Chapter III
Enhancing ‘Fit’ of Health Information Systems Design Through Practice Support

Craig E. Kuziemsky
University of Ottawa, Canada

ABSTRACT

The design and implementation of healthcare information systems (HIS) is problematic as many HIS projects do not achieve the desired outcomes. There exist a number of theories to enhance our ability to successfully develop HIS. Examples of such theories include ‘fit’ and the sociotechnical approach. However, there are few empirical studies that illustrate how to understand and operationalize such theories at the empirical level needed for HIS design. This chapter introduces a practice support framework that bridges the gap between the theoretical and empirical aspects of HIS design by identifying specific process and information practice supports that need to be considered to actively produce fit of an HIS within a healthcare setting. The chapter also provides an empirical case study of how practice support was used to develop a computer based tool in the domain area of palliative care severe pain management.

INTRODUCTION

The design and implementation of healthcare information systems (HIS) is problematic as many HIS projects do not achieve the desired outcomes. It has been reported that up to 30-50 percent of implemented HIS fail (Anderson, Aydin, & Jay, 1994) and in fact we may not know the true rate of failure of HIS due to the disincentives to publish about failures (Pratt, Reddy, & McDonald, 2004).

Part of the problem is that a HIS needs to reconcile the complexity of both a healthcare domain area and an information system. Introducing a technical artifact such as a HIS will impact workflow, communication and other clinical tasks. Having some understanding about user requirements to achieve those clinical tasks will enhance our ability to design and implement HIS that meet user needs.
The concept of ‘fit’ refers to the need to establish fit between HIS and the organizational context where it is being implemented. ‘Fit’ was first introduced by Southon, Sauer and Dampney (1997) and further described by Kaplan (2001). Aarts, Dooreward, and Berg (2004) suggest that fit is not a passive process but rather needs to be actively produced between the HIS and organization where the HIS is being implemented. Although the citations on ‘Fit’ have acknowledged its importance to HIS design there are few empirical studies that illustrate how to understand and operationalize fit at the detailed level needed for HIS design. Fit requires methodological rigor through qualitative research methods for understanding how HIS implementation impacts healthcare settings and for actively constructing fit between a HIS and a healthcare setting. However, the range of analysis that is possible in qualitative studies can be an obstacle as it can be difficult to determine how to study a healthcare setting to establish fit.

This chapter extends existing research on ‘fit’ by introducing a framework called practice support. Practice support refers to the need to understand all perspectives of how a HIS will impact healthcare providers when implemented in a healthcare setting. The chapter will describe existing theories and models related to fit of HIS and outline some of the limitations in the theories and models. It will then introduce the practice support framework and methodology, and provide a case study illustrating how the practice support framework was used to construct fit of a computer-based tool for palliative care severe pain management.

BACKGROUND

Theories and Models Related to ‘Fit’ of HIS

There exist a number of theories and models to explain the fit of HIS with healthcare providers and settings.
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