Information Technology

**The computer on your desk:
New roles, new rules and new challenges for general practice**

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The introduction of new technologies creates many new challenges for general practice.

The internet has provided access to the world's wealth of health information to health care provides and consumers alike. No longer do doctors hold the only key to the wonders of medical science. Today we are more likely to need to work with out patients to assess them to interpret the information they have found elsewhere and to determine how this applies to them as individuals.

We are also now in an era of shared responsibility for health decision-making. In recent years our patients have asserted their central role in the management of their own health concerns and the management of their own health information. Electronic storage and transmission of this information brings its own challenges.

Advances in genetics are predicted to change the face of clinical practice over the next decade. We are still to discover what our role will be as general practitioners in genetic testing and counselling as we move towards each of our patients having assess to their own genetic 'map'. It is likely that we will rely on computer systems to assist us in interpreting the meaning of each individual's genetic profile.

And what about that computer already on the desktop in many of our consulting rooms? Our electronic 'buddies' have already had an impact on the way we interact with out patients and manage their health information in our surgeries. As we move to connect up with the rest of the electronic world, what will be our new roles, what will be the new rules, and what will be the challenges for general practice?

New roles

The use of computers in clinical care offers many potential future benefits. There is the potential to enhance the safety and quality of health care and reduce preventable adverse events and hospitalisations. New technology will encourage increased informed participation by consumers in making decisions about their own health care.

We might use our computers to assist us in focusing on proactive approaches to wellness, through prompts about timely preventive care interventions. We could soon have increased access to best-practice evidence-based approaches to care at the time of individuals consultations. And

the international developments in electronic health records promise the future arrival of more accurate and prompt dissemination of data between an individual's health care provides.

But these roles bring new challenges. We are now facing new ways of interacting with our patients. Consultations are possible by both telemedicine and by the internet. These new consultations transcend traditional geographic boundaries and it is possible to consult with out patients in other parts of our own countries and overseas. These innovations do not sit easily where legal and regulatory systems are often very 'jurisdiction-specific', and it is assumed that clinical service delivery has taken place in the 'traditional' face-to-face manner.

We now have a whole host of new players involved indirectly in our consultations with our patients. The maintenance of our computer systems may rely on technical support personnel. Medical and non-medical IT experts develop our medical software. Often-unknown teams of experts develop the content of our clinical decision support tools. As we move to shared electronic health records, other health care providers who we have never met may have contributed components of our medical histories. And there are the individuals who control the electronic transmission of our patients' health messages and those who manage the centralised databases of personalised health information.

With all these new players involved in our consultations, who is responsible if things start to go wrong? Indeed, are we fully aware of all the things that could go wrong? Loss or corruption of key data, mislaid urgent messages, incorrect advice from decision support systems; these are just three of many possible problems.

New rules

So how can we help protect our patients, and ourselves, from any new risks?

It is important to adhere to the evolving statutory and regulatory hoops that are being developed by our governments. It is apparent that the introduction of IT systems can raise the bar of expectations, especially around privacy, security and confidentiality of personal health information. There are, as yet, few established legal principles, but the application of 'first principles' will give some preliminary guidance. These principles demonstrate that the bottom line is whether or not a professional has exercised 'reasonable' (not perfect) care. The computer will be regarded as a tool. Like all other tools, professionals who choose to use it will be expected to know how to use it. Our peak professional organisations are developing policies and guidelines and we need to review these and see how they apply to our own clinical practice.

We may find ourselves legally exposed if we rely on an electronic clinical decision support tool that 'leads us astray'. It is possible that patient harm could be caused by the use of high technology tools. In such an event, as users we may complain that the technology was faulty or misleading or confusing. The manufacturer will probably respond that user error was to blame.

Conversely we may - in the not too distant future - find ourselves legally exposed if we fail to use appropriate electronic clinical decision support tools. Community and legal expectations are likely to change as technology becomes more widespread and accepted as 'best' clinical practice. We may find ourselves being criticised (often with the crystal-clear vision of 20-20 hindsight) if we turn off decision support tools with drug-drug interaction information, or if we fail to access best practice guidelines known to be available on the internet.

