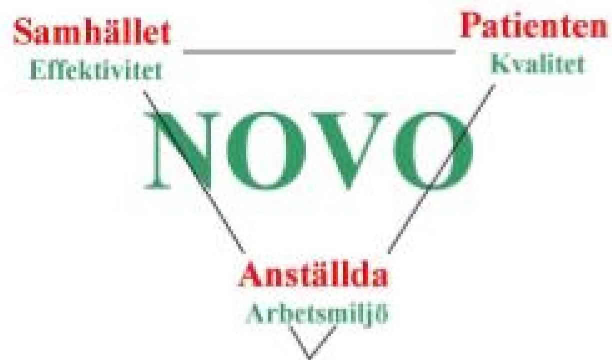

2nd NOVO SYMPOSIUM
Sustainable Nordic Health Care Systems

3. - 4.12.2008 Espoo, Finland

Abstract book

(Eds.: M. Laine, T. Sinervo, J. Winkel)

Preface

The Nordic Council of Ministers has since year 2007 granted establishment and development of a Nordic Network for scientists “NOVO-nätverket” (**NO**rdisk FoU-nätverk inom **V**ård och **O**msorg) regarding research on work environment and efficiency in the health care sector. An additional aim of the network is to communicate with and to practitioners within the field regarding recent research advances with practical implications. The vision of the NOVO network is a “Nordic Model for sustainable systems” in the health care sector.

One of the aims of the NOVO-network is to organise a yearly symposium to expose and discuss present and planned research within the field.

During the year 2008 dialog meetings with practitioners within the health care sector have been organised in Denmark, Norway and Sweden. The aim was to collect information from the end users of our research regarding their needs of knowledge in their strive towards development of “sustainable production systems”. The conclusions from these meetings will be presented at the meeting to create a basis for discussions on how to match our research with the needs of the practitioners.

In addition, two key-note speakers will contribute by summing up “state-of-art”. Professor Paul Lillrank presents an overview on “Productivity in Health Care and the work environment” and Dr Harriet Finne-Soveri’s presents an overview on “Care quality and work environment through standardised assessments”.

Finally, we have managed to get a good and strong sample of ongoing research in the Nordic countries within the field covered by the NOVO network.

The symposium is conducted with the financial assistance of the Nordic Council of Ministers. We also want to thank Tuire Westerholm from Finnish Institute of Occupational Health for her professional assistance in the preparation of the symposium.

Marjukka Laine
Finnish Institute of Occupational Health

Timo Sinervo
Stakes, Finland

Jörgen Winkel
NRCWE, Denmark and University of Gothenburg, Sweden

Content

KEY-NOTE LECTURES

Productivity in health care and the work environment 1
Paul Lillrank, Finland

REPORTS FROM THE NATIONAL MEETINGS

Report from the Swedish national dialogue meeting in Gothenburg, September 25, 2008 3
Gunnar Ahlborg Jr, Sweden

Report from the Danish national dialogue meeting in Odense, May 14, 2008 4
Jacob Hilden Winsløw, Jörgen Winkel, Denmark

Report from the Norwegian national dialogue meeting in Trondheim, June 2, 2008 6
Endre Sjøvold, Norway

ORAL SESSIONS

SESSION 1: PROVISION OF SERVICES AND ORGANIZING THE WORK

Treating sick hospitals with lean – a cure for patients, employees and society? 8
Peter Hasle, Anders Bojesen, Pia Bramming, Denmark

Collaborative development of a new organizational and leadership model in hospital surgery 10
Yrjö Engeström, Anu Kajamaa, Hannele Kerosuo, Päivi Laurila, Finland

Implementing lean in a surgical ward 12
Kasper Edwards, Anders Paarup Nielsen, Denmark

Team organization in the Danish elder care, an intervention study 14
Vilhelm Borg, Denmark

Collaboration programme for future services of health and wellbeing 15
Esko Hänninen, Finland

Work quality improvement: Participants' visions and outside expert support 16
Jacob Hilden Winsløw, Denmark

Public or private provision of service housing for elderly people
Productivity, care quality and employees' well-being in public and private service housing for elderly people 17
Timo Sinervo, Laura Pekkarinen, Vesa Syrjä, Anja Noro, Harriet Finne-Soveri, Heikki Taimio, Reija Lilja, Jukka Pirttilä, Finland

SESSION 2: NEW TECHNOLOGIES AND METHODS IN HEALTH CARE

Fosen District Medical Centre - a new model for collaboration between levels of health care 18
Leena Stenkløv, Norway

Does more "high -tech" lead to more "high -touch" in palliative care? 19
Beate André, Gerd Inger Ringdal, Toril Rannestad, Jon H. Loge, Stein Kaasa, Norway

Ergonomics and usability of two bathing methods - Comparison of traditional bed bath method to Bag Bath method in the elderly care 20
Virpi Fagerström, Leena Tamminen-Peter, Annika Parantainen, Finland

SESSION 3: REWARDING AND GRATIFYING HEALTH CARE WORK

Work fulfilment in dentistry 21
Hanne Berthelsen, Jan Hyld Pejtersen, Karin Hjalmers, Kamilla Bergström, Björn Söderfeldt, Sweden and Denmark

Aging social- and health care employees' readiness to continue working according to the experienced quality of service 23
Sami Laakso, Marjukka Laine, Gustav Wickström, Finland

Interruptions and delays in the work of nurses in acute care 24
Helga Bragadóttir, Iceland

SESSION 4: CULTURAL DIFFERENCES

Important factors of Nordic hospital nurse work environment - Comparison to international data 25
Sigrún Gunnarsdóttir, Iceland

Professional development among nurses working at hospitals - a comparation between Finland and Norway 26
Kari Anne Holte, Marjukka Laine, Norway and Finland

Burnout levels among Nordic hospital nurses - Comparison to international data 27
Sigrún Gunnarsdóttir, Iceland

SESSION 5: LEADERSHIP

Finnish social and health care entrepreneurs´ leadership and managerial abilities, skills and related factors 28
Merja Sankelo, Finland

Performing "on stage" - Reflection and learning "backstage"
The outcome of support groups for first line managers in health care 29
Christer Sandahl, Sweden

Health care leaders' stress, fragmentation of work and time-use strategies 30
L. Dellve, R. Arman, E. Wikström, Sweden

Systematic work environment efforts in municipal home care services: a research project to identify factors related to lack of effect on sick leave 31
Gunn Robstad Andersen, Rolf H. Westgaard, Norway

Physical risk policy as a part of safety management in the elderly health care 32
Leena Tamminen-Peter, Virpi Fagerström, Aija Moilanen, Finland

Workplace violence against health care workers 33
Simo Salminen, Finland

LIST OF PARTICIPANTS

Programme

Wednesday 3.12.2008

Chair: Dr Marjukka Laine, Finnish Institute of Occupational Health, Finland

09.00 - 10.00	Reception, coffee/tea
10.00 - 10.20	Opening Marjukka Vallimies-Patomäki, Dr, Ministerial Adviser Ministry of Social Affairs and Health, Finland
10.20 - 10.40	The NOVO Network Jörgen Winkel, Professor National Research Centre for the Working Environment, Denmark Department of Work Science, Gothenburg University, Sweden Lotta Dellve, Dr Sahlgrenska Academy and University Hospital Dept of Public Health and Community Medicine, Sweden
10.40 - 11.30	Keynote Lecture: Productivity in health care and the work environment Paul Lillrank, Professor Helsinki University of Technology, Finland
11.30 - 12.30	Lunch
12.30 - 13.30	Reports from the national dialogue meetings with practitioners Gunnar Ahlborg Jr, Assistant Professor Institute of Stress Medicine, Sweden Jacob Hilden Winsløw, Dr National Research Centre for the Working Environment (NRCWE), Denmark Jörgen Winkel, Professor
13.30 - 13.45	Break
13.45 - 14.45	SESSION 1: PROVISION OF SERVICES AND ORGANIZING THE WORK Chair: Gustav Wickström, Professor University of Turku, Finland Treating sick hospitals with lean – a cure for patients, employees and society? Peter Hasle, Senior Researcher National Research Centre of the Working Environment, Copenhagen Collaborative development of a new organizational and leadership model in hospital surgery Anu Kajamaa, Doctoral Student Center for Activity Theory and Developmental Work Research, University of Helsinki, Finland Implementing lean in a surgical ward Kasper Edwards, Associate Professor Technical University of Denmark
14.45 - 15.15	Break, coffee/tea

