2nd Nordic Conference on Research in Patient Safety and Quality in Healthcare

BOOK *of* ABSTRACTS

6 - 7 March 2012, Copenhagen, Denmark

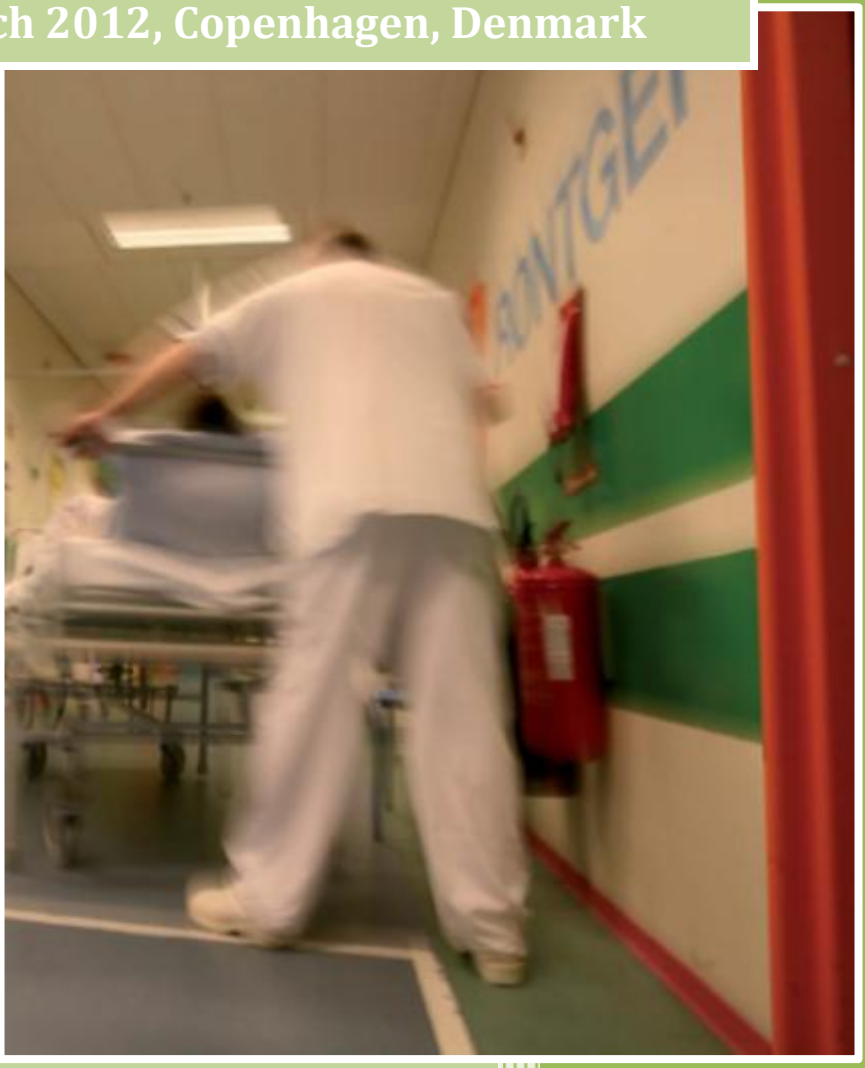

Photo:
Carsten Broder Hansen

Book of Abstracts from the 2nd Nordic Conference on Research in Patient Safety and Quality in Healthcare, 6 – 7 March 2012, Copenhagen, Denmark

Editors:
Anne Hjøllund Christiansen
Henning Boje Andersen
Knut Borch-Johnsen

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Danish Research Network for Patient Safety and Quality in Healthcare / Forskningsnetværk for Patientsikkerhed og Kvalitet i Sundhedsvæsenet
www.fpks.dk

Collaborating organizations:
Danish Society for Quality in Healthcare; Danish Society for Patient Safety

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Introduction

Dear Conference Participants

It is a great pleasure to welcome you to the 2nd Nordic Conference on Research in Patient Safety and Quality in Healthcare.

The first Nordic conference in Stockholm in Saltsjöbaden in May 2010, (www.npsc.se), which was very successfully organized by KTH (Royal Technical Institute of Technology), demonstrated that there was a need for Nordic researchers and practitioners occupied with safety and quality issues to present and discuss themes of shared interest. At the Stockholm meeting the Danish Research Network for Patient Safety and Quality in Healthcare (www.fpks.dk), established earlier that year, promised to organize the second conference, originally scheduled for the autumn of 2010 but then postponed till 2012. With the formation of the Nordic Research Network for Safety and Quality in Healthcare (NSQH) (www.nsqh.org) it was natural to expand the title of this conference series to explicitly include quality; so this is now the title of what we expect to be a continued Nordic series of conferences on research in safety and quality in healthcare. We also expect conferences to be organized in turn by the national networks in each of the Nordic countries – either on an annual or bi-annual basis.

There are many good reasons for having a Nordic conference series in our field: We have of course a tradition for cultural and scientific collaboration among the Nordic countries but equally important is the fact that the organization and management of healthcare in our countries are similar. Therefore, the potential for learning from and inspiring each other is particularly great in our field where outcomes are determined by the interaction among biological, technical, organizational and cultural factors.

For this conference, the numbers of abstracts and registrations received have been larger than expected: We have about 250 delegates and in addition about 25 invited speakers; we had more than 70 submissions for lectures and project posters and have selected 24 oral presentations after a blinded review (53% acceptance rate) and an additional 34 submissions for poster presentations.

We gratefully acknowledge the assistance of our collaborating organizations, the Danish Society of Quality in Healthcare and the Danish Society for Patient Safety and we thank the members of the Programme Committee and our reviewers for their efforts.

On behalf of the Danish Research Network for Patient Safety and Quality in Healthcare, we wish you rewarding encounters throughout the conference and beyond, looking forward to a continued and fruitful Nordic collaboration.

Henning Boje Andersen

Chairman of Danish Research Network for Patient Safety and Quality in Healthcare

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Siri Wiig

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09.10-09.50	**How to ensure quality and patient safety in a health care system under economic constraints?** Keynote speaker: *René Amalberti* Chair: *Knut Borch-Johnsen* **Room AB, Ground floor**	
10.05-11.00	**Session 1, Oral presentations** Theme: Patients' perspective and experience Chairs: *Morten Freil & Øyvind Andresen Bjertenæs* **Room A, Ground floor**	**Workshop A** Research methods in medication errors: Identification, measurement and evaluation Organizers: *Marianne Lisby & Annemarie Hellebek* **Room B, Ground floor**
11.00-11.20	**Coffee**	
11.20-12.30	**Session 2, Oral presentations** Theme: Risks and hazards: Identification and intervention Chairs: *Anne Zirau Kudsk & Brian Bjørn* **Room A, Ground floor**	**For debate 1** Research based on adverse event – Where does it bring us? Speakers: *Kim Lyngby Mikkelsen & Erik Hollnagel* Chair: *Richard Cook* **Room B, Ground floor**

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09.55-11.00	**Session 5, Oral presentations** Theme: Simulation, training and learning Chairs: *Per Nilsen & Olli Väisänen* **Room A, Ground floor**	**Session 6, Oral presentations** Theme: The relationship between working environment and patient safety Chairs: *Marianne Törner & Anders Pousette* **Room B, Ground floor**
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Day 1, March 6th 2012,
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Danish Cancer Patients' Perspectives on the health care services from first symptom to end of primary treatment. Cecilie Sperling, Mette Sandager, Janne Lehmann Knudsen, The Danish Cancer Society, Denmark

The National Danish Survey of Patient Experiences – a tool to measure improvement. Marie Fuglsang, Mette Foged, Region Hovedstaden, Denmark

11.20-12.30: Session 2, Oral Presentations: Risks and hazards: Identification and intervention

Improved safety in the patient's medication process during hospital stay. Experiences and outcomes from the LIMM-model (Lund Integrated Medicines Management). Tommy Eriksson[1,2], Peter Höglund[1,3], Lydia Holmdahl[1,3], Åsa Bondesson[1,3], Patrik Midlöv[1,3], Anna Bergkvist-Christensen[1,3], Lina Hellström[4]

[1]Lund University, Lund, Sweden; [2]Apoteket Farmaci AB; [3]Skåne Regional council; [4]Linnaeus University, Kalmar, Sweden

Development and evaluation of a clinical pharmacy screening service of risk medications: a national collaboration study. Lene Juel Kjeldsen[1], Marianne Hald Larsen[1], Trine Rune Høgh Nielsen[2]

[1]Amgros I/S, Denmark; [2]The hospital pharmacy, Næstved Hospital, Denmark

Validation of a taxonomy of failures and causes of handover patient safety incidents. Henning Boje Andersen[1], Inger Margrete Siemsen[1], Lene Funck Petersen[2], Doris Østergaard[2], Jacob Nielsen[2]

[1]Technical University of Denmark, Management Engineering, Kgs. Lyngby, Denmark; [2]Danish Institute for Medical Simulation

Weekend-effect: Is higher short-term case-fatality among patients with stroke, admitted during weekends, explained by a poorer quality of care? Nina Sahlertz Kristiansen[1], Søren Paaske Johnsen[2], Jan Mainz[1]

[1]University of Southern Denmark, Denmark; [2]Department of Clinical Epidemiology, Aarhus University Hospital

12.40-13.15: Poster Session 1: Accreditation and implementation of tools

The impact of an accreditation process on the reporting of adverse events. Annette Bjerre Vedstesen, Carsten Rix, Regionshospitalet Randers, Denmark

Danish Quality Model and Accreditation: Means and Ends - a Report from the Field. Irmgard Birkegaard, OUH Svendborg Sygehuse, Denmark

Facilitator visits as a development tool in general practice – a PhD and an evaluation of an intervention for quality improvement in general practice. Tina Drud Due[1], Frans Boch Waldorff[1], Thorkil Thorsen[1], Marius Brostrøm Kousgaard[1], Eva Branner[2]

[1]Research Unit of General Practice, University of Copenhagen, Denmark; [2]Capital Region of Denmark

****Know your pressure* and get hand hygiene up world class.*** Charlotte Eriksen, Susanne Johansen, Marianne Frandsen, Naestved Sygehus, Region Sjaelland, Denmark

12.40-13.15: Poster Session 2: Clinical outcome studies

Different patterns in use of antibiotics for lower urinary tract infection in institutionalized and home-dwelling elderly: a register-based study. Ylva Haasum, Johan Fastbom, Kristina Johnell, Karolinska Institutet, Sweden

Factors influencing doctors' perception of performance and outcome measurement in the Danish National Indicator Project (schizophrenia). Søren Uhre, Rikke Jørgensen, Aalborg Psychiatric Hospital, Aarhus University Hospital

Diagnosis-related 30 days mortality in wards with differing nurse-reported work environments. Christine Tvedt[2], Jon Helgeland[1], Ingeborg Strømseng Sjetne[1], Ole Tjomsland[1], Geir Bukholm[2]

[1]Norwegian Knowledge Centre for the Health Services, Norway; [2]University of Oslo

13.15-14.00: Poster Session 3: Medication safety

How common are errors in the medication process in a psychiatric hospital? Ann Lykkegaard Sørensen[1,2], Jan Mainz[3,4], Marianne Lisby[5]

[1]University College of Northern Denmark; [2]Institute of Public Health, Arhus University, Denmark; [3]Aalborg Psychiatric Hospital, Department South, The North Denmark Region; [4]Department for Health Services Research, Unit for Health Economics, University of Southern Denmark, Denmark; [5]Centre of Emergency Medicine Research, Aarhus University Hospital, Denmark

Development of an algorithm for differentiated intervention against medication errors in acute hospital admissions on the basis of individualized risk stratification. Eva Aggerholm Saedder[1], Dorthe Krogsgaard Bonnerup[1], Marianne Lisby[2], Lars Peter Nielsen[3], Birgitte Brock[3]

[1]Hospital Pharmacy, Aarhus University Hospital, Denmark; [2]Center of Emergency and Medical Research, Aarhus University Hospital, Denmark; [3]Department of Clinical Pharmacology, Aarhus University Hospital, Denmark

Physicians' attitudes towards drug counseling from external health professionals. Dorthe Krogsgaard Bonnerup[1], Eva Sædder[1,3], Marianne Lisby[2], Anette Eskildsen[1], Lars Peter Nielsen[3]

[1]The Pharmacy Department, Aarhus University Hospital, Denmark; [2]Center of Emergency and Medicine Research, Aarhus University Hospital, Denmark; [3]Department of Clinical Pharmacology, Aarhus University Hospital, Denmark

13.15-14.00: Poster Session 4: Safety culture

Determinants of Patient Safety – Perceptions of Swedish Patient Safety Experts. Mikaela Nygren, Per Nilsen, Kerstin Roback, Linköping University, Sweden

Traumatic Childbirth from the Perspective of the Health Care Professional. Katja Schrøder[1], Karen la Cour[1], Jan Stener Jørgensen[2], Jacob Hjelmborg[1], Niels Christian Hvidt[1]

[1]University of Southern Denmark, Denmark; [2]Odense Universitets Hospital, Denmark

First steps in testing validity of three different Patient Safety Culture tools for use in primary care in Denmark. Solvejg Kristensen[1], Malene Vestergaard[2], Paul Bartels[1]

[1]Central Denmark Region, Denmark; [2]Danish Society for Patient Safety

Promoting Patient Safety Culture Instruments in European Hospitals – Results from the EUNetPaS Project. Solvejg Kristensen, Paul Bartels, European Society for Quality in Healthcare, Office for clinical Indicators, Central Denmark Region

Improving Patient Safety in a Local Hospital Setting. Johan Barstad, Bodil Røyset, Helse Møre og Romsdal, Norway

13.15-14.00: Poster Session 5: Organization of care and national guidelines

A new zero vision for Swedish patient safety – but how do we know that health care is becoming safer? Per Nilsen, Mikaela Nygren, Annica Öhrn, Kerstin Roback, Linköping University, Sweden

The Finnish National Programme for Patient Safety. Olli Väisänen, Anneli Milén, National Institute for Health and Welfare, Finland

Innovative services for patients with complex medical disorders. Inger Marie Jaillet, Solveig Gram, Hospital of Randers, Denmark

Design for Patient Safety in Care for the Premature - It's about breast milk. Sanne Allermann Beck[1], Birgit Simonsen[2], Yutaka Yoshinaka[3]
[1]The Neonatal Clinic, Rigshospitalet - Copenhagen University Hospital, Denmark; [2]Juliane Marie Centret, Rigshospitalet - Copenhagen University Hospital, Denmark; [3]DTU Management Engineering, Technical University of Denmark, Denmark

15.15-16.15: Session 3, Oral Presentations: Safety at the sharp end

Prevention of Central Venous Catheter-Related Infections in a Swedish ICU department. Sophie Lindgren, Ingrid Eiving, Ann Eliasson, Elisabeth Ek, Anneli Fagerberg, Gisela Fridstedt, Elisabeth Lindström, Anna Ljung, Susanne Olsson, Maria Tiger, Helené Westrin, Sahlgrenska University Hospital, Sweden

A qualitative study of surgical personnel's experiences with the WHO Surgical Checklist two years after implementation. Arvid Steinar Haugen[1,2], Sindre Høyland[3], Øyvind Thomassen[1,4], Karina Aase[3]
[1]Department of Anaesthesia and Intensive Care, Haukeland University Hospital, Bergen, Norway; [2]Department of Clinical Medicine, University of Bergen, Bergen, Norway; [3]Department of Health Studies, Quality and Safety in Healthcare Systems, Stavanger, Norway; [4]Department of Surgery, University of Bergen, Bergen, Norway

Validating the Danish adaption of the WHO-ICPS classification of patient safety incidents. Kim Lyngby Mikkelsen[1], Jacob Thommesen[2], Henning Boje Andersen[2]
[1]National Agency for Patients' Rights and Complaints, Copenhagen, Denmark; [2]Technical University of Denmark, Management Engineering, Kgs. Lyngby, Denmark

15.15-16.15: Session 4, Oral Presentations: Global Trigger Tool

Measuring national levels of adverse events using the Global Trigger Tool in the Norwegian patient safety campaign. Ellen Tveter Deilkås, Norwegian Knowledge Centre for Healthcare, Norway

Implementation of Global Trigger Tool at a medium size hospital in Norway. Kjersti Mevik, Tonje Hansen, Hilde Normann, Birger Hveding, Barthold Vonen, Nordlandssykehuset, Norway

Measuring adverse events in oncology inpatients using Global Trigger Tools: Sense or nonsense? **Thea Otto Mattsson[1,2], Kim Brixen[1], Janne Lehmann Knudsen[3], Jørn Herrstedt[1,2]**

[1]Clinical Institute at University of Southern Denmark, Odense, Denmark; [2]Department of Oncology at Odense University Hospital, Odense, Denmark; [3]Danish Cancer Society, Copenhagen, Denmark

Day 2, March 7th 2012,
Conference Details on Oral and Poster Presentations

9.55-11.00: Session 5, Oral Presentations: Simulation, training and learning

Simulation for Learning and Teaching Procedural Skills: The state of the science. Debra Nestel[1], Jeffrey Groom[2], Sissel Eikeland Husebø[3], John M. O'Donnell[4]

[1]Monash University, Australia; [2]Florida International University, Miami, FL USA; [3]University of Stavanger, Norway; [4]University of Pittsburgh Medical Centers, Pittsburgh, PA USA

Using simulation-based training to ensure safe implementation processes of new technology in the home context - A literature review. Siri Wiig, Anne Marie Lunde Husebø, University of Stavanger, Department of Health Studies, Stavanger, Norway

Anaesthetists' Non Technical Skills in a Danish perspective. Rikke Malene Jepsen, Lene Spanager, Helle Teglgaard Lyk-Jensen, Doris Østergaard Danish Institute for Medical Simulation, Herlev Hospital, Denmark

MEET-MEASURE-iMprOVE – clinical teams learn to improve the safety of patients in a Danish regional hospital. Christian von Plessen, Inge Ulriksen, Hillerød Hospital, Denmark

9.55-11.00: Session 6, Oral Presentations: The relationship between working environment and patient safety
Interaction of organisational climates in health care: patient safety and occupational safety. Anders Pousette, Mats Eklöf, Pernilla Larsman, Marianne Törner, Göteborg University, Sweden
Work environment and patient safety. A multi methodolodical study at an acute department at a regional hospital. Kurt Rasmussen, Anna Helene Meldgaard Pedersen, Kent Nielsen, Department of Occupational Medicine, Herning Hospital, Denmark
Work related stressors and occurrence of errors and adverse events in an emergency department. Kent Jacob Nielsen[1], Anna Helene Pedersen[1], Kurt Rasmussen[1], Louise Pape Larse[1], Kim Mikkelsen[2] [1]Department of Occupational Medicine, Herning Hospital, Denmark; [2]National Board of Health, Denmark
Organisational change, work environment and patient safety. Anna Helene Meldgaard Pedersen, Occupational Medicine, Herning Hospital, Denmark

11.20-12.30: Session 7, Oral Presentations: Organization of care from a systems perspective
Evidence informed patient safety policy: is it possible? Anne Karin Lindahl[1,2], Marianne Tinnå[1], Unni Krogstad[1], Øystein Flesland[1] [1]Norwegian Knowledge Centre for the Health Services, Norway; [2]BI School of Management, Oslo, Norway
Patient safety in cancer care from a systems perspective. Mirjam Ekstedt, Synnöve Ödegård, Royal Institute of Technology, KTH, Sweden
Identifying the underlying management strategies of developing patient safety - are they competing or complementary? Elina Pietikäinen, Teemu Reiman, Heikkilä Jouko, VTT Technical Research Centre of Finland, Finland
A joyous occasion? How centralisation as part of quality improvement shapes power battles within organising of maternity care. Siri Wiig[1], Karina Aase[1], QUASER Team[2] [1]University of Stavanger, Norway; [2]King's College, London, UK

12.40-13.15: Poster Session 6: Simulation, training and learning

Patient Safety Learning Audits: Towards organizational learning for improved safety. **Svante Lifvergren[1], Susanne Gustavsson[1], Andreas Hellström[2]**

[1]Skaraborgs Sjukhus, CHI-Centre for Healthcare Improvement, Chalmers Tekniska högskola, Sweden; [2]CHI-Centre for Healthcare Improvement, Chalmers Tekniska högskola, Sweden

"Breakthrough departments" – the shortest way to quality. Birgit Simonsen, Britt De Cordier, Rigshospitalet, Denmark

Patient safety and simulation – many connections beyond simulation-based education. Peter Dieckmann, Doris Østergaard, Anne Lippert, Danish Institute for Medical Simulation, Denmark

12.40-13.15: Poster Session 7: Safety at the sharp end

Usage of the WHO Surgical Safety Checklist in Practice. Christofer Rydenfält[1], Gerd Johansson[1], Per Odenrick[1], Kristina Åkerman[2], Per Anders Larsson[2]

[1]Department of Design Sciences, Lund University, Sweden; [2]Helsingborg Hospital, Sweden

Is the safety of surgical satellite patients threatened or are other disadvantages dominating? Rune Ingemar Sjödahl[1,2], Olle Kilander[1], Kenth Johansson[1], Hans Rutberg[2]
Dept of Surgery[1] and the Patient Safety Unit[2], University Hospital, Linköping, Sweden

Adverse events and waiting times for patients with colon cancer - a pilot study. Rune Ingemar Sjödahl[1], Elin Canslätt[2]

[1]Linköping University Hospital, Sweden; [2]County Hospital Kalmar, Sweden

13.15-13.55: Poster Session 8: National and global strategies and systems

Implementation of a new national reporting system for adverse events in Norwegian hospitals. **Ånen Ringard[1], Anne Karin Lindal[1,2], Marie Brudvik[1], Marianne Tinnå[1], Øystein Flesland[1]**

[1]The Norwegian Knowledge Centre for the Health Services, Norway; [2]BI School of Managment, Norway

Mapping and evaluation of global models for patient safety. Henrik Alm, Anna Christensson, Jenny Rehnman, Systematic Reviews Unit, Department of Knowledge-Based Policy and Guidance, The National Board of Health and Welfare , Sweden

Joint Action: European Union Network for Patient Safety and Quality of Care (PaSQ). Solvejg Kristensen, Britt Wendelboe, Danish Society for Patient Safety
Analysis of types and causes of handover failures based on root cause analyses of four Danish regions. Inger Margrete Siemsen[1], Lene Funck Petersen[2], Doris Østergaard[2], Henning Boje Andersen[1] [1]Technical University of Denmark, Management Engineering, Kgs. Lyngby, Denmark; [2]Danish Institute of Medical Simulation, Denmark

13.15-13.55: Poster Session 9: Transitional care (care crossing units and sectors)
A review of patient-oriented care models as applied in transitional care of the elderly. Marianne Storm, Dagrunn Nåden Dyrstad, Karina Aase, University of Stavanger, Norway
The patient perspective in multisectoral cooperation. Rikke Gut, Marie Fuglsang, Capital Region of Denmark
Analysis of patient experiences of continuity of care. Peter Qvist, Birthe Lindegaard, Center for Quality, Region of Southern Denmark
Improving care for chronically ill patients by standardized e-communication between hospital and local communities. Peter Qvist, Birthe Lindegaard, Center for Quality, Region of Southern Denmark
The development and test of a generic concept to improve handover. Lene Funck Petersen[1], Marlene Dyrløv Madsen[1], Lene Spanager[1], Benedicte Schou[2], Henning Boje Andersen[3], Doris Østergaard[1] [1]Danish Institute of Medical Simulation, Denmark; [2]Development department, Herlev Hospital; [3]Technical University of Denmark, Management Engineering, Kgs. Lyngby, Denmark

Invited Lecturers

René Amalberti, National Authority for Health, France

Tuesday, 6 March 2012 / 09.10-09.50 – Chair: *Knut Borch-Johnsen*

How to ensure quality and patient safety in a healthcare system under economic constraints?

Healthcare is currently being transformed rapidly under the effect of four forces that combine together and thus create a difficult period of transition:

First, a series of technical innovations (day surgery is only one example among other contributing factors) are all leading to a drastic and rapid reduction of the average length of stay.

Second, a series of sociological changes (new professions such as interventionists, more female doctors, migration of surgery into physician offices, emergence of sophisticated medical homes, etc.) have a significant impact on the reorganisation of medical services and the need for reinforced co-ordination between primary and secondary care.

Third, a continuous push toward more public transparency and more supervision by the authorities via administrative and medical databases induces a growing impact on the payment scheme of doctors and professionals.

Fourth, and not least, an incredible financial crisis, especially in Europe, is making a pervasive impact. A few EC countries have entered into near bankruptcy and must reconsider their national medical protection scheme (Greece, Portugal, Ireland, and even Spain). Although this dramatic issue is not probable for other nations, including the Nordic countries, all Western nations are reconsidering urgently how to better allocate the money for best results, considering that the part of expenditures and GDP that is allocated to healthcare will remain at best stable in the near future, although the demand will necessarily grow with the arrival of new techniques and the aging population.

