in 45 units out of a total of 198 units in Rigshospitalet, Copenhagen University Hospital, during a period of two months. A semi-structured questionnaire was developed and applied in all visits. Nurses, physicians, pharmacists, including the staff involved in logistics and transport of medication participated in the tracers. All visits were planned and scheduled for two hours. The seven clinical guidelines include the medication process from the arrival of the medication in the hospital, to storage and transportation of medication, prescription of medication, the application and knowledge of the computerized medication system, dispensing and administration of medication, medication waste and medication reconciliation upon admission/discharge of patients. All units and their leaders received within a week a written report on compliance with the seven clinical guidelines. In the reports all findings were documented, including recommendations for follow-up and improvements.

Results: The overall finding showed low compliance with the seven clinical guidelines. Already after the initial tracers in 20 units no new findings were generated in the remaining 25 planned visits. Among the staff members interviewed there were a varying degree of knowledge about the seven new medication clinical guidelines due to:
- Different processes in communication – resulting in range spanning from none to a high degree of knowledge
- Extensive variation in prioritization of implementation of the clinical guidelines Knowledge about data i.e. for consumption and reports on medication storage were in most cases not known nor taken into consideration in planning of the implementation of the medication clinical guidelines: Open vials without date of opening / expiry date
- Clutter
- Too large amounts of stored medication
Variation between orders in the medical record and the computerized medication module

Conclusion:
System tracer methodology is a useful method to get an overall view of processes undergoing implementation in a big university hospital. The possibility to collect and document timely data is important in order to initiate action plans for implementation – both for the overall hospital achievement as well as the achievement locally in the units. After a proportionally small number of visits in the hospital units (20) the findings were reproducible and the sample size did not need to be extended. System tracer methodology is a useful but time-consuming tool if all hospital units are to be visited and the tracers cannot stand-alone but will require a follow up visit. System tracers can therefore not be recommended as a tool of first choice when implementing straightforward clinical guidelines. Further intervention in regards to implementation of the clinical guidelines for the medication processes is pending the outcome and recommendation of the medication task-force/work-shops in February if 2010.

How to implement seven complex clinical medication guidelines to a staff of 8.500 (Abstract Isqua)
IMPLEMENTATION OF KANBAN SYSTEM IN HOSPITAL

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Objective: Kanban system would reduce the time required to stocktake and restock the storerooms, and improve the items deliveries accuracy and timeliness.

Methods: Introduction It is a common challenge for hospital staff to keep inventory management effective. There is a lack of publications related to the successful implementation of resupply systems in hospital environment. Various resupply systems have been proposed by management experts of different industries. Kanban system is one of the most important lean tools adopted in logistics. When a unit of inventory is pulled into use, a signal (e.g. card) is triggered that tells the supplier to replace that unit. As long as the inventory is not used, it is not replaced. [1] Current state Pok Oi Hospital (HKSAR, PRC) is a 369 beds hospital. Lacking a central store and each ward had a small storeroom (100 square feet), the supplies were delivered from the distribution center of Tuen Mun Hospital (HKSAR, PRC) 10km away. Staff of the distribution center provided auto resupply service by checking or scanning, and replenishing the wards' storerooms every 2 weeks. The 14-day stock was ineluctably taking up excess space, time and resources. When the stock of an item was low before next supply, additional order would be made via computer system (adhoc order). Methodology It took 4 months to prepare the trail run of Kanban system, which could be divided into 4 phases (Plan-Do-Check-Act). (1) Plan (Oct 2009 to Nov 2009) We paid one visit [2] to the wards' storerooms and two visits to the distribution center. All stakeholders were invited to a 1-day Rapid Improvement Event (RIE) to discuss the implementation plan. Various Lean tools such as Value Stream Mapping (VSM) and Wastes identification were used [2]. The participants filled in a questionnaire evaluating their previous state of storeroom management. A Kanban card with essential information (item name and picture, address of the delivery location & number of items delivered) was designed for each item. The storage locations of items were sought and standardized using 5-S concept. (2) Do We started trial runs in two wards (Day Ward and acute medical ward). When an item was used in the ward, a Kanban card was sent to the distribution center, signaling needs of replenishment. (3) Check & Act (Jan 2010 onward) We sent the evaluation forms every month and visited the sites every week. The implementation was continuously refined according to evaluation and feedback.

Results: After implementation, an average of 3 wrong deliveries per month to each ward was reduced to nil. The mean time from order-to-delivery was reduced from 3 to 1.5 days. Adhoc ordering was cut from 2.5 times per week of 6 items each and 18 minutes per order, to 2 times per week of 5 items each and 12.5 minutes per order. Incomplete supply of item requiring a follow-up delivery happened at once per month (back order) before, but no more back order item was noted afterwards. Up to 36% of space can be saved and the time consumed for storeroom checking was reduced from 37.5 to 25 minutes

Conclusion: Effective inventory management by Kanban pull system was feasible in our pilot run in hospital. Further data would be presented in the Conference.

COUNTRY DIFFERENCES IN CHRONIC CARE MANAGEMENT: ANALYSES OF INTERNATIONAL PATIENT SURVEY DATA

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Objective: To analyse country differences in chronic care management focussing on patients with multiple conditions.

Methods: We analysed data from the Commonwealth Fund International Health Policy Survey 2008, a telephone survey of nationally representative samples of chronically ill adults in eight countries (Australia, Canada, France, Germany, Netherlands, New Zealand, United Kingdom, United States). In our analyses we included respondents with 2 or more chronic conditions (n=4,583), including hypertension, heart disease, diabetes, arthritis, chronic lung problems, mental health problems, and cancer. Chronic care management was measured using 5 questions from the survey (test results available at time of consultation, no unnecessary testing, no waste of time due to poorly organized care, doctors are aware of different conditions, no conflicting instructions). Favorable answers on all questions was considered as good care management. We calculated the percentage of patients with good care management in each country and examined the influence of having a specific condition (among other conditions) on care management, using multivariate logistic regression.

Results: Good care management varied between 58% in United Kingdom and 40% in the United States. New Zealand, the Netherlands and Australia had similar scores as United Kingdom (57%, 57%, and 56% respectively). Care management was best reported by patients having hypertension (among other conditions) and worst among those having mental health problems. The influence of the type of conditions varied substantially between the countries (see table; green is highest positive influence of the condition compared to other countries; red is highest negative influence of the condition compared to other countries). In Australia, having diabetes mellitus had a strong positive influence on chronic care management (+15%), whereas in France it had a negative influence (-5%). In all countries, mental health problems and chronic lung problems had a negative influence on chronic care management except in the Netherlands for chronic lung problems. Table. Influence of type of condition on chronic care management in patients with 2 or more conditions

<table>
<thead>
<tr>
<th>Type of condition</th>
<th>Australia</th>
<th>Canada</th>
<th>France</th>
<th>Germany</th>
<th>Netherlands</th>
<th>New Zealand</th>
<th>United Kingdom</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>11</td>
<td>5</td>
<td>9</td>
<td>-1</td>
<td>10</td>
<td>12</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Heart disease</td>
<td>8</td>
<td>-1</td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>4</td>
<td>-3</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>15</td>
<td>5</td>
<td>-5</td>
<td>12</td>
<td>4</td>
<td>-1</td>
<td>-1</td>
<td>-2</td>
</tr>
<tr>
<td>Arthritis</td>
<td>7</td>
<td>-1</td>
<td>1</td>
<td>-6</td>
<td>-11</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Chronic lung problems</td>
<td>-9</td>
<td>-12</td>
<td>-13</td>
<td>-11</td>
<td>2</td>
<td>-19</td>
<td>-3</td>
<td>-15</td>
</tr>
<tr>
<td>Mental health problems</td>
<td>-17</td>
<td>-12</td>
<td>-18</td>
<td>-13</td>
<td>-14</td>
<td>-19</td>
<td>-20</td>
<td>-11</td>
</tr>
<tr>
<td>Cancer</td>
<td>0</td>
<td>-3</td>
<td>-3</td>
<td>-5</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>-5</td>
</tr>
</tbody>
</table>

Conclusion: Patients from countries with a strong primary care system (Netherlands, New Zealand, United Kingdom) reported relatively high ratings on chronic care management. The varying influence of the type of condition among countries might be explained by differences in access to specific health care services and by different health policies and disease management programs. Exchanging knowledge and experience on chronic care management across countries could be helpful to improve coordination of care and to support healthcare system reform.

LEADERSHIP QUALITY IN MULTIDISCIPLINARY TEAMS FOR UROLOGICAL CANCERS - ARE URO-ONCOLOGISTS AN UNTAPPED RESOURCE?

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Objective:
This study aims to capture systematically and quantitatively the experience of urooncologists in the leadership of urological multidisciplinary cancer teams across the UK.

Methods: A qualitative and quantitative survey was constructed to explore the experience and attitudes of urooncologists towards the urological MDT. The survey was distributed to delegates at the British Urooncology Group annual Meeting in York, England, September 2009.

Results: 62 Delegates completed the survey (response rate 81%). 86.5% attended at least one urology MDT per week. There was no significant difference between the contribution to patient discussions or the weight of opinion carried between oncologists and surgeons (Wilcoxin Signed Ranks Test). Although 75% thought that the chairmanship of the MDT could rotate, only 37% reported that this was the case. Although there was no significant difference in the proportions of respondents who thought oncologists or surgeons (96% and 100% respectively) could chair the cancer MDT, only 24% of oncologists surveyed had been chair of the urology MDT they attended.

Conclusion: Patients with urological cancers in the UK are cared for by multidisciplinary teams (MDTs). As well as urologists, uro-oncologists are core members of the urology MDT. Uro-oncologists are involved in all stages of patient care and anecdotally, they do not often lead the MDT. This survey gives the first nationally representative picture of the experience of uro-oncologists of leadership of urological multidisciplinary cancer teams. It suggests that oncologists are an under-utilised resource for leading cancer care teams and would be capable and willing to increase their involvement. The literature in other specialties suggests that MDT performance is enhanced by having a range of leaders (Haward, 2003). Therefore increasing participations of oncologists in the leadership of cancer MDTs may help to optimise the performance of cancer care teams and consequently improve the quality of patient care.

PATIENT ASSESSMENT OF CHRONIC ILLNESS CARE IN VARIOUS ORGANIZATIONAL FORMS OF PRIMARY HEALTH CARE IN QUEBEC: A MULTILEVEL ANALYSIS

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Objective: Various countries are implementing reforms of their primary health care (PHC) systems. These often aim at better integrating care for populations with chronic illnesses, such as the framework proposed by the Chronic Care Model. Several PHC organizational models exist. This study aims to evaluate patients’ assessment of chronic illness care across PHC models.

Methods: 776 patients with one of four chronic diseases (diabetes, arthritis, heart failure and COPD) were recruited from 33 participating PHC clinics. Patients were interviewed using validated questionnaires (SF-36; Patient Assessment of Chronic Illness Care - PACIC) at baseline and at three subsequent six-month intervals. Multilevel linear regression models were developed to account for the hierarchical structure of the data and provide robust estimates of the association of PHC models with PACIC scores. PHC organisations were classified according to both a typology and taxonomic approach. Four different types of organisations (Community health centre (CHC), Family medicine groups (FMG), private group practices, and single-provider organizations) and five different taxonomic categories (Community-oriented, Coordination-integrated, coordination, professional contact, single-provider) were compared. Patients followed in specialists clinics were also evaluated. All regression models controlled for age, sex, SES, diagnosis, health status, and health service utilisation.

Results: Mean age of participants was 67 years old, 55% were females and most presented with more than one chronic conditions. Participants were followed for their chronic illness in Community health centre (CHC) (25%), Family medicine groups (FMG) (19%), private group practices (25%), single-provider organizations (7%) or at specialists clinics (24%). Average PACIC score was 2.51 (on a scale from 1 to 5). Assessment of chronic illness care was higher on average among patients affiliated to a FMG (2.87/5) and lowest for affiliation with private practices (2.34/5). Community health centres and organisations promoting a more coordinated approach to care performed the best with regards to assessment of chronic illness care by patients. These differences between PHC organisations remained significant in multilevel models after controlling for patient characteristics.

Conclusion: Our study suggests that improvements are required in chronic illness care in all PHC and specialist care settings. Current reforms to PHC organizations, promoting a more community oriented and coordinated approach to care could provide the basis for improvements in reception of appropriate chronic care in the future.

THE MORPHEE NETWORK: IMPROVING CARE FOR SLEEPING DISORDERS IN FRANCE AND EFFECTS ON SLEEPING PILL CONSUMPTION

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Réseau Morphée, Réseau Morphée, GARCHES/FRANCE

Objective: Evaluation of multidisciplinary management in the context of a health network on sleeping pill consumption in patients with sleep disorders.

Methods: Sleep disorders are a major cause of consultation in France and lead to inappropriate and chronic prescription of sleeping pills, especially in the elderly. Managing sleep disorders in primary care in France is difficult. GPs lack basic training in diagnosing and treating insomnia, access to secondary care is slow, with clinic delays of 3-6 months, and despite the recommendations of the national insomnia guidelines, access to behavioural therapy for insomnia is limited. The Morphee network is a regional health network dedicated to improving care for sleep disorders, focusing on identifying the optimal care pathway for each individual patient, organising behavioural therapy groups for primary insomnia, training health professionals and educating the public. The care pathway assessment uses a sleep questionnaire, analysed by the medical coordinators which, for most patients, identifies the sleep disorder and the optimal care pathway. Difficult cases are reviewed by a consulting GP (trained in the analysis and triage of sleep disorders). Patients are directed either to a 3 session behavioural therapy group, to a sleep specialist for a consultation or an investigation, or finally, in the case of a sleep disorder secondary to a medical or psychiatric problem, to their own GP or psychiatrist.

Results: 229 health professionals are members of Morphée. 3804 patients are followed by the network with a mean age of 52 years (53% < 55 years, 32% 56 – 70 years, 15% >70 years). 64% have sleep apnea, 16% insomnia, 8% hypersomnia and 5% a co-morbid sleep disorder linked to an underlying psychiatric problem. 1282 new patients were included in 2009. Four key indicators were identified: two process indicators: speed of needs assessment, result of the assessment, and two clinical indicators: change in insomnia severity and change in the consumption of sleeping pills. A study of the process indicators in 215 patients who had a direct care pathway assessment in 2009 found that the needs assessment process took on average 3 days. 62% patients were directed to a sleep specialist, 17% directly to a behavioural therapy group, 18% to a consulting GP and 2% to another management option. Detailed study of the clinical indicators was performed on patients participating in the behavioural therapy groups. Since their inception in 2006, 211 patients have been offered a place, of whom 185 completed at least one session and 142 have completed the programme. A study in 2009 of 102 patients found a significant improvement in the insomnia severity scale (17,3 - 14,4 p=0,0001). CBT was equally effective in young (<55) and older (56+) patients, but the intensity of the insomnia improved more in older patients (p = 0,0305). The consumption of sleeping pills declined significantly between the first (83,3%) and final (62,5%) session (ch² p = 0,0237). A follow-up survey (n=33) in 2009 on the effect of the CBT sessions found that 61% had reduced their consumption of sleeping pills overall.

Conclusion: The Morphée Network is a multidisciplinary team which performs rapid assessment and management of patients with sleep disorders. Process and clinical indicators are continually monitored in order to improve quality, indicators are regularly reviewed and systems modified to better follow the results of the team’s intervention. A prospective study on the effect of the direct care pathway assessment sleeping pill consumption is underway, but preliminary data indicate that a sustained reduction in sleeping pill use is seen in patients treated by direct access CBT. National extension of the network approach to sleep disorders could reduce inappropriate sleeping pill consultation in France.
IMPLEMENTATION OF FAST TRACK RECOVERY PROTOCOL IN PATIENTS REQUIRING MAJOR ELECTIVE COLORECTAL SURGERY IN HONG KONG


Objective: To decrease the post-operative hospital stay in patients receiving major elective colorectal surgery without compromising their complication and readmission rate

Methods: Tuen Mun Hospital is a regional hospital in the New Territories west in Hong Kong, serving a population size of 1.1 million. A hospital-based retrospective audit was performed to review our results in treating colorectal cancer patients in 2006. A multidisciplinary team was established including members from specialties that are responsible for the peri-operative care of colorectal cancer patients. A clinical pathway - Fast Track Protocol was designed according to experience from evidence based medicine and with reference to Chinese culture and local situation. All patients requiring elective colorectal resection are potential candidates, usually patients with a more predictable recovery course are selected to join the program. The essence of the pathway are: Pre-operative phase - All patients are seen at a pre-admission clinic before the surgery. Patients' physical condition are optimised, patient education are given regarding the entire peri-operative pathway including the early discharge and follow up plan. Nutritional supplement and psychological counselling can be provided if required. Patients with potential post-operative discharge problem will be identified and appropriate placement arranged. Intra-operative phase - Anaesthetic protocol are standardized, conservative intra-operative fluid protocol is adopted and the surgeon will minimise the use of nasogastric tube and surgical drain. Post-operative phase - All patients are treated by a protocol driven post-operative pathway, which include early oral feeding, early removal of foiley's catheter and early mobilisation. All patients receive epidural analgesia or patient controlled analgesia for 48 hours for pain control. There are protocol driven discharge criteria, patients will receive telephone call from colorectal specialist nurse and home visit by community service nurse for wound caring after discharge from hospital. All the data are collected prospectively, reviewed periodically and reported as clinical indicators on a regular basis. There has been ongoing modification of the protocol based on the audit result.

Results: From September 2007 to March 2009, 306 patients received elective colorectal surgery in Tuen Mun Hospital, 181 patients (59.2%) were selected for the protocol, 39 patients failed to complete the pathway because of unexpected operative findings or post-operative complications. 142 patients (78.5% of the recruited) completed the pathway and the peri-operative indicators are summarized as follow:

<table>
<thead>
<tr>
<th></th>
<th>Fast Track</th>
<th>Patient Historical Audit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid diet (Days)</td>
<td>2.0*</td>
<td>4.3</td>
</tr>
<tr>
<td>Drain (Days)</td>
<td>2.0*</td>
<td>6.6</td>
</tr>
<tr>
<td>Mobilization (Days)</td>
<td>2.0</td>
<td>N/A</td>
</tr>
<tr>
<td>Post-op stay (Days)</td>
<td>5.0*</td>
<td>11.5</td>
</tr>
<tr>
<td>Complication (%)</td>
<td>16.4</td>
<td>16.9</td>
</tr>
<tr>
<td>30-day readmission (%)</td>
<td>7.7</td>
<td>8.8</td>
</tr>
<tr>
<td>Re-operation (%)</td>
<td>1.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Mortality (%)</td>
<td>0</td>
<td>3.8</td>
</tr>
</tbody>
</table>

*Statistically significant The post-operative length of stay was significantly reduced from 11.8 days to 5 days. Our results were benchmarked with results of other major hospitals in Hong Kong, showing that the post-operative length of stay in our elective colorectal surgery is one of the shortest.

Conclusion: Implementation of Fast Track clinical pathway can significantly reduce post-operative hospital stay. 59.2% of our colorectal patients were recruited and majority completed the pathway. The post-operative length of stay was significantly reduced from 11.8 days to 5 days without compromising the readmission or complication rate. With co-operation among various departments and professionals, we managed to provide our colorectal patients a timely and effective multidisciplinary service. The implementation and success of our Fast Track Protocol has stimulated interest from other surgical teams for starting similar programs.
ANNUAL REVIEWS FOR CORPORATE HEALTH BOARDS

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Objective: The research reviews the extent to which NHS Corporate Boards undertake formal and rigorous annual evaluation of their performance and that of committees and individual directors and suggests a standard format for future annual reviews.

Methods: The work is based on reviews of NHS annual reports, interviews and a literature and best practice review undertaken in 2009/10, summarised as a briefing paper to be published by the Good Governance Institute in 2010. Both the Combined Code on Corporate Governance, (FRC, 2008) and Monitors Code of Governance expects the Corporate Board to undertake a formal and rigorous annual evaluation of its own performance and that of its committees and individual directors. The World Class Commissioning Governance requirements expects evidence of Board grip; that could be identified in a Board Review. Individual evaluation should aim to show whether each director continues to contribute effectively and to demonstrate commitment to the role (including commitment of time for board and committee meetings and any other duties). Workshops were used to determine the themes which a Board review should cover and a bookmark and maturity matrix was constructed to provide a reminder and simple ready reckoner of boards current performance and future action. The seven element scale provided a simple recording instrument.

Results: A review of Boards annual reports in 2009 noticed the absence of reporting of formal Board Reviews as recommended by the Combined code and supported by both Monitor for Foundation Trusts and World Class Commissioning requirements. The matrix developed in the workshops identified 10 themes: Vision & purpose; Strategy; Leadership; Assurance; Probity; Decision making and decision taking; The annual cycle of business; Board treatment of safety; quality; performance and finance; Clinical involvement; Service user and public involvement; Board supports and main committee structures; Appraisal process of directors, and any other existing feedback system the board uses; The seven element scale produced a mean score of less than 4 across all 10 elements suggesting considerable room for improvement. A repeat study in 2010 will measure progress since the production of the guide and Care Quality Commission/World Class Commissioning results and comment on the FRC recommendation that annual board reviews should be externally facilitated at least every three years;

Conclusion: Annual reviews have not been applied fully in corporate health governance which means that Chairman, Boards and stakeholders are unlikely to be clear of their priorities for both Board and individual Director's development. This work is part of a programme by the Good Governance Institute to develop a good governance body of knowledge (BOK) to support assurance that corporate boards on safe, joined up and cost effective care. The guidance and maturity matrix provide a reminder and simple format for Boards to undertake a formal and rigorous annual evaluation of their performance and that of committees and individual directors.

APPRECIATIVE INQUIRY AND VALUE CHAIN TO IMPROVE CLINICIAN INVOLVEMENT IN HOSPITAL STRATEGIC PLAN DEVELOPMENT

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Objective: To increase clinician involvement in hospital strategic plan development

Methods: Hospital clinical strategic plan was developed at one public teaching government hospital in 2008 within four steps: (1) a workshop based on appreciative inquiry (Coorperrider and Whitey, 2005) was undertaken to develop clinician team work and enthusiasm in developing plan to improve hospital quality. (2) Three months serial discussions between facilitators and hospital directors were carried out to make consensus of guidelines that will be used in clinical strategic plan development. (3) Five months serial workshop between facilitators and each clinical department using the agreed guideline in previous step were made to formulate details of clinical initiative strategic as a hospital mission and vision breakdown (4) a final workshop was undertaken to refine the clinical strategic plan.

Results: 96 (85%) from 120 senior clinician participated the initial workshop, the majority agreed to use positive thinking in process of developing hospital quality improvement plan. There were six guiding principle agreed to be used in clinical strategic plan, i.e.: (1) Balanced Scorecard (Norton and Kaplan, 1996) as a framework to describe hospital mission and vision into goals and initiative strategic. (2) National Public Service Excellent Guideline Program as a guideline to deliver public service through transparent and accountable thought. (3) Hospital for the Future (Joint Commission, 2008) as a concepts picture guideline of the hospital in the future, consist of clinical effectiveness, safety, patient centeredness, responsive governance, staff orientation and efficiency. (5) Value Chain (Michale E Porter, 2006) as a framework of interconnections between all activity in hospital, including: primary activities as an activity involve with pre-care, clinical care and post-care, and supported activities which connected to resource management including human resource, technology and infrastructure. (6) Clinical Governance (Western Australia, 2005) as a detail standard to improve clinical care quality consists of: Customer value, Clinical performance and evaluations, Clinical risk management and Professional development and management. The final clinical strategic plan was accepted by most of the clinician shown in picture 1.

Conclusion: Clinicians involvement in hospital strategic plan development are important because they have better understanding about what will be occur in clinical care technology and knowledge in the future. There are certain management approaches to improve clinician involvement and several frameworks as a guideline to develop hospital clinical strategic plan. In this research, appreciative inquiry was success to develop clinician positive thinking and to develop team work, integration of six guiding principle was successful to be used as a tools for develop the detail of the clinical strategic plan.
PERSONALIZING MANAGEMENT AND DEMYSTIFYING PERFORMANCE: THE PLANETREE MODEL DEDICATED TO HUMAN RESOURCES

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Objective:  
Faced with staff recruitment and retention difficulties threatening accessibility and quality of care and specialized services, the CRE relied upon the principles of the Planetree Patient-Centered Care Model (PCCM) to transform its human resources management approach and hoist itself up among the best employers in Québec.

Methods: The ten components of the PCCM were redesigned in five basic principles governing our human resources management: § The quality of our human interactions § Empowerment § The organization as citizen § The person as a holistic being § Healing environments To support its methodology, senior management created a coherent and integrated approach in which new management principles have become the filters for all decisions and actions in order to reach three objectives: § becoming a choice employer; § offering personalized health care and services; § generating solutions for the future. The process took place as follows: 2004 - Commitment from the Board of Directors and leadership from senior management - Revision of the vision, mission and organizational values - Adaptation of the PCCM to the CRE’s specific context - Implementation of a Steering Committee 2005 - Creation of a Planetree coordinator position - First organizational diagnosis based on Planetree components - Leadership seminars for senior management - Development of attitude and behavior indicators to be privileged in the management of a people-centered environment 2006 – Today - Periodic staff seminars - Development of management practices based on the components Organizational assessments have been implemented to monitor the evolution of the improvement process and understand its impacts: § Annual staff mobilization survey § Annual users’ satisfaction survey § Annual survey on the safety of the environment § Annual questionnaire to validate the Healthy Business standard § Planetree focus groups every 12-18 months § Best Employer Challenge every two years § Survey on the staff psychological health every three years § Valuation of attitudes and behaviors every five years Plus various performance measures: retention and absenteeism rates, salary insurance... Furthermore, during the first two years of implementation, the capacity to generate, disseminate and absorb knowledge in the organization was monitored through a research action conducted with the Université de Sherbrooke and using the Learning History method.

Results:  
Benefits gained from the implementation of the PCCM: § Increased organizational performance observed in the assessments from the CQA – staff mobilization assessment, best scores for each of the six survey indicators; consequently, we are now leading the averages from other comparable establishments. The six indicators were: fulfillment, involvement, collaboration, support, communication and leadership. § Best Employer Challenge, result improved yearly over the last five years (from 3.91 to 4.17/5) § Retention rate reaching 96%+ since 2007 § High level of staff commitment in various dimensions of organizational life (see illustration below) § Increased users’ satisfaction § Reduced salary insurance costs § Reduced costs related to hiring, integration and training § No vacant position

Conclusion: The CRE has been among the best Québec employers for the last five years in the Best Employers Challenge, winning first place in its category twice. In 2008, it obtained the Planetree Designation, marking the CRE among the best international establishments. The Planetree Québec Network was created and has close to fifteen members. In 2013, it will be hosting the first Planetree Conference in a French-speaking country.
MITIGATING RISKS AND IMPROVING OUTCOMES FOR RESIDENTS WITH INNOVATIVE APPROACHES TO CLINICAL GOVERNANCE IN HEALTH SERVICES

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Objective:
Integrating and supporting quality approaches in Victorian hospitals/health services that operate public sector residential aged care services (PSRACS) will support boards and executives with their clinical governance responsibilities; mitigate against adverse outcomes for residents and provide opportunities to increase capacity for a organisational culture of quality that moves beyond an accreditation led culture of quality.

