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Royal College of Nursing of the United Kingdom

**Information in Nursing Forum
2007-2008 Project**

**How well prepared are nursing students for
working in an eHealth environment?**

Phase 1: Report of an On-Line Survey

David Baker: Association of Nursing Students

June Clark: Information in Nursing Forum

Ian Bullock: RCN Learning and Development Institute

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Summary

This paper reports the results of an on-line survey of student nurses to discover their level of “e-Health readiness”. This survey was the first part of a two-part project, and this paper was used as the basis for the second part – a discussion at a Workshop held in October 2008, where key stakeholders were brought together in order to discuss the findings, share best practice, and to develop a consensus on how best to incorporate eHealth issues into nursing education. The results of the survey and the workshop will form part of the RCN’s ongoing response to the NMC proposals for pre-registration nursing education

Background

The work of the Information in Nursing Forum over the past several years has repeatedly demonstrated that nurses, including RCN members, are unaware of and inadequately prepared for the accelerating pace of the introduction of eHealth into health services and nursing practice. Similar problems were identified by the RCN’s Nursix surveys (RCN 2004, 2005, 2006) and by the Information in Nursing (IN) Forum’s earlier project *An investigation of the emergent professional issues experienced by nurses when working in an health environment*. (Bournemouth University 2007)

It is widely recognised that overcoming this problem must begin with pre-registration nursing education. Accordingly in 2007 a bid was submitted by the Information in Nursing Forum to explore this issue by means of a project to be undertaken in two parts: an on-line survey to identify the nature and extent of the problem, to be followed by a workshop where key stakeholders are brought together in order to discuss the results of the survey, to share current best practice, and to develop a consensus on how best to incorporate eHealth issues into pre-registration nursing education. The results of the survey and the workshop will form part of the RCN’s ongoing response to the NMC proposals for pre-registration nursing education

The project is led by the Information in Nursing Forum, in association with the RCN Education Forum and the RCN Association of Nursing Students. It is managed by a small project board, which consists of representatives of the three forums supported by relevant RCN staff.

2. Objectives

The objectives of the project as a whole are:

- 2.1 To discover the level of ‘readiness’ amongst student nurses for working in a technology enabled healthcare service;
- 2.2 To describe how e-Health is currently covered in pre-registration nursing curricula.
- 2.3 To develop a consensus among those responsible for the commissioning, planning and provision of pre-registration nursing education about how to achieve nursing competence in e-Health and to prepare nurses for the introduction of ehealth into health services, including but not limited to the NHS.

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- 2.4 To contribute evidence to the NMC proposed reform of pre-registration nursing education
- 2.5 To publish the findings as widely as possible to increase awareness throughout the profession of the need for change and to offer some guidance on how it may be achieved.

Method

The original intent was to survey education providers to identify how they incorporated eHealth into their pre-registration curricula. However, a preliminary literature search revealed that considerable work of this kind has already been done. Moreover discussion with members of the Norwegian Nurses Organisation during a recent study visit to Oslo, identified that they had undertaken a project with similar aims, but had focussed on the students rather than the education providers and had identified discrepancies between the two perspectives. It was hoped that the Norwegian questionnaire could be used, but in the event this was not possible. Nevertheless the bid was restructured and it was decided to direct the questionnaire to students.

The core of the survey was the question “How well do you feel that your nursing education has prepared you so far to achieve the following:” The question was followed by a list of competencies taken from *Learning to Manage Health Information – A theme for clinical education: Moving Ahead*. This document, published by the NHSIA in 2002, was built on the earlier publication *Learning to Manage Health Information* which was published in 1999 with the aim of establishing a core framework in health informatics development for clinical health professionals at pre and post registration level. *Learning to Manage Health Information – A theme for clinical education: Moving Ahead* took forward the earlier work by reviewing the learning outcomes and allocating them to what was expected of clinical practitioners at the three levels of first health profession qualification, post first qualification and related management learning. The competencies used in the questionnaire were all taken from the Level 1 list (first health profession qualification).

To these competencies were added three more taken from the NMC standards of proficiency for pre-registration nursing education (NMC 2004). These related to the ability to undertake and document a nursing assessment, a nursing care plan, and the outcomes of nursing interventions.

