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## Development of a tool for integrating Value Stream Mapping and ergonomics in healthcare - A Nordic Multicenter study

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The 7th Nordic Working Life Conference

# **Threats and Possibilities Facing Nordic Working Life**

University of Gothenburg, Sweden, June 11-13 2014

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UNIVERSITY OF  
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Stream 8. Quality of work in Nordic countries

**Development of a tool for integrating Value Stream Mapping and ergonomics in healthcare - A Nordic Multicenter study**

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Background: A recent review has documented mostly negative effects of rationalization on musculoskeletal and mental health and corresponding risk factors, particular for the healthcare sector (Westgaard & Winkel, 2011). The review concludes that “tools and methodologies should be developed that allow concurrent tuning of performance and wellbeing considerations in a rationalization process”.

Lean Practices are increasingly used in healthcare and Value Stream Mapping (VSM) seems to be a commonly used and powerful tool to minimize waste i.e. non-value-adding tasks (non-VAT) (Keyte & Locher, 2004). Several studies show that non-VAT often offer less risky physical and psychosocial exposures (e.g. Kazmierczak et al, 2005; Østensvik et al, 2008; Palmerud et al, 2012; Jonker et al, 2013).

VSM is a participatory tool, i.e. those affected are performing the analyses and subsequently suggesting the interventions. Participation

in the intervention process has been shown to be crucial to increase ownership of the interventions and thereby increase impact. Rationalizations based on VSM may therefore offer a procedure suitable to include working environment issues. Further, workplaces in the Nordic countries seem to offer good opportunities for realizing a true participatory approach using VSM (Guðmundsson, 1993; Westgaard & Winkel, 2011). On this background an ergonomic module to VSM, the ErgoVSM, has been developed to increase the sustainability of the organisation when using VSM. The module is based on existing scientific evidence and has been developed in close co-operation with end users. ErgoVSM has recently been evaluated in a Nordic Multi-center Study within healthcare (Winkel et al, 2012). On the basis of these experiences the tool has been simplified to increase usability.

**Aim:** To present the most recent draft Nordic version of the ErgoVSM tool for healthcare and some contextual factors influencing the intended impact of the tool.

**Material and Methods:** The ErgoVSM tool is tested at 7 wards on 4 different hospitals in Denmark, Iceland and Sweden. The tests include assessment of tool usability and main factors facilitating or inhibiting the intended impact of the tool. On the basis of these trials a final version of the ErgoVSM is developed.

**The ErgoVSM tool:** According to common VSM procedure the Current State is mapped (visualized) followed by a similar procedure regarding a wanted Future State. The Ergo-module includes assessments of physical exposures (posture, forces, variation, porosity) and psychosocial exposures (demands, control, variation, communication, porosity). It focuses task as well as values stream level. The exposures are assessed by ratings scales with verbally defined end points. The analysis includes discussion of solutions and establishment of an Action Plan needed to realize the wanted Future State.

**Main contextual factors influencing the intended impact of the tool** seem to be previous Lean experience, management style, volume of competing projects and type of value stream analysed.

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