

This paper will consider the educational implications and challenges for UK nurse education between the core nursing activity of clinical decision-making and the nursing data captured in the Electronic Patient Record. A Conceptual Model for Nursing Information is utilised to describe these core activities of nursing and how the resulting information may be used to provide a maximum data set for nursing.

## Overview

The UK is rapidly moving towards the Electronic Patient Record (EPR). This programme has not been without setbacks in England (House of Commons 2007) although other countries are faring better IHC (2007). Within the nursing profession, there remains concern regarding the “preparedness” of nurses to capture and input nursing information to the EPR, (RCN 2007). In evidence to the UK parliament, Hansard (2007) RCN stated that “adequate resources [must be] allocated to the education and training of nurses to enable proper use of the EPR, including the use of structured documentation and standardised terminology”. The adoption of SNOMED CT by England, CfH (2007), and Scotland, Scottish Executive (2005), may give impetus to the latter position, but the aspirations of the “education and training of nurses” is where we believe the major challenges exist both for nursing and the EPR. It is not only in the utility of the EPR that nurses must assert the value of nursing information however, the increased use of “tele-medicine” will need to incorporate the minimum data set of nursing, and indeed of professions allied to medicine, if we are to truly embrace an holistic model of care rather than a mechanistic one.

The authors contend that, as nurses are the one profession that provide care 24/7, they stand as the key professional figures in the patient/professional interface. What is needed is clear; an unambiguous means of collecting data from the patient onwards that fits the care needs of that patient. The authors propose that a Nursing Information Model, (NIM) adaptable, flexible and not wedded to any given philosophy of care, can give best utility to the ideal of patient-centred holistic care.

## Nursing Information Model

The adaptation of SNOMED CT means that the core activities of nursing will need to be described using standardised nursing languages. We believe that the use of an existing Conceptual Model for nursing information, Hughes, J.R.; Clarke, J. & Lloyd, D(2007) ; Hughes, J.R; Lloyd, D; Clark, J (2008) would allow nurses to describe and measure outcomes of nursing care in such a way as to provide a maximum data set, capturing the totality of nursing activity. This maximum data set must be the standard goal of all care planning if nursing input to the EPR is not to be relegated to the “basic functions” described by Aderibigbe, Brooks, & McGrath; (2007). It is the model’s maximum data set that we believe should form the template for educating nurses to capture their activities not just for EPR purposes, but also to provide the quality of care demanded by clients and the profession.

## Educational Challenges

The profession has seen a plethora of nursing models over the past half-century. Various countries, states, or care provider institutes have adopted one or more of these models to inform their nursing care. In nursing education, there has often been some tension between models as differing specialities e.g. midwifery and mental health nursing, have sought a “best fit” for the reality of the practice that the respective professionals engage in. Such tensions, especially where models have been “forced” to fit all practice, have not served the profession well. Clinical nurses may have become wary of new models emerging as they have experienced poor utility of previous ones. One exception in the UK has been the use of the “Tidal Model” Barker (2000) which, based on the work of Hildegard Peplau, has been widely recognised as well suited to the needs of some mental health clients. However, the success or not of such philosophical nursing models is a distraction from the care needs of the patient. What is required is a model that has utility for nurses across the spectrum of care, and one which different specialties can fit or adopt

their preferred model into. Why is this so necessary now? Because the care platform is changing to a technology based one, and unless nurses can articulate the care they perform within this new technology, then the nursing voice will at best be subdued and at worst, not least for the patient, lost. The challenge then is to present a Nursing Information Model that is flexible, adaptable and has utility for patient and nurse.

This can only be achieved by a clear investment by educational providers, clinical service managers and the profession as a whole. It will take vision by the profession to foresee the benefits of using such a model, but these benefits, we believe will serve the profession well in the technological age.

### **The Implications**

For nurses across the National Health Service (NHS) of the United Kingdom, the Electronic Patient Record (EPR) Technology is viewed as a key element to deliver a modern health service that is capable of supporting both healthcare professionals and patients (NHS Executive 1998, DoH 2001, NHS Wales 2003). The current NHS transformation programmes can provide both an opportunity and a threat for nursing. The changes have the potential to empower or make nurses passive and subservient at a time when the need has never been greater for nurses to be creative and to advance health care.

Information is the structure on which healthcare is built (Clark 2003, Thede 2003).

At several points of the clinical decision-making process in the care of the patient the knowledge-incorporating process is utilised. As nurses' work revolves around information, the quality of care they deliver depends on the information tools relied upon to guide and support decision-making. The use of a conceptual model that has decision making as its core, would ensure that best information is available for the patient care pathway.

Information use effects the making of a decision or making of meaning (Choo 1998). Nurses need to do both 'the right thing' and 'doing the thing right' at each point in the nursing process. This can be envisaged as controlled stages of discrete inputs to the

system, each of which is exposed to data collection, analysis and improvement tracking resulting in an alteration in the nurse's change of knowledge and ability to act. Therefore the manner in which information is handled and processed has a considerable effect on both the outcome of those who purchased the services of the healthcare providers and the economics of healthcare itself (Thede 2003). The contents within the record have ramifications not only for the person who creates and maintains the record, but also for the individuals whose lives are contained within the record and are later shaped by it. The distinction is between providing and receiving safe, necessary care and harmful or unnecessary care.

