

New Payment Models and Big Data Analytics

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INTRODUCTION

In our fragmented healthcare system, services are variable and lacking standardization in care treatment with limited oversight. Most physicians practice in small group with either no electronic medical record (EMR) or an EMR with limited capabilities and limited or no connectivity between the places of services. Future healthcare delivery system should be more patient centric, coordinated, compassionate and affordable. Moreover, a system that consistently delivers reliable performance and experiences improvements with each care delivery and transition. The healthcare reform is shifting care delivery focus from volume based provider centric organization to value based patient centric organization. However, change will require sophisticated IT infrastructure to facilitate the successful transition. This chapter will discuss how healthcare reform is driving new innovations in IT Infrastructure to encourage better care, better quality and lower cost for the entire US population. Moreover, discuss how these reforms are impacting healthcare organizations and role of technologies such HIE (Health Information Exchange) and big data analytics in meeting these mandates. This chapter will cover below topics:

- Healthcare and Payment Model Reforms
- What is Data Warehouse/Big Data Analytics?
- What is healthcare information exchange?
- Conclusion

BACKGROUND

It's not news to anybody how much we spend on healthcare delivery, but still a number of the uninsured population in America is continuously rising. Healthcare industry has been struggling with rising cost in care delivery because the existing system is driven by service volume rather than care outcome or quality of care. The Center for Medicare and Medicaid (CMS) estimates total healthcare spending will nearly double from \$2.6 trillion in 2010 to \$4.6 trillion in 2020, and healthcare spending per capita is forecasted to increase \$13,708 in 2020 from \$8327 in 2010. The report shows that the biggest jump in the spending will occur in next couple of years when reform is fully implemented.

Payment model for the current healthcare system except Healthcare Maintenance Organization (HMO) is setup based on the Fee for Service (FFS) model, under which physicians or hospitals are reimbursed based on the care services or the procedures performed on a patient. However, under this model, quality of the care delivery or reduce healthcare cost is the least priority in care providers' mind. The model has promoted lack of accountability in the care delivery stakeholder to deliver patient care at affordable cost which resulted into creating an unsustainable growth in the healthcare cost.

Multiple factors account for the unsustainable growth in healthcare spending. Healthcare outpatient services and physician/clinical services

account for more than half of the nation's health expenditures. New technology adoption and prescription drugs have been cited as major contributor to the increase in the overall healthcare spending. The fee for service (FFS) model has been viewed as a major barrier in achieving quality and cost effective health care delivery. The model promotes behavior which rewards the overuse of services resulting in increased healthcare cost without ANY additional perceived value to the patients. It doesn't support the culture to prevent hospital admission (or readmission), duplicate procedures, or care coordination.

MAIN FOCUS

Healthcare leaders, including government administration, agree that healthcare reform is essential to sustain the cost and improve the quality and patient experience. To address these issues and to improve access to affordable healthcare coverage for the entire US population, President Obama signed Affordable Care Act (ACT) in 2010. Under ACT, the CMS Center for Innovation launched number of initiatives and new payment models to revitalize and sustain Medicare and Medicaid spending. These new payment models include Accountable Care Organization (ACO), Share Savings Program, and Bundled Payments for Care Improvement etc. Financial incentives and penalties were put in place to promote meaningful use (MU) of health information or adoption of Electronic Medical Record (EMR) system and, eventually, shift healthcare payment model from Fee for Service (FFS) to Fee for Performance (FFP) or Value Based Care Delivery. However, eligible providers wouldn't receive incentives if they don't meet quality metrics imposed by the CMS for covered services. The EMR adoption has been accelerated by the Health Information Technology for Economic and Clinical Health (HITECH) act and created multiple programs, including workforce training programs to prepare skilled IT workforce, to promote the successful

adoption. The Office of the National Coordinator (ONC) for Health Information Technology (HIT) estimated that the United States will need approximately 51,000 skilled workers over the next five years.

Badly coordinated care results into higher cost, multiple handoffs, duplicated efforts/procedures, too little care for others and more care for the many wrong. Both Accountable care organizations (ACOs) and bundled payments are designed to create monetary incentives for coordinated care with the hope that coordination will not only improve value but also ensure right care at the right place at the right time. Coordinated care, however, may result into healthcare practices consolidation which may further lead to less competition and higher healthcare prices.

America also has the opportunity to continue to leverage best practices from other countries to reduce the cost. For example, Germany's inpatient payment method was originated in the United States but the average payment for a hospitalization in the United States is more than \$19,000, whereas it is less than \$5,000 in Germany, even though German patients remain in the hospital almost 50% longer, on average, than American patients. Reason for the difference in delivery cost is the inclusion of physician services in Diagnostic Related Grouping (DRG) because most physicians are hospital employees. With healthcare reform, increasing numbers of physicians in America are becoming hospital employees, the concept could be introduced here as well.

The Affordable Care Act (ACT) initiative will allow healthcare industry to test effectiveness of several payment models to make a transition to deliver quality care at a lower cost as well as improve the overall population health. Now, healthcare providers, physicians, specialists and other care delivery professionals are compelled to collaborate outside their geographical or organizational boundaries on delivering care continuum and share the savings cross care team.

The focus of these initiatives has been to manage most expansive and needy populations;

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