To top it off, Quality and Safety in Healthcare is not only an area that

potentially may suffer from these arbitrations and reallocations of resources and priorities in healthcare, but is also an area that may worsen inevitably because of the hard transition times putting healthcare at greater risks (rapid reorganization of services, hospital downsizing or even closing, social reluctance of workers to engage in new schemas, delicate transfer of charge to primary care, etc).

Paradoxically, this rapid change in the situation and new threats may be turned into an advantage for Quality & Safety.

Indeed, and for reasons that are separate from the financial pressure, the literature increasingly agrees that the three priority challenges of Quality & Safety for the near future are to transition from:

a) from a local perspective, consultation-driven, hospital-centred vision to a model of Quality & Safety addressing the patient journey through the entire system,

b) from a culture of autonomy to a team culture at all stages of the system, and

c) from process-driven results to outcome-driven results, including a fair cost-benefit analysis of Quality & Safety interventions, possibly abandoning some of the (numerous) interventions that have not proven efficient.

The crisis may channel and accelerate Quality & Safety professionals to transition towards these three objectives, giving opportunity to clean Quality & Safety actions that have proven to be little effective, revisiting the certification process, revising professional standards of persons dealing with Quality & Safety in healthcare, in sum, making a significant evolution for the benefit of the patients.

The presentation goes through these various conjunctures and gives concrete examples on how to use the inescapable sacrifices required by the economic crisis to make a profitable evolution of the Quality & Safety in the healthcare system.

Kim Lyngby Mikkelsen, National Agency for Patients' Rights and Complaints, Denmark
Erik Hollnagel, Center for quality, University of Southern Denmark
Tuesday, 6 March 2012 / 11.20-12.30– Chair: Richard Cook

For Debate 1: Research based on adverse events – Where does it bring us?

The conventional approach to improve healthcare safety is to reduce the number of adverse outcomes by reducing the errors and failures. From that perspective, research should obviously be based on a study of adverse events to understand why they happen. Furthermore, since time and resources are limited, we should focus on the adverse events that are most severe.

Healthcare may, however, also be made safer by facilitating everyday work, which means trying to make things better instead of preventing them from getting worse. From that point of view, research should be based on a study of everyday performance, and try to understand what it is and why it happens. This makes sense, particularly when time and resources are limited, because it can make us to better at what we already do well, hence improve safety, productivity, and quality together.

Learning from adverse events is not an option, it's an obligation. However, from an epidemiologist point of view, if we want to better understand both why things go wrong and why things go right, we need to study the exposures in both situations. From adverse event data, at best we get hypotheses of the exposures when things go wrong. Therefore we need to supplement that with insights into the exposures when things go right. The 'case-crossover' study seems to be an obvious study design to choose, when studying transient exposures in complex systems.

Another point which should be made is from an interventionists point of view. It is often argued that rigorous randomized controlled trials (RCTs) are not possible to conduct in the clinical every day setting, as so many factors in the context are constantly changing and due to the contextual diversity. The point to be made is that while RCT intervention studies truly are very difficult to carry through, implementation research in the form of prevention effectiveness studies is relative simple and must be performed. Prevention effectiveness studies aim at reducing the risk exposure. Clear

implementation goals must be set to reduce risk exposure and the fidelity in reaching these goals must be observed.

Peter Dahler-Larsen, University of Southern Denmark
Tuesday, 6 March 2012 / 14.15-15.00 – Chair: Kjeld Møller Pedersen

Complex interventions in safety and quality. Challenges in Methodology and interpretation

This presentation begins with the observation that sometimes the lessons learned from complex interventions in safety and quality are difficult to capture through methodologies that are conventionally accepted in the field of medicine.

More specifically, such interventions face a number of challenges. Interventions in safety and quality are sometimes complex, organizational, multi-layered, and dynamic. When expressed in terms of "quality" the outcome of such interventions is, at best, multidimensional. In addition, the outcome hinges on contextual factors and on their "meaningfulness" in the eyes of a number of implementors. Generalizations are notoriously difficult.

Furthermore, the use of audit, accreditation and evaluation systems induces problems in itself. One is a potential misfit between problem structures, intervention structures and accountability structures; another is the difficult transmission from evaluative knowledge to organizational and political decision-making.

In the presentation it is discussed whether these apparently numerous obstacles can be turned into potential resources in evaluation of complex initiatives.

Robert Wears, University of Florida / Imperial College London
Wednesday, 7 March 2012 / 09.00-09.40– Chair: Henning Boje Andersen

Is standardized care a solution to safety and quality issues?

In discussions of the quality and safety problems of modern, Western healthcare, one of the most frequently heard causal attributions has been that: "It is not standardized." This session will briefly explore issues

around standardisation that illustrate its surprising complexity, its potential advantages and disadvantages, and its political and sociological implications, in the hope that discourses around standardisation might become more fruitful. I will discuss four large components of this complexity.

Benefits. Any discussion of standardisation must admit that it has many benefits. A world in which every light bulb had to be custom fit to its socket would be a very dark world indeed. Ironically, one of the primary benefits of standardisation is seldom raised by its advocates: standardisation is highly valuable in supporting coordination of action across disparate groups whose mutual communications may be undependable.

Specificity. Many calls for standardisation in health care lack specificity and have an almost magical quality, as if standardisation were some universal good, a philosopher's stone that could turn the lead of day-to-day care into gold. Thus, an important first step in these discussion is to clarify a set of issues: what, exactly, should be standardised (*eg*, parts or procedures); at what level; along what dimensions; by whom; and for what purpose?

Non-neutrality. Standardisation has its roots in Taylorism, the industrial revolution, and before that the rationalism of the Enlightenment, and so is often depicted as a technical, politically neutral exercise. But standardisation efforts are not neutral activities; they privilege one view of the world over another and often one group over another. Standardisation tends to elevate the role of managers and technocrats (who organize and plan the work) over that of front-line workers (who merely executed their instructions). It makes invisible the articulation work of those who fill the gaps between prescriptive standards and the messy uncertainties of real work.

Heterogeneity. Finally, standardisation heterogeneity and variation are inherently undesirable properties that should be eliminated or at least nuisances to be minimized. But to the extent that the clinical problem space is heterogeneous, this clashes with two real world properties of complex systems: the Law of Requisite Variety (every controller of a system must exhibit at least as much variety as the system); and the principle of equifinality (that there may be many, equally good paths to a goal). Standardisation presumes that average results will be equally obtainable by

everyone, which is a form of the ecological fallacy. Finally, standardisation is unfortunately aimed at a moving target; developed for static manufacturing systems (*eg*, Adam Smith's pin maker), its application to complex, sociotechnical systems which are composed of multiple mutually influential elements, constantly changing, and evolving over time, will always and necessarily be behind the times, late in adapting to new or local circumstances. Thus standardisation cannot be a universal approach to quality and safety, but requires grounding and judgment if it is to be used safely and effectively.

Erik Jakobsen, Danish Lung Cancer Registry, Denmark
Knut Borch-Johnsen, University of Southern Denmark
Wednesday, 7 March 2012 / 15.10-15.50– Chair: Leif Panduro

For Debate 2: Do clinical databases lead to improved quality of care?

Erik Jakobsen:

In 1998 The Danish Lung Cancer Group published the first edition of guidelines for diagnosis and treatment of lung cancer. A national registry was implemented in the year 2000. The primary objective was to monitor the implementation of the guidelines and to secure and improve the quality of lung cancer treatment nationwide.

Through systematic nationwide registration of all lung cancer patients 40.779 patients has been included. Indicators describing survival, diagnostic delays, correspondence between pre- and postoperative staging and resektion rates have been registered since 2003. Each year the results have been audited locally, regionally and nationally and improvements have been proposed, implemented, monitored and consecutively evaluated by the audit-plenary.

This effort has had a significant impact on the results in all indicators. Thus overall survival has increased and mortality after surgery has decreased. Diagnostic delays have been significantly reduces and variations in the quality of care has been diminished. Details and supplementary data will be presented.

Conclusions

Establishment of a national system based on guidelines, a database, public reports, systematic audits and organisational commitment will contribute to significant improvements in the quality of care.

Knut Borch-Johnsen:

Diabetes is an area where systematic monitoring of care has been an integral part of the system for many years in most of the Nordic Countries. In Denmark, systematic monitoring of the quality of care started in the pediatric departments in 1996, and since 2004 all diabetes out-patient clinics have reported data to the National Indicator Project.

Despite this long lasting systematic monitoring and publication of data, major variations in the quality of care still remain both in the pediatric area and adult diabetes care units. Based on the data from these two databases we have analyzed whether the differences between clinics can be explained by case-mix and whether differences remain consistent over time.

This presentation will focus on why systematic reporting of "quality of care" data do not automatically lead to improved care and what comprises the major barriers to optimal care for patients with diabetes.

Naomi Judith Fulop, NIHR King's PSSQ Research Centre, United Kingdom

Wednesday, 7 March 2012 / 15.10-15.50– Chair: Karina Aase

Organisational and social perspectives on patient safety and quality in healthcare: Contributions, critiques, and future directions

Drawing on a number of current and recent research studies, this presentation will discuss how organisational and social perspectives can contribute to, not just critique, patient safety (Jensen, 2008; Vincent, 2009). In particular, the importance of:

(1) studying patient safety at macro, meso and micro levels and understanding the dynamic interactions between these levels;

(2) understanding the roles of professionals and their relationships with managerial imperatives in relation to patient safety that are more complex

than is sometimes acknowledged; and

(3) placing these two in the context of wider political and institutional relationships. Challenges in 'translating' or 'mobilising' understandings from these perspectives in to policy/practice will be discussed, and future directions proposed.

Workshops

Workshop A: Research methods in medication errors: Identification, measurement and evaluation

Tuesday, 6 March 2012 / 10.00-11.00

Organizers:

Marianne Lisby, Aarhus University Hospital, Denmark
Annemarie Hellebek, Unit for Patient Safety, Capital Region of Denmark
Kaj Essinger, The Patient Insurance LÖF, Sweden

Two decades ago a large-scale study of adverse events in US hospitals revealed medication errors as one of the main contributors to adverse events. Despite several studies and initiatives to improve medication safety, it still remains as one of the most important patient safety problems in modern healthcare resulting in unplanned hospitalisation, prolonged in-hospital stay, increased costs and death;

Medication errors occur in complex systems and involve several key players with different interests in safety such as patients, healthcare professionals and the commercial drug industry complicating straightforward answers to the problem. Another crucial issue is that relatively little knowledge in the field of medication errors, at least in Scandinavia, is based on research findings which reduces the likelihood of prioritizing targeted interventions to reduce harmful medication errors. Therefore, the main question of this workshop is "How can research methods deal with this important problem?" More specifically the workshop will address the following questions:

- Which research methods are appropriate to identify and measure medication errors?
- Which methodological and scientific considerations should be made when evaluating interventions that aim to reduce medication errors?

Mix up of medicines is a frequently addressed problem in the medication

process. The workshop will therefore address two examples of design interventions and adjacent research.

The workshop will be initiated with a brief status on medication errors and followed by five short presentations, each providing perspectives on the above mentioned questions.

- What is a medication error? *Marianne Lisby, RN, PhD, Postdoc., Centre of Emergency Medicine Research and Department of Clinical Pharmacology, DK*
- Can high alert medications be used to identify clinically important medication errors? *Eva Saedder, MD, Clinical Pharmacologist, PhD stud., Aarhus University Hospital, DK*
- How can and should medication errors be measured – a research perspective? *Annemarie Hellebek, MD, PhD, Unit for Patient Safety, Capital Region of Denmark, DK*
- What methodological considerations should be made in evaluation of medication error interventions? Examples from a Danish study of change in label design for medicines. *Simon Schytte-Hansen, Pharmacist, Danish Society for Patientsikkerhed.*
- What scientific considerations arise from evaluating a medication error intervention? Examples from a Swedish study of change in design of medication packaging. *Kaj Essinger, Senior Advisor, The Patient Insurance LÖF, Sweden*

Finally, the organisers will wrap-up the workshop with the main take-home messages. There will be time for a short discussion after the short presentations.

Workshop B: Leadership, Organization development & culture – Impact on safety and quality

Tuesday, 6 March 2012 / 16.30-17.30

Organizers:

Peter Kjær, Copenhagen Business School, Denmark
Morten Knudsen, Copenhagen Business School, Denmark
Kirstine Zinck Pedersen, Copenhagen Business School, Denmark

This workshop is organized by a team of researchers from Center for Health Management (CHM) at Copenhagen Business School. Our interests are patient safety, quality and user involvement – from an organizational perspective.

The workshop will address the interrelationship of organization and safety/quality. Whereas much health services research emphasizes 'organization' as one of many variables to be managed in the pursuit of quality and other goals, we wish to explore the complex interrelatedness of organization and healthcare. In particular, we wish to highlight how safety and quality issues are being translated into organizational concerns, and how the preoccupation with patient safety affects healthcare organizations in a wider sense. Thus rather than just describing how organizational factors impact on safety and quality; we highlight the broader questions of how safety and quality are being organized within healthcare and what the intended and unintended consequences of such processes of organizing are.

Workshop C: Global Trigger Tool in patient safety – Where is the evidence?

Tuesday, 6 March 2012 / 16.30-17.30

Organizers:

Helge Svaar, Svaar consult, Norway
Persephone Doupi, National Institute for Health and Welfare, Finland

The use of patient record data for patient safety monitoring: reviewing the evidence on trigger tools

An essential component of patient safety work is the ability to monitor

achievements, identify areas where improvement is needed and follow the impact of implemented interventions. Trigger tools, both in their paper and automated versions, have been viewed as a promising technology for patient record content analysis that can serve the aforementioned goals. In order to explore the requirements and potential barriers for implementation of each type of trigger tools, we have performed two interconnected literature reviews: one focusing on studies of IHI's paper-based GTT, which is currently taken up by several national level patient safety programs, another focusing on automated trigger tools, because of their increased feasibility as Electronic Health Record (EHR) adoption grows. We provide an overview of the existing evidence on the strengths and weaknesses of each approach, and discuss the implications of the findings from the perspectives of healthcare organizations' management and staff, and from the viewpoint of demands on EHR systems.

The Global Trigger Tool is a retrospective method for monitoring patient safety levels within a healthcare provider organisation. It allows for longitudinal comparisons and assessment of patient safety measures implemented, and it enables the identification of target areas for improvement. The method is paper-based, ie. does not require or depend on the use of health information systems. The GTT, as well as the rest of the IHI trigger tools family, is a relatively new technology. We located only eight publications specific to the IHI GTT, which have mostly appeared in the last 2-3 years. Studies use different outcome measures, partly depending on their focus, and partly on the choice of the authors.

- The review of the literature on computerized trigger tools showed the following: Automated trigger tool systems have often been developed on the basis of costumed, locally developed hospital information systems, raising concerns for their feasibility through commercially available applications.
- Different methods of adverse event detection identify different events with little overlap. The most successful strategy in terms of recourse demand and yield seems to be the combination of computer-based alerts and voluntary reporting.
- Prospective trigger tool systems, in addition to technology development and adoption, also depend heavily on significant

changes in workflow and hence face considerable barriers in implementation.

For both paper and electronic tools to be reliable, a number of shared requirements need to be addressed:

- Agreement on the core patient safety definitions – particularly those of adverse events, and preventability.
- Ensuring data quality, in terms of completeness and accuracy of documentation in the patient record.
- Alignment of the pertinent organisational and human factors. Leadership commitment to patient safety initiatives is essential, given the significant amount of resources and sustained effort needed, both for training and introduction, as well as regular use and maintenance.

Where is the evidence?

Akershus University Hospital, Norway, started structured analysis of patient records using Global Trigger Tool in 2007. In the first 4 years, altogether 6368 patient records were examined. The analysis was done in 6 surgical departments (orthopedic, gastro surgical, thorax, urology, gynecology and ENT) and 7 departments in the medical division (cardiac, lung, infectious, gastro medical, endocrinological, hematological, and neurological).

Our experience indicates that the method is both reliable and sensitive in detecting patient harm related to hospital treatment. The evidence for this is mainly based on:

- There is a good correlation with estimates for hospital acquired infections (HAI) based on the national prevalence examinations and those found in patient record analysis by GTT in 2007-2008. Both methods gave estimates of approximately 2000 HAIs each year. Hospital acquired infections was the major cause of patient injury.

- In 2009, a campaign to prevent hospital infections were conducted in all somatic wards. The results of the prevalence examinations estimated a reduction of approx. 800 cases, while the GTT analysis estimated a reduction of approx. 900 cases compared with the

estimates for 2007-2008 (40-45% reduction).

- In November 2009, the WHO Safe Surgery checklist was introduced for all operations in the hospital. Estimates by GTT analysis showed a reduction of the incidence of hospital acquired infections in the surgical departments from 7.6 % in 2009 to 4.8 % in 2010, a reduction of 35%. In the same period the mortality within 30 days after the operation was reduced by 20%.

- The GTT results show consistent risk values between individual departments in the surgical division and the medical division, with orthopedic, thoracic and gastro surgical departments at the highest risk. This is in agreement with other studies and clinical experience.

Workshop D: Economic evaluation of patient safety and quality of Care

Wednesday, 7 March 2012 / 14.00-15.00

Organizers:

Mickael Bech, University of Southern Denmark
Kjeld Møller Pedersen, University of Southern Denmark

Quality and costs or productivity are seen by many as contradictory. To many, higher quality means higher costs. This may, however, not always be the case – and actually may be quite the opposite as a general rule. Bad quality as seen for instance by medical errors and infections actually increase hospital costs, and quality improvements in this area undoubtedly save money. There are also good examples of evidence of appropriate clinical guidelines that will improve quality and reduce costs. In general, good organisational quality is a common prerequisite for both good professional or patient experienced quality and productivity.

The first presentation by Kjeld Møller Pedersen will focus on the evidence for the relationship between patient safety, quality and costs (productivity) including presentation of some of the latest studies on the relationship between hospital productivity and quality.

Healthcare providers have traditionally been reimbursed for providing services in fee-for-service or per case payment schemes. Increasingly, payment schemes that partly pay providers on the basis of their quality are implemented or tested. These payment schemes incentivise providers to focus on and improve quality alongside with economic efficiency.

The second presentation by Mickael Bech will focus on the experiences with pay-for-performance (P4P) programmes. P4P programmes have spread throughout the US and the UK in the last 10 years, and many other countries have implemented programmes rewarding healthcare providers dependent partly on quality indicators. The effects of these programmes are still not very well documented, and the little available evidence seems not to indicate major effects of the programmes. The economics mechanisms leading to both intended as well as unintended effects will be discussed together with the empirical evidence. The presentation will include results from a Danish P4P programme. The presentation will also present some of the latest developments with non-pay-for-performance programmes where hospitalsre punished for poor quality.

Workshop E: Patient/user involvement in patient safety and quality of care

Wednesday, 7 March 2012 / 14.00-15.00

Organizers:

Morten Freil, Danish Patients, Denmark
Marianne Storm, University of Stavanger, Norway

Patient/User involvement – the patient perspective

This presentation focuses on benefits of involving patient perspectives in health care.

A continuous rise in the number of chronically ill patients stresses the demand to engage and involve users of the healthcare system, not exclusively as an attempt to improve individual courses of treatment, but also, from a quality assurance perspective, as a means to critically examine and develop healthcare organizations.

It is documented that involvement has a positive impact on treatment and

patient safety, and, in many respects, patients provide another view on the concept of quality than do health professionals. In Denmark, every fifth patient experiences insufficient involvement in his or her own course of treatment – and a central argument in this presentation is that the patient perspective is given insufficient attention.

In recent years, health services has focused on optimizing patient care through various organizational and patient-oriented initiatives; centralization, specialization and standardization. In this process it becomes highly important to distinguish between patient orientation and patient involvement. A patient-orientated perspective implies that treatment is organized according to patient-orientated treatment goals. Patient involvement, in contrast, is about involving the patient in the formulation of goals and/or in the realization of treatment goals.

Patient/User involvement from providers' perspective

User involvement is a key principle in health policies in many countries and health service systems around the world. Although there is strong attention to user involvement, implementation of user involvement in health service systems varies. User involvement seems to be complicated by different concepts and meanings, methods and levels of implementation. In order to contribute to the understanding and implementation of user involvement, attention to both the providers' and users' perspectives is important.

This presentation focuses on the understanding of user involvement from the providers' perspective. Some key results and experiences from the research project "Service User involvement in inpatient mental health care" conducted in Norwegian Community mental health centers will be presented. Study results suggest that patient/User involvement from providers' perspectives can be measured with the following variables: "patient collaboration," "assisted patient involvement," "carer involvement," "management support," and "organizational user involvement." These variables can be useful in monitoring user involvement and pointing at areas that need to be addressed to develop user involvement. Attention should be paid both to the relatively few reports of "organizational user involvement" in the study in terms of soliciting service user representatives at the department level or at the community mental health center, involving service users in teaching and training sessions, and in the hiring decisions of

providers in the departments. There were also variations among institutions with regard to implementation of “organizational user involvement”. Study results suggest that an intervention program can turn attention to and increase competence about user involvement among providers and inpatients. This can be viewed as an important first step to involve service users in systematic work with health care quality.

However, more work seems to be needed to increase patients’ self-advocacy.

Oral Presentations

Session 1: Patients' perspective and experience

Cecilie Sperling, Mette Sandager & Janne Lehmann Knudsen

Tuesday, 6 March 2012 / 10.05-11.00 – Chairs: Morten Freil & Øyvind Andresen Bjertenæs

Danish cancer patients' perspectives on the health care services from first symptom to end of primary treatment.

Background

Cancer patients are a major source of knowledge when aiming to improve the quality of today's cancer treatment. Only patients experience the entire process from first symptoms to end of treatment and therefore have a unique insight into the workings of the health care system; across sectors, hospitals and departments.

The objective is to present the main results from a national cancer survey of the patient perspectives from 2010.

Methods and materials

A nationwide survey of Danish cancer patients' needs, experiences and assessments of the health care services from first symptom to end of treatment was conducted. Existing literature and focus group interviews were used to construct a questionnaire with 104 questions. The questionnaire covers themes such as information, communication, continuity, patient involvement, patient experienced errors etc.

6,721 patients with a primary cancer disease diagnosed from May to August 2010 in the Danish National Patient Registry received a questionnaire. Of those, 4,346 patients returned the questionnaire leaving a response rate of 65%.

Results

The study population contains approximately the same proportion of men and women. The four most frequent cancer diseases were breast (22.6%), prostate (16.6%), colon (9.1%) and lung (8.4%). The mean age was 65 years. There is a little overrepresentation of patients with breast, prostate and colon cancer in the study population, which is also the case for younger patients and patients who are single. It is important to keep that in mind when interpreting the results of the study.

Overall the quality of the health care services from the patient perspectives is reported to be good. However, the results indicate a number of critical areas where there is a special potential for improvements:

Non-specific symptoms and patient delay in primary care: One in every four patients waited two months or more before contacting their general practitioner (GP), often with non-specific symptoms.

Diagnosing cancer: Half of the patients waited one month or more from the first contact with a GP until the diagnosis was affirmed.

Patient experienced errors: A significant proportion of patients experienced medical errors during the initial investigation in primary and secondary care. Patients also experienced errors during treatment at the hospital.

Receiving the diagnosis: One in every four patients was not encouraged to bring a family member when receiving the diagnosis. The majority of patients received the diagnosis from a doctor they had not met before. Some patients were not sure about their future treatment plan.

Continuity of care: Patients experienced lack of continuity of care when transferring between different health care units. Two out of three patients received contact information for their care manager.

Patient involvement: A significant proportion of patients were not sufficiently involved in decisions about treatment and care. Further, the patient's wishes and needs were not taken into account.

Support and care: Patients experienced unmet needs for psychological support, advice on education and work, the chance to talk to other patients

and practical assistance when coping with everyday life.

Care after treatment: Some patients felt insecure when discharged from the hospital. Circumstances surrounding follow-up care were also unclear. Patients experienced unmet needs for information regarding self-care, what symptoms to be aware of, and who to contact with questions. Some patients had a need for rehabilitation, which was not met.

Discussion and conclusion

The patient perspective is important for improving the quality of the health care services. The Danish Cancer Society will repeat this national survey as well as be asking the same population about their needs, experiences and assessment in the process of rehabilitation and follow-up. Furthermore, the Danish Cancer Society will work for improvements in every of the critical areas.

Marie Fuglsang & Mette Foged

Tuesday, 6 March 2012 / 10.05-11.00 – Chairs: Morten Freil & Øyvind Andresen Bjertenæs

The National Danish Survey of Patient Experiences – a tool to measure improvement.

Background and purpose

Patients possess valuable knowledge about their own illness and feedback from patients is of crucial importance for improving quality of care. Systematic collecting and acting upon survey data on patients' experiences is a tool for focusing care on patients.