Methods:
The Victorian State Department of Health with 6,400 beds is the largest public provider of residential aged care beds in Australia. These beds are operated by health services that govern a range of programs with different priorities. The department has developed an innovative model to promote an integrated approach to quality in these health services. This model promotes streamlining organisational operations and a culture of quality beyond the minimum standards of accreditation. It highlights that governing clinical risk includes responsibilities across all program areas. Most research on clinical governance focuses on acute and ambulatory settings with limited research in residential aged care. Residents are becoming more vulnerable to clinical harm. Governing clinical risk in residential aged care is as important as in other settings. The model aligns with approaches in acute health and links the domains of clinical governance to outcomes at the board, staff and resident levels. Investment in research and partnerships has seen the development of Strengthening Care Outcomes for Residents with Evidence (SCORE) and the Aged Care Quality Indicators. SCORE, commencing in 2007, is a program that identifies, implements and evaluates standardised approaches for areas of clinical risk. The quality indicator program commenced in 2003 and recognises the importance of monitoring and measuring performance and quality of care. Evaluated in 2009 with reference ranges developed in 2010. A multi-methods approach was applied to these programs.

Results:
SCORE o Clinical risk was defined as a specific definition was not available in the literature. o Eighteen areas of clinical risks were identified for residential aged care - evidenced through the literature, database review and consultation. o Ten clinical risks were prioritised and standardised care processes were developed for these - evidenced by a range of criteria including evidence based guidelines. o Increased engagement of executives and staff to manage clinical risk. Quality indicators o Five quality indicators were developed and implemented – evidenced by literature and data review and consultation. o The impact of the indicators on residents and services are positive. o Variation was identified in practises related to managing indicators at the local and clinical governance levels. o The need for comparative data to facilitate interpretation and use of the indicators was identified. Reference ranges are being developed and results will be available for this presentation. General results o The 18 areas of clinical risks correspond with important domains of care for older people in all program areas. o The link between the activities to achieve accreditation, and improvements for residents, is often assumed. o Key drivers and barriers to facilitating integrated quality systems were identified.

Conclusion: New knowledge gained is the uniqueness of this approach to residential aged care and the identification and definition of clinical risks in this area. The results align with the objectives specifically engaging executives and care staff; identification of clinical risks; positive outcomes for residents and identification of opportunities to increase organisational capacity to move beyond an accreditation led culture of quality. Implications are that although this approach focuses on PSRACS it is applicable to the care of older people across program areas and aged care in all settings; the model will support boards and executives with their governance responsibilities for quality care to residents and a risk management model can mitigate against adverse outcomes for residents.
Objective: The purpose of this project was to use storytelling to change the culture of the Board Quality Committee and create a new partnership between Board members and staff.

Methods: Starting in 2005, the hospital administration began sharing stories, cases, and examples of bedside events with the Board Quality Committee. These included adverse events, “good catches,” and stories of success. The effort was led by Bonnie Adamson (CEO), Susan Kwolek (VP of Quality), staff members from Quality and Risk Management, and the respective Board Chairs, Dunbar Russell and Bruce Rothney. Incidents chosen for review were based on Quality priorities, as defined by Susan Kwolek, reported in the meeting by invited staff, and discussed by the Committee. Implications and potential learnings were identified, and a shorter three-month followup was often conducted.

The specific objectives for this project were to help the Board move from Operational to Strategic focus, from Blame and Shame to Learning and Just Culture, from People to Process orientation, and from a Boardroom perspective to a Bedside perspective. Methods including asking a consistent set of questions for each story or case study, including standouts, learnings, recommendations, and agreed-upon changes in systems, structures, and processes. The project was an ongoing process and took place over a three-year timeframe.

Results: Qualitative results included a significant change in the climate and culture of the Board Quality Committee, along all of the key dimensions noted earlier. New Quality initiatives were identified and linked to Board strategy and vision, thus providing more guidance and leverage for unit-level improvement activities. Board members gained confidence that they were exercising their governance responsibilities effectively. Staff felt appreciated and their commitment and followthrough rose accordingly. Administrators felt more able to link hospital strategy, operations, and cross-unit alignment. Quantitative evidence is harder to come by. The hospital has improved dramatically in several key areas. For instance, there has been a significant decline in adverse events: no cases of Ventilator Assisted Pneumonia since October, 2008, and one Central Line Infection since January, 2007. We do not know whether this project contributed directly to these outcomes, though the decline in adverse events would seem to be correlated with the attention paid to this as part of this project.

Conclusion: In our view, the project was successful in changing the culture of the Board Quality Committee. The project also created new knowledge. The Board had an awakening about the realities of life in a hospital; at first, this came as a shock and surprise: “you mean things like that actually happen in the hospital?” At times this triggered anxiety, blame, and command-and-control behavior, as in demands for quick fixes in policy, procedure, or rules. But Board members could see that the CEO, VP of Quality, and staff were serious about partnering with them. They began to appreciate that the “fixes” were more complex than they had thought at first and developed a better understanding of the everyday challenges faced by staff. Board members also responded to the administration’s insistence on following “Just Culture” principles (i.e., learn over blame, stewardship over quick fixes). The implications of this study are that storytelling can be used at the Board level with positive effect. Sharing different kinds of stories, ranging from successes to adverse events, can lead to a new partnership between the Board, administration, and staff. However, this is not a simple process. Key Board members and administrators must work closely together in order to balance learning with accountability, appreciating strengths while openly reviewing mistakes. The process requires ongoing dialogue, iteration, and stewardship. This is why we call it the Board Quality Journey.
HOW IDENTIFYING THE ELEMENTS OF FAILURE TO RESCUE CAN ENSURE CONSISTENT AND EFFECTIVE INTERVENTION FOR PATIENTS AT RISK.

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Objective: To describe and analyse the elements that constitute “failure to rescue” in relation to the intervention for patients at risk in the acute ward setting, in order to implement strategies to mitigate patient risk.

Methods: This research was conducted over a 2.5 year period in an acute inpatient surgical unit. It commenced with adverse patient outcomes following incidents about the recognition and management of deteriorating patients. Nursing staff reported incidents in which they believed a patient was at risk of catastrophic deterioration and they were unable to engender a response from medical staff. Simultaneously, instances in which a patient continued to deteriorate without intervention, despite their clinical parameters being diligently measured and recorded by nursing staff, were also reported. In both of these types of cases, many of the patients suffered adverse outcomes, increased length of hospital stay, cardiac arrests and death. Both of these types of cases are well reported in the literature, they are described collectively as ‘Failure to Rescue’ (Clarke & Aiken, 2003). Two distinct elements of Failure to Rescue have been defined: failure to recognise the level of risk to the patient and failure to respond to the patient’s level of risk (Clarke & Aiken, 2003). Each of the incidents were analysed using an incident management process, including gathering information from the staff involved and from the patient’s clinical record, mapping the sequence of events which preceded the occurrence of the incident, analysis of the information gathered to develop causal factors and development of recommendations to minimise the opportunity for the incident to occur again. Focus groups with medical and nursing staff were arranged to discuss the findings of the incident investigation and to discuss the range of possible solutions to prevent the incidents from recurring. Plan, Do, Study, Act Cycles were employed to develop and implement a system for the recognition and management of deteriorating patients. This system was titled R2E2 (recognition, response, escalation, escort). Following the implementation of the R2E2, failure to rescue incidents occurred. These incidents were explored with staff in focus groups, to identify further contributory factors.

Results: The literature describes two distinct elements of failure to rescue: 1) failure to recognise; and 2) failure to respond. A review of the incidents which occurred following the introduction of the R2E2 demonstrated the presence of additional elements to ‘failure to rescue’. These elements are failure to elevate patient risk to ensure an appropriate response and failure to challenge a perceived risk to patient safety. Failure to challenge occurs when staff perceive a threat to patient safety and do not intervene and challenge the clinical decision which places the patient at risk. Failure to elevate occurs when staff recognise a perceived threat to patient safety and are so concerned for the safety of the patient that they challenge the admitting medical officer. If this challenge goes unheeded then staff will not elevate this concern to anyone else as they perceive the admitting medical officer as having the ultimate say in patient management.

Conclusion: This research demonstrates that there are four distinct elements of failure to rescue incidents. The patient safety problem of failure to rescue is usually only addressed in clinical terms whereas, this research demonstrates, the problem must be understood in a broader context. Strategies to mitigate failure to rescue incidents will not ensure the consistent and effective intervention for patients at risk unless each of the four identified elements are addressed.

Does Emergency Physician Disposition Decision Making Have an Impact on Adverse Events?

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Objective: We sought to determine how emergency physicians make discharge decisions for high acuity patients and the impact these have on adverse events (adverse outcomes associated with health care management).

Methods: From June to August 2008, we conducted a real-time survey of attending staff emergency physicians for all consecutive patients discharged from geographic high acuity (non-ambulatory) areas of a tertiary care, academic emergency department during three peak discharge times. We excluded decisions about admitted or pediatric patients. This piloted survey used standardized questions about the rationale for emergency physician decisions and the use of specific criteria or evidence. We collected data on patients' initial emergency presentation and any subsequent 30 day adverse outcomes (deaths, admissions, unscheduled return to the emergency department and clinic visits). Three trained emergency physicians independently reviewed de-identified case summaries using a structured adverse event review process. Analysis included descriptive statistics and odds ratios.

Results: We interviewed 32 of 36 eligible emergency physicians immediately after their disposition decisions for 366 patients (88.9% response rate). The physicians were 71.9% male and experienced (53.1% > 10 years in practice). Half of the patients were male (54.9%) with a mean age of 60. The most common presenting complaints were chest pain, generalized weakness or dizziness and abdominal pain. For the majority of encounters, emergency physicians based their decisions on clinical judgment (320/366, 87.4%) while the remainder were based on specific evidence (46/366, 12.6%). There were 69 adverse outcomes (18.9%) and 10 adverse events (2.7%, 95%CI: 1.1-4.4%). All adverse events were deemed preventable. The likelihood of experiencing a preventable adverse event was not associated with decision making rationale (p=0.5824), gender (OR 4.61 95% CI:0.55-39.04) or experience (OR 1.72 95% CI:0.40-7.30). Most common themes of basis of disposition decision

<table>
<thead>
<tr>
<th>Theme (may include &gt;1 per decision)</th>
<th>N = 366 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution/control of symptoms</td>
<td>114 (31.6%)</td>
</tr>
<tr>
<td>Normal investigations</td>
<td>105 (29.1%)</td>
</tr>
<tr>
<td>Clinical criteria</td>
<td>55 (15.3%)</td>
</tr>
<tr>
<td>Diagnosis established</td>
<td>53 (14.7%)</td>
</tr>
<tr>
<td>No indication for admission/suitable for outpt Rx</td>
<td>53 (14.7%)</td>
</tr>
<tr>
<td>Good follow-up in place</td>
<td>40 (11.1%)</td>
</tr>
<tr>
<td>Presenting signs/symptoms not worrisome</td>
<td>39 (10.8%)</td>
</tr>
</tbody>
</table>

Conclusion: Emergency physicians most often rely on clinical acumen rather than evidence-based guidelines when discharging patients from the emergency department. This approach was not associated with more preventable adverse events. These results suggest that future disposition decision support interventions should focus on influencing physician judgement rather than specific criteria-driven decision rules.

Reference: Contact author
ASSESSING THE FEASIBILITY OF SHARING LEARNING FROM INTERNATIONAL REPORTING SYSTEMS.

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Objective: In view of patient safety incident reporting systems (IRS) functioning in isolation of each other, with little interaction, we aimed to assess the possibilities for sharing the learning generated by these systems by reviewing and comparing guidance issued internationally.

Methods: In order to focus our investigation, four events were selected. The four events chosen were: wrong site surgery, wrong group blood transfusion, intravenous injection of concentrated potassium, and unrecognised neonatal hyperbilirubinaemia. These were selected following a review of lists of ‘never’ or sentinel events published by IRS. The four events selected appear on a majority of lists, suggesting they have been recognised as having particular importance to patient safety. Reporting systems around the world were then searched for any alerts or advisories produced on these issues. Initially reporting and learning system websites were accessed for publicly available alerts. If no alerts were identified then organisations were contacted directly. The nature of the recommendations within the alerts and advisories was analysed qualitatively. Outputs from different reporting and learning systems were assessed for their international applicability.

Results: Alerts were identified on each of the chosen events from several agencies, all of which are in the developed world. Alerts on wrong site surgery have been issued from agencies in the USA, the UK, and Australia. Guidance on preventing wrong group blood transfusion has been published by agencies in the USA, the UK and Australia. Alerts regarding concentrated potassium exist from the USA, the UK, Australia, Canada and New Zealand. Neonatal hyperbilirubinaemia is addressed in alerts from the USA. There were many similarities between alerts from different countries. These similarities included general awareness-raising recommendations but also more robust, systematic changes to prevent errors. For example, colour coding of potassium chloride vials and removing concentrated potassium chloride from clinical areas. It appeared that organisations around the world had carried out comparable pieces of work to their counterparts elsewhere and reached very similar conclusions. There were also differences. These were partly related to the differing structures of healthcare systems around the world. Despite these differences many recommendations were applicable across healthcare systems. International information sharing is already occurring, with organisations utilising other systems’ work to produce their own alerts. For example the Australian Commission for Safety and Quality in Health Care used specifications developed by the UK’s National Patient Safety Agency in its recommendations for patient identity name bands.

Conclusion: There is potential for alert sharing between incident reporting systems internationally. Alert sharing could help raise awareness of critical issues in patient safety more rapidly, particularly when rare events are concerned. It may also help reduce the amount of resource needed to produce definitive guidance and make reporting and learning more efficient. The global patient safety community should work together to create a mechanism to allow outputs from reporting and learning systems to be easily accessed from anywhere in the world. Attention should also be paid to building capacity for reporting and learning systems in the developing world.
Objective: To evaluate clinicians’ attitudes and self perceptions towards managing patient expectations and patient satisfaction and to create a knowledge base for shaping a structured plan for intervention.

Methods: Achieving high levels of patient satisfaction is fundamental to the clinical success of healthcare organizations. When assessing quality of care, patient satisfaction has become as important as other clinical measures. Meeting patient expectations is a major element in an effective clinician-patient relationship and failure to identify patient expectations can lead to dissatisfaction. Thus, clinician's awareness, performance and attitudes towards patients' expectations represent key determinants of patient satisfaction. During January-December 2009, we implemented an international cross-sectional survey in four academic hospitals located at Denmark, Israel, United Kingdom and USA to assess clinicians’ attitudes and self perceptions towards patient expectations and patient satisfaction. A random sample of physicians and nurses were chosen from medicine and surgery departments. The study questionnaire examined three main aspects related to patient expectations and satisfaction: clinicians' work experience, hospital administration activities and clinicians' attitudes. The questionnaire underwent a qualitative review as well as pre-test and was found to be valid and reliable. Bivariate analyses were conducted via chi-square tests, and multivariate analyses were conducted via logistic regression.

Results: During the study, we collected 1004 questionnaires from the hospitals: Denmark, Israel, United Kingdom and USA (217, 269, 261, and 257 respectively). Overall, we had a 79.9% response rate. Summarizing the data, 87.2% of the clinicians stated that the level of awareness amongst clinicians with respect to patient expectations is moderate to low, with significant differences (P<0.001) between the countries: Denmark (70.3%), Israel (88.2%), United Kingdom (90.2%) and USA (96.9%). Although 89.6% of the clinicians stated it is important to ask the patients about their expectations, only 16.1% of the clinicians reported actually asking (McNemar’s p<.0001). Nurses (20%) ask patients more than physicians (11.4%) about their expectations. After controlling for years of experience and country, the result held up in multivariate logistic regression (odds ratio of nurses vs. physicians = 1.98; 95% CI [1.36, 2.90]). Nurses without an academic degree were more likely (29.4%) to ask about patient’s expectations compared to nurses with an academic degree (13.1%) (p<.0001). Overall, 19.5% of the clinicians thought physicians and nurses had adequate training to cope with patient’s expectations. This was significantly higher among nurses than physicians (22.4% vs. 16.5% respectively, p=0.019). Only 6.9 % of all clinicians claimed that their department has a structured plan for managing patient expectations. This was again different between nurses and physicians. While 9.7% of the nurses claimed that their department has a structured plan for managing patient expectations only 3.6% of the physicians claimed likewise (p=0.0003). When asked whether hospital management should take a more active role in conducting patient satisfaction improvement programs, 85.5% clinicians thought that it should. There were borderline significant differences in this variable between nurses and physicians (p=0.080) and in years of experience (p=0.081).

Conclusion: Meeting patient expectations is essential to improving care and results in better health outcomes and satisfaction. However, while clinicians think it is important to ask patients about their expectations they are failing to perform this step. Our results suggest that health care organizations should take a more active role in increasing clinician's awareness, conducting training to cope with patient’s expectations and initiating a structured patient satisfaction intervention. Differences between clinician groups (i.e. physicians vs. nurses) should be recognized and addressed when initiating system-wide interventional programs. We believe that our findings will help shape structured plans for managing patient expectations and improving patient satisfaction.
IMPACT OF STAFF ABSENTEEISM ON PATIENT SATISFACTION: A STUDY REALIZED IN 25 FRENCH HOSPITALS PARTICIPATED TO THE WHO-PATH PROJECT IN 2008

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Objective:
The international performance assessment project co-ordinated by the World Health Organisation pan-Europe project in Barcelona (PATH project: Performance Assessment Tools for Hospitals) has started in 2004 and is based on a multidimensional dynamic model containing 6 hospital performance dimensions: clinical effectiveness, efficiency, responsive governance, safety, staff orientation and patient centeredness. In France, the second wave of data collection began in 2008 and 43 public and private hospitals of different sizes have participated. The objective of this study was to test interactions between two of the dimensions of the model: staff absenteeism (staff orientation) and patient satisfaction (patient centeredness).

Methods: Inpatient satisfaction with medical and nursing care was explored by the widely used 16 items EQS-H scale including 2 dimensions related to ‘medical information provided’ and ‘relationships with healthcare providers’. ‘Accommodation and premises’ (8 items) dimension was explored by another widely used validated satisfaction questionnaire (SAPHORA). Items are rated on a 5-point scale ranging from 0 to 4. Both instruments had shown excellent psychometric properties. Absenteeism rates were evaluated for nurses and nursing assistants. They were defined as the ratio between the number of unscheduled days absent from work between 1 and 7 days on the total number of nurse or nursing assistants. 25 hospitals, 13 public and 12 private hospitals, were able to collect both patient satisfaction and absenteeism data. To take into account the clustered structure of the data, a mixed linear model was performed.

Results: Nurses mean absenteeism ratio was significantly higher in private structures than in public ones (0.33+-0.12 versus 0.15 +- 0.10 - p<0.001). Patient satisfaction scores were significantly higher in private structures too. After adjusting the number of hospital beds and the type of structure, results showed that a higher level of nurses’ absenteeism was significantly correlated to a lower patient satisfaction score towards ‘medical information delivered’ (p<0.05). Furthermore, similar results were found for nurse assistants’. Nurse assistants’ absenteeism was significantly correlated to a lower patient satisfaction score towards ‘accommodation and premises’ (p<0.02). The working group have decided to share results in order to initiate benchmarking. Original solutions were found to improve patient satisfaction. Some of them were based on improvements in staff work environments. Collection in routine of nurses and nurse assistants’ absenteeism and patient satisfaction data is planned in 2010.

Conclusion: This work shows the influence of staff absenteeism on patient care and patient satisfaction, in particular medical information delivered. Staff absenteeism is an indicator related to job satisfaction. These climate staff characteristics seem to be perceived by the patient and should be taken into account in improvement actions. Numerous studies found that shared governance management models allow a better job satisfaction (better implication, less stress, less turnover). If hospitals are to satisfy patients’ needs and expectations, assessing patient satisfaction is crucial. Patient factors considered in previous work have included patient sociodemographic variables and patients’ health-related behaviours, but they can barely explain 10% of the variance. Staff absenteeism as an indicator of job satisfaction seems to have an impact on patient satisfaction. These findings need to be confirmed by other studies.

Reference:
THE NORDIC PATIENT EXPERIENCES QUESTIONNAIRE (NORPEQ): CROSS-NATIONAL COMPARISON OF DATA QUALITY, INTERNAL CONSISTENCY, AND VALIDITY IN THREE NORDIC COUNTRIES

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Objective: This article evaluates and compares the Nordic Patient Experiences Questionnaire (NORPEQ) for data quality, reliability, and validity following surveys of patients conducted in Finland, Norway, and Sweden.

Methods: The NORPEQ instrument was developed in Norwegian and it was translated into the other Nordic languages using the forwards-backwards methodology. In each of the three Nordic countries 500 patients randomly selected after receiving inpatient treatment were sent the questionnaire by mail. In Finland data were collected from October to November in 2009, in Norway during April 2006, and in Sweden from February to March in 2009. NORPEQ was also included in a national survey in Norway which was in field from September to December 2006. Items were assessed for data quality and levels of missing data. Dimensionality was assessed using principal component analysis (PCA) and internal consistency by item-total correlation and Cronbach's alpha. Construct validity was assessed by correlating NORPEQ scores with variables known to be related to patient experiences. The final NORPEQ scores were calculated by adding the responses for the six experiences items and transforming the scores to a 0-100 scale where 100 represents the best possible experiences of care.

Results: Response rates ranged from 45.1% in Norway to 84% for Sweden. Levels of missing data were low for all items across the surveys. PCA identified one component with six experiences items. The six experiences items were: whether or not doctors are understandable, doctors' professional skills, nurses' professional skills, nursing care, whether or not health personnel were interested in patients' problems, and whether or not patients got information on tests. Mean NORPEQ scores ranged from 74 in Norway to 79 in Sweden on the 0 to 100 scale. Cronbach's alpha ranged from 0.85 in Norway to 0.88 in Sweden. In addition to the NORPEQ items, two items asked about general satisfaction and incorrect treatment. High levels of correlations were found between the NORPEQ scores and general satisfaction; all were in the range 0.72-0.77 for all surveys. Correlations with incorrect treatment were lower and in the range 0.24-0.39. The results of tests of construct validity followed the hypotheses for all countries.

Conclusion: The NORPEQ is a brief measure of patient experiences but measures vital aspects of the health care experiences that directly relate to the treatment and care patients receive at the hospital. The current study found that the majority of patients in the three Nordic countries reported good experiences of care in the upper region of the scale. We suggest that this is a result of high levels of care rather than the methods of measurement or country-specific characteristics of the health care system. This study has shown that the strength of the NORPEQ measure lies in the focus on important aspects of health care that are summed to form a single score. This lends it acceptability and feasibility in cross-national comparisons of hospital care. The brevity of the NORPEQ instrument makes it relatively easy to apply alongside existing national surveys as proved in the national survey in Norway.
COLLABORATIVE PATIENT ASSESSMENT: A TEAMWORK TOOL TO IMPROVE PATIENT AND STAFF SATISFACTION IN THE EMERGENCY ROOM

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Objective: The objective was to assess the impact of a collaborative patient assessment (CPA) on teamwork and communication perceptions by patients, nurses and physicians.

Methods: The need for patients to repeat their story multiple times during initial assessment in the Emergency Department (ED) is a major patient dissatisfaction identifier and can lead to a perception of lack of teamwork. In January 2008, Mayo Clinic ED began encouraging an interdisciplinary collaborative patient assessment (CPA) process designed to reduce this redundancy. The process was encouraged by conducting classes focused on the important elements of CPA and was then reinforced with briefs at the beginning of shifts that stressed the impact on 1) effective care, including improving teamwork, 2) reducing redundant questioning of patients, 3) increasing patient satisfaction and 4) reducing patient time in-room (PTR). This interventional prospective quality improvement project was conducted in an academic Emergency Department. Fifty patient encounters were surveyed from January through middle of February of 2009, with a predefined questionnaire for patients, nurses and physicians administered immediately after initial patient assessment. CPA was implemented rigorously from February through April 2009 through peer coaching, leadership rounding (where members of leadership staff interviewed staff and patients in realtime about CPA and encouraged staff to participate), briefs at the beginning and end of shifts and stressing the use of the SBAR communication format for sharing of patient provided information between care providers. A second set of 50 patients, nurses and physicians were surveyed from same setting from June through middle of August using the same questionnaire. A five-point Likert scale was used to assess the responses. Continuous variables were compared using independent sample t-test.

Results: Mean (SD) age of first and second set of patients was 51.7 (19.4) and 52 (23.7) years, respectively. The patient ratings suggested significant post training decline in repeated questioning by nurses and resident/midlevel ( p = 0.008). Patient ratings also suggested a trend for improvement for the item "The nurse and resident/midlevel clearly established roles during their assessment process" ( p = 0.056). Additionally, nursing staff perceived a significant improvement in communication prior to conducting patient initial assessment between the nurse and resident/midlevel (p = 0.011). Increases in the mean scores for other items were also evident, though these increases did not achieve statistical significance at p < .05. Declines in mean PTR (2.44 minutes, p=0.721) and mean LOS (7.74 minutes, p=0.871) were not statistically significant. Small sample size was the major limiting factor of this study and hindered the statistical power needed to find a significant effect.

Conclusion: CPA increased patient satisfaction in terms of decreasing repetitive questioning by nurses and residents/midlevel providers and providing better understanding of roles of care providers. Also, nurses perceived that they communicated better with residents prior to patient assessment. CPA potentially provides benefit for teamwork, communication and patient satisfaction in the ED.
THE USE OF SOCIAL COGNITION MODELS IN PREDICTING PATIENTS’ INTENTIONS TO PARTICIPATE IN SAFETY-RELATED BEHAVIOURS

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Objective:
To investigate the extent to which social cognition models can be used to predict patients’ intentions to participate in safety-related behaviours

Methods:
A 68 item questionnaire which assessed patients’ intentions to participate in different safety-related (SR) behaviours, including: asking doctors or nurses if they have washed their hands; notifying doctors or nurses if their hospital identification bracelet falls off; bringing into hospital a list of medicines and any drug allergies; reporting an error to a national reporting system (NRS). Patients’ intentions to participate in each of these behaviours was assessed using the constructs of the TPB (behavioural beliefs, normative beliefs, control beliefs and intention) and the perceived susceptibility and severity constructs of the HBM. An example of items relating to each of these constructs is provided below with respect to one of the SR behaviours; asking doctors if they have washed their hands: TPB constructs: • Behavioural Beliefs (BB) – ‘asking a doctor if they have washed their hands will reduce the chance of me getting an infection in hospital’; • Normative Beliefs (NB) – ‘People who are important to me (e.g. relatives) would approve of me asking a doctor if they have washed their hands before they treat me’; • Control Beliefs (CB) – ‘I have a lot of control over whether I ask a doctor if they have washed their hands’; • Intention – ‘I would ask a doctor if they have washed their hands’. HBM constructs: • Perceived susceptibility (PS) – ‘the chances of me getting an infection in hospital are unlikely’; • Perceived severity (PSV) ‘catching an infection in hospital would result in serious problems to my health’. The response format was on a 7 point scale. 80 patients from a number of different specialties (including medical, surgical, cardiology and urology) were recruited to complete the questionnaire over 6 months from 6 wards of an inner-city London teaching hospital. Participants’ mean age was 48 years (range 18-62 years); 45 were male.

