

Chapter 7

Optimizing the Use and Adoption of Healthcare Information Systems: A Systematic Review

Wilfred Bonney
University of Dundee, UK

ABSTRACT

Advancements in Information and Communication Technology (ICT) have led to the development of various forms of electronic records to support general practitioners and healthcare providers in capturing, storing, and retrieving routinely collected medical records and/or clinical information for optimal primary care and translational research. These advancements have resulted in the emergence of interoperable Healthcare Information Systems (HIS) such as Electronic Health Records (EHRs), Electronic Medical Records (EMRs) and Personal Health Records (PHRs). However, even as these systems continue to evolve, the research community is interested in understanding how the use and adoption of HIS can be optimized to support effective and efficient healthcare delivery and translational research. In this chapter, a systematic literature review methodology was used not only to explore the key benefits and technical challenges of HIS, but also to discuss the optimization approaches to maximizing the use and adoption of HIS in healthcare delivery.

DOI: 10.4018/978-1-4666-9882-6.ch007

INTRODUCTION

Advancements in Information and Communication Technology (ICT) have led to the development of various forms of electronic records to support general practitioners and healthcare providers in capturing, storing, and retrieving routinely collected medical records and/or clinical information for optimal primary care and translational research. These advancements have resulted in the emergence of interoperable Healthcare Information Systems (HIS) such as Electronic Health Records (EHRs), Electronic Medical Record (EMRs) and Personal Health Records (PHRs). However, even as these systems continue to evolve, the research community is still interested in understanding:

- What constitutes Health or Healthcare Information Systems?
- What are the key benefits, challenges, and obstacles of using Health or Healthcare Information Systems?
- What optimization techniques and approaches can be used to maximize the use and adoption of Health or Healthcare Information Systems in healthcare delivery?

HIS are powerful ICT-based processes, tools and applications that support effective and efficient healthcare delivery and translational research (Rodrigues, 2010). HIS have the potential to not only support seamless exchange of clinical information, but also improve both service efficiency and effectiveness for both inpatient and outpatient services (Harrison & McDowell, 2008). Hence, the need for optimizing HIS is of great essence in the healthcare industry.

The objective of this paper was to use a systematic literature review methodology not only to explore the key benefits and technical challenges of HIS, but also to discuss the optimization approaches to maximizing the use and adoption of HIS in healthcare delivery. The first part of the paper describes the systematic review methodology. In the second part, the focus is on the overview of HIS and their associated key benefits and challenges in the healthcare domain. The third part focuses on the optimization techniques and approaches to maximizing the use and adoption of HIS to support effective and efficient healthcare delivery and translational research.

METHOD

A systematic literature review, based on peer-reviewed articles from 2000 to 2014, was used not only to explore the key benefits and technical challenges of HIS, but also to discuss the optimization approaches to maximizing the use and

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/optimizing-the-use-and-adoption-of-healthcare-information-systems/146066

Related Content

Assessing the Overall Impact of Data Analytics on Company Decision Making and Innovation

Tor Guimaraes and Ketan Paranjape (2021). *International Journal of Business Analytics* (pp. 34-51).

www.irma-international.org/article/assessing-the-overall-impact-of-data-analytics-on-company-decision-making-and-innovation/288057

Big Data and Advance Analytics: Architecture, Techniques, Applications, and Challenges

Surabhi Verma (2017). *International Journal of Business Analytics* (pp. 21-47).

www.irma-international.org/article/big-data-and-advance-analytics-architecture-techniques-applications-and-challenges/187207

A Knowledge Management Framework to Manage Intellectual Capital for Corporate Sustainability

Herbert Robinson (2010). *Strategic Intellectual Capital Management in Multinational Organizations: Sustainability and Successful Implications* (pp. 119-135).

www.irma-international.org/chapter/knowledge-management-framework-manage-intellectual/36459

Innovation Management in Research and Development Projects: Key Performance Factors Oriented to Industrialization of Results and Market

Arturo Córdón-Pérez, Pedro Solana-González, Daniel Pérez-González and Sara Trigueros-Preciado (2018). *Handbook of Research on Strategic Innovation Management for Improved Competitive Advantage* (pp. 117-137).

www.irma-international.org/chapter/innovation-management-in-research-and-development-projects/204219

AI Ethics: A Bibliometric Analysis, Critical Issues, and Key Gaps

Di Kevin Gao, Andrew Haverly, Sudip Mittal, Jiming Wu and Jingdao Chen (2024). *International Journal of Business Analytics* (pp. 1-19).

www.irma-international.org/article/ai-ethics/338367