

Chapter 17

Digital Solutions and Lean Management in African Public Hospital Medicines Supply Chain: Literature Review and Case Studies

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ABSTRACT

The healthcare sector has made several changes after technological devices have been introduced to different processes. In addition, in Africa, the concept of “lean” comes to save medicines supply chains from waste. In this context, this chapter evolves the intersection of lean management in the public hospital medicines supply chain and digital solutions. Therefore, it focuses on how this integration can address critical challenges and improve healthcare delivery. In addition, it highlights the side of digital solutions in Africa differently based on lean management integrated before and after technologies in the medicines supply chain and are not focused on the healthcare sector overall; however, the results demonstrate the importance of implementing lean management with digital solutions. Integrating digital solutions into a lean-managed medicines supply chain holds considerable promise for African public hospitals aiming to improve healthcare delivery.

DOI: 10.4018/979-8-3693-9641-4.ch017

INTRODUCTION

In the 21st century, several technologies have been implemented in the healthcare sector to help medical staff and patients do their jobs (production, prescription, or receipt of medicines). Nowadays, hospitals have started considering technology as beneficial for the healthcare and logistics sectors, by introducing some digital solutions to the processes. During the COVID-19 pandemic, and focusing on both the opportunities and risks they present, (Kaiser et al., 2021) highlight how digital health technologies can improve service delivery and efficiency, particularly in oncological care, while also introducing cyber security vulnerabilities and privacy concerns. Through a systematic literature review, the authors map digital health applications to healthcare processes and emphasize the need for comprehensive risk assessments and balanced cost-benefit analyses when implementing these technologies. This chapter demonstrates the role of digital solutions in supporting the implementation of lean management inside African public hospitals' medicines supply chain.

To answer the following questions: **how do digital solutions support the implementation of lean management in the African public hospital medicines supply chain? In addition, how efficient lean management can become while using digital solutions in healthcare?** Multiple sections are presented in this chapter, first, is an overview of the presence of digital solutions in the healthcare sector. Thus, the implementation of digital solutions with a focus on lean management. After that, we present some case studies highlighting the integration of digital solutions in African healthcare organizations, with a lens on lean management implementation inside public hospitals. Finally, we end the chapter with recommendations related to digital solutions in healthcare and their role in integrating lean principles and practices into medicines supply chains.

Having introduced the subject of lean management and digital solutions in African public hospitals, the next step is to explain the methodology that supports this investigation. This section outlines the systematic approach taken to gather and analyze the relevant data on the integration of these concepts in the medicines supply chain.

METHODOLOGY

The research process contains a systematic literature review, as Figure 1 shows the steps and phases followed to conduct this study, which aims to capture a wide range of studies, articles, and case reports on the topic. The following sections visualize the different approaches used to articulate this chapter.

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