Chapter 17
Accountable Care and Evidence–Based Decision Making

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ABSTRACT

In today's cost challenged healthcare environment accountable care and evidence-based decision making have become important considerations. Contemporaneous to this is the fact that the superior management of diabetes has become a global priority especially given the exponential increase in the number of diabetes patients as well as the financial implications of treating this silent epidemic. Thus, this research focuses on trying to address these respective yet critical issues by examining the possibility of using a mobile web-based reporting system that taps into existing widely available resources to monitor and manage gestational diabetes. To test this solution, we adopted a randomized control trial with two-arm cross over applied to a not-for profit hospital in Victoria, Australia. From the perspective of practice, we have uncovered far reaching implications for hospital management's cost vs. quality care to patients. In particular, it appears that the adoption of smartphones to support many aspects of care and patient-clinician interactions is prudent.

INTRODUCTION

Diabetes is one of the leading chronic diseases affecting Australians with approximately 1 million Australians currently diagnosed with diabetes (Baker IDI, 2013). This alarming phenomenon triggers this research. In particular, we examine the aspects of accountable care and evidence-based decision making in the context of gestational diabetes management. Traditionally, healthcare delivery has been designed to treat patients at the point of care with less focus on being proactive in supporting preventative measures

that keep people healthy and away from the hospital. This could be due to several reasons including the lack of suitable healthcare information systems to support the ideology of Accountable care.

Accountable care aims to improve quality and lower healthcare costs by proactively keeping people healthy and away from the hospital (Morse, 2013). This view of healthcare is one of the most popular discussions relating to US health reform and has supported the launch of pilot projects to test the concept, examine its sustainability, and explore how the model might look and be assessed for its potential (McClellan, et al. 2010). However, this concept is challenging especially when applied into solo and small-group practices primarily due to the cost of the required IT (information technology) investment and quality improvement training for staff (Shields, et al., 2011). In view of this critical challenge, this study examines the possibility of using a mobile web-based reporting system that taps into existing widely available resources (e.g. smartphones and cloud systems) and thus requires minimal IT cost and user training. Thus, we set out a unique research initiative that focuses on a specific issue to address a current dilemma, namely the support of gestational diabetes through improved accountable patient care.

Hence, the primary objective is to examine "how smartphones might keep Australian mums healthy" by preventing and/or reducing the impact of gestational diabetes (GDM). Specifically, the research question under consideration is "can using a smartphone solution to facilitate monitoring and management of Gestational Diabetes (GDM) support the accountable care paradigm?"

BACKGROUND AND LITERATURE REVIEW

The relevant key bodies of literature include management of gestational diabetes and the accountable care system and are presented in turn below.

Management of Gestational Diabetes

Managing diabetes using information technologies is a relatively recent priority within the healthcare domain as diabetes has become one of the most prevalent and exponentially increasing diseases around the world. Further, the cost of managing patients with diabetes is also considerable. In Australia, it costs over $14.6 billion to treat a diabetes patient with complications running up to $9,645 per year (Diabetes Australia, 2013). Therefore, an effective management system for diabetes is an imperative.

As diabetes is a chronic disease there is by definition no cure. This makes the adoption of various management strategies paramount in the successful care of diabetic patients (Britt, 2007, AIHW, 2007, AIHW, 2008, Diabetes Australia, 2008). Moreover, the prudent adoption of these strategies can dramatically affect the cost of care without significantly impacting the quality of care. Typically, the management of diabetes is based on a mixture of self-management protocols linked with the support of a dedicated medical care team (Victorian Government, 2007). An essential element of self-management relies on regular testing of blood glucose, using a glucometer or blood glucose monitor.

Gestational Diabetes Mellitus (GDM) requires tight control of Blood Sugar levels, with a preferred range of readings between 4-6 mmol/L (Hoffman, et al, 1998; Siri and Thomas, 1999). The management of GDM is conducted over a short period of time (that of the pregnancy) and thus a tighter management of sugar levels is required while the impact for both mother and baby of poor control can be far reaching and unpleasant. The need for such control draws into question the information that a diabetic may need when self-managing their condition.

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