15.15 - 16.15	SESSION 1 CONTINUES
	Team organization in the Danish elder care, an intervention study Vilhelm Borg, Senior Researcher National Research Centre for the Working Environment, Denmark
	Collaboration programme for future services of health and wellbeing Esko Hänninen, MSc, Director Stakes Tampere Satellite Office, Finland
	Work quality improvement: participants' visions and outside expert support Jacob Hilden Winsløw, Senior Researcher, Dr National Research Centre for the Working Environment, Denmark
	Public or private provision of service housing for elderly people Timo Sinervo, Senior Researcher National Research and Development Centre for Welfare and Health, Finland
16.15 - 16.30	Break
16.30 - 17.15	SESSION 2: NEW TECHNOLOGIES AND METHODS IN HEALTH CARE Chair: Kari Anne Holte, Senior Research Scientist International Research Institute of Stavanger, Norway
	Fosen District Medical Centre - a new model for collaboration between levels of health care Leena Stenkløv, Project Manager St. Olavs Hospital - Trondheim University Hospital, Norway
	Does more "high-tech" lead to more "high-touch" in palliative care? Beate André, Assistant professor Norwegian University of Science and Technology, Norway
	Ergonomics and usability of two bathing methods Comparison of traditional bed bath method to Bag Bath method in the elderly care Virpi Fagerström, Research Scientist Finnish Institute of Occupational Health, Finland
19.00	Dinner

Thursday 4.12.2008

Chair: Dr Timo Sinervo, National Research and Development Centre for Welfare and Health, Finland

9.00 - 9.45	Keynote Lecture: Towards better care quality and work environment through standardised assessments Harriet Finne-Soveri, Dr National Research and Development Centre for Welfare and Health, Finland
9.45 - 10.45	SESSION 3: REWARDING AND GRATIFYING HEALTH CARE WORK Chair: Sigrún Gunnarsdóttir, Assistant Professor, Dr University of Iceland, Iceland Work fulfilment in dentistry Hanne Berthelsen, DDS, MPH, Doctorate Student Department of Oral Public Health, Malmö University, Sweden Aging social and health care employees' readiness to continue working according to the experienced quality of service Sami Laakso, Researcher Finnish Institute of Occupational Health, Finland Interruptions and delays in the work of nurses in acute care Helga Bragadóttir, PhD, Associate Professor University of Iceland, Iceland
10.45 - 11.15	Break, coffee/tea
11.15 - 12.15	SESSION 4: CULTURAL DIFFERENCES Chair: Gunnar Ahlborg Jr, Assistant Professor Institute of Stress Medicine, Sweden Important factors of Nordic hospital nurse work environment Comparison to international data Sigrún Gunnarsdóttir, Assistant Professor, Dr University of Iceland, Iceland Professional development among nurses working at hospitals - a comparation between Finland and Norway Kari Anne Holte, Senior Research Scientist International Research Institute of Stavanger, Norway Burnout levels among Nordic hospital nurses. Comparison to international data. Sigrún Gunnarsdóttir Assistant Professor, Dr
12.15 - 13.15	Lunch
13.15 - 14.15	SESSION 5: LEADERSHIP Chair: Lotta Dellve, Dr Sahlgrenska Academy and University Hospital, Sweden Finnish social and health care entrepreneurs´ leadership and managerial abilities, skills and related factors Merja Sankelo, Principal Lecturer, PhD Laurea University of Applied Sciences, Finland Performing "on stage" - Reflection and learning "backstage" The outcome of support groups for first line managers in health care Christer Sandahl, Associate Professor Karolinska Institutet, Medical management centre, Sweden Health care leaders' stress, fragmentation of work and time-use strategies Lotta Dellve
14.15 - 14.45	Break, coffee/tea

14.45 - 15.30	SESSION 5 CONTINUES
	Systematic work environment efforts in municipal home care services: a research project to identify factors related to lack of effect on sick leave Gunn Robstad Andersen, Research Fellow, PhD Candidate Norwegian University of Science and Technology, Dept of Industrial Economics and Technology Management, Norway
	Physical risk policy as a part of safety management in the elderly health care Leena Tamminen-Peter, Specialized Researcher, PhD Finnish Institute of Occupational Health, Finland
	Workplace violence against health care workers Simo Salminen, Senior Researcher Finnish Institute of Occupational Health, Finland
15.30 - 16.00	Summing up and future challenges for the network. Plenum discussion. Gunnar Ahlborg, Sweden Jörgen Winkel, Sweden/Denmark
16.00	Closure of the symposium

Productivity in health care and the work environment

Paul Lillrank

Department of Industrial Engineering and Management, Helsinki University of Technology, Finland

Productivity is the relation between input and output.

Productivity is easy to define, but difficult to measure because of complications on both the input and output sides.

In healthcare typically three quarters of the operating costs are wages and salaries. Therefore labor hours serve as a good proxy for inputs.

In healthcare, as in many other services requiring producer – customer co-production, the output side consists of three different elements. *Outputs* are definable and measurable activities done by a producer for an intended benefit of a patient: what is done to a patient. Typical outputs are patient visits, prescriptions and surgical interventions. These can be equalized in terms of patient mix and complexity, counted, and evaluated against established best practices. *Outcomes* are the results of provider-patient interactions: what happens to a patient. Outputs contribute to outcomes to a variable degree. Other factors are patient health behavior, compliance, placebo, situational and random factors. *Value* is the perceptions of patients and significant others as to the cost-benefit of a treatment episode in relation to expectations.

The purpose of healthcare services is to create positive health outcomes with a high perceived value. Outcomes can be measured, for example with post-treatment check-ups and before-after comparisons. The health status of a population can be determined. The problem, however, is that service providers do not have a full control over outcomes. The contribution of an output to an outcome is a variable that gets different values in different situations. I clear-cut cases, such as minor trauma, the relation is easily established, in others, such as diffuse pain, it is hard to do.

While outcomes are generally seen as the crucial factor in healthcare efficiency, the co-production nature makes it difficult to construct outcome –based incentive and budget systems. If outputs are used as drivers of remuneration due to easy calculability, the system will produce a lot of outputs. Outcome –based systems will lead to moral hazards, such as rejection of patients with poor prognosis, or undue meddling with patients' privacy.

Several solutions to this dilemma can be conceived. Output and outcome –based productivity are defined and measured separately. Incentives can be constructed to include both. The proper relation

between number and types of outputs per outcome can be subject to benchmarking. National best practices can be established and used as a baseline, to which the performance of individual treatment units is compared.

Report from the Swedish national dialogue meeting in Gothenburg, September 22, 2008

Gunnar Ahlborg Jr

Institute of Stress Medicine, Gothenburg, Sweden

Local organizer

Institute of Stress Medicine, Region Västra Götaland and Occupational and Environmental Medicine, Sahlgrenska Academy, University of Gothenburg.

Participants

17 practitioners representing three counties (regional and hospital level), the city of Gothenburg (elderly care), the Swedish Association of Local Authorities and Regions (national level) and the Swedish Work Environment Authority (national level). 11 researchers representing 9 research centres/institutions.

Programme

After introductory presentations the participants were engaged in focus group discussions. Three mixed groups were formed, each with a group leader and a "secretary" from the organizers. The same theme-guide was used by all group leaders and the discussions were taped for later evaluation. The group activities were followed by a panel session when the practitioners could raise questions to the research experts. By the end of the meeting the main points from the group discussions were summarized.

Main messages – proposals for research areas

- Leadership in large complex work systems
- Leadership that keeps "the NOVO-triangle" together, organisational support
- Dissemination and implementation of new knowledge
- Prognostic measures regarding organisational success and employee health
- Management and co-worker participation

The focus group material will be further explored by the organizers and presented at the meeting in Helsinki 3-4 December, 2008.

