Evaluation and development of an ergonomic complement to the Value Stream Mapping tool - DTU Orbit (30/12/2018)

Evaluation and development of an ergonomic complement to the Value Stream Mapping tool: a NOVO multicenter Study plan

The Nordic healthcare system is under constant pressure to deliver more and better healthcare services. Advances in science continue to offer treatment for new patient groups and improvements to existing groups leading to more patients. At the same time work demands seem to increase; burn-out and physical work load problems are frequently described. Thus, the healthcare system needs to become more efficient and the principles of lean manufacturing are increasingly being selected by hospitals and wards as the methodology to becoming more efficient. Lean has been around for many years in the form of the Toyota Production System (TPS). But the concept and term surfaced as “lean” following a study of the Japanese car industry that tried to explain its high level of success (Liker, 2004). Lean is deeply rooted in an industrial manufacturing environment and many of the tools that are being used in connection with lean also have their origins in manufacturing. The fundamental methodology when implementing lean is value stream mapping (VSM). VSM is a tool to analyze a process by mapping all activities from a specific process in sequence. The time to complete an activity and waiting times between events are registered as well as total lead time, providing the analyst with an overview of the current state of the process. VSM in its current form does not support ergonomic considerations. Using the lean philosophy without considering the specific problems of the healthcare sector may result in work intensification and increasing ergonomic strain leading to more sick days and early retirement. In order to improve sustainability of suggested system solutions resulting from VSM a complementary tool, Ergonova, is now developed. The present planned Nordic investigation aims to evaluate and further develop the Ergonova tool for practical use in the Nordic countries. It is hypothesized that a broader spectrum of suggested solutions will be obtained by using Ergonova and some of these may appear to offer a higher level of sustainability. The overall research design is a comparative study where both the Ergonova and VSM tools are tested in the same organization on the same process and results are compared. One health care organization in each of the four participating countries will be investigated. Two types of data are collected: 1) Process data and 2) Outcome data. Process data are information documenting the work process taking place during the events. Outcome data are the suggested future process solutions; drawings and descriptions of the future state and proposed changes to tasks with significant ergonomic implications. Process data are further divided into an analysis of the technical skills in e.g. process mapping, ergonomic analysis and non-technical dimensions, i.e. the social side of the process. In an international perspective the Nordic countries are presumed to offer the best location for studies on how to integrate work environment issues into process development for improved performance. Our unique roots in this context are illustrated by the Nordic Model for co-operation between the social partners based on mutual trust.

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