Results:
Data were analysed using regression analyses. Separate regression analyses were performed for patients’ intentions to participate in each of the behaviours under examination. Significant findings emerged: - Asking doctors about hand washing Model accounted for 49% (F 17,62 = 5.39, p < 0.001) - Asking nurses about hand washing Model accounted for 43% (F 17,62 = 4.52, p < 0.001) - Notifying doctors about ID bracelet Model accounted for 56% (F 16,63 = 7.37, p < 0.001) - Notifying nurses about ID bracelet Model accounted for 69% (F 16,63 = 12.15, p < 0.001) - Reporting an error to a NRS Model accounted for 77% (F 18,61 = 15.68, p < 0.001) - Bringing medications into hospital Model accounted for 34% (F 18,61 = 3.29, p < 0.001) Out of all the constructs of the HBM and TPB, control beliefs and normative beliefs had the strongest predictive value in predicting patients’ intentions to participate across behaviours.

Conclusion:
This study is the first of its kind to examine the collective utility of constructs of the TPB and HBM in predicting patients’ intentions to participate in patient safety. This study provides promising preliminary evidence of the usefulness of the TPB and the HBM in predicting patients’ intentions to participate in safety-related behaviours. These models could therefore prove valuable for informing the design and implementation of interventions aimed at encouraging patient participation in the safety of their healthcare. In particular, interventions should address patients’ normative beliefs and control beliefs as these appear to have the strongest impact on predicting patients’ intentions to participate.
READMISSIONS: HOW DO RELATED AND UNRELATED READMISSIONS COMPARE?

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Objective: Evaluate the difference between related and unrelated 30-day readmissions and emergency department (ED) returns among adult general internal medicine patients.

Methods: General internal medicine patients discharged from hospital were followed electronically for 30 days post discharge to determine whether they were readmitted to the hospital or visited the Emergency Department (ED). Related readmissions and emergency room visits were identified following the algorithm used by University Healthsystem Consortium (UHC). A readmission is defined by UHC as related when any of the following conditions are met: • Index encounter DRG = readmission DRG • AHRQ Clinical Classification System (CCS) category of index encounter principal diagnosis = AHRQ CCS category of readmission principal diagnosis • AHRQ CCS category of index encounter primary procedure = AHRQ CCS category of readmission primary procedure • Index encounter APR-DRG = readmission APR-DRG • Principal diagnosis of readmission is a complication code (Dx1 = 996.00-999.9) Survival analysis using Kaplan-Meier methods and proportional hazard regression (PHR) models were developed. The data was also stratified according to the distance travelled to our institution to help account for the increased capture of rehospitalizations in local patients. All general medicine hospitalizations occurring in 2006 from our hospitals were assessed. Of the 7,153 general internal medicine hospitalizations, 672 were excluded (9.4%) for the following reasons: 344 due to no research authorization, 130 due to inpatient transfer, 189 due to discharge to another inpatient facility or hospice, and nine due to in-hospital death. Patients discharged to home with home health services or to skilled nursing facilities were included while patients who were discharged to hospice care were not included. Within this patient population, there were 411 ED visits within 30 days and 1210 readmissions within 30 days.

Results: When applying the UHC logic to the readmissions and visits to the emergency department to determine relatedness, only 37.5% (454 of 1210) of readmissions within 30-days were related to the previous stay, while only 33.1% (136 of 411) of emergency department visits were considered related. Thirteen percent of related readmissions were complications with the remaining cases being readmitted for a similar problem. The percent of readmissions which were deemed related does appear to differ by diagnosis group of the initial hospitalization. Only 31% of readmissions were related among patients admitted with endocrine, nutritional, and metabolic diseases and immunity disorders; while over 50% of readmissions were related among neoplasm and circulatory system disease. The percent of readmissions which were related were not significantly different across age group, nursing home or time to readmission (in weeks). There was an association with distance traveled with more distant patients having a higher proportion of related readmissions than local patients (national: 51.5% vs. regional: 40.1% vs. local: 34.9%). Additionally, surgical patients were more likely to have related readmissions (surgical: 47.3% vs. non-surgical: 36.6%). Among ED returns, there were significantly higher proportions of related returns for Sunday discharges (58.3%) and Wednesday discharges (45.7%) than among other discharges (27.2%). There were no significant differences in the proportion of related ED returns by geography, nursing home, or time to return.

Conclusion: Readmissions and returns to the ED within 30 days of hospital discharge for general medical hospitalizations appear to be less related to the initial stays than originally anticipated. Increasing focus on hospital readmissions by Medicare and other payors may be less amenable to changes by modifying hospital activities if the reasons for readmission are not related to the original stay. Our experience indicated that many of the readmissions were due to unrelated problems based on UHC logic. Further research should focus on distinguishing related, potentially preventable and unplanned readmissions.
DEVELOPMENT OF A STARTER SET OF AMULATORY QUALITY INDICATORS, NATIONAL QUALITY INDICATOR PROJECT, GERMANY

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Objective: Quality is an increasing competitive factor in the public health sector in Germany. To improve the evaluation of medical performance according to quality (not only according to quantity and morbidity), and in order to measure, analyze and assess quality, reliable quality indicators are necessary. Therefore, the objective of the AQUIK® (Ambulatory Quality Indicators and Key Figures) project was to establish a set of structurally developed and validated quality indicators for the outpatient care sector in Germany.

Methods: The AQUIK® project was carried out by the National Association of Statutory Health Insurance Physicians (NASHIP) between 2006 and 2009. It was supported by international and national experts such as medical doctors, scientists and professional organizations. The literature research as well as the feasibility analysis were conducted in close cooperation with the University of Witten-Herdecke. The project has four milestones: The starting point for the development of a quality indicator set for the outpatient care sector in Germany was a systematic review of international and national indicators or sets of indicators. The indicators thus identified were entered into the NASHIP database. All relevant features of the identified indicators were recorded. From those indicators a sample for a draft indicator set was selected. First any duplicate entries were removed from the database of indicators. In a further study step, professional experts selected the quality indicators to be included in the draft set of indicators if they met the following selection criteria: relevance to the outpatient care sector, prevalence of the corresponding diseases, possible potential for improvement, suitable for demonstrating good quality. This sample of indicators was then assessed in a structured rating process by selected medical experts who rated the quality indicators regarding the criteria relevance to the German health care system and feasibility. This was carried out in a two stage structured consensus process based on the approved RAND/UCLA Appropriateness Method established by RAND Health. In a further step, data availability and accessibility of the indicators agreed upon in the rating process were tested in medical practices within a feasibility analysis. For this purpose a total of 113 medical practices were surveyed regarding their views on data availability, data acquisition and relevance of the indicators.

Results: The project provides three main results. A data base of more than 2000 international quality indicators, a pattern of how to systematically develop and assess a set of quality indicators, and finally the AQUIK®-Set itself of 48 structurally developed and validated quality indicators which focuses on chronic diseases of primary care (hypertension), internal medicine (rheumatoid arthritis), neuropsychiatrics (depression) as well as prevention (vaccination) and patient centered care (home visits).

Conclusion: The results of the literature search, consensus and test processes led to a structured developed and validated set of 48 quality indicators for use in the outpatient care sector. The study furthermore provides important methodological basics for the future development and assessment of quality indicators. The AQUIK®-Set opens up improved possibilities for the demonstration of quality in health care. It raises questions, especially regarding the creation of a supportive IT infrastructure in order to implement the quality indicators in medical practices.

LEARNING FROM A QUALITY INDICATOR SYSTEM - TEN YEARS EXPERIENCE IN TAIWAN

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Objective: The objective of this study is to share the 10-year quality indicator monitoring result and the outcome of TQIP (Taiwan Quality Indicators Project).

Methods: Taiwan Joint Commission on Hospital Accreditation (TJCHA) introduced an external comparison indicator system, the International Quality Indicator Project (IQIP) from United State to Taiwan healthcare system as “Taiwan Quality Indicator Project; TQIP” in 1999. The number of hospitals that participated increased from 29 to 82. Quarterly data were used for frequency, trending, and comparative analysis. Top 50% of high frequency usage indicators were identified by the number of facility submitted. Data trend was examined by regression analysis. And Taiwan’s indicator data were compared with IQIP to determine the potential opportunity for improvement.

Results: Mortality, management of labor, physical restraint, documented falls, pressure ulcers and emergency-related indicators were identified as common used indicators set. 261 indicators with a statistically significant (p<.001) linear trend were examined from the following indicator sets including mortality (AMI, pneumonia, neonatal birth weight >750 grams, and perioperative), unscheduled return rate (unscheduled acute care readmissions <=31 days and returns to ICU), inpatients fall, antibiotic prophylaxis for surgery for a duration of <= 24 hours following surgery end time, and total pressure ulcer incidence. Finally, the areas of labor management, physical restraint hours, ICU device-associated infections were identified through international comparison.

Conclusion: From the 10-year indicator data reviewing, we fined that one indicator will be commonly used if the indicator data is easy to collect data, or with policy support (such as national annual patient safety goals), or hospitals find useful for internal improvement. Taking the documented falls indicator for example, it is one of the most commonly used and with significantly improvement result, a significant increase in usage indicating not only the hospital paying attention to preventing patient falls but also a positive patient safety reporting culture. From the seminars for sharing the application of indicators over the past few years, it was shown that hospitals have intervened systematically to prevent falls. In the future, we can investigate the gaps between the Taiwan indicator performance and international performance to prioritize what is the next quality improvement topics.
CONTENT DEVELOPMENT FOR THE INTERNATIONAL CLASSIFICATION FOR PATIENT SAFETY

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Objective: To develop content to populate two Healthcare Incident Types (HITs) in the International Classification for Patient Safety Conceptual framework (ICPS).

Methods: Existing patient safety classification, data collection and analysis tools were identified and reviewed by a research team at the Australian Patient Safety Foundation, funded by the World Health Organization (WHO). The resultant information was used to populate the concepts, definitions, synonyms and relationships of the ICPS conceptual framework, for the incident types ‘fall’ and ‘pressure ulcer’. The content was incorporated into an online pictorial representation for review by a team of international patient safety experts. The expert review group consisted of key personnel with a demonstrated interest in patient safety representing four WHO regions. Feedback from the expert review group was collated and discussed by the research team. A revised classification that incorporated the feedback and comments received by the expert reviewers was structured and released for further comment and review. The final stage of the project involved an evaluation of the methods and processes used to develop the content and the release of the classification for broader consultation.

Results: Four patient safety classification systems were reviewed for inclusion in the content; however, only two (the Common Formats from the Agency for Healthcare Quality and Research and the Advanced Incident Management System from Australian Patient Safety Foundation) had content that was specific to fall and pressure ulcer incident types. In addition the concepts of five international standards and classifications, such as the International Classification of Disease (ICD) and Systemized Nomenclature of Medicine - Clinical Terms (SNOMED-CT) were included. Fifteen of the 18 experts contacted (83%) agreed to participate. Specific feedback relating to both the Fall and Pressure Ulcer HITs was received from six countries, encompassing single reviewers from Finland, Norway and the UK, three reviewers from Tanzania and two review groups from Australia and Canada. In total there were 41 comments relating directly to the pressure ulcer classification, 71 comments relating to fall and 12 general comments. A total of 25 changes were made to the pressure ulcer HIT and 50 changes to the fall HIT. Changes to the HITs included restructuring of the classification, in particular including additional questions, re-wording or re-phrasing of terminology, updating medical device or equipment lists, changing current risk assessment protocols and including non acute care settings such as nursing homes or community facilities. A further 16 comments were received following release of the second draft of the classification (three for pressure ulcer and 13 for fall). The majority of these comments (87.5%) indicated support for the changes to the HITs. This paper presents of the pressure ulcer HIT.

Conclusion: The ICPS has been designed to represent international perceptions related to patient safety and to facilitate the description, comparison, measurement, monitoring and analysis of information to improve patient safety. With the assistance of expert reviewers, we have developed a robust patient safety classification for fall and pressure ulcer incident types that demonstrates the convergence of international elements to provide a classification that is suitable for use across time, jurisdictions and borders, as well as providing a solid foundation for further development of other HITs within the ICPS conceptual framework.

Disclosure: Australian Patient Safety Foundation receives a royalty from users of the AIMS (Advanced Incident Management System).
ESTIMATION OF OPTIMAL CHEMOTHERAPY AND RADIOTHERAPY UTILISATION RATES FOR CANCER

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Objective: To develop flexible evidence-based models to estimate the optimal chemotherapy and radiotherapy utilisation rates for cancer as benchmarks for comparison with actual rates and for service planning.

Methods: Australian and international evidence-based guidelines were reviewed to identify the indications of chemotherapy and/or radiotherapy for cancer patients. Epidemiological data on patient and tumour-related attributes of each cancer site were obtained from published reports. The optimal proportions of cancer patients who should receive radiotherapy or chemotherapy at least once during the course of their lifetime were mapped and calculated using decision tree software. Univariate and Monte Carlo multivariate sensitivity analyses were performed where there were conflicting indications or major variations in epidemiological data. Actual first course of chemotherapy and radiotherapy rates published in patterns of care studies were compared with the optimal utilisation rates.

Results: Over 2000 published reports were examined. Utilisation decision trees were constructed for each cancer site and each treatment modality. The estimated optimal chemotherapy and radiotherapy utilisation rates for all cancers were 50.8% (95% CI 50.6-51%) and 52.3% (95% CI 51.7-53.1%) respectively. Indications for treatment were based on level I or II evidence for 83% of chemotherapy patients and 56% of radiotherapy patients. The optimal chemotherapy utilisation rates by tumour sites ranged from a low of 13% for thyroid cancers to a high of 94% for myeloma and for radiotherapy from 0% for liver to 92% for cerebral cancers. Actual chemotherapy utilisation for all cancers varied from 29% in the United Kingdom to 42% in Canada. Actual radiotherapy utilisation for all cancers varied from 24% USA to 43% in Sweden.

Conclusion: Our evidence-based models provide an estimate of optimal chemotherapy and/or radiotherapy utilisation rates for cancer. There is a considerable but varying gap between optimal and actual radiotherapy and chemotherapy utilisation in developed countries. The benchmarks serve as important tools with which to interpret patterns of care and service delivery data. The methods are readily adaptable to other interventions.
Objective: To investigate the extent of justification for the use of quality indicators to report on the quality of primary diabetes care, and to identify the (attributes of the) most frequently used indicators.

Methods: A systematic literature review was performed to identify descriptive, comparative, or intervention studies on the quality of primary diabetes care. Our search strategy in Medline, PubMed, Psychinfo, Embase and Cinahl databases initially resulted in 2237 references. Titles and abstracts were screened using the inclusion criterion: the study is directed at the quality of primary diabetes care using a set of performance indicators, and exclusion criteria: specific patient categories (i.e. diabetes in pregnancy), specific components of diabetes care (i.e. diabetic renal disease), and specific outcomes (i.e. effect on HbA1c), as in these studies the selection of indicators is clearly closely related to the research question. After full text screening and an additional search using the literature references of the included studies, 44 papers were included. Included papers were screened on background characteristics (e.g. source and number of quality indicators), and the use of selection criteria according to the National Quality Measurement Clearinghouse (NQMC) (desirable attributes, availability of data sources, application to desired setting or care, selection from appropriate domain, considerations for comparisons). Sets of indicators (n=44) were screened on measurement attributes: domain (according to NQMC: process, outcome, access, experience, or structure), scope: prevention, diagnostics, monitoring, treatment, integrated care, other (i.e. incidence, prevalence, organization), and aggregation level: single or composite indicators.

Results: In total, more than 600 quality indicators were found (mean 14, range 4-47 per set). Two thirds of the sets were derived from organizations that are specialized in developing guidelines or indicators (e.g. the American Diabetes Association, ADA), or from existing sets (e.g. the Healthcare Effectiveness Data and Information Set, HEDIS or Quality and Outcomes Framework, QOF). The number of indicators selected from these sources varied between 5-22 (ADA), 4-9 (HEDIS), and 9-14 (QOF). Selection criteria were hardly mentioned. In some studies, the availability of data was a reason for (not) using specific indicators. In 10% of the studies indicators were self-developed, in 20% of the studies, the source was not mentioned. Indicators that were considered the same were classified, resulting in 55 categories. Most frequently used indicators (top-10) are process and outcome indicators on HbA1C, lipids, and blood pressure, and process indicators on urinalysis, eye and foot examination, and lifestyle counseling. Process indicators appeared to be most frequently used (two thirds), followed by outcomes (30%), structure (5%), and experience (1%). Indicators were mainly focused on monitoring (81%) and treatment (16%). In some studies, indicators were selected on integrated care (1%) or other topics (e.g. practice management). Finally, most indicators were single indicator (96%).

Conclusion: An impressive amount of (different) indicators are used in scientific projects to measure the quality of primary diabetes care. Even when looking at the most frequently used indicators, different cut off points (outcomes) or measurement periods (process indicators) are being used. In many cases, authors do mention that their indicators have been derived from specific sources, however, in contrast to studies in which choices for measurement instruments, are highly argued, we conclude that transparency or justification for selecting and using specific diabetes indicators is mostly lacking. It can be questioned whether using less, more, or different diabetes quality indicators would lead to other conclusions, or consequences for the field. As the number of indicators is expanding, and indicators are increasingly used in change management programs, the method of selection needs careful attention. At the same time, research on and attention for psychometric properties, such as the validity of (sets of) indicators are highly needed.
HOSPITAL VOLUME AND BLEEDING COMPLICATIONS IN BENIGN ELECTIVE HYSTERECTOMY

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Objective: This study explores the volume-outcome relation for benign elective hysterectomy to determine whether high volume hospitals are associated with less bleeding complication

Methods: Previous studies have showed a relation between hospital volume and surgical outcome for various disease populations such as cancer and cardio patients. However, few have studied whether the same association exists in less invasive surgical procedures, which might affect the health and performance of a relative large part of the population. The study population includes women registered in Danish Hysterectomti Database (DHD). DHD includes all women registered with a hysterectomy in the Danish National Patient registry since between 01.01.04 and 31.12.08. The study includes more than 21,000 women. The association of bleeding complications and hospital volume was examined after adjusting for difference in age, size of uterus, BMI, alcohol intake, smoking status, ASA-score and indication for surgery. Both conventional regression models and multilevel regressions models were used to estimate the effect of hospital volume on bleeding complications.

Results: A low hospital volume was related to an increased risk of bleeding complications in benign elective hysterectomy. When comparing high volume hospitals (more than 200 hysterectomies annually) with low volume hospitals (less than 100 hysterectomies annually) we found an increased risk of bleeding complications of 30% for patient operated in low volume hospitals (odds ratio [OR], 1.30; 95% confidence interval [CI], 1.061-1.592). The point estimate of the hospital volume-outcome association were very similar when the effect of clustering within hospitals were taking into account, however, the 95% confidence increased considerably and the association between hospital volume and bleeding complication was no longer significant.

Conclusion: Low hospital volume is associated with significant higher bleeding complications after hysterectomy when using conventional logistic regression models in the analysis of volume-outcome.

QUALITY REVIEW OF SYMPTOMATIC BREAST DISEASE SERVICES IN IRELAND

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Objective:
In 2005 the Department of Health and Children (Ireland) established an expert symptomatic breast disease (SBD) group which resulted with the Health Information and Quality Authority (the Authority) launching the National Quality Assurance Standards (NQAS) for SBD in Ireland in May 2007. At this time, there were 33 hospital providing breast cancer services. In 2007, the National Cancer Control Programme Directorate was established which over a staged process centralised by the end of 2009 the provision of breast services to 8 designated specialist centres. During 2007 a number of serious concerns about the quality and safety of symptomatic breast disease services came to light. These included examples of delayed diagnosis of breast cancer and led to a number of investigations, including two undertaken by the Authority. The impact of these incidents and the associated media coverage led to a reduction in public confidence in breast cancer services. In Autumn 2007 the Authority commenced a national Quality Review programme to assure the public that hospitals providing this service were meeting the authority's standards of care was undertaken. This project presents the methodology and findings.

Methods:
The Authority’s approach was designed to reflect the stage of development the designated cancer centres were at, at a given time. This led to the Quality Review programme having five phases: - Self assessment against the NQAS. - Validation of information used for the self-assessment scores - Interim feedback - Quality Review - Publication of individual and national reports

The quality review assessment phase involved an in-depth review of the performance of the centres with the NQAS, which, for the purpose of the review, were categorised into 7 themes: – Governance – Multidisciplinary Approach – Skills, Education and Training – Person-centered care – Data management – Access – Clinical effectiveness From these, key essential elements for the provision of safe, high quality care were identified. The assessment framework involved three distinct stages: 1) Pre on-site – Documentation request – Data request – Documentation / data review. 2) On-site – Patient discussion group – Interviews – Facilities review – Overview of data information systems – Validation of data 3) Key findings : publication of an individual centre report and a consolidated national report

Results: The quality review programme which extended over 2 years provided the designated centres at sentinel points in their development reliable and corroborated assessments of the arrangements in place to ensure adequate: - Governance - Specialist skills , education and training - Multidisciplinary team working - Data management - Patient access and clinical effectiveness - Person centered care Consequently this allowed the Authority make targeted recommendation at both local and national level. There was evidence that the overall Quality Review Programme - together with the NQAS - had been a focus for change and improvements in the quality and safety of the SBD services.

Conclusion:
The Quality Review programme which assessed the eight nationally designated centres delivering SBD services in Ireland was an effective evaluation with the NQAS. This tailored and scaled response has had a positive impact on the change process by highlighting areas that needed addressing as the process progressed. The definitive review has given a reliable and relatively low resource mechanism for assessing SBD services with the SBD standards.

Reference: Health Information and Quality Authority. National Quality Assurance Standards for Symptomatic Breast Disease Services - Developing Quality care for Breast Services in Ireland, 2007: Health Information and Quality Authority
THE BREAST CANCER HORMONE RECEPTOR RETESTING CONTROVERSY IN NEWFOUNDLAND AND LABRADOR, CANADA: LESSONS FOR THE HEALTH SYSTEM

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Objective: This paper addresses (a) the diagnostic utility of estrogen and progesterone testing for breast cancer in general, (b) specific testing problems that occurred in Newfoundland and Labrador, Canada (c) scientific problems associated with retesting, and (d) the impact on public trust and the resulting legal and political responses which occurred as a result of the adverse events associated with false negative hormone receptor tests. Finally, the lessons learnt will be discussed including bias associated with the retesting process in favor of finding a high false negative rate, the need for quality assurance and national standards, public education, and appropriate communication with patients and the public.

Methods: Secondary analysis of the exhibits and transcripts of the evidentiary hearings of the Commission of Inquiry on Hormone Receptor Testing and a review of the literature.

Results: 425 (39.1%) of 1,088 “ER negative” patients (696 living and 392 deceased) had positive results upon retesting. Within two months of the October 2005 disclosure of changed test results a class-action lawsuit was filed. The erosion of public trust in the health care system and the manner in which information about the retests was communicated to the patients involved induced a public inquiry to investigate the events surrounding the testing and also the appointment of a task force on adverse health events. The inquiry determined that the primary causes of the changes in test results were methodologic and that absence of a good quality assurance program was problematic. Little attention was paid to the poor technical validity of immunohistochemistry hormone receptor tests known to have a high false negative rate or to the bias associated with retesting likely to have increased the sensitivity of the diagnoses. National standards and quality assurance programs for hormone receptor testing together with laboratory accreditation may have prevented the debacle. Failure to anticipate the high rate of conversion from negative to positive on retesting and a flawed public communication process contributed to the controversy.

Conclusion: We recommend retesting of all breast cancer patients with negative hormone receptor results until national standardization and accreditation processes have been implemented.
NATIONAL ACCREDITATION FOR ASSURING QUALITY IN IRANIAN HOSPITALS: THE STRUCTURE, STANDARD, CURRENT PROCEDURE, DEVELOPMENT AND IMPLEMENTATION OF HOSPITAL ACCREDITATION & LICENSING SYSTEM IN IRAN

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Objective: This study describes the framework, standards, indicators, current procedure and development of the accreditation & licensing system in Iranian hospitals.

Methods: The study consisted of document analysis, literature review and discussions with key persons. Documents reviewed included written official documents, declarations and instructions. Hospital site visits and discussions with external assessment implementers at the Ministry of Health and Medical Education (MOHME) and medical universities were conducted. We also conducted discussions with hospitals managers who are involved in accreditation & licensing via telephone and face-to-face.

Results: Over a decade Iran has successfully developed and implemented a national accreditation & licensing system in all 750 hospitals since 1997. The plan covers 14 main areas; Consideration of values, Patient satisfaction, Management, Medical and professional staff, Nursing manpower, Other manpower, Hygiene & cleanliness, Medical records & informatics, Hospital committees, Hospital infrastructure & industries structure, Safety equipments, Non-medical equipments, Medical equipments and Quality indicators with a total maximum of 20867 score which is for hospitals that are functioning excellent. Hospitals rankings based on external governmental peer assessment scores are as follows: Score /Rank Over 20,867=excellent 18,367-20,866=normal 1 15,867-18,366=2 13,218-15,866=3 Under 13,218=below the standard Following the implementation of the accreditation & licensing plan early 2006, the Vice-chancellor of Treatment of MOHME developed a new method for hospital assessment including five new emphasized areas; Hygiene & cleanliness, Medical records and Informatics, Hospital committees, Hospital quality indicators and Emergency unit quality indicators. In this plan, each hospital should acquire an acceptable score for each of the five mentioned areas on specified criteria, and the final hospital rank would be considered the score of these basic criteria. This plan focused on a hospital's ability to provide and assure high quality services. These indicators have been set as basic quality items. Assessing these measures is a prerequisite for the overall annual assessment. It means obtaining annual assessment certification at each level of general scores. If a hospital does not acquire an acceptable minimum score in any of these basic items, it will not be assessed until improving the situation to a standard level. Furthermore, if the hospital acquired scores in one of the five basic areas does not meet a specific rank, it will fall to a lower rank. This approach is used to encourage and also to regulate hospitals to improve quality and to implement and monitor QA strategies continuously.