Report from the Danish national dialogue meeting in Odense, May 14, 2008

Jacob Hilden Winsløw[A], *Jörgen Winkel*[A,B]

[A] *National Research Centre for the Working Environment (NRCWE), Copenhagen, Denmark*
[B] *Department of Work Science, University of Gothenburg, Gothenburg, Sweden*

Local Organizer

The Danish National Network Concerning LEAN in the Health Sector

Participants

72 practitioners from all Danish regions and 4 researchers from NRCWE and the University of Aalborg.

Programme

The meeting was opened by lean coordinator Jörgen Ejler Pedersen. Then professor John Johansen presented the Danish research project "Lean without stress" and lean practitioner Lena Lundh from the University hospital of Lund presented the Swedish experiences within the field. Thereafter, the participants formed groups that discussed three questions: 1) Is there sufficient evidence for the claim that LEAN works in the health sector? 2) Does the LEAN-terminology work in the health sector? and 3) Are there any special circumstances that need to be taken into account when LEAN is implemented in the health sector. The discussions were reported in plenum and tape-recorded. A questionnaire was distributed to the practitioners, asking two questions: 1) What is the greatest advantage to the working environment of implementing LEAN, as you see it? and 2) What is the greatest challenge of LEAN production to the working environment , as you see it? 39 practitioners returned completed questionnaires listing at total of 97 "advantages" and 96 "challenges"

The main messages from the practitioners

- The practitioners were divided concerning the sufficiency of existing documentation of the workability of LEAN in the health sector (discussion question 1). Some considered that professional practical experience was a sufficient form of documentation, while others set higher demands
- In general the practitioners agreed that the LEAN-terminology has to be translated in order to work in the health sector (discusssion question 2)
- A number of special circumstances merit attention when LEAN is to be implemented in health sector organizations (discussion question 3), among them: The importance of the professional identity for health sector employees, the high quality standards of both the sector and the

professions working in it, the danger of workers' overinvolvement in their jobs, old buildings, manpower scarcity, and organizational inertia.

- Approximately 1/3 of all respondents to the questionnaire emphasized the significance of the following advantages of LEAN in the health sector:
    - increased influence/responsibility for the individual worker
    - increased transparency of the system as a whole
    - improved interdisciplinary co-operation
- Few respondents reported challenges to the working environment inherent in LEAN. The majority of challenges reported were to the successful implementation of LEAN, such as
    - lack of resources,
    - fear of change among workers, or
    - institutional barriers to the implementation.

Report from the Norwegian national dialogue meeting in Trondheim, June 2, 2008

Endre Sjøvold

Dpt. of Industrial Economics and Technology Management, Norwegian University of Science and Technology, Norway

Theme

"Realizing value by lean production and ICT in hospitals: practitioners view on what researchers contribution ought to be"

Local Organizer

Dpt of Industrial Economics and Technology Management, Norwegian University of Science and Technology By Endre Sjøvold, (endre.sjovold@iot.ntnu.no)

Participants

25 persons participated of who six had an additional role as researcher. Both clinical and IT professional (ratio 5 to 1) where invited all working with "lean" organizing and/or ICT efforts. We experienced a geographical skewed representation towards the southern part of Norway.

Programme

The workshop was split into two parts. The first part consisted of several lectures covering intention of the NOVO network and practical experiences. The second part was arranged as a World Café dialogue meeting where participants were presented with two areas for discussion: "organizing for efficient/effective interaction" and "efficient/effective logistics and use of ICT".

The main messages from the practitioners

The results and discussion reflects the three "corners" of the NOVO triangle and are briefly summarized by the following six bullet points:

- Research on logistics and lean production should be concern with the complete value chain; from primary care through hospitals. The validity of the "value" construct should always be evaluated in connection to such research.
- Research on the use and implementation of ICT in hospitals should be coordinated with the effort of institutions responsible for national initiatives. Researchers may help evaluating ongoing projects and bring in lessons learned from other industries.

- Research on professional borders and interdisciplinary teamwork will create knowledge essential for most of the themes discussed at the workshop as these topics repeatedly were raised as major obstacles to success.
- Research on management, leadership and control include all aspects from recruitment practices to strategic implementation and are more in depth covered by the Swedish workshop.
- Research on change concerns needs to focus not only “best” practises, but also what the underlying, and often unconscious, reasons for change initiative in hospital are.
- Research on work environment has to be related to the topics above, and has less value if treated as a separate matter of concern.

These findings and more thoroughly description of the workshop and findings are compiled in a separate report. The finding will also be presented at the NOVO conference in Helsinki Des 3-4 2008.

Treating sick hospitals with lean – a cure for patients, employees and society?

Peter Hasle, Anders Bojesen, Pia Bramming

National Research Centre of the Working Environement, Copenhagen, Denmark

The Danish public hospital sector faces numerous challenges. The most important ones are on one hand a rapid growth in demands in form of number of patients, quality expectations and availability of new expensive treatments. On the other hand budgets are continuously restricted and there is a severe lack of qualified staff.

During the last few years lean has achieved tremendous popularity and virtually all hospitals in Denmark are involved in implementation of lean projects, and lean is now considered to be one of the most important answers to the challenges in the hospital sector. However, lean is also propagated by critical questions such as: Can a rationalization strategy developed for car manufacturing be used for such a different task as treating patients? Most of the positions in the discussions have been either overtly enthusiastic proponents or angry opponents. Few attempts have been made to analyse the content of the locally negotiated lean approach and study how it may fit into the everyday work processes in the hospitals.

The key concept in lean is "creation customer value". That idea is perhaps more unambiguous in car manufacturing than other business lines but it is not necessarily clear what it means when it comes to treatment of patients. While the patients are the obvious costumers they do not pay for the services provided to them. Payment is provided by the state and secured by elected politicians. Thereby politicians too become customers of some sort. At the same time "creating customer value" may be an ambiguous term in itself. There may be contradictions between the short term interest in an (expensive) cure in the here-and–now for a limited number of patients, and longer term interests in securing quality treatment for future patients at large scale. It will for instance imply resources for the training of nurses and doctors and time for sharing knowledge and consolidating procedures, experiences which are not beneficial to the individual patient in need of a fast treatment.

The initial experience from a research project – Lean Without Stress – in a university hospital in Denmark indicates that it is possible to overcome some of these contradictions. The project is based on a bottom-up approach with strong support from the top management. It is the staff who carries out value stream mapping, develops ideas for improvements, and to a large extent takes responsibility for implementation. Top management supports with personnel resources, training, and internal lean consultants. An important key to the positive experience is a joint agreement between the management and the employees about the purpose and the use of the gains from the project. Improvement of the

work environment for the employees is an objective equal to quality and productivity, and the gains are to be shared between the local department and the central top management. The resources thereby made available for the local department are used mainly for sharing experience, competence development and for research.

The overall research question which we address in this paper is: What happens to the hospital, when it is seen as a sick organism in need of a lean cure? Is it possible to balance the needs of society, patients and employees by implementing lean? Is lean the cure proper to secure efficiency in work, high quality services and a good work environment, or are there restraints?

Collaborative development of a new organizational and leadership model in hospital surgery

Yrjö Engeström[A], Anu Kajamaa[A], Hannele Kerosuo[B], Päivi Laurila[C]

[A] *Center for Activity Theory and Developmental Work Research,University of Helsinki, Finland*
[B] *Verve Consulting, Finland*
[C] *Surgical operating unit, Oulu University Hospital, Finland*

Industrial management principles such as process thinking and rationalization of care processes have become commonly used in health care quality management. Statistical process control (SPC) methodology is usually employed in quality management in studying care as a process. Results of the studies provide guidelines on how to develop efficiency and fluency of the processes, for example by reducing waiting times and waste times in hospitals.

Our starting point is that working and organizing are moving towards collaborative models. Dialogue, relationships and co-created organizational models are a crucial factor in reshaping and holding together organizations. Collaborative organizing is a historical, over time evolved phenomenon. The concept of collaborative community takes us further in understanding organizational processes and connections within and between organizations. Collaboration takes shape in collective activity which involves a purposeful target called an ‘object’ that is cultural and includes the collective motive and meaning for the activity. Collaborative modelling requires reconceptualization of the object of work, and tool creation for mastering the emergent new object and new forms of activity.