The National Danish Survey of Patient Experience (Danish acronym: LUP) is a questionnaire survey for assessing patients' experiences in Danish hospitals. Since 2009, it is being carried out as an annual, nationwide survey, investigating the experiences of both inpatients and outpatients.

Regularly repeating the survey enables changes over time to be monitored and performance compared. This provides the opportunity for individual units and hospitals to use the feedback from patients to identify areas in their services that need to be improved.

Methods and materials

In 2010, postal questionnaires were distributed to approximately 60,000 somatic inpatients and 180,000 somatic outpatients, subsequent to their discharge or end of treatment. 61% of these patients filled in the questionnaire. The questionnaire consists of a series of national and regional questions integrated jointly in one table targeted at either inpatients or outpatients. A number of general topics will be covered repeatedly from one year to the next. Questions in the survey have e.g. been selected based on patients' own evaluation of important factors concerning hospital treatment and on areas for improvement identified in previous surveys.

LUP is based on retrieval of patients from the National Patient Registry of Denmark, which holds key information about every contact between Danish citizens and the hospital services. A representative random sample of patients from most major specialities is included in the survey.

Results

The survey measure patients' experiences and highlights areas that need to be improved. The results show that there *are* areas where improvement is needed to transform care into being more patient-centred. Results are presented at four distinct levels: unit, hospital, regional and national level. The main part of the results from the survey in 2009 and the survey in 2010 can be compared by logistical regressions. At the national level there has been a positive significant change in the results for 12 out of 13 questions for the inpatients and in 11 out of 14 questions for the outpatients. None of the questions have had more negative results.

Discussion and conclusion

The results from the survey provide managements with a basis for acting upon their results. In this way, patient experiences can be improved. The aim of conducting continuous measurements is to ensure that the improvement of patient experiences is an ongoing process with assessment of results, identification of areas of improvement and preparation of plan of action, implementation of improvement initiatives, followed by a new measurement reflecting the progress since the last survey.

It is important that the patients' feedback is as reliable as possible,

therefore the aim of the following surveys is to minimize the time gap from when the patients are discharged from the hospital and until they receive the questionnaire, so that the patients will have their experiences fresh in memory. Likewise it is the intention to minimize the time gap between the data collection and distribution of the results to the units, thereby the patients' evaluation will reflect the routines and reality in the hospital the most and it will furthermore provide time to work with improvements before the next survey is conducted.

Measuring does not automatically improve patient experiences but data can be a driver for change and can give managers and politicians knowledge about the quality of care at different levels. The effects of changes are measured at different levels which help identify best practice and give the possibility of learning from the best performing departments.

Oral Presentations

Session 2: Risks and hazards: Identification and intervention

Tommy Eriksson, Peter Höglund, Lydia Holmdahl, Åsa Bondesson, Patrik Midlöv, Anna Bergkvist-Christensen & Lina Hellström
Tuesday, 6 March 2012 / 11.20-12.30 – Chairs: Anne Zirau Kudsk & Brian Bjørn

Improved safety in the patient's medication process during hospital stay. Experiences and outcomes from the LIMM model (Lund Integrated Medicines Management).

Background and purpose

The effects from medication use in clinical trials are hard to achieve in standard care. Instead of health benefits for the patient there is risk of errors and negative consequences, such as morbidity, mortality and costs. The risk is highest among elderly patients admitted to and discharged from hospital care.

The purpose of this project was to develop a systematic model for a better medication process for an elderly patient during and after their hospital stay.

Material and Methods

Systematic analysis of problems and limitations in the standard patient medication care process from admission, during hospital stay, and after discharge was performed. A structured model based on medication reconciliation, medication review, oral and written communication was developed. Specific tools, checklists and responsibilities were developed and tested for each part of the process and for the total model. The clinical pharmacist is the catalyst for improvement in the patient care team, but each member have their specific responsibilities. Each part of the model was developed, introduced in the care team, and researched stepwise in

cooperation between pharmacy, medicine, and nursing, in hospital and primary care. The base for the project was Skåne University Hospital in Lund.

Results

18 scientific publications and manuscripts have been produced from the development and are also the base for four PhD and more than 30 MSc theses. The model improves the process of care, i.e. identifies and solves drug related problem, reduces medication reconciliation errors, and improves medication appropriateness. It also improves clinical outcomes. Health care contacts and hospital readmissions due to medication errors were reduced by at least 50 percent. It also saves time, at least 2-3 hours per patient, for physicians and nurses in hospitals, in primary and community care. The model also generate savings of €390 and gained utility of 0.005 for each patient. The model is cost saving at a 98% chance. Finally all involved in the process are very satisfied with the process and the pharmacist contribution.

Discussion and conclusion

The LIMM model has successfully been introduced and researched. It has been rewarded "The Gold Scalpel" for best innovation in Swedish health care, and is the base for national patient safety and improvement initiatives, and regulations. The discharge part of the model is mandatory at all hospitals in Skåne and the full model is applied at six hospitals and is being introduced nationally as well as in Mid Norway. In Skåne, there is a political consensus of the benefit and there are concrete plans to hire up to 40 additional clinical pharmacists.

Lene Juel Kjeldsen, Marianne Hald Larsen & Trine Rune Høgh Nielsen
Tuesday, 6 March 2012 / 11.20-12.30 – Chairs: Anne Zirau Kudsk & Brian Bjørn

Development and evaluation of a clinical pharmacy screening service of risk medications: a national collaboration study.

Background and purpose

The use of risk medications leads to adverse events, hospital admissions

and increased economic costs. In 2010, 34,418 adverse events were reported to the National Board of Health, and of these, 30% were related to medication, some of which are more frequently involved in adverse events; risk medications.

Clinical pharmacists in Denmark are frequently involved in addressing medication related patient safety issues e.g. by participating in work related to "Patientsikkert Sygehus". Hence, when clinical pharmacists expressed interest in developing a national project, risk medications were chosen as the subject for the study.

The aim was to develop and evaluate a national clinical pharmacy study.

Methods and materials

Development of the intervention and methodology: In spring 2010, all clinical pharmacists at hospital pharmacies in Denmark were invited to participate in the study through their local contact person and their hospital pharmacy management. Before commencing the study, clinical pharmacists were asked to propose subjects for the study and to give input to the methodology. Interested representatives participated in a start-up meeting, where consensus on subject and methodology was reached. From each of the five regions, 1-2 clinical pharmacists were included in the project group. The aims of the project group were 1) to assist in developing the intervention, 2) to ensure that the study could be conducted in practice locally, and 3) to support local implementation of the study.

Results

At the start-up meeting, consensus was reached on an intervention study about risk medication. The design should allow all clinical pharmacists to participate irrespective of prior experience and professional skills.

The project group identified five risk medication areas for the intervention: Anticoagulant therapy, Opioids, Digoxin, Methotrexate and NSAIDs. These subjects were identified as risk medications associated with frequent and severe adverse events according to the literature. The intervention was developed as a screening service of patients treated with one or more risk medications admitted to hospital at any ward and at any age. The purpose of the screening service was to ensure optimal treatment with risk medications among patients admitted to Danish hospitals. Clinical

pharmacists identified potential medication related problems and made recommendations to physicians at the ward. Evaluation data were collected before and after implementation of the intervention by clinical pharmacists, pharmaconomists or pharmacy students.

Implementation of the intervention: In December 2010, the study was presented to clinical pharmacists in Skejby and in Copenhagen. Baseline data were collected during weeks 5-9 in 2011, and intervention data were collected in weeks 18-22 in 2011. Data were collected for at least 4 of the 5 weeks during the data collection periods, and for at least two days per week.

Study evaluation: Data were collected by 49 clinical pharmacists, 22 pharmaconomists and 10 pharmacy students at 21 locations by using data collection forms. In total, 2,909 and 2,399 patients were screened in the baseline and intervention periods. Of these patients, 1,458 (50%) and 1,144 (48%), respectively, were treated with one or more risk medications. The intervention was conducted at 43 wards, most frequently at orthopaedic surgery (7), geriatric (6) and acute visitation wards (6).

Feedback collected by questionnaires revealed that the majority (64%) of the clinical pharmacists felt that the intervention could be offered the wards in its existing or slightly adjust form.

Discussion and conclusion

The study showed that a national generic clinical pharmacy service on risk medication could be developed and tested in collaboration with other healthcare professionals in Danish hospital settings. The impact effect evaluation, including accept rate of recommendations, hospital readmissions and mortality, is currently being conducted.

Henning Boje Andersen, Inger Margrete Siemsen, Lene Funck Petersen, Doris Østergaard & Jacob Nielsen

Tuesday, 6 March 2012 / 11.20-12.30 – Chairs: Anne Zirau Kudsk & Brian Bjørn

Validation of a taxonomy of failures and causes of handover patient safety incidents.

In recent years, there has been an increased focus on patient safety during patient handovers. When a patient handover is carried out improperly so that wrong or inadequate information is received or responsibility for care of the patient becomes unclear, the patient may suffer serious harm.

One of the tools that may be used to identify problems involved in handover failures is a taxonomy of types of failures and their causes. Having considered using generic taxonomies to analyze handover events, the authors concluded that a classification system specifically targeted at handovers would be needed to capture the types of failures and causal factors involved.

The goal of the study was to develop and validate a taxonomy of handover failures to capture the relations between types of failures and the interplay of their causes.

Materials and methods

Two sources of adverse events were used for the validation. First, a stratified random sample from the Danish Patient Safety Database was drawn comprising 200 events; and second, events described during 47 interviews with clinical staff conducted at a large hospital in the capital region (232 events). Two of the authors performed the classification of events independently. Main outcome measure was interrater agreement as calculated by kappa.

Results

The taxonomy consists of two groups of categories, active failures and causal factors. Failures are divided into types of handover failures that include acts of miscommunication; refused, unclear or deferred responsibility among healthcare staff in relation to patient handovers. Inadequate communication is divided into communication related to and

not related to tests. A further type is the failure to address given aspects of patient care, for instance, the failure to ask relevant questions or to address aspects about the patient that, according to accepted standards of care, should have been explored.

The most prevalent causes are: inadequate competence (30%); inadequate infrastructure (22%) busy ward and interruptions (18%); Inadequate procedures/instructions (7%); deviations from procedures/instructions (6%). Interrater reliability (*kappa*) was 0.76 and 0.87 for reports and interviews, respectively.

Conclusions

The taxonomy provides a tool for capturing and analyzing adverse handover events in order to identify failures that have similar causes. We discuss how this in turn provides a basis for choosing risk control measures.

Nina Sahlertz Kristiansen, Søren Paaske Johnsen & Jan Mainz
Tuesday, 6 March 2012 / 11.20-12.30 – Chairs: Anne Zirau Kudsk & Brian Bjørn

Weekend-effect: Is higher short-term case-fatality among patients with stroke, admitted during weekends, explained by a poorer quality of care?

Background and Purpose

Numerous studies have reported that patients admitted with acute medical conditions, including stroke, during out-of-hours or during weekends face a higher risk of death and other adverse outcomes. However, the explanation behind these findings remains to be clarified, since few studies have provided detailed data on factors determining clinical outcomes. The aim of this study was; 1) to compare quality of acute stroke care between patients admitted during weekends and patients admitted on weekdays and 2) to examine whether differences in quality of acute stroke care may explain possible differences in short-term case-fatality.

Methods and Materials

This study is as a population-based, historical cohort study including all patients admitted to Danish hospitals with acute stroke from January 1,

2003 to December 31, 2009 (N = 71,256) and registered in the Danish National Indicator Project-Stroke (DNIP-stroke). Registration in the DNIP-stroke database is mandatory for Danish hospitals departments treating patients with acute stroke (including hemorrhagic, ischemic and unspecified stroke). The DNIP-stroke database encompasses detailed data on patient characteristics, including socio-demographic and clinical data, and data on quality of care, that indicates whether patients receive specific evidence-based processes of care in the acute phase of stroke. First, we determined the proportion of patients fulfilling the individual process indicators and compared patients being admitted during weekends and patients admitted on weekdays. In addition, we computed the proportion of patients, fulfilling all relevant process indicators (the "all or none" approach). Secondly, we compared 30-day case-fatality between patients being admitted during weekends and patients admitted on weekdays using multivariable logistics regressing while controlling for differences in patient characteristics and fulfilment of the process indicators of acute stroke care. We used multiple imputations to impute missing values of patient characteristics.

Results

Hospitalization during weekends was associated with a lower chance of fulfilling most of the process indicators (RR varying from 0.70 (95% CI: 0.69-0.71) to 0.98 (95% CI: 0.97-0.99)). The most significant reductions were observed for the indicators concerning early assessment by a physiotherapist, by an occupational therapist and of nutritional status. Patients admitted during weekends also had a lower chance of simultaneously fulfilling all process indicators ("all or none") (RR 0.67, 95% CI: 0.65-0.70). Being admitted during weekends was associated with a higher risk of 30-day case-fatality, after controlling for differences in patients characteristics (adjusted Odds Ratio (OR) 1.10, 95% CI: 1.03- 1.18). This association remained virtually unchanged, when we also controlled for differences in the fulfillment of the process indicators (adjusted OR 1.10, 95% CI: 1.02-1.19).

Discussion and Conclusion

The main strengths of our study include the nationwide population-based design, the detailed prospective data collection, the large size and the

complete follow up for ascertainment of survival status. In addition, only patients without registered contraindications for the specific process indicators were included in the analyses. Study limitations include the use of possibly inaccurate data collected during routine clinical work in a large number of settings and a risk of residual confounding despite efforts to adjust for various prognostic factors. In conclusion, we found, that Danish patients with acute stroke, admitted during weekends, had a lower chance of receiving a number of recommended processes of acute stroke care. The 30-day case-fatality was also higher among patients admitted during weekends; however, the difference in cases-fatality appeared not to be explained by the observed differences in quality of acute care.

Oral Presentations

Session 3: Safety at the sharp end

Sophie Lindgren, Ingrid Eiving, Ann Eliasson, Elisabeth Ek, Anneli Fagerberg, Gisela Fridstedt, Elisabeth Lindström, Anna Ljung, Susanne Olsson, Maria Tiger & Helené Westrin

Tuesday, 6 March 2012 / 15.15-16.15– Chairs: Gerd Johansson & Rune Ingemar Sjødahl

Prevention of central venous catheter-related infections in a Swedish ICU department.

Background

Central venous catheter-related infections (CRI) are a major cause of iatrogenic morbidity and mortality. In all patient categories the incidence varies between 0-30 per 1000 catheter days depending on the type of care facility. Intensive care units (ICU) generates relatively more CRI. The mortality rate varies in different studies from no increase at all to 35 percent. Hospital stay may be extended for 10-20 days and 12 percent of all infections acquired in intensive care are related to a central venous line [1, 2, 3]. Several international studies show that simple infection control measures significantly reduce the incidence [4].

Setting

The project was performed during 2010 in two university hospital intensive care units, one mixed ICU (CIVA) and one neuro ICU (NIVA) in Sahlgrenska University Hospital (SU), Sweden.

Methods

The improvement process was based on the "Plan Do Study-Check Act" (PDSA) methodology. The Swedish Association of Local Authorities and Regions (SKL) provided the project team with a bundled strategy: 1) correct indications for CVC-insertion, 2) maximal sterile barrier precautions at insertion, 3) daily maintenance of CVCs, 4) daily evaluation of CVC need, and

5) correct verification of CVC-infection. Our primary goal was to reduce our CRI rate to zero during 2010 and hold on to that result. This required monthly reports from the bacteriologist for cultivation statistics. We carried out a comprehensive education campaign for all staff groups and gradually introduced the following improvements: a) documentation of CVC insertion and maintenance, b) checklist at CVC-insertion, c) checklist for daily evaluation of CVC-need, supervision of CVC-dressings and changing of CVC-couplings, d) placement of chlorhexidine bottles and cellulose pads at the patient's head-end to facilitate disinfection of links, e) use of large plastic plates for carrying syringes bedside. We continuously monitored adherence to basic hygiene measures, implemented improvements a-e and to the care bundle 1-5.

Results

Retrospective analysis of cultures and patient records showed that 25 of the 2227 patients who were treated at CIVA and NIVA in 2009 had a CVC-related infection. The total number of CVC-related infections in 2010 were 11 in 2214 patients. Diagnostic criteria were symptoms of SIRS/sepsis in combination with positive catheter-tip culture and no other explanation of symptoms. During 2009-2010, a total number of 4675 CVCs, 2266 (2009) and 2409 (2010), respectively, was inserted by anaesthesiologists in our department and 1/3 of these on CIVA/NIVA patients. A point prevalence study (November 2009) stated that 85% of our ICU-patients had a CVC during 95% of the ICU-stay. A cost analysis showed that the mean hospital stay was 15 days longer for patients with CRI and the mean ICU-cost was 0.2 mill SKr (=20000 Euro) more expensive compared to a matched control group of ICU-patients without CRI. This result is in line with international cost analyses [5].

Conclusion

If basic hygiene measures and evidence-based practices are followed at insertion and maintenance of CVCs it is possible to significantly reduce the number of CVC-related infections in a large ICU department. This requires careful monitoring of procedures and monitoring of CVC-related infections through continuous interdisciplinary quality healthcare work.

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Arvid Steinar Haugen, Sindre Høyland, Øyvind Thomassen & Karina Aase

Tuesday, 6 March 2012 / 15.15-16.15– Chairs: Gerd Johansson & Rune Ingemar Sjødahl

A qualitative study of surgical personnel's experiences with the WHO Surgical Checklist two years after implementation.

Background and purpose

Recent health research literature suggests that quality and patient safety outcomes in surgery have improved as the introduction of surgical checklists has reduced both mortality and morbidity in surgical populations. Globally, the Safe Surgical Checklist was introduced by the World Health Organization (WHO) in 2008. The checklists consist of a Sign-in, a Time-out and a Sign-out part, performed at three critical junctions in the surgical pathway. The aim of this paper is to explore how surgical personnel use the WHO's Safe Surgical Checklist two years after implementation in a surgical unit in a Norwegian tertiary hospital.

Methods and materials

This study builds on an observational study of checklist practices in surgical teams in 2010 and provides results of follow-up focus group interviews after two years. We performed three focus group interviews with three operating theatre nurses and three nurse anaesthetists, four anaesthesiologists and four surgeons, respectively. Surgical personnel with more than one year of experience with the safe surgical checklist were included. A focus group interview guide was designed to assist the

interview process, comprised of broad, open-ended questions aimed at revealing the perception of the checklist. Following each of the three focus group interviews, notes and audio recordings were fully transcribed verbatim and subsequently analysed using qualitative content analysis, in order to identify emergent themes. Aimed at revealing adherence to the checklist, data were analysed and meaning units were identified and categorized individually by two of the researchers. The findings were subsequently compared to strengthen the validity of the overall theme identification process.

Results

Data portrays the surgical personnel's adaption of the surgical checklist use within the operating room (OR), two years after the checklist introduction. As formal guidelines regulated the checklist use in the initial phase, data suggests that surgical personnel now often perform the checklist in various and unique ways that they find more suitable in practice. The Sign-in part is strengthened by new preoperative routines of surgical site marking and identity checks and weakened by its performance by the nurse anaesthetists solely. The Time-out part is now often performed by the surgeons and not by the OR nurses as in the initial phase, yet the accompanying pause in performance is missing. Furthermore, the surgical personnel find that they rely on adaption rather than strict guideline adherence due to time pressure and effectiveness demands in the OR. Nevertheless, the focus group interviews display perceptions of the checklist use involving improved practice but also some challenges. On the up side the checklist improves confidence, team communication and sharing of critical information in the surgical team. However, on the down side informants described occurrence of wrong site surgery not prevented by the checklist due to preoperative wrong site marking combined with automated checklist use in the OR. Using the checklist as a "tic box exercise" was recognized as a safety challenge by all professions, especially in routine surgery.

Discussion and conclusion

We find that the surgical personnel two years after implementation of the safe surgical checklist have adapted the checklist as a standard of care. All professions recognize the checklist as a contributor to safety in the OR as it

has increasingly become an integral part of the daily routines. Challenges to be addressed are making the Sign-in part a team effort and taking accompanying pause in performance during the Time-out, in order to avoid automated use of the checklist. In non-medical high reliability organizations this has been met by regular and mandatory checklist training in full-scale simulators. We suggest surgical team training including checklist performance to enhance the quality of checklist use.

Kim Lyngby Mikkelsen, Jacob Thommesen & Henning Boje Andersen
Tuesday, 6 March 2012 / 15.15-16.15– Chairs: Gerd Johansson & Rune Ingemar Sjødahl

Validating the Danish adaption of the WHO-ICPS classification of patient safety incidents.

Objectives

Validation of a Danish Incident Type classification for patient safety incidents adapted from ICPS-WHO (International Classification for Patient Safety, World Health Organization).

Design: Hospital safety management experts classified 58 patient safety incident cases according to the Danish adaptation of the classification consisting of 29 patient incident types and subtypes (categories and sub-categories). Test cases were selected to cover all types and subtypes.

Setting: Test materials – cases, instructions, a user guide and a questionnaire – were sent by e-mail.

Main Outcome Measures: Two measures of inter-rater agreement: kappa and ICC (intra-class correlation).

Results

The average number of patient incident types used per test case per rater was 2.5. The mean ICC was 0.521 (range: 0.199 - 0.809) and mean kappa was 0.513 (range: 0.193 - 0.804). Kappa and ICC showed a very high correlation (Pearson's r=0.99). An inverse correlation was found between prevalence of type and inter-rater reliability. The length of the case descriptions (narrative) was positively correlated with the inter-rater

agreement.

Results are discussed according to four factors known to determine inter-rater agreement: skill and motivation of raters; clarity of the case descriptions to be classified; clarity of the operational definitions of the categories and the instructions that guide the coding process; adequacy of the underlying classification scheme.

Conclusion

With mean inter-rater agreement kappa a little above 0.5 for categorising patient safety incident cases, the inter-rater agreement can be considered 'fair' to 'good'. The wide distribution in inter-rater reliability across types suggests that highly prevalent types usefully can be split up into precisely defined subtypes – since the highly prevalent types tend to be non-discriminatory (uninformative) and, moreover, burdened by low reliability.

We conclude that the set of Incident Types of the ICPS, as adapted in the Danish version of the classification system, is adequate, exhaustive and well-suited for classifying and structuring incident reports. At the same time, since Incident Types represent adverse events at levels that are clinically meaningful, safety management experts can be expected to find it reasonably natural to use them in classifying and retrieving incidents. Results of the present study are the first published evaluation of the reliability and usability of WHO's ICPS and should be useful for healthcare administrations who consider or are in the process of adapting the ICPS.

Oral Presentations

Session 4: Global Trigger Tool

Ellen Tveter Deilkås

Tuesday, 6 March 2012 / 15.15-16.15– Chairs: Tonje Elisabeth Hansen & Ellen Deilkås

Measuring national levels of adverse events using the Global Trigger Tool in the Norwegian patient safety campaign.

Background and purpose

On the 27th of January 2011 the Norwegian Health minister launched the national patient safety campaign, "In safe hands". The aims of the campaign are to reduce harmful events to patients, establish competence and routines for patient safety and improve patient safety culture. The Health minister mandated that all Norwegian healthcare trusts should review randomly selected medical records throughout the campaign to track local and national improvement. In order to create a baseline for the measurement of adverse events, medical record review was required done for patients discharged after the 1st of March 2010 and throughout the year.

Methods and materials

Global Trigger Tool (GTT) is developed by the Institute for Healthcare Improvement (IHI) and was chosen as the standard procedure for doing record review in the campaign. Hospital trusts were required to establish at least one Global Trigger Tool team at trust level, consisting of two clinical nurses and one physician. In addition, or instead, they could, establish teams at hospital and clinical levels. The campaign secretariat translated the Global Trigger Tool instruction manual, and made a protocol for how to conduct the GTT in the campaign context. The trusts were demanded to review 10 records twice a month. 18 one-day long training courses were held for 200 healthcare providers. The teams were trained according to the instructions in the manual. The secretariat translated and provided access to a Norwegian version of the web-based database Extranet where the

teams were required to plot their results in time series, intended for local evaluation. In addition, they were instructed to list adverse events in an Excel template, which was used for analysis at the national level. The adverse events were categorized according to severity (E to I). A list over types of adverse events (postoperative infection, bleeding, DVT, etc.) was provided and adjusted within the context of the campaign. The teams were asked to report the number of admissions that their investigated admissions had been randomly selected from. This was used to weight the results of the teams against each other, according to standard statistical procedure.

Results

18 out of 19 trusts and five private hospitals submitted results. A total of 39 GTT teams participated in the review of 7819 medical records. 16 percent of the admissions included one or more adverse events. 7 percent of the admissions included an adverse event that led to prolonged hospital stay. 1 percent of the admissions included an adverse event which led to permanent harm. 0.66 percent of the admissions included an adverse event that led to death.

