Data Standards in Healthcare Supply Chain Operations

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Abstract

This paper presents the challenges and benefits associated with adoption of healthcare supply chain data standards in a hospital environment. In a highly fragmented industry like healthcare with several stakeholders, the adoption and use of common data standards for identifying delivery locations and products is critical. Common data standards ensure system wide interoperability and visibility across the supply chain, contributing to improvements in patient safety and streamlined internal and external supply chain operations. However, the global healthcare industry has been significantly slow in adopting data standards in comparison to other industries like retail, manufacturing. We discuss the results from data standard adoption pilot project conducted by Center for Innovation in Healthcare Logistics (*CIHL*), University of Arkansas at Washington Regional Medical Center, a 325 bed not-for-profit hospital in Fayetteville, Arkansas. CIHL data standards pilot involved studying the existing supply chain processes, design, pilot-test, and evaluation of GS1 data standards adoption over a sample of products and a single delivery location at the hospital. We present the results, which demonstrate the capabilities of systemwide improvements and roadblocks likely to be encountered. Findings from the pilot can be expanded to develop a broad implementation plan of data standards adoption for healthcare providers.

Keywords
Healthcare Supply Chain, Healthcare IT, Material, Information and Process Flow, GS1 Data Standards.

1. Introduction

The complex nature of healthcare supply chains has intensified the need to share accurate and timely information about products and locations. The information disconnect and the rising costs of products in the healthcare supply chains calls for employing effective supply chain management practices. The cost of supplies constitute the second largest expense for healthcare providers [1], yet supply chain has been ignored and failed to take advantage of advanced developments in technologies and practices employed by other industries several decades ago. Data Standards (DS) in the healthcare supply chain are representations of unique, unambiguous, common information relating to products and location, which are fundamental to the effective information exchange throughout the supply chain. This information exchange refers to both within the hospital (internal) and among trading partners (external).The presence of common data standards ensure the correct material is delivered at the right location, in the right quantity at the right time and contributes to increased patient safety. Currently the healthcare supply chain has not widely adopted data standards. That is, there is no agreement on the identification standards (product and location) to be used by all players in the supply chain. The use of internal identification numbers is more prevalent; leading to staggering amounts of confusion, supply chain process inefficiency, and lack of visibility to track the product flow. From the healthcare provider point of view, more than 30% of hospital expenses are related to material procurement and supply chain management activities [2]. The administrative costs along healthcare supply chain constitute roughly 30% to 40% of healthcare costs as compared with 3% to 6% in the retail industry [3]; around 24% of supply administration time is spent on data management, cleansing and reconciliation efforts [4]. An industry survey reported providers spent over 7% on contracted price for medical surgical products, as the provider account number was wrongly identified leading to the confusion on tier-pricing[4]. Contrary to the healthcare industry, data standards have been a huge success factor

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