In our presentation we will provide a case example of collaborative development of a surgical operating unit at University Hospital in Finland. The unit had functioned in a contradictory situation with an increased need for operating patients and demands for organizational effectiveness. Simultaneously the lack of personnel and closed operating rooms had partly paralyzed the functionality of the unit. In order to solve the difficult situation our research group was invited to facilitate a developmental process. The process was carried out in a group of anaesthetists, surgeons, nurses, other staff members, and managers from different organizational levels as well as us researchers. The process was fostered through a ‘mirror’ representing the work situations at the unit. The intervention provided a space for collective analysis of the crisis like situation of the unit. During the process a new organizational and leadership model was created collaboratively and tested in practice. Agentive actions took place during the change process, which are considered to be crucial in consolidating and sustaining the new model. The focus in the intervention was in large-scale

transformations in activity systems which does not mean a quick fix of organizing the work, but may take years to carry out in an organization.

Implementing lean in a surgical ward

Kasper Edwards[A], Anders Paarup Nielsen[B]

[A] *Technical University of Denmark, Denmark*
[B] *Aalborg University, Denmark*

Using the well-known principles from lean management in an orthopedic surgical ward at a major Danish hospital reorganized their work-flow and processes. The ward has ten operating rooms and performs the complete range of the orthopedic procedures ranging from patients that need simple standard procedures to patients in need of complex emergency procedures.

The primary result of the lean project has been to split the flow of patients in two. The first flow is concerned with highly standardized and non-emergency procedures, e.g. minor knee surgery. These surgeries are routine, predictable and can be planned in advance and meet the prerequisites for lean management. Two of ten operating rooms have been allocated to this flow. Selected surgeons, nurses and porters have been allocated to the two operating rooms and they remain in the sterile environment for the duration of the workday. The effect of the lean implementation has been a 33% increase in patient throughput.

The second flow is unchanged and concerned with non-standard and emergency procedures, e.g.., major hip surgery on old people or surgery on traffic victims. The surgeries within this flow are non-routine, unpredictable and cannot be planned (in detail) in advance. The remaining operating rooms are allocated to this flow and there have been no significant changes to the organization of work in these theaters.

Lean management is derived from the Toyota production system and is a comprehensive system of tools and techniques for productivity improvement. Lean management has its origins in industrial production, but it is now being transferred to many other sectors, e.g., health care. Two important prerequisites exist for implementing lean management: Firstly, stable and standardized processes and secondly leveling of production. Stable and standardized processes ensure quality and predictability (e.g. process time). Leveling of production is essential for production planning. Based on the results of the case study of the surgical ward this paper will discuss three issues or challenges that emerged from the implementation of lean management Firstly, is lean a suitable tool to increase productivity in the health care sector. Secondly, what are the major challenges associated with implementing lean in the health care sector. Special emphasis will be given to a discussion of the implementation of lean in a professional bureaucracy as a hospital ward and the preconditions for a successful implementation of lean in this particular environment? Thirdly, what are the effects of implementing lean on the work environment and can lean principles be applied without deteriorating the work environment of the

employees? These three challenges will be analyzed and discussed using a number of different theoretical perspectives from, e.g., organization theory, lean and manufacturing management.

The paper will conclude by outlining a number of recommendations for the successful implementation of lean in the health care sector.

Team organization in the Danish elder care, an intervention study

Vilhelm Borg

National Research Centre for the Working Environment, Copenhagen, Denmark

Background. In the Danish Elder Care work is organized within the so called BUM-model. This organization of work is subject to dissatisfaction among care workers. A majority among them believe that the system results in unjust allocation of services, and that their own competence is not recognized. In many work places of the Danish elder care sickness absence is high, and early retirement frequent.

Objectives. The aim of this study is to evaluate the effects of an intervention that combines a modification of the BUM-model with team building and stress management for the care workers on their health and well being, sickness absence and turnover, and the quality of care.

Design. A prospective quasi experimental controlled intervention study.

The intervention. The intervention is a modification of the BUM-model with devolution of responsibility from visitators to suppliers, combined with team building activities and stress management. A team is here defined as a work group with a high degree of decision latitude, shared responsibility for planning, distribution, and performance of the tasks. The reason for choosing stress management is that previous studies and experiences have shown that restructuring of tasks leading to increased influence for workers is often associated with an increase in the experience of psychological demands.

Methods. Before and after the intervention the care workers' evaluation of their working environment, team functioning, health, well being, and intention to stay is measured on the basis of questionnaires. The quality of care is measured by the care workers' own evaluation of their possibility for delivering good care, and by the clients' evaluation of the care they receive. Process evaluation will be undertaken by use of questionnaires and observations.

Collaboration programme for future services of health and wellbeing

Esko Hänninen

Stakes (National Research and Development Centre for Welfare and Health)
Tampere Satellite Office, Finland

The National R & D Centre for Welfare and Health (STAKES), Tampere University, City of Tampere and Pirkanmaa Hospital District have signed in November 2006 a "Collaboration Programme to Develop Future Services for Health and Wellbeing". The agreement is valid until the end of 2010. The overall goal of the programme is to enhance the efficacy and efficiency of public services for health and wellbeing. For this purpose the programme promotes planning and implementation of new R & D partnership projects which will have essential impacts regionally and nationally.

The content of the programme is concentrating in three thematic areas: 1) Development of new coordinated and/or integrated approaches to organise customised services for health and wellbeing, 2) Health technology assessment, and 3) Health promotion based on principle "health in all policies". On all of these thematic areas the following transversal approaches are basis for work: exploitation of knowledge and scientific findings, future orientation, efficacy and efficiency, justice, crossdiciplinary and multiprofessional cooperation, and involvement of service users.

In the presentation some examples about the on-going projects are described. International contacts are created e.g. to study the possibilities to transfer new successful operational models from private sector companies for use in the health care systems. Some possible approaches will be summarised, like "supply chain management", "customer relationship management", "modular production system" and "integrated services delivery". All this will be done in the context of "purchaser - provider split" and identifyed needs for new steering system of multiprovider reality, where public, private and 3rd sector services are intertwined together.

Work quality improvement: Participants' visions and outside expert support

Jacob Hilden Winsløw

National Research Centre for the Working Environment, Copenhagen, Denmark

Work Quality Improvement: By WQI we understand improvements in service work recognized by both the worker and the recipient. Background: Every year there are 130,000 acute admissions of patients aged 80+ to Danish hospitals. Acute admissions of elderly people involve, in addition to the patients, a similar or higher number of close relatives, and many of the 150,000 front line workers in hospitals, municipal services for the elderly, the primary health care, and supporting organizations. Depending on the source, between 5% and 33% of these admissions are considered inapprorpriate. There is wide-spread agreement that the cooperation between the services is unsatisfactory, and little agreement in the narratives of the cooperation given in the two sectors, and by recipients. One barrier to the improvement of the cooperation may well be the long organizational distance between the front workers in the two sectors. The pragmatic concern underlying the intervention is to improve work quality by improving the cooperation between the front workers across sector boundaries. Research question: Today worker participation is recognized as essential for the success of programmes of organizational change. Similarly recipients rights to participation in service delivery is established by law. Yet the outcomes of organization-level interventions based on worker participation are only small to moderate, depending on whether one looks at them from the perspective of worker health, job satisfaction, or job performance. Two hypotheses compete: A. Expert diagnosis of problems inhibits participants' creativity, mutual cooperation, and individual autonomy. B. The anxiety provoked in the individual by the opportunity for participation leads to reactive behavior against the intervention. Design: A 2 x 2 experiment with additional work units as control groups. Both factors have 2 levels: On the first level of factor A the participants are given state-of-the-art assistance in the definition and elucidation of the problems involved in the cooperation around the elderly patient and her transfer across the sector boundary, on level 2 no such assistance is provided. In stead participants on level 2 are encouraged to form a common vision of a sustainable cooperation across the sector boundary. On the first level of factor B participants are offered professional support for anxiety generated in the process of change, on the second level no such support is offered. Ethics: The intervention is based on two theories based on different views of man and on working life. Thus while it from one perspective appears to be beneficial to offer external support to alleviate anxiety, from the other perspective it appears as harmful interference with the free development of the worker and the work group. Some unanswered questions: How should legitimate interests without voice be recognised? How is the ”repressive formative interest” that can be expected from senior management and external interests be handled? How is low-level management to be involved?