Conclusion: The Iranian mandatory hospital accreditation & licensing system and external governmental assessment plan has been developed as a powerful tool in assuring and improving quality of hospital care. We found this nationwide strategy has been successfully implemented through yearly assessments in all Iranian hospitals to assure quality and to improve hospitals’ responsiveness to needs of customer. Based on the current governmental accreditation & licensing plan if a hospital does not qualify, it will not be allowed to perform medical activities. The accreditation & licensing applies to all hospitals, independent of the type of ownership in Iran. According to unpublished data from around 560 accredited hospitals in 2008, more than half of hospitals ranked as normal (level1) and a minority of them fell into rank3.

Reference:
A DESIGNATION SCHEDULE FOR CANCER INSTITUTES COMPLEMENTED WITH THE OECI ACCREDITATION PROGRAMME FOR INCREASING QUALITY IN CANCER CARE

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Objective: The validation of a designation system offers an exclusively OECI (Organisation of European Cancer Institutes) Accreditation Programme for each type of cancer institute and it creates a platform for synchronization and benchmarking of cancer institutes on an European scale.

Methods: In the period from September 2009 till January 2010, the designation pilot project took place in which thirty-seven OECI cancer institutes participate. The aim of the pilot project was to design a decision schedule for designating cancer institutes. Four different types of cancer institutes will be distinguished: Cancer Unit, Clinical Cancer Centre, Research Cancer Centre and Comprehensive Cancer Centre. The participating institutes filled out an online electronic questionnaire with quantitative data. The data is analysed with the focus on the following indicators: facilities, human resource capacity, production of the institute, financial capacity and translational research. As a result of the analysis eight sub-indicators are subtracted that are the foundation for the Concept Designation Decision Tree Model: · Total number of beds specific to oncology, · Number of ambulatory day care beds/chairs specific to oncology, · Number of specialists dedicated to oncology (FTEs), · Number of newly diagnosed cancer patients, · Total number of active clinical trials in the reported year, · Number of original scientific publications in peer reviewed journals, · Annual budget for cancer care, · Annual budget for cancer research. In the same period of the pilot project the first three cancer institutes finished the self assessments which is a part of the OECI Accreditation Programme. The programme aims to help cancer institutions to build a continuous quality improvement quality system in the cancer institute organization.

Results: By following the Designation Decision Tree Model the cancer institutes are designated in four types: · Research Cancer Centre (4 institutes), · Cancer Unit (8 institutes), · Clinical Cancer Centre (16 institutes), · Comprehensive Cancer Centre (CCC) (9 institutes). The institutes applied in the Accreditation Programme also have different designation types. The designation type of these institutes is not yet defined due to the fact that the Designation Decision Tree Model is in the pilot phase. Hence, the applicant institutes in the Accreditation Programme are examined for all OECI quality standards while not every type of designation is expected to meet all the OECI standards.

Conclusion: Designation is focussed on quantitative data and accreditation is focussed on quality. Both systems don’t exclude each other but rather complement or even strengthen each other. The designation type of cancer institutes indicates the comprehensiveness of the services within the organization and the degree of specialization; it is not a measurement on quality of the organization like in the accreditation programme. Therefore, the OECI Accreditation and Designation Group is working to integrate the Designation schedule and the Accreditation Programme. Currently, applying organizations in accreditation programme indicate their preference on their designation type according to their own interpretation. With the integration of the designation schedule it will be possible to validate the type of designation and the accreditation can be made exclusive for that type of organization by eliminating quality standards that are not expected to meet in the type of institute. Additionally, designation could be a tool for cancer institutes to ensure and improve their quality standards. By putting effort in gaining a designation status the idea is that this will stimulate in disseminating knowledge and forming coalitions with other designated institutes. This allows cancer institutes to benefit from each other and reach to a critical mass in cancer services.
ACCREDITATION AND ISO CERTIFICATION: DO THEY EXPLAIN DIFFERENCES IN QUALITY MANAGEMENT IN EUROPEAN HOSPITALS?

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Objective: To identify systematic differences in quality management between hospitals which were accredited, or certificated, or neither.

Methods: Analysis of compliance with measures of quality in 89 hospitals in six countries, as assessed by external auditors using a standardised tool, as part of the EC-funded MARQuIS project.

Results: Of the 89 hospitals selected for external audit, 34 were accredited (without ISO certification), 10 were certificated under ISO 9001 (without accreditation) and 27 had neither accreditation nor certification. Overall percentage scores for 229 criteria of quality and safety were 66.9, 60.0 and 51.2 respectively. Analysis confirmed statistically significant differences comparing mean scores by type of external assessment (accreditation, certification or neither); however, it did not substantially differentiate between accreditation and certification only. Some of these associations with external assessments were confounded by the country in which the sample hospitals were located.

Conclusion: It appears that quality and safety structures and procedures are more evident in hospitals with either type of external assessment and suggest that some differences exist between accredited versus certified hospitals. Interpretation of these results, however, is limited by the sample size and confounded by variations in the application of accreditation and certification within and between countries.
THE IMPACT OF AN ELECTRONIC HEALTH RECORD ON DIABETES CARE AND OUTCOMES

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Objective: To assess the multi-year effectiveness of EHR implementation on diabetes care delivery in a fee-for-service ambulatory care network.

Methods: This was a naturalistic experiment in which an EHR (GE Centricity Physician Office – EMR 2005) 33 primary care practices in a large, fee-for-service physician network in North Texas in a staggered schedule over three years. Diabetes data were collected through semi-annual chart audits of diabetes prevalence cohorts using the AMA/Physician consortium Adult Diabetes Measure set. The primary outcome was the HealthPartners’ “optimal care” measure (HbA1c ≤ 8%; LDL cholesterol <100 mg/dL; Blood pressure < 130/80 mmHg; Not smoking; and Aspirin use [measured by prescription] in patients over 40 years of age).

Results:
We identified 25,367 patients with diabetes with at least 2 diabetes-related primary care visits in one or more of the 6 overlapping 12-month cohort periods between January 1, 2005 and June 30, 2008. The EHR had a significant positive impact on “optimal care”: odds ratio (95% confidence interval) = 1.16 (1.01, 1.34) following adjustment for baseline performance and cohort. Individual measures showing positive impact after adjustment were HbA1c measurement, urinanalysis, influenza vaccine, smoking assessment, aspirin prescription, visual and pulse components of the foot exam, and systolic blood pressure <130 mmHg, and diastolic blood pressure <80 mmHg. Counterintuitively, HbA1c measurement was lower with EHR exposure following adjustment (odds ratio [OR]=0.79; 95% confidence interval [CI] (0.68,0.92); P= 0.004). The subset of patients identified in both the first cohort and one or more later cohorts showed similar results, and considering only post-EHR implementation data, the longer the EHR exposure, the higher the rate of “optimal care” (6 month cohort effect OR = 1.02; 95% CI(1.01,1.04); P = 0.010).

Conclusion: The implementation of a commercially available EHR in primary care practice may improve delivery of diabetes care and clinical outcomes for diabetes patients. As room for further improvement exists, future efforts should examine the possibilities of enhancing or expanding the decision-support capabilities within EHRs to focus more directly on improving outcomes, and of using the EHR data to create disease-based registries that can support care coordination and population management initiatives.
Objective: A data quality initiative to examine consistency in code assignment indicated variation in hospital coding practice, documentation and clinical practice; presenting opportunities to follow up with the clinical and coding community to explore, understand and control such local variation.

Methods: The Irish national dataset of acute inpatient hospital activity, Hospital In Patient Enquiry (HIPE), is managed by the HIPE Unit of the Health Research and Information Division, Economic and Social Research Institute. The HIPE Unit manages all aspects of HIPE, including software development, selection and implementation of the clinical classification system, implementation of standards, managing coding queries, coder education, data quality and audit initiatives, data access, data analysis and production of annual reports. This centralised approach to the management a national activity dataset offers quality assurance opportunities throughout the life cycle of HIPE to ensure the dataset is a timely accurate reflection of hospital activity. HIPE collects information on inpatient and day case activity from all acute hospitals in Ireland. Administrative, demographic and clinical information are collected. Each record must have a principal diagnosis recorded, may have up to nineteen additional diagnoses and up to twenty procedures recorded. The database is distributed locally to each hospital, data are collated monthly to a central national file by the HIPE unit at the ESRI. The national file is finalised on an annual basis. Data are collected on discharge by hospital-based clinical coders, using complete patient medical records, coded using the ICD-10-AM/ACHI/ACS/ICS classification system and entered onto the HIPE software. Data checks run at the point of entry, checking the validity at the variable level; case level checks also fire at this point, checking the consistency of the clinical information in addition to the administrative and demographic information. Further centralised checks and data reviews are performed by the HIPE unit on the national file. Steps Taken: To examine the consistency in code assignment across hospitals, we counted the frequency of code assignment nationally and per hospital, for principal diagnosis, additional diagnoses, procedures separately for day cases and inpatients for all discharges in 2008. We selected for examination where a hospital accounted for more than 50% or less than 1% of the national total. We deemed this unusual activity and explored it further, taking into account the type of hospital and any documented local coding and clinical practices. Queries were issued, asking the hospital coders to justify why their hospital accounted for such a high or low proportion of the national use of the particular code.

Results: Over 700 queries were issued on 1.3 million records from this checking process. Findings included: · Local coding practice – for example where a specific procedure that is not usually captured may be collected for local reasons · Local admission policies and clinical practice · Local documentation issues – for example non documentation of tobacco use in day case settings · Classification and standard requirement – where radiotherapy and chemotherapy are both administered in a day case setting, currently no standard exists to guide the sequencing of these, we are seeking international guidance and will follow up with an Irish coding standard · Common coding errors identified – these issues are being incorporated into the Coder Education program; new edit checks have been specified and incorporated.

Conclusion: Examination of data consistency across hospitals highlighted issues beyond data collection and reporting, presenting opportunities to follow up with the clinical and coding community to explore, understand and control local variation in documentation, admission and clinical practice.

Reference: [1] International Statistical Classification of Diseases, Australian Modification/Australian Classification of Interventions/Australian Coding Standards/Irish Coding Standards
CAN ELECTRONIC PERSONAL HEALTH RECORDS INFLUENCE THE QUALITY OF HEALTH CARE?

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Objective: A part of a survey of BARMER GEK, a German statutory health insurance company, evaluates the impact of electronic personal health records (ePHR) on the quality of health care. What is the "personal electronic health record" in Germany? In contrast to institutional electronic patient records (iPHR) which are maintained by a doctor, an electronic personal health record (ePHR) is initiated and maintained by the insuree in Germany. Users can store information on diagnoses, treatments, medications, emergency data and vaccinations in the record. It also includes health information and reminder functions. A link to professional data is restricted by structural and technical constraints. For the communication between physicians, data will be transported in the near future by electronic case records (eCHR) to which only physicians will have access. All insurees in Germany have a health card with basic data like name, address, with emergency data. It is intended for personal access.

Methods: 7,920 insurees aged between 18 and 75 years were interviewed about their expectations and concerns about this new technology. The survey covered price advantages, desired features and questions about the expected benefits. The convenience of the ePHR was evaluated during two online surveys. These focused on the assessment of personal benefits, functionality and design. In addition, insurees were asked if they saw implications in the use of electronic health record for the quality of care. With the help of pseudonymised login data, various functions could be analyzed.

Results: Selected results of the cross-sectional survey â— 96% of the insurees expected positive effects on the treatment in emergency situations. â— Passing of results to joint physicians (94%), avoidance of double examinations (90%) as well as easier tracking of treatment and examination results (94%) were chosen as advantages of ePHR. â— Chronically ill and elderly insurees value the benefits of ePHR more highly than young and healthy respondents. Selected results of two online surveys â— A total of approximately 1,200 users (as registered December 2009). Most users are aged between 35 and 70 years. The oldest user was 91 years. â— 85% of respondents described themselves as experienced internet users. â— The proportion of chronically ill patients as users of the health record is significantly higher in the survey (63%), compared with the users of the cross-sectional survey (35%). â— 93% replied that the storage of the data on the record by the physician is very important. â— 86% of the participants in the online survey believed that the ePHR supports them in their personal health management and in raising their awareness about their own health (75%). â— Users also specify that they can better address problems during conversations with the doctor (62%) and feel able to speak better about the disease (61.4%). â— 71% of those using the information contained on the ePHR health advisor reported positive benefits. 12% reported a change in behavior because of the information and recommendations. The information had no direct benefit to 14%.

Conclusion: Conclusion of BARMER GEK The results of this study show that a large proportion of insurees are interested in an electronic personal health record and they see a positive influence on their own health care. The ePHR particular contribute to better doctor-patient communications and shared decision making. Also the ePHR qualifies patients to more self-management and ownership. In Germany the potential cannot be fully exploited because of the lack of connections between the physicians’ dataware and the internet.
INCENTING FOR QUALITY IMPROVEMENT: IMPROVED METHODS FOR SETTING MEANINGFUL TARGETS

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Objective: Develop and evaluate an objective method for setting quality improvement incentive targets based on quantitative estimates of patient impact, statistical validity, and achievability.

Methods: At Virginia Mason Medical Center (VMMC) our leaders and managers are financially incented to achieve care quality and patient safety improvement goals linked to our strategic quality plan. Previously, our methods for performance incentives suffered from two major limitations: (1) Targets were sometimes set in an arbitrary fashion; and (2) participants were sometimes rewarded based on what may have been random variation in the processes being monitored.

In order to make these incentive targets equitable, effective, and data-driven, we sought to improve our target-setting process by combining a formal benchmarking approach, Achievable Benchmarks of Care (ABC), with statistical process control (SPC), methods. For process and outcome metrics, we used SPC charts to evaluate both process variation during the baseline period and to assess the magnitude of improvement required to be statistically real. This approach allowed us to assess:

• Patient Impact – we could estimate the numbers of patients affected at different targets.
• Validity – we could use objective tests to separate random from non-random change.
• Achievability – we could view past levels of performance within our organization.

Where we had provider-specific data available, we were able to supplement our SPC analyses by using a variant of ABC methodology.

Results: These new methods for setting and evaluating improvement incentive targets were evolved and evaluated over a 2-year period. During the first year of the project the new methods were partially implemented for the Executive Variable Compensation (EVC) program and the methodology concepts were introduced to administrative and clinical leaders. When using SPC-based targets, we found that the data patterns specified by standard “out-of-control” tests fit well with our internal objectives for reaching and sustaining improved performance on quality and safety metrics.

During the second year, we were able to apply the SPC-based target-setting approach to all EVC metrics, and found the method generally well-accepted and better understood by executive decision-makers. For one preventative care metric (cervical cancer screening) we were able to develop ABC-based internal benchmarks for performance and incorporate these into target setting. We found that using these internally-derived benchmarks were especially helpful in setting, communicating, and promoting the performance improvement target levels.

Conclusion: We determined that our blend of SPC and ABC methodologies provided an objective, data-driven approach to setting quality incentive targets based on estimates of patient impact, achievability, and statistical significance. In setting targets we sometimes needed to find a balance point between methodological rigor and pragmatism. We also found that pre-planning was necessary to assure adequate baseline data for SPC analysis. Our incremental implementation and training was well accepted by corporate leadership, and we concluded that this approach can be generalized to other organizations.

CREATING AN EVALUATION PROGRAM FOR PHYSICIAN BEHAVIOR AND IMPLEMENTING IT AS PART OF A ‘PRIVILEGING’ SYSTEM.

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Objective: To investigate mechanisms of evaluating physician behavior, as the beginnings of an acceptable physician ‘privileging’ system.

Methods: In response to international hospital accreditation standards, our hospital in Jan 2009 created a committee specifically to deal with the issues of “privileging” (appointed appropriate committee members; designed a framework for evaluating physicians). We followed suggestions made in the JCI Accreditation Standards for general competency areas such as: patient care, medical/clinical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practices. Valid licenses (medical specialty/sub-specialty, advanced life saving e.g. ACLS or equivalent) were mandatory. Patient care was evaluated by physician administrators interviewing individual physician flagged as outliers for designated indicators (e.g. mortality, morbidity, longer length of stay or higher expenditure clinical case, fit for safety, timely, effective, efficient, equitable, and patient centered concepts). Medical /clinical knowledge was evaluated according to the participation in specialist conferences, curriculum or seminar. Practice-based learning and improvement were evaluated by EBM/CAT reports. Interpersonal and communication skills were evaluated by patient satisfaction surveys, medical records about informed consent, discharge planning, condition explanation, self-assessment by the physician, surveys of his/her medical colleagues and other co-workers. System-based practices were evaluated according to the individual use of e-learning programs related to legal, social, and health insurance, etc. Professionalism was evaluated according to common items such as blood transfusion incidents, medico legal problems and consulting rates in 24 hours. Specialty-specific items included wound infection rates for surgery, indwelling-urinary catheter-associated infection, use of prophylactic antibiotics in surgery, etc. Each indicator was scored as fully met (maximum of 10 score), partially met (5 score) or not met (0 score) for each physician where possible, although the overall matrix had slots for “not-applicable” (e.g. some physicians do not have outpatient sessions) The average score of all items by physician was used to determine if extension (between 6 and 10), limitation of privileges (5≤ average score<6) or punishment /withdrawal of privileges (average score<5) would be invoked.

Results: During the period July, 2008 to June, 2009, 319 physicians were evaluated: 313 physicians were 6≤ average score≤10, 6 physicians were 5≤ average score <6, and none was average score<5. Details are in the following table:

<table>
<thead>
<tr>
<th>Items \ Grade</th>
<th>Fully met</th>
<th>Partially met</th>
<th>Not met</th>
<th>Not applicable</th>
</tr>
</thead>
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<td>License credentials</td>
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<td>5</td>
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<td>Patient care items</td>
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<td>53</td>
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<td>Practice-based learning and improvement</td>
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<td>Interpersonal and communication skills</td>
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<td>System-based practices</td>
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<tr>
<td>Professionalism</td>
<td>311</td>
<td>8</td>
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</table>

Conclusion: This system as it currently stands is successful in screening individual physician, clarifying issues that may need improvement, and focusing on some specific physicians with borderline behavior problems. The system is transparent in that all data is available to the individual physician on password protected intranets, allowing physicians with poor assessments to follow up their performance to avoid changes to their privileges (punishment or limitation). We continue to investigate which indicators are effective in this evaluation matrix, adding new ones, and retiring ineffective ones as our experience increases. We are currently reviewing all sampling and data collection processes to increase the validity of the matrix. We are also investigating the effectiveness of various "punishments" to find positive drivers of desired behavior.
MOREOB: REAL IMPROVEMENTS IN PATIENT SAFETY.

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Objective: To make a fundamental improvement to Patient Safety AND Health Workers' quality of life.

Methods: The premise: Despite the availability of excellent CME, Patient Safety continues to elude us. The same errors are repeated from Unit to Unit, from hospital to hospital, from Nation to Nation. Clearly, the way we are doing things currently is not working. The plan: Re-invent CME, include the whole team, approach Health Care as being provided by the team that it is, with the patient at its center. MOREOB was created in 2001 by the SOGC (Society of Obstetricians and Gynaecologists of Canada) as a 3 year Patient Safety Program to change the culture in Obstetrical Units. Initially rolled out in 20 pilot sites, the success was such that it rapidly spread to over 200 sites across Canada. 80% of births in Canada are currently in MOREOB hospitals.

Results: The popularity of the Program speaks to its universal acceptance by every interprofessional team member. Internal results confirm this impression. Significant learning from a peer reviewed Common Body of knowledge is demonstrated. With Specialists knowledge gaining an average of 8% improvement over the Program, Nurses gaining 23%, Midwives: 14% and Family Doctors gaining: 15% (all results are p less than or equal to 0.01). Application of this knowledge is also demonstrated by improvements in the management of emergencies such as Shoulder Dystocia, PPH and Eclampsia. Improvements in standardization, consistency of practice and team effectiveness. A statistically significant improvement in the Culture Assessment survey is also clearly noted across the program. Organizational improvement is also noted. 77% agree that the Program had a positive effect on caregiver satisfaction on the job. 62% agreed that work related stress was decreased by the program. Other organizational return on investment are also noted. A statistically significant reduction in Newborns on Ventilation (OR: 0.69, p less than or equal to 0.05) and in Severe Infant Morbidity* (OR: 0.76, p less than or equal to 0.05) among others are attributed to the Program's effects**. Insurers data tell us (p less than or equal to 0.01 over 39 (HIROC) participating hospitals) of a reduction of the Average Cost Incurred from nearly $250,000 per Claim to under $50,000 thereby approaching much more closely costs from non OB units.

Conclusion: Health "Teams" are all too often individuals from various professional cultures thrust together to create yet another culture. If teams are supported, and educated together using a peer reviewed Common Body of knowledge, they will begin to gel and bond as a true team. Once this initial success is obtained, one can focus on introducing Communication and Teamwork tools with success, this will increase the quality of team interaction. Finally the team evolves to a high functioning team on the lookout for system errors with a true desire, ability and empowerment to repair faulty systems. The MOREOB program results in real improvements in the care of our obstetrical patients and in the quality of life of our stressed team members. It forms a paradigm shift in how a Health Team should be created and supported.

Reference: *Severe Infant Morbidity: index of multiple conditions (respiratory distress; bacterial sepsis; omphalitis; cerebral, intraventricular or subarachnoid hemorrhage due to birth injury; intracranial non-traumatic hemorrhage) REFERENCES: **Outcomes Following Province-Wide Implementation of the Managing Obstetrical Risk Efficiently (MOREOB) Program in Alberta, Frick et al., SOGC ACM Poster Presentation, June 2009.

Disclosure: Dr P. James A. Ruiter is the manager of the MOREOB program. In this capacity he leads the evolution and marketing of the program. The author is employed by the Salus Global Corporation. SALUS is owned by two not for profit corporations: SOGC and HIROC.
Objective: Reliable safe healthcare, despite extensive efforts in the last decade, is far from being a fulfilled expectation. Although health professionals are not intentionally harmful, the impact of errors and related harm to patients requires a major change. The objective of this paper is to describe APSS Trust’s effort towards the provision of safe healthcare services through an extensive continuing medical and professional education programme (CME) to improve a culture of trust, reporting, transparency and discipline.

Methods: APSS health care Trust manages 13 health care districts, 2 hub and 5 spoke hospitals (1,800 beds), serving nearly 520,000 inhabitants of the Trentino Region, North East of Italy. Professional workforce includes 1,077 physicians, 6,193 nurses/allied professionals/administrative staff. APSS office has implemented an array of CME courses to effectively refocus professionals’ continuing education on errors prevention and patient safety. The guiding light was the acknowledgment that health care is multidisciplinary and occurs within a complex, hierarchically organized system, therefore training was designed to be interdisciplinary and focused on identifying gaps in knowledge and address barriers to change in the practice environment. The following key features were chosen as targets for CME courses at different levels: principles of clinical risk management, medication errors management, communication and patient records, root-cause and failure-mode and effect analysis techniques, sentinel events, basic life support techniques. Since conventional “sit and listen” education is not very effective in terms of impact on clinical practice, active learning techniques and field education were implemented. CME courses were attended by small groups, usually no more than 20 people, during multiple editions.

Results: APSS has implemented, in the last four years, the following CME courses:

- basic skills in clinical risk management: 170 professionals
- advanced skills in clinical risk management (RCA and FMEA): 25 professionals
- effective patient and staff communication: 400 professionals
- patient records: 230 professionals
- BLS-D training and retraining: 2,119 professionals (over 90% of physicians and nurses with direct access to patient care in the JCI accredited hospital)
- new policies and procedures International Patient Safety Goals designed and implemented with a collaborative effort: over 120 field visits in the units and operating theatre by skilled hospital staff in the main hospital - JCI accredited, involving 320 professionals
- Satisfaction questionnaires showed agreement and interest on the goals of CME courses. Although the impact of CME in daily practices is very hard to verify, monitoring of patient records (i.e. evidence of time-out procedure in surgical patients) and audits in units are performed on a regular basis.

Conclusion: Safety, rather than being linked to measurement and rules, depends on achieving shared culture and values between professionals. CME needs to be restructured to balance the almost exclusive focus on clinical and scientific evidence, towards the development of skills, attitudes and behaviors that promote safe health care. The leverage of CME is only a first step in a long journey, and one of the many actions that must be implemented to improve safety, but in our experience it is effective, sustainable and it’s happening now.

Reference:
Elkin, P. et al., Continuing Medical Education and patient Safety: an Agenda for Lifelong Learning, J Am Med Inform Assoc., 2002; 9, 128:132
THE CHARACTERISTICS OF DOCTORS WHO GENERATE MULTIPLE PATIENT COMPLAINTS TO A REGULATORY AGENCY

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Objective: The objective of this study was to identify in doctors who had been the subject of multiple complaints, any characteristics that might assist in the development of better early warning, prevention and remediation systems

Methods: An analysis was performed of complaints about doctors that had been received by the Health Quality and Complaints Commission, and a predecessor agency between 1992 and 2009. Almost all these complaints had come from patients or their relatives. The focus of this report is a subgroup that has been the subject of 10 or more complaints. A joint database was constructed for this purpose from information held by both the Commission and the Medical Board of Queensland. Although complaints had often been received about the same doctor by both the Commission and the Board, this report concerns only those complaints received by the Commission. The present analysis is limited to gender, registration (including specialty) type, and country of first registration. Observed frequencies were calculated for the study group and compared with the expected frequencies amongst the 17,832 doctors (including 6,433 specialists) currently registered in Queensland. Statistical analysis was by the Chi square method.

Results:
• The number of complaints received by HQCC rose from approximately 5% of all doctors registered in Queensland in 1992 to 7% in 2009.
• Over this 16-year period, one or more complaints were received about the activities of 4583 doctors.
• An analysis of 71 doctors who had been the subject of 10 or more complaints, revealed that they were highly significantly more likely to be male (n=67, 94.3% observed vs. 66.4% expected, p<0.0001); to have specialist rather than general registration, (n= 47, 66.2% vs. 36.1%, p<0.0001); and to have an Australian rather than a non-Australian first qualification. (n=54, 76.0% vs. 61.6%, p<0.0001)
• Within the specialist group, general surgeons were highly significantly more commonly represented than were other types of specialist, (n=8, 17.0% vs. 6.4% p<0.0001), as were orthopaedic surgeons (n=8, 17.0% vs. 4.1% p<0.0001), plastic and reconstructive surgeons (n=8, 17.0% vs. 0.98% p<0.0001) and ENT/head & neck surgery (n=3, 6.4% vs. 1.48% p<0.0001). Lesser, but also statistically significant differences were noted in the specialties of obstetrics and gynaecology (n= 6, 12.8 vs. 6.1%, p=0.003), and urology (n=2, 4.2% vs. 1.3% p=0.003). There were no internal medicine specialists in this subgroup (expected 6.9%) and anaesthetists were less commonly represented than expected. (n=3, 6.4% vs. 13.1%, p= 0.007) No significant differences were found in gastroenterology, dermatology, neurosurgery (one individual in each specialty ) or ophthalmology and psychiatry (2 of each)

Conclusion: It is perhaps not surprising that doctors in “interventional” specialties may be subject to more complaints from patients than those who practice less invasive medicine, but the extent of the differences are surprising. An analysis of the nature of the actual complaints that is in progress may shed some light on this. It would appear that analysis of complaints from patients is underutilized and has significant potential to assist in the design of early warning and remedial programs that may reduce harm to patients.
AN IMPLEMENTATION PATHWAY FOR MATCHING EDUCATION MATERIAL WITH THE LITERACY LEVEL (LL) OF DIALYSIS PATIENTS

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Objective: The objective of this study is to develop and implement a pathway that can be used to ensure that patient education material is appropriately matched to the LL of patients by analysing the written education component of the North West Dialysis Service (NWDS) Managing Kidney Failure (MKF) pathway for pre dialysis renal patients.

