

## Chapter 8

# State of IS Integration in the Context of Patient– Centered Care: A Network Analysis and Research Directions

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### ABSTRACT

*For more than a decade, healthcare reform has emphasized coordinated “patient-centered care”. To that end, policymakers have invested in integration of healthcare providers’ information flows. Research has studied healthcare providers’ information needs but overlooked communicative exchanges among participants in coordinating treatment plan decisions. Consequently, although medical literature asserts that patients should depend on information exchange with healthcare providers to enable participation in treatment plan decisions, the assertion has not been tested. In this paper, the authors conduct an empirical study to elucidate the structure of actors’ communications in support of their information dependencies. The findings illustrate that although patients are well connected through personal contact with healthcare providers, patients are disenfranchised from integrated healthcare information systems (IS) and the potential of IS to support patients’ participation in coordinated “patient-centered care” decisions. Furthermore, knowledge asymmetry between patients and healthcare providers should be considered in the selection and design of healthcare IS.*

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## INTRODUCTION

Medical literature asserts that patients should depend on information flows with healthcare providers to enable patients' participation in treatment plan decisions, and that integrated information systems (IS) should support the coordination of essential information from all pertinent actors. However, we found that the assertion has not been systematically assessed in prior research. Therefore, we undertook a systematic empirical study to develop and substantiate a conceptual framework of information dependencies and patterns of information flows in the context of patient-centered care for diabetics in one healthcare system. We develop the initial conceptual framework based on a review of the literature and refined through expert informants. We then substantiate the conceptual framework through face-to-face interviews with primary care physicians, clinical diabetes educators, and diabetes specialists in context. The findings shed new light on the state of IS integration in the context of patient-centered care, and highlights implications of providing patients with access to electronic medical records that should be considered in the selection and design of healthcare IS.

The basic premise of our study is that a mantra of healthcare reform for more than a decade has been "patient-centered care" in which patient-specific treatment plan decisions should be coordinated among all of the pertinent actors – patients and healthcare providers – over the course of patients' lifecycles (ACP, 2007; Bergeson & Dean, 2006; Porter & Teisberg, 2007; Wagner et al., 1996). A central tenet of patient-centered care is that integrated IS should support the coordination of essential information from all pertinent actors. Integrated information flows are essential to coordinating treatment plan decisions over the course of patients' lifecycles. The process of enacting patient-centered care involves diagnosing symptoms, identifying potential treatments, projecting possible health outcomes

and deciding on plans of action (D'Cruz, 2008). In the process, healthcare providers and patients often face uncertainty for two reasons (Charles et al., 1997; Whitney et al., 2004). Firstly, symptoms are often indicative of numerous and potentially interacting medical conditions that are difficult to distinguish with certainty. Secondly, several alternative treatment options often exist with different possible impacts on patients' physical and psychological wellbeing and no certain right or wrong answer. Providers and patients seek information, therefore, to help them to overcome uncertainty and decide on plans of action (Charles et al., 1997; Whitney et al., 2004; Daft & Lengel, 1986; Goodhue et al., 1992; Wybo & Goodhue, 1995). However, "while the healthcare provider possesses better knowledge regarding the expected effectiveness of health care in improving health status, the individual [patient] knows best how improvements in health status affect his or her wellbeing" (Hurley et al., 1992, p. 4). Therefore, to make coordinated patient-centered treatment plan decisions requires the integration of healthcare providers' technical knowledge and patients' intimate knowledge of their wellbeing (Charles et al., 1997; Flynn et al., 2006; Gafni et al., 1998; Hurley et al., 1992; Von Korff et al., 1997). To that end, "information exchange between patients and health professionals is fundamental to achieving patient participation in decision-making... [which] requires the exchange of all information relevant to decision-making" (Bugge et al., 2006, p. 2065). Because they depend on each other for information essential to treatment plan decisions, patients and healthcare providers can be viewed as a network of interdependent actors.

Prior studies have conceptualized the healthcare system as a network of actors, each of which possesses specialized knowledge in support of treatment plan decisions (e.g., Ellingsen & Obstfelder, 2007; Hanseth et al., 2006; McGrath, 2002; Ramiller, 2007; Timpka et al., 2007). Specialization is necessary because individual actors are unable to acquire, store and process information

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