Dynamic management of patient care is dependent on dynamic information systems (Tang 1991). The electronic patient record technology can be viewed as potentially a transformative technology, perceived to be 'essential', to 'liberate and 'enlighten' the practice of the care providers and users of healthcare services. The NHS will be transformed from an 'information poverty' environment to become 'information rich' in the sense that shared EPR can promote and synchronise different functions where multiple actors (healthcare providers) will be able to manage, access and use patient information stored in databases.

### **The Challenges Through the lens of nursing: Avoiding determinism**

Information technology use in NHS is still decades behind other industries, banking and the armed forces (Ford *et al.* 2006). Within the EPR development discourse there is the urgency for nurses to 'catch-up' with the technology. 'Not catching-up' can be costly when benefits are not realised. There is no doubt that we must adapt to change. Walsh (2004) highlights that there are obvious benefits associated with the use of EPR technology but Barnard (1999) cautions against interpreting technology particularly in relation to utopian perspectives.

Investments such as the EPR technology which helps to improve patient care and health professional's working practices are supported (Pierskalla & Woods 1988, Hendrickson

& Kovner 1990, Wanless 2002), however, alongside the new opportunities the EPR technology also brings new risks to the nursing profession. Electronic patient records, for example, inevitably change one's recording practices and will certainly affect the distribution and content of work tasks, change information flows, and affect the visibility of these work tasks and information flows. The traditional role boundaries and nursing professionalism will be challenged. How will nurses engage with the new order for professional practice?

The forthcoming paperless EPR (NHS Executive 1998) will probably see significant changes to organisational structure (Raymond et al. 1995), organisational culture (Doherty and Perry 2001), the distribution of power (Poulymenakou and Holmes 1996) and user motivation or working styles (Clegg et al. 1996, 1997). Managing information technology is a function of managing the people who use it. Thus the importance of 'user-involvement' cannot be overstated as systems design and development can encourage or impede change in the workplace. With its ability to change work practices the symbiotic relationship between the design and use must also be understood and is important when highlighting resistance and contradiction. Wilson (2002) revealed that when users such as nurses are not sufficiently involved in the design process, the user-interface may become illogical from the users' point of view, for example, the sequence of actions prescribed by the system may run against the users' working routines and thus leading to non-use of the system. Orlikowski (1996) emphasised this as a lack of 'interpretative flexibility' with the system. The EPR technology can be felt to be reinforcing control if there was passive user engagement in the system's social and physical constitution; if there is conflict with the expectations and experiences of the designers and users (Orlikowski 1996). These small examples illustrate the deep interrelation of technical and social aspects in systems development.

Clark (2004) emphasised the need for clinical engagement during the development phase and the implementation of the system. Patterson (2004) reiterated that the single shared EPR must focus on the people who receive and deliver the service. Healthcare is an information intensive, knowledge-based activity that requires high reliability in

operations as well as software innovations. Nurses' professional identity stems from a clear idea of function, that is to say what they do, what nursing is and more importantly what is nursing's professional responsibility. It is nursing's professional identity which distinguishes nurses from other health care workers. Traditionally the value of the work of nurses has been poorly recognised as care and nurturing are both highly subjective and difficult to measure. In the absence of data standards for nursing- systematic ways of describing, measuring and evaluating nursing care – the professional contribution to patient outcomes and experience of care will remain invisible (Clark 2003).

One of the hall marks of the profession is that of being able to govern one's own domain. Thus, nurses as primary deployers of the EPR technology should engage in the design and implementation process to make what is 'invisible' nursing work 'visible' (Simpson 2003).

The general impression is that the nursing profession is not well served by the various information systems currently offered by vendors. The inability of the profession to articulate clearly its requirements could be the attributing factor. Professions take part with others professions to maintain their legitimacy and improve their position. Traditionally nursing has always been seen as a dependent bureaucratic occupation and faces the risk of subordination with inter-profession relationship (Savage 1988, Davies 1995, Wicks 1998). Unless nurses have a clear view of what the profession requires from technological solutions for the recording of nursing activity and the collection of nursing data they will be forced to accept suboptimal solutions which will be accompanied by certain losses (Mort *et al.* 2003). Non-engagement in the design of the EPR can be for nursing the difference between professionalising and deskilling but more importantly between excellence and extinction (Simpson 2003, Clark 2003).

Therefore developing and implementing the electronic patient record technology must not be seen as a mere matter of 'diffusing' a technology but requires a deeper and more holistic interpretation, addressing issues related to not only use of artefacts and resources but also the way technology influences practice environments, the efforts of nurses to

control practice, identifying new conceptual models for patient assessment and the prudence of seeking suitable application of technology (Barnard & Locsin 2007). Nursing needs to address these existing gaps in the education opportunities for prospective and practising nurses.

Nurses need nursing informatics and to assume a dominant position in a division of labour, so that it gains control over the determination of the substance of its own work, and is thus autonomous and self – directing (Friedson 1961, 1970). Nursing needs to secure the connection between education and occupation (Witz 1992). To participate or perish seems the overt theme.

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