THE ROYAL COLLEGE OF RADIOLOGISTS

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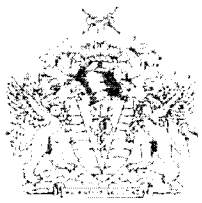

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From the Office of the President
Professor Janet Husband, OBE FMedSci FRCP FRCR

31st August 2005

Dr Nick Green
The Royal Society
6-9 Charlton House Terrace
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Dear Dr Green

The Impact of ICT on Health and Healthcare: Call for Evidence

We are pleased to have the opportunity to consider the Call for Evidence in regard to the study the Royal Society is undertaking and offer some preliminary thoughts.

In answer to the specific questions:

1. What relevant technology trends are likely to impact on health and healthcare in the next ten to fifteen years?

Answer: The development of e- and tele-medicine, e-communication is already mature and the Government has plans for e-prescribing and e-requesting, for example, of imaging examinations. Tele-medicine and teleradiology are also mature technologies, which are likely to be the subject of further development. The development of entire health records carried on a smart card, for example. These could include the results of all investigations and indeed, records of consultations, images, records of surgical procedures, etc. Generically across medicine, there are systems which enable and support communications such as video-conferencing, remote viewing of images (teleradiology) and remote dictation systems.

In our specific specialties of Clinical Radiology and Clinical Oncology, there is much that can be done to develop the use of ICT and integrate systems. For example in Clinical Radiology there are Radiology Information Systems (RIS) and Picture Archiving and Communication Systems (PACS). In Clinical Oncology there could be automation of radiotherapy planning so that normal organs and structures and indeed tumours can be outlined automatically.

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The College has been doing work with the National Cancer Services Analysis Team (NatCanSAT), which is working on a Radiotherapy Episode Statistics project. This is likely to be an extremely powerful way of obtaining personal data about patients treated with radiotherapy (and in time chemotherapy). Linked to mapping technology, it will be possible to look at referral patterns and link those to outcomes and indeed to the treating doctors.

The impact of ICT in healthcare learning training and teaching must not be overlooked. Currently, this College is working with the Department of Health on one the largest, if not the largest, e-learning project in the UK by transferring very large parts of the radiology teaching and training curriculum into electronic learning format. Coupled with what is called the Validated Case Archive (a flexible and highly searchable very large database of radiological images), this will give trainee radiologists in the first instance and many others in the future access to unparalleled learning opportunities and to offer new and accelerated ways of training. We are also working with the Department of Health to embed one of our most important guidelines publications into the learning repository for trainees, clinicians and others.

Whilst these projects themselves make use of current or emerging technologies, exploiting their full potential and linking up the various systems and concepts offers possibilities which we may not even have yet identified. Accordingly, we suggest the Royal Society may wish to consider some or all of these aspects in its study.

2. What areas in the provision of health and healthcare could be positively or negatively affected by these developments?

Answer:

a) Easy access to the complete health record by any healthcare provider anywhere in the world, subject to consent.
b) Levels of access to be defined.
c) Second or specialist opinion greatly facilitated.
d) Supports the development of patient autonomy.

However, all aspects of e-communication

a) Present a challenge to the "doctor/patient relationship";
b) Compromise team-working if data is sourced in one location, interpreted in another and advice provided in a third;
c) Encourage off-shoring which will impact on employment;
d) Could lead to alienation and isolation within the healthcare process;
e) With the development of Artificial Intelligence, medical judgement could disappear and care could become entirely protocol-driven. This has implications for the quality of care but also for the quality of motivation of the workforce

3. What actions should be undertaken now to maximise positive impacts, or to prevent or minimise adverse effects?

Answer:

- Focus the development of technology on areas of need rather than just "because we can";

- Develop human as well as e-networks:
- Highlight the importance of the person rather than just technology. This applies to patients and to the workforce.
- Ensure that face-to-face e-communication is an early gain, easily implemented and widely available to enhance ownership of the system, team-working and personalised care.
- Limit off-shoring to situations where this would improve access or quality or both.

Although value for money in healthcare is applicable as in any other field, this must be evaluated in the round.

4. Do you have any concerns associated with the generation, release and subsequent use of personal data?

Answer: Yes. The evidence relating to identity-fraud and theft, the effectiveness of computer hackers makes personal medical data extremely vulnerable. Conversely, the introduction of tight strictures in respect of data protection could limit the review of medical data in such a way not only to compromise the team approach to patient care but also very significantly damage processes of medical education.

5. What medico-legal and ethical issues merit considering when introducing new technologies, such as the responsibilities, processes and liabilities for decision making?

Answer: This is an extremely complex issue. Care must be taken to ensure the overall clinical responsibility to those contributing to the care in an out-sourced or off-shored fashion, and in the development of not only protocol-driven care but also Artificial Intelligence – defined care. If judgement is removed then the responsibility for care becomes that of the author of the protocol or the decision-making tree. The technology should be developed such that it continues to represent a tool to provide assistance and information rather than the method of delivery of care itself.

6. What regulations or other mechanisms (including standards) would facilitate the responsible development o relevant technologies?

Answer: A good example of this is the Teleradiology document developed by the Royal College of Radiologists see the College website http://www.rcr.ac.uk/index.asp?PageID=310&PublicationID=195

7. What infrastructure would be required to allow any new technologies to be used effectively?

Answer: This is impossible to answer and will depend upon the technology but includes proper interaction in the design cycle to ensure fitness for purpose: education and training in the proper use of the technology: understanding of the advantages and limitations, a help-desk, immediate availability of technical support: a clinical/medical involvement in R&D.

8.and 9. We have no comments to make.

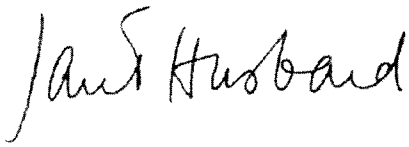
10. and 11. We have answered, at least in part, above.

12. This is not possible to assess.

13. Addressed above.

I hope these comments are of help.

Yours sincerely



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