Discussion and conclusion

This is the first time that a national medical record review has been conducted to measure the scope of adverse events in Norwegian hospitals. The baseline result reveals that a considerable number of adverse occur. However, sources of error and misunderstanding may have affected the result. First, although the doctors and nurses in the teams have the same basic training, their various clinical experiences may have influenced their judgment regarding if outcomes should be considered to be adverse events or the result of an underlying clinical condition. That may have affected the number of adverse events. The teams experience may also have influenced their assessment of how long the harm related to an adverse event is expected to last. This may have affected the severity rating of adverse events. Secondly, the number of adverse events detected may have been influenced by how meticulously the teams conduct the reviews. The way the record review has been conducted nationally could probably be improved with more workshops and conferences to exchange experiences between teams. Still, the GTT methodology has been appropriate for providing the

intended baseline for measurement of adverse events in the Norwegian patient safety campaign.

Kjersti Mevik, Tonje Hansen, Hilde Normann, Birger Hveding & Barthold Vonen

Tuesday, 6 March 2012 / 15.15-16.15– Chairs: Gerd Johansson & Rune Ingemar Sjødahl

Implementation of Global Trigger Tool at a medium size hospital in Norway.

Background and purpose

After deviation from hospital functions was acknowledged in summer 2010, the board decided on ten tasks that had to be implemented into the hospitals daily operations to prevent unnecessary adverse events and improve quality. One of these tasks was the implementation of Global Trigger Tool (GTT) (1). GTT is a method focusing on the harmful events as they are actually experienced by patients, rather than on blaming the health care professionals. We hope this work will contribute to fostering a culture of safety that shifts from individual blame for errors to comprehensive system redesign that promotes patients safety.

Methods and materials

We used the translated Norwegian IHI GTT version (2) which requires manual systematic review of closed inpatient records. The aim is to disclose adverse events during the patient stay. Our team consisted of two doctors and one nurse who carried out individual surveys of the patient records. Our hospital is at three different locations, the main hospital in Bodø and two local hospitals in Lofoten and Vesterålen. We sampled 10 patients' records every two weeks from the discharged patients in every department at the hospital in Bodø. For the departments in Lofoten and Vesterålen, we sampled 5 patients' records in each department. With a total of 7 departments, we reviewed a total number of 140 patient records each month. Psychiatric and pediatric patients were excluded. All together we did a review of 1680 patients records for 2010. We found that to use the results as a method to promote patient safety, it was necessary to do the survey in each department. The results from 2010 were then discussed with each

department separately. The departments are responsible for choosing one priority issue to reduce adverse events. In the beginning of 2011, we started to train GTT teams from each of the 7 departments. These teams are now responsible for the GTT reviews every 14 days based on their own patients' bed-days. The GTT analysis is continued further on, and we will present results until July 2011.

Results

We found that our hospital had a rate of 40 adverse events per 1000 bed-days in 2010. In the first half of 2011, the rate was 39 adverse events per 1000 bed-days. In 2010, the surgical departments had an expected higher rate at 51 per 1000 bed-days which increased to 60 per 1000 bed-days in the first half of 2011. This increase is not significant according to Statistical Process Control. The medical departments had 27 adverse events per 1000 bed-days in 2010, and this rate is unchanged in the first half of 2011 (28 adverse events per 1000 bed-days). In 2010, infections were the most frequent adverse event with 41% of the adverse events, followed by bleeding with 15%, complications to surgery 12%, and drug harm 10% of the adverse events. This did not change significantly in the first half of 2011, where we found that infections represented 38% of the adverse events, bleeding 18% and complications to surgery 10%. In 2010, 21% of the hospital admissions included at least one adverse event, while in the first half of 2011 the number was 22%.

Discussion and conclusion

Identification of adverse events is a central topic in patient safety work. Self-reporting systems detect very low portions of the total number of adverse events. In a recent study, Patients' safety indicators, Volunteering report systems and Global Trigger Tool were compared. The study showed that GTT alone revealed 90% of the adverse events detected by the three systems combined (3). GTT is with its high specificity and moderate sensitivity (4) a reliable method for detecting adverse events. Compared to international numbers, our results show a lower rate of adverse events. In the recent study of 10 hospitals in North-Carolina they found 57 adverse events per 1000 bed-days (5).

The way we have done this GTT analysis allow us to use the result at each unit in the improvement of patients safety work, compared to how this is

done elsewhere in Norway according to the national patient safety campaign in Norway. In this campaign all hospitals are required to do the GTT for at least 20 inpatients records each month. Results from 4 other hospital in Norway show our hospital as a mid-range hospital with 21% of the patient-stays including an adverse event. Oslo University Hospital had 10%, Hospital in Bergen 12%, Stavanger University Hospital 21%, and Hospital in Østfold 32%.

Conclusion

Using the GTT in Nordlandssykehuset HF has reveled several areas where we can improve and reduce adverse events. GTT is potentially an important tool in improving patient safety in our hospital. We see GTT as a tool primarily to be used for comparison within our own hospital in the years to come.

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Thea Otto Mattsson, Kim Brixen, Janne Lehmann Knudsen & Jørn Herrstedt

Tuesday, 6 March 2012 / 15.15-16.15– Chairs: Gerd Johansson & Rune Ingemar Sjødahl

Measuring adverse events in oncology inpatients using Global Trigger Tools: Sense or nonsense?

Background and purpose

In 2006, the Institute for Healthcare Improvement developed the IHI Global Trigger Tool (GTT) for measuring harm rates over time. Since then the GTT has been introduced and used in healthcare systems in USA and Europe. A limited number of studies have been published on the performance of GTT and no studies have assessed the effect of inter-rater variation on the outcome measures of the GTT. The purpose of our study was to determine inter-rater reliability, and to evaluate the effect of inter-rater variation on the reliability of the generic GTT to detect adverse event rates over time. A secondary aim, not assessed in this abstract, was to evaluate the effect of adding an oncology specific module on number and types of adverse events identified with the GTT.

Method and Materials

A retrospective chart review was performed by two teams each consisting of two primary reviewers. One team used the general GTT and the other used an oncology specific Global Trigger Tool (GTTO); consisting of the general GTT module and an additional oncology module (O). A random sample of 10 charts was selected every two weeks between all discharged patients from a Department of Oncology during January 1st thru December 31st. 2010 (N=240). All charts were reviewed using standard Global Trigger Tool methods and measures by the two separate review groups. All primary reviews were validated by a secondary review by a physician. For the purpose of this study, only results from the identical general GTT module were used. Standard GTT outcome measurements: Adverse events (AEs) per 1000 admission days, AEs per 100 admissions, and categorization of identified AEs on the NCC MERP harm categories E thru I, were calculated. Inter-rater variability between review teams was assessed calculating the Kappa Cohen coefficient. Measurement error (ME) of the GTT assessed

using the Bland and Altman plot to determine limits of agreement (LoA). From the obtained LoA smallest detectable change (SDC) of the GTT was calculated.

Results

No significant differences between the two review teams in the total number of identified AEs or in the distribution on the five NCC MERP harm categories E thru I were found, when using the identical GTT module on the same 240 charts. The GTT review team identified 56 AEs and the GTT(O) team identified 49 AEs, but in total 63 different AEs were identified on the same 240 charts. Displaying the event rates graphically using standard GTT outcome measures and testing for special cause variation; the two review teams identified different periods with special cause variation. Reliability between the two teams of reviewers to identify an adverse event was moderate [K=0.45]. The Bland and Altman plot gave LoAs between the review teams above the mean values of the AE rates. SDC of the GTT was found in this study to be 65 when measured in AEs per 1000 admissions.

Discussion and conclusions

a) The finding that the review teams identified different adverse events on the same charts indicates that the GTT is of limited use for identification or measurement of specific improvement areas.

b) Different review teams could reach different conclusions on the safety process when measuring the same charts using the general GTT. This raises concern about using the GTT to track harm rates over time.

c) If we accept inter-rater reliability with moderate kappa values of [K=0.45] as in this study. We also accept that changes in level of harm below 65 events per 1000 admission days are not to be distinguished from zero, and can therefore not be considered real change. Suggesting further evaluation of the measurement properties of the GTT is needed.

Oral Presentations

Session 5: Simulation, training and learning

Debra Nestel, Jeffrey Groom, Sissel Eikeland Husebø & John M. O'Donnell

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Per Nilsen & Olli Väisänen

Simulation for Learning and Teaching Procedural Skills: The state of the science.

Simulation is increasingly used to support learning of procedural skills. Our panel was tasked with summarizing the "best evidence". We addressed the question: To what extent does simulation support learning and teaching in procedural skills?

Methods

We conducted a literature search from 2000 to 2010 using Medline, CINAHL, ERIC and PSYCHINFO databases. Inclusion criteria were established, then data extracted from abstracts according to several categories. Although secondary sources of literature were sourced from key informants and participants at the "Research Consensus Summit: State of the Science" they were not included in the data extraction process but were used to inform discussion.

Results

Eighty-one of 1,575 abstracts met inclusion criteria. The uses of simulation for learning and teaching procedural skills were diverse. The most commonly reported simulator type was manikins (n=17), followed by simulated patients (n=14), anatomical simulators (e.g., part-task) (n=12) and others. For research design, most abstracts (n=52) were at Level IV of the National Health and Medical Research Council classification (i.e. case series, post-test or pre-test/post-test, with no control group, narrative reviews and editorials). The most frequent Best Evidence Medical Education (BEME) ranking was for *conclusions probable* (n=37). Using the modified

Kirkpatrick scale for impact of educational intervention, the most frequent classification was for modification of knowledge and/or skills (Level 2b)(n=52). Abstracts assessed skills (n=47), knowledge (n=32), and attitude (n=15) with the majority demonstrating improvements after simulation-based interventions. Studies focused on immediate gains and skills assessments were usually conducted in simulation.

Discussion

The current state of the science finds that simulation usually leads to improved knowledge and skills. Learners and instructors express high levels of satisfaction with the method. While most studies focus on short-term gains attained in the simulation setting, a small number support the transfer of simulation learning to clinical practice. Further study is needed to optimize the alignment of learner, instructor, simulator, setting and simulation for learning and teaching procedural skills. Instructional design and educational theory, contextualization, transferability, accessibility and scalability must all be considered in simulation-based education programs. More consistently robust research designs are required to strengthen the evidence.

Siri Wiig & Anne Marie Lunde Husebø

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Per Nilsen & Olli Väisänen

Using simulation-based training to ensure safe implementation processes of new technology in the home context – A literature review.

Background and purpose

The number of elderly (age 60+) citizens in industrialized countries is growing rapidly. Today one out of ten persons living is elderly. According to estimation by UN, this ratio will double to one out of five by 2050, with nearly two billion elderly in the world. If their need of healthcare services is to receive the same amount and quality of help as today, the number of personnel delivering these services must double. By 2020, the shortage of registered nurses is forecasted to be 20% below requirements, implicating worse work environment and stress. In Norway, a shortage of 40,000

healthcare personnel towards 2030 is forecasted. The goal is to preserve elderly individuals' personal control, dignity and quality of life. Noticeably, one often prefers to live at home in a confident and comfortable environment. Aging-in-Place (AIP) has become a metaphor for optimized healthcare services that make efficient use of resources, and delay admission in institutions or hospitals. AIP also includes the use of assistive technologies like telecare and smart house technology, safety/automation, and social interaction in private homes.

Training, learning, and simulation are critical success factors for the adoption of new IT-based healthcare services. Simulation-based training is well-recognized within acute medicine, and has great potential as an educational method in smart house technology training. The purpose of this paper is to conduct a literature review:

1) To map literature studying how different types of simulation-based training have been developed and used to ensure safe implementation processes of new technology in the home context, where elderly people are facing a more technological future, and

2) To map literature exploring the relationship between the implementation of new technology in the home context and its impact on the three aspects of quality namely – clinical effectiveness, patient safety and patient experiences.

Methods and materials

In this paper we will perform literature searches in databases such as ISI Web of Science, Cinahl, Medline, Academic Search Elite, Science Direct, and AMED. Possible key words to be used in the literature search are: telecare, smart technology, smart house technology, implementation, simulation, training, learning, quality improvement, clinical effectiveness, patient safety, and patient experiences.

Results

Preliminary results show that safe implementation of new technology, such as smart houses, is depending on training of health professional at all levels. Training is important for the elderly individual, as well as the next-of-kin. Even the technical staffs need proper training, not only for the installation but also for assisting the elderly living at home and the care givers adjusting

to the new technology.

Discussion and conclusion

The results of this literature review will guide our work on developing training programs for groups of elderly people, next of kin, and different level of professionals. It will also provide a theory base for our studies on how simulation-based training can be applied to improve empowerment and safety of elderly in a more technological-oriented home sphere.

Acknowledgements

This paper reports results from the project: *Safer@home - Smart System to Support Safer Independent Living and Social Interaction for Elderly at Home.* The project is partly funded by the Research Council of Norway.

Rikke Malene Jepsen, Lene Spanager, Helle Teglgaard Lyk-Jensen & Doris Østergaard

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Per Nilsen & Olli Väisänen

Anaesthetists' non-technical skills in a Danish perspective.

Background and purpose

Non-technical skills are widely acknowledged as essential for safe and efficient medical performance. These skills are behaviours not directly related to the use of medical expertise, drugs or equipment and encompass skills such as communication, team working and decision making. Different behavioural marker systems have been developed to aid training in and evaluation of these skills in different medical specialities such as Anaesthetists' Non Technical Skills (ANTS) from Scotland. However a system developed in one cultural context might not necessarily apply in other countries. The aim of this study was to develop a Danish behavioural marker system for anaesthesiologists (DK-ANTS) using ANTS as a template.

Methods and materials

One of our hypotheses was that the social categories "task management" and "teamwork" would be more culturally dependent than the cognitive ones. Six semi-structured group interviews were conducted with scrub

nurses, anaesthetic nurses, surgeons, consultant and trainee anaesthesiologists at Herlev University Hospital. In total 31 healthcare professionals participated. The duration of the interviews was between 46 and 67 minutes. The interviews were fully transcribed and coded independently by the two interviewers, discrepancies were discussed until consensus. From the coding non-technical skills were identified. They were sorted during an iterative process in the multi-professional research group using the category and element structure from ANTS. The identified non-technical skills that did not fit the existing category and element structure were analysed inductively. To ensure content validity the prototype DK-ANTS was commented and evaluated by consultant anaesthesiologists with educational responsibility from 2 out of 3 Danish regions.

Results

The full structure of the system with categories, elements and behavioural markers will be presented at the NSQH 2012. "Self-insight" was included as a new element under the category "Situation Awareness". Some of the behavioural markers associated with this new element were; "Knowing your limits", "requests help when needed" and "exhibits inappropriate behaviour according to the situation". Many statements that addressed the behavioural aspects, such as "presenting one self", "maintaining good communication" and "appear calm", "taking responsibility for decisions", "justifying decisions" and "inform team about decisions", were also important in a Danish context. Those statements are reflected in the behavioural markers.

Discussion and conclusion

DK-ANTS was developed based on the Scottish version addressing the local cultural context. It appears that certain aspects of the Danish system differ from the Scottish version but not only in the social categories. Whether this is due to differences in development methods or real cultural differences is unclear at this stage but will be discussed at the NSQH 2012. Further studies will evaluate the psychometric properties of the system.

Christian von Plessen & Inge Ulriksen
Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Per Nilsen & Olli Väisänen

MEET-MEASURE-iMprOVE – clinical teams learn to improve the safety of patients in a Danish regional hospital.

Background and purpose

Hillerød is a 490-bed regional teaching hospital. The median harm rate is 110/1000 bed-days as measured with the Global Trigger Tool. The hospital standardized mortality rate (HSMR) was 95 in 2010. These rates correspond to monthly approximately 1500 harms and 180 deaths.

In 2009, the leaders of the hospital applied for a national campaign for patient safety. The Danish Regions, the Danish Society for Patient Safety and the Institute of Health Care Improvement initiated the campaign as a collaborative improvement program in five pilot hospitals. The aims of the program are to reduce harms by 30% and HSMR by 15% by the end of 2012.

The program started in May 2010. Twelve clinical and two administrative care bundles are currently being implemented in the hospital. Care bundles are a combination of evidence based interventions to improve common safety problems in hospitals, for example central line associated infections. They set quantitative targets for improvement and contain indicators for processes and outcomes. Moreover, hospitals carry out mortality analyses and patient safety walk rounds.

The purpose of our study was to investigate whether directing the program toward the smallest units of care in the hospital would increase the speed of implementation and lead to reliable processes. We named these smallest units clinical teams, e.g., the nurses and physicians who serve the patients on a surgical ward on a given shift are a clinical team.

Methods and materials

The campaign is organized around five main areas: general ward, intensive care, surgery, medication and leadership. We constituted improvement teams consisting of clinicians and leaders for each of these areas. The teams participated in learning sessions with international experts in patient safety

to learn how to coach staff at the hospital.

The target for the clinical processes is a reliability of 95%. To achieve such a high degree of reliability, front line clinical teams should learn to hold safety huddles, measure their processes and outcomes and systematically improve their work. We conceptualized the learning trajectory of clinical teams as the levels MEET, MEASURE & iMprOVE and monitored the spread of the program in the hospital according to these levels. Moreover, we register the percentage of days where teams collect data, the reliability of processes and clinical outcomes.

Results

As of November 2011, 19 clinical teams MEET, 7 MEASURE AND 4 iMprOVE. Teams needed 1 to 12 months to integrate reliable measurements of care processes into their routine flow of work. No teams have been initiated in the operation suites, the recovery ward and the emergency department (ED). Improvement teams mentioned lack of natural team arenas, busy work situation, discontinuity of team members' work schedules, insecurity about roles and lack of leadership engagement as barriers to team formation. Data on measurement reliability, process and outcome, such as days with complete measurements per month or fraction of bladder catheters with relevant indication will be presented.

Discussion and conclusion

Overall the focus on clinical teams has been useful, but the approach has to fit the local context. In the operation suites and the ED, teams were not initiated, presumably, because of the lack of established team structures and arenas for meetings.

The MEET, MEASURE & iMprOVE steps reflect clinical teams' need to become aware of themselves as systems of care, understand and evaluate the processes of their work and learn systematic approaches to improving them. The steps offer the possibility for differentiated teaching and support depending on a team's level of competence.

It took over a year to activate 50% of the target number of clinical teams. Suggestions to speed up activity are engagement of middle managers and quality staff, more coaching by improvement teams and involvement of

patients and families.

Oral Presentations

Session 6: The relationship between working environment and patient safety

Anders Pousette, Mats Eklöf, Pernilla Larsman & Marianne Törner

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Marianne Törner & Anders Pousette

Interaction of organisational climates in health care: patient safety, and occupational safety.

Background and purpose

Climate and culture are domain specific. Every organisational unit develops several climates that support different critical outcomes. Thus, in a care unit a climate that supports patient safety and a climate that supports occupational safety can be identified. But how do these climates interact? Do they go "hand in hand" or are they antagonistic?

Methods and material

The safety climate with regard to patient safety and occupational safety was assessed at four Swedish care organisations: two major hospitals, primary care and care for the elderly, N= 2364 at 124 units. For patient safety climate, the Hospital Survey of Patient Safety Culture (HSOPS) was used, and for occupational safety climate, the Nordic Safety Climate Questionnaire (NOSACQ) was used.

Results

Second order factor analysis showed that the HSOPSs dimensions could be represented in two higher order factors; the first factor reflecting an inward perspective (Supervisor actions promoting safety, Organizational learning, Teamwork, Communication openness, Feedback and communication about error, Non-punitive response to error) and the second factor an outward perspective (Hospital management support for patient safety, Cooperation across hospital units, Hospital handoffs and transitions). The NOSACQ dimensions could also be represented in two higher order factors; the first

factor reflecting a safety management perspective (Management safety priority, commitment and competence, Management safety empowerment, Management safety justice), the second factor reflecting a team perspective (Workers' safety commitment , Workers' safety priority and risk non-acceptance, Safety communication, learning, and trust in co-worker safety competence, Workers' trust in the efficacy of safety systems). The bivariate correlation between those global safety climate dimensions were all high and positive (r= 0.44 to 0.62) at the individual level. In aggregated data, based on 73 units, the bivariate correlations were also high and positive (r=0.41 to 0.78).

Discussion and conclusion

The results show clearly that patient safety climate and occupational safety climate go hand in hand. This result was shown at the individual level as well as at the unit level. Thus, units with a high patient safety climate also had a high occupational safety climate. Why do these climates develop in a similar manner? The two types of climate may mutually influence each other, or they may have common antecedents. It may be concluded that interventions aiming to improve either patient safety climate or occupational safety climate may also be beneficial for the other climate domain.

Kurt Rasmussen, Anna Helene Meldgaard Pedersen, Kent Nielsen, Louise Pape, Marlene Dyrløv & Kim Mikkelsen

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Marianne Törner & Anders Pousette

Work environment and patient safety. A multi-methodolodical study at an acute department at a regional hospital.

Background and purpose

A number of studies have shown associations between single work environment factors as working hours and occupancy rate, and adverse events at hospitals. The purpose of this study is to shed light on hypothesised relations between a range of factors as individual and organisational factors, safety culture, management and task related factors, and as outcome, adverse events and patient failures.

Methods and materials

The study population is an emergency department at a regional hospital. The design is an observational study, following all 100 nurses and 30 doctors during 1 month. A multi-method approach has been applied, using the SAQ questionnaire, diary, trigger tool, trip counter, observations, interviews, DPSD database (the Danish Patient Safety Database), and organisational audit.

Results

Diary for the 130 participants showed a response rate of 98% and a rate of coverage of 70% of all duties during a month. 239 events were registered on 958 duties, of which 13% were reported in DPSD. Fifty of the 239 adverse events resulted in a patient injury, of which 14 were categorized as severe or catastrophic in nature. A clinical analysis of the incidents showed that different types of delays and mixing-up of clinical exams were among the most important events. The questionnaire had a response rate of 87% and from these data we found that 39% reported to be daily behind schedule, and as high a part of the staff as 92% were frequently interrupted or disturbed during their daily work. 11% found themselves not to be proper skilled to their working tasks and 24% reported there work to be always or often emotionally affecting them in a negative way. The number of self-reported adverse events which the respondents had personally been involved in during the previous month included reporting for 43 fixed items. The highest occurrences were incidents at hand-overs at work shift and transfer between departments , (40% were involved in that), waiting time or breaks of continuity during the course of treatment (46%), administrative processes by admission (40%), and lack or delays in access to clinical documents (55%). Observations and interviews pointed at insufficiencies in the learning environment, poor cooperation with other clinical departments and internal unsuitable work organisation to be important factors.

Discussion and conclusion

We found that 20% of 100 nurses and 30 doctors were involved in 239 unintentional incidents of substantial clinical importance during 1 month, and even if this was 8 times as many as registered in DPSD, the study

indicates that this was only the tip of the iceberg. Description of these incidents enabled a categorization in a number of different clinical types of events, in a generally stressful psychological work environment. By questionnaire it is reported that, during a month, between 40 and 55% were involved in adverse events, counting all types of severity. A new electronic version of the traditional global trigger tool has been developed and validated, with an easy, feasible and reliable method, enabling a possibility to go through a larger number of medical records.

Kent Jacob Nielsen, Anna Helene Pedersen, Kurt Rasmussen, Louise Pape Larse & Kim Mikkelsen

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Marianne Törner & Anders Pousette

Work-related stressors and occurrence of errors and adverse events in an emergency department.

Background and purpose

The psychosocial work environment is increasingly being recognized as an important contributing factor for the occurrence of errors and adverse events at hospitals, thereby linking work environment and patient safety. The purpose of this study was to investigate the relationship between 12 work-related stressors and the occurrence of errors and adverse events.

Methods and materials

98 nurses and 26 doctors working in an emergency department were instructed to fill out a short questionnaire on occurrence and stressfulness of 12 different work-related stressor at the end of each workday in a 4 week period. The questionnaire also instructed the participants to describe any errors or adverse events that they were involved in during the work day. The nurses and doctors worked a total of 1,163 and 248 days respectively in the 4 week period and filled out 820 (71%) and 159 (64%) questionnaires. Administrative data on officially reported adverse events were collected for the emergency department in the study period.

Results

The most frequently occurring stressor for both nurses and doctors was 'Frequent interruptions', while 'Being to busy to do the job in the best way' was rated as the most stressful stressor for nurses and 'Bad working relationships' was the most stressful stressor for doctors. 214 errors and adverse events were reported in the questionnaires, 169 from nurses and 45 from doctors. During the same period 27 adverse events were reported to the hospitals official reporting system. Both a significant higher occurrence of stressors and emotional impact of stressors were found on workdays where participants reported being involved in adverse events or errors.

Discussion and conclusion

The results show that the majority of adverse events are not reported to the official reporting system. They also show that nurses and doctors have different exposures to and impact from work related stressors. However, both groups show an association between the occurrence and impact of work-related stressors and involvement in errors and adverse events.

Anna Helene Meldgaard Pedersen

Wednesday, 7 March 2012 / 09.55-11.00– Chairs: Marianne Törner & Anders Pousette

Organisational change, work environment and patient safety.