As a result of consultation with external experts, some additional questions were asked to a subset of the total sample consisting of those students who had used electronic patient records in a clinical placement.

Demographic information was sought in order to check whether the profile of the respondents conformed to the profile of all nursing students as represented in other RCN databases.

The questionnaire (see Appendix 1) was converted to the RCN format for on-line surveys and was placed on the RCN website for four weeks during April 2008. A prize of an iPod was made available to encourage responses. A total of 1120 responses were received.

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Analysis

Because of a communication failure within the RCN, responsibility for the analysis had to be transferred at a late stage to a different department. This made analysis more difficult because the analysts were not involved in the construction of the questionnaire. Analysis was eventually undertaken by Dr Ian Bullock, and Tanya Smith at the Learning and Development Institute, whose help the Forum gratefully acknowledges.

Analysis was undertaken by importing a csv file into SPSS. The data was then analysed using frequency tables and cross tabulation reports were performed by country.

Analysis of questions 1-3, question 16 (which listed the competencies) and the questions relating to the demographic details of respondents are based on the total of 1120 responses. Analysis of the subset of the sample who said (in response to question 3) that they had used electronic patient records either a lot (113) or a little (492) was based on these 605 responses. However, within this subset the software was not able to discriminate fully between those who were not eligible to respond to these questions and those who were eligible but chose not to do so; for this reason the tables relating to this section include only the raw data not expressed as percentages.

Responses were also cross tabulated by country, because it was thought that the varying stages of development of the government eHealth programmes in the four countries of the UK might result in different responses from each. In the event the low number of responses from the three celtic countries meant that statistical analysis was unable to show any significant differences.

It must be recognised that since this was an on-line survey, the sample is likely to be biased towards the more computer-literate among the student population. However the demographic details of the sample suggest that the profile of the respondents to this survey conforms to the profile of all nursing students as represented in other RCN databases, with one exception – respondents included a higher proportion of students studying for degrees than the total student population .

Results

Results are tabulated in Appendix 2.

The first question asked respondents to rate their knowledge about eHealth overall. eHealth was defined as “the use of information technologies (ICTs) in the delivery of healthcare”. A quarter of the respondents (285=25.5%) rated their knowledge as “good” or “very good”; a third (393=35.1%) as “quite good”, but almost 40% (442=39.5%) as “poor” or “very poor”.

The second question asked respondents to rate their basic computer skills. Three quarters of the respondents (832=73.3%) rated their skills as “very good” or “good”; (253=23%) as “quite good”, and only a very small number (35=3.1%) as “poor” or “very poor”

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The implications of these two responses, and in particular the difference between them, are identified as one of the issues for discussion (see below)

Competencies

In response to the questions about how well their nursing education had prepared them for competencies specified by the NMC or recommended by *Learning to Manage Information*:

- Nearly all (89.1%) felt they had been well or quite well prepared to undertake and document a nursing assessment using a paper system, but less than a quarter (23.8) felt similarly prepared to undertake and document a nursing assessment using an electronic system.
- Similarly, nearly all (81.7%) felt they had been well or quite well prepared to undertake and document a plan of nursing care using a paper system, but less than a quarter (22.7%) felt similarly prepared to undertake and document a plan using an electronic system.
- Nearly all (82.4%) felt they had been well or quite well prepared to document nursing outcomes, and almost two thirds (64.7%), perhaps surprisingly, to use appropriate standardised terminology in preparing and updating records.
- Most (69.9%) felt well or quite well prepared to use health related on-line sources of information
- Just over half (59.1%) felt well or quite well prepared to explain to patients their rights in relation to the content and access to their records
- Only a third (33.2%) felt that they understood the secondary uses of data, and only 13.8% felt prepared to carry out an audit.
- Very few felt they understood the concept, range, and practice of telemedicine (13.8%) or telecare (14.4%).

Respondents who had used electronic records

More than half (55.9%) had used electronic patient records, including 10.8% who had used them “a lot” The implications of this finding are identified as an issue for discussion

Of those who had used a computer in their most recent placement almost all (92%) felt they had the necessary skills and knowledge to do so, but less than half (45.8%) had received training on the systems they were using, and more than a third (39.1%) had received no information about information governance requirements.

