Lean in Stroke Care: Reducing waste to increase efficiency

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Background

Many healthcare organizations are looking for methods to reduce their costs and increase the productivity of their nurses and other professionals. Although the resources, such as budget and number of professionals are declining every year, the demand for health care is still increasing in the Netherlands. In 2015, the annual costs of healthcare in the Netherlands were 95 billion euro’s: 5.628 euro per inhabitant. More healthcare organizations are looking into the Lean methodology to reduce costs and work more efficiently. The Lean methodology focuses on the customer: the patient. The Lean method looks at every step in every process to assess if this step adds value for the customer or not. If not, the step should be removed. Reducing mistakes and removing non-value adding steps are examples of eliminating wastes. Research shows that in the United States of America, a reduction of human mistakes by 50% can save the American healthcare annually 1 billion dollars. Therefore, the aim of this study was to explore the value adding and non-value adding process steps in stroke patient admission in an integrated care stroke service in the Netherlands.

Methods

In this research, we focus primarily on stroke patients, whom are discharged from hospital acute treatment, and are ready to start their medical rehabilitation. Our research is executed in the Rotterdam Stroke Service (RSS) in three out of 19 organizations of the RSS. In this study, we used the qualitative approach to generate theory using interpretative knowledge from nurses and other professionals (normative approach, explorative research, naturalistic inquiry). Nurses and other professionals were interviewed to explore which problems they experience in their daily work. This results in more insight of potential wastes. In order to collect all the important data, we used interviewing, value stream mapping and a large part of the data consists of the research journals that captured all the information gathered during the naturalistic inquiry process. The last thing we added to our data were the documents we received from the experts (current protocols, application forms, available beds). For the interviews we used coding according to the grounded theory approach. Furthermore, we used a configuration analysis to distinguish aggregates and configurations in order to diagnose the different problems.

Results

Eleven interviews were held with nurses and other professionals. In a customer journey, each step was researched from the moment the patient arrived in the hospital till the moment the patient was discharged to a rehabilitation center or nursing home. After the interviews, several expert meetings were planned. In these expert-meetings, nurses and other professionals discussed the findings and tried to create an improvement plan, based on the Lean method. The results of the configuration analysis (most common problems and possible solutions) were discussed with all the involved experts. The up to date protocol in the RSS states that the patient should preferably be transferred to either rehabilitation of a nursing home within 5 days, if the condition of the patient allows for transfer. The majority of the patients were discharged within 5 days. An influence analysis showed that nurses influenced the patient processes the most. More than 100 wastes were discovered during this research. The most reported issues concerned 1) slow internal logistics in the hospital, 2) lack of medical readiness of the patient, 3) missing or delayed medical patient information transfer, 4) multiple discharge interviews, 5) lack of safely transfer of delicate information, 6) waiting lists and queuing up in rehabilitation centre.

Discussion

After this study, the organizations within the RSS started with reducing the wastes which were discovered during this research. This is in ongoing process in 2017, and the assumption is that there will be a significant improvement. Also, implementation of Lean caused a remarkable improvement in the University of Pittsburgh Medical Centre. Nevertheless, a critical note is that no research was found about failed attempts to implement Lean. Several studies show that only 10% of the Lean implementations can be considered as a success in the long term. Therefore, we should be careful with marking Lean as the definite success for the entire healthcare industry.