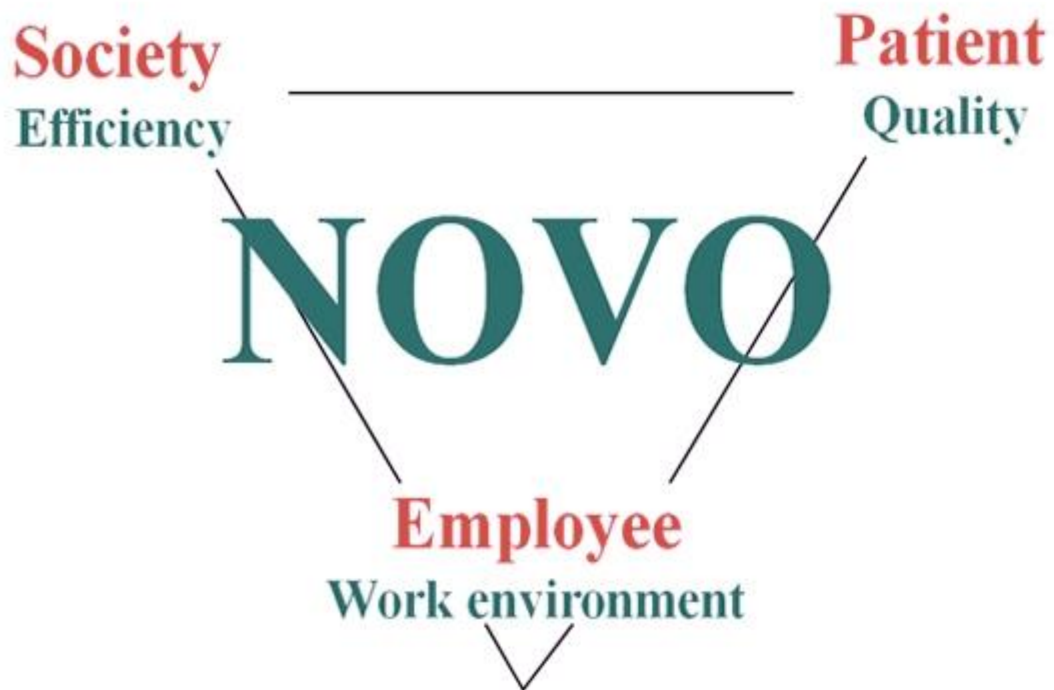
6th NOVO Symposium



Stockholm, 15-16 November 2012

Karolinska Institutet

KTH Teknik och hälsa

Stockholms universitet

Sustainable Health Care:
Continuous Improvement of Processes and Systems

The vision of the 6th NOVO symposium is “a Nordic Model for sustainable systems in the health care sector”. The specific niche of the Symposium is the elaboration of the characteristics surrounding the Nordic Model.

The focal point of this year is continuous improvement of processes and systems in health care. At present time, Nordic countries need to invest in improvement but at the same time cut costs. While the health care systems must become more efficient, this cannot be done at the expense of physical and psychosocial work environment of the health care professionals or the quality of care or patient safety. Improvement, ideally, should take all these aspects into account. Hence, the focus this year includes studies of design, implementation and effects of tools for continuous improvement, processes of work and patient flow as well as managerial systems for improvement. The work of managers and employees and their sustainable work environment are also of interest.

We have organized the symposium in five tracks

Tools for continuous improvement
Sustainable processes
Sustainable systems
Sustainable management and leadership
Sustainable work

We hope that you will find the 6th NOVO symposium in Stockholm of value and of interest!
Most Welcome!

The local committee
David Bergman, KI LIME/MMC
Lotta Dellve, KTH Ergonomics
Emma Granström, KI LIME/MMC
Henna Hasson, KI LIME/MMC
Pernilla Lindskog, KTH Ergonomics
Andrea Eriksson, KTH Ergonomics
Ulrica von Thiele Schwarz, KI LIME/MMC/SU Psychology

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PREFACE

Welcome to Stockholm and the 6th NOVO-symposium!

The annual NOVO-symposium is a core activity of the NOVO-network which brings together researchers and practitioners to create a forum for presenting and discussing new insights in Nordic health care systems.

This years' theme of the NOVO-symposium is "Sustainable Health Care: Continuous Improvement of Processes and Systems". The theme is inspired by the increasing economic pressures of our health care systems which have led to increasing use of process optimization tools and concepts such as lean-management and productive ward.

The NOVO-network started in 2007 and was for the first three years funded by the Nordic Counsel of Ministers. The vision of the NOVO-network has always been to create a "Nordic Model for sustainable systems" in health care. In this context sustainability is very broad and is illustrated by the elements of the NOVO-triangle: Efficiency, Quality and Work Environment.

The NOVO-network also tries to promote and facilitate joint Nordic research projects and multicenter studies. So far the Nordic Counsel of Ministers has granted one such study, i.e. a study named: "A Nordic work environment complement to Value Stream Mapping (VSM) for sustainable patient flows at hospitals – A NOVO Multicenter study", a collaborative study between Denmark, Sweden and Iceland.

It is our hope that the NOVO-symposium continues to be an opportunity for researchers to expand their network and inspire new Nordic projects – there is much to learn from looking at each other's health care systems. This symposium has the pleasure of attracting many interesting abstracts of which we have had the privilege of selecting 52 for presentation. The NOVO-symposium is a place for discussion, interaction, thought and healthy curiosity. Each one of us has interesting ideas, perspectives and opinions that should be shared. We hope you will use the NOVO-symposium as one such opportunity!

On behalf of the NOVO-steering group and the Local committee

Kasper Edwards, Chair   Sigrún Gunnarsdóttir, co-chair

NOVO STEERING GROUP

Denmark:	Kasper Edwards, chair
	Jörgen Winkel
Finland:	Marjukka Laine
	Timo Sinervo
Norway:	Endre Sjövold
Iceland:	Helga Bragadottir
	Sigrun Gunnarsdottir, co-chair
	Kristinn Tómasson
Sweden:	Gunnar Ahlborg
	Lotta Dellve

LOCAL COMMITTEE

The conference has been organized in collaboration between Karolinska Institutet, KTH-Royal School of Technology and Stockholm University, by the following persons:

David Bergman, Medical Management Centre, Karolinska Institutet

Lotta Dellve, School of Technology and Health, KTH Royal Institute of Technology, University of Borås

Andrea Eriksson, School of Technology and Health, KTH Royal Institute of Technology

Emma Granström, Medical Management Centre, Karolinska Institutet

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Ulrika von Thiele Schwarz, Medical Management Centre, Karolinska Institutet and Dept of Psychology, Stockholm University

Saman Amir, Dept of Learning, Informatics, Management and Ethics, Karolinska Institutet

SCIENTIFIC REVIEW

Each abstract was reviewed by 2-3 reviewers. We gratefully acknowledge contributions from the following scientific reviewers:

Gunnar Ahlborg, assoc prof	Inst of Stress Medicine, Västra götalandregionen, Sweden
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Susanna Bihari Axelsson, assoc prof	Nordic School of Public Health, Sweden
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Jörgen Winkel, professor	DTU - Danmarks Tekniske Universitet, Denmark
Bengt Åhgren, professor	Nordic School of Public Health, Sweden

KEYNOTE SPEAKER

MATS BROMMELS

Dr. Brommels is Professor of Medical Management, Director of the Medical Management Centre and Chair, Department of Learning, Informatics, Management and Ethics at Karolinska Institutet, Stockholm, Sweden.

Professor Brommels is a specialist in general internal medicine and has a qualification in medical administration awarded by the National Board of Health to Finnish medical specialists. He has been working as a clinician and as medical administrator in Finland. He was previously professor of health services management at the Nordic School of Public Health, Gothenburg, Sweden and the University of Helsinki, Finland. He served on the Board of the European Health Management Association in 1989-1994, being President in 1991-93. Since 1998 he is the Chair of Samfundet Folkhälsan, a 17,000 member voluntary organisation engaged in health promotion which also runs a large research centre. Between 2000 and 2009 he was Board Chair of the Finnish Institute of Occupational Health.

His research has covered policy analysis in the field of public health services and international comparative studies of public health systems; health care utilisation studies; and evaluation of medical technologies and professional practice patterns, health services management and quality improvement.

KEYNOTE SPEAKER

RICHARD COOK

Richard I. Cook, MD, Professor & Chairman, Department of Patient Safety, School of Technology and Health, Royal Institute of Technology, Stockholm, Sweden

GAPS IN THE CONTINUITY OF CARE AND PROGRESS ON PATIENT SAFETY

Gaps in continuity are as a major threat to the quality of medical care. There at least three reasons that gaps now dominate the medical care landscape:

1) Chronic conditions are common.
2) Diagnostic and treatment complexity has increased.
3) Healthcare system payers have incentivized component care.

The knowledge and technology revolutions of the 20th channeled the organization of medicine into islands of competence, i.e. settings or places devoted to a single technology or corresponding to a dedicated mode of payment. Despite claims that the activities there are 'patient centered', the activity and attention that take place there are centered on the island itself. But medical *care* is more than a series of treatments. To achieve care, patients find themselves forced to paddle from one island to another.

What are the consequences of an island-centered approach to medical care? Can the gaps that arise because of this approach be reduced or eliminated? How do those who work on the islands try to compensate for these gaps? What can be done to make them more successful? Finally, why is it that the commitment to patient centered care has produced a 'system' devoted entirely to island centered treatments? The presentation will suggest some ways to discover the answers to these questions.

Reference: Cook RI, Woods DD, and Render M (2000). Gaps in the continuity of care and progress on patient safety. *BMJ* 18: 791-4.

HealthNavigator - Sponsor of the 6th NOVO Sympostium

Improving care for COPD patients with frequent care episodes

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Introduction
Disease management is a validated method to support risk groups in health care. The objective of this study is to determine whether a nurse-managed telephone-based disease-management intervention can reduce healthcare utilization and improve self-assessed health status for COPD patients with frequent care episodes.

Material and methods
We carried out a Zelen-design randomized controlled trial among COPD patients who were identified as having high preventable risk for future care need. The patients were identified at four university hospitals (five clinics) in Stockholm, Sweden. Patients included in the study (n= 922) were randomized to either receive the nurse managed intervention or no intervention. Patients who declined to participate or could not be reached were also followed for the study outcome.

Results
After 3 to 13 months (study still ongoing), the telephone-based disease-management intervention reduced the number of days patients were admitted to hospitals (-32%) as well as the total healthcare costs for hospital admissions (-31%). Patient self-assessed health status increased slightly for patients who received the disease-management intervention.

Conclusions
Our results indicate that the nurse-managed telephone-based disease-management intervention represents a possible strategy to improve care for COPD patients with frequent care episodes as well as decrease admission days and healthcare costs.

Agenda and timetable

Date: **15th November**
Venue: **Karolinska Institutet, Berzelius väg 3, Solna Campus (Skrivsalen)**

09.00-10.00 **Registration and coffee**

10.00 **Welcome:** Local committee/David Bergman. NOVO-network/Kasper Edwards

10.10 **Keynote speaker Professor Mats Brommels, MMC/KI:** "People and places: Success and sustainability of healthcare management innovations"

10.40 **SUSTAINABLE MANAGEMENT AND LEADERSHIP**
Moderator: Endre Sjövold

Nordgren *""Managers are coming and going" - Complex conditions of management and leadership in conjunction with university hospital mergers"*
Lornudd, et al *" Healthcare Leadership Behavior Profiles and Work Performance Satisfaction"*
Rafnsdóttir, et al *"Servant leadership in nursing at Akureyri hospital. Job satisfaction – work-related factors – quality of care"*
Wilmar, et al*"Managers approaches towards media during organizational development processes"*
Grill, et al *"Health care managers learning through observing subordinates in a dialogue intervention"*
Bergman *"The effect of dialogue groups on physicians' work environment – a matter of gender?"*

12.10 **Lunch**

13.10 **SUSTAINABLE SYSTEMS**
Moderator: Gunnar Ahlborg

Danielsson and Enblom, et al *"Improving care for COPD patients with frequent care episodes"*
Strehlenert, et al *"Outcomes and implementation of a national initiative to improve quality of care for older people"*
Hansson, et al *"A balanced budget with side effects – a case study of implementation of a hospital cost savings programme in Sweden"*
Thor *"A model to guide and assess the application of improvement knowledge in healthcare organizations"*
Johansson, et al *"Light and sound design in the intensive care patient room – an intervention study"*
Olausson, et al *"Patient safety in relation to the design of the patient rooms in Intensive Care Units – Staff's lived experiences of their working environment in high technological settings"*