Methods: An implementation pathway was developed with the sequential steps being: 1) collection of written material 2) establishment of the LL of our haemodialysis patient population by using the ‘Rapid Estimate of Adult Literacy in Medicine’ (REALM)1 test 3) determine the readability of patient brochures using the Gunning FOG Index2 and Fry Graph3 (FG) 4) evaluation of the level of comprehension required using the Suitability Assessment of Materials4 (SAM) test, and 5) modification of the education brochures to match patient LL and comprehension levels. The following principles were used to redesign brochures: the content was limited, the brochures were made easier to read by adjusting the format and information was presented in a more visual manner.

Results: Two hundred and fifty four (254) renal dialysis patients attempted REALM. Of these, 152 patients completed the testing. Median score was 52 out of a maximum of 66 (range 4-66) corresponding to a LL of Year 7-8 schooling. Assessing our current written material the median FOG index was 10 (range 8-12) indicating patients required a literacy level of Year 10. Likewise, the Fry Graph indicated that Year 10 (range 7-12) was required for comprehension of our written material. Of the 7 brochures tested, SAM indicated that 4 brochures were superior (a LL of Year 4 required) and 3 were adequate (LL of Year 6-7 required). To address these deficiencies, brochures were modified to improve readability. After brochure modification, FOG decreased to Year 8, FG decreased to Year 8 and all 7 brochures achieved SAM superior rating (Year 4).

Conclusion: The health care community increasingly relies on written material to convey and gather information. However, written materials are often given to patients with little regard for their ability to read them. Previous studies demonstrate that the reading comprehension of many patients lies below that required for printed healthcare materials they receive, suggesting that the LL of patients be strongly considered when developing education materials. This is particularly important given research has demonstrated patient comprehension is a prerequisite for compliance with medical instruction and health education. In this paper we have described the steps we have undertaken to maximise the effective transmission of health care information to our pre dialysis patients. By modifying our education brochures we have ensured that they meet the LL of our patients. This more effectively delivers information required by patients to understand the treatment and lifestyle regime required for their disease treatment. On-going use of this pathway is recommended.

Reference:
HEALTH LITERACY BARRIERS AND FACILITATORS: AN ASSESSMENT OF 10 HOSPITALS IN CATALONIA, SPAIN

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Objective: Navigation of health care institutions, difficulties of understanding written information and shortcomings in oral communication has repeatedly been linked to quality of care outcomes [1]. Here we report on the results of an assessment of the health literacy environment assessment in 10 hospitals in Catalonia, Spain.

Methods: The authors used standardized rating tools for the evaluation of navigation and specific readability tools for the assessment of written and oral communication [2]. We assessed the perception of patients about written and oral communication for one clinical process, the cataract, in 9 hospitals members of the HPH Catalanian network. Patients were distributed a satisfaction survey comprising 21 items related to legibility of patient materials. Data analysis included uni-, bivariate and multivariate statistics.

Results: Qualitative, thematic analysis of results on health care navigation indicates insecurity and confusion in finding one’s way throughout healthcare facilities. This was supported by standardized ratings of the literacy environment. Readability assessment of selected written materials shows extensive use of scientific language and informed consent forms inappropriate for the general public. Standardized assessments using legibility formulas suggest high educational levels required for understanding of the text. Assessment of oral communication was performed in 313 patients (50.8% women; mean age of 71). In general, educational level was low and satisfaction with legibility items was medium to high (asking questions, doctors explaining medical terms). However, substantial and statistically significant differences existed between hospitals (<0.001). Patients appear to be satisfied with the information materials although their readability assessment suggests that a university degree is required. Regression analysis did not demonstrate associations between education and ratings.

Conclusion: This assessment offers insight into the literacy demands placed on patients and visitors. On average, patients’ assessment of oral communication is rated high even though we were able to identify differences between hospitals. Some of the results are inconsistent in the sense that patients with low education level rate their satisfaction high with material that requires a high level of education for comprehension. Social desirability bias may influence the ratings in these groups of patients and further, more independent assessments are needed to target further improvement activities in oral communication.

IMPACT OF SHARING MEDICAL RECORDS AND CARE PLANS WITH PATIENTS DURING TREATMENT

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Objective: To evaluate the impact on patient experience of encouraging patients to view and comment on their medical records and plans of care during the treatment process.

Methods:
A hospital policy was established at a 160-bed hospital in 2002 to ensure the viewing and contribution to the medical record and plan of care by patients themselves during active care and treatment episodes. A "patients' notes" section of the record was developed, and nursing staff were trained to present the record to the patient, review sections of interest, orient patients to the section for their own input, and document patient interest. Upon discharge from hospital, a telephone survey was conducted with patients between 2002-2007 to evaluate whether they chose to view/contribute to their record, and if so, whether they found it useful. In addition, overall satisfaction with care was measured between patients who had been informed of their ability to contribute to their own record, and those who had not been informed during a 14-month period in 2006-2007. Similar overall satisfaction data was collected during this same time frame from four additional hospitals that had also implemented the shared medical record policy.

Results:
Data indicate that it took two years for the new hospital policy to be consistently implemented by staff. In 2002, 69.7% of patients surveyed responded that nurses had informed them of the option, and 18.3% chose to view and/or document in their chart. By 2004, 90.6% of patients had been informed and 26.9% opted to view their charts. By 2006, 93% of patients were informed, and 30.6% read them. In addition, 2,060 in-patients were surveyed between 2006-2007 on their overall satisfaction with care as reported on the HCAHPS survey, and the ratings of patients who had been informed of the policy and those who had not were compared. Eighty-seven percent of patients who had been informed were "very satisfied" with their overall experience compared to 77% of those who had not been informed of the option. This association was also established in a larger data set of four hospitals that surveyed 3,504 patients, with 69.7% of patients who had been informed rating themselves as "very satisfied" with their experience compared to 62.3% of uninformed patients.

Conclusion:
This study suggests that empowered, involved patients who are encouraged to view their own medical records during treatment and better understand their condition, are more satisfied with their care. Passive patients were less likely to feel that their caregivers kept them informed about their treatment, suggesting that patients who are less involved may end up frustrated by not having their needs anticipated by caregivers. As the healthcare industry moves toward expanded use of electronic medical records, the opportunities to more effectively share information with patients both during and subsequent to a treatment episode presents additional challenges that will need to be addressed. Providing online access for patients to view medical records is being experimented with in a growing variety of in-patient and ambulatory healthcare settings. This study reinforces the importance and potential benefits of ensuring that patients are given the opportunity and encouragement to become familiar with their own medical information and plans of care during active treatment episodes.

Reference:
EVIDENCE FROM THE UK GP PATIENT SURVEY: PREDICTORS OF PATIENT SATISFACTION AND POSITIVE EXPERIENCE WITH ACCESS TO PRIMARY CARE

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Objective: The GP Patient Survey (GPPS) surveys patients from all GP practices in England and is used to reward practices for performance on patient access and choice of hospital services. The survey was conducted for the second year in 2008. We used this large survey (nearly 2 million respondents) to explore drivers of patient satisfaction and positive experience with primary care.

Methods: The patient level data was combined with practice and PCT level data from various other sources. The main outcomes of interest were items about patient experience and satisfaction on five domains of access: telephone access; immediate (same or next 2 days) appointments; advance (more than 2 days hence) appointments; seeing a doctor of choice; and surgery hours. Relationships between satisfaction/experience and a range of patient, practice and PCT characteristics were explored using descriptive statistics and multivariate multilevel logistic regression. We also investigated the interactions of significant patient-level predictors with respective patient-level variables in order to explore potential reasons of dissatisfaction.

Results: Overall satisfaction and positive experience was high for all access domains. Patient-level variables that had the strongest impact on satisfaction and experience were age (older people more positive), ethnicity (White British most positive, Asians least positive), and employment status (full-time employed least positive, retired people most positive). Amongst full-time employed people, an ability to take time off work to visit the practice effectively removed any access disadvantage. In contrast, longer practice opening hours had no noticeable effect on reported satisfaction or experience. Practice size had a very substantial impact, with patients at small practices being more positive on all domains bar surgery hours. Satisfaction and experience also varied by geographical area, with patients from the London area being most likely to give a negative report. Significant patient/practice-level interactions were identified with ethnicity having the strongest effect: satisfaction and experience for both white and non-white patients deteriorated, to a different degree, as the percentage of non-white patients increased in a practice.

Conclusion: Although the great majority of patients expressed high levels of satisfaction and positive experience with access to primary care, some important predictive factors were identified. Although current Government policy favours longer practice opening hours and larger practices, this study, based on a very large national sample, found that additional opening hours did not improve patient reports about access and that patients at smaller practices reported both easier access and greater satisfaction. Regarding ethnicity, additional research is required to investigate the causality of the observed effects.

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Objective: analyse the impact of the patient/consumer-movement in the Netherlands by measuring outcomes of patients associations. Therefore creating transparency and informing the public in general about their activities, and providing patients associations a tool to learn from each other.

Methods: The purpose was to gather information on the most important tasks of patient associations. The project was started in 2005. Information gathering is yearly. Based on existing literature three major themes were identified: providing information and education, patient advocacy, and organising peer support meetings. We formulated a questionnaire to measure several outcome indicators and organised a focus group of ten representatives of patients associations to revise the questionnaire. The online questionnaire was tested on 19 patient associations. We tested the working of the online tool and checked the standard deviation of the given quantitative information. In the subsequent four years (2006-2009) we invited almost 200 known Dutch patient associations for specific illnesses and disabilities to fill in this online questionnaire. We organised a helpdesk by phone and by email for associations who needed support filling in the questionnaire.

Results: Response rates were 152 in 2009, patient associations had at average 3211 individual members, 170 donating members and 87 donating members. During the years this number hardly has changed. A third of the associations had professional and paid employees. Most of the associations are managed by volunteers: 74 at mean in 2009, varying from 3 until 3100. During the last years their number has been diminishing. The funding of patient associations is at average 200.000 euros and is stable during the years of measurement. Funding is primarily through membership contributions and government subsidies. Almost all responding patient associations focus on providing knowledge on diagnosis and therapy. This is their primary purpose of existence. Their reach is immense: in 2009 almost half a million people are subscribed to one of their magazines, almost 140.000 questions are being answered every year by their helpdesks and 20 million people visit their websites yearly. In the last 4 years the number of people that have visited these websites has increased up to 10.3 million unique visitors in 2009. Most questions are about diagnosis and treatment (90%) but also questions about the supply of specific care (53%) and the potential benefits of a patient association (47%) are asked. Patient associations organise meetings to provide support and advocacy. Most popular are meetings for their own members, significant others or family/relatives.

Conclusion: Dutch patient organisations are well organised and are fulfilling their tasks to inform patients as expected. However, the Dutch government wants patient associations to fulfil another role, as a serious partner in negotiating healthcare policy with (healthcare) suppliers and insurers. The government wants them to professionalise their advocacy role. Patient associations are trying to fulfil this new role. However, they have a long way to go before suppliers and insurers see them as a serious equal negotiation partner. The associations have hardly any professional support. The number of volunteers, their members and the amount of income are not increasing and sometimes even decreasing while the pressure to perform and participate only increases.
EXPANDING ACCESS TO SPECIALIZED HEALTH CARE FOR POOR AND EXCLUDED POPULATIONS IN THE ANCASH REGION – PERU

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Objective: Expand access to specialized health care for the poor and excluded population, through the development of new mobile care strategies strengthening local networks of health services and social actors in Ancash Region, Peru.

Methods: The Project was carried out in the Ancash Region, a coastal and highland region in Peru. It is 407 kilometers northeast of Lima and covers 35,876.92 Km2 and has a total population of 1,154,523. The project was made possible thanks to a strategic alliance between the Peruvian Cayetano Heredia University, the Regional Health Board of Ancash, G&C Health and Environment and the Antamina Mining Company. Despite a positive trend regarding insurance coverage in Peru, 48 percent of the population still lacks health care and there are still significant economic, cultural and geographic barriers regarding access to basic health care. The same is true for specialized health care to an even greater degree. The project focused its intervention on areas categorized by the Ministry of Health as poor, excluded and disperse due to impoverished conditions and geographic inaccessibility. That population included 427,141 residents, 390 rural areas and 44 health centers and 10 local hospitals. The intervention took place between January and December 2008. The intervention strategy was divided into two main components: 1. Develop a new health model that offered mobile specialized healthcare services. · Screening of cases that require specialized attention through itinerate teams and first response establishments. · Attention for selected cases through Campaigns Specialized Medical Care in Local Hospitals, bringing equipment and specialists from hospitals that have the resources to offer more complex care. · Campaigns Specialized Medical Care in Schools, placing priority on ophthalmology and oral healthcare 2. Strengthening the public health care sector for specialized health care in order to guarantee sustainability: · Strengthening management and medical care skills for specialized health care attention · Improving the quality of care in hospitals through a medical audit · Strengthening the reference and counter-reference system

Results: a. Results: · The percentage of the population that requires and receives specialized care has increased from 6 percent to 27 percent. In the project area 23,383 people received specialized attention in internal medical, pediatrics, gynecology, surgery, ophthalmology, dentistry, otolaryngology and gastroenterology, etc. · Of the total number of people attended, 84.18 percent formed part of quintiles 1 and 2 that correspond to the highest poverty levels. · 84% of those who were attended in Specialized Healthcare Campaigns in hospitals were satisfied with the attention they received · The skills of 155 local health care workers were strengthened for specialized health care.

Conclusion:
· It is feasible to eliminate barriers to access and bring specialized attention closer to the disperse rural population using strategies such as mobile units, linking attention levels and involving local actors. · Access to health technology has been facilitated for the poor population. · The Project contributed to improving the quality of life of the poor population by decreasing a lack of skills that have a direct impact on the diagnosis and treatment of illness. · It is an alternative strategy to the current deficit in terms of the health care services currently offered. · This new strategy has been presented to the Peruvian Ministry of Health to be applied in Universal health Insurance pilot projects in order to guarantee that disperse and excluded populations have access to the Essential Healthcare Plan, funded by the public budget.

THE DESIGN AND IMPLEMENTATION OF THE BALANCED SCORECARD FOR HOSPITALS IN LEBANON WITH IMPLICATIONS FOR NATIONAL HEALTH SYSTEMS AND POLICY IN THE EAST MEDITERRANEAN REGION

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Objective: Despite the positive outcomes of implementing the Balanced Scorecard (BSC) in high-income countries, evidence about BSC usage in low- and middle-income countries (LMICs) particularly in the East Mediterranean region (EMR) is lacking. This paper discusses the design and outcome of BSC implementation in one country from the EMR, Lebanon. The majority of Lebanese hospitals still struggle with identifying, measuring, and using PIs for better performance and operational decision making. Hospitals lack mechanisms to externally benchmark their performance. We will discuss the process and outcomes of identifying, developing, and implementing a standardized set of balanced PIs for hospitals in Lebanon; including translation of results into policy.

Methods:
A multi-step approach was used: 1) Extensive literature review was conducted on BSC frameworks including selection of pre-determined PIs. 2) Engagement mechanism and dialogue with stakeholders. 3) Consensus meeting was held for selection of PIs. 61 hospitals completed a survey. Based on selected criteria, consensus was achieved on 21 PIs. 4) Organizational readiness assessment survey was conducted and a second consensus meeting was held to discuss progress and determine next steps. 5) A national steering committee was established to oversee the development and pilot-testing of PIs. Based on PIs’ applicability in Lebanese hospitals, the PIs were classified into categories with a starter set of 7 PIs. These are; in-patient mortality, readmission for the same diagnosis, repeat surgeries, surgical site infections, patient falls, needle-stick and sharps injuries, and patient satisfaction. A procedures manual detailing measurement of the 7 PIs was developed. 6) Training was conducted for 15 representative hospitals. 7) Pilot-testing of the PIs was implemented from October to December 2009 in 14 hospitals. 8) Pilot evaluation using both quantitative and qualitative ways. Quantitative evaluation was conducted through a questionnaire, which evaluated validity, reliability, and feasibility of PIs using a 1 to 5 scale. PIs were considered valid, reliable, and feasible when their mean scores were >3 on the corresponding subscales. The questionnaire also evaluated staff experience and professional development. Qualitative evaluation was conducted through interviews during field visits to assess pilot strengths and challenges. A random sample of log sheets was collected to evaluate consistency with protocol and provide guidance. 9) Development of decrees by Ministry of Public Health (MOPH) to institutionalize the 7 PIs.

Results:
Findings from the readiness assessment emphasized the lack of quality culture and wide variations in the measurement tools of the same PIs across hospitals. For most hospitals (69%), measurement activities were only conducted for accreditation surveys and ceased once accreditation was granted. Urban hospitals were more active than rural in PI measurement due to competition and diversity of third-party payers and private out-of-pocket patients. Feasibility, validity, and reliability were demonstrated for the 7 PIs except patient satisfaction, which scored <3 on feasibility and reliability. Specifications of patient satisfaction and other PI were reviewed for nationwide implementation based on hospitals’ recommendations. Findings from the pilot support nationwide implementation and development of decrees by the MOPH to institutionalize the PIs.

Conclusion: This project resulted in the development of standardized PIs and built hospital capacity for measurement, enabling hospitals to benchmark their performance. This paper demonstrates the importance of stakeholders’ involvement and partnerships between academics, MOPH, professional associations, and health providers in the effective implementation of such large-scale initiatives; translation of results into policy; and policy implications for national health systems in Lebanon and the EMR, particularly for linking hospital reimbursement to performance or developing performance contracting/pay-for-performance. In addition, this paper affirms that replicating the BSC should consider the context of health systems. PIs developed in high-income settings should first run through local applicability criteria to fit LMICs context.
DETERMINANTS OF QUALITY OF CARE FOR CHILDREN UNDER FIVE YEARS ATTENDING HOSPITAL OUTPATIENT CLINICS IN AFGHANISTAN

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¹International Health, Johns Hopkins University, Baltimore/UNITED STATES OF AMERICA, ²School Of Nursing, University of Washington, Seattle/WA/UNITED STATES OF AMERICA

Objective: To assess the quality of care with respect to the Integrated Management of Childhood Illness (IMCI) and its determinants for children under five years in hospital outpatient clinics in Afghanistan.

Methods: In 2007, 31 main hospitals in the provincial capitals were selected to conduct performance assessments on the essential package of hospital services. Patient observations were conducted on 10-12 children selected by systematic random sampling followed by caretaker and provider interviews. This was followed by assessments on hospital capacity and clinical capabilities including staffing and availability of essential equipment drugs and supplies. To determine provider adherence for patient assessment and counseling a quality index was computed using eight priority IMCI indicators listed in the World Health Organization IMCI index.

Results: A total of 360 observations of outpatient consultation clinical care were conducted, although 53 records were eliminated from the final sample due to missing values for age of the child. The primary presenting compliant was diarrhea, followed by cough or difficulty in breathing. A majority of the children were examined by clinicians (93%), and for 94% of the children the consultation time was less than 10 minutes. Less than 50% of the children were assessed for danger signs, although 65% were assessed for diarrhea, 77% for fever an 60% for cough. Less than 20% of the caretakers were counseled on feeding during illness, but 87% of the children requiring vaccinations were directed to receive immunization. Only 56% of the caretakers were aware of how to administer the medications to the children. The overall quality of care median score was sub-optimal at 27.5, on a 100 point scale. In the multivariate analysis, the odds of better quality of care by a female provider was 5.8 times higher than a male provider (p<0.005), after adjusting for facility type and child sex. Similarly children seen by medical doctors clinicians had a 2.9 higher odds of better quality of care than other providers (p<0.01). In Hospitals managed by NGO’s the poorer patients had a 15.2 higher odds of receiving high quality care (p<0.05), than the poor patients in the hospitals managed by the Ministry of Public Health (MOPH).

Conclusion: Despite the investments in health infrastructure and improvements in service delivery, quality of care still remains suboptimal in the outpatient clinics of hospitals. Although IMCI training was significantly associated with improved quality in primary health facilities in Afghanistan, this study did not include assessments on provider training in IMCI to perform the analysis. The efforts are underway to initiate IMCI training in hospital outpatient departments. Ensuring access to optimal care at these referral hospitals will be critical to ensure utilization and favorable health outcomes as patients are referred from primary facilities. Improved care by medical doctors clinicians and also by female providers necessitates additional investments for ensuring better training for non medical providers , and recruiting more female providers in the workforce. This is the first national study examining quality of outpatient care for children in hospitals, and despite the limitations of small sample size and lack of information on IMCI training in hospitals, the findings justify the need for continued investments to strengthen the capacity of hospitals to improve quality and service delivery.
COMMUNITY BASED SURVEILLANCE MODEL FOR REVIEWING ACCESS, QUALITY, AND UTILIZATION OF PRIMARY CARE SERVICES AMONG COMMUNITY MEDICAL INSURANCE CARD HOLDERS FOR THE POOR IN INDONESIA

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Objective: Reviewing the implementation of community medical insurance for the poor in the province level

Methods: Several workshops were conducted to develop a model of community based surveillance in five districts. Based on the model, a simple check-list was developed as a tool for reviewing access, quality and utilization of primary care services, and a mechanism for reviewing process was establish by the forum with the help of facilitators from provincial health office. The review process was conducted by village people that were organized in a village health forum. Based on the reviewing process, the forum would provide feedback and recommendation to the health care providers as well as the local health office for follow up actions.

Results: A model was developed with similar check-lists for reviewing access, quality and utilization. Reviewing mechanisms were developed in those five districts based on consensus among the forum members. The process was conducted well only in two districts due to better local government support, commitment of the health care providers to encourage the reviewing process by the community, and real follow up actions of the forum recommendation. The result has not yet showed the Improvement of access, quality and proper utilization of the services.

Conclusion: The Indonesian Government has established a community medical insurance for the poor since 2006 due to increase number of poor people since the economic crisis in 1998. Complaints from the users as well as from the legislatives to the health service providers and the local health offices were gradually increase. The government has yet provided a continuous monitoring system to review the access and quality of the service providers and the utilization of services among the card holders.
PROCESS MANAGEMENT IN THE IRANIAN HOSPITALS: A SURVEY ON THE PATTERNS BEING USED

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²Management, Iran University of Medical Sciences, Tehran/IRAN, ³Management, of Islamic Azad
University- Fars Science and Research Branch, Shiraz/IRAN

Objective: The main goal of the present study was to identify the type of process management patterns being used in the Iranian Hospitals and to assess the results of adopting and maintaining such patterns in the stated organizations.

Methods: In order to achieve the above goal, a survey was done in the Iranian Social Security Organization's hospitals around the country (N=65). Iranian public hospitals are either under the supervision of Medical Sciences Universities or Independent Organizations such as Iranian Social Security Organization, Oil Company, etc. No sampling was used in this research. The data were collected via a self-report questionnaire. The subjects were working either as hospital manager or quality improvement experts in the stated hospitals.

Results: The findings indicated that 7 different patterns of process management have been implemented in the investigated hospitals. These patterns were ISO 9001, FOCUS PDCA, QFD, EFQM, Hospital excellence quality model, 6sigma and BSC. Forty one out of 65 of the hospitals, ISO 9001 has been implemented for the last decade and following results were obtained: 1)Reduction in number of errors, 2)Improvement of main processes, 3)Improvement of productivity, 4)Access to excellence in quality improvement and 5)Standardizing health services.

Conclusion: At the present time ISO 9001 process management pattern functions successfully in the Iranian Social Security Organization hospitals and has improved the quality of services in these settings. It looks like that in the Iranian hospitals ISO 9001 has successfully achieved the objectives of process management. Considering the positive results of our study, we recommend the use of ISO 9001 in similar health care settings.
Does initiation and engagement in substance abuse treatment decrease the likelihood of arrest and incarceration?

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Objective: To explore the relationship between process measures and outcomes in substance abuse treatment by examining the association between adherence to during-treatment performance measures (initiation and engagement) for substance abuse clients and outcome measures (defined as arrests and incarcerations).

Methods: We use substance abuse performance measures originally developed by the Washington Circle (WC), adopted by the National Committee on Quality Assurance (NCQA) for commercial, Medicaid and Medicare managed care plans through HEDIS, and under further development by ten USA public state substance abuse agencies. These include initiation (percent of clients with a new episode beginning with an outpatient service who have an additional service in 14 days or who have an initial residential stay) and engagement (two additional services within 30 days after initiation). Survival analyses were conducted to predict the influence of treatment initiation and engagement, along with client demographic information, previous criminal justice involvement and employment, type of drugs used, and program variables, on the time to arrest or incarceration. The study reports on encounter data from the Oklahoma Department of Mental Health and Substance Abuse Services linked to state criminal justice data for adult clients who began a new episode of treatment with an outpatient service (N = 5,163) in 2001. We further explore how the study is to be replicated in five other states with differing data systems (Connecticut, Massachusetts, New York, North Carolina, and Washington).

Results: In Oklahoma, clients first treated with outpatient services and who initiated and engaged in treatment were less likely to be arrested or incarcerated (hazard ratio = .73). Initiation of treatment by itself, without engagement, was not enough to significantly decrease the likelihood of arrest/incarceration. Previous research has shown the positive benefits of longer lengths of treatment and of treatment completion, but our findings show that engagement in the early stages of substance abuse treatment, for clients with even two additional visits within 30 days after initiation of outpatient care is associated with a positive difference in outcomes. Progress on replicating these findings in other states is also reported.

Conclusion: This study offers initial evidence that adherence to substance abuse performance measures is associated with a lower likelihood of serious negative outcomes such as arrests/incarcerations for outpatient clients. It suggests that performance measures based on the concept of “process of care” for persons with substance use disorders have an association with subsequent criminal justice involvement, an outcome that is critical both to clients and society. Measures such as initiation and engagement are actionable in the short term through quality improvement initiatives at substance abuse treatment facilities, and can thus have a broader societal impact.