Public or private provision of service housing for elderly people

Productivity, care quality and employees' well-being in public and private service housing for elderly people

Timo Sinervo[A] ,Laura Pekkarinen[A], Vesa Syrjä[A], Anja Noro[A], Harriet Finne-Soveri[A], Heikki Taimio[B], Reija Lilja[B], Jukka Pirttilä[B]

[A] *Stakes (National Research and Development Centre for Welfare and Health, Finland)*
[B] *Labour Institute for Economic Research, Finland*

In present difficult economic situation municipalities use more private services. No consensus exists, however, on the effects of using private services (in costs, productivity, quality of care and well-being of workers). There is a lack of comprehensive studies taking into account costs, differences in clientele, quality of care and workers' well-being. If these aspects are not taken into account the results will be misleading.

This study attempts to overcome the problems in former studies using a large sample, and combining different data. The aim is to explore the differences between private-owned and municipal services in service housing for elderly people. The factors studied are costs and efficiency, quality of care, work environment and well-being of employees. In analyses patient-structures are taken into account. The study is based on data from personnel surveys (N=1500), resident assessments (2500) (quality of care, patient structure) and data on costs, organizational structures and bed-days in municipal and private-owned service houses (150 work units).

First results show that in private-owned organizations leadership, team climate and autonomy are at better levels. Also job demands seem to be lower. In further analyses patients' functioning and quality of care are explored.

Fosen District Medical Centre - a new model for collaboration between levels of health care

Leena Stenkløv

St. Olavs Hospital - Trondheim University Hospital, Norway

Fosen District Medical Centre is an integrated health care model between primary and secondary health care. Eight municipalities and St. Olavs Hospital collaborate providing following services in Fosen region: desentralised hospital services (specialist consultations in Fosen, X-ray, dialysis, light therapy, audiographist), intermediate bed unit for diagnostics, observation, treatment and rehabilitation, Fosen emergency centre run by GP's, health promoting, education and skills development, digital communication (telemedicine, video, sensor technology, web -based networks, eLearning) and collaboration with local Air force base medical resources.

Some results: people with chronic desease, long term illness, need of rehabilitation and elderly people get high quality treatment near to home, beds and money are saved at the hospital, there is less need of help from primary health care and better continuity of care, patients are satisfied and feel safe, health care professionals have interesting jobs, good possibilities for eLearning, they stay in Fosen and have an extremly low rate of absence from work, it's easier to recruit primary doctors, people avoid unnecessary transport and long absence due to illness.

Shortly: an WIN - WIN situation for patients, municipalities, hospital and employers - an entire society.

Does more "high -tech" lead to more "high -touch" in palliative care?

Beate André, Gerd Inger Ringdal, Toril Rannestad, Jon H. Loge, Stein Kaasa

Pain and Palliation Research Group, Norwegian University of Science and Technology, Trondheim, Norway Faculty of Nursing, Sør-Trøndelag University College, Norway. Psychosomatic Research Group

Symptom assessment is important in palliative care. Computerized Technology (CT) is now available for use in such assessment. The aims of the present study were to investigate the attitudes and behaviour toward the implementation of CT among personnel in symptom assessment at a palliative care unit. Seventeen respondents participated in an in-depth interview. A qualitative approach was used in analyzing the data. The conflict between the "high-tech" and "high-touch" is more visible in palliative care units and will make the implementation process more difficult. This effective use of "high-tech" can lead to more time released for "high-touch" and possible more quality of life for the patients.The focus on being close to the patient and to meet their needs and wishes can easily be seen as opposed to more efficient and accurate symptom registration.

Ergonomics and usability of two bathing methods - Comparison of traditional bed bath method to Bag Bath method in the elderly care

Virpi Fagerström, Leena Tamminen-Peter, Annika Parantainen

Finnish Institute of Occupational Health, Turku, Finland

The aim of the study is to compare nurses' cardio respiratory load, their perceived work strain and working postures and the perceived features of the products used, when nurses perform bathing tasks using a traditional bed bath method and the newer Bag Bath method.

The method: This is an experimental study with a cross-over study design. The subjects are 14 healthy female nurses and 14 patients in two elderly care units. During three months period nurses perform bathing with Bag Bath and then with traditional bed bath or vice versa. Nurses' hart rate, perceived work strain (RPE-10) and working postures with REBA-analyses will be measured during these bath methods. This study compares ergonomics features, usability and the quality of skin care (Braden-measure). Nurses' and patients' perceptions of the bathing methods will be assessed by visual analogue scales (VAS). The time and the material usage will be followed to be able to count the cost-effectiveness.

The study will start on December with planning of the research schedule. On January in 2009 we will start to collect the data. The funding of this study has been confirmed by the Finnish Work Environment Fund and Steripolar Oy. The results of this study could be used when improving the quality of care and choosing the bathing methods which is ergonomic, cost-effective and comfortable for patients and nurses.

Work fulfilment in dentistry

Hanne Berthelsen[A], Jan Hyld Pejtersen[B], Karin Hjalmers[A], Kamilla Bergström[A], Björn Söderfeldt[A]

[A] *Department of Oral Public Health, Faculty of Odontology, Malmö University, Sweden*
[B] *National Research Centre for the Working Environment, Copenhagen, Denmark*

The psychosocial work environment in dentistry is well documented as demanding, while less is known of what constitutes work fulfilment for dentists.

Aim. The aim was to explore the rewarding aspects of the work as general dental practitioner.

Methods. A qualitative approach was used to ensure a deeper understanding of the subject as perceived by dentists working in the field. Among Danish and Swedish general dental practitioners, eight informants were in 2007-08 selected step by step to obtain maximal variation of participants as to country of origin, gender, age and clinical work experience. Semi-structured, in-depth interviews based on Kvale's principles were performed in the mother tongue of the informants. The interviews were audio-recorded and later transcribed verbatim in the original language by the interviewers. Statements covering rewarding aspects of dentistry were used for systematic text condensation according to the principles of Giorgi's phenomenological analysis, following 4 steps as modified by Malterud: (1) reading all the material to obtain an overall impression, and bracketing preconceptions; (2) identifying units of meaning representing different rewarding aspects of good work, and coding for these aspects; (3) condensing and abstracting the meaning within each of the coded groups; and (4) summarizing the contents of each code group to generalize descriptions and concepts reflecting aspects of good work. The study was approved by The Regional Ethical Review Board in Lund, Sweden.

Results. The first overall impression of data was that the rewarding aspects of the work as a dentist emerged directly from the clinical encounter: From the opportunity for performing a high quality odontological handicraft and from the relation with patients. It was formulated as an emotion of internal self satisfaction. Next, the dentists described some basic conditions as their relations to workmates, peers and managers as well as how organisational values and conditions influenced the opportunities for achieving the perceived rewarding aspects from the clinical encounter.

Conclusion. The results comprising the moral aspects as essential in the work as a dentist support Hasenfelds' theory of Human Service Organizations. This implicates a need for developing work environmental models with internal as well as external rewards when dealing with human service organizations.

Acknowledgements. The authors wish to acknowledge the Swedish Council for working life and social research for financial support.

Aging social- and health care employees' readiness to continue working according to the experienced quality of service

Sami Laakso[A], Marjukka Laine[A], Gustav Wickström[B]

[A] *Finnish Institute of Occupational Health, Finland*
[B] *University of Turku, Finland*

The Finnish population is rapidly aging. The needs of the services are rising while the amount of available labour is diminishing. The national social and health care system will need new solutions in providing the services. In order to evaluate the development needs, the working conditions and well-being of the staff in the social and health care services have been assessed in 1992, 1999 and 2005. In this paper the aging social and health care employee's readiness to continue working related to the experienced quality of work is presented.

