Commentary

Applied precision analytics technology to improve healthcare quality and cost

Alexander Stojadinovic, Yan-gao Man, Itzhak Avital

International Union for Difficult-to-treat-Diseases
Burtonsville, Maryland and Great Neck, New York, NY, YSA

Chinese Approaches for Difficult Diseases 2016; 3:5-9

Corresponding author:
Alexander Stojadinovic, MD, FACS
Burtonsville, Maryland, USA
E-mail: stojadinovicmd2011@gmail.com

This is an open-access article distributed under the terms of International Standard Serial Number (2372-7837) and the International Union for Difficult-to-treat-Diseases (www.iudd.org). Reproduction is permitted for personal, noncommercial use, provided that the article is in whole, unmodified, and properly cited.

Received: 2015.09-28; Accepted: 2015.12-12; Published: 2016.01-15

Abstract

The healthcare landscape has been one of growing mergers, acquisitions, and integrated strategic partnerships. The effective clinical integration and expansion of a value-based healthcare continuum needs consistently delivering quality care and successfully managing the health of the population. This mini review intended to briefly summarize the main trend of the current healthcare landscape, and to introduce the Clinical Decision Support System (CDSS), which appears to have the potential to assist the medical community to improve the quality and cost of the healthcare continuum.

Commentary

In an era of unprecedented transformational change, hospitals and healthcare systems today are focused on the triple aim – better care, better health, lower costs – from a total-cost-of-care perspective [1-4]. These systems are evolving novel business and organizational models to improve quality, safety and efficiency of patient care, while reducing the cost of care within a capital-constrained environment. The present-day healthcare landscape is one of growing mergers, acquisitions, and integrated strategic partnerships.

The new organizational value-based care delivery models are focused on: ensuring quality, safety and positive patient experience; delivering value and promoting population health through innovation and collaboration; aligning clinical and...
operational resources; applying lean process improvement and standardization to increase productivity and operational effectiveness; and, developing new capabilities and alliances with shared risks to efficiently provide and effectively coordinate services across the continuum of healthcare [5-8].

Effective clinical integration and expansion of value-based, coordinated care across the healthcare continuum means consistently delivering quality care and successfully managing the health of populations. Doing so requires inter-operable information systems and precision healthcare data analytics. This advanced analytics capability makes frontline clinical decision support possible, supports population health management, and enables continuous process improvement and real-time, total-cost-of-care financial management [9-12].

Integrated information management systems enable hospitals and healthcare systems to establish benchmarks, track quality metrics and monitor concurrently their performance against quality and efficiency targets and market competitors [13-16]. These systems are regarded as key to strategy development, long-range forecasting and decision analysis. Up to a third of healthcare organizations regard integrating information systems as a top strategic priority with the specific aim of applying precision analytics to turn data into value-generating, actionable clinical knowledge. The global healthcare data analytics market is currently estimated to be capitalized at $5.5 billions; and, with a compound annual growth rate of 25%, it is projected to grow to $13.5B by 2018.

Key customer segments contributing to this increased demand for data analytics are healthcare systems, physicians and allied health professionals, researchers, policy makers, payers, pharmaceutical industry, and patients. Key market trends driving this growth are: increased automation in healthcare; emergence of reliable clinical decision support tools; growing demand for text analytics and natural language processing; increased utilization of cloud computing technology. The market drivers for healthcare data analytics are: remote diagnosis through digital technology advances; increasing use of predictive modeling and precision analytics; the need to effectively use clinically actionable patient information; and, the need to improve efficient and effective health promotion and population health management [17-20].

The key buying criteria for precision analytics platforms for clinical and financial management are: cost effectiveness; interoperability; return on investment; front-line deployability;
total-cost-of-care and outcome capture across the full cycle of care per health condition treated; scalability; and, margin relevance. Our value proposition is to integrate and operationalize precision analytics throughout healthcare systems utilizing deployable Clinical Decision Support System (CDSS) products [21-24].

This value is achieved through “Five Mores” aimed at creating healthcare value: 1. more clinical performance; 2. more cost performance; 3. more market retention; 4. more market capture; and, 5. more licensing revenue. The overall strategy is to harness cutting edge proven, precision analytics technology to improve healthcare quality and cost for every patient through applied CDSS at point-of-care [25-28].

References (参考文献)

1. Friedman A1, Wise H2, Knab M3, Delitto A4. Rothstein Roundtable podcast--"Interprofessionalism: is it Campfire Kumbaya, or the means to the triple aim (better health, better care, lower cost)?". Phys Ther. 2014 Dec; 94(12):1696.


