Chapter 8
Are Nurses Prepared for Engagement to Evidence–Based Practice with New Technologies?

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ABSTRACT

Capability in the domain of nursing informatics at least a beginner level is essential for all nursing graduates. The components of the domain are unpacked and explored along with a consideration of competency frameworks and the educational support needed to move toward specialist and advanced levels of informatics practice in nursing. The frontiers of nursing practice and education that involve social media and virtual worlds are explored.

INTRODUCTION

Information technology has influenced nursing practice already for decades. As in any other field including nursing, technical tools were adopted first to help to monitor care and secure patient safety with various electronic devices e.g. intravenous pumps, monitors for vital signs, and automated assessment tools. These devices were all taken in use in daily practice almost as a matter of course. However, after 30 years of existence it seems that safe and efficient use of these devices would have required more in depth knowledge and skills. As the number of devices and at the same time the complexity of information systems has grown there has not been enough emphasis on education (McNeil, Elfrink, Pierce, Beyea, Bickford & Averill, 2005). According to recent studies nurses' knowledge and skills vary in terms of use of computerized devices and information systems (Hobbs, 2002; Hart, 2008) as well as in implementing evidence-based practice (Pravikoff, Tanner & Pierce, 2005). Despite that the overall attitudes toward electronic information systems

seem to be positive, attitudes toward research utilization in practice seem to be more negative than positive (Hart, 2008).

Health and nursing informatics competencies are among essential components of an infrastructure that supports evidence-based practice, reduces variation in practice, and prevents errors (Bond, 2007). These competencies support formulation of evidence based practice combining clinical expertise to research evidence (Dee & Stanley, 2005). Furthermore, professionals cannot hope to keep up to date, store, organize, and retrieve existing and new knowledge without using new information processing methods as well as information and communication technology (Staggers, Gassert & Curran, 2002; Curran, 2003; Mantas, Ammenwerth, Demiris, Hasman, Haux, Hersh, Hovenga, Lun, Marin, Martin-Sanchez & Wright, 2010).

Nurses representing the majority of health care workers should be able to take advantage of all existing health information technology tools e.g. information systems but also new technologies as e.g. Personal Digital Assistants (PDA) to both enhance daily information flow but also evidence-based practice and personal competencies. An interesting means of communication and not yet widely adopted in professional use are social media applications which may also have huge potential to revolutionize knowledge transfer in health care in the near future. In this case social media can be defined as applications that allow users to generate content and support information, and knowledge sharing by social networking and enabling communication with others through the newly available technology rather than through print and other mass media (McNab, 2009). Facebook, Twitter, wikis, and other social media applications have growing interest among citizens in their personal life but how to engage them in nursing practice?

This chapter focuses first on knowledge and skills needed in the adoption of new technologies in nursing. Further the aim is to discuss about in-

formatics infrastructure for evidence based nursing practice and the possibilities of social media in professional use among nurses.

DEFINING NURSING INFORMATICS KNOWLEDGE AND SKILLS NEEDED IN PRACTICE

Expanding use of information and communication technology in health care has internationally created needs to secure health professionals' knowledge and skills in health and nursing informatics. Nursing has always been regarded as a human action not a technical one. When computers were first introduced to nursing practice in the 1980's a lot of effort was made to assure what is the use of them or why nurses should be involved in using them (e.g. Ball, Hannah, Gerdin Jelger & Peterson, 1988; Grobe, 1989). Ultimately, it was not only about the use of computers but the applications developed to support nurse's daily practice (Bond, 2007).

In health care organizations implementations of new technologies have resulted in updating each nurse's knowledge and skills in information technology (IT) usage but still there are great needs for basic computer skills among nurses. Despite of the existing health information technology and nursing informatics education a lot of nurses have entered their professional practice before any nursing informatics education existed. (McNeil &al., 2005; Hart, 2008; Westra & Delaney, 2008.) Just as when driving a car a driving license is needed various tests and licenses have also been developed to reveal knowledge and skills to use information technology in health care. One example is the European Computer Driving Licence (ECDL) which is a relevant and internationally recognized qualification for all computer users. ECDL is planned to improve understanding and efficient use of computers among employees and is designed for novice and intermediate computer users. (ECDL, n.d.) Following the model of a

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