The data was collected in 2005 by using a postal questionnaire completed by the respondents. Number of respondents was 2870 and the sample represents the social and health care staff in Finland. The readiness to continue working was examined by presenting a question asking what the employee would choose to do in case that her/his living would not be dependent on the employment situation. This paper covers the respondents aged 50 years or more and working in daily contact with clients or patients (n = 698). Logistic regression analysis with adjustments for education level and experienced health was performed.

40 % of the respondents was ready to continue working full time though their economical situation would not be dependent on the employment. As a part of the work satisfaction, data was examined and the results showed that those employees, who experienced the quality of the service provided by their unit as high, were 2,5 times more likely to continue working [OR 2,51 (95% CI: 1,68-3,77)] compared to those, who experienced it as moderate or low. The results also showed, that the employees who were satisfied with the service provided by themselves personally, were also nearly 2,5 times more likely to continue working [OR 2,46 (95% CI: 1,30-4,67)] compared to those who were unsatisfied with their own performance.

The experienced quality of the service provided is strongly connected to readiness to continue working among aging social and health care staff. Thus the factors related to experienced low quality of service should be investigated.

Interruptions and delays in the work of nurses in acute care

Helga Bragadóttir

University of Iceland Faculty of Nursing, Development Advisor, Landspitali University Hospital, Reykjavík, Iceland

To make better use of the human resources of nurses in a world of nursing shortage, a number of studies have identified how the working hours of nurses are used and what influences the effectiveness of their work. Former studies indicate that nursing is complex, requiring frequent shifting of tasks, location and cognitive work. Nurses are frequently interrupted during their work, which puts them at risk of making errors or near errors, jeopardizing the safety of patients. Study results on the work of nurses and their work environment indicate direct and indirect care to be the most important, however threatened by the complexity of the work and external factors such as interruptions.

A study was conducted on the work of nurses in acute care inpatient units at the Landspitali-University Hospital in Iceland. Direct observations of nurses during 12 entire eight hour shifts were done. A palmtop computer was used for data collection accompanied by a dictaphone for the observers to give explanations and further information. Observations included the type of work the nurses were doing and the frequency and type of interruptions and delays nurses encountered during their work.

For the purpose of this study the concept interruption is used as a synonym for interruptions, operational failures, delays and disruptions and is defined as: Disruption in the work of the nurse so that it does not continue or finish undisrupted and/or the nurse undertakes work/project/task which is not within the work schedule of the nurse or does not require the professional knowledge or skills of a nurse.

Nurses encountered most interruptions and delays during direct patient care, indirect patient care and medication administration. The most frequently occurring interruptions regarded lack of assistance and issues regarding communication or information. A total of 434 interruptions and delays were identified during the 12 shifts.

Nurses in acute care inpatient units encounter frequent interruptions and dealys during patient care and medication administration. This poses risk on patient safety and decreases the effectiveness of nurses' work.

Important factors of Nordic hospital nurse work environment Comparison to international data

Sigrún Gunnarsdóttir

University of Iceland, Faculty of Nursing, Iceland

This study investigates nurses' work in an Icelandic hospital, to identify important factors in their work environment in comparison with international data. The study aims at increasing knowledge about successful strategies to enhance nurses' working environment with the ultimate goal of providing high-quality patient care. The study is a cross-sectional survey among a large sample of a Nordic university hospital nurses using an instrument previously tested and employed in international studies. International studies point to hospital management, staffing, work relationships and autonomy as important factors to enhance job satisfaction, recruitment and good patient care. However, limited literature exists about Nordic studies providing comparison to international data. The study shows three factors being important elements of nurse work environment with regard to postive nurse and patient outcomes. These factors are supportive relationships between staff nurses and first line nurse managers, good working relationships between nurses and medical doctors and adequate staffing. Counter to expectations the study does not indicate the importance of senior nurse management for outcome measures and moreover the instrument proofed not sensitive to the perception of nurse work autonomy. Comparison to international studies shows that influencing factors of nurse work environment are similar to those of nurses in five other countries apart from senior nurse management and nurse work autonomy. It is suggested that factors concerning power and autority differ across countries possibly linked to culture and social traits.

Professional development among nurses working at hospitals - a comparation between Finland and Norway

Kari Anne Holte[A], *Marjukka Laine*[B]

[A] *International Research Institute of Stavanger, Norway*
[B] *Finnish Institute of Occupational Health, Finland*

Nurses constitute a large and important group of workers within health care both in Finland and Norway. Nurses' professional development is important both for the quality of care as well as for the job satisfaction of the individual worker. The aim of this study is to explore professional development and quality of care among nurses in Finland and Norway respectively. The study is a questionnaire-study including 2162 Norwegian and 1825 Finnish nurses working at hospitals. The data is gathered as part of the European Nurses Early Exit study (www.Next-Study.net). The preliminary results show a significant difference ($p<0.000$) in days used on professional development between Finnish (mean=4.9 days, median=2 days) and Norwegian nurses (mean=10.2 days, median =4 days). A tendency for significant differences ($p=0.07$) between different "department types" was found for the Finnish nurses, while in Norway the difference was significant ($p<0.001$). The Finnish nurses reported significantly lower on possibilities for development ($p=0.000$) and more often perceived performing tasks not enough qualified for ($p=0.000$). They were still less frequently thinking about further qualification in nursing ($p=0.000$). The Finnish nurses were less satisfied with their opportunities to give the care the patients needed ($p=0.000$). They also report more quantitative demands than the Norwegian nurses ($p=0.000$). The results indicate that differences in opportunities for professional development between the Finnish and Norwegian nurses may exist. This may be related to differences in how professional development is organised within each country.

Burnout levels among Nordic hospital nurses
Comparison to international data

Sigrún Gunnarsdóttir

University of Iceland, Faculty of Nursing, Iceland

This study investigates nurses’ perception of burnout symptoms in an Icelandic hospital in comparison to international data in the context of nursing shortages in with the ultimate goal of enhancing nurse well being at work and their ability to provide good patient care. The study is a cross-sectional survey using Maslach Burnout Inventory (MBI) among a large sample of a Nordic university hospital nurses. Previous studies show levels of burnout symptoms among hospital nurses higher than among other professional groups. Limited evidence exists about burnout levels among nurses in Nordic countries in comparision to international data. Leading academics point to the importance of context and culture for perception of burnout symptoms. Data were factor analysed and findings confirmed the three MBI sub-scales previously published, these are emotional exhaustion, depersonalisation and personal accomplishment. Icelandic nurses show more favourable scores (indicative of lower burnout) on all three MBI sub-scales, as compared with nurses in the US, England, Scotland, Germany and Canada. Counter to expectations the findings indicate that the nurses in this study do not suffer from burnout and demonstrate the characteristics of engagement at work, for example, feelings of control, choice and meaningful work. Feelings of control may be considered positive for Icelandic nurses compared to nurses in other countries and findings may also be accounted for by the positive report on some work environmental factors. It is suggested that context and culture are influential and may cause difference in perception of burnout across countries. A measure designed in the context of Nordic culture and society may be needed.

Finnish social and health care entrepreneurs´ leadership and managerial abilities, skills and related factors

Merja Sankelo

Laurea University of Applied Sciences, Finland

The social and health care sector is faced with momentous challenges wordwide. Most coutries have so far responded by developing and upgrading their service systems, particularly by increasing service provision. In the wake of these changes, increasing numbers of professionals have been setting up their own businesses to provide nursing care, social care and welfare services to different age groups and population groups. This is also true in Finland. On average the private social and health care compenies have 2 to 10 members of staff . The grow of this sector has created a whole new environment also for leadership and management. Globally there are however only little research focused on leadership and management issues in the field of private the social and health care companies.

This presentation is based on the study conducted among 294 entrepreneurs in Finland in the year 2006. The data was collected by a structured questionnaire and analysed by using SPSS statistical software. The results concerning the attitudes of entreperenuers to management, their adoption of managers' role, managerial assertiveness and the factors which were related to the results are introduced and discussed in this paper.