Background and purpose

The aim of this presentation is to show how organisational change and implementation has an effect on both work environment and patient safety.

There is growing acknowledgement that the psychological work environment may influence the occurrence of errors and adverse events at hospitals. However, it has not been described precisely how work environment and patient safety are associated. The presentation is based on a qualitative study that is part of a larger research project investigating this relation.

Methods and materials

The project has been performed at a newly established combined acute admission and acute department within the Danish healthcare system, referred to as the acute department.

The methods used in the study consist of qualitative individual and focus group interviews with acute physicians, junior physicians, speciality physicians (orthopaedic surgery, surgery and medical), nurses, and individual interviews with department managers. Furthermore, observations have been conducted that included following four nurses and four doctors on a day shift. During the observations the employees' tasks were documented to gain an overview *of the tasks during a work day.*

Results

The preliminary results show that the initiation and implementation of the new acute department have had considerable impact on the work conditions for various employees. The new construction has caused fundamental changes in the structure of the acute department in terms of workflows, profession boundaries, redefinition of job areas and training of new doctors. These changes have also significantly affected the related departments such as the orthopaedic surgery, surgery and medical, and have resulted in conflicts between these departments and the acute department.

Furthermore, there has been a constant flow of considerable changes, mainly due to the new construction. This has caused confusion and frustration among the employees and led to uncertainty and further disagreements about areas of responsibility and workflows. It has among other things affected patient treatments, patient number overload and thereby had a negative effect on patience safety.

Discussion and conclusion

The study indicates a connection between patient safety and the work conditions as a result of organisational changes. The conflicts between the different groups and the need to constantly adapt to changes have led to cooperation problems, communication problems and unclear areas of responsibility, elements that are all identified as risk factors for adverse events. A substantial part of these work conditions can be traced back to the way the new construction has been organised and implemented.

Oral presentations

Session 7: Organization of care from a systems perspective

Anne Karin Lindahl, Marianne Tinnå, Unni Krogstad & Øystein Flesland

Wednesday, 7 March 2012 / 11.20-12.30– Chairs: Karina Aase & Anneli Milén

Evidence-informed patient safety policy: is it possible?

Background

Applying relevant research evidence is expected as part of making decisions in health care. Policy makers and those supporting them often do not have knowledge on how to find and use research evidence, nor the capacity or understanding necessary for bringing research evidence into the decision process. We have in this study analyzed two patient safety policy issues regarding how research evidence informed the decisions.

Materials and Methods

We applied the SUPPORT tools[1] as the basis for analyzing the policy-making process. The analyses are based on documents and interviews with people involved in two patient safety policy issues: The decision of the patient safety campaign and the decision to establish at non-punitive national reporting system for adverse events.

Results

In the case of the patient safety campaign, the first criteria, of identifying the need for research, a systematic review concluding with lack of evidence to support the effect of 4 of the 6 areas of the 100K campaign (Institute for Healthcare Improvement), was not widely known nor emphasized in the decision-making process. Several countries were already introducing patient safety campaigns at the time, and results from these were lacking or

anecdotal. The enthusiasm of the various national campaigns was evident, and examples from these campaigns, not evaluated scientifically, were taken as sufficient evidence in the process. Political considerations, in a climate where the newspapers regularly published cases of harm for patients caused by the hospital stay, outweighed the need for convincing scientific evidence for the effect of the policy. Once the policy was decided upon, the need for monitoring and the planning of evaluation was identified and followed up on.

In the case of establishing a non-punitive national reporting system for adverse events, the need for research evidence was more widely accepted. The initiative started many years prior to the policy decision with the book of a Norwegian physician, using research evidence along with patient cases, widely used and sited. The initiative was first stopped during the policy-making process. However, when stakeholders launched a new initiative, this background literature, along with a systematic review on the topic, was used to convince the policy makers of the need of a national non-punitive reporting system. Evidence and opinions from other industries than healthcare were also applied.

Discussion and conclusion

These two cases illustrate the complex process of policy making in healthcare. The decision to go ahead with a patient safety campaign was made despite the lack of evidence for effect, while the decision against a national, non-punitive reporting system in the first place was made despite evidence for its effect. In the second round, scientific evidence was used openly in the process. In both cases, the research evidence was not used to clarify the problem, to frame it or to address the implementation. The distinction between qualitatively assessed evidence and the more anecdotal evidence used in the decision making process was not clear. A better process of providing, demanding and including assessed and synthesized research evidence for policy options would ensure a more evidence-informed policy decision making. Politicians will always have many other aspects to consider in making decisions, but the need for transparency in process, and the expectation that politicians make evidence-informed decisions, will support initiatives to improve these processes.

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Mirjam Ekstedt & Synnöve Ödegård

Wednesday, 7 March 2012 / 11.20-12.30– Chairs: Karina Aase & Anneli Milén

Patient safety in cancer care from a systems perspective.

It has long been an accepted knowledge that structural issues are important for patient safety. The organization of cancer care is divided into many specialties, clinics and levels of care, making patients particularly vulnerable to medical mishaps. It is clear that practitioners at "the sharp end" (physicians, nurses, technicians, pharmacists and others) have to cope with a complex, rapidly changing care, highly advanced technology and potent treatment, and in particular, with the “gaps” of discontinuities, that complexity spawns.

One question that needs to be addressed in relation to this complexity is whether existing laws, rules and guidelines regulating cancer care cover issues of responsibility sufficiently throughout the entire continuum of care. Another one is to what extent professionals at “the sharp end” have the opportunity to follow guidelines for patient safety.

Gaps often occur between different organizations or health-care providers, or when responsibility is transferred within an organization. However, it is through an increased understanding of practitioners' normal ability to bridge gaps that safety is increased.

We know little about how practitioners identify and bridge gaps that occur within the cancer-care continuum, from the patients´ first visit to their general practitioner, through hospital care and transmission to advanced home care. Therefore, the aim of this ongoing study is to perform an exploration of gaps in the cancer-care continuum and the way practitioners anticipate, detect and bridge them, as a means of pursuing robust

improvements in patient safety.

Methods and materials

Twelve qualitative interviews (individual or in group) were performed with healthcare professionals working with various healthcare providers in cancer care in three county councils in central Sweden. The participants were managers, administrators, secretaries, medical doctors, general practitioners, district nurses or nurses in patient care, palliative care or advanced home care. A total of 28 persons were interviewed. The participants were instructed to describe situations when they managed to avoid risks of medical injury, or situations where they failed to prevent human errors. The interviews were transcribed verbatim and analyzed using a qualitative latent and manifest content analysis method.

Preliminary results

This study is currently under analysis and final results are planned to be presented and discussed at the meeting. This study will contribute to the discussion with some patterns of the complexities and hazards in cancer care that practitioners at the sharp end have identified.

Preliminary findings deal with issues of communication deficits within the organization and between different levels of care, unclear guidance and lack of knowledge among practitioners, technical challenges and lack of resources, hierarchies and attitudes that impede patient safety; and the fact that cancer patients often face a variety of actors in a complicated chain of care, without someone taking a clear and collective responsibility for their care.

Elina Pietikäinen, Teemu Reiman & Heikkilä Jouko
Wednesday, 7 March 2012 / 11.20-12.30– Chairs: Karina Aase & Anneli Milén

Identifying the underlying management strategies of developing patient safety – are they competing or complementary?

Management of a complex sociotechnical system requires making trade-offs or negotiating between several goals and means for attaining them. Research on organizing for quality implies that the improvement journeys of hospitals are laden with reliance on different management strategies to

cope with challenges at various levels of the system (cf. Bate et al. 2008). Safety science has also identified several fundamental tradeoffs (such as the efficiency-thoroughness and optimality-fragility trade-offs) that have to be balanced when managing safety (Hollnagel, 2009; Woods & Branlat, 2011). General management research on the other hand has paid attention to competing values that exist in organisations and contrasting actions that managers need to engage in in order to manage the organisation effectively (Cameron & Quinn, 2011; Farjoun, 2010; Quinn et al., 2011). These approaches can provide important insight for managing patient safety.

In the Finnish SafetyAsset research and development project, the goal has been to construct a model of patient safety management. Our findings during the project imply that there exist multiple strategies that more or less implicitly guide patient safety management activity. At least on a surface level these strategies also seem to be somewhat discordant. A need to better understand the underlying dialectics in patient safety management has emerged.

We aim to clarify the nature of patient safety management by focusing on the underlying strategies governing it. Our research questions are: 1) What kinds of management strategies do managers and patient safety coordinators use in managing patient safety? 2) Are these strategies contradictory or complementary? 3) How should the different strategies be reconciled in patient safety management?

Methods and materials

We conducted 10 interviews with managers and patient safety coordinators between November 2011 and January 2012. The interviewees represented 4 different types of Finnish social and health care organisations. Interviews focused on the interviewees conceptualisations of their work and patient safety and their stories on how they had carried out patient safety management in their organisation. The results of the interviews were complemented with a reflective diary data from one patient safety coordinator in a Finnish hospital.

Results

In the presentation we present the identified strategies of patient safety management in the case organisations. Compatibility and reconciliation of

the strategies will be discussed.

Discussion and conclusions

The possibility that the management strategies necessary for patient safety are at the same time both contradictory and complementary (cf. Farjoun 2010) will be discussed. The study will provide implications for practical patient safety management.

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Siri Wiig, Karina Aase & QUASER Team

Wednesday, 7 March 2012 / 11.20-12.30– Chairs: Karina Aase & Anneli Milén

A joyous occasion? How centralisation as part of quality improvement shapes power battles within the organization of maternity care.

Background

Traditionally, the Norwegian medical communities have argued in favour of centralizing maternity care based on the medical risk. Moreover, births have been seen as unpredictable in a worst-case scenario perspective, arguing for full preparedness to handle birth complications. Within maternity care, Norway has practiced a decentralised and differentiated maternity care since 2001, meaning that care is organised around a risk-based selection of pregnant women to delivery room, maternity ward, and maternity hospital, respectively. The organisation of maternity institutions according to this three-level model has been based on a volume approach, meaning that delivery rooms are typical in rural areas and maternity hospitals in densely populated areas. The Norwegian Parliament's decision on the differentiated and decentralised approach has by some been called a paradigm shift. Ten years later, the Ministry of Health and the Norwegian Directorate of Health state that the volume-based approach has flaws related to the present attention to volume solely, where research-based evidence for this criterion is lacking. A more centralised approach is suggested, rooted in the development of quality requirements (related to e.g. competence, courses, training, and guidelines) within maternity care. The new approach continues the three-level model of maternity institutions, but replaces the volume approach with quality requirements.

Objective

This paper aims at describing how the recent centralisation and differentiation debate of maternity care in Norway can be analysed according to the power battles it creates among different stakeholders.

Methodology

The paper is based on a case study of recent organisation of maternity care in Norway as perceived by three stakeholder groups; (a) governmental bodies, (b) health care personnel, and (c) users of maternity care services. A multi-level analysis of stakeholder perceptions has been carried out using policy documents, debates in media and scientific communities, and interviews with healthcare personnel as the main sources of data.

Results

Organisation of maternity care in Norway engages the entire society from medical scientific communities to users of maternity care and local communities. The debates are characterised by a high degree of sensibility, with belonging power battles. Arguments and incentives span from district policy in the upholding of local maternity wards to disagreement in the medical scientific communities. The analysis of stakeholder perceptions has identified the following main power battles: (1) Disagreements concerning the risk involved in upholding rural delivery rooms versus centralizing to maternity hospitals; (2) Financial and medical risk discourses where government and health trusts argue for down-sizing of maternity care (centralization) to improve quality, while local communities in rural areas emphasize the risk related to increased travelling distances; (3) Disagreements concerning the objective risk of giving birth at home versus in a hospital context; (4) Argumentation of the new maternity care model as a theoretical model without practice-based anchoring and in lack of consequence analyses.

Conclusions

The purpose of the present differentiated maternity care model is to ensure variation where selection is based on risk-assessment according to given quality criteria. Several stakeholders are either involved in or affected by the changing of the organisation of maternity care. The study illustrates how risk perception varies among stakeholders within maternity care, how risk perception is subjective, and how power battles are shaped when decisions affecting local communities are made by central governmental bodies based on so-called objective risk.

Acknowledgements

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Poster Presentations

Session 1: Accreditation and implementation of tools

Annette Bjerre Vedstesen & Carsten Rix

Tuesday, 6 March 2012 / 12.40-13.15– Chair: Anneli Milén

The impact of an accreditation process on the reporting of adverse events.

Background and purpose

The Danish law on patient safety (2004) obligates healthcare professionals to report adverse events and learn from them.

In 2009, a national accreditation model was released for the hospitals to implement. In the accreditation model most of the standards have focus on patient safety and on securing uniform quality for patients across organisations.

The purpose of this study is to reflect on the impact of the accreditation system on the perceived patient safety measured by the reporting of adverse events.

Methods and materials

A part of the accreditation process is to carry out internal and external surveys to address whether the organisation has implemented the national standards. The surveys are conducted in the different departments of the hospital using the same questionnaire on all staff members.

Adverse events reports from the national reporting system.

Measurement of improvement

This study is based on reports of adverse events associated with an ongoing accreditation process.

Results

From 2004 and until autumn 2010 the average number of reported adverse

events was 200 on the regional hospital of Randers.

As part of the accreditation process an internal survey was conducted in the fall of 2010. By the end of the year, the number of reported adverse events increased to 304 – an increase of 50%! In June 2011, the external survey was conducted. By November the amount of reported adverse events had risen to more than 700.

The seriousness of the reported adverse events seems to include more of the less serious events – this is typically the adverse event were the mistake was corrected before any harm was inflicted on the patient. This indicates that the awareness of the importance of reporting all types of adverse events has improved.

Discussion and conclusions

Based on the number of reported adverse events, accreditation has an impact on the awareness of the importance of reporting adverse events. Especially the internal and external surveys seem to have great effect. It is therefore assumed that the surveys made staff more aware of:

- the obligation to report adverse events
- how to report adverse events
- how the adverse events are be used as learning material both on department level and hospital level

The accreditation model set new standards for healthcare professionals. It emphasizes the importance of uniform guidelines and openness to share knowledge across the organisation.

Irmgard Birkegaard

Tuesday, 6 March 2012 / 12.40-13.15– Chair: Anneli Milén

Danish Quality Model and Accreditation: Means and Ends – a Report from the Field.

Background

The Danish Quality Model (DDKM) has been part of healthcare for 2 years and the first experience with accreditation has been conducted. Plenty of time, manpower and money have been spent to make guidelines, to

implement, to monitor and to take action. The value and impact on clinical practice is questioned by clinical staff members and we need to meet this uncertainty with research and knowledge.

This report – an "unambitious" analysis – evaluates the relationship between how implementation of DDKM and accreditation is conducted and the impact on integration of quality improvement in clinical practice. Evaluation focus is on processes both given and driven by the intervention and by the organization.

Assumption

The assumption is that integration of making guidelines, using guidelines, monitoring performance and planning improvements, the so called "4 steps", are the prerequisite for a positive effect on performance in healthcare practice, which is important for patient outcome.

Purpose

We need knowledge about how and which circumstances affect quality improvement attitude and performance in clinical practice. The aim is through process-evaluation, to enlighten circumstances and pitfalls that have to be taken into consideration in the future integration of DDKM and accreditation into Danish healthcare practice.

Materials

Questionnaires, interviews and observations from meetings in the quality organization.

Methods

Donabedian's model structure-process-outcome is used for contextual, structure and process mapping and for analysis of the relationship between structure and process.

Theory

Guidelines for evaluation of complex interventions.

Results and perspective

The goals of DDKM are not evident, except the obvious that everybody wants quality. With unclear goals hospital organizations run the risk of

confusing the tools for enhancing quality with the goal of quality itself.

Quality reaches the patient through the hands of the clinical staff. The process of caring for the health of patients has to be seen, spoken and made accessible for evaluation. The main issue of healthcare lies in the process.

To meet quality and safety interventions, demands information from the "field." The chosen feed-back mechanisms are essential to secure the relationship between structure, process and outcome.

A rough conclusion

This Donabedian-inspection has given the rough conclusion that structure has taken the dominating role ahead of process and ahead of the relations between structure and process.

DDKM and accreditation as an aim in itself has been dominating thereby impeding the use of effective tools for improving quality.

Making guidelines has been the dominating rational. This has neglected the importance of working with the effective activation of these guidelines.

In the implementation, the knowledge of the superior guidelines has dominated over the needs of local clinical practice.

In monitoring, the central demands have dominated ahead of local needs for improvement.

In plans for action, structure has dominated and left no attention on process. The lacking evaluation of the structure-process relationship weakens the potential for patient outcome.

Discussion

The plans for actions represent an unused potential for common strategic view in the hospital organization, a possibility for inter organizational dialogue, for connecting structure and process.

Tina Drud Due, Frans Boch Waldorff, Thorkil Thorsen, Marius Brostrøm Kousgaard & Eva Branner

Tuesday, 6 March 2012 / 12.40-13.15– Chair: Anneli Milén

Facilitator visits as a development tool in general practice – a PhD and an evaluation of an intervention for quality improvement in general practice.

Facilitator-based interventions are widely used in general practice to support development, and the implementation of guidelines. The concept of facilitation is not well defined, and there are many differences between the interventions regarding purpose and content. Even though several studies find an effect of these interventions, some studies do not. A Cochrane review recommends more process evaluations for a further insight in the differences between the studies. There is also a lack of knowledge of how the concept of facilitation is translated, and the processes of change occurring in the clinics during, and after the visits.

The Capital Region of Denmark has established a facilitator project with an aim to improve the quality of chronic care management in general practice. The 16 facilitators in the project, primarily GPs, have attended a three month educational programme. Each clinic in the region is offered three visits. The facilitator is to act as a change agent who motivates and helps the clinic team in defining common goals, and choosing the appropriate means for achieving them.

The project is evaluated by the Research Unit for General Practice in Copenhagen, and is also the case for my PhD.

Purpose

The main question of the PhD is: *How do facilitator visits work as a tool for development in general practice generally, and particularly in the implementation of disease specific programmes for chronic care management?*

Sub-study 1: A randomised controlled trial of the effect of the facilitator project

Sub-study2: A qualitative study divided in:

2a. how is the role of the facilitator translated in practice, and which factors influences this translation?

2b. which processes are established in the clinics, and how does the translation of the role of the facilitator, as well as external factors, influence learning and change in the clinics?

Methods and materials

The study is a combination of quantitative and qualitative methods. The data in the RCT consists of register data and baseline and follow-up questionnaires to the clinics. Allocation of the 179 clinics in the trial was completed in April 2011, and baseline data has been collected.

Primary outcome measure

- The prevalence of formalised yearly follow-up consultations

Secondary outcome measures

- Use of systematic guidelines
- Use of ICPC diagnosis coding
- Use of Sentinel Data Capture for overview of patients
- Use of stratification

In the qualitative study, visits by a facilitator are observed in 16 clinics, and the clinics are interviewed afterwards. The facilitators' experiences are explored by observations of facilitator network meetings, and focus group and individual interviews.

The combination of methods offers an opportunity to assess different aspects of the project. Different types of outcome can be assessed by the two methods, and the qualitative finding, regarding the translation of the concept, and the processes occurring in the clinics, can contribute to the understanding of the result of the RCT. The explorative approach, chosen in the qualitative study, provides a possibility to explore also unexpected aspects of the process of translation, and its consequences.

The poster focuses on the research and evaluation design, and the choice of methods triangulation. According to the definition of the Medical Research Council the facilitator project is a complex intervention, which provides

some challenges for an effect-study. The poster includes thoughts of the study in this context.

Implications

This study will provide information on how facilitator visits can contribute to development, and quality improvement in general practice. In the scientific field the study will contribute to the understanding of the translation of the role of the facilitator, the learning processes occuring as result of the visits, and contribute to the debate of RCT in complex interventions.

Charlotte Eriksen, Susanne Johansen & Marianne Frandsen
Tuesday, 6 March 2012 / 12.40-13.15– Chair: Anneli Milén

Know your pressure and get hand hygiene up world class.

Background and purpose

Naestved Hospital participates as one of five public hospitals in the Danish Safer Hospital program. The program is designed to prevent inadvertent errors, injuries and deaths by, for instance, eliminating hospital infections. It is well known that poor hand hygiene increases the risk for patients of hospital-acquired infections. The Board of Directors has chosen hand hygiene as a special action because this includes all meetings between patients and health professionals.

The purpose of this intervention has been to sharpen our hand hygiene, so that we may protect our vulnerable oncology patients as much as possible. According to national standards and the guidelines of the hospital hand disinfection must be carried out in 30 seconds. It proved to be a much bigger task than we thought.

Methods and materials

Key persons performed observation of all staff on hand disinfection according to the national standards at the end of 2010. Audit showed 4 pct. compliance.

We initiated a number of interventions recommended by the Office of Health and hygiene organizations to achieve proper hand hygiene before

every patient contact: this included discussion at staff meetings, education, including presentation and discussion of National Health movie about hand disinfection, testing of various alcohol products, the use of small competitions and rewards for good performance and personal feedback.

Through intense study of the hand disinfection process it was discovered that each staff member should use an individual quantity of alcohol depending on hand size, heat or cold hands and skin type. All staff have now tested how hard they were to press the alcohol pump in order to get exactly the quantity of alcohol needed for a 30-second rub of hands. The method was dubbed the "know your pressure."

The hand hygiene process was monitored closely to see if the interventions led to an improvement. The monitoring was done by a key person appointed in agreement with selected staff members and was intended to check that hand hygiene was observed during the day and that the staff followed the national standards. Data was presented in run charts and discussed in the quality team every month.

Results

Over a period of 10 months the department staff has improved their hand hygiene compliance from 4 to 100 pct. Compliance has fluctuated up and down, but has slowly moved in the desired direction. Since the observation the method was changed from open observation to concealed observation there was a marked decreased in compliance again. This gave a strong impetus to the improvement work and the method **Know your pressure** was developed. This led to a compliance of 100 %, even during concealed observation.

The approach to hand hygiene has changed from something you thought was correct, more than a irritation of having to spend so much time on something so trivial, to an activity that should be carried out due to professional pride.

Discussion and conclusion

Why can good hand hand hygiene be so difficult? Many barriers were identified. Our staff members were uncertain about health risks in using so much alcohol, worried about autonomy and impact on busyness, had doubt regarding evidence and difficult implementation method. Teaching and

discussion of the film gave staff a much better more background as to why one should disinfect hands for 30 seconds and why hand wash is not sufficient. This therefore persuaded people why it is so important with hand disinfection, and thus greater ownership of the improvement process.

The big difference in complience by open and concealed observation was a major surprise, which was crucial for the achieved success. The professional pride was challenged. Another important factor to successful implementation has focused on the fact that it should be good and easy for staff to do the right thing every time with the development of the method **Know your pressure**. This allows 30 seconds for reflection or to breathe out. The improvement is therefore beneficial to both patients and staff for.

Poster presentations

Session 2: Clinical outcome studies.

Ylva Haasum, Johan Fastbom & Kristina Johnell

Tuesday, 6 March 2012 / 12.40-13.15– Chair: Siri Wiig

Different patterns in use of antibiotics for lower urinary tract infection in institutionalized and home-dwelling elderly: a register-based study.

Purpose

To compare the use of urinary tract infection (UTI) antibiotics between institutionalized and home-dwelling elderly.

Methods

We analysed data on age, sex and dispensed drugs for people aged ≥65 years registered in *the Swedish Prescribed Drug Register* from July to September 2008. Data about type of housing were retrieved from *the Social Service Register* (n=1 347 564).

The studied UTI antibiotics were quinolones (ciprofloxacin, norfloxacin), pivmecillinam, trimethoprim and nitrofurantoin. We also analyzed the quality of use of UTI antibiotics: Women: 1) The proportion of women who used quinolones (should be as low as possible); 2) The proportion of women treated with pivmecillinam, nitrofurantoin or trimethoprim (the proportions should be about 40%, 40% and 15-20%, respectively); Men: 1) The proportion of men who used either quinolones or trimethoprim (should be as high as possible).

Results

About 15% of the institutionalized women used quinolones compared to 19% among the home-dwellers.

The proportion of women treated with pivmecillinam, nitrofurantoin or trimethoprim was 29%, 27% and 45% for institutionalized women and

40%, 28% and 34% for home-dwellers.

Quinolones or trimethoprim were used by about 76% of the institutionalized and 85% of the home-dwelling men. Institutionalized men were less likely to receive quinolones but more likely to be treated with trimethoprim in ages <80 years and nitrofurantoin in ages ≥80 years.

Conclusions

Our results indicate that the Swedish recommendations for treatment with UTI antibiotics are not adequately followed. The high use of trimethoprim among institutionalized women and the low use of quinolones among institutionalized men need further investigation.