In general, access to a computer was usually easy, students found the software easy to use, and the systems generally (81.9%) enabled them to record all the nursing information that they wished to record.

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Of those who had used a computer in their most recent placement, only 17.2% were given their own password, and almost a third (31.7%) had been asked to log-on to the system using a password that was not theirs. Although the numbers are small, the implications of this finding are serious.

Issues for discussion

Some of these findings were as expected and reflect the findings of earlier research, but some are not. Workshop participants were invited to contribute their interpretations and to discuss the issues raised. A report of the workshop is published separately

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David Baker
Ian Bullock
June Clark

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APPENDIX 1: TABLES

Table 1: Students' rating of their overall knowledge of eHealth

Very good	Good	Quite good	Poor	Very Poor	Total
50 (4.5%)	235 (21.0%)	393 (35.1%)	312 (27.9%)	130 (11.6%)	1120 (100%)

Table 2: Students rating of their basic computer skills

Very Good	Good	Quite good	Poor	Very Poor	Total
397 (35.5%)	435 (38.8%)	253 (22.6%)	27 (2.4%)	8 (0.7%)	1120 (100%)

Table 3: Number of students who have ever used electronic records

Quite a lot	A little	Not at all	Total
113 (10.1%)	492 (43.9%)	515 (46.0%)	1120 (100%)

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Table 4: Students preparedness for competencies set out in *Learning to Manage Information*

Competency	Very well	Well	Quite Well	A little	Not at all	Total
Appreciate abilities and limitations of technology	78 (7.0%)	223 (20.01%)	292 (26.1%)	330 (29.5%)	197 (17.6%)	1120 (100%)
Understand purpose and use of patient records	184 (16.4%)	277 (24.7%)	248 (22.1%)	285 (25.4%)	126 (11.3%)	1120 (100%)
Understand structure of health record systems	61 (5.5%)	185 (16.5%)	222 (19.8%)	366 (32.7%)	286 (25.5%)	1120 (100%)
Document outcomes	287 (25.6%)	388 (34.6%)	246 (21.9%)	131 (11.7%)	68 (6.1%)	1120 (100%)
Use appropriate standardised terminology	97 (8.6%)	310 (27.7%)	313 (27.9%)	252 (22.5%)	148 (13.2%)	1120 (100%)
Use accredited on-line sources of information	195 (17.4%)	304 (27.1%)	280 (25.0%)	218 (19.5%)	123 (11.0%)	1120 (100%)
Understand security, legal and ethical issues	211 (18.9%)	275 (24.6%)	223 (19.9%)	275 (24.5%)	136 (12.1%)	1120 (100%)
Be able to explain to patients their rights in relation to record content and access	133 (11.9%)	270 (24.1%)	265 (23.6%)	299 (26.7%)	153 (13.6%)	1120 (100%)
Be aware of NHS IT initiatives	43 (3.8%)	112 (10.0%)	150 (13.4%)	402 (35.9%)	413 (36.9%)	1120 (100%)
Understand secondary usage	49 (4.4%)	119 (10.6%)	211 (18.8%)	350 (31.3%)	391 (34.9%)	1120 (100%)
Design and carry out an audit	23 (2.0%)	75 (6.7%)	93 (8.3%)	235 (21.0%)	694 (62.0%)	1120 (100%)
Understand concept range and practice of telemedicine	22 (2.0%)	48 (4.3%)	88 (7.9%)	243 (21.7%)	719 (64.2%)	1120 (100%)
Understand concept range and practice of telecare	18 (1.6%)	56 (5.0%)	98 (8.7%)	264 (23.6%)	684 (61.1%)	1120 (100%)

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Table 5: Students self rated ability to formulate and document a nursing assessment and plan of care, using paper and electronic systems

Competency	Very well	Well	Quite well	A little	Not at all	Total
Nursing assessment using paper system	323	379	231	131	56	1120 (100%)
Nursing assessment using electronic system	40	87	138	264	591	1120 (100%)
Care plan using paper system	354	332	227	144	63	1120 (100%)
Care plan using electronic system	40	87	117	231	645	1120 (100%)
Record all relevant actions using paper system	429	364	119	91	37	1120 (100%)
Record all relevant actions using electronic system	38	93	128	247	614	1120 (100%)