The entrepreneurs had positive attitudes toward leadership but they had deficiencies in the adoption of leadership and they were not very assertives leaders. Basic education, leadership education, leadership experience before starting up one´s own business, the annual turnover of the company and the number of staff had statistically significant relationship to the results obtained. Based on the results it is advisable that a person venturing into social and health care entrepreneurship has previous experience in acting as a superior and has some training in leadership and management.

In the end of this presentation the meaning of the results and leadership issues from the point of view of whole Finnish private and public social and health sector are discussed.

Performing "on stage" - Reflection and learning "backstage"
The outcome of support groups for first line managers in health care

Christer Sandahl

Karolinska Institutet, Sweden

During a one year period 75 first line managers at the Karolinska University Hospital in Stockholm participated in once monthly reflection groups. The "backstage" groups were based on an action-reflection-learning model, which was taking its point of departure in everday dilemmas and problems presented by the managers.The purpose was to strengthen the managers in their roles as leaders and thereby performing more efficiently. One hypothesis was that this experience will contribute to an increased self-confidence among the participating managers, which in its turn would be expected to increase the work satisfaction and health of the employees. Another potential possibility is that the intervention as a whole might be related to patient safety and quality of care. A web-based questionnare on employee health, attitude to patient safety and work climate was distributed before and after the intervention to a study cohort of 1950 employees, of which about one third had managers who participated in the intervention. Questionnaires were also distributed to the participating managers regarding their health, experience of work climate, coping skills as leaders and their evalutaion of the Backstage groups. This is a three year project with a "wait-list" control design, but some preliminary results will be presented.

Health care leaders' stress, fragmentation of work and time-use strategies

L. Dellve[A], R. Arman[B], E Wikström[B]

[A] Dept. Occupational Medicine, Sahlgrenska School of Public Health, Göteborg University, Sweden

[B] School of Economics, Business and Law, Göteborg University, Sweden

Introduction: The complex nature of the psychosocial work environment with its trend of increasing occupational stress creates challenges for today's health care leaders (HCL). Health, work ability and performance among health care workers have been related to leadership qualities and strategies. While, leaders own stress has been qualitatively related to fragmentation of work, compound identities and loyalty commitments. However, most of earlier studies are based on interviews or questionnaires, and few on observations. This study was conducted within a research program with the purpose to understand and support sustainable leadership in health care organizations.

Adopting the Mintzberg structured observational method of leaders' activities and behavior in combination with interviews and stress-indicators, we investigated what HCL really do at work and what kind of leadership activities that were related to stress. The further aim was to develop a method for support in sustainable time-use, sustainable from the perspective of leadership practice (quality and performance) and individual health among leaders.

Method: Strategically selected HCL (n=10) were observed during one week each. Stress was measured by continuous hart-rate and the stress-energy scale (4 times a day). The HCL were also interviewed at the end of the days as well as in-depth after the observation period.

Results: The result from the observations show that stress was observed in relation to frequently being interrupted (causing a fragmentation in their work). While, low stress was observed during uninterrupted times of administrative work (24% of their working time). In comparison with studies of other leaders, HCL had more and shorter activities. In total, 2 473 activities was observed during a week (3-14 activities/h). Most, 59% of their working time comprised of meetings (scheduled and unscheduled), especially with their subordinates (73%) and <1% with their own superior. Little time was used for preparation and reflection (1-9%) and there was almost no time between the activities.

The method for support in sustainable time-use comprise a shorter observation, mirroring and own reflection and, group-wise mirroring to increase insight of alternative strategies.

Systematic work environment efforts in municipal home care services: a research project to identify factors related to lack of effect on sick leave

Gunn Robstad Andersen, Rolf H. Westgaard

Dept of Industrial Economics and Technology Management, NTNU, Trondheim, Norway

The Norwegian Labor Inspectorate (NLI) carried out a national campaign, “Rett Hjem”, from 2002 to 2007 to improve the working conditions among home care workers (HCW) in councils throughout the country. Despite several orders and a substantial push by NLI, some of the councils did not manage to improve the working conditions. Other councils appeared to improve working conditions, but failed to benefit in terms of improved health and reduced sick leave. Variation in success among units within a council was also detected. These results are in accordance with research indicating that planned interventions often fail in reaching their stated goals. However, little is known why this happens. One hypothesis is that the simultaneous introduction of measures to increase output nullifies work environment interventions. This research project aims at 1) identifying factors explaining why some work environment interventions fail in reaching their goals while others succeed, and 2) examining causes of health complaints dominating sick leave statistics among HCW today. We aim at carrying out case studies consisting of 6 units (app. 200 HCW) within the council of Trondheim. Trondheim responded well to the campaign by allocating >10 mill NOK to campaign-related projects, but sick leave statistics indicate difficulties in showing overall positive effects. However, differences were observed between units in the council. Selection criteria for inclusion are variations in sick leave and work environmental challenges, allowing comparisons across units. Comparison of responses according to organizational level will be used to detect potential discrepancies in worker- and management perspectives. In-depth interviews, surveys and “work-diaries” will be carried out to gain insight into the working situations of HCW today. Changes to work procedures and standards will be documented from archival material. The data will be compared to statistics from 2003 which will enable us to make inferences about the situation after, as opposed to prior to, the interventions. In addition, descriptions of workers’ and management’s evaluation of local interventions will serve as grounds for ascribing today’s situation to the effect (success or failure) of the interventions.

Physical risk policy as a part of safety management in the elderly health care

Leena Tamminen-Peter[A], Virpi Fagerström[A,], Aija Moilanen[B]

[A] Finnish Institute of Occupational Health, Turku, Finland
[B] ARvire Ky, Lappeenranta, Finland.

Introduction: The work in the elderly health care is physically demanding; back pain and high injury rates are common. There are many risks factors but patient handling tasks are considered a main contributor to musculoskeletal disorders. A systematic review on patient handling found that the most successful interventions are based on policy changes, work environment redesign and risk assessment. As single factor interventions, based on technique training, has difficult to gain impact on back pain and injury rates, a change of work methods ought to be embedded into the safety management system.

Aim: The aim of the intervention study is to develop an action model for physical risks in the safety management system to achieve safer work methods, a safer environment and improved quality of care.

Material and methods: The controlled intervention study is carried out in 12 elderly care units in the Turku and the Lappeenranta area with a baseline- and then in 12 months a follow up evaluation. The evaluation includes risk assessments, a questionnaire about nurses' health, their experienced strain, musculoskeletal symptoms, psychosocial factors, safety attitudes and the units' safety climate features, which all are assumed to influence on the quality of care. Sick leave days and injury rates of musculoskeletal disorders are gathered from registers. The interventions take place on an organisational as well as on a unit level. On the organisational level is decided the safety policy which will be implemented by nurses in the unit level intervention. The follow up evaluation will be carried out in January 2009, so the results are not yet available in NOVO-seminar.

Workplace violence against health care workers

Simo Salminen

Finnish Institute of Occupational Health, Helsinki, Finland

Violence at work is a growing problem at the workplaces of health care system. The Work and Health surveys carried out by the Finnish Institute of Occupational Health every third year showed that percentages of health and social workers experienced violence or threat of violence at work has increased from 10% in 2003 to 17% in 2006. This is the most rapid increase among all industries.

The new law of work safety implemented in the year of 2003 determined that, where there is an obvious risk of violence, the work conditions have been organized so that the threat of violence can be prevented beforehands. According to the law, there must be safety procedures and devices to prevent violence at workplace. In addition, the workplace must write guidelines for the control of violence situations.

A questionnaire study was done in 2005-2006 to assess the implementation of this new law. Altogether 1,876 safety managers and safety representatives filled out the questionnaire of whom 202 worked in health care and social sector.

The respondents from health and social sector said that in 79% of their workplaces there are guidelines for employees in order to prevent workplace violence. Adequate safety procedures and devices was acquired to the 61% of the workplaces. Employees had possiblities to call help in 88% of health care and social sector workplaces.

There results showed that most of the workplaces in health care sector took the risk of violence seriously. Majority of them had done some actions to prevent violence from clients. However, there is now a discussion in Finland, whether regulations in the work safety law are enough to prevent this growing problem.