14.30 **POSTER BLITZ SESSION**
Moderator: Ulrika von Thiele Schwarz and Kasper Edwards

von Thiele Schwarz, et al *"The LeanHealth project: Merging occupational health, safety and health promotion with lean: an integrated systems approach"*
Lindskog, et al *"Sustainable Lean in psychiatric healthcare organizations"*
Sinervo, et al *"Collaborative innovation process and its antecedents in social and health care"*
Murtola, et al *"Information used by intensive care unit charge nurses in care coordination"*
Sormunen, et al "*Critical factors in opening pharmaceutical packages: a usability study among health care workers, women with rheumatoid arthritis and elderly women"*
Fereshtehnejad, et al *"Leading integrative healthcare: The case of treating Parkinson's disease"*
Nörby, et al *"Drugs and Birth defects – evaluating a knowledge base used by the experienced specialist as well as the worried patient"*

Karltun, et al *“Developing a sustainable infection control program in health care”*
Bäckman, et al *“The patient’s way through the pediatric emergency department – in detail. A healthcare logistic study in the ED of a Swedish tertiary level university hospital”*
Mosson, et al *“Evidence-based practice in social care – what kind of support does first-line managers need?”*
Hasson et al, *“What is considered evidence? A comparison of municipality and county council views on evidence”*
Berthelsen, et al *” Continuous improvement of odontological educations – the outline of an alumni survey”*
Zary, et al *”Speaking the Same Language: Technology Standards to Improve Healthcare Education”*
Drotz et al *“Lean in healthcare from the employee perspective”*
Björn, et al *“Experience of work in an operating department – a case study”*

15.00 **Poster session and Coffee**

15.30 **SUSTAINABLE WORK, I**
Moderator: Marjukka Laine

Lindegård, et al *“The influence of perceived stress and musculoskeletal pain on work performance and work ability in Swedish health care workers”*
Augustsson, et al *“The LeanHealth project: Analysis of implementation when merging occupational health, safety and health promotion with Lean”*
Ulhassan, et al *”Lean and Teamwork: A Longitudinal study of impact of Lean Implementation on Teamwork in a Hospital Setting”*
Lykke Lundström, et al *”Social Capital and Relational Coordination in General Practice”*
Dellve and Williamsson, et al *“Health care professionals’ motivation, engagement and collaboration in organizational developments of processes of care”*
Bergström, et al *”Emotion work in dentistry - A descriptive and theoretical overview”*

17.00 **Finish day 1**

18.30 **Dinner at Moderna Museet**
18.30 Cocktail in lobby
18:45 Exhibition – Wolfgang Tillmans
19:45 Exhibition closes and the dinner starts

Date: **16th November**
Venue: **Karolinska Institutet, Berzelius väg 3, Solna Campus (Skrivsalen)**

8.30 **Keynote speaker Professor Richard Cook, KTH:** “Gaps in the continuity of care”

9.00 **SUSTAINABLE PROCESSES**
Moderator: Christer Sandahl

Sanne ”*Sustainable quality improvement requires a multidimensional approach”*
Eriksson, et al *“Implementation of the organizational concept lean production – Case studies of two Swedish hospitals”*
Mazzocato and Savage, et al *“Complexity complicates lean: Lessons from seven parallel emergency care services in the same hospital-wide lean program”*
Sankelo, et al *“Case-study of Innovation Activities in Psychiatric care in Finland”*
Kajamaa, et al *”Where is the glue for successfully and sustainably integrating care processes in hospital surgery?”*
Gunnarsdóttir, et al *”The frequent shifting of attention by nurses in acute care: gaining deeper understanding of factors contributing to the complexity of nursing work”*

10.35 **Coffee**

11.00 **TOOLS FOR CONTINOUS IMPROVEMENTS/PROCESSES**
Moderator: Katrin Skagert

Nyström, et al *“SIDSSA* - An Approach for Building Sustainable and Multilayer Competence in Continuous Improvement in Health and Social Services”*
Höög, et al *“Capturing and enhancing macro and micro learning and change processes during organizational development in health and social services”*
Andersson Bäck, et al *“Distributed Research and Development units in Health and Social Services – A Potential Tool for Organizational Development?”*
Sundberg, et al *“Feasibility and acceptability of an interactive mobile phone system for collecting and managing patient reported symptoms in prostate cancer”*

12.00 **Boat trip and lunch**

14.15 **SUSTAINABLE WORK, II**
Moderator: Sigrun Gunnarsdottir

Skagert, et al *”Continuous improvements of processes in line with lean and employees satisfaction with efficiency, quality of care and their work environment”*
Bergman and Skagert *”Co-workership as a collective process: focus group interviews with employees in a Swedish healthcare organization”*
Bååthe, et al *“Engaging physicians in organizational improvement work”*

15.00 **Coffee**

15.15 **SPECIAL SESSION “MULTICENTER STUDY”**
Moderator: Jörgen Winkel
Winkel, Edwards, Johansson Hanse, Birgisdóttir

15.45 **Ending off:** Local Committee/Lotta Dellve, Introducing 7th NOVO 2013.

16.00 **Finish symposium**

Distributed Research and Development units in Health and Social Services – A Potential Tool for Organizational Development?

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Introduction

Managing knowledge, learning and development is critical for health and social care in times of demographic changes, new technology, treatments and medicines. In Sweden geographically distributed Research and Development units within health and social services (R&Ds) are a response to this challenge. As a complement to traditional academia, R&Ds aim to stimulate the interplay between research and practice bringing innovative development for improved performance. The purpose of this study was to analyse conditions for Swedish R&Ds to contribute to continuous and sustainable organizational learning and development in elderly care.

Material and methods

Of 108 Swedish R&Ds, data were gathered from the 38 addressing elderly care. Content analyses were performed and unit characteristics were identified. The missions, main activities, output and the staff situation were examined, and twelve randomly selected R&Ds were analysed concerning activities, competence and publications.

Results

Four types of R&Ds were identified: Regional, Health & Social Services, Social Services and Elderly care. 40 percent of them had been active for fifteen years or more. The majority consisted of units partially and temporary financed, having less than 20 employees, many working part-time. Main activity themes were: 1) Management and evaluation of research projects, 2) Competence development, and 3) Organizational and process development. Factors affecting organizational learning and development were identified. The R&Ds also offered an infrastructure with staff, tools and arenas bridging people, activities and knowledge. Results show that the R&Ds collect ideas, experiences and needs as well as promote staff learning and development. Hereby, R&Ds provide channels for meetings and dissemination of knowledge. Among the hindering aspects identified were lack of long-term strategies and structures for learning and development, and limited support for knowledge implementation.

Conclusions

R&Ds offer platforms for learning and development, but might be further improved by stronger focus, less ad-hoc activities and projects loosely coupled to partner organizations, and by refining the structure towards long-term strategies and vertical and horizontal integration at operational and strategic levels. Further research is required to determine the value of involvement by members in strategic functions, and systematic work with knowledge and innovation processes for learning and development.

Work Culture among Health Care Personnel in a Palliative Medicine Unit

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Background
Understanding and assessing health care personnel's work culture in palliative care is important since a conflict between "high tech" and "high touch" is present. Implementing necessary changes in behaviour and procedures may imply a profound challenge due to this conflict. The aim of this study was to explore the work culture at a Palliative Medicine Unit (PMU).

Methods
Health care personnel (N=26) at a PMU in Norway comprising physicians, nurses, physiotherapists and others filled in a questionnaire about their perception of the work culture at the unit. The Systematizing Person-Group Relations (SPGR) method was used for gathering data and for the analyses. This method applies six different dimensions representing different aspects of a work culture (Synergy, Withdrawal, Opposition, Dependence, Control and Nurture) and each dimension has two vectors applied. The method seeks to explore what aspects dominate the particular work culture identifying challenges, limitations and opportunities. The findings were compared with a reference group of 347 ratings of well-functioning Norwegian organizations, named the "Norwegian Norm".

Results
The health care personnel working at the PMU had significantly higher scores than the "Norwegian Norm" in both vectors in the "Withdrawal" dimension and significant lower scores in both vectors in the" Synergy", "Control" and "Dependence" dimensions.

Conclusion
Health care personnel at the PMU have significant different perception of their work culture than "well-functioning organizations" in several dimensions. The low score in the "Synergy" and "Control" dimension indicate lack of engagement and constructive goal-orientation behavior and not being in a position to change their behavior. The conflict between "high tech" and "high touch" at a PMU seems to be an obstacle when implementing new procedures and alternative courses of action.

The LeanHealth project: Analysis of implementation when merging occupational health, safety and health promotion with Lean

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Introduction

Intervention implementation may have profound influence on intervention outcomes. However, systematic process analyses have seldom been conducted in relation to occupational health interventions.

Aim

The aim is to investigate how employees and managers perceive and implement an intervention aiming to integrate occupational health, safety and health promotion with Lean.

Material and methods

The study is part of an intervention study at one Swedish hospital that focuses on integrating occupational health, safety and health promotion with Lean (i.e. kaizen). The integration builds on two principles: 1) kaizen suggestions are analyzed from a health perspective, 2) occupational health and safety problems and suggestions are identified and analyzed at kaizen notes. The departments are free to decide how the concrete/practical integration is conducted based on their needs and kaizen work practices. Key employees' and managers' (n=13) perceptions of the implementation were examined with interviews four months after the baseline and with a questionnaire at 6 months follow-up (n=168).

Results

There were considerable differences in how the departments perceived the intervention and how the implementation was conducted. Majority of the departments had implemented the first part of the intervention (i.e. analysing problems and suggestions from a health perspective) but not to the same degree identified specific health related problems. The departments also differed significantly on employees' ratings of manager support for the integration, employee participation and employee readiness for the integration. The interviews indicated that important prerequisites for a successful implementation was that the kaizen work was well functioning and that the manager was supportive. The responsibility to implement the intervention fell on a few employees, those with a specific responsibility for the kaizen work, while the rest of the employees were difficult to engage in the process.

Conclusion

The findings indicate that integration of health and lean might be a promising way of working with occupational health, safety and health promotion. Implementation factors at department level such as manager support, employee participation and employee readiness for the integration appear to be important for the implementation success. Thus it is important to consider implementation factors when conducting and evaluating occupational health interventions.

Co-workership as a collective process: focus group interviews with employees in a Swedish healthcare organisation

Caroline Bergman[1,2], Katrin Skagert[1]
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[2] *Department of Public Health and Community Medicine, Sahlgrenska Academy at Gothenburg university, Gothenburg, Sweden*

Introduction

In contrast to leadership, research about co-workership is limited, even though both are equally important concepts. Co-workership has been defined as employees' relationship to their employer and to their own work (i.e. their manager, co-workers, patients/clients). The interpretation and practice of co-workership may vary between different contexts. Few studies have explored co-workership as a concept in healthcare organisations, and especially from employees' point of view. Therefore, the aim of this study was to explore employee's view of co-workership in a Swedish hospital.

Material and methods

Twelve focus group interviews were conducted in a hospital, in which improvement work in line with Lean has been going on for several years. The participants (n=68) were strategically selected in order to obtain variation in professions (29 nurses, 21 assistant nurses, 8 medical secretaries, 5 physiotherapists and occupational therapists and 5 physicians). Employees with the same profession but from different wards participated in the same focus groups. During the interviews, a moderator performed the interviews and an assistant took field notes as complement to the audio recording. Data were transcribed and analysed with conventional content analysis.

Results

Co-workership was viewed as a collective process that occurs within the clinical base in the hospitals' organisational hierarchy. Although the participants had different individual and professional responsibilities, they strived to achieve a common goal, i.e. to care for the patient. Cooperation with their co-workers within the same ward and between different wards was central for the co-workership. Reliance on co-workers' expertise and experiences and a trustful climate promoted the cooperation and quality of co-workership. Organizational factors that influenced the social processes were employee turnover, workload and rotation of physicians. Lean procedures could improve the co-workership by gathering different professions together to work with improvements, but was also viewed as something stealing time from the "real work", i.e. direct patient work. Management was not clearly included in the participants' conceptualization of co-workership.

Conclusions

Co-workership in hospitals can be defined as a collective process that is shaped around the patient. Continuity in staff seems to be important in order to improve the quality of co-workership.

The effect of dialogue groups on physicians' work environment – a matter of gender?

David Bergman
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Introduction

Health care systems in Sweden and most western countries have undergone major changes over the past decades. This has had a broad impact on physicians' work environment. Research has shown a deteriorating work environment among physicians and substantial gender differences, with disadvantages for female physicians. The need to improve physicians' work environment has been shown important for the quality of patient care and the health care system as a whole. Dialogue groups have been found to positively affect the work environment in organizations and to enable participants to deal with organizational changes.

This study aimed to evaluate the effects of dialogue groups on the work environment for physicians in relation to gender.

Material and Methods

In 2003 all physicians (n=68) at the Sachs' Children's Hospital in Stockholm, Sweden, were invited to participate in dialogue groups once a month during a one year period. Two supervisors facilitated the discussions, concerning the physicians' problems in their every day work, e.g., in their role as a leader in clinical work. They were randomly assigned to six dialogue groups, in which gender, age and clinical experience were equally distributed. Assessments of their psychosocial work environment were collected through a validated Quality Work Competence questionnaire before and after the implementation of the dialogue groups.