THE IMPACT OF PAY FOR PERFORMANCE DEMONSTRATION PROJECT FOR AMI CARE IN KOREA

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Quality Assessment, Health Insurance Review and Assessment Service, Seoul/KOREA

Objective: Health Insurance Review and Assessment Service (HIRA) has assessed the quality of acute myocardial infarction (AMI) as Payment For Performance (P4P) Demonstration Project from Jul 2007 to Dec 2010. P4P Demonstration Project model has three steps. 1) Year One(2007.7~12) : penalty threshold setting(upper Composite Quality Score(CQS) of 5th group) 2) Year Two(2008.1~12) : incentive payment(Top 20% of all hospitals) 3) Year Three(2009.1~12) : incentive and disincentive payment(Top 20% of all hospitals and lower penalty threshold hospitals of Year One). This study is aimed to analyze the effectiveness of P4P Demonstration Project.

Methods: We collected the administrative data and the clinical data of all patients who were diagnosed with AMI admitted in emergency room from Jul. 2007 to Dec. 2008. Total 12,665 patients were enrolled and were treated in 43 tertiary hospitals. AMI performance measures are composed of five process measures (Fibrolytic therapy received within 60 minutes of hospital arrival, Primary Percutaneous Coronary Intervention within 120 minutes of hospital arrival, Aspirin at arrival, Aspirin prescribed at discharge, Beta-blocker prescribed at discharge) and one outcome measure (risk-adjusted 30-days mortality rate). Six AMI performance measures were aggregated with one CQS. Hospitals were sorted in descending order by their CQS and were divided into five groups which have the equal number of hospital. To evaluate the effectiveness of P4P, the results from the first and second year were compared by chi-square test. The CQS of the first year was compared to the second year by paired t-test.

Results: Fibrolytic therapy received within 60 minutes of hospital arrival rate increased from 70.3% to 86.4% (p=0.001). Primary Percutaneous Coronary Intervention within 120 minutes of hospital arrival rate increased from 85.3% to 88.9% (p=0.020). Aspirin at arrival rate increased from 98.0% to 98.8% (p=0.027). Aspirin prescribed at discharge rate increased from 99.5% to 99.6% (p=0.372). Beta-blocker prescribed at discharge rate increased from 96.1% to 97.7% (p=<.000). During the second year of P4P Demonstration Project, 4 of 5 process measures improved significantly in statistics. The overall average CQS increased from 92.09 to 93.86(1.77 score). By paired t-test, the CQS of the second year was significantly higher than the first year (p=0.047).

<table>
<thead>
<tr>
<th>process measure</th>
<th>denominator (N)</th>
<th>numerator (N)</th>
<th>results (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibrolytic therapy received within 60 minutes of hospital arrival</td>
<td>101</td>
<td>71</td>
<td>70.3</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>228</td>
<td>197</td>
<td>86.4</td>
<td></td>
</tr>
<tr>
<td>Primary Percutaneous Coronary Intervention within 120 minutes of hospital arrival</td>
<td>543</td>
<td>463</td>
<td>85.3</td>
<td>0.020</td>
</tr>
<tr>
<td></td>
<td>2,037</td>
<td>1,811</td>
<td>88.9</td>
<td></td>
</tr>
<tr>
<td>Aspirin at arrival</td>
<td>1,673</td>
<td>1,640</td>
<td>98.0</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>4,801</td>
<td>4,742</td>
<td>98.8</td>
<td></td>
</tr>
<tr>
<td>Aspirin prescribed at discharge</td>
<td>3,489</td>
<td>3,471</td>
<td>99.5</td>
<td>0.372</td>
</tr>
<tr>
<td></td>
<td>7,098</td>
<td>7,070</td>
<td>99.6</td>
<td></td>
</tr>
<tr>
<td>Beta-blocker prescribed at discharge</td>
<td>2,847</td>
<td>2,735</td>
<td>96.1</td>
<td>&lt;.000</td>
</tr>
<tr>
<td></td>
<td>5,963</td>
<td>5,830</td>
<td>97.7</td>
<td></td>
</tr>
</tbody>
</table>

Table2. The comparison of Composite Quality Score

<table>
<thead>
<tr>
<th>CQS</th>
<th>N</th>
<th>Mean±SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year One</td>
<td>28</td>
<td>92.09±9.37</td>
<td>0.047</td>
</tr>
<tr>
<td>Year Two</td>
<td>28</td>
<td>93.86±7.74</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: P4P Demonstration Project of Korea has shown great impacts on improving quality of AMI care in the second year. We anticipate that these results would be used for applying P4P project in other clinical areas.
BALANCE OF CARE: COMMUNITY SERVICES AS AN ALTERNATIVE TO LONG TERM CARE PLACEMENT

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Objective:
Balance of Care offers eligible clients a comprehensive basket of services that enables them to live at home as a viable alternative to long-term care.

Methods:
The purpose of the presentation is to: - Share outcomes of the Balance of Care pilot project, which offers an integrated and collaborative approach to providing services for clients living at home. - Demonstrate an innovative model of care that highlights coordinated care between Central Community Care Access Centre and multiple community service agencies - Profile effective practices that provide clients with individualized service plans and high quality care, which results in the right care, in the right place, at the right time. MOUs/Contracts

Results:
The current health care system has few alternatives to Long Term Care for frail seniors. As a result, institutionalization is for many the only option. The Balance of Care pilot project is a partnership between the Central CCAC, Downsview Services for Seniors, CHATS (Community Home Assistance to Seniors) and Circle of Care. Balance of Care offers people over 65, living in the Central LHIN and on a waiting list for long-term care, with comprehensive home-based services that enable them to remain at home. CCAC case managers and community agencies work together with the client and family to determine the best combination for a basket of services that includes personal support, homemaking support, adult day programs, transportation, and meals on wheels. Over 400 clients have been admitted to Balance of Care since it was implemented over a year ago. Some of the key outcomes of the project include: strengthened partnerships and increased capacity of CCAC and community service agencies; positive client outcomes, with 13% of clients declining admission to long-term care, improved assessment scores, and increased caregiver satisfaction. This presentation will demonstrate the results of a pilot initiative that offers a cost effective alternative to long-term care.

Conclusion: Established community alternatives as a viable, cost-effective and client centred alternative to placement in long-term care.
NON-TECHNICAL SKILLS, TEAM-WORKING AND QUALITY IN UROLOGICAL MULTIDISCIPLINARY CANCER TEAMS: A MULTI-METHOD INVESTIGATION

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¹Centre For Patient Safety And Service Quality, Imperial College London, 1PG/UNITED KINGDOM, ²Urology, Basingstoke and North Hampshire NHS Foundation Trust, Basingstoke/UNITED KINGDOM, ³Urology, Whipps Cross University Hospital NHS Trust, 1NR/UNITED KINGDOM, ⁴Academic Surgical Unit, Imperial College London, London/UNITED KINGDOM

Objective: Evidence from various specialities shows team performance affects quality of care (Undre 2009), so using a multi-method study we aim to systematically investigate these skills and their effect on decision making in urological multidisciplinary cancer teams.

Methods: Multidisciplinary teams participating in a bladder cancer Master-Class run by the Pelican Cancer Foundation were recruited. Information presented at meetings and team members' interactions were assessed via direct observation from 09/2009-12/2009. MDT members completed a survey over the same period assessing the same aspects of MDT working to allow comparison with observations.

Results: 390 cases were observed and 75 surveys were completed from 8 Urology teams across England. Observations showed strongest use of case history followed by radiology, pathology, information on co-morbidities and patient's treatment preference (p<0.05, Wilcoxin Signed Rank Test). Urologists had greatest involvement in discussions, followed by oncologists, radiologists, pathologists and urology clinical nurse specialists (p<0.05 Wilcoxin Signed Rank Test). Survey evidence agreed with observations: case history is presented most thoroughly, then radiology, comorbidities, pathology, patient choice and psychosocial problems. Surveys found urologists' opinion carries most weight, followed by oncologists, radiologists, histopathologists and urology clinical nurse specialists. Most chairs are urologists. Although only 40% of chairs rotated, 83% felt they could rotate with urologists the most popular choice.

Conclusion: Observations and members surveys of non-clinical aspects of MDTs were consistent-cross-validating the findings. Clinical aspects of patient care are reviewed more thoroughly than psychosocial aspects and patient preferences. Urological opinion dominated, with CNS sidelined leading to less presentation and consideration of patient preference and psychosocial information. Evidence shows that not considering these factors results in poor quality decisions (Blazeby 2006, Wood 2008). Inclusivity must be promoted in multidisciplinary cancer teams in order to improve decision-making. This can in turn improve the quality of patient care.

MEASURE OF THE IMPACT OF THE IMPLEMENTATION OF ORGANIZED STROKE CARE IN THE REGION "ILE DE FRANCE" (FRANCE).

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Objective: Many studies and metaanalysis showed the efficiency of Stroke Units (SU). Organized care has been proven to decrease morbidity and mortality after stroke. In Ile-de-France, about 20000 strokes occur each year ; there are 16 SU, among them 10 were created since 2003. The implementation of the SU and of their networks are regularly evaluated on behalf of the regional hospitalization agency (ARH-IF) , with information feedback to multidisciplinary stroke teams and hospital administrators in order to optimize the quality of care of stroke patients.

Methods: DESCRIPTION OF THE PROGRAM Two types of indicators are collected. Epidemiological data such as number of hospital admissions for stroke in the region and by establishment and demographic data of stroke patients are analysed. Since 2000, they are collected from the national hospital discharge database, according to a protocol of extraction defined by the professionals. Other indicators concern the hospital management of stroke patients such as proportion of patients admitted in SU vs other non dedicated units, the type of stroke (transient ischemic attacks, infarction and haemorrhage), the stroke severity, the treatments (including rehabilitation), the complications, the length of hospital stay and the outcome. Time indicators are important to assess the organization of the care : delay of hospitalization, of admission within the SU, of access to the neurological expertise, to the brain imaging, to the physiotherapist and speech therapist evaluation and to the stroke rehabilitation unit. These data are prospectively collected from surveys regularly realized on 30 to 50 consecutive patients admitted in SU. A web-based tool was used to collect data from sites. The analysis is realized by the pole " Affaires hospitalières de la CRAMIF ». The results of these evaluations are presented during an ARH-IF plenary session to the neurologists, the rehabilitation physicians and the hospital administrators of the concerned establishments, and then within each establishment to all the medical and non medical multidisciplinary team and the directors.

Results: These evaluations allow to estimate, in an iterative way, the professional practices and to suggest actions to improve organization of stroke care, measured in particular on patients' proportion admitted in SU, on the decrease of pre-and intra-hospital delays allowing more patients to have access to the thrombolytic therapy. Within the region "Ile de France", the number of stroke patients admitted in establishments with SU increased from 22 % to 48,5% between 2003 and 2008; the median age of stroke patients did not modify in the region (71 years), but the age of stroke patients admitted in establishments with SU increased from 63 to 67 years. The in-hospital stroke mortality decreased from 15,8 % to 10,5 % and the SU- mortality from 12,5 % to 8,6 %. The number of patients evaluated within the first 48 hours by a physiotherapist and/or a speech therapist increased regularly, while the complications rate decreased.

Conclusion: Regular evaluation of the regional stroke care pathways allows to provide and to quantify relevant and robust information’s on organizational processes and quality of care. These objective data allow to exchange points of view between the professionals, to suggest better organizations, to follow their implementations and to measure the clinical impact of improvement program.
GOVERNANCE QUALITY COMPOSITE PERFORMANCE SYSTEM IN AN ACADEMIC HEALTHCARE FACILITY IN TORONTO, CANADA

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Objective: To provide Senior leaders and the Quality Committee of the Board / Board of Directors with a high level report that reflects the overall performance of the organization in the six dimensions of quality as defined by the Institute of Medicine [IOM] and adopted by St. Michael's Hospital.

Methods: The assessment system consists of six dimensions (SOAPEE): safety, outcomes, access, patient experience, efficiency and equity. There are several aspects and indicators in each dimension. We developed the standardized quality and clinical outcome indicators with adjustment for factors, such as standardized mortality ratio, standardized readmission ratio, infection rates, adverse event rates, wait time and patient satisfaction rates. To standardize the indicators, the Generalized Linear Model was applied in the development of the indicators adjusted for several major risk factors considering their distributions. The performance indices scores were calculated based on the standardized quality indicators. Factor analysis was employed to develop a weighted composite performance score. This score was applied in the hospital performance assessment.

Results: St. Michael's Hospital has established a measurement and reporting system which provides a Quarterly Composite Performance Index for each dimension of quality. An overall Composite Performance Index shows overall performance on a quarterly basis. Detailed breakdown of the select indicators is included for information and ensures transparency.

Detailed analysis of select indicators show actual performance compared to targets, peer hospitals, and performance variance compared to acceptable corridors. A commentary is provided to explain significant variances, including steps taken by management to address negative variances. This work has created a high level performance system which represents a more holistic assessment of overall performance for leadership and governance efforts to improve the healthcare quality, safety and cost-effectiveness.

Conclusion: Oversight for performance, especially in the areas of quality of care and financial condition is one of the responsibilities of the board of governors and the senior leadership. We have established a Composite Performance Index in the six dimensions of quality which supports governance and management decision making. The combination of a high level simple display of quality measures combined with a more detailed display of the targeted corporate indicators can be an effective way to supply the board of governors with data that will enable them to evaluate performance for strategic quality improvement planning. This framework is applicable in other organizations as a tool to support performance oversight for quality improvement.

THE ART OF NHS INDUCTION: GENERATION Y STYLE

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Objective: This study explores the current state of induction into the NHS for management trainees and junior doctors. It suggests positive strategies that could be implemented to improve institutional loyalty.

Methods: An online survey of junior doctors and management trainees was carried out. The brief survey assessed the most recent induction experienced, including the seniority of those providing the induction, the use of online training, and the overall effect of the induction. It specifically looked at whether the induction created institutional loyalty, developed teamwork and informed about the priorities of the organisation.

Results: Abstracts without results or which simply say "Result will be presented" will not be accepted. The findings are stark: loss of opportunity to inspire and create an insitutional loyalty, limited attempts to explore the local health organisation and population health needs and a cynical reaction to induction. Only 19 per cent of junior doctors met the chief executive of their Trust at induction, whereas over 50 per cent of management trainees reported meeting the chief executive during their induction. NHS management trainees are more positive about their most recent induction experiences when asked to score them out of 10, with 0 being the worst and 10 being the best. The most frequent score for junior doctors was 3 out of 10 and for management trainees was 8 out of 10. Induction for NHS management trainees provides an overview of the whole organisation, which is not currently part of junior doctors’ induction. 40 per cent of junior doctors did not recall patient safety discussed at their most recent induction compared to over 80 per cent of management trainees. Induction for junior doctors failed to teach the majority of junior doctors (57 per cent) more about the organisation and the patients they would be working for so that they could work more effectively, compared to only 21 per cent of management trainees feeling the same. Over two-thirds of junior doctors did not feel part of a team as a result of their induction programme. Nearly half of management trainees did not feel part of a team following their induction experience. More than 80 per cent of junior doctors, and 47 per cent of management trainees, did not feel more inspired about their jobs following their induction programme. Over two-thirds of both junior doctors and management trainees were unable to recall a vision for the organisation they work for clearly stated during their induction.

Conclusion: At present, induction to the NHS is not inspiring junior doctors nor addressing the key issues required to create strong institutional loyalty. Management trainees are receiving a different and in some ways, more appropriate induction to the NHS. Looking to learn from other industries, future implications of this study include the creation of an induction DVD to introduce the NHS, clearly stating the background aims and current strategy for the organisation, through brief interviews with senior leaders. Sending such a DVD to a junior doctor prior to starting work aims to inspire them about their new job and create a wider awareness of the environment in which they will be working.

Disclosure: C. Lemer, Diagnosis, Financial Interest Social Enterprise Healthcare Consultancy E. Stanton, Diagnosis, Financial Interest Social Enterprise Healthcare Consultancy
NTWC LEAN JOURNEY – ACHIEVING CONTINUOUS HEALTHCARE IMPROVEMENT THROUGH LEAN MANAGEMENT

C.W. Cheng
Quality And Risk Management Division, New Territories West Cluster, Hospital Authority, Hong Kong, Hong Kong

Objective: Through NTWC Lean Journey, the hospital cluster is determined to achieve
- services that deliver most value in patients' perspectives;
- an environment where patients and staff are being respected;
- a culture of continuous improvement.

Methods: New Territories West Hospital Cluster (NTWC) comprises 4 hospitals and 8 general out-patient clinics providing full range services to a population of 1.1 million in North Western Hong Kong. Lean was not new to healthcare. Many hospitals applied lean with promising results. As the first hospitals to adopt lean in the region, we develop our lean journey that is specific to the context in Hong Kong. After careful exploration and planning, the management kick-started the Lean Journey in August08. The activities of the Lean Journey can be characterized into 3 categories:

Process improvement
The Lean journey was headed by a committee of senior managers led by the cluster chief executive. Kaizen coordinators were appointed in each department to coordinate lean activities. Seminars and forums are organized monthly to share good lean activities and practices. Regular newsletters on lean activities are circulated to all staff.

People development
A structured training plan has been set to equip staff with necessary knowledge on lean so they can undertake lean activities in the cluster and support the NTWC lean journey at different levels.
- Level I - 1hr introduction for all staff: also integrated in staff orientation
- Level II - 2day workshop to train up departmental leads
- Level III - a certified program in lean management for leaders of the NTWC lean journey.
Visits on other lean industries are also arranged for eligible staff to expand their perspectives in lean management.

Philosophy and culture
The NTWC lean journey is more than a set of tools and improvement projects. It aims at improving healthcare through systemic change in the organization.
NTWCare Ward - a ward model designed for systemic change in ward care – was introduced in 25 wards. Under this model, clinical training & supervision, administration support and culture development are enhanced.
Kaizen rooms were set up in hospitals to provide a friendly environment to perform lean discussions. To improve bottom-up communication, senior management holds regular Gemba Walks featuring interaction with and recognition of frontline staff. Most lean-related issues identified can be followed up quickly with real-time management support.
To encourage suggestions from frontline staff, suggestion boards were erected in over 100 units where managers have to attend regularly. A "Star Wall" was dedicated to recognizing effort of frontline staff on lean activities.

Results: In 2009, there have been over 300 Kaizen activities recorded. These activities ranged from simply reconfiguring a workplace to enhance staff efficiency, to redesigning the whole process to create value to patients. Outcomes of several significant projects are listed below:

<table>
<thead>
<tr>
<th>Item</th>
<th>% Improve</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of patient being discharged before 13:00</td>
<td>42% more</td>
</tr>
<tr>
<td>Developing rehab/discharge plan for Stroke unit patient</td>
<td>43% faster</td>
</tr>
<tr>
<td>% delay transporting patient for Angiogram</td>
<td>22% decrease</td>
</tr>
<tr>
<td>% days with operation theatre overrun</td>
<td>18.9% decrease</td>
</tr>
<tr>
<td>Out-patient waiting time at pharmacy</td>
<td>16% decrease</td>
</tr>
</tbody>
</table>

Care ward model not only enhanced access to training and supervision for staff, it also created a highly engaged workforce as demonstrated by an internal study. Most importantly, a culture of lean has been taking root in the NTWC culture, where teams constantly think of improving service in the perspective of patients' value.

Conclusion: Lean healthcare is adoptable under the context of Hong Kong as demonstrated by the benefits brought by the NTWC lean journey. NTWC is determined to stay on this path.
A METHOD OF ILLUMINATING A POSITIVE WORKPLACE CULTURE: STAFF DEFINING AND ENACTING THEIR ORGANISATIONAL CULTURE

D. Greenfield, P. Nugus
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Objective: The aim of this study was to investigate the progress that the Community Care Program (CCP) in ACT Health, a health jurisdiction in Australia, had made in translating their ideals, as specified in their Cultural Charter, into ongoing cultural norms.

Methods: The Cultural Charter is comprised of five sections, with a total of 46 items specifying the values and conduct expected of staff within the program. The Charter was established in November 2006 and refined in September 2008, as a follow up to workplace culture surveys undertaken by ACT Health in 2005 and 2007 respectively. In August 2009, CCP staff were surveyed to ascertain the progress that they had made towards enacting their Charter. The statements from the section in the Charter entitled “The workplace I want to work in is” were selected for this study. Seven issues are covered in this section: team and work environments; respect and valuing of staff; work expectations; leadership; communication; safety and organisational resources; and, valuing of learning. The selected statements from the Charter were transformed into a survey comprising 11 items with an additional free text question for any suggestions for improving the workplace. Respondents were asked to rate the items using a five point Likert scale, from strongly agree to strongly disagree. From 120 questionnaires distributed 96 were returned for a response rate of 80%.

Results: Respondents overwhelmingly perceived that staff of the CCP were enacting the values and conduct specified in their Cultural Charter. In summary, positive responses, of 64% or above, were given for ten of the eleven questions, and seven of the ten positive responses rated higher than 70%. Only six items received a negative rating of over 10%, with a solitary item over 20%. The highest positive response, a rating of 89%, was that the CCP valued learning and the attainment of skills. Three questions that examined values received high positive ratings – respect and care (78%), fairness and honesty (78%), and recognition of staff (71%). The team environment questions scored ratings of 77% and 75% respectively and the work environment rated 68% with 20% neutral. Participants reported that the CCP had realistic work expectations, recording a positive rating of 70% with a further 17% in the neutral category. Communication in the CCP was perceived as being conducted well, with a positive score of 68% and a fifth of respondents recording a neutral rating. Similarly, leadership was well regarded with 64% positive and a quarter of respondents remaining neutral. Safety and organisational resources received the most mixed responses and lowest positive rating. Participants responded 49% as positive, just under a third, 28%, replied neutral and 23% in the negative. Free text responses were received from one third of respondents; 36 participants made suggestions and 60 no comments. Suggestions to improve the CCP fell into four categories: enhanced support for clinical work; improved organisational leadership, promoting greater self-governance and distributed leadership; increased opportunity for IPL and IPP; and, additional workplace resources.

Conclusion: The Charter has established cultural norms by which health professionals judge themselves and seek to improve the delivery of patient care. There are two important lessons for executives, managers and clinicians. Firstly, staff, when given responsibility and opportunity, will demonstrate self-governance and distributed leadership. Secondly, the study highlights that organisational improvement is an incremental, continual process.

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DEVELOPMENT AND PILOT TESTING OF A NATIONAL AND MANDATORY SET OF ACCREDITATION STANDARDS ACROSS SECTORS

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Objective: Transitions between institutions and sectors are associated with risk of adverse events causing harm to patients. Knowledge of care in the individual sector is frequently not conveyed across sectors when the patient is transferred. This may be due to lack of explicitly stated expectations about what information to transfer. Standards are a powerful tool to make implicit expectations explicit.

Methods: The Danish Healthcare Quality Programme is an accreditation model intended to cover all aspects of healthcare in Denmark. Currently, accreditation standards have been implemented in all public and 50 private hospitals, community pharmacies and some community healthcare services. Standards in the pre-hospital area have been developed, and are undergoing pilot testing in early autumn 2010. All sets of standards have been developed according to the ISQua International Principles for Healthcare Standards. The other sets of standards have previously passed pilot testing successfully. The standards for hospital and pre-hospital areas include standards for transfer of care between sectors. These standards were formulated in order to emphasize that a patient pathway across sectors should be viewed as one common process. This was facilitated by members from different sectors participating in the theme groups developing the standards. Furthermore, a common template for standards was used, and special care was taken to ensure a common and consistent use of terminology. Survey across the sectors will be implied.

Results: Evaluations by organizations in both sectors participating in the pilot test of the suitability of standards for evaluating and promoting cross sector continuity and cooperation.

Conclusion: Accreditation standards and surveys can be designed in a manner that stimulates improvements in cross sector continuity and cooperation.
THE SYSTEM OF ACCREDITATION OF HEALTHCARE ORGANIZATIONS IN KYRGYZSTAN AND ITS APPLICATION WITHIN THE FRAMEWORK OF REGIONAL COOPERATION IN CENTRAL ASIA

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Objective: To generalize the experience of accreditation system in healthcare organizations in Kyrgyzstan as a key instrument for quality improvement and building the regional cooperation

Methods: · Analysis of the current legislation of accreditation system in the health in Kyrgyzstan; · Analysis of the generalized findings of accreditation visits and reports; · Analysis of the current legislation of the healthcare system in Tajikistan.

Results: The National system of accreditation of healthcare organizations emerged in Kyrgyzstan encompassing the Accreditation program, an independent body responsible for the accreditation of healthcare organizations – Medical accreditation commission (MAC), - the Oversight council on the accreditation and a collection of highly-professional experts that have reconfirmed their competence in the staff certification body, included in the country’s State expert register. The Kyrgyz MAC has been an institutional member of ISQua. The last accreditation standards were developed in accordance with the international principles of ISQu and accredited by ISQua. The development of accreditation system of healthcare organizations as an external quality assessment system has led to the optimization of internal quality management and safety of services. According to accreditation standards, healthcare organizations have created Quality and safety committees that became supporting mechanisms in the management of quality of services and promote positive shifts in the area of quality improvement and safety of services. The committees organize regular clinical audits for self-assessment of compliance with the standards and use their findings to improve performance. The outcomes of the committees’ activities include improvements of quality and safety in healthcare organizations as qualifications of personnel, introduction of new technologies, verification of measurement devices, ensuring patient’s rights, identification and prevention of risks, waste management. Regular trainings for the health staff and experts on accreditation, management of quality of services and systematic accreditation visits have made it possible to popularize the system of accreditation in Kyrgyzstan. The system is recognized as a key mechanism in ensuring and improving the quality of services whereas accreditation standards have been recognized as the necessary foundation for the improvement of performance of healthcare organizations and included to State health program. This benefited to high commitment to accreditation of an ever broadening circle of healthcare managers across the country and resulted in integration of all services of the healthcare system in the system of accreditation including such entities as dentist, sanatorium and resort treatment organizations. The country experience in accreditation has led to the expressions of interest from the healthcare systems of Tajikistan, Kazakhstan, Mongolia, Uzbekistan and international development and donor's agencies working in development of healthcare systems. Within the GTZ support the Kyrgyz MAC has started the project in building capacity of accreditation system in health in Tajikistan. Analysis of the legislation in health sector was carried out to identify the gaps that have resulted to the development of proposals for amending the legislation of Tajikistan. The program of integration of Kyrgyzstan experience in accreditation of healthcare organizations in Tajikistan was developed. Currently the sector for accreditation and licensing established under the State Control Agency over medical activities in Tajikistan.

Conclusion: The development of accreditation system in Kyrgyzstan as a mechanism of external evaluation of healthcare organizations on the basis of standards adopted in the country resulted in the optimization of internal management of quality and safety of services and the improvement of services quality. The MAC has found its place in the complicated integrated healthcare system of Kyrgyzstan and gained recognition as the National body on accreditation. The country experience in development of accreditation system was highly recognized by the healthcare systems from the Central Asian region, donors and development organizations working in the health system development.
AN ASSESSMENT PROCESS TO ACHIEVE SAFE ADOPTION OF CPOE AND EMR TECHNOLOGY

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Objective: To describe the methodology and tools used to perform an assessment of planning, design, and implementation of CPOE and EMR technology and to describe the safety gaps identified through the process.