List of participants

Ahlborg, Gunnar Jr
Director
Institute of Stress Medicine, Gothenburg
Gruvgatan 8
SE-421 30 Västra Frölunda, Sweden
Tel. +46 31 894383
gunnar.ahlborg@vgregion.se

Andersen, Gunn Robstad
Research fellow, PhD Candidate
Norwegian University of Science and Technology
Department of Industrial Economics and Technology Management
Alfred getzv.3
NO-7491 Trondheim, Norway
Tel. +47 97795198
gunnand@iot.ntnu.no

André, Beate
Assistant Professor
Norwegian University of Science and Technology
Rognersvingen 15 A
NO-7021 Trondheim, Norway
Tel. 0047 91692871
beate.andre@ntnu.no

Bergström, Kamilla
DDS, MPH, Doctorate Student
Malmö University
Department of Oral Public Health
Faculty of Odontology
SE-20506 Malmö, Sweden
Tel. 0045 29725279
kamilla.bergstrom@mah.se

Berthelsen, Hanne
DDS, MPH, Doctorate Student
Malmö University
Department of Oral Public Health
Faculty of Odontology
SE-20506 Malmö, Sweden
Tel. 0045 28196867
hanne.berthelsen@mah.se

Bojesen, Anders
Researcher
National Research Centre for the Working Environment
Lersø Parkallé 105
DK-2100 Copenhagen, Denmark
Tel. +45 39 16 52 46
abo@nrcwe.dk

Borg, Vilhelm
Senior Researcher
National Research Centre for the Working Environment
Lersø Parkalle 105
DK-2100 Copenhagen, Denmark
Tel. +4539165358
vbo@nrcwe.dk

Bragadóttir, Helga
RN, PhD, Associate Professor
University of Iceland
Faculty of Nursing
Eiríksgötu 34
IS-101 Reykjavík, Iceland
Tel. +3545254988
helgabra@hi.is

Dellve, Lotta
Dr
Sahlgrenska Academy and University Hospital
Dept of Public Health and Community Medicine
Medicinaregatan 16
SE-405 30 Gothenburg, Sweden
lotta.dellve@amm.gu.se

Edwards, Kasper
Assistant Professor
Technical University of Denmark
Bygning 423, stuen
DK-2800 Lyngby, Denmark
Tel. +4522256320
edwards@ipl.dtu.dk

Fagerström, Virpi
Research Scientist
Finnish Institute of Occupational Health
Lemminkäisenkatu 14-18 B
FI-20520 Turku, Finland
Tel. +358 30 4747552
virpi.fagerstrom@ttl.fi

Harriet Finne-Soveri
Dr
National Research and Development Centre for Welfare and Health
PL 220
FI-00531 Helsinki, Finland
Tel.+358 9 3967 2299
harriet.finne-soveri@stakes.fi

Gunnarsdóttir, Sigrún
Assistant Professor, Dr
University of Iceland
Faculty of Nursing
Eiriksgata 34
IS-101 Reykjavik
Reykjavik, Iceland
Tel. 354 525 4919
sigrungu@hi.is

Hasle, Peter
Senior Researcher
National Centre of Working Environment
Lersø Parkallé 105
DK-2100 Copenhagen, Denmark
Tel. +45 39 16 53 05
pha@nrcwe.dk

Holte, Kari Anne
Senior Research Scientist
International Research Institute of Stavanger
Box 8046
NO-4068 Stavanger, Norway
Tel. +47 51 87 51 81
kari.anne.holte@iris.no

Huuhtanen, Pekka
Research Professor
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland
Tel. +358 40 5453819
pekka.huuhtanen@ttl.fi

Hänninen, Esko
Director
Stakes Tampere Satellite Office
Biokatu 10
FI-33520 Tampere, Finland
Tel. +358 40 5037095
esko.hanninen@stakes.fi

Kajamaa, Anu
Doctoral Student
Center for Activity Theory and Developmental Work Research
P.O. Box 26
FI-00014 Helsinki, Finland
Tel. +358 408232358
anu.kajamaa@helsinki.fi

Kerosuo, Hannele
Dr.
Verve Consulting
P.O. Box 15
FI-00521 Helsinki, Finland
Tel. +358 4877345
hannele.kerosuo@verve.fi

Laakso, Sami
Researcher
Finnish Institute of Occupational Health
Lemminkäisenkatu 14-18 B
FI-20520 Turku, Finland
Tel. +358 30 4747546
sami.laakso@ttl.fi

Laine, Marjukka
Dr
Finnish Institute of Occupational Health
Lemminkäisenkatu 14-18 B
FI-20520 Turku, Finland
Tel. +358 30 4747537
marjukka.laine@ttl.fi

Lillrank, Paul
Professor
University of Technology
Quality and Service Management Dept. of Industrial Engineering and Management
P.O.Box. 5500
FI-02015 TKK, Finland
Street address: TUAS Bldg.
Otaniementie 17, Espoo
Tel. +358 9 4513658
Mobile +358 500 703848
paul.lillrank@hut.fi

Parantainen, Annika
Researcher
Finnish Institute of Occupational Health
Lemminkäisenkatu 14-18 B
FI-20520 Turku, Finland
Tel. +358 30 4747515
annika.parantainen@ttl.fi

Penttinen, Leena
M. Sc, Rehabilitation Administrator,
Standars Development
Kela
Valimotie 1
FI-00380 Helsinki, Finland
Tel. 020 6343205
leena.penttinen@kela.fi

Salminen, Simo
Senior Researcher
Finnish Institute of Occupational Health
Topeliuksenkatu 41 a A
FI-00250 Helsinki, Finland
Tel. +358 30 4742731
simo.salminen@ttl.fi

Sandahl, Christer
Associate Professor
Karolinska Institutet
Medical management centre
SE-171 77 Stockholm, Sweden
Tel. +468 52483618
christer.sandahl@ki.se

Sankelo, Merja
Principal Lecturer
Laurea University of Applied Sciences
Uudenmaankatu 22
FI-05800 Hyvinkää, Finland
Tel. +358 40 4862088
merja.sankelo@laurea.fi

Sinervo, Timo
Senior Researcher
Stakes (National Research and Development Centre for Welfare and Health)
P.O. Box 220
FI-00531 Helsinki, Finland
Tel. +358 40 5752751
timo.sinervo@stakes.fi

Stenkløv, Leena
Project Manager
St. Olavs Hospital - Trondheim University Hospital
Olav Kyrres gate 17
NO-7006 Trondheim, Norway
Tel. +4791333208
leena.stenklov@stolav.no

Sund, Valborg
Project Director
St. Olavs Hospital - Trondheim University Hospital
Olav Kyrres gate 17
NO-7006 Trondheim, Norway
Tel. +4790073980
valborg.sund@stolav.no

Söderfeldt, Björn
Professor
Malmö University
Department of Oral Public Health, Faculty of Odontology
SE-20506 Malmö, Sweden
Tel. 0046 40 665 8582
bjorn.soderfeldt@mah.se

Tamminen-Peter, Leena
Specialized Research Scientist, PhD, T.P.T
Finnish Institute of Occupational Health
Lemminkäisenkatu 14-18 B
FI-20520 Turku, Finland
Tel. +358 40 5447134
leena.tamminen-peter@ttl.fi

Vallimies-Patomäki, Marjukka
Ministerial Adviser, Ph.D.
Ministry of Social Affairs and Health
P.O.Box 33
FIN-00023 Government, Finland
Tel. +358 9 1607 4170
Mobile +358 50 367 6490
marjukka.vallimiespatomaki@stm.fi

Wickström, Gustav
Professor
University of Turku
Lemminkäisenkatu 14-18 B
FI-20520 Turku, Finland
Tel. +358 44 5567171
gustav.wickstrom@utu.fi

Winkel, Jörgen
Professor
National Research Centre for the Working Environment, Copenhagen and University of Gothenburg, Department of Work Science
+46 (0)31 7865482
jorgen.winkel@av.gu.se

Winsløw, Jacob Hilden
Senior Researcher, dr.scient.soc.
National Research Centre for the Working Environment, Copenhagen
Lersø Parkallé 105
DK-2100 Copenhagen, Denmark
Tel. +45 3916 5344
jhw@nrcwe.dk