Søren Uhre & Rikke Jørgensen
Tuesday, 6 March 2012 / 12.40-13.15– Chair: Siri Wiig

Factors influencing doctors' perception of performance and outcome measurement in the Danish National Indicator Project (schizophrenia).

Background and purpose

The Danish National Indicator Project (DNIP) is a mandatory national system to document, monitor, and improve quality of care in 10 major diseases including schizophrenia (1). Performance and outcome measurement indicators in DNIP (schizophrenia) are deducted from a national clinical guideline (2). Compliance to the standards in DNIP (schizophrenia) is thus expected to facilitate positive clinical outcomes.

Motivation is expected to drive behaviour (3-5); i.e. doctors' compliance with the DNIP regarding clinical processes and documentation. Doctors' perception of performance and outcome measurements is thus expected to be crucial regarding whether they positively engage in quality development or decoupling strategies (6,7).

This study explored factors influencing doctors' perception of performance and outcome measurement in the DNIP (schizophrenia).

Methods and materials

17 doctors in various clinics/wards of a university hospital and a district psychiatric hospital were given semi-structured qualitative interviews. 2 ideal types (8) were identified with an inductive approach, using software (9). Variation was analysed in a deductive theory-focused approach (10).

Results

Positive and negative ideal types

Positive and negative perceptions of the DNIP (schizophrenia) were identified. All interviewees agreed that the elements in the DNIP (schizophrenia) are necessary for successful patient pathways, and that the doctor/patient alliance is crucial. Thus, reservations to the DNIP (schizophrenia) are based on the *process* not the *content*.

Characteristics of positive perception: Standardization underpins good pathways, DNIP facilitates inter-collegial discussion, Management logic is accepted in a strong professional qualitatively-oriented culture.

Characteristics of negative perception: Opposition to codification of tacit knowledge, Control as governance logic, DNIP explicates unfair and unrealistic budget restrictions, Standards should be defined locally.

Factors influencing doctors' perception of DNIP (schizophrenia)

Medical directors perceived the DNIP (schizophrenia) positively. Furthermore, the perception of the DNIP (schizophrenia) was conditional for non-management doctors and section managers. Doctors who treated primarily schizophrenic patients, mostly non-acute patients at specialized out-patient clinics, patients with "typical" schizophrenia, and who performed social psychiatric care to a relatively low degree and had many resources relative to the number of patients had positive perceptions of the DNIP (schizophrenia). Doctors not working under these conditions tended to have a less positive or negative perception of the DNIP (schizophrenia).

Discussion and conclusion

Based on other studies (7,11), DNIP is likely to have corrective effects. Doctors perceiving the DNIP positively do not experience it as unnecessary monitoring and control, but feel that an increased focus on standardized

treatment improves patient treatment by focusing efforts on the main process elements such as adverse effects of medical therapy, contact with relatives, and assessing suicide risk. Based on these findings, the DNIP probably has corrective effects on doctors' behaviour when they are positive towards the DNIP. Whether doctors perceiving the DNIP negatively only have increased focus on documentation and not on the activity per se should be considered.

Empirical recommendations

- An adequate quality department to sufficiently facilitate focus on the DNIP
- A disease-divided organization since specialization tends to facilitate internal motivation
- Specifying patient pathways to clarify points during an admission where certain process elements should take place by whom
- Ease documentation by supplying adequate IT systems.

By implementing our empirical recommendations, performance and outcome measurement regimes are expected to facilitate positive doctors' internal motivation to comply with clinical guidelines and document clinical processes.

Christine Tvedt, Jon Helgeland, Ingeborg Strømseng Sjetne, Ole Tjomsland & Geir Bukholm

Tuesday, 6 March 2012 / 12.40-13.15– Chair: Siri Wiig

Diagnosis-related 30 days mortality in wards with differing nurse-reported work environments.

Background

Evidence indicates that public reporting of hospital performance stimulates quality improvement activities, but knowledge about how improvements should be made is sparse. Studies have found that health professionals' perceptions of work environment are associated with various service quality measures. Because contextual features seem to be part of the complexity that explains quality variation, these features represent an important potential for targeted quality improvement efforts.

In this study, we wanted to explore the association between a clinical outcome (30-days mortality rates for myocardial infarction (AMI), cerebral stroke (stroke), and hip fracture) and registered nurses' (RNs') work environment as a contextual feature of the hospitals.

Methods

RN4CAST (Nurse forecasting in Europe) is an international cross-sectional study including a survey of RNs in 2009. The questionnaire included 32 items from the Nursing Work Index (NWI), covering topics like nurse leadership, staffing adequacy, nurse-physician relationship, nurse participation in hospital affairs, and professional orientation. Data were collected from 238 wards in 35 hospitals with 90 beds or more. Total response rate was 57% (per ward: from 9 to 100%). By averaging the 32 NWI-items (four-point response-scale) we calculated a composite score (NWI-score), and the ward mean was considered a general rating of the RNs' local work environment.

In June 2011, the Norwegian Knowledge Centre for Health Services published results from a study assessing 30 days mortality after admission for AMI, stroke and hip fracture in Norwegian hospitals. Patient administrative data were retrieved from all Norwegian hospitals for patients discharged in the period 1.1.1996-30.12.2009 using an in-house developed system for this purpose.

The data were linked to The National Population Register to update patient status (dead/alive). Records for AMI, stroke and hip fracture at each hospital were identified according to the International Classification of Diseases (ICD-10). Patients were excluded if the admission was coded as dead on arrival, a non-acute case, readmission or admission for rehabilitation, and if the patient was < 18 years (< 65 years for hip fracture).

We identified the wards that most likely had provided care for patients with AMI, stroke and hip fracture. Wards belonging to hospitals with statistically significant higher 30 days mortality for these conditions are marked red in Figure 1. We dichotomized the variables to test the associations between mortality and NWI-scores.

Results

Figure 1 shows ward means of the NWI-score sorted descending, and the

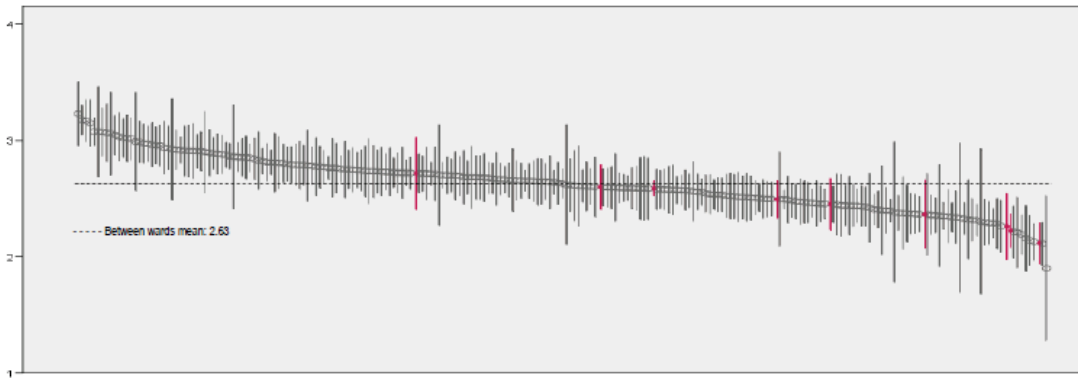
horizontal line represents the between wards mean (2.63). The figure displays a strong variation in RNs' perception of work environment. The nine wards belonging to hospitals with high mortality are mainly found among wards with lower NWI-scores (Fisher's exact test: p=0.036).

Discussion

These results support the assumption that associations between quality measures and contextual features is present, also in Norwegian hospitals. Our finding suggests that combining data from the RN4CAST study with clinical quality measures is one way to gain insight into the complexity of hospital performance.

The study has some limitations that need to be addressed in future studies. The general work environment measure could be specified, for example by using sub-scales. Other contextual features should be taken into account, for example other professions' perspectives, hospital size, costs, and patient safety culture.

Figure 1. Ward level mean scores for nurses' work environment (N=238b)



- - - - - Between wards mean: 2.63
a Error bars: 95% confidence intervals
b Wards in red provide AMI, stroke or hip fracture care in hospitals with high observed mortality for these conditions

Poster Presentations

Session 3: Medication Safety.

Ann Lykkegaard Sørensen, Jan Mainz & Marianne Lisby

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Henriette Lipczak

How common are errors in the medication process in a psychiatric hospital?

Background and purpose

Medication errors in psychiatric care are a problem in need of attention in Denmark. Studies are sparse and do not investigate all stages of the medication process. There is an urgent need for clarifying studies concerning prevalence and nature of medication errors in psychiatric care, as well as studies concerning associations related to medication errors. This is the basis for quality improving interventions in relation to medication safety in psychiatric care. The aim of this study was to asses frequency, type and potential clinical consequences of errors in all stages of the medication process in an inpatient psychiatric setting.

Methods and materials

A cross-sectional study in two general psychiatric wards and one acute psychiatric ward. Participants were eligible psychiatric in-hospital patients (n=67), physicians prescribing drugs and ward staff (nurses and nurses assistants) dispensing and administering drugs. The study was carried out using 3 methods of investigation – an observational study, an unannounced control visit and an audit of medical records. Medication errors were evaluated in terms of potential, clinical consequences, by two senior clinical pharmacologists. The evaluation was done in a worst-case scenario and did not include discharge summaries.

Results

Main outcome measures were frequency, type and potential severity of errors compared to the total number of opportunities for error. In total, 434

errors were detected in 1333 opportunities for error (33%). The rate of medication errors (with potential to harm patients) was 8%, and 0.3% were considered potentially fatal. The frequency of errors was: *Prescription*: A) Computerized physician order entry (CPOE): 10/267 (4%), B) Electronic medical record (EMR): 245/251 (98%). *Dispensing*: 18/391 (5%). *Administration*: 142/340 (42%). *Discharge summaries:* 19/84 (23%). The most common errors were *lack of documentation of informed consent in the EMR*, *omission of pro re nata (prn) dosing regime in the CPOE, omission of dose*, *lack of identity control* and *omission of drug.*

Discussion and conclusion

Errors throughout the medication process in a psychiatric setting are common and as prevalent as the rates of errors found in somatic settings. The finding of errors in every third handling in the medication process points toward a continuing need for quality improvement in the psychiatric hospital setting. In this study, the prevalence of clinically important errors was 8%, and 0.3% were considered potentially fatal. This indicates that the rate of potentially harmful errors in psychiatric hospitals is similar to the rate of potentially harmful errors found in somatic hospital settings but tends to be less serious. Errors in the administration stage constituted almost a third of all errors detected in the study and it appears that bar-coded medication administration could reduce administration errors. Medical staff needs further education in guidelines related to the medication process. Errors directly related to ward staff constituted 37% of all errors detected and consequently the nurses' role in improving psychiatric medication safety should be further explored.

Eva Aggerholm Saedder, Dorthe Krogsgaard Bonnerup, Marianne Lisby, Lars Peter Nielsen & Birgitte Brock

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Henriette Lipczak

Development of an algorithm for differentiated intervention against medication errors in acute hospital admissions on the basis of individualized risk stratification.

Background

A medication error is an error that cause damage or pose a threat of harm to

a patient. The risk of patients to be exposed to errors is related to patient age, comorbidities, individual drugs and polypharmacy. Medication review at hospital admission has been shown to reduce medication errors but it has not unambiguously been shown that this has an effect on length of hospital stay, readmissions or death. A reason may be that the patients receive the same intervention despite the complexity of their drug treatment and other risk factors.

Hypothesis

It is possible to develop an algorithm that stratifies patients regarding their risk for medication errors.

Aim

To develop an algorithm to be used for individual risk stratification of patients admitted to hospital with regards to their need for control and intervention to their drug treatment.

Methods

Risk factors for medication errors, such as age, comorbidities, polypharmacy and individual drugs, are found by literature search. Individual drugs will be assessed for risk potential by 36 experts in a delphi process. The risk factors will be assigned values on a numerical scale. An overall risk score will be attached to an intervention. The higher the score, the more specialized the intervention. The validity of the algorithm will be tested in a historic patient population where medication and medication errors are known.

Future perspectives

The algorithm could be implemented in IT systems to enable risk assessment of patients which allows for early intervention in drug treatment and thereby improve patient safety.

Dorthe Krogsgaard Bonnerup, Eva Sædder, Marianne Lisby, Anette Eskildsen & Lars Peter Nielsen

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Henriette Lipczak

Physicians' attitudes towards drug counseling from external health professionals.

Background

Medication errors lead to harm and deaths in up to 6 of 100 admissions to hospitals. Medication reviews performed on admission to hospitals reduce medication errors, however, the evidence of effect on morbidity and mortality is currently inconsistent.

To benefit from a medication review it is necessary that the physicians at the ward adhere to the recommendations. Two Danish studies have revealed that the physicians only adhered to 20-40 percent of the provided recommendations. Reasons for disregarding external drug counseling have not been studied thoroughly in Denmark or abroad.

Objective

The objective is to investigate physicians' attitudes towards drug counseling from external health professionals.

Methods

Four focus group interviews are performed to reveal themes and items for a questionnaire survey. The members of the focus groups are both younger physicians and more experienced surgeons and medical physicians. The questionnaire is developed based on literature review and results from the focus groups. The questionnaire is pilot tested in a group of 30 physicians and after adjustment e-mailed to approximately 580 physicians at Aarhus University Hospital.

Perspective

Based on results from this study (will be available in January 2012) it will be possible to perform medication reviews and delivery of the recommendations in closer accordance with the physicians' wishes and demands. This may lead to a better adherence to the recommendations which may have an impact on acutely admitted patients' morbidity and mortality. The effect of a differentiated medication review based on knowledge from this study, among other things, should be tested in a randomized controlled trial.

Poster Presentations

Session 4: Safety culture.

Mikaela Nygren, Per Nilsen & Kerstin Roback

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Elina Pietikäinen

Determinants of patient safety – Perceptions of Swedish patient safety experts.

Background

Swedish efforts and ambitions to achieve improved patient safety have increased markedly during the 2000s, with The National Board of Health and Welfare and the Swedish Association of Local Authorities and Regions (SALAR) as active players. SALAR has published a number of "evidence based intervention packages" which have been widely disseminated for implementation in Swedish health. These packages include guidelines and recommendations for how to achieve improved patient safety in areas such as falls, pressure ulcers, medication errors in care transitions and healthcare-associated infections (HAI). This year, patient safety work was stepped up further with a new law on patient safety (Patient Safety Act 2010:659) and a government-supported financial incentive plan initiated by SALAR, which will allocate over 2 billion SEK during 2011-2014 to the county councils that perform certain patient safety-enhancing actions and achieve certain results regarding patient safety. A zero vision for Swedish patient safety has been articulated by SALAR.

Objective

The objective is to investigate the perceptions of patient safety experts in Sweden's 21 county councils regarding factors they believe are most important for the current level of patient safety in their county council and for achieving increased patient safety in the future.

Method

The study surveys a purposive sample of approximately 200 respondents, experts concerning patient safety work in Sweden's county councils, on the basis of two criteria: (1) the respondents' insight (understanding and knowledge) into the county council's patient safety work, and (2) the respondents' possibility to influence county council decisions concerning this work. The respondents were selected in collaboration with appointed patient safety coordinators for the 21 county councils who provided names and addresses of respondents who fulfilled the criteria. The number of respondents from each county council was based on categorization according to population size and health care budget.

The questionnaire was developed in collaboration with experts in survey methodology at the Linköping University and with experienced researchers and practitioners in patient safety at the local county council and nationally in Sweden, including researchers at the KTH Royal Institute of Technology and the National Board of Health and Welfare. The questionnaire was reviewed by an expert in respondent psychology and cognitive interviews were also conducted to ensure that the questions were perceived correctly.

The questionnaire covered four areas, of which two were used for this study. The respondents determined the importance of 36 factors concerning the county council's current level of patient safety ("How important have the following factors been to achieve the current level of patient safety?") and 22 factors concerning increased patient safety in the future ("How important do you believe the following factors are to achieve increased patient safety in the county council?"). Likert-style response options were used.

All respondents received a postal questionnaire together with stamped return envelopes in late October 2011. Reminders were sent to all respondents by e-mail three weeks after the first mailing.

Analysis / processing / timetable

The study is in progress and data are currently being assembled. Preliminary results are expected in December 2011. The conference will be the first time results are presented publicly.

Katja Schrøder, Karen la Cour, Jan Stener Jørgensen, Jacob Hjelmborg & Niels Christian Hvidt

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Elina Pietikäinen

Traumatic childbirth from the perspective of the health care professional.

Background and purpose

Midwifery and obstetrics are predominantly associated with joyous events; with the delivery of a new life. However, rare cases of midwives and doctors being involved in so-called traumatic birth incidents will happen, where the baby is born with severe and possibly fatal injuries related to the birth. When complications arise in the delivery room, the incident is assessed in order to clarify whether the adverse event could have been avoided. The subsequent management of employee reaction mainly regards organizational practice, where the most important question is what lessons can be learned from the incidents, so they will not be repeated in the future. While the organization has had a significantly increased focus on patient safety over the past decade, the individual midwife's and doctor's professional and personal reactions and management of a traumatic childbirth have not equally been considered.

The Danish Society for Patient Safety has investigated how the employees' reactions are best handled in the aftermath of a traumatic incident, and the conclusive report establishes that there is only very little scientific publications on the subject. This study aims to contribute to this field of research from a perspective that differs from the current patient-oriented approach that is formulated by the Danish Society for Patient Safety or the Danish Healthcare Quality Programme. Instead the focus is on the healthcare professional: The midwife and the doctor. This approach should not be perceived as a contrast to the development in patient safety, but rather as complementing it by including the perspective of the healthcare professionals, even with the aim of increased patient safety.

Methods and material

The study has a mixed methods approach consisting of a quantitative questionnaire survey and a qualitative interview study, thus allowing a descriptive as well as an exploratory dimension.

Questionnaire: A questionnaire will be sent to all midwives and obstetric consultant and trainees in Denmark, adding up to a total of 2400. The overall aim of the survey is to identify the proportion of midwives and obstetricians who have been involved in one or more traumatic childbirths. Subsequently, the aim is to investigate the correlation between traumatic childbirths and work-related mental health problems among midwives and obstetricians and finally to explore the coping strategies of the midwives and obstetricians related to their personal values, faith and convictions.

Qualitative interviews: The qualitative part of the study will consist of 16-20 individual semi-structured interviews, equally distributed between midwives and doctors, which will provide a deeper understanding and contextualization than the questionnaire allows.

Expected results

Prior to this study a pilot project was carried out. The data showed that in the aftermath of a traumatic incident, midwives predominantly experienced that the focus was on the organizational aspects, leaving their individual responses secondary, or even completely ignored. Some midwives described a sense of 'never letting go' of the traumatic incident and a few had subsequently left the labour ward for good. Some of the midwives recognized that their clinical performance was influenced by their prior experiences and they were furthermore aware of being carriers of a culture where errors and mistakes are viewed as a sign of lack of professional competence.

The study will provide knowledge about how midwives and obstetricians experience being involved in traumatic childbirths, which may help improve the management of the aftermath of the traumatic events from the perspective of the healthcare professionals. Such improvements may prove essential in an increased safety culture, based on the notion that the emotional state of the health care professionals may influence their clinical performance and impact patient safety. It is assumed that the results will be transferable to other (acute) medical professional specialties.

Solvejg Kristensen, Malene Vestergaard & Paul Bartels

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Elina Pietikäinen

First steps in testing validity of three different patient safety culture tools for use in primary care in Denmark.

Background and purpose

One of the most extensively discussed factors in the area of patient safety (PS) is developing a just and fair culture, where both the design of technology and procedures are as safe as possible, and where staff have a constant and active awareness of the potential for things to go wrong; a commitment to safety that permeates all levels of an organization. For the purpose of surveying and developing a PS culture, suitable and valid tools are needed.

The objective of this study was to initiate first steps in the validation procedure of three different patient safety culture tools for use in Denmark.

Methods and material

Quality of translation, content coverage, relevance, composition and usability, and feasibility was investigated. For this purpose a multi-step procedure was initiated.

Following the procedure outlined by WHO, all tools were forward – backward translated by two independent linguists and adapted by a review group of risk and quality managers, clinicians and leaders. Amendments were made, and if necessary the individual tool was retested.

The tools were tested in four pilot-meetings in different primary care settings. Participants (N=6-10) were nursing assistants, nurses, doctors, secretaries, and technical personal. In the pilot-meetings two different tools were applied according to their respective manual. Hereafter a structured open discussion on; content coverage, relevance, composition, usability, and feasibility of the tools followed. As a cause of findings in the first two meeting alterations were made for the following two meetings. Finally, the tools were revised according to consistent and explicit findings.

All tools tested are well documented and were recommended in the EUNetPaS project (3):

- Manchester Patient Safety Framework for primary care (MaPSaF),
- Medical Office Survey on Patient Safety Culture (MOPSC),
- Nursing Home Survey on Patient Safety Culture (NHPSC).

MaPSaF is a qualitative dialogue based workshop for reflection on PSC; originally from England, where as the MOPSC and the NHPSC are questionnaires originating from America

Results

Participants liked the MaPSaF workshop form, as it allows for in depth dialogue of cultural strengths and weaknesses. However, the test pointed toward improvements in composition, usability and feasibility; the terminology used across nursing homes and GPs is not consistent, and MaPSaF material was found too extensive, both in terms of amount of text, number of topic covered, and time consume. The original English workshop embraces nine topics; participants found reflecting on three themes more suitable. Participant pointed toward possible improvements in tool composition and easier usage. They thought that if the PS culture is too immature the issues, topics and concepts addresses feel foreign and the confronting form of the workshop might not be the best way to promote a PS culture.

This test showed that the MOPSC and the NHPSC both need minor adjustment to enhance usability and feasibility. Participants pointed to improvements in the phrasing of individual items and the graphical design of the questionnaires: They found the surveys relevant but also rather extensive, thus they came with suggestions on how to enhance participation rates for respondents with difficulties in reading.

Discussion and conclusions

The MaPSaF workshop was not regarded as usable in its original form. Our findings were consistent with findings in Germany. Further development of the MaPSaF material will be made before Danish versions are released.

The transferability of the MOPSC and the NHPSC into the Danish setting is regarded as over average. Revising the surveys is possible keeping them equally clear, precise and equivalent to the original American survey forms. The three tools are ready to undergo the next steps in the validation

procedure.

Solvejg Kristensen & Paul Bartels
Tuesday, 6 March 2012 / 13.15-14.00– Chair: Elina Pietikäinen

Promoting patient safety culture instruments in European hospitals – Results from the EUNetPaS Project.

Background and Purpose

The European Network for Patient Safety (EUNetPaS) was a project funded and supported by the European Commission. In total, 27 European member states (MS), and eight European stakeholders and international organisations participated. A national contact point (NCP) served as a coordinator of activities within each MS and to the EUNetPaS organisation.

The aim of the presented work was to map the use of patient safety culture (PSC) instruments in European hospitals, recommend a set of eligible different instruments to promote PSC measurements MS, and test two instruments in a setting where patient safety work was in early stages.

Method and material

The work process was as follows:

- Literature search identifying PSC instruments and their use
- Establishing a EU-wide network of experts appointed by the NCP
- Setting criteria for mapping, selection and recommendation of PSC instruments
- Information collection from MS and experts on used PSC instruments
- Draft report on used PSC instruments and content validation by experts and NCPs
- Assessment of instruments according to both instrument- and set-criteria
- Preliminary recommendations and validation by experts and NCPs
- Information collection from NCP and experts on experiences in applying PSC instruments and developing a culture of patient safety
- Specification of pilot study in Lithuania
- Pilot aiming at: 1) introducing the concept of patient safety, and 2) testing the transferability of the instruments, and gaining experiences in applying them

- Recommendation of PSC instruments applicable for use in MS

Results

An EU-wide PSC network of more than 90 researchers, patient safety managers, consultants, advisors, policy makers etc. was established.

The information collection revealed the use of 15 different instruments in MS hospitals; three instruments met the instrument-criteria. These were; the *Hospital Survey on Patient Safety Culture (HSOPSC)*, the *Safety Attitudes Questionnaire (SAQ),* the *Manchester Patient Safety Assessment Framework (MaPSaF).* These were also the three most frequently used instruments in MS, and a number of validity studies regarding these instruments had either been performed or were planned. HSOPSC and SAQ are PSC survey forms, whereas the MaPSaF is a work shop. All three instruments are available in English, have well documented manuals, they survey different dimensions of PSC, and no fee for application applies. Together the three instruments fulfilled the set-criteria.

The HSOPSC or SAQ was piloted in 20 hospital wards in Lithuania. Both instruments were translated and some technical changes were made to match patient safety work in very early stages. The pilot was introduces through an educational workshops where the staff was told about the science of patient safety, identifying, reporting and learning from adverse events, and finally either of the two PSC surveys was filled in. The workshop ended with an open discussion about local safety issues, culture and the experiences made in the workshop.