Results

Female physicians perceived less satisfying work environment compared to male physicians at baseline. The work environment for the whole group of physicians improved after the implementation of the dialogue groups. The female physicians perceived improvements in more areas than their male colleagues.

Conclusions

Dialogue groups appear to improve physicians' work environment and to promote gender equity.

Emotion work in dentistry - A descriptive and theoretical overview

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Introduction

The emotional aspects of work for dentists are little researched. Emotion work is a part of the intervention toolkit of the dentist for example emotional contagion or persuasion of the patient or a way to make other thing easier. As a condition of human service work, the emotional aspects can be a source to burnout because of frequent contradictory emotional demands from the organization, patient, and the dentist self. However, the emotional aspects of work can also be a source to positive inner experiences. Eudaimonic and hedonic rewards can arise from the interaction with patients, and thereby potentially enhance satisfaction and fulfillment of work.

Material and methods

A questionnaire was developed covering the multidimensional concept of good work, including perceptions of emotion work. A total of 1835 dentists randomly sampled from the dental associations were sent a questionnaire in November 2008. Because emotion work in dentistry has little previous research, a theoretical overview and conceptualization for dentistry were created. Principal components analysis (PCA) was used to reduce measures of emotion work. Covariance between the indices and variables were grouped as setting, work and person.

Results

The average net response rate was 68% (n = 1226). Three dimensions were theoretically relevant in the dental context: *Emotion work, emotional labor* and *emotional work* can all influence the dentist in different ways. PCA of the questions showed unidimensional solutions and six indices were created: *Patient relations values, emotional support, emotional display, emotional dissonance, emotional hedonic rewards* and *emotional eudaimonic rewards* stable over gender and nationality.

Conclusion

Emotion work is a considerable part of being a professional dentist. It is requirement of work as well as constituting the balance between being dentist and person. Potentially, emotion work can influence the dentists' perceptions of work in a positive way. The emotional aspects of work should be investigated more closely as a central component of work environment and job satisfaction.

Continuous improvement of odontological educations – the outline of an alumni survey

Hanne Berthelsen, David Bengmark
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Introduction

The Swedish National Agency for Higher Education (Högskoleverket) evaluates how well educations achieve the requirements of the Higher Education Act and 'degree descriptions' in regulations connected to the law. One way to assess the quality of education is to gather feedback from former students. A follow-up survey is planned as part of the continuous improvement of the educational programmes at the Faculty of Odontology, Malmö University with the overall aim of ensuring quality as well as development of the educational content and form.

The educational system prepares students for their future work life. Therefore, a questionnaire also including perspectives from the NOVO triangle has been established. The outline of the planned survey and the intentions behind it will be presented at the symposium.

Material and methods

Students who graduated from the Faculty of Odontology at Malmö University in the period 2009-12 will be invited to participate in the study, which will be carried out via a web based questionnaire. The questionnaire comprises questions on demographic background factors, aspects of their education, transition to labour market, current work situation (including work environment aspects), continued competence development, and perception of how the education prepared the students for different aspect of work life, such as relational and ethical aspects in addition to manual competences.

Conclusions

The students must be prepared to work in and take an active role in a changing context in health care. Continuous development of health care educations is needed for supporting sustainable health care systems leading to organisational efficiency, quality in patient-work, and a sustainable work life.

Experience of work in an operating department – a case study

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Aim
The aim of the study was to identify obstacles to carrying out work at an operating department and to describe how registered nurses and nurse assistants interpret organizational goals and their own daily goals.

Introduction
Work in operating departments can be demanding in many respects. However, crucial to job satisfaction and retaining nurses are working conditions that enable nurses to carry out the work and provide good healthcare. Obstacles to carrying out work tasks can be unclear organizational and daily goals and lack of resources or lack of social support.

Method
A descriptive case study was conducted on an operating department, using manifest content analysis of structured individual and group interviews.

Results
Changes in the operation programme, and unsuitable environmental premises implied obstacles to daily work. The nurses' work was guided by their own daily work goals, to finish the operation programme and to ensure good quality in patient care. The organizational goals had little influence on the daily work.

Conclusions
To give registered nurses and nurse assistants possibility to influence the daily operating programme could increase the possibilities to carry out work and provide good healthcare. If organizational goals are to guide work, they need to be transformed into understandable, applicable goals and incorporated into daily work. The study also gives attention to the importance of a functional physical work environment for possibilities to carry out work and provide good healthcare at an operating department.

Keywords: organizational objectives; operating rooms; case study; nurse practitioners; job satisfaction

Engaging physicians in organizational improvement work

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Introduction

To improve health-care delivery from within, managers need to engage physicians in organizational development work. Physicians and managers have different mindsets/ professional identities which hinder effective communication. Our aim is to explore how managers can transform this situation.

Material and Methods

25 individual interviews with clinical active physicians. First we use a grounded theory analysis of the interviews to allow the physicians' own perspective on engagement related to organizational improvement to emerge. Thereafter we further the analysis and discuss professional identities/mindsets from three theoretical perspectives (Complex Responsive Processes. Managing understanding and Cultural theory) and explore the mindsets of physicians and managers. We further explore the need to modify professional identities and how this can be achieved.

Results

If managers want physicians to engage in improvements, they must learn to understand and appreciate physician identity. This might challenge managers' identity. We show how managers - primarily in a Swedish context - could act to facilitate physician engagement. This in turn might challenge physician identity. Studies from the western world show a coherent picture of professional identities, despite structural differences in national health-care systems. We argue, therefore, that our results can be relevant to many other health-care systems and settings.

Conclusions

We provide an alternative to the prevailing managerial control perspective. The alternative is simple, yet complex and challenging, and as we understand it, necessary for health care to evolve, from within.

The patient’s way through the pediatric emergency department – in detail. A healthcare logistic study in the ED of a Swedish tertiary level university hospital

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Introduction
Emergency department overcrowding is a global problem. Despite many studies exploring possible solutions, the literature offers few primary studies on patient flow. A majority of published studies base their conclusions, not on objective data, but upon estimations of lead times drawn from interviews with employees. The aim of this study was to objectively measure actual lead times and correlate these to the care processes.

Material and Methods
With parents’ help, 2000 patient paths through the Pediatric Emergency Department (PED) at the Astrid Lindgren Children’s Hospital were clocked. Additional data was gathered using electronic medical records and study protocols. Lead times were matched with data on e.g. gender, age, reason for encounter, and final diagnosis to identify different patient value streams.

The extracted data was used to model patient flow, identify the percentage of patients that took each path, and how long they stayed at each step making it possible to differentiate between value adding and non-value adding time.

Results
The empirical data made it possible to identify factors which impact lead times. Average door-to-door time was 210 minutes. Average patient-physician face-to-face time was 16 minutes. 79% of arriving patients met a physician, 32% of those needed radiology services, 48% had blood work, and 9% were admitted. The pre-triage time was for some patients up to 70 minutes.

Conclusions
Primary data helps identify areas for improvement (such as pre-triage time) beyond those found through generalized value stream maps. This information can help improve patient safety and satisfaction. Poor flow efficiency (face-to-face care time/total time in the ED) implies that there is room for improvement. The data that has been gathered provides an objective description of patients’ paths through the ED. This data can be used to develop more accurate simulation models to help practitioners design and test different interventions before applying them in real life.

Health care professionals’ motivation, engagement and collaboration in organizational developments of processes of care

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Background

Health care professionals´ engagements in health care development processes have considerable impact on the outcomes of such processes. Particularly doctors’ willingness to become involved is central to success from organizational development projects in health care. A conceptual model of physicians’ engagement was developed to gain a deeper understanding of central motivational drives for physicians’ engagement (Lindgren et al 2012). The aim is to quantitatively describe health care professionals’ motives, engagement and collaboration in organizational developments of processes of care.

Method

The first step was to develop a substantive grounded theory and generate a tentative model based on empirical data from semi-structured interviews (Lindgren et al 2012). The second step, a questionnaire was developed from the qualitative study in order to investigate prevalence and to assess preconditions for and effects of implementation of organizational developments. Central statements and substantive codes of the conceptual model of physicians’ motivation and attitudes to participate in organizational developments were formulated to items. These were piloted to health care professionals regarding clarity and construct validity. Thereafter the questionnaire has been distributed to all health professionals working at 3-4 selected units at five hospitals. Index was tested regarding internal consistency Descriptive statistics, stratified to professional groups and analysis of associations will be presented.

Results

Eleven statements (attitudes) regarding organizational developments were grouped according to the conceptual model. The following index were identified: To risk time-conflicts (3 items, cronbach alpha 0,66), Learning and developing (2 items, cr alpha 0,65), having impact (2 items, cr alpha 0,71), Achieving meaningful results (2 items, cr alpha 0,72) and Fulfilling mission (single item). The concerns developed from interviews with physicians were prevalent also among nurses and assistant nurses. Physicians were most concerned about risking time-conflicts when engaging in organizational development processes. A good collaboration in continuous improvements of processes of care was less prevalent between wards than between health care professionals.

In conclusion, effective healthcare development needs health care professionals’ engagement in continuous improvements of processes of care between the wards that share a patient flow. For a rewarding sense of professional fulfillment to arise from participation in healthcare development, health care professionals stresses the importance of meaningful results, impact and learning.

Lean in healthcare from the employee perspective

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Purpose
Several studies may be found on how Lean production is implemented in healthcare. Most articles include single case studies and are often published in medical journals. There is however a different tradition on how research is performed in medical and management sciences. The medical studies describe the state before and after an intervention or improvement program, but rarely pay attention to the implementation process and consider such important issues such as leadership, management processes and employee's role. There is a need for more management studies on Lean healthcare that focus *not only on outcomes, but also* on the context and factors that influence outcomes.

The purpose of the article is to contribute to the knowledge on how Lean production influences the daily work and routines of healthcare staff.

1. What does it mean to employees to work in a Lean healthcare unit?
2. How does a Lean implementation affect the role and responsibilities of the employees?

Methodology/Approach
The data described in this paper comes from three case studies performed in healthcare organizations: two district care centers and one hospital unit. The data was collected through interviews, both with managers and employees, observations and document studies. The case organizations were described as successful Lean organizations and had worked with Lean for at least three years.

Findings
The implementation of Lean production often implies increased responsibility of employees for management of daily activities and increased participation in the improvement work. The influence of Lean on the daily work is however to great extent a matter of how the implementation is managed. In one case, Lean had been implemented by discrete projects, mainly conducted by the manager group with little effort on empowering the employees, increasing two-way communication and involvement in improvement work. Therefore, the role of the employees did not change much in conjunction with the Lean implementation. On the contrary, at another case the managers put a lot effort on coaching, developing and empowering the employees, and the improvement work had become an important working task for all employees. This led to a substantial improvement in the social climate, since the former barriers between different professions were weakened and the teamwork had increased.

The conclusion is that there are great potential benefits with a Lean implementation for the employees, but this can only be realized if the implementation is managed with a focus on the development of employees and a more open social structure. An important method to facilitate this is improvement groups with employees from different professions and functions within the organization that has an explicit ownership of the improvements, from idea to realization.

Originality/Value of paper
Lean Healthcare is relatively a new phenomenon and more research work is needed to determine the full range of implications of the concept. The paper increases the understanding of what Lean production actually means to the healthcare staff. This knowledge is vital for the success and sustainability of Lean improvement programs in healthcare. The paper is also an inspiring source for both researchers and healthcare professional who are interested in the application of lean production in healthcare.

Keywords: Lean production, healthcare

Light and sound design in the intensive care patient room – an intervention study

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Introduction

In an ICU the patients are staying in an uncomfortable environment surrounded by intensive staff activity. Technology easily dominates the ICU patient room. The patients often suffer for ICU delirium and sleep deprivations. Previous research has identified risk factors such as; disturbing light levels and quality, lack of circadian rhythm and high noise levels. These conditions might affect the patients' well-being, health and recovery.

Methods

With the aim of creating a more healing environment, an intervention took place in an ordinary ICU. It was based on evidence based research about physical planning in health care facilities and sustainable design concerning light, sound and interior design**.** One two-bed patient room was reconstructed/ refurbished and as a control an ordinary identical ICU patient room remained intact. A cyclic lighting system was installed in the intervention room and aims to follow the natural day and night light rhythm, levels and color. In addition to this, it has been equipped with a sound absorbent ceiling.

A comparative/explorative design was used for measuring Participants' estimation of the light environment in the two different ICU patient rooms. Light levels were also measured and registered. As a next step the relationship between sound levels and ICU delirium will be investigated as well as rest relative to light.

Results

The results of Participants' estimation of the lighting environment showed a significant difference in benefit to the intervention room. Average of light levels in the intervention room 07.00-19.00 was 331 lux and 18 lux 19.00-07.00. In the control room in daytime it was 810 lux and in nighttime 147 lux. Data collection concerning ICU delirium and sound levels will be started this fall. In the presentation we will also demonstrate preliminary results from the ongoing data collection.

