

Guest Editorial Preface

Transforming Healthcare through Information Technology: A Roadmap to Succeed Beyond 2015

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Patient Protection and Affordable Care Act (ACA), the so-called *Obamacare*, was signed into law by President Obama on March 23, 2010. In the meantime, the HITECH Act Provisions went into effect on February 17, 2010 to incentivize healthcare providers in adopting health information technology (HIT) to expedite healthcare reform via receiving monetary incentives provided by Medicare and Medicaid Programs (Zabawa & Garsombke, 2010). While healthcare reform was recognized as a must-to-do task by the USA governments more than two decades ago, no real actions were taken until 2009. With little doubt, the HITECH Act, along with extra regulations imposed by ACA, is considered a “carrot and stick” approach to reforming the healthcare industry, which topped the growth in the USA economy and accounted for 17.5 percent of national GDP (Pianin, 2015).

To date, it is almost six years after healthcare reform was initiated. Though a roadmap was clearly laid out in the HITECH Act, the progress of healthcare providers’ adoption of HIT is not quite on the schedule. Most HIT scholars and healthcare practitioners are wondering if *Obamacare* will be continued “*as is*” once the new leader moves into the presidential office in January 2017. The answer may be a variable, depending on your political stand or whom you consult with. Nevertheless, an early study, as concurred by a recent analysis, maintains that even if parts of ACA may be reformed, it is unlikely that this act will be repealed (Manchikanti *et al.*, 2011, Hall & Lord, 2014). Indeed, the digitization of healthcare is the way to reduce cost and improve the quality of health with better care. The key is how to measure the HIT payoff and to leverage HIT investment in transforming healthcare (Agarwal & Gao, 2010).

The most recent statistics did show that the healthcare spending topped the growth in USA economy, which in fact was repeatedly warned by some studies such as Falan, Han, Zoeller, Tarn, & Roach (2011) and Minogue & Wells (2016), just to name a few. Apart from eliminating waste and reducing cost by adopting HIT, what else can we do to sustain the healthcare industry? Or, posted in a positive tone: “*What is the roadmap to succeed beyond 2015 for transforming healthcare through information technology?*” which in fact was the theme of the *International Conference on Health Information Technology* (i.e., ICHITA-2015) held at Kalamazoo, Michigan on October 30-31, 2015. In this biennial conference, more than one dozen academic and industrial keynotes were invited to provide possible solutions and directions for future healthcare transformation using HIT. After two doubly-blind reviews, this conference has accepted twenty-four high quality research papers for final presentation. Among these accepted papers, four top quality ones were identified for publication as a special issue of *IJHISI*. A brief highlight of each selected paper is given below.

First, to fully understand how and why some hospitals have successfully made transition to newly-adopted electronic health record systems, Regan and Wang examined ten (10) critical success factors (CSF) that have been commonly addressed to differentiate those institutions which achieve positive healthcare outcomes from those that do not. They employed systems theory as a framework to view HIT implementation as a complex interaction among people, process, and technology to gain insight into difference in actual outcomes. Their findings suggest that technology is only one of the ten factors, impacts created by executive commitment, quality of clinical benchmarking, strong leadership of clinical professionals, and holistic view on system change cannot be underestimated. Their findings do ring a bell to IT leaders, whether they are involved within or without the healthcare industry. The second article, authored by Ryan, Doster, Daily, and Lewis, was focused on healthcare practice for continuous improvement. Their paper illustrates how data-driven efforts could benefit dynamic technological activities that support analysis, evaluation, and synthesis of both internal and external organizational operations for process integration. Their study meant to balance perioperative workflow through data-driven process improvement. Findings show that through continuous process improvement efforts, a balanced workflow could be attained to tighten sub-processes in a hospital to better off patient care accountability and clinical documentation.

The third paper, authored by Al-Aiad, Al-Ayyad, Alkhatib, and Hmeidi, investigated a future healthcare problem – a smart home to facilitate individual care by equipping with a new set of medical and public healthcare resources that are demanded by each individual. A conceptual framework, composed of four major components, was employed along with a qualitative thematic approach to analyzing conversations from interviewing with both patients and healthcare professionals. Their study reveals noticeable insight into the characteristics of smart homes that are to be observed by designers and manufacturers. The last paper, certainly not the least, written by Lavariega, Garza, Gómez, Lara-Díaz, and Silva-Cavazos, was to examine the barriers to adoption of a childcare EHR system designed for pediatricians in Mexico. In addition, their study also focused on how this childcare EHR working with other systems in terms of data exchange and data representation in the health care area. Study results indicate that medical errors were reduced and relationships between patients and doctors were improved. Moreover, the application of service-oriented architecture in developing the child-care EHR makes the system more scalable, reusable, flexible, and maintainable.

While the above four studies are a quality representation of ICHITA-2015, it is clear that there is still a distance to reflect a solid roadmap for HIT professionals to follow for transforming healthcare with a sure success. The last paper, certainly not the least, is authored by Alaiad, Ziaei, and Al-Ayyad, used a thematic approach to investigating the smart home setting with respect to the interaction among four major components - person, tasks, technologies, and environments.

As pointed out by Regan and Wang (2015, in this issue) and suggested by an early research (Agarwal & Gao, 2010), using HIT to transform healthcare is a must-go. The key is to find ways to measure its impacts on the improvement in care quality and health outcomes and its effectiveness in reducing healthcare costs. Now the unanswered question is “What is the roadmap to succeed for the coming year?”

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REFERENCES

- Agarwal, R., Gao, G., DesRoches, C., & Jha, A. K. (2010). The digital transformation of healthcare: Current status and the road ahead. *Information Systems Research*, 21(4), 796–809. doi:10.1287/isre.1100.0327
- Falan, S. L., Han, B., Zoeller, L. H., Tarn, J. M., & Roach, D. M. (2011). Sustaining healthcare through waste elimination: A taxonomic analysis with case illustrations. *International Journal of Healthcare Information Systems and Informatics*, 6(4), 1–22. doi:10.4018/jhisi.2011100101
- Hall, M.A., & Lord, R. (2014). Obamacare: What the Affordable Care Act means for patients and physicians. *BMJ (Clinical Research Ed.)*, 349, g5376. doi:10.1136/bmj.g5376 PMID:25338761
- Manchikanti, L., Caraway, D., Parr, A. T., & Fellows, B., & Hirsch, J. (2011). Patient Protection and Affordable Care Act of 2010: Reforming the health care reform for the new decade. *Pain Physician*, 14, E35–E67. PMID:21267047
- Minogue, V., & Wells, B. (2016). Managing resources and reducing waste in healthcare settings. *Nursing Standard*, 30(38), 52–60. doi:10.7748/ns.30.38.52.s45 PMID:27191452
- Pianin, E. (2015, December 3). US Health care costs surge to 17 percent of GDP. *The Fiscal Time*. Retrieved from <http://www.thefiscaltimes.com/2015/12/03/Federal-Health-Care-Costs-Surge-17-Percent-GDP>
- Zabawa, B., & Garsombke, M. (2010, February). HITECH Act Provisions go into effect February 17, 2010 – Is your business ready to comply? WHD Special Report.

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