

Title: Preparing nurses for nursing in an ehealth world

The development of ehealth (ie the application of information and communication technologies in healthcare) is both a driver and an enabler of the changes in nursing practice that are required to meet current and future healthcare challenges. It is, however, widely recognised that at present nurses are not adequately prepared for the incorporation of ehealth into nursing practice, and in particular into nursing documentation, and that the solution to this deficit lies in nursing education. This paper focuses on what needs to be done, in particular in changes to pre-registration nursing curricula.

In their standard setting document *Proficiency for pre-registration nursing education (2004)* the NMC articulates clear principles and requirements of pre-registration nursing education programmes. The document suggest that it is up to nurse education providers to set a curriculum that enables applicants to achieve the specified standards of proficiency in nursing practice

The recent Royal Society report *Digital Healthcare: The impact of information and communication technologies on health and healthcare* included the recommendation:

“We recommend that the higher education institutions and professional bodies responsible for the different disciplines adapt their curricula to integrate the use and understanding of healthcare ICTs into the basic training and continuing professional development of healthcare professionals”

The rapid implementation of National IT Programmes across the UK and the imminent pervasive use of ICT in clinical settings acts as a catalyst for needed changes in the curriculum to enable nurses to acquire the skills, knowledge and attitudes to enable them:

- to find the most reliable sources of information to support evidence based practice;
- to guide patients through publicly available information sources;
- to incorporate ICT into patient consultations;
- to manage the nurse patient relationship when the nurse is not physically in the same place as the patient;
- to perform quick and accurate data entry at the point of care;
- to understand the legal and ethical issues associated with managing and sharing patient information;
- to extract data to support decisions and monitor the outcomes of practice;
- to understand the role of technology in the delivery and organisation of care
- to train other users such as patients and carers how to use ICTs

In particular, if patients and nurses are to derive the benefits of electronic patient records (which include not only the well-rehearsed benefits to patients of increased safety, better co-ordination of care etc, but also benefits to nursing derived from the use of anonymised aggregated data to identify nursing outcomes and the evidence base for decisions on skill mix, resource allocation and service planning etc.), changes are required in how nurses document their practice, and documentation of nursing practice is a core skill that needs to be taught in the pre-registration nursing programme.

The key requirements for computerised documentation are:

- Appropriate (nursing) content
- Structure
- Standardised terminology

Moreover, since what systems will provide is a structure for documenting the **clinical** process, it is vital that the **nursing** process that nurses use to structure their decision making and their documentation explicitly includes **all** of the key elements.

Pesut and Harman (1999) have shown how the nursing process has evolved and changed since it was first introduced in the 1950s through three generations, from the 4-stage, linear APIE (assessment, planning, implementation, evaluation) model, to the present day iterative process that includes the identification of nursing diagnoses and nursing outcomes. Unfortunately UK nursing is still, 30 years after its introduction into the UK, teaching, using, and documenting the first generation AIPE model.

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For example, the NMC document cited above includes, amongst other overarching principles, the following elements:

- Undertake and document a comprehensive, systematic and accurate nursing assessment of the physical, psychological, social and spiritual needs of patients, clients and communities.
- Formulate and document a plan of nursing care, where possible in partnership with patients, clients, their carers and family and friends, within a framework of informed consent and
- Evaluate and document the outcomes of nursing and other interventions.

Although they include the documentation of outcomes, they omit the key stage of identifying and documenting the nursing diagnoses. In practice, since an outcome is defined as a change in the pre-existing condition following an intervention (Donabedian 19xx), the identification of outcomes depends fundamentally on the documentation of the pre-existing condition (the diagnosis) as well as the intervention. Current work on the development of practice standards for documentation (led by Anne Casey) will certainly include nursing diagnosis in its standard for the content of patient documentation, and Chris Beasley (CNO England) has recently committed to a programme of practice development to include the use of the concept and terminology of nursing diagnosis. It is important that the RCN, and in particular the Education Forum, knows about and supports this work.

