Proceedings of the 8th North American International Conference on Industrial Engineering and Operations Management, Houston, Texas, USA, June 13-16, 2023

Role of Technology in the Performance Measure of Insulin Cold Chains

Mona Haji
Logistics and Supply Chain Management Department
College of Science and Engineering
Hamad Bin Khalifa University
Doha, Qatar
mhaji@hbku.edu.qa

Abstract

Insulin is seen as an essential medication in high demand in the pharmaceutical industry. Optimizing the supply chain for insulin cannot be overstated to ensure patients have access to the medication they need and that the provider or supplier's costs can be managed efficiently. In order to ensure that patients have access to lifesaving medicines in a timely manner, the insulin supply chain (ISC) can be improved to become more efficient and effective. A semi-structured interview method was used in this study to analyze the issue of enhancing the effectiveness of the ISC and reducing the presence of counterfeit drugs by interviewing seven participants from the pharmaceutical sector in Doha, Qatar. As a result of this study, four themes were identified. These were: 1) limitations in transporting insulin, 2) methods for ensuring the effectiveness of the supply chain, 3) the importance of adopting advanced traceability methods to ensure that insulin is transported efficiently, and 4) RFID as a way to ensure that insulin is transported safely and appropriately throughout the supply chain. Participants in the study indicated that radio frequency identification (RFID) in the cold chain for insulin increased its efficiency by increasing its effectiveness.

Keywords
Supply chain management, Cold supply chain, Perishable drug, Insulin

Biography / Biographies

Mona Haji is currently a PhD graduate of the Logistics and Supply Chain Management Program within the Engineering Management and Decision Sciences Division at the College of Science of Engineering (CSE), Hamad Bin Khalifa University (HBKU) in Doha, Qatar. Her field of interest is Logistics and Supply Chain Management. She published several papers in international journals addressed public health and how to ensure food quality and drug safety. In addition to her experience in materials and store management, she has also established maintenance contracts. She has a MSc in Engineering Management from the Science and Engineering Department, University of Qatar, and BSc in Mechanical Engineering from the Science and Engineering Department, University of Colorado at Denver, USA