Conclusions

The following three instruments are recommended for internal use not for benchmarking in MS:

- *Hospital Survey on Patient Safety Culture*
- *Manchester Patient Safety Assessment Framework*
- *Safety Attitudes Questionnaire.*

Piloting the HSOPSC and SAQ was successful. Informants were motivated and positive towards working actively with patient safety culture development. They found the way of introducing the concept of patient safety, and surveying PSC through a workshop appropriate. The tested

instruments seem applicable in a clinical and political setting where systematic patient safety work is in very early stages.

The reports of the work are available at www.eunetpas.eu. The recommendations were approved by the NCP and EU leading experts in patient safety culture.

Johan Barstad & Bodil Røyset

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Elina Pietikäinen

Improving patient safety in a local hospital setting.

Background and purpose

Health Sunnmøre Trust, since July 1st, 2011 integrated into Health Møre and Romsdal Trust, consists of two hospitals, located in Aalesund and Volda.

Health Sunnmøre Trust has implemented routines on how to handle adverse incidents, from unit level upward through the organization and further onto relevant public bodies. Still there is a need to establish a more comprehensive approach at unit and sub-unit level.

Since 2010, a Patient Safety Project has been implemented here, with a main focus to develop a comprehensive, unit-based approach to safety. The local process and the chosen approach are built upon The Comprehensive Unit-based Safety Program (CUSP) method, developed by Dr. Peter Pronovost and colleagues at the Johns Hopkins Hospital.

The Patient Safety Project intends to contribute to a further reduction in adverse incidents and to establish safer patient trajectories and to improve the safety-culture among all personnel employed. Discussions and literature on patient safety points at the importance of improving the safety-culture in order to improve patient-safety, in the project this has been structured into three main strategies:

- Transparency. Openness regarding adverse incidents and use incidents actively to prevent further incidents
- Pro-activity. Improve personnel awareness to risk factors and to minimize/eliminate possible effects thereof
- Improving competence and capacity building. Continuous updating knowledge and skills to ensure patients receiving optimal care.

Methods and materials

A long-term implementation plan has been developed where the first parts have been implemented

1) Carrying out an Internet based Patient Safety Survey based upon the CUSP model and adapted to the local setting. This survey was carried out from December 2010 - January 11 and obtained a 62% response from the 2600 employees. Intention was to build a basis of knowledge and obtain a fundament to be used when working with specific units

2) Presenting results at unit-level. The Project is now in the process of presenting results to the Units to start the unit-level process. A person has been engaged to facilitate this process, intended to result in the recruitment of 3-4 Units for further implementation of the CUSP model. Through selecting a set of units the Project intends to build a base for comparing effects of the implementation, since the Projects coincides in time with the National Strategy to Improve Patient Safety. Thus a need arose to be able to distinguish between general effects from the national strategy and the effects contributable to the local implementation project.

3) Building direct relations between the recruited units and key administrative personnel at Hospital level. This is to develop a reciprocal strategy intended to improve implementation strength

4) Identification of key elements of high risks at unit level to engage actively between unit and key personnel to develop strategies and solutions for improvement

5) Dissemination of results from involved units to siblings not involved in the intervention

6) Carrying out of a 2nd internet-based survey to search for improvements in patient safety culture at Hospital level.

Presently, part 1 has been implemented and part 2 is in the establishment phase. Time frame is to have the final survey within a 2-year span.

Results

Since this is a project still in its infancy, no final results or strong results can be presented. The intention is to present and discuss the project structure,

intentions and implementation. Still, a few preliminary results from initial survey show that employees trust in patient safety work is reduced when going upwards in the organization. The trust is higher towards colleagues at unit level while lower towards the administrative level. Generally, the level of knowledge is regarded as adequate at unit level.

Discussion and conclusion

For the above mentioned reasons, we leave the discussion/conclusion field open.

Poster Presentations

Session 5: Organization of Care and national guidelines.

Per Nilsen, Mikaela Nygren, Annica Öhrn & Kerstin Roback
Tuesday, 6 March 2012 / 13.15-14.00– Chair: Öystein Flesland

A new zero vision for Swedish patient safety – but how do we know that health care is becoming safer?

Efforts to improve Swedish patient safety have intensified in 2011 with a new Patient Safety Act and an activity and performance-based compensation scheme launched by the government and the Local Authorities and Regions (SKL). A "zero vision" has been formulated. These efforts beg the question: how do we know that Swedish health care is becoming safer?

This paper addresses key issues concerning evaluation of patient safety work in Sweden. Difficulties and opportunities associated with this evaluation are discussed against a framework that expands on Donabedian's "triad" by adding a contextual component to account for patient safety culture and by integrating a learning dimension through the use of the concepts of single and double loop learning, as described by Argyris and Schön. The various components are discussed in relation to the county councils' reporting in their 2011 patient safety reports that describe their patient safety work, in accordance with the new Patient Safety Act.

Olli Väisänen & Anneli Milén
Tuesday, 6 March 2012 / 13.15-14.00– Chair: Öystein Flesland

The Finnish National Programme for Patient Safety.

Context

The Finnish National Programme for Patient Safety is a unique national tryout to improve quality and patient safety in Finland. The programme is a

joint journey involving the National Institute for Health and Welfare (THL) and all healthcare units and actors in Finland. It is also one of the six top projects in the THL. Because the patient safety work needs to be done in healthcare units, the role for the National Programme is to help healthcare units to achieve the goal.

Problem

In Finland, 700-1700 patients die every year due to adverse events and the costs may be over one billion €. The estimation has been done by using the international data. The enormous number of adverse events was the reason why patient safety was heavily included into the new National Act for Health Care which was launched May 1, 2011.

Assessment of problem and analysis of its causes

After the new Patient safety strategy (in 2009) and the new National Act for Health Care the Ministry of Health and Welfare obligated the THL to act towards better and safer health care and started a National Programme for patient safety. This evoked The Finnish National Programme for Patient Safety during 2011-2015, and the ambitious goal is to half the adverse events before year 2020.

Intervention

There are six main streams in The National Programme for Patient safety: 1. Knowing the risks, 2. The leadership´s responsibility, 3. Education, 4. Patient Safety Tools, 5. Good practises and experiences, and 6. Innovations and Research.

The first action is to launch the theme pages in the internet for the programme on October 2011. The webpage is intended to be for the patients and professionals and there will be sectors as “Tools for the Better Patient Safety”, “E-library for Patient safety”, “News and Innovations” etc. The next step is to help the local healthcare units to perform the Patient Safety Plan, which is required in the new healthcare act. A new e-learning course for all 140 000 public healthcare workers and students should be ready in April 2012, and the work to build The National Patient Safety Indicators System is also in action.

Strategy for change

Our partners are National Supervisory Authority for Welfare and Health, Finnish Medicine Agency, The Association of Finnish Local and Regional Authorities, Finnish Patient Association, Patient Insurance Centre, The Finnish Medical Association, The Finnish Nurses Association, The Finnish Trade Union TEHY for Healthcare Workers, The Finnish Pharmacists' Association, The Finnish Association for Patient Safety, The Finnish Society for Hospital Infection Control, Medical and Healthcare Universities as well as all Health Care Units and Hospitals in Finland.

One of the most important partners is going to be Healthcare Universities, because we believe that the real change in patient safety will start from the undergraduates.

We hope that the cultural changes will start at once but our estimation is that it will take at least 10 years to reach a safe culture in health care in Finland.

Measurement of improvement

We have no national baseline data concerning adverse events. Therefore, we learn from studies done in the future to estimate the change in patient safety. Also, the cultural change needs to be studied and is partly going to be started during the national e-learning course.

Lessons learnt

So far, the implication of the programme has reached high publicity in national media and the healthcare system and partners are satisfied with the programme. The resources have found to be inadequate in THL and corrective actions have been carried out.

Message for others

A National Patient Safety Program is a four year endeavour, just started and more data and experiences will be gathered all the time.

Inger Marie Jaillet & Solveig Gram

Tuesday, 6 March 2012 / 13.15-14.00– Chair: Öystein Flesland

Innovative services for patients with complex medical disorders.

The Regional Hospital of Randers experience, as well as other hospitals, that it is difficult to provide a continuous process for patients with complex medical disorders, which require multidisciplinary treatment from both medical and surgical specializations.

Therefore, a project is initiated with the purpose of finding practical solutions for staff and organization to deal with the patients with complex medical diseases. It is also an aim of the project to motivate medical and surgical staff to converge on patients, instead of sending the patients between the different departments.

The project has therefore elements of communication, quality and development of organisations. The project also addresses the barriers, which may be linked to strong traditions within the staff and their professional identities.

Methods

Use of servicedesign developed by external partner, Observations by anthropologists, Interviews with multidisciplinary staff within several specializations, Workshops, Involvement of users and experts, Completion of measures in cooperation with experts and users.

Results

- Information campaign to staff on medical and surgical departments on organizational initiatives.
- 6 specialized nurses go across departments to complex patients.
- Quick guides to the staff, with memory-cards to various medical/surgical conditions, which are particularly relevant for patients with multiple diseases. The cards contain the name and the local number to the specialized nurse.

The project won a price for one of the best innovative design projects in Denmark. The project is actually exposed at the exhibition Challenge Society at the Danish design centre.

Danish Technological Institute has evaluated the project and the assessment of the expert panel of probable effects is:

1) Quality of service (based on professional standards):

- Positive effect, because specialized competences are exploited.
- Positive impact, because the service-design solutions support division of labour.

2) User satisfaction (patients, relatives and employees):

- Positive effect, because of greater coherence and flow for the patients.
- Positive impact on employee satisfaction due to better use of competences.

3) Organizational efficiency

- Positive effect, because a more holistic treatment may cause faster procedures.
- Positive effect, because solutions are attainable at low cost.

The staff is assessed to be more satisfied as a result of the project. The Regional hospital of Randers has appointed six specialized nurses in: COL, diabetes, oxygen, stoma, urology and wounds. The specialized nurses are pleased with the opportunity to use their special knowledge more and better. The other nurses find it satisfying to have easy access to the relevant experts.

The focusing on holistic thinking in the project has a positive effect on the organizational efficiency and the quality of service:

- Patients will get faster and more coherent treatment.
- Resources for other purposes will be released.
- Patients will have shorter and safer stay in hospital care, since they avoid being moved between different specialized departments

The implementation of the project is developed, so that it can be implemented easily and at low cost.

The project has resulted in a concept, which subsequently has been partially implemented by The Regional Hospital of Randers. The project has positive effects on the quality of service, user satisfaction and the organizational efficiency. The positive effect is primarily a result of a good and innovative idea, which subsequently has been translated into realistic solutions.

The designers were able to provide a completely different way of thinking and new methods by combining Anthropological methods and focus on

processes. This meant that the relevant players were involved in the drafting process, and therefore their needs have been identified and addressed in the solutions.

Sanne Allermann Beck, Birgit Simonsen & Yutaka Yoshinaka
Tuesday, 6 March 2012 / 13.15-14.00– Chair: Öystein Flesland

Design for patient safety in care for the premature – It's about breast milk.

This paper addresses recent lessons from a collaborative undertaking on designing for patient safety and quality improvement, namely, as to the working practices concerning breast milk for hospitalized premature babies. The backdrop of the paper is a five-month project involving hospital personnel and a group of university students specializing in design and innovation. The handling of breast milk has been implicated in a number of adverse events in the Copenhagen Capital Region, where breast milk was inadvertently switched so some infants received another mother's milk. Such incidents have potential economic as well as ethical consequences, in the light of the risk of passing infection from the donor milk onto the vulnerable premature, and needlessly placing anxiety upon the parents, etc.

A preliminary root cause analysis occasioned the initial contact to the students. This focused upon means to reorganize the working practice of the breast milk from refrigeration as the 'object of design'. While the objective of providing a better overall practice for parents and healthcare professionals in the handling, the breast milk for the premature was maintained in the ensuing collaboration, this paper discusses how the objects of design and the concerns entailed in patient safety (and designing for it) were emergent, and subject to a process of qualification (Callon et al. 2005). This involved mutual learning by those involved in the collaborative process.

Methods and materials

The collaborative approach to design for patient safety rested upon a form of knowledge elaboration and production (Binder & Brandt 2010) involving the articulation and qualifying of issues at stake. This comprised, at the same time, of the means with which to grapple with these issues through

concrete initiatives to serve toward patient safety and quality improvement. The approach encompassed a line of participatory inquiry, dialogue and co-creation through a series of workshops between the care practitioners and design engineering students, spanning problem-generation based on research and analysis, ideation, and, finally, detailed concept development. To this end, ethnographically informed research and social science-based analytical devices were engaged and mobilized to allow relevant insight of situated practices of care to be born into the design process, through means of exploration, mutual sense-making and design synthesis.

Results

The ensuing process of co-design allowed for the initial 'problem-space' to be re-opened from the initial framing of the project, to allow for a scoping of patient safety in which the intricacies of practice, organization, and technology could be framed and addressed more specifically. Practitioners, thus, came to be engaged and partake in the qualification and re-specification of the object and scope of design (Zuiderent-Jerak et al. 2009). It led to a broader treatment of patient safety issues and the possible solution-space, based on an in-depth analysis and through the synthesis of a palette of suggested solutions.

Discussion and conclusion

The paper discusses, reflects upon and concludes as to the premises and implications of the approach and process to patient safety and quality improvement that may be drawn through the project, i.e. in terms of the relevance of how patient safety is addressed and grappled with, in and through collaborative design.

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Poster Presentations

Session 6: Simulation, training and learning

Svante Lifvergren, Susanne Gustavsson & Andreas Hellström
Wednesday, 7 March 2012 / 12.40-13.15 – Chair: Patrik Nyström

Patient Safety Learning Audits: Towards organizational learning for improved safety.

Background and purpose

There is a lot of attention on patient safety issues in the healthcare sector today. We, however, suggest that there might be a problematic tension in the actual field. Healthcare organizations have to follow governmental laws and regulations and various campaigns and initiatives – a top down approach that, implicitly or explicitly, pushes regimentation. On the other hand, research in organizational learning as well as recent research in patient safety (e.g. Vincent, 2010) emphasizes the importance of locally driven adaptation when implementing new methods and techniques for safety.

From an individual perspective, learning is defined as a stable and lasting change in the internal or external behaviours, beliefs, knowledge or intellectual skills (Docherty 1996). Individual learning is a prerequisite for collective, organizational learning. Collective learning requires dialogue within the group or community in which insights, lessons, ideas and experiences are exchanged, discussed, interpreted and possibly integrated into a common understanding (Weick, 1995). This process is often referred to in the literature as joint sense-making, when all contribute on the same standing (ibid.).

We argue that the patient safety movement would benefit from integrating research on learning at individual, group and organization level. We propose that the presented model – "Patient safety learning audit" – could be an approach to accelerate the safety level of organizations.

Methods and materials

Skaraborg Hospital Group (SkaS) has developed an approach to raise the awareness of patient safety issues in the organization by a "Patient Safety Learning Audit" (PSLA). The approach is inspired by Weick and Sutcliffe´s (2001) ideas of high reliability organizations. The audit addresses three different perspectives on patient safety: A –Safety management, B –A systematic approach, and C –Attention to prioritized areas of patient safety. The PSLA has been tested at SkaS as well as in a Dutch hospital.

Results

The learning audits were analysed and outlined by the '4 I – model' (Crossan et al., 1999). Crossan's model describes how individual and collective learning can be linked together. On the individual level described as *intuition*; there was a marked difference before and after the dialogue in the way individuals described their picture of how to deal with patient safety issues. New ideas of how to improve patient safety have come up during the dialogues and the group of staff together with their manager often have welcomed these new ideas and insights and felt a collaborative responsibility of improving patient safety, which is described as *interpretation*. The *integration* of learning arose during the learning dialogues when there were suggestions from the audit team about different procedures to improve patient safety. The fourth 'I' stand for *institutionalization;* it is a long-term process to reach institutionalisation of patient safety in an organizations culture, signs of institutionalisation could be recognized in the follow up meeting.

Discussion and conclusion

After testing the PSLA, we strongly believe in integration between patient safety and organizational learning, not only as an element within patient safety but even more regarding how to integrate patient safety issues in an organization. There is often few opportunity for a dialogue between (and among) managers and staff regarding patient safety. In the PSLA, the ability to question taken-for-granted assumptions, current mental models and categorizations was extremely important.

Another important aspect with the PSLA has been that the approach not only focuses on use of specific methods and techniques but instead highlights the underlying principles and practices (Dean and Bowen, 1994)

of the local patient safety work.

Birgit Simonsen & Britt De Cordier
Wednesday, 7 March 2012 / 12.40-13.15 – Chair: Patrik Nyström

"Breakthrough departments" – the shortest way to quality

Applying a bottom-up approach and a de-centralization strategy for quality improvement initiatives lead to a fuller and faster implementation of quality initiatives.

Background and purpose

Rigshospitalet in Copenhagen, Denmark is a 1200 bed/8000 employee university hospital providing all specialty services. In Denmark, all medical care is covered through taxes. The Ministry of Health and Prevention and The National Board of Health are the supreme healthcare authorities.

Rigshospitalet has since 2002 achieved Joint Commission Accreditation 4 times, latest in March of 2011. The efforts and results of achieving accreditation have contributed to position Rigshospitalet as a hospital where quality is continuously in focus and highly prioritized.

However, the quality improvement data collected the last 10 years showed some stagnation over the past few years. Therefore, it was important to boost the motivation of the organization to ensure an ongoing commitment to quality improvement. To facilitate moving quality to the next level, we had to consider a redesign of our quality improvements efforts. To this, a new strategy for quality improvement was initiated as a project spanning one year. The foundation for the project was a strong, continuous focus and involvement in quality improvement by the leaders. The goal was to ensure that the employees on the front line would gain motivation, thus resulting in moving quality to the next level for the benefit of the patients.

Methods and materials

The strategy was a bottom-up approach. Participation in the project was voluntary and all departments were eligible. The interested departments identified one to three clinical areas to be improved, which subsequently had to be approved by the quality steering council in Rigshospitalet. The

work processes for the identified areas had to be data driven with baseline measures, milestones, goals and actual results. To ensure timeliness and effect of the processes the “Break-through departments” had to present their current results to the quality steering council 4 times during the project period. The central quality staff supported the “Break-through departments” in regards to quality improvement tools and methods.

The “Breakthrough departments” were exempted for several obligatory audits and other required quality demands during the project year.

Results

Out of a total of 71 departments, 11 were approved as “Breakthrough departments”. The areas selected for improvement were quite different, among others: Patient reported waiting times in outpatient Clinic for Growth and Reproduction, to ensure ID-wristbands on admitted children in the Pediatric Oncology ward, applying the “Personal assistant" (handheld scanner) in the medication administration in the NICU, to ensure appropriate documentation in connection with multidisciplinary oncology conferences. The “Breakthrough departments” applied different methods, tools and systems in order to achieve their targets for the identified areas of improvement. They all systematically monitored their quality data to insure progress and all worked with determination, engagement and commitment in facing the many different challenges to further the improvement. The departments did not all reach their targets, but all departments have shown good data-driven improvement during the project year.

Discussion and conclusion

There is no doubt that this method ensures a faster and fuller data-driven progress in quality improvement. Certainly more than seen when working in the traditional way where each department only had bottom-down and exogenous quality improvement demands and goals.

The “Breakthrough departments” had chosen their very own areas to improve, which were important to their patients and services. This method resulted in motivation, involvement and focus on reaching their goals as the results of their efforts were evident right there in their daily work.

Now we are moving on to version 2.0 of “Breakthrough departments”. Unfortunately, it’s not possible to exempt the “Breakthrough departments”

from the obligatory overall regional demanded audits and other required quality reporting during the next version. So right now we're facing the dilemma of the quality improvement challenge in being caught between the "top down" inflexible quality demands, and the strong inspiring "bottom up" commitment.

Peter Dieckmann, Doris Østergaard & Anne Lippert
Wednesday, 7 March 2012 / 12.40-13.15 – Chair: Patrik Nyström

Patient safety and simulation – many connections beyond simulation-based education.

Background

Simulation is spreading through the healthcare system. New modalities are used, more and more target groups are addressed. The focus so far, is on the educational use of simulation – ranging from novices to experts. Research in this sense is research about simulation, where simulation and its learning features are the research object. Simulation also spreads in a non-eductional use, being established as a research lab for safety-relevant issues. Research in this context is research using simulation, where simulation becomes the research method to investigate other research objects.

Method

The presentation will describe examples of research with simulation to optimize the safety-relevant interplay of human, technology and organisation. The overview is based on a critical review of the literature and our own work.

Results

In regard to human factors, simulation has been used to investigate the effect of fatigue in anaesthesioloigsts on their performance during simulated anaesthesias (Howard, et al., 1998). Another study looked at failures of prospective memory in simulated anaesthesias, investigating under which conditions intended actions are not executed as planned (Dieckmann, Reddersen, Wehner, & Rall, 2006). In regard to optimizing technical systems, simulation is increasingly used to study and optimize the

ergonomical features of devices, typically in usability tests (Anders, et al., 2011) but also looking at larger system issues (Scerbo, et al., 2011). On the organisational side, a recent study combined failure modes and effect analysis with simulation to investigate procedural changes in a hospital and its effect on interdisciplinary teams handling complications during deliveries (Staub-Nielsen, Dieckmann, Mitchell, Mohr, & Østergaard, in preparation). By providing the examples, the presentation will analyse the potentials of simulation to improve patient safety.

Discussion

Simulation has much to offer as a tool for the analysis AND intervention in the healthcare system. The complex interplay of human, technology and organisation in health care can be investigated under ecologically highly valid circumstances, still offering much study control. Interventions to improve the healthcare system performance via simulation can be tightly tied to those analysis elements.

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Poster Presentations

Session 7: Safety at the sharp end.

Christofer Rydenfält, Gerd Johansson, Per Odenrick, Kristina Åkerman & Per Anders Larsson

Wednesday, 7 March 2012 / 12.40-13.15 – Chair: Karina Aase

Usage of the WHO Surgical Safety Checklist in practice.

Background

Previous research shows that pre-operative checklists improve the safety attitudes among the operating theatre personnel as well as reduce the number of communication and medical errors. Previous research also indicates that the personnel's attitude towards different questions on the checklist differs between questions. Despite this, previous research says very little about how checklists, such as the WHO surgical safety checklist, are used in practice.

The purpose of this study was to determine how the WHO checklist is used in practice.

Method

24 timeout procedures from four commonly occurring surgical procedures were video recorded. The procedures were analyzed according to a predefined observation protocol based on the checklist. In order to be able to explain the nature of deviations, qualitative notes were made regarding other activities occurring in parallel with the timeout.

Results

Fulfillment varied between questions in the checklist. High rates were noted for type of operation, patient ID and antibiotics, while essential imaging, site of incision and theatre nursing team reviews were not addressed in most of the studied cases. Personal presentations were conducted in about half of the studied cases. The anesthetist nurse and the surgeon dominated the

timeout. The theatre nurse was not as active and it happened that the timeout was initiated while the theatre nurse was occupied with other tasks.

Discussion

The checklist is not always used as intended. In practice, this means that there is a gap between what is expected and what really is done to ensure patient safety. To ensure that the checklist is used as intended might actually be a bigger problem than to make certain that the correct questions are included.

We find it plausible that the questions getting the most attention are the ones perceived as the most important and to be of common interest by the team. For instance, personal presentations could be perceived as unnecessary by those who know everybody. Theatre nursing team reviews of sterility could be perceived as primarily of concern for the theatre nurse as the theatre nurse that is both reviewing and is responsible for ensuring sterility. To make the whole team involved in the timeout, it calls for the addition of questions directed towards the theatre nurse that is perceived as relevant for the other team members as well. Such questions could for instance discuss material and instruments.

Rune Ingemar Sjödahl, Olle Kilander, Kenth Johansson & Hans Rutberg

Wednesday, 7 March 2012 / 12.40-13.15 – Chair: Karina Aase

Is the safety of surgical satellite patients threatened or are other disadvantages dominating?

Introduction

Shortage of the number of beds for surgical patients may result in overcrowded wards and/or relocation of patients to other departments – satellite patients. Fear has often been expressed that patient safety may be threatened in those situations. Case reports have illustrated suboptimal management of satellite patients. In our department we have nurse coordinators who are responsible for the selection of satellite patients and a major goal is to avoid having risk patients in other wards. The aim of this study was to identify adverse events, disadvantages, but also possible

advantages when surgical patients are taken care of in satellite wards.

Material and Method

During 2010 there were 181 surgical satellite patients who were taken care of in 13 different departments. A retrospective analysis of the medical records including the Global Trigger Tool was performed. In addition patients, nurses and surgeons who had managed the patients answered various questionnaires.

Result

Time in hospital for the 181 patients amounted to a total of 556 days. Admission to the satellite ward directly from the Emergency department occurred in 69 percent and relocation from the Emergency surgical ward in 31 percent. Twenty percent of the patients were older than 80 years. Most admittances occurred in June, on Sundays, and at 2-8 pm. Most common diagnoses were bile stone disease, appendicitis, and non-specific abdominal pain. For 66 percent of the patients, the time in hospital consisted of observation, urgent/acute investigations, or non-surgical treatment. Other reasons for the stay in a satellite ward were postoperative care (27 percent), waiting time for transfer (6 percent), and miscellaneous causes (1 percent).

