

## Chapter 7

# Align Hospital Drug Delivery With Supply Chain Management: From Process Analysis to Performance Measurement

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### **ABSTRACT**

*In recent years, the European hospital sector has suffered the brunt of the economic crisis. This sector is now faced with a paradox, which is to reduce costs, related to the decline in government subsidies and an increase in the quality of care required by the regulatory bodies, while maintaining the level of care. This paradox can be resolved through the optimization of the hospital supply chain. Despite hospital supply chains having a great impact on hospital budgets, many opportunities for optimization exist to improve the healthcare quality. This chapter aims to analyze the distribution of drugs within a hospital in the line of supply chain management. The SCOR model was selected as the framework for this analysis. Then, potential failures that can arise in logistics processes are identified. After reviewing the literature regarding the hospital supply chain and the performance measurement, a framework is proposed with key performance indicators that can be applied in hospital supply chains to measure and monitor their performance.*

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## **INTRODUCTION**

Due to recent evolutions, the healthcare sector is being confronted with a challenging issue. On the one hand, the sector has to decrease costs while, on the other hand, the sector has to maintain or improve its quality standards as well as patient safety. These are a consequence of multiple causes.

First, there is the demographic evolution. This results in more people requiring more care than ever before. Secondly, healthcare expenditures in government budgets are rising. Whereas total healthcare expenditures made up 7.2% of the GDP in 1990, in line with the EU average, this rose to 10.4% in 2015, thereby exceeding the EU average (OECD/EU, 2016). In times in which government budgets are under pressure, healthcare does not escape from the exercise of financial discipline.

The revenue streams of health care providers are changing: instead of fee-for-service, other models are emerging which require proof that treatment is effective (Ebel & al, 2012). Since 2002 the funding system for hospitals in Belgium is based on performance and justification of activities (Di Martinelly, Guinet, & Riane, 2005; Gerkens & Merkur, 2010). Finally, the last major reform in the Belgian health sector aims at rationalizing and stimulating collaboration among different hospitals to achieve more quality and efficiency (Health Belgium, 2016).

However, this pressure on costs cannot lead to deterioration in quality. Healthcare does not escape from the general trend towards higher quality demands in an increasingly complex medical environment. The formerly passive patient became an active actor in the treatment process. The active client has other and higher demands, is better informed, and is continuously looking for the best care. This introduces the concept of competition between healthcare organizations in which quality is the key differentiator. Lastly, and most importantly: in healthcare, quality means saving lives.

Hospitals are considered to be one of the most complex players. This complexity is due to the heterogeneity (wide variety of care services offered), professionalism of doctors (they impose requirements and constraints), human factors (patients induce a high degree of uncertainty) and complex structure (a hospital includes non-primary activities that have to be synchronized with the care providing) (Hammami, 2006). Diverging objectives of the different actors involved with the hospital make things even more difficult. The complexity of hospitals linked with the fact that they constitute between 50% and 70% of the healthcare budget (WHO, 2003) and the fact that improvements on a large scale are possible to justify a further focus on hospitals.

When the authors look at what induces costs in healthcare organizations, and more particularly in hospitals, they see that logistics have a considerable stake in the cost of these organizations. Estimations differ but Landry and Beaulieu (2013) conclude that they must make up between 30% and 40% of the total costs. The pharmacy-related costs are considered to be half of these costs (Di Martinelly,

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