Risk can be reduced by becoming proficient with the technology that we choose to use as part of our clinical care. We must ensure that the technology that we select is appropriate for our clinical tasks. If in doubt about whether IT might deliver an inferior service when compared to traditional methods of care, it might be better to stick with the traditional methods, and review the suitability of electronic developments over time.

We certainly need to be wary of entering 'entrepreneurial' fields involving IT and medical care, such as online consultations, and ensure that we safeguard against potential new risks to our patients and ourselves.

We need to establish that our patients are comfortable with the way our new IT practices affect them and their personal health information. As with all information needs of our patients, their level of interest, expectation and awareness is likely to vary. We will need to be ready to 'take on all comers'.

We need to review our management of information and ensure that we do not forward data electronically, by fax or email, to the wrong recipient, or to the right address but without ensuring that only the intended recipient sees it.

We need to review our security processes in our practices on a regular basis. This includes ensuring the physical security of our IT equipment to make sure it can't be stolen. We need to have rigorous back-up processes to save our data, monitor our use of passwords and screen-savers to prevent inappropriate access to personal information, and protect our data with up-to-date anti-virus software.

The use of email and the internet in our surgeries carries its own risks. We must ensure that confidential information is not sent by email unless it is truly protected. We must learn about encryption and the use of digital signatures. We need to ensure that we have firewall protection to shield our patient information from potential hackers. We must virus-check any files than we download to ensure that we don't compromise our whole clinical record system.

New challenges

Cyberconsultations, consulting with our patients through email or the internet, represent a challenge to our traditional methods of clinical care delivery. Some models already exist, such as www.doctorglobal.com, and demonstrate that many people would probably like to communicate with their own doctors online. This could avoid the need for our patient to travel

to see us, to sit for long periods in our waiting rooms, or to attempt to speak to us by telephone.

Email could be used to request the results of pathology and radiology tests, to request repeat prescriptions or letters of referral, or to ask questions which come up after a consultation has ended.

Email communication does carry some risks. We have all developed methods for handling telephone-based consultations with our patients. However these telephonic solutions are not always 'lawyer-proof'. We will need to show even greater care as we develop new methods for handling internet-based requests for information. There are risks to the security of personalised health information sent by email. There are risks if our patients misinterpret information provided to them by email. There are risks that we will end up with a large volume of unpaid extra computer work. There are risks to the way each of us has chosen to practise medicine.

Each email message to a patient becomes a legal document. It is possible that email, through the creation of a 'virtual relationship' which did not previously exist, could create a duty of care relationship where the doctor did not intend to create one. It is possible that doctors could find themselves with increased responsibilities to respond to enquiries that they might otherwise have not been able to receive. Delays in response may bring added risks for our patients.

Computerised decision support provides another challenge for general practitioners. This includes the drug-drug interaction checking and alert systems built into our clinical software.

Computerised decision support is an evolving field in clinical medicine. As one commentator reported: *'(This is) a rapidly advancing and unregulated field, with potential for harm as well as benefit if systems are poorly designed and inadequately evaluated, The onus is on users to monitor the introduction of any new system carefully.'*

However, there are also significant potential benefits in using such systems to support the decision making of clinicians, and to alert us and assist us to avoid preventable adverse events.

We need to ensure that any risk to our patients is minimised through ensuring that we can rely on the information provided, and that we can verify the quality and reliability of each software product that we choose to use. We need to be able to justify those occasions when we might choose to ignore the warnings provided by these systems.

We also need to understand how to interpret the quality and accuracy of information that is available on the internet. We need this skill so that when our patients bring us health information from the internet on whatever their particular interest may be, we can explain why this information is either accurate and worth considering, or not.

New opportunities

These new challenges also bring exciting new opportunities for general practice. Our main challenge, as general practitioners, is to determine how we can best use this technology, together with our patients, to provide better health care outcomes for the people who trust us for their health care advice and management.

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