Conclusion

The first part of this intervention project shows that it is possible to design environments in the intensive care area that are both more comfortable and health- promoting than predominating interiors. Therefore, we hypothesize that the design of light system and sound absorbents in an ICU room may have an impact on critically ill patients' wellbeing, health and recovery.

Implementation of the organizational concept lean production – Case studies of two Swedish hospitals

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Introduction

A majority of Swedish hospitals have the last years introduced lean. It is likely that the consequences of lean depend on the local context, i.e. how lean is implemented in the local hospital. If the sole goal of lean is increasing efficiency, there is a great risk that worker health will suffer, and there will probably be no change in the quality of care. If lean, on the other hand, is implemented in a participatory way and the implementation also is designed to fit the local context, there are greater chances for lean having more positive effects, as well as being sustained over time. The aim of this study was thus to analyze how lean was implemented in Swedish hospitals.

Material and Methods

Case studies of different units in two hospitals implementing lean were performed. Interviews with hospital-level management, interviews with key actors in development work as well as surveys to all managers were performed in order to study the hospitals' implementation of lean. To study the implementation processes in the local units, interviews were made with the management of each of the units as well as with lean implementation coordinators. Observations of the units' meetings and activities related to lean as well as surveys to the units' employees were also performed.

Results

The overall methods of implementing lean differed between the two hospitals. The implementation process in *hospital 1* was mainly driven by specially assigned process leaders and the main lean tool used was lean boards. In *hospital 2,* on the other hand, an extensive training program for managers was applied in order to implement lean and the main lean tool used was value stream mapping.

Conclusions

Hospital 1 had a strong focus on dealing with improvement suggestions from employees, indicating that participatory processes to some extent were employed. The implementation process in hospital 2 indicated, on the other hand, a higher local ownership among managers. The hospitals different approaches will probably impact both the effects of as well as the long term sustainability of lean.

Leading integrative healthcare: The case of treating Parkinson's disease

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Background

Integrative healthcare (IH) has recently been suggested as a strategy for enhancing quality and efficiency in healthcare services. Further, IH seems to be particularly relevant for complex chronic disorder such as Parkinson's disease (PD). IH allows focusing not only on the patients' medication and treatment, but also on improving their life-quality, including the life-quality of their families.

Efficiency, quality and safety are prominent objectives in healthcare and IH may turn out to be the next pronounced trend complementing concepts such as lean in healthcare. However, an integrative strategy calls for going beyond traditional service thinking and adopt a genuine cross-boundary interdisciplinary teamwork approach. It will be argued that this calls for a particular kind of leadership.

Methods

Relevant databases in medicine, healthcare, leadership, social science and management were assessed to find articles on leadership in interdisciplinary settings, and in particular in healthcare. After reviewing the literature, key lessons were discussed in seminar settings to sketch out a conceptual framework for understanding leadership in interdisciplinary healthcare management, with treatment of PD patients as example.

Results

The literature suggests that cross-boundary teams, and interdisciplinary approaches, can improve patients' recovery and/or life quality, especially in the case of chronic illnesses with long-term morbidities, such as PD. However, the requirements of leadership in integrative healthcare are so far poorly understood and might include quite different roles on various organizational levels (teams, clinics, hospitals, public management and policy making).

Conclusion

Many leadership-styles have been proposed historically. However, the recently suggested shared leadership and integrative leadership seems to be most appropriate for managing multidisciplinary healthcare teams and organizations. Both styles focus on collaboration in organizations with various overlapping tasks and, especially, integration of work. In the shared model, power is distributed among several member-leaders taking a shared responsibility. In such a multi-actor, multi-sector setting, integrative leadership serves to promote things such as information-sharing across collaborating teams, creating trust and mutual respect, and to identify resources and stakeholders perhaps even in the external environment. The latter is particularly important when treating PD since f. e. community services often have to be part of the treatment package.

Health care managers learning through observing subordinates in a dialogue intervention

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Introduction

Middle managers in health-care today are exposed to extensive demands on their leadership concerning administration, economy, organizational change and learning, quality of care and work environment for their subordinates and themselves. Middle managers thus are expected to continuously and efficiently decide, act and communicate in relation to these demands. Little time is reserved to listening to their subordinates, which according to Isaacs, (1999), together with respecting, suspending, and voicing constitutes dialogue. Dialogue in the workplace is advocated in organisational communication and could be developed in a training situation in healthcare wards.

Aim

To examine the ways in which healthcare managers experienced observing a dialogue intervention in their staff.

Materials and methods

All participating eight middle managers in an intervention were interviewed, regarding their experiences observing and listening to their subordinates training dialogue in a dialogue programme aiming at more use of dialogue in the daily work in healthcare wards. The interviews were semi-structured and analyzed using qualitative content analysis.

Findings

The managers described their observing and listening experiences as enriching but also demanding. Three categories of learning and acting emerged. *Becoming aware of communication* entailed perceiving in new ways both interaction between their subordinates, and managers´ own non-verbal interaction with staff and trainer. *Discovering communicative actions for leadership,* meant experiencing self-knowledge, thoughts and models to apply in their own leadership, when noticing the trainers acting pedagogically and democratically. *Converting theory into practice* signified using dialogue-promoting manners towards their subordinates, colleagues and superiors during and after the dialogue programme.

Conclusions and Implications

This study contributes to knowledge about managerial leadership learning and workplace communication for practical use and for further research, in identifying the importance of listening, and of support from superiors, in these activities.

Keywords: dialogue training, manager experiences, observing, listening, leadership learning

The frequent shifting of attention by nurses in acute care: gaining deeper understanding of factors contributing to the complexity of nursing work

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Nurses in acute care are frequently interrupted during their work, posing risk of errors upon patients. Quality of work environment and quality of patient care is influenced by factors at individual, organizational and external levels. Prior studies show that nurses work is complex and non-linear but deep insight on this is limited. The aim of this study was to gain better understanding of factors influencing the work of nurses in acute care inpatient units by simultaneously collect real time data on various aspects in nurses' work. This was a mixed methods observational study with 8 registered nurses (RNs) and 10 practical nurses (PNs) in four inpatient acute care units at a university hospital. Rich multilayer real time quantitative data were collected with qualitative field notes, on the work of nurses, influencing factors, movements and time. Data collection took place in 2008 for a total of 141:18 hours.

Results show that nursing work was characterized by frequent shifting of attention with interruptions, systems failures, multitasking and constant movements. On average RNs shifted their attention 41.7 times per hour, and PNs 37.7 times per hour. The factors influencing the work of RNs and PNs were most frequently related to communication initiated by co-workers and insufficient information on hand. Study findings provide new insight into the complexity of RNs and PNs work in acute care. The combination of nursing knowledge, engineering and computer technology adds new dimensions to the complex work of nurses under study, providing multilayered data on their activities, movements, influencing factors and timing. Results are being used in the study hospital to identify potential improvements in the work and work environment of nurses.

Further studies are needed to identify when and how attention shifting of nurses threatens or enhances quality patient care. Clinical nurses, nursing leaders and policy makers need to have knowledge and awareness concerning the interaction of the physical, communicational and professional factors adding to the quality of working life and patient care. Study results indicate the importance of studying healthy work environment at the individual, organizational and external level using mixed methods approach with human factors engineering.

A balanced budget with side effects – a case study of implementation of a hospital cost savings programme in Sweden

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Introduction
The purpose of this study is to explore and report the implementation of a cost savings programme in a Swedish county hospital during 2010-2011 and its stated influences on work environment, quality of care and patient safety.

Materials and methods
A case study research design theoretically informed by the Pettigrew and Whipp model of strategic change guided the data collection and analyses. Data was gathered from 45 individual interviews at different hospital levels and from hospital internal and external documents and plans.

Results
The study found substantial differences among the informants' perceptions on the change process and how these actions were to be carried out. Deficient management and leadership support and insufficient change competence surface as other factors hindering the change. A shared understanding among the informants regarding the content of the savings programme promoted the implementation. Nevertheless, converging data from interviews and documents indicates that the programme negatively influenced the hospital's work environment, patient safety and quality of care.

Conclusions
Our findings converge with previous research and add value to the existing research base on downsizing and restructuring by reporting the programmes unintended consequences. Our findings suggest that policy makers and change implementers should be proactive and prioritize assessments of the relations between intended outcomes and unintended consequences. Organizational change structures and support functions should be informed by staff participation in order to ensure a trustful and committed change climate. These lessons are central for policy makers and implementers trying to make informed decisions about how to organize and implement cost savings while ensuring a healthy work environment with continued quality of care and patient safety.

Keywords: Downsizing, reorganization, cost savings, implementation, patient safety, work environment, quality of care.

What is considered evidence? A comparison of municipality and county council views on evidence

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Introduction

Development of evidence based care presents a promise of more effective and safe patients' care. However, major difficulties arise in introducing evidence based methods into routine practice. The study aims to compare views of stakeholders from social and health care organizations concerning evidence and influence of evidence on their daily work.

Methods

The study consist of 44 interviews performed on four occasions between 2008 and 2010. A total of 26 stakeholders at three organisational levels (department management, first-line management, employees) participated from a municipality care organization and a university hospital. The respondents were involved in a RCT study 'Continuum of Care for Frail Older People' and theier views on evidence was evaluated at the start, during and at the end of the trial.

Results

Initially, the department managers discussed the importance of evidence. Employees' expressed mostly general interest towards research. The municipality managers considered municipalities being poorer than hospital in using evidence based methods. Managers at both organizations were hoping that their employees would get more interested about research and evidence when participating the project. At the end of the project, the stakeholders at all organizational levels were aware of the fact that they were producing evidence and were keen on knowing the results of the trial. The managers perceived this time as hard since the organizational leaders wanted to change work practice but it took a long time to produce the scientific evaluation. The municipality leaders although they recognized the importance of scientific evidence, emphasized the importance of local experiences. The municipality organization changed their work practices based on the knowledge and experiences of their staff before the scientific evidence was available. The hospital stakeholders at all level were emphasizing the importance of evidence and wanted to wait until clear knowledge of trial's effects was available.

Conclusion

The study shows differences between employees and managers as well as municipality and hospital stakeholders' views on evidence. The findings illustrates the difficulties that organizations faces when making decisions about new work practices based on local experiences one hand side and on scientific evidence on the other side.

Capturing and enhancing macro and micro learning and change processes during organizational development in health and social services

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Introduction

For change agents responsible for implementing and facilitating change, one challenge is to ensure intervention continuity over time. Finding ways to enhance opportunities for reflection, analysis and learning is essential, in every day work as well as during change processes. Suitable tools are needed to capture and enhance macro and micro processes of learning and change. The often used observations and interviews require time and resources. The current study describes a resource efficient approach that might fulfill both change agents' and researchers' needs to assess and support on-going change processes. The objective of the study was to evaluate if the *Reflection on Intervention, Outcome, and Learning (RIOL) instrument* could support change agents' and change recipients' reflection, analysis and learning, and at the same time aid data collection in process research.

Material and methods

The RIOL instrument was developed by the authors to capture basic information on interventions, their purpose and outcomes, and reflections on the learning process. RIOL was tested for six months by a regional R&D unit in the Swedish region of Sörmland during a quality improvement project in elderly and disabled care. Data consisted of the filled in instruments, observations and interviews. Interviews were analyzed using qualitative content analyses focusing on use, understanding, usefulness and potential for future use of the RIOL instrument. Instrument data was independently assessed by two researchers and checked for consistency and quality of data for research purposes.

Results

The information in the RIOL instruments showed good correspondence with the categories used i.e. high validity. Easiest to capture was the basic details, while reasons for outcomes and reflection on future actions and learning varied in detail. The respondents reported that the instrument was easy to use, useful for many situations and enhanced the intervention continuity in the development process. Results also indicated potential for enhanced reflection and continuity for change recipients.

Conclusions

The conclusion is that the RIOL instrument has a potential to fulfill the dual purposes of providing information on micro and macro processes during organizational development for both change agents and researchers and might be especially useful for action research.

Where is the glue for successfully and sustainably integrating care processes in hospital surgery?

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Health care employees need to carry out complex and often unexpected care processes. Carrying out the processes in a sustainable and client-centered way creates an increasingly demanding challenge. This study analyses implementation of an innovation, a new activity and management model, which aims at integrating care processes in a client-centered way in a university hospital in Finland. The aim of the study is to reveal where the glue is for successfully and sustainably integrating fragmented and complex care processes.

In this study, theory and practice are tightly interconnected. The study applies activity theory which is one of the many approaches connected to process orientation. The ethnographic methodology of the study includes following care processes of 16 surgical patients across organizational boundaries and units. In the analysis, the patients' initiatives and the employees' responses to them are depicted. Then successful integration efforts and disturbances leading to failures are depicted in the course of care. The initiatives and ruptures are viewed as driving forces for the cultivation of the integration innovation in use.

