Chapter 4
The Implementation of Lean in Emergency Hospital Screening During the COVID–19 Pandemic

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ABSTRACT

Healthcare services, in particular, are one of the areas in which Lean can be applied and benefits can be reached through it. In order to analyze the suitability of Lean implementation in healthcare units, this research focused on a case study, namely in Hospital of Santo António emergency area, in the city of Porto, Portugal. The study was conducted in the year 2020, during the pandemic of COVID-19, which forced the change of screening processes. This research analyses and compares the new and previous sorting model and discusses if Lean methodology was applied. It was concluded, through data collected in the interview to the leading nurse, that despite de fact she is not familiar with the Lean concept and methodology, as process simplification and time reduction were taken into account, the new process can be considered Lean. The flow charts that reflect both the sorting structure used in the urgencies before and after were developed. Hospital culture, lack of communication before the new process implementation, and the facilities were some of the identified barriers.

INTRODUCTION

In an increasingly globalized world, companies seek the best use of their operational capacity with a focus on optimizing results and maximizing profits. Thus, the use of methods and tools to improve the design of processes is essential for the best use of their workforce. To guarantee the effectiveness of processes and flows, process mapping and redesign are important project tools.

The process and routine management of large companies is of fundamental importance to ensure targets and the correct allocation of existing resources (Chopra & Meindl, 2011). From this perspective, it becomes relevant the management of internal services offered to meet the needs of other internal areas, with the expected quality standard and adding value for all those involved in these operations.

Lean is a management tool widely used in process management to define activities, tasks and workflows. Research on management of health services has been increasing and the latent need for improvement of managerial processes in the healthcare area led to the adaptation of *lean* methodology to healthcare (D'Andreamatteo et al., 2015). As with any managerial change, changes in routines and protocols may generate fear and little adherence of the collaborators to the new realigned workflow routines. Difficulties in understanding and adapting to the new management, problems in the adherence and cooperation of leaders to the new strategic management may be major barriers to the effective implementation of lean healthcare (Sim & Rogers, 2009).

In the context of the worldwide pandemic COVID-19, which began in 2020, hospital management has taken on new aspects in the management of emergency procedures: How can infected service users be more easily identified and the contact between service users with suspected COVID-19 and service users without symptoms be reduced?

Taking into consideration the realignment of emergency triage processes, in the scenario of the COVID-19 pandemic, the importance of using *lean* methodology in the hospital environment has increased. This research is directly oriented towards the internal workflow, which affects employees and their satisfaction with the project and the success of the triage process.

PROCESS MANAGEMENT

Process management consists of measuring, designing and aligning activities. Its importance occurs when we need to visualize in a clear and cohesive way the activities of an organization. A process is a sequence of activities with a specific objective (Campos, 2014). When organized as a set, in a structured way, they create a pre-established work routine guiding employees to perform their tasks correctly and on

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