Three Swedish hospitals' lean strategies and their contribution to organizational development

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1. Introduction

Lean is a popular management concept in Swedish hospitals. The extent to which the implementation of lean contributes to sustainable organizational development depends on if issues related to efficiency, quality of care and employee health are considered and included in a balanced manner. The aim of this study is to analyse the degree to which strategies for lean in three Swedish hospitals contributed to sustainable organizational development.

2. Methods

A holistic multiple case study design was used. Additionally, a prospective questionnaire study of three Swedish hospitals with ongoing lean implementation was performed. Three hospitals were selected as cases meeting two inclusion criteria: (1) small or medium-sized public tertiary care hospital serving an urban area; (2) self-describe having begun to implement lean at the time of the study. Qualitative interviews with 54 key actors, including hospital managers, administrators, clinical unit managers and change agents, were analyzed. The analysis involved forming categories through linking patterns between statements and perceptions of contexts, motives and strategies in the different hospitals. Results from the questionnaire to employees performed in 2012, T1 (N=1002, mean hospital response rate 65%) and in 2013, T2 (N=1005, mean hospital response rate 60%) were also analyzed. The items selected for this study were satisfaction with quality of care, efficiency of work performed and work environment. Differences in paired mean values 2012-2013 were analyzed between and within hospitals. Z-test was used to analyze if differences were statistically significant.

3. Results

Hospitals had different contexts and motives for lean, resulting in each hospital using different strategies for implementing lean. The survey results showed that there were significantly lower perceptions of quality of care ($p=0.01$) and work environment ($p<0.01$) developed from T1 to T2 in hospital 2, compared to the other hospitals.

Hospital 1 had a bottom-up strategy for implementing lean, including mainly employees' own suggestions on how to improve work processes and work environment. To

work with smaller improvements at a unit level was chosen as an explicit strategy for teaching employees about the principle of lean, i.e. principles of systematic organizational development. No significant differences between T1 and T2 in perceptions of quality care, efficiency of work performed or work environment could be seen in Hospital 1. It should be noticed that the hospital's lean work mainly consisted of nurses' and assisting nurses' smaller improvement suggestions at the clinical unit level. Physicians were only to a limited extent involved in lean work and change agents and managers described that it was hard to get them involved in the work with lean.

Hospital 2 chose a management-governed approach for implementing lean, including choosing to focus on a hospital-wide value stream in order to achieve broad efficiency gains. In response to the context and motives of a huge budget deficit, the hospital chose implementation strategies believed to have as much impact as possible. The hospital thus set up an extensive education program on lean and specifically on applying lean to "acute somatic flow," a process involving 50 % of all patients. Top management and all second line managers took part of the most extensive parts of the education program. The results showed significant differences between T1 and T2 in perceptions of quality of care ($p=0,01$) and work environment ($p<0,01$), meaning that employees were less satisfied following the implementation of lean. The results may reflect a context of many cut-downs, as well as a burden of working extensively with development work. Key actors described that motives for implementing lean, signaled by the hospital management, were a need for increased pace in improvement work in relation to expressed explicit aims to get a high budget deficit in balance.

Hospital 3's strategy included working with selected lean processes, mainly chosen for having high clinical relevance as well as for the potential of being best practice processes. Strategies for meeting clinical relevance included appointing process leaders who were experienced medical doctors. Hospital 3's overall strategy for involving key actors can be seen as a top down approach of spreading a structure for organizational development. This meant that process owners from the top management were appointed, and that central change agents were giving method support to process groups. The results showed significant differences between T1 and T2 in perceptions of efficiency ($p=0,01$) meaning that employees were more satisfied following the implementation of lean. Key actors described the success of the different selected processes to differ. Overall, it can be noticed that when unit managers were interviewed about lean they were describing internal development going on in wards or clinics at a local level, and more seldom relating to the county council governed work with the lean processes.

4. Discussion and Conclusion

So far, the implementation of lean in the studied hospitals did not seem to contribute to sustainable organizational development. In one of the hospitals, hospital 2, negative outcomes of lean were shown. The burden of implementing an extensive program for development work may be one explanation for the overall negative outcomes in hospital 2.