Chapter 27
Technology's Enabling Role to Improve Care Coordination

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ABSTRACT

The U.S. healthcare system has been often characterized as fragmented and disconnected. Lack of effective and concurrent adoption of information technology has been known to be a factor that contributes to the decentralization of healthcare systems. Fragmented systems are also responsible for creating silos that operate with minimal coordination. Clinicians in such systems are providing duplicate services because they are not aware of patient care plans set by other practitioners. These duplications could lead to prescription drug errors due to inconsistencies and lack of coordination in the treatment services and in some cases drug-drug interactions. The following suggests a role for technology to facilitate better care coordination.

INTRODUCTION

Improving coordination between clinical settings will minimize fragmentation. With Medicare patients visiting on average close to seven providers in four settings annually, a large number of clinicians are linked to each other within patient-care networks (Kern, et al., 2019). Primary care providers positioned in these care networks are required to communicate with more than two hundred physicians and coordinate their Medicare patients care plans (Kern, et al., 2019). This amount of communication and care coordination requires accuracy and robust information systems that will optimize the data integration process. The process of care coordination will ideally include all patient needs, preferences, and capabilities (Pham, O'Malley, Bach, Saiontz-Martinez, & Schrag, 2009) which are gathered from different care settings to assist clinicians with the decision making process . The coordination of care also relies

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on active and accurate interaction between providers and patients. Patients with multiple chronic conditions and complex needs require a higher level of coordination to improve the quality of care services provided and control the cost of these services (Berenson & Horvath, 2003).

Enabling Role for Technology

The implementation of health information systems (HIS) can have vast and diverse indications on care measures. Different clinical settings could impose a wide range of requirements on health information systems. In complex clinical encounters with high-risk patients, clinical settings are required to assess a large volume of health information in a short period of time and carefully manage the appropriate health data to deliver to applicable clinicians. While health information management is highly relevant for providers, patients with multiple chronic illnesses require care services from different practitioners in a coordinated environment with an effective integration of care information (McCullough, Parente, & Town, 2016). In addition to these distinctions in processing health data (that are associated with different care settings), there also remains a high demand on health data reporting associated with regulations and value-based reimbursement models (McCullough, Parente, & Town, 2016). Several important factors influence the success of HIS implementations. One of these components is the degree of integration between implemented health information technology and clinical workflow which in turn relies on the complexity of the care facility and the level of investment and commitment displayed by the organizational leadership. Health information technology improves the communication and coordination of clinical care in addition to supporting information management.

Current Challenges

Delivering cost-effective and value-enhancing care to a growing aging population is a substantial challenge for the healthcare systems. The rate of health care services consumption by patients who have one or more chronic conditions or multiple concurrent chronic conditions (MCC) is rising. Chronic conditions included in research studies are arthritis, asthma, chronic respiratory conditions, diabetes, heart disease, human immunodeficiency virus infection, and hypertension. According to the Agency for Healthcare Research and Quality (AHRQ) in 2009, 21% of total health expenditure was consumed by only one percent of the population and 30% of the population were responsible for about 89% of healthcare expenditure (Cohen & Yu, 2012). In the same year the average expenditure of these top consumers was close to $100,000 annually (Cohen & Yu, 2012). Medicare beneficiaries with two or more chronic conditions are considered the heaviest users of care services that consume close to 93% of Medicare spending (Lochner & Cox, 2013).The rising cost of treating Medicare beneficiaries with chronic conditions is a major contributor to the overall growth in Medicare spending (Thorpe, Ogden, & Galactionova, 2010). Several important indicators such as patient mortality, poor functional status, unnecessary hospitalizations, adverse drug events, duplicative tests, functional limitations, need for assistance with daily activities, and conflicting medical advice do increase with the increased number of chronic conditions in patients (U.S. Department of Health and Human Services, 2010). These indicators directly impact healthcare cost and patient care quality.

According to the Institute of Medicine (IOM), patients with MCCs require coordinated care that does not focus solely on one of the conditions. One of the challenges that providers encounter when designing care services for chronic patients is designing care services that encompass all patient needs and