The study depicts four types of integration efforts made by the caregivers and the patients, namely 1) Technical integration, 2) Cognitive-emotional integration, 3) Social integration and 4) Volitional integration which can be seen as indicators of the glue by which successful integration efforts aiming at organizational change can take place. Disregard of the clients' initiatives and denial of the disturbances indicates that an integration effort has failed.

The successful conduction of care requires handling of the stepwise processes as well as constant integration efforts of the care. The integration efforts are required from the caregivers as well as the patients. The process view of this study widens our understanding of the dynamics between fragmentation and integration in highly complex care organizations. It provides knowledge on how to promote successful integration and organizational learning in the level of complex, multilayered systems.

Developing a sustainable infection control program in health care

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Introduction

The increasing threat of resistant bacteria has become a progressively more important issue and a major challenge to deal with in health care systems. In 1995 the Medical Society Reference Group for Antibiotics Questions (RAF) started a Strategic Program for rational use of antibiotics and reduced antibiotic resistance called Strama. In 2006 Strama received a commission from the government and a permanent financing and on July 2010 a national Strama council was formed as an advisory body to support the Swedish Institute for Communicable Disease Control in issues regarding 1) use of antibiotics and reduced antibiotic resistance and 2) efforts to promote cross-sectorial and locally established approach includings relevant authorities, county councils, municipalities and nonprofit organizations.

In May 2011 a working group within Strama was formed in hospital A on behalf of The Director of Public Health and Healthcare in the county. The Urology Unit was chosen as a pilot department as urinary infections account for more than 30 percent of all hospital-acquired infections and contributes to the overuse of antibiotics. On behalf of The Director of Public Health and Healthcare in the county, the urology clinics at the three hospitals in the county during the past year merged into a common Urology Unit as a part of the process in gaining better control of infection spread when patients move between hospitals depending on the type of treatment that each hospital is specialized on. This merger involves in itself a number of major challenges.

Materials and methods

A process in the Strama work related to the Urology Unit at the County Council was followed during autumn 2011 and spring 2012 by interviewing project leaders, members of the Strama group, clinicians, attending meetings, studying documents and by observations.

Results and conclusions

The Strama group has been working at obtaining uniform working methods and procedures as it has been varying between physicians and clinics. They have also developed methods to inform about the latest treatment guidelines to assist clinicians to work properly.

A problem is the difficulty for clinicians to obtain feedback on their treatment results, since the current IT systems do not enable a convenient way to access measurement data over time, which also affects the motivation of staff documenting the measurements. The Strama team therefore work together with the IT unit at the hospital to develop a so-called E-portal to provide quick feedback on clinical measurement data and prescribing patterns for antibiotics

During the spring 2012 Strama-responsible physicians and Department Care Developers from all clinics were invited to learning seminars. The aim was that each clinic would initiate mapping and improvement work at the clinical level of three important Strama areas: antibiotics, hospital acquired infections, epidemiology and resistance.

The work performed by the Strama-team is perceived as a great support at the surgical department where the urological patients are cared for after surgery. So the Strama work is now beginning to take off in the county but there are many challenges to be solved e.g. the implementation takes time due to cultural differences, between units and personnel, inefficient and incompatible information systems, organizational boundaries and lack of time for improvement work for clinicians.

The influence of perceived stress and musculoskeletal pain on work performance and work ability in Swedish health care workers

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Background

Stress-related and musculoskeletal disorders/symptoms are the two most important factors behind long term sick leave in Sweden, and accounts for a considerable amount of the total economic burden on society, companies and organizations. Musculoskeletal pain conditions and mental disorders have been shown to be major factors in explaining the high costs for reduced productivity in the work force. It is therefore essential to investigate whether these factors on their own or in combination constitute a risk for reduced work performance and decreased work ability, especially among work groups with a high prevalence of these disorders.

Aim

The aim of this study was to evaluate the influence of perceived work stress and musculoskeletal ache/pain at baseline on self-rated work ability and work performance two years after the baseline measurements.

Methods

The present study is part of a larger 6-year longitudinal study among a random sample of employees in Region Västra Götaland, Sweden. The present study focuses on two measurement waves, 2008 and 2010. The study sample consisted of 770 respondents (617 women and 153 men) who all reported good work ability and no deterioration in self-rated work performance in 2008. Perceived continuous stress for at least one month during the last 12 months and the frequency of musculoskeletal pain episodes were assessed at baseline. Changes regarding self-reported work performance and work ability compared to baseline were assessed at follow-up and used as outcomes.

Results

Decreased work performance at follow-up (2010) was reported by 9% of the respondents (n=66) and reduced work ability by 34% (n=246). Workers who at baseline reported musculoskeletal pain had higher risk for reporting poor work ability and work performance at follow-up compared to workers without such pain. Likewise, a trend towards a similar association could be seen for perceived stress regarding both work performance and work ability, although these results were not statistically significant.

Conclusion

Proactive workplace interventions to maintain high work performance and good work ability within organizations should include measures to preserve good musculoskeletal well-being for the employees, as well as measures, both individual and organizational, aiming to reduce perceived long-term stress.

Sustainable Lean in psychiatric healthcare organizations

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Introduction

Lean Production (Lean) is spreading fast in many sectors of Swedish society. The spread is believed to be driven by many factors, e.g. market pressures for change. However, the implementation of Lean in healthcare is not unproblematic. The concept is often met with both skepticism and positive reactions when introduced.

Many factors likely affect the sustainability of Lean when it is introduced in Swedish public psychiatric division, i.e. a context characterized by high levels of autonomy but also of strong hierarchies and professions. Other factors likely of importance are the tradition of socio-technical systems thinking in Swedish organizations, strong union influence, etc.

Objective

What factors affect the sustainability of a Lean intervention in a Swedish psychiatric setting, characterized by high autonomy, democracy and strong hierarchy?

Methods

The data collection has been done through focus group interviews, at two occasions (2011/2012). These groups consisted of 24 first line managers, averaging at six participants per group at the first occasion and three participants per group at the second occasion. The first line manager all worked within a psychiatric division at a large Swedish university hospital.

In the analysis of the data, a socio-technical perspective has been chosen, using Cherns' ten socio-technical principles. A theoretical analysis model for sustainable development work has also been used in selecting the most viable principles in the studied Lean intervention.

Conclusion

In order to promote a sustainable Lean intervention at the studied psychiatric division, the first line managers need clear and viable objectives but also clear role definitions. Furthermore, a shift in the traditional way of controlling the Swedish public sector, due to New Public Management (NPM), has resulted in a closer integration between political, administrative and medical systems. In order for this integration to work smoothly, clear role definitions at all levels within the healthcare organization is needed to promote a sustainable Lean intervention at the psychiatric division.

Healthcare Leadership Behavior Profiles and Work Performance Satisfaction

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Introduction

Leadership behavior in a healthcare setting has been shown to be associated with work climate and subordinate job satisfaction. The objective of this ongoing study is to examine the relationship between leadership behaviors and subordinate ratings of stress and additional aspects of psychosocial work environment. As a first step, we have identified leadership behavior profiles and examined if these profiles differed in self-rated work performance satisfaction.

Material and methods

One hundred and eighty eight healthcare managers self-assessed their leadership behavior using the CPE instrument (*Change Production Employee*), which measures the leadership behavior in a change, structural-, and relational orientation. Further, they rated their health and psychosocial work environment using QPS (*Questionnaire for Psychological and Social Factors at Work*). A two-step cluster analysis of CPE yielded four leadership behavior profiles. The four clusters then served as independent variable in analysis of variance in order to explore differences in work performance satisfaction. Post hoc analysis was conducted with Bonferroni pairwise comparisons.

Results

The four clusters significantly differed from each other in all CPE dimensions; one leadership profile with high means in all dimensions (>1Sd above the mean), one with low means in each dimension (>1Sd below the mean), and two clusters with mixed profiles (within 1Sd from the mean). The leadership profile with the lowest means reported significantly less satisfaction with both the quality and the quantity of their performance at work.

Conclusions

The results from the preliminary analysis show that four groups of leader behaviors can be distinguished, and that the leadership profile that was characterized by low ratings in all three CPE-dimensions was associated with lower satisfaction of work performance. Since the results are based on self-ratings only, these associations should be interpreted cautiously. Next step in the study is to analyze whether these leadership profiles are related to subordinates ratings of health or psychosocial work environment, and particularly whether leaders who overall rate themselves less favorably also affect employee outcomes.

Social Capital and Relational Coordination in General Practice

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Introduction

The Danish welfare system with universal access to health care is built around the primary health care. All Danish residents have free and direct access to general practitioners (GPs) as well as access to specialist and hospital care. The general practice in Denmark is going through changes and moving toward a more collaborative practice form. The numbers of healthcare personnel whom are not physicians have been rising, giving a need for more coordination and collaboration between the healthcare personnel in a practice.

The aim of the study is to measure organizational social capital and relational coordination in Danish general practice, explore two concepts, and what influence these two concepts.

Methods

This is a quantitative study based on a questionnaire survey, which measures organizational social capital and relational coordination. The questionnaire was sent to every Danish GPs and their staff, approximately 2074 practices with about 2 - 15 staff members in each practice. 702 practices (3029 individuals) have responded.

Results

The results from the survey showed a correlation between social capital and relational coordination. There was significant variation between respondents scoring of social capital and relational coordination depending on function. Each practice showed significant variation in their overall social capital and relational coordination score depending on practice type. Geography location also showed to be significant for a practice's relational coordination. And the ratio between patients and employees in a practice was significant for social capital.

Conclusion

The results shows that solo practices have higher social capital and relational coordination than cooperative and partnership practices, and that practice with a low patient to employee ratio have higher relational coordination, which goes against the tendency of practices becoming bigger. This is interesting as there is a general move towards larger practices from both the political side as well as healthcare professionals, in particular doctors. We know from other studies that relational coordination is associated with treatment quality and consequently general practice may become a workplace with declining job satisfaction and treatment quality.

Complexity complicates lean: Lessons from seven parallel emergency care services in the same hospital-wide lean program

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Introduction
Lean has become a popular strategy to reduce emergency department waiting times, but there is limited understanding of the variation in lean interventions and their effectiveness. This study seeks to how and why the same hospital-wide lean-inspired program impacted access to care in emergency services.

Material and Methods
A multiple case study based on a realistic evaluation approach to identify mechanisms for how lean impacts process performance and the services' capability to learn and continually improve. Four years of process performance data was collected together with data on how the lean intervention was implemented at seven emergency services at a Swedish university hospital: Ear, Nose and Throat (ENT) (2 sites), Pediatrics (2 sites), Gynecology, Internal Medicine, and Surgery. Quantitative data was collected from hospital administrative systems. Qualitative data was collected through realist interviews.

Results
The complexity of the care process influenced how improvement in access to care was achieved. For less complex care processes (ENT and Gynecology), large and sustained improvement was mainly the result of a better match between capacity and demand. For Medicine, Surgery, and Pediatrics, which exhibit greater care process complexity, sustainable or continual improvement were constrained because the changes implemented were insufficient in addressing the degree of complexity.

Conclusions
The design, implementation, and selection of targets and performance indicators need to be calibrated to the degree of complexity of the care process.
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Evidence-based practice in social care – what kind of support does first-line managers need?

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Background and aim

Implementation of evidence based methods and national guidelines have reported to be a slow and complex process. This is particularly true within municipal services. Prior research suggests that first-line managers have a significant role in all types of implementation process. However, there is a lack of knowledge concerning how the first line managers prefer working with evidence based methods and guidelines and what type of organizational support and facilitation they would require in that process. The present study aims to investigate what type of support first-line leaders at municipality care need in order to be able to facilitate implementation of national guidelines and other evidence at their workplace.

Methods

The study is set within six municipalities in Sweden, representing a variation in location, population size and previous experience working with evidence-based practice. Within each municipality five to six first-line managers currently operating in social care considering children, families, adults, older adults and individuals with disabilities were interviewed (n=30).

Results

Interviews will be analyzed using content analysis and preliminary result will be presented at the conference. Hypothetically, the need for support will vary depending on the individuals previous experiences in working with evidence based practice and national guidelines, and differ between sectors of municipal services depending on the cultural and historic approach to evidence-based practice.

Conclusion

Guidelines are used on a national level to support evidence-based practice in regional and local settings. Implementation research shows that first-line managers are essential for implementation in general. This study will show how first-line manager's them-selves perceive their role in relation to evidence-based practice and what support they need in order to pursue this further.

Information used by intensive care unit charge nurses in care coordination

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Introduction

Intensive care units (ICUs) are complex and continuously changing environments where a multi professional group work together to provide life supporting care to critically ill patients. ICU care coordination is conducted by charge nurses and intensive care specialists. The charge nurse is responsible for the allocation of staff and other resources, needed in order to provide safe and efficient patient care. This care coordination is characterized by immediate decisions made by charge nurses. This decision making requires a lot of information and supportive systems are needed. As an overall goal we aim to develop an information integration tool to support charge nurses information access. In order to do this we have explored ICU charge nurse's information sources when coordinating care both in Finland and in New-Zealand. The results of New-Zealand are presented here.

