editorials

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Psychiatrists and the information age: how we should learn to stop worrying and love the computer

Human beings are unique in their capacity for speech, which has been the carrier of our acquired cultural wisdom for perhaps 100 millennia. There have been subsequent revolutions in our capacity to store and communicate information. We have seen the intervention of systems of writing (about 5 millennia ago), printing (550 years ago), telegraphy (150 years ago), telephony (130 years ago), television (nearly 80 years ago), computing (over the past 60 years), photocopying and, most recently, the internet.

We live in an information age in which technological change is frighteningly rapid. Building on an elaborate if somewhat ramshackle existing infrastructure, the National Health Service (NHS) has an extraordinarily ambitious (and very costly, at some £6.2 billion) information technology strategy (Humber, 2004). This is overseen by the National Programme for Information Technology (NPfIT, 2005) and is to be instituted by commercial sector providers. Developments in IT will transform the way that health professionals work (Jadad & Delamothe, 2004) as well as providing the management information required to gain some control over the vast enterprise that constitutes the NHS.

We are all wittingly or unwittingly consumers of the technological advances occurring in IT. The current generation of psychiatric trainees has progressed through an education system that has emphasised IT skills (and perhaps more importantly uses IT skills in everyday life). Computing has to date had less impact on psychiatry than on general practice and the acute specialties, reflecting commercial pressures, lack of NHS investment in IT within mental health trusts and the conceptual complexities and cultural resistance associated with the specialty. One of the consequences of this underdevelopment is that the particular concerns of mental health professionals and their patients are not always incorporated within the emerging NHS information strategy. In fact, there appears to have been a more general failure to engage patients and professionals in the work of the NPfIT, and the major current provider of general practice IT, EMIS (Emisphere Technologies Inc.), has not signed contracts with any of the 'local service providers' responsible for delivery of the strategy (Humber, 2004).

This paper seeks to present reasons for those psychiatrists of an older generation who may be reluctant to embrace IT to engage with the information revolution and offers some advance warning of emerging trends that will affect everyone's professional practice.

Computing and professional life

The desktop personal computer (PC) offers increasingly powerful applications. We are now all familiar with word-processing, presentation software, databases and spreadsheets. Statistical packages available for a stand-alone PC are more powerful, and an order of magnitude easier to use, than the entire resources of a university computing department of two decades ago. The storage and retrieval capacity of computers allows ready access to all that we have previously written and has transformed the work of the medical secretary. These familiar tools can, of course, be misused. What was written before can be recycled (helpful, of course, for the annual appraisal round); spreadsheets can be used to collate meaningless information; flashy presentations rich in graphics can be utterly banal (the software having been written for selling rather than education purposes) or persuade people to act on misleading or misunderstood data.

Less familiar to us but already in use on computer desktops within organisations such as NHS Direct (and any call centre we ring) is 'decision-support' software. This allows relatively untrained individuals to handle potentially complex questions in a structured fashion, or trained staff to make better decisions. EMIS offers general practitioners (GPs) the potential for decision-making support within the consultation, for example by making drug information available on the desktop and providing warnings on potential drug interactions. Fields (templates) can be produced for identified problems that encourage the GP to follow good practice and to generate the information required to meet financially remunerated targets. PC software has also been developed for psychological testing and some forms of psychological therapy (the latter potentially enriched by remote interaction with a therapist).

Desktop PCs have been supplemented by laptops and hand-held computers. The personal digital assistant (PDA) can act as a diary that can be shared with one's secretary, with a potential for increasing personal efficiency, as well as containing a significant amount of data in a readily accessible form.

E-mail: intranets and the internet

Powerful though the individual computer is, the real advance offered by the new technology is its interactivity. E-mail, intranets and the internet can radically transform our ability to access information and communicate with others. The internet, for example, offers access to powerful bibliographical databases (e.g. Medline) and, increasingly, access to the publications themselves, predigested information resources (e.g. the Cochrane Collaboration of meta-analytical reviews) and sources of official information and statistics (e.g. the Department of Health and National Institute for Mental Health in England websites). This process can bring more resources to our desktop than are available in hard copy in the best library in the world. It represents a potential for the democratisation of information. What was once available only to those working in centres of excellence can now be accessed by everyone. It is worth noting, however, that the highest quality information tends not to be freely available: one of the aims of the NHS information strategy is to allow access to the best information sources.

Intranets can provide ready, and searchable, access to material that would otherwise be located in poorly collated and out-of-date box-files (an advantage that diminishes if the material on the intranet is not regularly reviewed and updated). Intranets can also now display administrative and clinical data that can be made available throughout a large organisation.

E-mail offers unparalleled opportunities for rapid communication. The material communicated can be as complex as one wishes: e-mail certainly transforms the experience of joint authorship of a document, making geography irrelevant. Some organisations (for example, the Medical Research Council and the Advisory Committee on Clinical Excellence Awards) can now only be contacted effectively via e-mail. Historically, the advance is not so much in the capacity for individual communication (consider the vast correspondence of Victorian scientists and men of letters), but for its immediacy and the ability to communicate simultaneously with a large community of interest.

