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Reshaping Health Professionals' Communication: Impacts On Local Policy Development And Service Delivery/Patient Care?

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INTRODUCTION

Current policy contexts within the NHS [1] have set an agenda for improved delivery of care based on the effective management of information [2, 3]. A central vision of current health policy is that there is a direct link between increasing the participation of NHS staff in the decision-making process and the successful implementation of key policy changes. In particular enhanced clinical performance is seen to be directly associated with the development more open and efficient communication systems, [1].

Nursing and midwifery have in particular seen radical changes over the last few years in respect of the demands being placed on the profession for information management. Current research at Kettering NHS Trust [4] on nursing communication and management structures has highlighted that although commitment to change is high among nursing staff, there is a need for communication systems that will facilitate the management and dissemination of information efficiently. Moreover systems are needed that will also assist with the cultural and attitudinal change required to develop nurses as critical reflective practitioners who can actively participate in the process of multi-professional decision-making.

A possible solution to the health care 'communication and information gap' lies in the development and application of ICTs [5, 6] Alan Milburn Health Minister, has suggested that asynchronous systems will enable the dissemination of new best practice in seconds, enhance interprofessional collaboration, mark the end of the bureaucratic paper-chase and '*rebuild co-operation in the NHS*' [7]. Research on computer mediated communication (CMC) has identified that ICT's are capable of positively altering interaction patterns both in interpersonal and organizational relationships although this is dependent on the local context and culture of use being supportive of such change [8].

THE TECHNICAL BACKGROUND

A critical understanding of the impact of the computing technologies on the health care sector remains to be developed. In particular new technology systems need to be based on an understanding of health professionals communication processes and information needs.

Commitment to the application of information technology among health workers will be high if it is implemented in the context of a clear solution to a clinical or professional issue rather than being technology driven [2].

Secondly, it seems likely that the development of an understanding of how health care professionals currently (and ideally need to) communicate will prove as important as an exploration of any specialized technological communications infrastructure for health care [9]

Thirdly, existing information technologies and particularly asynchronous systems [10] such as email, internet communication tools, and text-based conferencing systems that can take advantage of communication that is threaded and themed. may hold the potential for rapid, cost-effective advances in the quality of clinical information and communication for health professionals. Asynchronous electronic communication is vital to support mobile and time-constrained professionals to communicate effectively at convenient times. Threaded communication can establish and identify working dialogues within a collection of messages.

Themed communication in a conferencing environment allows for the clear organisation of information.

However, above all of the technical features of such systems, the social context of the communication is significantly more important for the effective implementation of a meaningful digital discourse[11].

THE PROJECT

This paper reports on an ongoing project that is prototyping, administering and evaluating a digital discourse system. This system will enable health care professionals within an acute NHS Trust to access and contribute to threaded, asynchronous discussions and themed information. The project is piloting the use of 'shared social contexts' and the use of server-side information assistants (intelligent agents) for information exchange. Currently the application of such systems in educational and business settings, have been proven to increase access to information and to create a more participative and efficient decision-making culture [12].

The project is exploring the potential of the system to create change and efficiencies in communication behaviours and facilitate improvements in patterns of practice. The project is initially focusing the system on enhancing knowledge and participation in decision-making relating to the implementation of the National Service Framework (NSF) for CHD.

The first stage of the project considered the actual usage and content of email by nurses, as well as their attitudes towards CMC. This consisted of analysis of 477 emails, depth interviews with 66 staff and a postal questionnaire to 114 nursing staff. This provided an exploration of their access to information, communication patterns, development of their clinical practice and input into decision-making processes. The second stage has involved the development of the digital discourse system. This will enable participants to further access/ contribute to threaded, asynchronous discussions concerning policy implementation relating to the NSF's. This phase has involved the evaluation team in observation of participant trials of the system. In addition a structured questionnaire has sent to all staff (80 staff, 76 responded to survey) in the areas concerned with CHD, this survey assessed current levels of knowledge relating to NSF policy as well as current perceived ability to participate in decision-making..

The system is now in operation at the hospital and available to staff in four areas affected by the NSF for CHD. A user evaluation, alongside an additional analysis of email content is being undertaken.

Professional views and experiences of CMC.

Commitment to dissemination of information and finding a means to share information with colleagues was very high, 85% of the general survey respondents stated that it was an important or a very important aspect of their role to cascade information to colleagues. As a solution to this problem CMC was felt by the overwhelming majority to be a valuable resource by both users and non-users to achieve this. Of those whose work related to CHD 87% felt that CMC offered *improved sharing of clinical information*. Findings from this stage of the project indicated that professionals also perceived themed and threaded CMC to be supportive of discursive information sharing. The interview data indicated that CMC had the potential to develop supportive networks among isolated and time constrained staff.

"Now there is a network of people out there that I am involved with, it's a way and means of actually getting the communication over more quickly and while it's there, actually in your mind, because at the end of the day we're all human and something else can come along... You can think I must tell Sue that but you don't see them or can't make the next meeting." (Staff nurse, part-time, qualified 26 years)

Email specifically was perceived as offering an improved means of organising, managing and owning the increasingly vast amounts of information that professionals are required to deal with. It certainly was perceived as offering a means of reducing the 'NHS paper-chase.'