Material and methods

We collected data on five ICUs in New Zealand. We used an online questionnaire, with 122 stated information needs, with a scale from 1 (completely unnecessary) to 10 (absolutely necessary), in order to explore the most important information, needed by charge nurses in their daily decision making. When this was done, we interviewed the charge nurses in order to determine the sources of the most important information needed in their daily decision making. The interviews were structured and they were conducted online.

Results

The response rate of the survey was 25.5% (N=15). From the responses, we could identify 43 information needs that were absolutely necessary in the charge nurse's daily decision making. We interviewed charge nurses (N=7) from all five ICUs concerning the sources of these absolutely necessary information needs. As a result we found that charge nurses use several information systems in order to support their immediate decision making. Sources of information are e.g. paper based, electronic or human.

Conclusions

Information needed by ICU charge nurses in their immediate decision making is spread out in many sources and this information is sometimes hard to acquire. We can conclude that ICU charge nurses would benefit from information technology supporting their information access.

”Managers are coming and going”
Complex conditions of management and leadership in conjunction with university hospital mergers

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Introduction

The rate of turnover of hospital managers has been high in Sweden. Hospitals are regarded to be difficult to manage, something which is connected with various discourses and logics, e.g. politics, medicine, care and management, creating complex conditions for management. According to Choi ”the vertical clash between managerialism and professionalism is the main post-merger challenge in a hospital merger” (2011, p. 46). The position as a hospital manager seems to be particularly vulnerable in connection with major organisational changes, combined with cost-cutting that are carried out under the supervision of the manager. One change is hospital fusion. In Sweden three fusions of university hospitals were carried out between 1996 and 2011.

The purpose of the article is to analyse management conditions in conjunction with university hospital mergers. Only a small amount of research has been published on this subject.

Method and material

Two case studies of university hospital mergers in Sweden illustrate the management conditions by means of analysing how different actions and statements are passed on by politicians, county council directors, and hospital managers. In-depth interviews were carried out. In the analysis of the stories given by the politicians and the managers, conducted with the support of three theoretical perspectives, certain themes emerged which touch upon these management conditions. The author’s own experiences as a hospital manager and as a consultant was also of use, as have document studies.

Results

In connection with hospital mergers, leading hospital actors carry out communicative power games that are controlled by different action logics. The power games, which are being played between representatives of professions and politics, are leading to an unpredictable change process. As the changes were additionally perceived to entail negative consequences for the patients and staff in mass media, the initially weak position of the managers were undermined.

Conclusions and originality

There have been done several studies of healthcare management. No study, however, seems to have explicitly dealt with the hospital manager’s conditions as regards managing a university hospital in connection with mergers. One consequence of the financial deficits and the power games is that the managers are resigning. They are coming and going.

SIDSSA* - An Approach for Building Sustainable and Multilayer Competence in Continuous Improvement in Health and Social Services

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**Sustainable Improvement and Development through Strategic and Systematic Approaches (SIDSSA)*

Introduction

Care of the elderly and functionally impaired in Sweden is mainly tax funded, guided by politicians and organized by county councils and municipalities. Managing and improving such organizations is a complex task, adhering to many expectations. Managers and change agents need strategies and tools that can aid continuous improvement and learning processes. The purpose of this study was to develop and test an approach for building sustainable and multilayer competence in continuous improvement in health and social care. The strategy, named SIDSSA - Sustainable Improvement and Development through Strategic and Systematic Approaches, was developed and tested in Sörmland region.

Material and methods

The case study used a mixed methods approach. Three cases covered the Change Agency – the R&D unit in Sörmland, division and unit managers in two municipality cases, elderly care and care of the functionally impaired. Data consisted of interviews, observations, documents, instruments and process diaries collected 2009-2012.

Results

The goal of SIDSSA was to enhance a holistic understanding and strategy, systematic practices and process knowledge (learning, change and organizational processes). SIDSSA consists of five flexible phases under which specific methods and instruments were developed and tested. SIDSSA was successfully implemented at the R&D unit and adopted as the unit's development assignments approach and sustained during the study period. Respondents reported that the model's structure helped create a sense of control and calmness in otherwise messy and uncertain situations. Planning, mapping of situations and problem analyses were improved, producing better problem solutions. Respondents found it easier to explain, motivate and implement change initiatives, especially after mapping, analyzing and formulating purpose and aims in relation to the large picture. The importance of involving higher management was highlighted.

Conclusions

We conclude that a systematic strategy involving several hierarchical levels can aid learning and development. Having a holistic overview and a systematic change approach gave managers a sense of control of a fragmented work situation. To enhance development creating common mental models are important and SIDSSA aided such processes. Further research is needed to test the approach in other context. Effects on staff and patients are yet to be established.

Drugs and Birth defects – evaluating a knowledge base used by the experienced specialist as well as the worried patient

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Introduction

The knowledge database *Drugs and Birth defects* provides assessments on fetal risks of all medications on the Swedish market. It is available on the website http://www.janusinfo.se/v/Lakemedel-och-fosterpaverkan/ and can also be used as an integrated part of electronic health records. The database has around 100 000 inquiries annually which can be compared to the approximately 100 000 children born in Sweden every year. The information is designed for health care professionals. However, it is freely accessible on the Internet and to a great extent used by the public. We will investigate the effects of the database in clinical practice, with special emphasis on health care professionals and patients using the same information. Easily-accessed, reliable and consistent information is central within this area. It is otherwise common that a disproportionate fear of fetal risks due to medications may result in suboptimal treatment of the pregnant woman.

Material and methods

A pilot study via a questionnaire on the website is planned to autumn 2012 to provide an overview of the largest user categories, i.e. physicians, other health care professionals and patients. The questionnaire is designed specifically for each category. Important questions to be investigated are:

- during which circumstances and why the information is inquired
- its usefulness/clinical impact
- whether the database is time saving
- its impact on pregnant women's level of anxiety
- if the information is comprehensible

Based on the results from the pilot study, we intend to further evaluate some questions, i.e. how the information influences clinical decision making, patient safety and working procedures; how patients perceive the information and how it affects the physician-patient relationship.

Results

Preliminary results are available in late autumn 2012.

Conclusions

The knowledge database *Drugs and Birth defects* is, from web statistics and anecdotal evidence, an appreciated and frequently used tool in every-day clinical work. A project to evaluate its impact on a scientific basis has been initiated to clarify the value and means of improvement of the information system.

Patient safety in relation to the design of the patient rooms in Intensive Care Units – Staff's lived experiences of their working environment in high technological settings

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Introduction

Intensive Care Unit (ICU) is the place of care for the most critically ill patients. Patient rooms in ICUs serve as a place of care, treatment, recovery, visiting as well as a place of work for the staff. According to European Society of intensive Care Medicine, providing high quality and safe care requires an integration of human, technological and spatial recourses. These rooms are characterized by a high prevalence of stressors such as high levels of sound, strong lighting and are technologically dense environments. Previous research highlights the impact of the design and interiors for experiences of wellbeing and recovery process from the patients' and next of kin's perspective. However, in order to improve and develop intensive care there is a need for studying the meaning of the patient room as the staff's working environment and for patient safety.

Material and Methods

Data was collected during 2012 through a combination of qualitative research interviews and photographs, conceptualized as photovoice methodology (Wang & Burris 1997) at three different ICUs in Western Sweden. The participants were invited to photograph various aspects of the patient room of significance for their work. Photographs were used as an aid for reflection during the interviews. Data was analyzed using a phenomenological approach. In total 15 people participated.

Results

The preliminary results show that the design and interiors of the patient room are essential for the staff to manage and provide a safe and high quality care. The design and interiors are also of importance for work satisfaction. Moreover, the design of the room has a great influence on working conditions.
The presentation will be held orally and findings from the analysis i.e., themes, subthemes and some of the photographs will be presented as well as a short discussion about the method.

Conclusions

The design and interiors of ICU have an impact on work satisfaction and on patient safety.

Servant leadership in nursing at Akureyri hospital

Job satisfaction – work-related factors – quality of care

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Introduction/Background

Research has shown the importance of leadership regarding consultation and participation of staff in decision making, as well as emphasising factors in the working environment which improve the well-being of staff and the quality of care as well as safety in health care. Comprehensive research reveals that improvement of hospital work environment can be a relatively low cost strategy to improve outcomes of healthcare. Servant leadership is based on the philosophical framework of Robert Greenleaf who emphasised that a servant leader was first and foremost a servant respecting ancient values of humanity and morality putting other people's well-being before own power and benefit. These emphases are consistent with findings from recent studies underlining the importance of servant leadership in companies, institutions and health care for effective management and leadership.

The purpose of the research

To explore if management with servant leadership approach is practised in nursing at Akureyri Hospital. Also, to explore attitudes of nursing staff towards job satisfaction, work-related factors and quality of care and if there was a correlation between servant leadership managment, work-related factors and quality of care. A descriptive cross-sectional survey was conducted using a new questionnaire, SLS. Participants were nurses, nurse assistants and unit managers at Akureyri Hospital in the fall of 2011.

Findings

The main results showed that servant leadership characterises management and leadership considerably in nursing at Akureyri Hospital. Stewardship as a sub-factor was strongest of all factors. The level of job-satisfaction was high and generally the participants were pleased with the quality of care. Empowerment as a sub-factor had the strongest correlation with job-satisfaction. There was a significant correlation between empowerment and all work-related factors. There was correlation between some servant leadership sub-factors and staff's assessment of patient safety.

Conclusion

The results reveal that servant leadership exists at Akureyri Hospital and the hospital's staff is generally satisfied at work. These give support to results of prior studies that servant leadership approach promotes support to staff, joint decision-making, good working environment and flow of information which again improves job-satisfaction and staff's competence to ensure quality and safety in health care.

Keywords: Organization, leadership, servant leadership, nursing, management

Case-study of Innovation Activities in Psychiatric care in Finland

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On way for organizations to become more innovative is to capitalize on their employees' ability to innovate. Employees can help to improve psychiatric treatment and nursing care of patients through their ability to generate ideas and use these as building blocks for new and better services and work processes. This kind of orientation needs support from leaders in hospital environment. We call this orientation as a "Collaborative innovation process".

The aim of this paper is to introduce the results of qualitative study in which 40 staff members from psychiatric care department in central hospital in Finland was interviewed during the spring 2012. The interview themes were: leadership and management, trust, commitment, innovation activities, and well being at work. Now the results concerning innovation activities are presented. Our aim was to find out what kind of attitudes the staff have to innovation and how the innovation was coming true. The study is part of a larger Osuva-study where other three action research and survey are carried out.

It was found that the attitude among managers and staff was positive toward innovation and to the generation of new ideas. The ideas were focused mainly to the basic care. All staff found that they are allowed to be creative but however clear structure and resources for innovation activities was lacking. Usually one person or a group generated ideas as part of their daily work and then it was discussed in staff meetings. If the idea was accepted by staff and boss it was carried out forward but not always. The leaders were criticized of not being eager enough in implementation of new ideas produced by the staff. It seems also that the staff expected more support and encouragement from leaders concerning innovation. On the other hand leaders of upper level of organisation expected the staff to act freely on their daily work with their nearest leader.

The conclusion of the results is that innovation could be in more central role in the work of nursing staff and there is a need for creation of better innovation structure in hospital care practice.

Sustainable quality improvement requires a multidimensional approach

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Introduction

Healthcare is much more complex and heterogeneous than the industries where traditional quality improvement means are often invented. Single patient flows often stretch across several healthcare practices encompassing several professions and specialties with different tasks, experiences and interests, differences that the professionals often are unaware of. Healthcare professionals often find management models too simplified to account for their practice and they might find quality improvement suggestions as a threat to their professional expertise and identification. Moreover, healthcare improvement is governed by administrators, politicians and professions (as clinicians and researchers) with differences in tasks, knowledge and interests, sometimes in conflict.

Materials and methods

Ethnographic fieldwork and interviews with a project leader and a department head in endocrinology and maternity care, from an ongoing quality improvement project, as well as with the hired consultants.

Results

Quality improvement in a complex practice as healthcare is most successful when it simultaneously addresses all the relevant dimensions such as improving patient flows through better logistics, encompasses mutual learning among all involved professions, securing appropriate care for the patients and changing cultural values and identities among professionals.

Conclusions

To this end, quality improvement projects need to encompass quality improvement knowledge and tools, professional knowledge and involvement and to secure appropriate organizational support to overcome various forms of skepticism or resistance. In this way the quality improvements are underpinned by an increased knowledge of professionals' problems and backed up by their creative solutions and they also serve to produce increased mutual understanding between professionals as well as new improvement change leaders with an increased self-esteem and knowledge about quality improvement work.