Network technology also raises the possibility of telemedicine, the remote delivery of healthcare. Already a significant amount of primary care is provided via telephone rather than in the surgery or during a home visit. NHS Direct and specialist mental health helplines provide an increasingly popular access to care. Mental health professionals are only just beginning to exploit the possibilities this technology offers: there is evidence that professional distaste for telemedicine is not shared by patients (McLaren, 2003).

Again, these technological advances are associated with significant problems. The most obvious, which dates back to the invention of the photocopier, is that too much material of dubious relevance can be distributed to too many people. From the perspective of the e-mail recipient and internet user, there is a clear difficulty in discriminating the important and useful from the trivial and wrong. From the perspective of the sender, it is difficult to be confident that any communication has actually been read. Although IT offers unparalleled potential for interactivity, information flow within organisations remains overwhelmingly one-way: raw, often inaccurate, data flow upwards to feed the beast, with instructions and demands for yet more data flowing downwards.

The electronic care record

One long-term aim of NPfIT is the development of an 'electronic care record' (ECR) of an individual's healthcare that is (with appropriate safeguards) available across the NHS and over the lifespan (Lewis, 2002; NPfIT, 2005). On the way to this goal are a series of steps which begin with basic patient administration systems that track patient contacts within an organisation (and provide the basic data required centrally by the NHS – which includes, for example, data on all finished consultant episodes). Further up the hierarchy are electronic systems that support and record prescribing, care planning and care pathways: many services now have a computerised care programme approach (CPA) process which allows access to care plans across a trust intranet. As yet the more ambitious goals of the strategy, which envisages all health information to be captured and stored electronically and the availability of advanced decision-support systems (that support the practitioner's adherence to evidence-based guidelines), are unrealised, although NPfIT has tight guidelines for delivery. There are to date very few accounts in the literature of the use of decision-support systems in mental health (Cannon & Allen, 2000).

Increasing IT skills

It is obvious that in order to make use of advances in IT we need to acquire new skills, but healthcare organisations have a poor track record in IT training. Some software, such as word-processing, presentation and e-mail software, is designed to be easily used without training, although productivity can be improved by training. Other software, for example spreadsheets, databases and locally developed systems for the Patient Administration System and CPA, are not intuitive and do require training if they are to be used at all. Yet other skills, such as designing and maintaining web pages, require a degree of technical facility and enthusiasm that should perhaps at present best be provided by the employing organisation. Gaining appropriate generic IT skills, and skills required to make use of bibliographical software and make sense of advances in evidence-based medicine, is an entirely

appropriate element of a personal development plan, and should be supported by employers both financially and practically.

Conclusions

Informatics is playing an increasingly important role in healthcare, and the Royal College of Psychiatrists has already shown a commitment to improving the knowledge and skills of its membership in this field (Katona, 2002). In an era of clinical governance, accountability and guidelines, we will need to make full use of the opportunities afforded by technological and conceptual advances in informatics. Unfortunately few professionals take informatics seriously, investment in specific mental health informatics remains minimal and the potential to improve professional practice and the quality of patient care remains just that, potential.

There are also important concerns that need to be aired. One obvious issue is confidentiality within the context of the ECR (McClelland & Thomas, 2002). Perhaps more serious is the potential for losing important qualitative aspects within the ECR compared with traditional medical records. It is by no means clear that the designers of mental health ECRs have the correct data architecture for their products, and no satisfactory solutions have as yet been found to the vexed issue of data entry in the wordy and narrative-based discipline of psychiatry. Mental health professionals have also not yet developed ways of consulting with patients that fully incorporate use of the computer, and as such are far behind their primary care colleagues.

Finally, there are important distinctions to be made between information, knowledge and wisdom. The internet offers access to a vast amount of information and biomedical sciences are producing ever more data. Buried within this information is a certain amount of useful knowledge, much of it in forms that require specialist expertise for understanding. Professionals may take some comfort that, at least as yet, what is most certainly not available by electronic means is the wisdom of when and how to apply this knowledge. One important further challenge in the consumerist climate we now work in is to ensure that good-quality balanced information on mental health is directly available to patients and carers.

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Declaration of interest

None.

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References

CANNON, D. S. & ALLEN, S. N. (2000) A comparison of the effects of computer and manual reminders on compliance with a mental health clinical practice guideline. *Journal of the American Medical Informatics Association*, **7**, 196–203.

HUMBER, M. (2004) National programme for information technology is sorely needed and must succeed – but is off to a shaky start. *BMJ*, **328**, 1145–1146.

JADAD, A. R. & DELAMOTHE, T. (2004) What next for electronic communication and health care? *BMJ*, **328**, 1143–1144.

KATONA, C. (2002) Informatics in mental health care. *Advances in Psychiatric Treatment*, **8**, 163–164.

LEWIS, A. (2002) Health informatics: information and communication. *Advances in Psychiatric Treatment*, **8**, 165–171.

McCLELLAND, R. & THOMAS, V. (2002) Confidentiality and security of clinical information in mental health practice. *Advances in Psychiatric Treatment*, **8**, 291–296.

McLAREN, P. (2003) Telemedicine and telecare: what can it offer mental health services? *Advances in Psychiatric Treatment*, **9**, 54–61.

NATIONAL PROGRAMME FOR INFORMATION TECHNOLOGY (2005) *NHS Connecting for Health Brochure*. http://www.connectingforhealth.nhs.uk/

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