Methods: Health care organizations around the world have been committing significant dollars and other resources to implementing technology to support and improve patient care. Our observations have shown that hospitals struggle not only with completing computerized physician order entry (CPOE) and electronic medical record (EMR) implementation, but also with implementation that supports safe medication use. To develop a strategy to perform a comprehensive assessment of planning, design, and implementation as well as post go-live use of CPOE and EMR technology to ensure optimal support for patient safety, we have developed tools and methodology to assess the following: · Strategic planning for technology, including resource requirements, sequencing, project planning, and involvement of key stakeholders · Evaluation of the design, build, and implementation of technology to test integration with workflow, use and adequacy of clinical decision support tools, support of high-risk medication processes, and integration with other technology to support patient safety · Evaluation of the technology in a live environment to ensure optimal integration with workflow, optimal use of functionality to support patient safety, measures of performance, and planning and implementing upgrades and improvements We have completed a pilot of the tools and methodology for our assessment of safe adoption in a 700-bed academic medical center. This assessment was conducted over a 3-day period by a multidisciplinary team of clinicians and administrators with informatics background. This assessment is key to targeting interventions to gaps that pose the highest patient safety risks.

Results: The pilot was conducted to test the validity and value of the tools and methodology at any point in the planning to the post go-live phases. Specific findings during this pilot included: · Accountability for patient safety decisions with technology use needed to be fully defined, particularly when there was no consensus · Technology was not being introduced in consideration of patient needs; rather, it was being introduced to support users’ needs · Quality assessment needs to be more robust so that defects and areas of non-compliance are fully examined to understand the nature of failure and identify enhancements · Identification of opportunities that could prevent errors in prescribing, dispensing, and administration through system design and functionality, including: o The use of forcing functions with lethal chemotherapy doses and contraindicated drug combinations o Drug builds that include only relevant routes and dosage forms for the prescriber o Medication administration details for nurses o Transcription requirements resulted in new opportunities for error with chemotherapy · Clinical decision support regarding venous thromboembolism risk assessment was lacking, resulting in screens requiring action not being supported by decision trees · System design to support the delivery of individualized pediatric doses As a result of the pilot, we were also able to define needed refinements pertaining to the logistics of performing the assessment, including the development of the agenda, pre-assessment document review, and additional areas of focus during the assessment.

Conclusion: Safe adoption of technology incorporates the best design, functionality, clinical decision support tools, and integration into workflow to support safe patient care. To facilitate this assessment, we have developed methodology and tools that have been validated through a pilot project.
A METHOD TO DEVELOP QUALITY INDICATORS WHEN ELECTRONIC HEALTH RECORD IS LACKING: ELEMENTS OF CONFIRMATION BY NATIONAL RESULTS

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Objective: The objective of this study is to validate a method which allows a nationwide implementation of Quality Indicators (QIs) after a two-steps analysis of randomized medical records in a sample of health care organizations (HCOs), in countries where electronic health record is lacking.

Methods: COMPAQH (COordination for Measuring Performance and Assuring Quality in Hospitals) is a French research project which develops and evaluates QIs assessing the quality of hospital care. QIs are designed in cooperation with health professional bodies. They are tested on a panel of 42 voluntary HCOs representing all types of activities and status in order to evaluate their feasibility, metrolological quality and relevance. This evaluation is achieved in two steps: randomized medical records are first analyzed in the panel of voluntary HCOs (Test 1), and then in a hundred of hospitals in collaboration with the National Authority for Health (HAS) (Test 2). If tests are satisfied, the QI is proposed to national institutions for a nationwide generalization. The hypothesis formulated was that results obtained in the generalization set were similar to those obtained during tests. The judgment criteria concerned relevance: 1) the discriminatory power assessed by the statistical dispersion and measured by the Gini coefficient (which should be close to 0) and 2) the possibilities of improvement, assessed by the difference between actual scores and an optimal performance of 100% (t-test). As an example, a QI related to the quality of anesthetic records (AR) was developed. It consisted in a composite score assessing compliance of 13 items. In each HCO, a random selection of 60 medical records on the year preceding the analysis was performed. This QI has shown good feasibility and metrolological quality.

Results: In 2008/2009 the HAS organized a data collection of the first QIs in 1300 HCOs, among which 1002 HCOs were concerned by the AR QI. For this indicator, the mean score across all HCOs was 66.8%, with HCO scores ranging from 25% (“worst”) to 100% (“best”): Table: Results of the 2 tests and generalization for the AR QI

<table>
<thead>
<tr>
<th>Set</th>
<th>Number of HCOs</th>
<th>Min %</th>
<th>Max %</th>
<th>Mean %</th>
<th>[std]</th>
<th>Gini coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test 1</td>
<td>26</td>
<td>41.5</td>
<td>86.4</td>
<td>62.6 [13]</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Test 2</td>
<td>86</td>
<td>33.2</td>
<td>92.8</td>
<td>65.6 [12.4]</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Generalization</td>
<td>1002</td>
<td>25</td>
<td>100</td>
<td>66.8 [14]</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

A wide heterogeneity in distribution was observed for the two tests as the Gini coefficient was close to 0. This was confirmed in the generalization set. In the two tests, the gap between AR scores and an optimal performance of 100% was significant (p<0.0001), which remained true in the generalization set.

Conclusion: Our results demonstrate that this method of development of QIs, based on the analysis in each HCO of a small sample of medical records, is robust. In order to further optimize workload, the same sample can be used to calculate other QIs. This method has the strength to test at a lower cost feasibility, metrolological quality and relevance, and therefore to avoid generalization in case of bad results. A second advantage is to involve professionals at its different steps, facilitating acceptance. However, QIs’ development takes at least 18 months and a limited number of QIs can be evaluated each year. Development of electronic health records may be seen as a way to facilitate quality assessment without the cost of return to medical records. Nevertheless, to achieve this aim, prerequisites should be satisfied: compatibility across HCOs systems, possibility to include data required by new QIs and automatic data extraction. For the moment the best compromise in our view remains the use of medical records.
USING GEOPROCESSMENT TO ENSURE HEALTHCARE ACCESS AT A BRAZILIAN HEALTHCARE PLAN

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Objective: To identify health services access gaps using georeferencing analysis at a Brazilian health plan covering 17 cities in the metropolitan region of Belo Horizonte, Minas Gerais state.

Methods: For the geoprocessment analysis, a database was built on Mapinfo ® Professional v9.0 (Pitney Bowes©), containing the following information: hospital name; hospital classification (daycare clinic, emergency service, general hospital, etc.); address; city; state; postal code; telephone number, number of beds available for the health plan, city population and city area. City population data was obtained from IBGE (Brazilian Institute of Geography and Statistics) estimates, based on year 2000 population census. City area was obtained from IBGE’s international chart of the world (CIM). The database structuring was based on geo-relational models (dual architecture), in which there is the separation between textual information and graphic information. After the database building, data was georeferred by matching the information to an external database (Streetbase standard v2.0 by ProMaps Soluções de Mapeamento LTDA, Campinas, Brazil) containing geographic coordinates. Lastly, georeferred data were interpolated using kriging method (Materon, 1971) at the software ArcMap v9.3 - Geostatistical Analyst Extension® (ESRI, New York, USA) for building a Grid Surface Thematic Mapping (GSTM). This graphic method allows observing the density of determined georeferred data, such as the number of hospital beds in a determined area, according to a chosen gradual pattern.

Results: The database georeferral was able to match 100% of all health plan network, with an expected distance err of 10 to 15 meters. The demographic density analysis revealed the highest density at Belo Horizonte city, with 5,469 inhabitants per square kilometer, and the lowest at Santana do Riacho (65 kilometers far from Belo Horizonte), with 6 inhabitants per square kilometer (Figure 1). Hospital bed density (Figure 2) revealed 9 cities without hospital beds within its limits, most located at quadrant 1 and 2. Quadrant 3 area concentrated the majority of hospital beds. The average nearest neighbor distance analysis show that the hospitals are dispersed. Kriging interpolation method asserts that the hospital beds are concentrated on the right superior part of quadrant 3.

Conclusion: In conclusion, the data show bed concentration despite hospital dispersed arrangement and reveal problems in the health services provision and coverage in the metropolitan geographic region. These methods and studies based on geoprocessment are relevant for planning and managing health services for quality improvement.

Reference: Contact author
IMPROVING COMMUNICATION AND COORDINATION AMONG MEDICAL CENTERS, PRACTITIONERS AND PATIENTS BASED ON A WEB2.0 PLATFORM

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Objective: Medical Centers face the predicament to streamline the internal workflow, reduce the treatment costs and improve treatment quality at the same time. Often, Medical Centers investing in process optimization and cost cutting measures neglect patient communication and service. Several studies show that physicians spend less than 50% of their work capacity for medical treatment and patient consultation. Failed coordination and non-specific communication and documentation causing wait time, redundant activities, unnecessary hectic and stress contributes to this predicament. The objective is to create a platform and method to improve workflow, communication and collaboration within Medical Centers and among Medical Centers, General Practitioners and Patients. The basic approach is to build and configure a platform on which all participants are integrated, informed, and embedded correctly in the workflow.

Methods: After analyzing the workflow of four Medical Centers and 200 referring Practitioners, a software prototype was build to adapt all kinds of clinical and ambulant processes and communication flows. In several test series, the prototype was improved in an iterative manner by feedback of medical staff and patients. As a result a web platform was build with user accounts for every participant – patients and medical staff. Every participant has its own account to manage securely his/her access, information, communication preferences, and workflow. The basis of a web platform facilitated the overall collaboration as every participant appeared in the network with his/her own preferences. The functions of the Web2.0 platform comprised a resource planning, workflow management, booking and reservation system for referring Practitioners, automatic patient information and communication system.

Results: The Web2.0 platform solved the efficiency-quality-dilemma by generating an effective resource utilization of treatment an operating rooms and medical devices (e.g. +30% of OP utilization and six digit revenue gain per year), reduction of administrative fax and telephone workload (e.g., over 90% online referrals instead of faxes phone calls as well as 30% online booking from patients), reduction of idle time and improved planning reliability by automatic SMS reminders for patients, improving quality levels by transparent workflow avoiding capacity overload and under-utilization, improving service levels for patients through just in time information, ex ante education and immediate health supply across all medical specialties.

Conclusion: By developing a solution for Medical Centers, Practitioners and Patients, an integrative platform was created to optimize workflow and resource efficiency as well as treatment quality and service levels. The Web2.0 platform does not need any further software or hardware but offers the usability and speed of and installed software while allowing specific access to doctors and patients. It provides online appointments, workflow optimization, an improved patient-doctor-communication and doctor-doctor-collaboration and therefore delivers a huge range of collaborative possibilities, quality and economic benefits and a new form of integrative health supply.

Reference: Hopkins Tanne J. US GPs are unhappy, underpaid, deluged by paperwork, and want to retire, study says BMJ. 2008 Nov 25;337:a2711.
FIGHTING THE SUPERBUG WAR – ANTIMICROBIAL STEWARDSHIP IN SINGAPORE GENERAL HOSPITAL

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Objective: Antimicrobial stewardship program (ASP) was convened in Singapore General Hospital (SGH) with the key objectives to individualize and optimize patients’ antibiotic therapy and to reduce antibiotic consumption and related expenditures.

Methods: An ASP involving a multidisciplinary team of an infectious disease physician, pharmacists, infection control officer and microbiologists was established in Oct 2008 with support from hospital management. The program was piloted in General Surgery (GS) after the team met with participating prescribing doctors for discussion, creating an awareness and understanding of the program’s structure and its initiatives. All patients who were prescribed parenteral antibiotics (carbapenems, fluoroquinolones, cefepime, piperacillin/tazobactam, vancomycin) were identified. Work flow is as below. 1. Selection of patients: Identification of patients prescribed audited antibiotics via IT System 2. Primary review by clinical pharmacists (Stage 1 Prospective review): Collection of relevant information from case notes and electronic records using standardized data collection form 3. Second Review and evaluation of cases (Stage 2 Mid-day meeting): Discussion and evaluation of cases with ID physician and team for appropriate choice, dose, route and duration 4. Intervention (Immediate concurrent feedback): If appropriate Database entry and analysis, pre-defined outcome measures collected in database and monthly review of data and departmental update. If inappropriate Memo addressed to prescribing doctor inserted into case notes on the same day. Immediate-concurrent feedback perpetuates the engagement of the primary team, whereby prescriber autonomy is preserved and the primary team retains authority in the final therapy decision. It is timely and serves as a constant education platform, eventually elucidate misconceptions and improve prescribing practices. The prescribing patterns, appropriateness of antimicrobial use, interventions made & associated cost-savings were analyzed periodically. This information is shared during update sessions with the GS department, where feedback from the team was also collected. Mutual feedback allows timely modifications to the program structure. This report describes the impact of ASP from Oct 08 – Oct 09.

Results: (a) Antibiotic prescribing Six-hundred thirty patients were audited, in whom 798 antibiotic courses were initiated. Antimicrobial use in 177 (22.2%) courses was not justified. Two-hundred fifty (31.3%) courses required interventions, most of which were those recommending antibiotic discontinuation. Other types of interventions made include: narrowing/broadening antibiotic therapy; dosage adjustments and therapeutic drug monitoring and IV-PO conversion. Of 306 interventions made, 62.7% were accepted. Interventions involving changes in choice of therapy and dosage adjustments met with the highest compliance. (b) Antibiotic expenditure and consumption Consumption of key audited antibiotics has decreased. Overall audited antibiotic expenditure has decreased by 13.8%.

Table 1. Antibiotic consumptions and expenditures during pre-ASP and post-ASP period

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Pre-ASP</th>
<th>Post-ASP</th>
<th>% change in median monthly consumption from pre-ASP</th>
<th>Total Antibiotic Expenditure ($)</th>
<th>% change in median monthly expenditure from pre-ASP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total antibiotics (including non-audited)</td>
<td>596.3</td>
<td>562.4</td>
<td>-5.7</td>
<td>852,187</td>
<td>807,625</td>
</tr>
<tr>
<td>Individual audited antibiotics</td>
<td>237.6</td>
<td>203.4</td>
<td>-11.3</td>
<td>650,089</td>
<td>560,602</td>
</tr>
<tr>
<td>Piperacillin/tazobactam</td>
<td>58.0</td>
<td>45.9</td>
<td>-18.9</td>
<td>250,107</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion: ASP is an effective and cost-saving strategy in optimizing antibiotic use in our hospital. Almost 80% of all audited antibiotic prescriptions were appropriate. Overall audited antibiotic expenditure has decreased by 13.8%, with no significant adverse clinical outcomes. The two-stage immediate-concurrent feedback ASP structure can be easily implemented without major changes to workflow. This is possible even in resource-limited settings. There is high potential for implementation of ASP in other departments and even other institutions. Similar ASP programmes based on the SGH structure have since been implemented at two other local hospitals.
AN EVALUATION OF A STATE-WIDE COLLABORATIVE TO REDUCE CENTRAL LINE ASSOCIATED BACTERAEMIA IN ICUS IN AUSTRALIA

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Objective: Our objective was to design and conduct an evaluation of the Central Line Associated Bacteraemia (CLAB) learning collaborative in Intensive Care Units (ICUs) in New South Wales, Australia.

Methods: The CLAB ICU Project is a statewide initiative that began in March 2007 to improve patient outcomes by reducing central line associated blood stream infections in ICUs. Thirty-eight ICUs in NSW and ACT participated in this initiative. Using Collaborative methodology that has been tested in the United States, the CLAB ICU Project focused on evidence that shows that central line infections can be reduced by developing and implementing a guideline for the aseptic insertion of central lines in the ICU.(1, 2) We evaluated the CLAB-ICU Project to determine: (1) Have the guidelines been effective in changing clinician behavior and team processes? (2) What specific strategies were effective in supporting implementation of the central line insertion guideline and in diffusing resistance to change? (3) What strategies would have improved implementation of the CLAB-ICU Project aims? (4) Has the project increased accountability for CLAB and preventative measures? (5) What lessons can be drawn from CLAB-ICU about future initiatives? (6) What can CLAB-ICU tell us about the likely sustainability of quality improvement projects which target clinician behavior? (7) What were the characteristics of compliant and non-compliant units? (8) Has the project changed clinical practice regarding central line insertion and CLAB detection and reporting? We used a multi-level evaluation strategy to meet the specific aims, including: (1) Focus groups with members of the ICU teams (2) Interviews with several ICU team members (3) Observations of procedures in the ICU. Data collection was accomplished during site visits with six ICUs in NSW. In addition to the on-site data collection activities, we conducted a literature review of the relevant literature related to reducing central line infection as well as the relevant literature on changing behaviour through collaborative work. Emerging themes were identified in the data following each visit and informed data collection at subsequent site visits.(3)

Results: Site visits to each of the participating ICUs were conducted during July, August, and September of 2009. In addition to providing a forum for conducting interviews and focus groups, the site visits provided an opportunity to observe the clinical teams conducting rounds, caring for patients, and interacting as a care team. Based on the data analysis we formulated a series of recommendations: (1) Start the collaborative process with a pilot demonstration project involving a small number of diverse sites; (2) Establish guidelines for what is required by the participating sites to drive local change; (3) Clarify the incentives of the collaborative; (4) Engage participants earlier in the design of the collaborative; (5) Allow for local adaptation of tools, with an approval process; (6) Use an external auditor to audit the data collection process; (7) Build evaluation into the collaborative efforts from the beginning.

Conclusion: Catheter-related bloodstream infections are one of the most common healthcare-associated infections resulting in potentially preventable sepsis related morbidity, mortality, and increased hospital costs.(4-7) It is estimated that more than 3500 central venous catheter related blood stream infections occur each year in Australia, resulting in the death of 12 percent of these patients.(8, 9) Comparable rates have been identified in countries including Denmark,(10) Turkey,(11) Sweden(12) and the United States.(13, 14) Learning collaboratives can be an effective mechanism for driving change across a wide range of facilities and institutions. The results from the site visits and interviews indicate there is scope for improvement and provide a platform for improving learning collaboratives organized for the ICUs in NSW and ACT. If implemented, these recommendations should further strengthen future collaborative work.
BACTEREMIA ZERO, A CHALLENGE FOR CATALONIAN ICUS

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Objective: To decrease catheter-related bloodstream infections in Catalan ICUs, pursuing an incidence rate below 4 bloodstream infection episodes per 1,000 catheter-days, which represents a 40% reduction from the mean Spanish ICU rate in the last 5-year period.

Methods: The Patient Safety Alliance in Catalonia promoted in 2005 by the Department of Health as a means to compromise stakeholders to focus the agenda for patient safety improvement efforts, adhered and leaded the Spanish Bacteriemia Zero project. A 12-month collaborative effort is now completed to reduce catheter-related bloodstream infections in 32 intensive care units in Catalonia. A national council was aproved, as a coordination structure reporting to the Department of Health, in charge of giving suport to the 32 hospital ICU teams in implementing a two-armed intervention protocol. For the technical part, the protocol was directed to sistematically adhere to evidence-based interventions and implement the catheter insertion check-list. That was accompained by the introduction of team-oriented patient safety tools planned to advance patient safety culture, including learning-from-errors strategy, besides the use of a patient daily objectives sheet and the implementation of hospital manager ICU walkrounds. Data management for the project has efficiently used the ENVIN-HELIX ICU infection diseases database, that has proven a successful reporting system, for monitoring indicators and evaluating progress in a monthly basis.

Results: Thirty-two of a total of 38 (84\%) public and private ICU operating in Catalonia adhered the project in January 2009. One year later, a total of 153 catheter-related bloodstream infections were reported from those ICUs, representing 2.55 per 1,000 catheter-days. This result represents a 41.4\% reduction from the 2008 baseline rate of 4.35 per 1,000 catheter-days. The figure also compares favourably to Spanish mean rate of 3.42 per 1,000 catheter-days (with a total of 1,183 catheter-related bloodstream infections from 202 ICU adhered to the Bacteriemia Zero project). Of the 32 Catalan ICUs, 25 (78\%) have accomplished the objective, leading the national results. A total of 1,676 nurses and physicians have followed a patient safety learning program. All ICU have introduced the daily patient objectives sheet as a team communicating tool, which has benefit patient safety, and for the technical arm of the protocol, 2,156 catheter insertion check-lists were reported. Despite that, only 36\% of ICU have sistematically introduced hospital managers walkrounds, as one of the eligible tools for quality improvement. Difficulties and opportunities have been the subject of 2 benchmarking meetings held at the Department of Health with the participation of 192 intensive care physicians, nurses and hospital managers as well. In those working sessions, teams have shared experiences, strategies and models for improvement. As an example, some succesful ICU explained how managers’ implication facilitated investing in nursing extra hours specifically for project purposes.

Conclusion: Five conclusions are drawn after analysis of results:
1. The project has achieved the planned objective to reduce incidence rate below 4 catheter-related bloodstream infections per 1,000 catheter-days. Improving results and adhering all Catalan ICUs is a challenge from now on.
2. For these succesful results to be, physician and nurse collaborative leading is identified as the crucial component.
3. The project is serving local teams to learn from errors, promote changes in work organisation and improve team communication by introducing the patient daily objectives sheet, as a key instrument for patient-centered care.
4. The encouraging figures are demonstrating that improvement efforts lead to results. More implication is desirable from hospital managers to promote decisively patient safety culture, as ICU teams appreciate and value managers’ facilitation as a motivating factor to consolidate changes.
5. Benchmarking forums initiated by the Department of Health, constitute a promising strategy to share experiences and activate implication over time.
SUSTAINED HAND HYGIENE WITH THE USE OF REAL-TIME REMOTE VIDEO MONITORING WITH FEEDBACK AND HEALTH CARE ACQUIRED INFECTIONS

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Objective: To evaluate the sustained effect of real-time remote video auditing (RVA) with feedback on health care worker (HCW) hand hygiene (HH) compliance and to determine whether changes in HH influence hospital-acquired infections (HAIs) within the medical intensive care unit (MICU).

Methods: The Centers for Disease Control considers proper HH to be the single most important factor in protecting patients from HAIs, and estimates HCW compliance to average about 40% nationally [1]. In March 2008 the staff of a large tertiary hospital in the U.S. attempted to improve HH. We placed cameras with views of every sink and hand sanitizer dispenser in the hallway and patient rooms to record the HH compliance of HCWs. The HH protocol requires HCWs to perform HH upon entering and exiting patient rooms. Sensors mounted in the doorways identified when HCWs entered or exited, indicating a HH event. When video auditors observed a HCW using the hand sanitizer dispenser or washing hands with soap and water, they assigned a Pass to the event. Auditors indicated a Fail when they observed the HCW not performing these practices. We recorded baseline rates for HH compliance from June through the first week of October 2008. On October 6, we began displaying results of audits on two electronic boards updated every 10 minutes with current shift, weekly, and monthly rates. MICU managers also received e-mailed shift summaries delineating shift, weekly, and monthly rates. The MICU leadership responded to low rates of HH compliance largely on an aggregate basis, but coached individuals as needed. To monitor HAIs, the epidemiology group reviews all positive microbiology specimens. For each positive specimen, we review, categorize, and report it as an HAI using the National Healthcare Safety Network criteria for central line related bacteremias (CLABs) and ventilator associated pneumonias (VAPs). This process of case categorization also includes the identification of pathogens such as Clostridium difficile (CDAD) and methicillin resistant Staphylococcus aureus (MRSA).

Results: Data from June 2008 through the first week of October 2008, the period without feedback, identified HH rates of <10%. With continuous real-time feedback, the rate for the rest of October was 54.5% and >85.7% from November 2008 through December 2009. The statistical difference performed by a t-test analysis between the pre- and post-feedback periods was highly significant (p < .0001). Additional analysis revealed the weekly compliance rate of physicians (70.5%) was lower than other health care providers (87.4%) (p< 0.001) and the day shift (81.9%) was lower than the night shift (88.4%) (p< 0.001). We assessed HAIs in both the pre and post intervention phase. CLAB and VAP rates showed no statistical difference between the two phases. However, the increased compliance in hand hygiene may have a temporal association with CDAD infection and MRSA transmission. CDAD decreased from 46.6 to 22.2 per 10,000 patient care days and MRSA exhibited a reduction from 9.67 to 3.08 per 1,000 patient care days (p< 0.001).

Conclusion: The data suggested that RVA combined with feedback produced a significant and sustained improvement in HH compliance with a downward trend in CDAD infection and MRSA transmission rates. RVA technology has the potential to change and sustain HH compliance, and improving quality patient care. The experience in the MICU has lead to discussions on expansion of RVA to replicate and further substantiate the downward trend of infections.

EARLY INVOLVEMENT OF PS IN THE MEDICAL CURRICULUM: THE IMPACT OF AN INTRODUCTORY PS LECTURE ON SPONTANEOUS INCIDENT REPORTING BY UNDERGRADUATE MEDICAL STUDENTS.

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Objective: Reducing harm caused by health care is a global priority. As medical students will play an important role in future health care there is an urgent need to implement Patient Safety (PS) education in their undergraduate curriculum (Sanders et al, 2007; WHO, 2008), aiming at better event recognition and reporting. This study wants to assess the impact of an introductory lecture on PS for undergraduate medical students on their spontaneous medical incidence reporting during a subsequent nursing internship.

Methods: As part of the undergraduate curriculum at Hasselt University second year (undergraduate) medical students have to fulfill a two week nursing internship in a local hospital. The group of students was randomly divided in two conditions: respectively 40 (control group) and 38 students (intervention group). No priming was performed on the control group. A week before the start of the internship the intervention group received a priming. These students were given a 1.5 hour introductory lecture on PS. This lecture was given by a patient safety specialist from one of the hospitals in the area. 34 of the 38 students of the intervention group, attended this lecture, 4 students were absent and were added to the control group. After the internship the students had to hand in a written report reflecting on their own general experiences during the internship. No instructions regarding event reporting were listed as requirements by the medical school. The reports were analyzed for any spontaneous incidence reports. Incident reports of both the control and the intervention group were classified using the 13 incidence types of the 2009 WHO-ICPS taxonomy (WHO, 2009). Coding of the incidence reports was done by two independent trained coders. Krippendorff’s alpha was .86. The hypotheses were that (1) the priming would result in more reported events per student, (2) a higher proportion of students reporting (3) a higher proportion of students with multiple reports.

Results: The intervention group reported significantly more events (average number of events is 1.70 in the control group (total \( n_{events} = 75 \)) and 2.65 in the intervention group (\( n_{events} = 90 \))(p<.05)). The percentage of students reporting events is not significantly different for the intervention group: 75.00% for the control group vs. 79.41% for the primed group. The percentage of students with multiple event reports seems higher in the primed group (57.57% vs. 74.07%), even though this is not statistically significant due to the rather small sample. In the intervention group there are 5 students who report more than 5 events (heavy reporters). There were no heavy reporters in the control group (p<.01). This means that hypotheses 1 and 3 are supported by the data.