Collaborative innovation process and its antecedents in social and health care

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Social and health care services are facing severe economic challenges in Finland. At the same time organizational structures are developed thoroughly. In organizational changes it's a challenge, how to create innovative work methods and processes. Organizational changes create quite often time pressures and uncertainty. It has also been shown that co-operation becomes more difficult and workers' readiness to create new ideas decrease in organizational changes as workers cope to stress and assure their positions in organization. However, changes in organizations also give possibilities for new and innovative solutions concerning organizing the work and can give individuals in organization possibilities to organize their own work. Might be that these kind of possibilities are depending on the organizations culture and the personnel's capabilities to organize their own work. In this paper, the aim is to explore how stress, organizational factors and social factors are related to innovative organizational culture in social and health care. Particularly it will be discussed, how collaborative innovation process will come true at work places.

This paper is based on a data from personnel surveys (N=3000) in 6 social and health care organizations. The survey is a part of a larger Osuva-study where four action studies and this survey are combined in a multicenter study. The aim of the study is to search new methods to manage and lead the collaborative innovation process, which enable more participation of personnel, clients and service providers. Important factors studied are employee welfare, participation, creativity, trust and commitment.

The study design and first results from the survey will be presented on the relationships between stress-related, social and organizational factors and collaborative innovation process.

Continuous improvements of processes in line with lean and employees satisfaction with efficiency, quality of care and their work environment

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Introduction

Continuous improvements of processes in line with Lean have been implemented in health care the last decade in order to meet demands on efficiency and quality of care. Improvement of work environment has not been the direct target although earlier research highlights the complexity of health care and employees' moral distress from perceived conflicts between quality of care and prioritization of resources. This study aims to explore the relationship between work processes in line with Lean and employees satisfaction with quality of care, efficiency and their work environment.

Material and methods

Cross-sectional survey directed at all employees, excluding managers, at a hospital, in which improvement work in line with Lean has been going on for several years. Answers regarding satisfaction with quality of care, efficiency (doing the right things, in the right way, in the right order, without unnecessary loss of time), and the work environment were dichotomized into satisfied/not satisfied. Answers to the question "Do you work with continuous improvements/Lean on your unit". Answers were dichotomized into Yes, it is evident/No, it is not evident, and it's relations to satisfaction with efficiency, quality and work environment were analysed using the chi-square test ($p<0.05$).

Results

Twenty-eight per cent of the employees were of the opinion that it was evident that they worked in line with continuous improvements/Lean at their work unit. Eighty-three per cent were satisfied with the quality of care, 60 per cent with efficiency and 64 per cent with their work environment. Those working in line with Lean were more often satisfied (94%, 82%, and 77%, respectively), compared to those who did not (79%, 52%, and 59%, respectively) ($p<0.0005$).

Conclusions

Improvement of work processes is essential not only for efficiency and quality of care but also for the work environment. Further research will explore relationships between Lean and team work, leadership and communication climate.

Critical factors in opening pharmaceutical packages: a usability study among health care workers, women with rheumatoid arthritis and elderly women

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Introduction
All consumers and health care workers should have the opportunity to handle pharmaceutical packaging safely and easily. The objective of this cross-sectional study was to compare the usability of pharmaceutical packages and determine the critical factors involved in the usability of packages with different opening mechanisms.

Material and methods
Four different packaging types were evaluated by 45 women. The participants were: nurses aged 47–62 years, older women aged 69–79 years, and women with rheumatoid arthritis aged 39–67 years. The test packages were (A) a glass bottle with a screw cap, (B) a carton box with a pill plate, (C) a disposable plastic dropper with a cover and (D) a plastic jar with a hinge cap. The usability of the packages was evaluated for such subjective measures as specified features of the openability of the packaging, as well as for such objective measures as the time needed to open the packaging, the involved upper-extremity muscular activity and the range of motion.

Results
Of the arthritic women, 13% were unable to open a screw cap bottle and 20% did not succeed with a plastic dropper with a cover within a given time limit. All of the other participants, except one older woman handling plastic dropper packaging, managed to open all of the test packages. For all of the participants, the use of the plastic dropper packaging caused the greatest amount of difficulty, both subjectively and objectively. The plastic jar with a hinge cap and the carton box with a pill plate were rated as the best in the overall evaluation of the ease of openability. In this evaluation, the plastic jar with a hinge cap was rated higher among the professional nurses than among the arthritic ($p<0.01$) or older ($p<0.05$) women. For the rest of the packaging, no significant differences were found in the overall evaluation between the study groups.

Conclusions
These findings revealed the difficulties involved in opening certain types of pharmaceutical packages, especially the difficulties of arthritic and older women. Reacting to the specified, critical features of packaging openability would enhance the possibility to create user-friendly products for all consumers.

Outcomes and implementation of a national initiative to improve quality of care for older people

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Introduction

National authorities have implemented initiatives to improve quality and efficiency in health and social care. Traditionally, they have merely provided information about changes needed. Scientifically, this approach has been proven rather ineffective. In recent years, Swedish national authorities have shown an increasing awareness of the need for facilitation to bring about change in health care. This study aims to describe the content, implementation, facilitation strategies and results of a national initiative within older people care 2010-2012 organized by the Swedish Association of Local Authorities and Regions (SALAR). The initiative strives to improve systematic and evidence-based ways of work e.g. by increasing the use of the quality registries in municipalities and county councils.

Methods

The national initiative is studied using multiple methods. Data collection consists of semi-structured interviews with key stakeholders, observations of activities and gathering of documents. Degree of use of four quality registries is used as an outcome measure.

Results

The initiative can be described as flexible regarding content and strategies for facilitation, which are continuously developed and adapted. SALAR has used a diversity of facilitation strategies to implement the initiative, for instance enabling regional development coaches, involving management in county councils and municipalities, economic incentives and engaging expertise from the quality registries to develop output data and give support. Other features are strategies for early, continuous identification of hindrances, rapid re-design and application of measures and feedback. The analysis of outcomes shows an increase in use of all of the four quality registries during the last two years.

Conclusions

This case study presents an innovative national approach characterized by flexibility and dynamism regarding content and facilitation. This is in line with research findings on successful implementation and change. Outcomes regarding quality of older people care and efficiency are too early to address, but an increase in the use of quality registries has been observed.

Feasibility and acceptability of an interactive mobile phone system for collecting and managing patient reported symptoms in prostate cancer

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Introduction

For immediate and continuous dialogue between patients and caregivers new approaches in modern technology are encouraged today. So far, there is not sufficient evidence for the effects of interactive health communication systems. In cooperation with a Swedish health management company, we developed an interactive mobile phone based monitoring system for the assessment of symptoms and wellbeing and generation of instant self-care advice including an alerting function of severe symptoms with instant access to professionals in real time. By using this technique patients can communicate symptoms with instant support while cared for out-side hospital but at the same time reassured that their condition is monitored by the professionals. The objective of this study was to evaluate the feasibility and acceptability of the system for patients with prostate cancer and for the involved health care staff.

Material and methods

Evidence-based symptoms and related self-care advices were implemented in the application after literature review and interviews with patients and health care professionals. Nine patients diagnosed with prostate cancer undergoing radiotherapy treatment were recruited to test the application in two weeks. Subsequently, they were interviewed, individually and in focus groups, about their experience. Nurses directly involved in the care and treatment of the participating patients were interviewed at the end of study.

Results

Overall, patients and nurses reported positive experiences of using the mobile phone system. The patients considered the application helpful and easy to use although there were some suggestions for further elaboration on the rating scale and the meaning of the symptoms. Most of the patients had read the self-care advice and found them useful. The alerting system was activated in several cases; the nurses found it useful to identify and manage problematic symptoms early and the patients felt safe and well cared for. Some of the nurses thought the monitoring system was time-consuming.

Conclusions

Both patients and nurses could see the potential for using the mobile application in clinical practice. The system enables the involvement of the patients and the alerts showed problematic symptoms promoting timely interventions. The results support further development and testing of the system in full-scale.

A model to guide and assess the application of improvement knowledge in healthcare organizations

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Introduction

In their efforts to relieve human suffering from illness and injury, healthcare organizations face the inevitable yet challenging task of managing change. Since the 1980's, healthcare organizations have tried different methods originally developed in manufacturing to manage change and improve performance. They still search for ways to continuously improve (and many fail); there is not sufficient research knowledge to guide their efforts. The present paper conveys a model to guide and assess quality improvement (QI) efforts in healthcare organizations.

Material and methods

Based on a review of studies of QI, I previously developed a model to explain how QI is established in a healthcare organization. The model shows that successful establishment of QI requires a good fit between the QI approach and the needs and circumstances of the organization. It also suggests that implementation is not a one-off thing; instead, it requires iterative adaptation based on trial and learning. In the present paper, I build of that model to develop ways to think about strengthening QI capacity in healthcare organizations, and assessing the effectiveness of QI efforts to build further knowledge through evaluative research.

Results

Effective QI needs to address the mission-critical work of healthcare organizations. Since QI work will require resources, this investment needs to pay off for the organization – it must enable the organization to enhance the value it delivers to key stakeholders, e.g. better healthcare which yields better health for patients, and/or lower costs to achieve the same or better performance.

QI consists of a range of principles, methods and tools. To make a difference in an organization, they need to be applied well, and extensively. Short-term and superficial application is unlikely to make a difference for good. The model therefore considers the following aspects of a healthcare organization's QI application; its:

1. Breadth
2. Depth
3. Focus
4. Pace
5. Duration
6. Technical fidelity
7. Ability to demonstrate impact

Conclusions

By addressing the 7 aspects of QI application, healthcare organizations can increase their chances of accomplishing continuous improvement. Assessing these aspects of QI efforts will yield more nuanced and useful knowledge of QI effectiveness.

Lean and Teamwork: A Longitudinal study of impact of Lean Implementation on Teamwork in a Hospital Setting

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Introduction
Lean Thinking in healthcare has mostly been studied in terms of process outcomes rather than socio-technical aspects, despite that the importance of this has been highlighted in recent Lean reviews. Teamwork, which is an important socio-technical aspect, is understudied as an employee outcome of Lean. The Integrative Model of Group Development suggests that teams ideally develop through stages. Healthcare teams are different in nature from other fields due to variation in personnel and their roles over time. Further research is needed about the group development in healthcare teams during quality improvement interventions such as Lean, in order to improve interventions but also to understand the complexity of group development in healthcare.

Methods
This multiple method study, carried out at a Swedish hospital, measured teamwork through the Group Development Questionnaire (GDQ) survey among the employees in 2010 (n=223) and a follow-up survey in 2011 (n=207) during Lean implementation. Moreover, qualitative data including interviews, observations and document analysis were collected and analyzed to generate hypothesis about teamwork change patterns from first to second survey. This hypothesis was then tested against the actual results through a linear regression analysis.

Results
Overall, the survey results confirmed the hypothesis. The groups working at initial group development stages showed less success in Lean implementation as compared to the groups working at higher group development stages.

Conclusions
We found that it is possible to detect the result of a complex change by forming hypothesis based on theoretically derived assumptions and knowledge of the circumstances wherein the changes take place. The results suggest that Lean may have an impact on group development, given that it is properly implemented. The outcome of a lean implementation is highly dependent on external factors. Some sub-areas of group development may be more related to lean than others, namely those relating to structure, rather than those relating to relations within the group. The relationship between lean and group development may be bi-directional. Thus, practitioners should note that if their group is struggling with initial stages, Lean may not be the answer.

The LeanHealth project: Merging occupational health, safety and health promotion with lean: an integrated systems approach

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Background and aim

Lean is a production system that has gained wide-spread attention in Swedish health care. Overall, lean is focused on quality and production improvements rather than occupational health, safety and health promotion, and if anything, lean has been report to have detrimental effect on employee work environment, including increased work pace, workload and work intensification. However, some tools within lean have qualities that make it promising as a systematic, participatory health promotion system. In an ongoing project, the lean tool kaizen, which as a participatory system for continuous improvement, is used as a base for integrating occupational health and safety and health promotion. Thus, the project is an example of an integrative approach, which has been advocated as the frontier of organizational level occupational health interventions. The aim of this presentation is to describe how such integration can be done, and studied scientifically, by giving an overview of the LeanHealth project.

Methods

The project starts with a quasi-experimental design and emphasizes an interactive research-practitioner collaboration. The 12 departments in the hospital is matched and randomized to control and intervention conditions. Thus, the integration is implemented at six departments. However, the actual integration will differ between departments, since each department works slightly different with kaizen, and are free to adapt the integration of system to their own needs, with support from internal and external resources. The project takes a multi-method approach and the data collection includes web-based surveys at four time points, observations, interviews and document analysis. Both effects and issues regarding implementation are studied.

Results

The project is ongoing. The expected results includes potential effects on individual health- and efficiency-related variables and department level sickness absence, but most importantly, variation in implementation factors between departments in relation to outcomes are studied.

Conclusions

The project will provide new knowledge on how occupational health and safety and health promotion can be integrated with quality improvement within a production system. It will also provide knowledge on how implementation affects the intervention outcomes.