Adverse events reported by the personnel or detected with the Global Trigger Tool methodology occurred in 8 patients (4 percent). The most serious adverse events were two near-accidents – in one patient the dialysis was delayed, and in another patient the detection of anuria was delayed. On 8 other occasions deficient collaboration was reported. No obvious delay of the management was noticed. Among the 42 percent of the patients who answered the questionnaire, 88 percent apprehended the treatment as good in the satellite ward, and 96 percent answered that the pain relief was good or at least acceptable. Five patients reported that they felt insecure and disliked being moved between different wards. The nursing staff was often not aware of who was the responsible surgeon, and was unsatisfied with the ward rounds due to substantial delays, bad communication, and indistinct prescriptions. Most positive for the nurses was increased knowledge about abdominal disorders. The surgeons reported that they had to spend more than one hour extra every day in taking care of these patients.

Conclusions

An acceptable patient safety can be maintained for surgical satellite patients if special nurse coordinators prevent high-risk patients from being cared for in other departments. There are, however, serious drawbacks with satellite patients that impair the working environment.

Rune Ingemar Sjödahl & Elin Canslätt
Wednesday, 7 March 2012 / 12.40-13.15 – Chair: Karina Aase

Adverse events and waiting times for patients with colon cancer – a pilot study.

Introduction

In spite of comparatively good medical results in cancer patients, adverse events, fragmentation, discontinuity and lack of focus on the patient are not uncommon in Sweden. The aim of this pilot study was to investigate how frequent these are in patients with colon cancer.

Material and Methods

Five medical records were randomly selected from 7 hospitals in the Southeast region of Sweden. The patients (16 men, 19 women, median age 71 years) were operated and managed by oncologist in 2010. Nine patients (26 percent) were admitted as emergency cases. The Global Trigger Tool (GTT) was used to study adverse effects in the 35 patients. To measure the waiting time in different parts of the chain of management, a Patient Perspective Protocol (PPP) was filled in.

Result

No adverse events occurred in 19 patients. In 13 patients an adverse event prolonged the hospital stay, and in 3 patients an adverse event occurred that required some kind of measure. PPP revealed that 69 percent of the patients were discussed on a multidisciplinary conference with a substantial difference between various hospitals. In 43 percent, relatives were present when the patient was informed about the diagnosis and the plan of management.

Waiting times for patients admitted electively (median value and range in

days):

Suspicion of tumour until diagnosis: 21 (3-62)

Diagnosis until information of diagnosis: 4 (1-58)

Information of diagnosis until decision on therapy: 8 (1-25)

Decision on therapy until start of therapy: 14 (1-49)

Time between operation and oncological therapy: 47 (19-87)

Number of doctors involved (median value and range):

Suspicion of tumour until information of diagnosis: 2 (1-4)

Information of diagnosis to latest note in the medical record: 7 (3-27)

Seventeen of the 26 patients who had been admitted electively had a total waiting time that exceeded 30 days (median value 70 days, range 33-145)

Conclusion

Some kind of adverse event that prolonged the hospital stay or required various measures was seen in 46 percent. The median value for the total waiting time was 46 days which is slightly more than two weeks longer than the goal. The waiting time was longer than 30 days in 65 percent of the patients. Complexity of the management in advanced cancer disease means that the patients meet many doctors, which in turn imposes special demands on security, continuity and co-operation.

Poster Presentations

Session 8: National and global strategies and systems

Ånen Ringard, Anne Karin Lindal, Marie Brudvik, Marianne Tinnå & Øystein Flesland

Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Anna Dahlgren

Implementation of a new national reporting system for adverse events in Norwegian hospitals.

Background

In Norway a national reporting system of serious adverse events has been in place since 1994. The National reporting central, which has been operated by the Norwegian Board of Health (NBH) since the start, received reports of 2059 events in 2009. Over the past few years the NBH- reporting system has faced criticism. The main problem according to the critics is the fact that NBH, in addition to receiving reports of adverse events, also is the responsible national body for issuing individual reactions (warnings, revocation of authorization etc.) toward healthcare personnel.

In the fall of 2010, the Ministry of Health (MoH) put forward a proposal for amending the system. The proposal was followed up by the Parliament in June 2011, which decided to move the system from the Board of Health to the Norwegian Knowledge Center for the health services (NOKC). NOKC is the national HTA, Cochrane and quality improvement centre. The new system will start operating on July 1, 2012. NOKC has now launched an implementation project in order to create a new national reporting system. The figure illustrates the conceptual model of the project:

A key feature is the change of focus from individual errors and sanctions to systemic learning from adverse events.

Aim

To analyze the implementation process of the new national reporting system in Norway, focusing in particular on the relationship between knowledge, learning, and patient safety.

Methods

The study will use different sources of information: i) research on successful systems for reporting adverse events; ii) expert knowledge on the topic; iii) and knowledge gathered among users (i.e. healthcare personnel).

Results

Previous research has identified several ways reporting can lead to improved safety: i) by gaining knowledge about new hazards (e.g. for medical devices); ii) by the dissemination of successful experiences from individual hospitals on new methods to prevent errors; iii) by doing central analyses of many reports in order to reveal trends and hazards that require special attention; iv) the central analyses can then be used as the basis for recommendations of "best practices" for all to follow. The project will run several pilot studies and tests from now and until it is officially launched, focusing on bridging the gap between reporting of adverse events and patient safety (i.e. on accumulation of knowledge and organizational learning). Results from systematic reviews, interviews of experts and health personnel and pilot testing of our new reporting system will be presented.

Concluding remarks

When the Institute of Medicine (IOM) issued the report *To Err is Human* in 2000, one of the most controversial topics was the recommendation to expand mandatory reporting of adverse events and medical errors. The reporting system currently being designed and implemented aims at improving safety for Norwegian patients through accumulation of knowledge and the subsequent transformation of knowledge into learning.

Henrik Alm, Anna Christensson & Jenny Rehnman

Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Anna Dahlgren

Mapping and evaluation of global models for patient safety.

Background and purpose

Improving the safety of care is essential for patients as well as hospital staff and healthcare providers. Recent years witnessed a massive increase in safety initiatives by governments and healthcare providers worldwide to enhance patient safety and to minimize preventable medical errors. This has called for methods to measure, evaluate and improve the safety of care in a variety of settings and at different levels. Although there is a plethora of methods available, many lack scientific evidence as to their effects on patient safety. A clear majority focus on providing guidance at the practitioners' level, considerably fewer aim to evaluate healthcare at an organizational level, using scientifically sound and validated methods. However, with the proliferation of local and regional efforts for patient safety and the necessity to provide equal and safe healthcare across a healthcare system, it becomes increasingly important to evaluate the effect at a systemic level.

In 2011, the Swedish government commissioned the National Board of Health and Welfare to create a national strategy for patient safety. An essential part of that work is to map and evaluate the evidence base for current models for patient safety and to assess the effects they have on the safety of care. More specifically we aim to:

- Map methods for patient safety via research articles in online publication databases
- Evaluate the evidence base for the models used, and the effects they have on patient safety

We will focus on general methods for discovery and analysis of risk in a system: if and how they have been implemented in healthcare settings, what types of changes they have brought about, and their effects on patient safety. Particular impetus will be put on whether the evaluated methods were or can be implemented in the Swedish healthcare setting.

The work presented here summarizes the preliminary findings of the studies and provides a discussion about future research efforts in the field.

Solvejg Kristensen & Britt Wendelboe
Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Anna Dahlgren

Joint Action: European Union Network for Patient Safety and Quality of Care (PaSQ).

Background and Purpose

High quality healthcare can improve an individual's health outcome on the one hand, and can contribute, in the longer term, to a cost-effective use of resources on the other hand. Therefore quality of health care is increasingly of interest at the EU level. The project: "European Union Network for Patient Safety and Quality of Care" (PaSQ) aims to strengthen cooperation between project partners on issues related to quality of health care and patient safety. The goal is to contribute to the provision of safe and high quality healthcare for EU citizens. PaSQ aims to identify and exchange experiences on institutional level safe clinical practices and system level policies and strategies in quality of care. Also, PaSQ aims to implement and monitor some good practices in accordance with the Council Recommendations on patient safety, e.g. in infection control.

PaSQ is a three year joint action project starting in 2012. It is co-funded and supported by the European Commission under the EU Health Programme 2008-13.

Method and material

In total 52 partners; EU Member States (MS), international organisations and EU stakeholders participate. The project is organised in four horizontal and three vertical work-packages (WP) to fulfil specific sub-purposes and contracted deliverables. The WP-leaders form the project executive board responsible for operational issues, where as a steering committee made up of all associated partners form the project strategic and decision making body.

PaSQ will provide a platform for collaboration and networking between all participating partners. Different levels of involvement and methods will be proposed according to the specific purposes:

- supervisory involvement to facilitate active participation of MS in the project and promote its achievements at the EU and national levels

- national coordination of sub-network at MS level
- selection of institutional level safe clinical practices and system level policies and strategies in quality of care with a preference for those that are relevant for most MS and their respective healthcare systems
- exchange of information on safe clinical practices and system level practicies in quality of care. This will happen via the web and on site exchange mechanisms, where experts share their experiences and address implementation and context issues, sustainability etc. Sharing solutions to ensure patient involvement is a special topic to be addressed.
- implementation and monitoring of patient safety initiatives
- dissemination via conferences and or integration of PaSQ materials in national campaigns
- impact assessment using PaSQ indicators

Results to be achieved

The main outcome of PaSQ will be capacity building in patient safety and quality of care across EU. By sharing experiences and solutions in PS and related aspects of quality of care, MS, regions and healthcare facilities can benefit from the knowledge and experience of others. The voluntary exchange of experiences could lead to a peer review system for quality management systems in health care.

The consolidation of a permanent network for patient safety and quality in health care in Europe will add value at the EU as well as at the partner's level. The commitment expressed by the 52 partners to build a permanent collaborative network will assure long-term dynamic MS and stakeholders engagement in the PaSQ network together with the Commission.

Inger Margrete Siemsen, Lene Funck Petersen, Doris Østergaard & Henning Boje Andersen

Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Anna Dahlgren

Analysis of types and causes of handover failures based on root cause analyses of four Danish Regions.

Background

Root cause analysis [RCA] is the most widely used technique for investigating the underlying causes of adverse events in healthcare. Doubts have been raised about the effectiveness and efficiency of RCA, and there is limited evidence for the hoped-for gains in patient safety of RCA efforts. RCAs are applied to any type of adverse events that has serious consequences for the patient and that appears to contain learning potential. Included in such events are handover situations which are recognized as having a critical role for patient safety. A healthcare handover is any situation during which information and responsibility for the diagnosis, treatment and care of a patient is transferred from one healthcare professional to another. It should be expected that RCA reports will identify more causes than reports delivered by staff themselves and often delivered after a busy day.

The goal of the present study was to analyse RCA reports that describe handover failures (along with possibly other types of failures) in order:

(a) to identify the types of failures and underlying causes involved in handover events based on the findings of a wide sample of RCA reports; and

(b) to compare the prevalence and distribution of failure types and causes of this sample with findings from handover adverse events garnered from interviews with clinical staff and the Danish Patient Safety Database.

Methods and materials

All RCA reports from 4 out of the 5 Danish regions from 2007 were collected and analysed (N=79). The frame of analysis was a taxonomy of handover failures developed by the authors that directs analysts to identify the type of failure and the underlying individual and organizational causes of failures (each event may have one or several causes). RCA reports were analyzed independently by two of the authors, excluding events that either did not involve any handover or were not described clearly enough to allow for classification.

Results

The interrater reliability as measured by Kappa was 0.70. Of the 79 RCA reports, 43 (54%) contained one or more handover failure events (in total

78 events). The average number of individual causes identified in the 79 events was 1.54 (compared to 0.75 causes for events (n=232) elicited through interviews (n=47; previous study, Siemsen et al.); and to 1.05 causes for events (n=200) randomly sampled from the Danish Patient Safety Database (n=210; previous study, Siemsen et al.)

Among the causes of handover events identified in the RCA sample were, in the order of prevalence:

- Insufficient competence: 47% (1.44% greater odds of finding insufficient competence identified via RCA than for DPSD events and 1.78% greater than for interview-elicited events);
- Busyness/interruptions: 37% (2.01% greater odds than for DPSD events and 2.21% greater than for interview-elicited events);
- Inadequate procedures: 36% (3.42% greater odds than for DPSD events and 7.57% greater than for interview-elicited events);
- Infrastructure, records and IT: 15% (0.54% smaller odds than for DPSD events and 0.89 smaller than for interview-elicited events);
- Crowding: 14% (3.13% greater odds than for DPSD events and 4.67% greater than for interview-elicited events).

The relative distribution of causes found in RCA reports was roughly comparable with the distribution found in DPSD and interview-elicited events.

Discussion and conclusion

The finding that RCA investigations tend to capture more causes behind adverse events than are revealed in standard incident reporting (DPSD reports) and staff interviews is not surprising. But it is noteworthy that there is much greater likelihood that an RCA will uncover inadequate procedures. Finally, we discuss the recommendation by Pham et al. that RCAs should be accompanied by a scheme that encourages and captures measurements of the effectiveness of interventions initiated on the basis of RCAs.

Poster Presentations

Session 9: Transitional care (care crossing units and sectors).

Marianne Storm, Dagrunn Nåden Dyrstad & Karina Aase
Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Mirjam Ekstedt

A review of patient-oriented care models as applied in transitional care of the elderly.

In the healthcare quality literature, patient experiences are recognized as a key area to attend to. Patient experiences can refer both to the quality of the patient's experience as well as the clinical result, and can be measured in terms of prompt access, good relationships with service providers and efficient administration of health care services. Patient-centeredness, shared-decision making and patient participation are three models of care that incorporate user involvement and the patients' experiences with care. Even though these care models have proven important to healthcare quality, limited knowledge exists as to their adaption to care for the elderly, and more specifically to the transitional care that most elderly patients are in need of. By transitional care we mean the assurance of coordination and continuity of health care as patients transfer between different levels of care within or between locations.

The purpose of the paper is to give an overview of patient-oriented care models as applied in transitional care of the elderly, and to discuss their implementation in the healthcare system. The methodology used in the paper is a combination of document analysis of Norwegian policy documents and a review of the literature searching the electronic databases PubMed, Medline, Cinahl, Academic Search Elite and the Cochran Database of Systematic Reviews. The following search terms were used: "patient-centeredness", "shared-decision making", "patient involvement", "patient participation", "patient experience", all concepts in combination with "elderly" AND/OR "health care quality" AND/OR "transitional care", "handovers", "patient transfer" AND/OR "discharge planning" AND/OR

"admission".

Results show that policy documents to a large extent emphasize patients' experiences and user involvement, cohesive services and continuity of care to ensure quality in the transitional care of the elderly. Family involvement is one of the most significant factors in successful discharge planning for elderly patients, and education of elderly shows promising results especially in relation to quality improvement of transitional care.

This paper has documented that the role of elderly patients in transitional care and in activities to improve healthcare quality is highlighted as important in Norwegian policy documents, but has not been well explored in the research literature. The paper identifies key areas to address to ensure patient-oriented care when elderly patients transfer between different levels of the healthcare system. We furthermore suggest that these areas should be taken into consideration when implementing tools to support patient-oriented care and improve the quality of transitional care of the elderly.

Rikke Gut & Marie Fuglsang
Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Mirjam Ekstedt

The patient perspective in multisectoral cooperation.

Background and purpose

In 2010, hospitals in the Capital Region of Denmark were faced with the challenge of implementing two multidisciplinary and multisectoral Disease Management Programs for type 2 diabetes and chronic obstructive lung disease (COLD), respectively.

To support the implementation of the two programs, the management at Amager Hospital decided to involve patients using new methods for patient involvement. First step in the implementation process was to invite staff members from different sectors to join a workshop where focus was on the whole patient pathway and on the patients' experiences of co-ordination of care – both interdisciplinary and across sectors.

The purpose of the workshop is to:

- Give staff a joint overview of the present multisectoral patient pathways as seen from the perspective of the type 2 diabetes patients and COLD patients.
- Identify present and potential challenges for good patient pathways.
- Initiate discussions on how various challenges can be addressed.
- Give staff members from different sectors better knowledge of the parts that the other sectors play in relation to the patient pathways for type-2 diabetes and COLD patients.
- Spread light on how efforts provided by each sector best can support the efforts provided by the other participating sectors.

Methods and materials

Using patient cases as workshop foundation

Four patient case stories were developed on the basis of 10 in-depth interviews with patients diagnosed COLD or type-2 diabetes. The case stories were fictional – but based on true patient experiences.

The patients interviewed varied in age (41-83 years), sex (5 women / 5 men), diagnosis time (newly diagnosed to more than 20 years since diagnose) and disease severity. Eight out of ten had more than one chronic diagnoses. Four patients are receivers of local home care.

The cases were verified by the Lung Association and the Diabetes Association.

Cross-sectoral Workshop

The workshop was attended by 33 staff members from various sectors. There was staff from Amager Hospital, staff from municipalities and general practitioners. But also communication officers and researchers from the Copenhagen Business School, Center for Health Management participated.

The workshop process:

1. The patient case stories were presented to the participants

2. The participants identified the different steps in the patient's pathway

3. The participants expanded each steps with information that illustrated:

- Staff members who had a part in the patient's pathway (at the

hospital, in general practice, specialists, municipalities, etc.)
- Documents produced (references, journals, etc.)
- The patient's experiences and thoughts

4. The participants identified potential challenges to the good patient pathways

5. The four groups presented the identified challenges in the plenum, and suggested what could be done to meet the challenges

6. A panel with the Chairman of the Coordinating Committee commented the presentations and described how to progress with the challenges.

Results

As a result of the workshops a number of challenges were identified. A selection can be seen below:

CHALLENGES - TYPE-2 DIABETES

- Failure in detection
- Too long at the GP
- The patient is his/her own coordinator
- Compliance
- Lack of coordination between sectors
- Health professionals lack of knowledge of each others' offers
- Lack of coordination when handling concurrent illness'
- Six different journal systems do not correspond
- The patient is not aware of his/her own illness
- Late rehabilitation

Discussion and conclusion

Having started with patient interviews created a non-repudiation of the issues raised. The focus was on the patients – not the sectors. The staff got a clearer picture of the patient pathways and recognized the potential for improvement.

Peter Qvist & Birthe Lindegaard
Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Mirjam Ekstedt

Analysis of patient experiences of continuity of care.

Background and purpose

The Danish national patient satisfaction survey 2009 included possibilities for patients to add positive and/or negative written comments. In the region of Southern Denmark, we received 19,323 comments of which 9,007 were critical comments. In this study we assessed the frequency of comments regarding continuity of care, including interobserver variation in terms of categorising comments into different types of continuity. The overall purpose was to determine important aspects of continuity from the patient point of view in order to prioritise appropriate improvement initiatives.

Methods and materials

By systematic random selection, two samples of each 100 critical comments were drawn from in- and out-patients, respectively. The comments were assessed by four independent observers – two senior registrars and two nurse leaders. A short guide for categorization was formulated after pilot testing. Observers were asked to place the comments into one of four categories: Relational/interpersonal continuity, information continuity, organizational continuity or no relation to continuity. Observer variation was assessed using Kappa statistics.

Results

On average 38% of comments from in-patients and 47% of comments from out-patients were categorized as comments related to continuity of care by the four observers. For both groups the majority of these (on average 7 out of 10) were classified as problems related to organizational continuity. Kappa statistics were performed for the six possible calculations between the four observers. In three cases, the kappa values showed slight agreement in the 0.2-0.4 range. The remaining three kappa values were in the 0.4-0.6 range corresponding to moderate interobserver agreement.

Discussion and conclusion

A precise analysis including categorization of patient comments into subgroups of continuity seems to be difficult. However, this study confirms

that continuity of care is still a point of concern for many patients. For both in- and out-patients, the observers agreed that organizational continuity is by far the most important issue from the patient point of view. We conclude that solving problems of continuity requires more focus on care planning, inter-professional cooperation and logistics as compared to solutions involving case managers or other efforts to improve relational continuity.

Peter Qvist & Birthe Lindegaard

Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Mirjam Ekstedt

Improving care for chronically ill patients by standardized e-communication between hospital and local communities.

Background and purpose

Traditionally, the handover of patients needing post-discharge follow up by the local community has been planned at the time of discharge. Improvement of discharge planning and discharge follow up might be obtained by enhancing e-communication between sectors during the patients hospital stay. The purpose of this project was to evaluate the effect of the implementation of standards for e-communication between primary and secondary healthcare sector for hospitalized chronically ill patients.

Methods and materials

In 2009, local communities and hospitals in the region of South Denmark agreed on standards for content and timeliness for information exchange regarding:

- Basic patient-related data
- Diagnosis and medication
- Physical, mental and social status
- Need for personal aids
- Nutrition and housing situation

One year after implementation, the impact of the initiative was evaluated in terms of adherence to standards. After pilot testing of different cross-sectorial audit designs, an explicit audit model was chosen as the most cost-effective evaluation method.

Five hospital departments and five communities were included in the study.

Communities and departments were chosen in pairs with a close geographical relation. The content and timeliness of e-communication for 100 randomly selected patients (20 per hospital/community unit) was registered in a pilot tested questionnaire by the recipient of the information. Results were analysed and then presented by the regional Centre for Quality during subsequent audit meetings held in each of the five settings.

Results

Basic patient-related data, provisional diagnose and medication list was present in most cases. The other above mentioned items were often either insufficiently described or missing. The audit meetings revealed that the involved professionals struggled with identical problems across the region. Need for improvement was both related to e-technology and failures in clinical documentation of information relevant to the recipient. In addition, minor improvements in the registration forms were suggested. The audit meetings – carried out with representatives from both sectors – were considered by the participants as an excellent opportunity for sectors to discuss the possibilities to meet the counterparts need for structured information.

Discussion and conclusion

The possibility for rapid and timely communication between healthcare sectors has increased markedly with the advent of e-communication. This audit-based evaluation suggests that there is still room for improvement in order to make use of this opportunity to improve integrated care across sectors. Future efforts should focus on both IT-technology adjustments, improvement of clinical documentation and cost-effective audit designs.

Lene Funck Petersen, Marlene Dyrløv Madsen, Lene Spanager, Benedicte Schou, Henning Boje Andersen & Doris Østergaard

Wednesday, 7 March 2012 / 13.15–13.55 – Chair: Mirjam Ekstedt

The development and test of a generic concept to improve handover.

Background and purpose

When the responsibility for a patient is transferred from one person or

department to another there is a risk for the patient. Several reviews have addressed the complexity of the situation and emphasised the need for concepts to improve the communication, organisation and culture around this situation. Previously we have conducted interviews with clinicians about the factors that influence patient handovers, analysed selected adverse event reports from a National database and root cause analyses from four out of five regions in DK. Based on these data and a comprehensive literature review a generic concept for how to conduct change processes in the organisation has been developed. This consists of 1) a short analysis phase involving the users (both leadership and front line staff), 2) a development phase where the users get a deeper understanding of differences in perspectives and culture, the necessary tools are developed, and 3) an intervention phase where the tools are introduced and anchoring agents are education in training the frontline staff.

The handover of the patient from the recovery room to the ward consists of 4 steps: A telephonic transfer of information about the patient between the nurse in the recovery room and the health profession in the ward taking over the responsibility for the patient. Secondly, a written report consisting of the written report from the recovery room, the physical transportation of the patient by the orderly and the arrival of the patient in the ward.

The objective of this study was to conduct a analyse the handover of patients from the recovery room to the orthopedic wards in an large university hospital and based on these analyses to develop a structured communication tool as well as implement and evaluate the staffs satisfaction with the generic concept to improve this hand over situation.

Methods and material

A development team consisting of health professions from the recovery room and the 4 orthopedic wards was appointed by the heads of departments in order to commit leaders and staff members to work with the development of the concrete intervention for this hand over situation. The process was facilitated by person from the simulation centre. The teams described in details the hand over process (benefit, drawback and barriers for patient safety). The facilitators conducted observations in the departments. We developed a questionnaire to evaluate staff satisfaction with the intervention. The anchoring agents were trained.

Results

One of the key words was staff expectations. It became clear, that sender and receiver needs differed considerably. A structured communication tool was developed addressing the specific needs of both user groups. In 3 of the 4 wards the implementation was successful and the structured tool was used in between 50-100% of the hand-overs. Futher they found the handover process now was safer. The use of the tool facilitated the hand-over process – making it faster and creating opportunities for asking questions. The staff expressed a better understanding of each others tasks and improved collaboration between the two departments after the intervention.

Discussion and conclusion

A structured communication tool was developed and introduced as part of an intervention based on a generic concept for improving hand over. The users´ satisfaction with this intervention was high.

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