Conclusion: The results indicate an impact of priming PS on the average number of spontaneous incidence reporting by undergraduate medical students. This priming may easily be accomplished: in this study the effect of a 1.5 hour lecture on PS was significant. Comparing this data with the results of earlier similar data collections shows that the average number of events reported is higher in both the control as the intervention group, indication an overall rise in attentiveness towards events. Spontaneous event reports of undergraduate medical students are a relatively new and unbiased data source which can lead to interesting results as they are based on a “fresh look” from relative outsiders (not unlike patients or their visitors).
DEVELOPING A SIMULATED SCENARIO TO TEST BEHAVIOURS ASSOCIATED WITH THE JOINT COMMISSION NATIONAL PATIENT SAFETY GOALS

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Objective: Testing the impact of programs designed to change the behaviour of clinicians with regard to key aspects of safety and quality remains a challenge. This project aimed to develop a simulation station that can be used to evaluate educational programs designed to familiarise residents in the Partners Healthcare Network with the Joint Commission National Patient Safety Goals.

Methods: A simulation station around central line insertion was developed by medical educators and a senior surgical resident. The station was developed to specifically test the behaviours one would ideally expect from a resident physician in the lead up to inserting the central line. Four of the 2009 National Patient Safety Goals were selected for testing and included appropriate hand-off, infection control and patient identification.

Results: The station was successfully developed and tested internally at the STRATUS Simulation Centre in Brigham and Women’s Hospital, Boston. The station includes prompts such as incomplete patient histories to test expected behaviours. Nine specific behaviours were identified that could be assessed at the station. The station is to be used to validate online learning around the National Patient Safety Goals at Brigham and Women’s Hospital with the intake of residents in June 2010.

Conclusion: The use of simulated station such as a central line insertion represents an opportunity to measure the behaviour of young doctors regarding key aspects of safety and quality. This should greatly improve on the more traditional measure of simple knowledge recall often used to evaluate programs in safety and quality.
THE USE OF TELEMEDICINE TECHNOLOGY FOR PREANESTHETIC ASSESSMENT OF CARDIAC SURGICAL PATIENTS

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Objective: The objective of this clinical project was to determine if an adequate preoperative assessment including an assessment of the airway could be done on cardiac surgical patients using telemedicine technology.

Methods:
54 per cent of the patients who present for cardiac surgery at the University of Ottawa Heart Institute reside more than 50 km from the hospital. A convenience sample of 25 patients was selected to assess the effectiveness of telemedicine technology in the pre-operative assessment of patients who had planned cardiac surgical procedures and had access to a nearby healthcare centre that was equipped with telemedicine capability. The full pre-operative assessment consisted of a nursing assessment, an anesthetic assessment and a patient education program. All laboratory tests were available through the network and diagnostic imaging was available on a picture archiving system (PACS) that was integral to the telemedicine system. History, consultants notes and surgical consultation were available either on-line through the Ontario Telemedicine Network or in the patient file from UOHI if the patient had undergone cardiology procedures prior to referral to surgery. A clinical nurse specialist operated the telemedicine equipment and supported the assessment from the remote location including clarifications as needed, positioning of the stethoscope, and camera positions. The remote site nurse was instructed in use of the stethoscope and camera positions and measurements necessary to conduct an adequate airway examination. The pre-operative assessment was reviewed by the physician for adequacy of information and diagnostic data transfer, effectiveness of pre-anesthetic assessment including quality of breath sounds, heart sounds, carotid bruits and airway examination. Adjustments of techniques were made at various stages throughout the trial as were deemed necessary. Satisfaction by the nursing staff at UOHI and the remote site were assessed in a qualitative interview following each telemedicine encounter. Patient satisfaction was also qualitatively assessed following the encounter. Adequacy of preanesthetic assessment with particular reference to adequacy of airway examination was assessed by the attending anesthesiologist at the time of the procedure.

Results: 1) Quality of historical information, consultation, lab data and medical images was excellent. 2) Length of session was judged to be too long on average by the remote site nurse and by the Ontario Telemedicine Network. The latter concern was the very large requirement for bandwidth and the relative inefficiency compared with other specialty consultations. 3) On several occasions, the transmission was interrupted, causing the session to be disjointed. 4) Patients were satisfied with the consultation. They expressed satisfaction with information received and the ability to access specialty care near to their homes. 5) The quality of heart sounds, breath sounds and carotid bruits was judged to be suboptimal. 6) The quality of the consultation was reviewed by the attending anesthesiologist for the surgery. There were no errors or omissions reported. Documentation of the airway was accurate in all cases.

Conclusion: 1) It is the opinion of the author that telehealth is an acceptable alternative for preoperative assessment, pre-anesthetic assessment and education of patients scheduled to undergo cardiac surgical procedures. 2) As a result of the pilot program, patients who live more than 50 km from the Heart Institute may be offered a preoperative assessment by telehealth. 3) A critical element of the pre-anesthetic assessment is evaluation of the airway. An accurate examination of the airway can be done during a telehealth consultation. An algorithm and illustrations for airway examination has been developed for remote site telehealth nurse coordinators. 4) Implication: This pilot study confirms that sub-specialty medical and nursing care and specifically pre-cardiac anesthesia assessment can be delivered to patients who reside at a distance from quaternary care centres.
SUCCESFUL NURSE-LED DERMATOLOGICAL OUTPATIENT CLINIC, USING TELEMEDICAL COMMUNICATION

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Objective:
It was decided to run a nurse-led dermatological outpatient clinic without dermatologists in a test period from March 2008 till December 2008 at Viborg Regional Hospital in Denmark, using telemedical communication.

Methods:
Using a telemedical communication system, dermatologists could make a diagnosis and decide on treatment and the nurses at the clinic could perform the treatment locally, supported by internet-based clinical guidelines. The purpose of the project period was to evaluate if a nurse-led outpatient dermatological clinic could deliver adequate quality and patient satisfaction without the physical presence of a dermatologist. Before the project period, a steering group with the hospital managers from both hospitals involved and a project group were formed. The patients participating in this project were inpatients at the regional hospital with acute dermatological problems. Doctors, nurses and secretaries at both hospitals were introduced to how to use the technical equipment. The specialists and nurses made the clinical guidelines the nurses followed in the treatment. During the project period, a log book was introduced at both hospitals for the professionals to note ideas, problems with the IT-system etc. Evaluation of the project period: Both qualitative and quantitative data were collected.

Results: A total of 72 inpatients were diagnosed and treated in the project period. Results of the evaluation of the project period showed that it was possible to maintain an adequate professional quality both in diagnosis and treatment. The patients were very satisfied and felt safe. Waiting lists and patients transport have been avoided. The nurse-led outpatient clinic is a success and is now a permanent offer.

Conclusion: The regional hospital is able to continue to offer highly professional dermatological treatment locally, even though, centralization of the speciality in dermatology was physically located at the university hospital. Lessons learnt:

Lessons learnt:
Ø Essential with well educated and competent dermatological nurses at the outpatient clinic
Ø Good introduction to all involved professionals before using the telemedical equipment
Ø The local IT-department has to be involved from the beginning
Ø Direct and personal communication between doctor and nurse by phone still has to be possible
Ø Good communication, collaboration and respect for the different organizations necessary
Ø Agreement to clinical guidelines approved by the dermatologists

Reference:
Objective: To create and determine the value of an Integrated Care Coordination Information System (ICCIS) quality improvement in primary care clinics to improve the care of patients with complex illness.

Methods: This study will be completed over a three year period. In the first year, we enhanced existing IT in a set of six ambulatory clinics/teams. The ICCIS web application was developed using an iterative system development life cycle: needs assessment, requirements assessment, and usability testing (see Table 1). The system was integrated with each clinic’s electronic health record (EHR) system so that quality measures and lists of high risk patients can be generated at will (see Figure 1). The six clinics were then randomized to either quality improvement alone or care coordination for patients with complex illness. The design tests alternate reimbursement systems by paying for improvement in quality or by individual care coordination components, such as education, motivation, communication, and coordination. Implementation success assessed through the Reach-Effectiveness-Adoption-Implementation-Maintenance, or RE-AIM model and reduction in utilization and improvement in satisfaction will be measured in the clinics. Table 1. Timeline of ICCIS Development

Results: Previous studies of the Care Management Plus practice model showed 24% improvement in diabetes control, reduction of severe depression incidence, relative reduction in hospitalizations of 24% at one year, and an over 20% reduction in the annual mortality rate. We also observed an 8-12% increase in physician productivity. However, it was unclear that these results could be disseminated outside of the previous study location. Preliminary results of ICCIS use are promising. In the first quarter of active system use we’ve seen the enrollment of nearly 2,500 of 54,000 patients into the
intensive care management program. In all, nearly 1,000 care manager encounters were recorded in the first quarter among the six study clinics. Monthly increases in quality metric adherence were observed; much of this improvement was due to inclusion and revision of clinical data, though sites are now engaged in regular quality improvement cycles. Design principles included integrating workflow into the EHR where possible, but that best practice use of HIT does not necessarily rely on a single system. Quality measurement and population management required enhancement to the EHR to make the functions available and to fit them into workflow. Previously, care managers had no way to follow quality measures in the clinic. With ICCIS, preventative and chronic illness measures can be queried at the individual and population level and combined with proactive outreach to coordinate care across conditions. All quality improvement activities and care coordination activities needed to be achieved with a single workflow, and integration functions within the software allowed the care managers to combine tasks and efforts.

**Conclusion:** Effectively providing consistent, patient-centered, longitudinal care for the growing population of patients with multiple chronic illnesses can improve healthcare quality and efficiency. Quality measurement can be difficult for patients with complex and multiple illnesses. Systematic training and information technology support can create a system of care management that can not only assess these new measures, but also quickly adapt to meet them.
REENGINEERING OF AN IN-PATIENT HANOVER SYSTEM TO IMPROVE PATIENT SAFETY

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Objective: We present our experience of reengineering, auditing, and utilization of the system for continuous improvement of asynchronous, 'Shepherd-based', inpatient doctor handover system.

Methods: The hospital settings included a 800-bed medical centers (Hospital A), and a 400-bed community hospital (Hospital B) in metropolitan area, with 30 common wards and intensive care units. An inpatient patient handover system was firstly implemented in the EMR charting system of our HIS in 2006, but failed due to poor compliance. Handover system, version 2 (HO2), was implemented outside the EMR system of HIS, to fulfill the different logic and user requirement. Customization of user interface, and reengineering according to different workflows and duty schemes of various departments, was supervised under regular user and expert committee since Jun. 2007. A "shepherd" design is the central part of improvement, which allowed the flexible change of the care areas, and ensuring the inclusion of any new patient around clock.

Results: HO2 began the test run in Oct. 2007, and were extended smoothly to all wards in Hospital A in Dec. 2007. Overall compliance rate rose from 49.2% to 84.8% in Feb. 2008. Significant difference between the medical and the surgical department (overall duty acceptance rate, 93.2% vs 67.2%, p less than 0.01) elicited quality improvement projects and refactoring of the department duty workflow. HO2 was extended to Hospital B with minor modification smoothly in Sep, 2008.

Conclusion: Ensuring the security of patient handover between staffs of various duty areas and of different time schedules is one of the central issues of patient safety in the modern hospital. The literature was mostly on the nursing handover, or other assistance implementation for face-to-face handover. The information systems for inpatient handover between doctors were discussed relative little, for its complexity, the indirect and asynchronous nature, and the need of user customization. Customization of the real-world workflow is the most important factor of user compliance and persistence of a quality information system. The process itself and the implementation issues of the inpatient "doctor handover" was much complicated than the direct face-to-face nursing handover, and more resource than expected should be empowered to yield usable and reliable platform of quality improvement.
SYSTEMATICAL QUALITY ASSURANCE AND PATIENT SAFETY IN NORTH RHINE HOSPITALS
- WHAT WE DO AND HOW WE DO IT

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Objective:
The study describes our systematic quality framework combining quality assurance and quality
improvement with patient safety aspects and a freedom of information policy. The framework is
established throughout the 405 hospitals of the state of North Rhine-Westphalia. 20 different types of
treatments performed on more than 850,000 patients annually are carefully retrieved in a standardized
way by clinicians. They provide relevant data (patient anamnesis, diagnosis, treatment and outcome)
via computer and internet. The data is analysed and serves for a quality review process. Every
hospital receives its individual treatment reports for the current evaluation period; the outcome of
medical care with respect to all hospitals in North Rhine-Westphalia is accessible to the public via
internet.

Methods: Up to 405 hospitals in North Rhine-Westphalia (population 18 million, 4.2 million hospital
treatments annually) are committed to provide data for our quality framework. Adult patients is the
target population of these quality assessments; up to 20 different diseases are recorded. The hospital
outcome is assessed against benchmark results and reference points that are defined by 200 quality
indicators. We established a safe network with more than 1,800 clinicians via internet concerning the
submission of quality data; our quality review process and the discussion of benchmark results occurs
in the same way (internet). The 1,800 clinicians receive their individual quality reports for their
treatments and the outcome of their medical care. We ask them about computed peculiarities in their
area of responsibility. The clinicians provide their quality statements online. The computed peculiarities
and the quality statements are anonymously judged by a quality committee of medical colleagues.
They decide whether the peculiarities are approved quality deficits or not. In case of quality deficits,
target agreements are imposed on those physicians and hospitals and are monitored by our QA
department. Step by step we provide quality results to the public via internet. In addition, the hospitals
are forced to publish their quality results: The 2009 edition refers to the results of already 26 quality
indicators of our quality framework!

Results: Our quality framework shows significant quality improvement and increase of patient safety
throughout the 405 hospitals of the state of North Rhine-Westphalia. For nearly all quality indicators in
the hospital treatments monitored for a period of five years, results improved steadily with various
statistical deviations.

Conclusion: Our quality framework shows significant quality improvement and increase of patient
safety throughout the 405 hospitals of the state of North Rhine-Westphalia. For nearly all quality
indicators in the hospital treatments monitored for a period of five years, results improved steadily with
various statistical deviations. Our information policy and the publishing of quality results is very much
accepted by the public and state and federal politics in Germany.
COMBINING ENERGY, EXPERTISE AND RESOURCES TO IMPLEMENT QUALITY SYSTEMS IN THE ROYAL CHILDREN’S HOSPITAL, MELBOURNE

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Objective: Four departments, with different regulatory requirements, wished to combine their resources and review their quality management systems to achieve

- A communication hub for quality information
- Increased local ownership of quality actions
- Standardisation of quality related processes
- Combined resources for four departments to achieve cost effectiveness
- Increased knowledge base of quality systems within the organisation

Methods: Four departments in The Royal Children’s Hospital, Melbourne, Australia collaborated to undertake a comprehensive review of their quality management systems. Two departments were at advanced stages of compliance with national regulatory requirements and two were commencing the quality journey. They were all subject to different regulatory requirements and standards, but the underlying quality principles remained the same. The review process included:

- Identifying key areas for review
- Process mapping, with key staff from each department, of communication and control systems
- Development of Q-Pulse software to support agreed proposals
- Set Up and upload of all documented processes required to be controlled
- Creation of Opportunities for Improvement process to ensure they were managed to completion
- Creation of audit schedule and subsequent process
- Development of processes for each department to use as the basis for their quality system
- Training of staff in the new quality system processes

The review process resulted in the standardisation of processes for document control, opportunities for improvement, audit, people & training management, suppliers and equipment management. Priority areas within the quality system were identified and process mapped, with the input of all key stakeholders. This joint approach to process mapping allowed staff to share information and contribute ideas to each other’s processes.

Results: Quantitative feedback undertaken with the key drivers in each of the four departments indicated that the review had made significant changes to core areas including: local ownership of controlled documents, follow-up of opportunities for improvement, management of suppliers and audit scheduling. 90% staff rated the new quality management system as either excellent or very good. High ratings were received for the document control process, and mechanisms for raising an Opportunity for Improvement in particular. 95% of staff agreed that the new system made it easier to participate in the quality process, and 90% staff agreed that it is easier to find information since its introduction. Staff emphasised the need to ensure that the associated processes were embedded over time, to ensure that the changes were implemented. A cost effective analysis demonstrated that the organisation made a cost saving of approximately 300% by combining resources, rather than pursuing them separately. From a knowledge base, there is now an increased knowledge of the system across four departments, and an ability to effectively communicate about any opportunities for development within the system.

Conclusion: Implementing a Quality Management System where four departments work together achieved the following:

- Standardised quality processes which meet the unique regulatory requirements of each department and are also based on evidence based best practice
- Increased ownership of the system by all staff due to ease of access
- Mechanisms for capturing data about all quality functions being performed
- Processes for identifying, reviewing and implementing opportunities for improvement

Overall the implementation of a Quality Management System has provided a centralised system within each department which supports the overall governance of the departments and indeed the organisation. By collaborative working, the organisation has been cost effective, increased its total knowledge base, achieved its objectives and increased camaraderie across all four departments.
PROCESS-OUTCOME ASSESSMENT TO IMPLEMENT A QI PROGRAM TARGETING HYPERTENSION AT THE PHC

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Objective:
To implement a healthcare quality program targeting essential hypertension at the primary care level, in the region of Monastir (Tunisia).

Methods: The intervention involved four phases. The first phase consisted of an audit of the quality of care\(^1\), conducted on a random sample of 390 patients with essential hypertension, attending three primary healthcare centers. The assessment was performed using a referential. The judgment criteria were related either to the care process and the outcome. The second phase was aimed at analyzing the causes of problems and establishing priorities for healthcare improvement. So, a multi professional meeting was organized and the findings of the clinical audit were presented to the team. Then, they were invited to generate causes and develop corrective measures by using QI specific tools. By the end of this step, the team identified two major issues: the patient centered approach and the clinical management. The third phase consisted in drawing a quality assurance framework summarizing the activities and monitoring the indicators. The fourth phase was aimed at evaluating the impact of the program. Thus, we proposed a post intervention KAP and satisfaction assessment on a random sample of 90 patients, using the Lot Quality Assurance Sampling (LQAS) method\(^2\).

Results:
The pre-intervention evaluation showed that the Body Mass Index (BMI) was noted only in 23% of cases, the ophthalmic fundus in 31% and the Proteinuria in only 20%. The practice of the electrocardiogram was observed in 31% of cases. Moreover, the patient’s knowledge about the blood pressure normal values was correct in 48% of cases and only 50% were satisfied with the provided care in the PHC. Six months after the implementation of the corrective measures, we noted a better compliance with clinical recommendations in the four identified criteria. Furthermore, the results of the patient centered approach showed a positive change likewise. Patient’s knowledge about the range of normal values of blood pressure increased from 48% to 67% and the satisfaction with care were reached a level of 80%.

Conclusion:
Regarding the issue of this study, we concluded that it was possible to implement a disease specific quality improvement program in our context. The success of this initiative required the use of appropriate quality improvement tools as well as the involvement of both the whole team and the patient. The positive change recorded through this experience will help enhancing the team motivation to sustain and expand the use of this approach.

Reference:
TRANSITIONAL CARE PROGRAM TO IMPROVE HEART FAILURE OUTCOMES

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Objective:
To examine the effect on 30-day (from discharge) all-cause readmission rates and 30-day (from admission) mortality rates of a nurse-directed, multidisciplinary transitional care intervention in patients 65 years and older with heart failure (HF) at Baylor Medical Center Garland (BMCG).

Methods:
This nurse-directed intervention was adapted from the Naylor Model. The intervention involves an orientation and training program guided by an advanced practice nurse (APN), pharmacist, nutritionist, social worker, physical therapist, and cardiologist. The study population includes all patients 65 or older admitted to BMCG with HF who are alert and oriented, are reachable by telephone after discharge, and reside within 20 miles of the hospital. Screening includes daily census reports, a prescription list of IV diuretics, brain natrieretic peptide greater than 200 ng/mL on admission, and eligibility for Joint Commission HF Core Measures. The initial APN home visit occurs within 24 to 48 hours of index hospital admission and includes patients' and caregivers' goals; nature, duration, and severity of HF and comorbid conditions; physical, cognitive, and emotional health status; general health behaviors and skills; and availability of social support. At least 8 APN home visits are conducted. The APN is available by telephone 7 days per week. If a patient is rehospitalized during the intervention period, the APN resumes hospital visits to facilitate the transition to home. The length of time devoted to the intervention for such patients does not extend beyond 3 months post-discharge from the index hospitalization.

Results:
From August 1, 2009 through November 30, 2009, 57 Medicare HF patients were eligible for the intervention; 20 (35.1%) were enrolled. Of the 37 (64.9%) eligible patients not enrolled, 18 (31.6%) were not screened; 12 (21.1%) were discharged to nursing home, skilled nursing facility, or hospice; and 7 (12.3%) refused the intervention or were not seen prior to discharge. Of the 36 patients enrolled in the intervention, 20 (55.6%) were Medicare HF patients. There were 16 (44.4%) patients who did not meet the Medicare measure criteria (11 [68.8%] did not meet HF criteria and 5 [13.9%] did not meet Medicare Part A criteria). Readmission data within 30 days of discharge for Medicare HF discharges were as follows: from August 28, 2008 through November 30, 2008 (one year before intervention initiation), 8/52 (15.4%) of patients; from June 1, 2009 through August 27, 2009 (pre-enrollment), 10/56 (17.9%) of patients; from August 28, 2009 through November 30, 2009 (total), 6/57 (10.5%) of patients; from August 28, 2009 through November 30, 2009 (patients not enrolled), 5/37 (13.5%) of patients; from August 28, 2009 through November 30, 2009 (enrolled patients), 1/20 (5.0%) of patients.

Conclusion:
Preliminary results suggest that the Transitional Care Program reduces readmission 30 days after discharge for patients with HF. Additional observation time is necessary to assess the program's effect on mortality 30 days from admission for patients with HF. Screening to identify all potential hospitalized HF candidates for the intervention presents a significant challenge and time/resource commitment. In addition, approximately 20% of patients hospitalized with HF are discharged to skilled nursing facilities and are not reached by the intervention. Addressing their transitional care needs requires modification of the intervention or development of a separate targeted intervention. The overall success of the intervention has led to plans to introduce it a second BHCS hospital in 2010. We plan to present additional cumulative patient accrual and follow-up data available to us up to the time of the ISQua meeting in October 2010.

QUALITY OF CARE IN STROKE UNIT OF KOREA

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Objective: This study was performed to compare the quality of care between the hospitals which have stroke units and do not.

Methods: HIRA(Health Insurance Review and Assessment Service) analyzed the administrative data and collected clinical information 175 general hospitals in Korea from October to December in 2008. The subjects were 5,887 patients who admitted general hospitals via emergency room with the code of ICD 10 I60~I63. We classified the hospitals into two different groups. Group1 is hospitals which have stroke unit and Group2 do not. We made operational definition of stroke unit by 1) independent unit for acute stroke care 2) with at least three board certified professionals of neurology, neurosurgery and rehabilitative medicine and 3) full-time nurse practitioners for stroke care. Quality of care for stroke was assessed with 9 ; rate of assessed smoking history, rate of assessed neurologic exam, rate of considered dysphagia screen, rate of brain imaging within 24 hours, rate of lipid profile, rate of considered t-PA therapy, rate of received antithrombotics within 48 hours, rate of antithrombotics at discharge, rate of patients with atrial fibrillation received anticoagulations. 9 measurements were aggregated into one composite score by summing up the denominators and numerators. Composite scores of Group1 were compared to Group2 by student t-test.

Results: The percentage of performance measurement for Group1 was at 99.4% and 85.1% for Group2 (p<.001). (Table) Table. Performance score for stroke care by the presence of stroke unit

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean±SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group1</td>
<td>20</td>
<td>99.4 ± 0.9</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Group2</td>
<td>155</td>
<td>85.1 ± 20.2</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

* Group1 : presence of stroke unit , Group2 : no presence of stroke unit

Conclusion: The hospitals which have stroke unit were shown to provide better quality of care than ones do not. The presence of stroke unit should be added as the structure indicator in the quality assessment program for acute stroke care.
QUALITY IMPROVEMENT IN HOSPITALS DUE TO IMPLEMENTATION OF OUTCOME QUALITY REGISTRIES USING THE EXAMPLE OF THE AUSTRIAN STROKE UNIT REGISTRY

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Objective: The aim of outcome quality registries is a comparative description of achieved care and treatment results which are a base for working on an effective quality management to improve and guarantee the quality of medical care and patient safety.

Methods: The “Austrian Health Institute (Gesundheit Österreich GmbH/Bundesinstitut für Qualität im Gesundheitswesen)” develops and manages seven different outcome quality registries. The work on these registries follows a consistent process which includes data collection, interpretation, feedback and benchmarking as well as the definition and implementation of measures for quality improvement.

In order to explain the realization the Stroke Unit Registry will be used. The development of the Stroke Unit Registry started in 2003. From this time on a brain trust supports the registry development and data analysis by bringing in specific experience and expertise. The following data are collected from all patients who are treated in a stroke unit:

- information about the patients themselves;
- characteristic and severity of the disease at hospital admission, during the stay at the stroke unit and after discharge;
- diagnostic processes and therapies (overall 220 indicators).

Data are collected via a web-based input-mask and the participating hospitals can view their results daily. Concerning data interpretation the results are separated into basic descriptive diagrams (e.g. age, gender) and benchmarking diagrams (present the outcome parameter).

Participating hospitals can compare their own results to the Austrian average and the benchmarking diagrams show all the other hospitals which participate the program. These results and the comparison to the others should support the hospitals to generate measures on their own to improve the quality of treatment and care. The GOEG/BIQG supports them by preparing the analysis and organising benchmarking events which offer a space for exchange, with the aim of learning from the best (best practice).

Results: In 2009 30 of 34 Stroke Units participate in the registry. Data from nearly all patients who were treated at a Stroke Unit were admitting to the registry. To gain better comparisons for specific indicators the brain trust defines standard and target values which are adapted each year. Data analysis show, that some of the most important indicators concerning stroke treatment improved over the last few years. Noticeable is that the average of the lysis-rates (admission diagnose: stroke and ischemia) increased from 7% (2004) to 15% in 2009. A further interpretation shows that almost 70 percent of the patients obtain admission to stroke units within three hours (ideal timeframe for lysis). While in 2005 19 percent of the patients had a door-to-needle-time of less than 30 minutes this number raised to 27 percent in 2009.

Conclusion: The Austrian Stroke Unit Registry is a comprehensive and high quality nationwide database concerning the treatment and care of patients in stroke units. Especially the high participation rates contribute to the value of the data. It seems that the collection, analysis and comparison of outcome results – based on the registry – contribute to quality improvement in the participating hospitals. Using nationwide outcome quality registries based on a standardised process contributes to quality assurance and improvement.