Managers approaches towards media during organizational development processes

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Background

Health care service is a public concern and an area where the media are expected to debate, investigate and criticize decisions and strategies. Despite today's intense reorientation of health care in Sweden and the increased media attention, organisational strategies to handle the dynamics of internal and external communication, as well as the scientific knowledge in these issues, are poor. Negative impacts of intense managerial personification processes on the managers stress reactions have been described. How managerial practice and handling of media interacts with organizational conditions and the progress of organizational improvements are, to our knowledge, not previously studied.

The purpose of the present study was to explore health care managers' approaches when communicating with media during ongoing organizational development processes.

Method

We used qualitative interviews with managers to explore approaches when communicating with media. Twenty cases of managers with top- or middle-position in municipal health and social services or hospital organizations were interviewed once or twice. The selection of managers was strategic to find a variation in experience of media communication and also a geographic and organizational variation. The raw data were collected stepwise, simultaneously coded and analyzed in line with the grounded theory approach (Charmaz 2006).

Results

Managers' strategies were related to the organizations *support and goal clarity* during media communication as well as to their *own experiences and awareness* of opportunities and threats imbedded in the media communication during organizational development processes. The following managerial strategies were identified: *avoiding media contact* (i.e. having a more passive approach which could be due to earlier negative experiences, being new in position and/or having a lack of media training), *being available to questions* (i.e. due to an awareness of the benefits of keeping availability or as more reactively following the process of medias interest), *following organizational strategies* (i.e. being clear about the agenda that was agreed upon in the organization: how, when and who communicates with media) and *taking proactive approaches in communication* (i.e. being well-prepared and having an own more strategic agenda during media contacts). The handling strategies were qualitatively related to progress in the ongoing organizational development.

Conclusion

Managers handling of media communication can have vital importance for the organizational development processes. According to our earlier results, it can also have importance for their own stress reactions and for the personification processes during media attention.

Speaking the Same Language: Technology Standards to Improve Healthcare Education

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Introduction

IT systems to support health professions education are often quite fragmented, making it difficult to see how the curriculum, competencies, assessments, and learner data are interrelated. Technical standards to support IT systems for health professions education would enable educators and learners alike to see the connections among curriculum, competencies, assessments, and learner performance. With ready access to that data, both educators and learners could use it to improve their performance across the continuum of health professions education.

Material and methods

The MedBiquitous Consortium was established in 2001 to advance healthcare education through technology standards that promote professional competence, collaboration, and better patient care. MedBiquitous is accredited by the American National Standards Institute (ANSI) to develop information technology standards for healthcare education and competence assessment. MedBiquitous convened working groups of subject matter experts in learning management, competency based learning, assessment, and curriculum management to develop the following standards and specifications: Healthcare Learning Object Metadata, Competency Framework, Curriculum Inventory, Educational Achievement. Each standard and specification has an eXtensible Markup Language (XML) Schema and accompanying document that specified the format for data in that domain. The standards and specifications are made available for download at no cost on the MedBiquitous website.

Results

Several organizations are implementing MedBiquitous standards to enable connections among curriculum, competencies, assessments, and learner performance. The Association of American Medical Colleges is implementing MedBiquitous standards to 1) catalog learning resources made available on its MedEdPORTAL site, 2) collect curriculum and competency data from US medical schools, 3) develop an accreditation preparation tool, and 4) develop an eFolio system to compile and exchange competency and performance data. The use of common standards facilitates connecting these systems in ways that promote continuous improvement.

Conclusions

Technology standards offer an opportunity to connect IT systems in health professions education, enabling continuous improvement based on institution and learner data.

Multicenter study:

A Nordic work environment complement to Value Stream Mapping (VSM) for sustainable patient flows at hospitals – A NOVO Multicenter study

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The Nordic Council of Ministers (NCM) granted 2007-09 a project with the aim to establish and develop a Nordic Network for scientists regarding research on work environment and efficiency in the health care sector ('the NOVO network'). The vision is a "Nordic Model for sustainable systems" in health care. A "Sustainable system" is here defined as the joint consideration of competitive performance and working conditions in a long-term perspective (Westgaard & Winkel, 2009, 2011). A preliminary project plan for a Nordic Multicenter project focusing a specific aspect of the vision was developed as part of the above mentioned NCM project. This was entitled: "A Nordic work environment complement to Value Stream Mapping (VSM) for sustainable patient flows at hospitals – A NOVO Multicenter study".

Development of production systems in healthcare is at present to an increasing extent based on Lean Production ideas. In the Lean terminology "value-adding work" (VAW) represents the portion of process time that employees spend on actions that create value as perceived by the customer (Liker 2004). The complementary part is "non-VAW" or "waste" as the general Lean term of non-value-adding activities.

In healthcare VSM is a common Lean tool used to identify and minimize waste (Keyte & Locher, 2004). It is a participatory tool, i.e. those affected by this type of rationalization are performing the analyses and subsequently suggesting the interventions. Participation has been shown to be crucial to obtain ownership of the suggested interventions and thereby increase impact. In addition, VSM has been shown to be a powerful rationalization tool. However, the resulting interventions may imply physical work intensification and impaired psychosocial work environment if the proportion of VAW is increased and management issues are not properly considered. In the rationalization process both physical and psychosocial working conditions should therefore be integrated to obtain a competitive performance in a long term perspective. In practice, this is rarely done. Thus, health of the employees and system performance goals often end up on a collision course with short-term performance demands as the winner (e.g. Winkel & Westgaard 1996, Westgaard & Winkel 2011).

A management style based on dialog between the parties seems to be crucial in order to consider both competitive performance and health issues as part of the same intervention process (Westgaard & Winkel 2011). Due to this, it is hypothesized that the Nordic countries have special opportunities to develop sustainable production systems. This hypothesis is based on the presence of "The Nordic model" which has regulated industrial relations in our part of the world (Guðmundsson 1993). It has evolved gradually during more than hundred years in the light of our special historical circumstances.

During the period 2002-10 an ergonomic intervention process tool (ErgoVSM) was developed in a series of Swedish projects, based on existing scientific evidence and in close co-operation with Swedish industry and the healthcare sector. It is based on the well-established VSM tool. But now it also considers health issues, i.e. risk factors for musculoskeletal and mental health in addition to reduction of waste (Jarebrant et al 2004, 2009). This requires a high degree of consensus between the parties and it is presumed that the Nordic countries with a common anchoring in "The Nordic model" offer the best prerequisites for this kind of research and practice. A prototype of ErgoVSM is now available (Jarebrant et al 2010a, b), but proper validation and further development are needed. As part of the NCM-funded NOVO project 2009, Sweden suggested that this could be performed within the healthcare sector as a Nordic Multicenter study. NCM now grants a Nordic co-ordination of the national studies in Denmark, Iceland and Sweden.

The final delivery will be a common Nordic version of the process tool ErgoVSM comprising the work from survey to development and implementation of solutions. We aim to deliver two booklets: a Manual and a Workbook for intervention processes towards increased sustainability of patient flows based on our specific Nordic opportunities. In addition, country-specific discrepancies will be considered in the guide.

The Multicenter Study is still in an initial phase with few results. However, our preliminary observations indicate marked national differences in handling of the VSM and ErgoVSM tools as well as generation of intervention proposals. Previous experience of Lean in the healthcare sector and in particular VSM seems to be a key modifier (cf. Jarebrant et al, Edwards & Winkel and Dröfn Birgisdóttir & Gunnarsdóttir, abstracts in the present Session). This represents a particular challenge in a research study validating the impact of the ErgoVSM compared to VSM regarding impact on performance and aspects of the work environment. This issue will be presented and discussed in relation to the specific Lean experiences within the healthcare sector in Denmark, Iceland and Sweden as well as at the investigated wards. At a general level the significance of such experience seems to be a key issue in the on-going discussions on “pros et cons” regarding Lean and sustainability.

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Previous experiences of Value Stream Mapping (VSM) at the hospital units included in the Icelandic part of the NOVO Multicenter Study

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During recent years the healthcare sector and in particular the Landspítali hospital in Iceland has gone through extensive financial cuts leading to downsizing of services and staffing. At the same time the total number of patients served and patient acuity has increased. Reports and hospital surveys have emphasized an increased risk of impaired productivity, patient safety and work environment for the staff.

Several strategies have been discussed and applied to compensate for these problems. Particular focus has been on Lean Production ("Lean"). In Iceland, Lean has been applied for many years in a number of organizations (e.g. industry, banking, IT). At Landspítali there is now an increased interest in adopting Lean for better hospital outcomes. Lean has been introduced the past few years at seminars and via professional reports and general knowledge in the field is at theoretical levels and practical knowledge is increasing among staff. Hospital management and staff members have demonstrated general interest and commitment to support implementation of Lean. However, at Landspítali an introduction of Lean to improve production was not initiated until November 2011 when collaboration was established with McKinsey&Company and Karolinska Institute (Sweden). This implied onset of Lean projects to increase patient safety at the hospital. Currently Lean is a key element of the hospital strategic plan for year 2012 – 2013.

For the purpose of the NOVO Multicenter Study three clinical units at the Landspítali hospital have volunteered to participate. These are: the general emergency department (two units) and the children's department (one unit). Comprehensive internal training in Lean methods is on the agenda at present.

Conclusions

In Iceland, introduction of Lean at the Landspítali hospital is to a large extent at the planning stage, guided mainly by external competence where training of internal lean experts is a priority.

Previous experiences of Value Stream Mapping (VSM) at the hospital units included in the Danish part of the NOVO Multicenter Study

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The rationalization strategy Lean Production ("Lean") was first introduced at a Danish hospital in 2004. The development of healthcare in Denmark has since then to an increasing extent been based on ideas and principles of Lean production although there has never been government Lean strategy. There is however signs that Lean will become the dominating strategy as the Danish Capital Region decided in 2011 to use Lean as the general rationalization approach at all their hospitals. A variety of Lean approaches, including top-down as well as bottom-up practices, have been used in different parts of the country.

The Danish hospital units included in the present NOVO Multicenter Study are part of the Odense University Hospital (OUH). This is a regional hospital with more than 10.000 employees. OUH has applied Lean principles including Value Stream Mapping (VSM) since early 2006 using a top-down approach driven by the hospital management. A central Lean department was established at OUH and it was decided that the saved resources obtained by VSM and subsequent reorganization should imply gains for both the hospital and the individual employee (ward) on a "50/50-basis".

After 2010 OUH changed to a "pull strategy" meaning that each ward is responsible for contacting the Lean department if they want to reorganize one or more of their processes. Thus, more emphasis is now put on "bottom-up" initiatives. Since then the number of projects has increased but the scope of projects is narrower compared to the early top-down lean projects. The Lean department has developed a concept for implementing Lean at OUH. The Lean department supply tools and project management to the wards in order to facilitate problem solving and implementation of solutions.

It is presumed that the above presented history of Lean introduction at OUH explains the general awareness of Lean, expectation of what it may offer and how it is implemented. Lean has become institutionalized at OUH and Lean projects seem generally to be associated with improvement of the work.

Conclusion

The organization of the Lean processes seems to be well established in the system and also accepted by most of the employees.

Previous experiences of Value Stream Mapping (VSM) at the hospital units included in the Swedish part of the NOVO Multicenter Study

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Within the county councils of Sweden (hospitals, elderly care, etc.) two waves of introduction of Lean Production (Lean) have occurred. The first occurred during the 1990s and was unsuccessful mainly due to dramatic and negative impact on the employees (Härenstam et al, 1999). The 2nd wave started after the turn of the millennium. In 2011 about 80% of the county councils were running Lean projects (SKL, 2012). Now more emphasis was put on leadership and teamwork as well as knowledge on methodology. Successful projects creating e.g. more efficient patient flows are supposed to save time. A key issue is, however, that no general agreement seems to occur on how these saved resources should be reprioritized (cf. the "50/50-basis" in Denmark). Due to this, Lean projects are often perceived as "saving projects" where staff will eventually be phased out leading to further "work intensification".

VSM is a main Lean tool used to reduce waste in production flows. Our present case studies show differences between hospitals in Lean and VSM experiences. At one hospital Lean has been developed from "below" in the organization since 2004 through successive education (SkaS-guiden 2008). In our 2 cases from this hospital the initial steps of VSM were guided by internal Lean educated stakeholders. No resistance was met from any employee. However, the writing of action plans and the following actions were integrated in parallel rationalization processes.

In contrast, our 2 other cases at another hospital had only been marginally influenced by Lean. The VSM processes were guided by an external Lean educated stakeholder (one of the authors). Especially one of the cases had significant difficulties in achieving consensus on an action plan including work environment issues. The required time for the VSM analyses became considerably prolonged, partly related to lack of Lean and VSM experience.

Conclusions

The duration of the VSM process seems to depend on previous Lean experiences. Problems in the assessment of an action plan, an essential part in the VSM procedure, seems partly due to employee uncertainty regarding the consequences for the individual and parallel rationalization processes.

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