I just think it's so much better than bits of paper floating in and out of wards you have to try to track it down, on email it's there, it's yours.

Analysis of the content of emails communication demonstrated a marked pattern of evolution both in terms of a gradual increase in volume particularly at busy times, but also in terms of the type and form of information conveyed. Initially the main forms of information conveyed via email were largely simple and formally structured 'flyer' type information concerning study days and education issues or the organisation of meetings. However over the period analysed there was increase in the amount of discursive emails, i.e. emails that canvassed views, generated discussion or attempted to progress developments. Additionally over the period these types of emails were increasingly likely to be related to clinical knowledge and practice. There was also an increased use of 'forwarding' to create basic threaded discussions. Moreover use of CMC did involve the sharing of knowledge and experiences, thereby retaining some of the strengths of informal direct verbal information.

Consequently, the need to retain informality of communication and allow for discursive sharing of information were features that were specifically incorporated into the design of the digital discourse system.

Technical Directions

In this study we are integrating key features from 3 robust systems developed within the Knowledge Media Institute of the Open University into a range of clinical contexts. The overall architecture of the CMC developments is illustrated in figure 1. The first of these systems is a digital discourse environment (see <http://d3e.open.ac.uk/>). This is based around server-side technologies which can augment bulletin-board-like asynchronous discussions. At the centre of each discourse is an artifact, typically a document, which acts as a focus for the discussion. Contributions from participants are solicited as email or via a browser based web forms interface. The contributions are text messages which are themed and threaded, and most importantly, are in the context of the document.

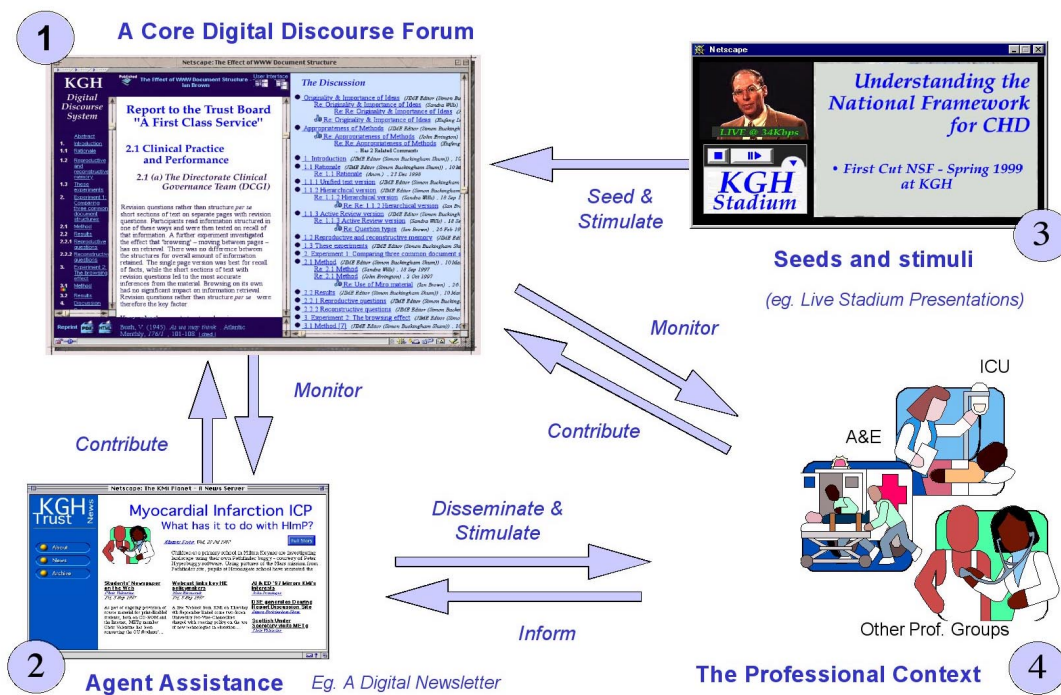


Figure 1 - The CMC architecture for the KGH study.

The second system which contributes to the discourse is a (semi) intelligent agent which contributes to the communication. The agent is a set of server side tools which are delegated to act on the behalf of individual participants. In this case the agent can assist in the automatic production of a newsletter which is associated with the document (see <http://kmi.open.ac.uk/planet>).

The third of these systems is a set of streamed media production tools that help to stimulate and seed the discussion by the production of both live and offline video and slideshow/multimedia presentations (see <http://kmi.open.ac.uk/stadium>). As noted above, the use of these systems is currently being trialled in four different professional contexts within the acute trust.

FUTURE DIRECTIONS

Overall acceptance of the potential of CMC to offer solutions to real clinical and health care delivery issues was very high among nursing staff. Early interactions with the digital discourse system indicate that new and developmental learning seems likely as a result of the interaction with the system, with staff sharing knowledge and 'best practice' across specialist areas.

The next phase of the project will expand the system and evaluate issues concerned with practical usage in a real clinical environment, issues of multi-professional use and the impact on policy implementation.

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