It is interesting to compare the NMC document with *Learning to Manage Health Information: A theme for clinical education* (NHSIA 1999), which is the document, commissioned by the (then) NHS Executive and formally endorsed (but never used) by the UKCC, that sets out a core curriculum in informatics for the clinical professions. The NMC emphasis on documenting the holistic client assessment, the plan of nursing care and the evaluation of outcomes, can be compared with the heading of 'authoring and reading health records', which is the term used in *Learning to Manage Health Information*. However, *Learning to Manage Health Information* also refers to the use of agreed standardised clinical language and terminology and the importance of shared meaning between professional, with specific desired learning outcomes articulated as:

"Understanding of the basis and application of different clinical coding systems and related vocabularies"

For nurses this means learning to use standardised terminology such as the NANDA terminology of nursing diagnoses (an anglicised version of which, undertaken by Dickon-Weir Hughes and Alex Westbrook, is about to be published) and SNOMED-CT, which is to be the recognised language for all computerised health information in the NHS from 2010. Anne Casey is currently leading a project to develop a nursing subset of SNOMED-CT.

The NMC, on the other hand, refers to communications under the **care delivery** domain as a key practice element rather than documentation. It notes an expectation of students to "*utilise a range of effective and appropriate communications and engagement skills*", focusing on interaction with patients/clients. Under the **care management** domain students are expected to "*interpret and present information in a comprehensive manner*", whereas in *Learning to Manage Health Information* the main emphasis is on team working where students are expected to

"Understand ... the systems for and implications of patient held clinical information for inter-professional clinical practice and multidisciplinary care and managing change".

The terms *information* and *data* are both noted in the NMC document under the **care delivery** domain as

"provide relevant and current health information to patients..." and
"systematically collect data regarding health and functional status..." as well as
"analyse and interpret data accurately to inform nursing care...". Students should also be able to

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“identify new information, disseminate it to colleagues” and “ensure current research findings...are incorporated into practice”.

The *Learning to Manage Health Information* document is expecting students to

“Understand the difference between data and information and how they can be used to support clinical practice and service management”.

Nurses need to understand the terms **data, information, knowledge** (and wisdom), and how the hierarchical relationship between them is relevant to their clinical decision making. These terms are the core building blocks of the specialist domain of Nursing Informatics. Nurse informatics specialists work at the interface between users of clinical Information and ICT Systems and developers/vendors, to ensure systems are designed appropriately and support effective implementation and use of such systems as part of the clinical process of delivering care. It is very important that nurses are closely involved in this work, and that nursing informatics becomes recognised in the UK, as it is in some other countries, as a nursing speciality.

The rapid implementation of National IT Programmes across the UK and the imminent pervasive use of ICT in clinical settings brings many challenges and new opportunities to nurses, nurse leaders, and nurse educators. Whilst it is acknowledged that there are many obstacles to changing the set and generic standards of proficiency for pre-registration nursing education, it is suggested that a proactive move by the RCN to provide content that fills the apparent void within the curriculum may hasten action by others.

Nurses are already familiar with the ECDL (European Computer Driving Licence) which provides a standardised programme in basic computer skills. However, the ECDL covers only the technical and manual skills; it does not meet the educational requirement for understanding the underlying concepts. This paper suggests that the Education Forums work with other stakeholders to develop a **Nursing Computer Driving Licence**, which enables students and qualified practitioners to attain a level of competence required to maximise the potential of clinical ICT. Such development will enable learners to grasp core nursing practice and information management concepts and skills and support the need of the profession to move beyond the role of computer operators and data entry activity into the realm of a knowledge workforce.

Suggested core elements to be included in such development include (without specific order):

- Information governance
- Telecare
- Working clinical systems
- Decision support systems including standardised assessment tools and linkages between assessment data and nursing problem identification
- Clinical language and standardised terminology and codes that enable the capture of nursing concepts
- Information literacy and brokering

The good news is that a great deal of work has already been done by nurses in other countries, from which we can draw: we do not have to “re-invent the wheel”. The Information in Nursing Forum is keen to work with the Education Forum in meeting the challenge.

Let the debate commence!

Sharon Levy
RCN Informatics Adviser

June Clark
Chair, Information in Nursing

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