Using computers to work smarter

A guide for GPs

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BACKGROUND
Computers have many uses in general practice, but to get the most out of them requires commitment of time and money.

OBJECTIVE
This article describes some of the most important benefits of computers, but also indicates some of the difficulties in their use which can be overcome with simple strategies.

DISCUSSION
Realising the benefits of computers requires a positive mindset which welcomes their role in improving the quality of patient care and the efficiency of general practice.

Computers have multiple uses in general practice including administrative functions such as appointments and billing, clinical assistance within the consultation, and obtaining and transferring information. In each of these areas, computers can sometimes improve workflow, but they can also hinder it.[1,2] Nevertheless, computers can add to the quality of health care provided in general practice[3,4] and this might justify the increased time it sometimes takes to use them.

This article reviews how computers can be used to maximise benefits for the patient and the practice. It also identifies some of the practical difficulties in using computers; such difficulties should not discourage general practitioners from using computers, but the issues should be considered and worked through in order to achieve the best results.

The following lists are based on the author's experience both in his own general practice (see *Case vignette*) and as an active member of the General Practice Computing Group, a national body whose charter is to facilitate the development and uptake of 'e-health' (and whose funding was recently revoked by the Australian government). Of course, you may not entirely agree with these lists, as your views will depend largely on your own interests, knowledge and skills in the use of computers.

The top 10 list of computer benefits

As some 90% of Australian general practices are now using computers, it might not seem necessary to highlight their benefits. It would appear that the argument in their favour has been won. However, the extent of information technology/information management (IT/IM) uptake remains uneven, and therefore it should be helpful to consider the more obvious 'winners' as these might encourage further exploration of computer use by those reluctant to spend time or money on them.

Billing and claiming

Very few practices would now use paper based billing systems as computers have enabled not only the

printing of an individual invoice, but the compilation of data on financial transactions and the generation of useful reports. Also, billing transactions can be sent electronically to Medicare, and 'HIC Online' allows patients to receive their rebates almost immediately.

Appointment systems

An electronic appointment system can make it easier to find the time and date of that forthcoming consultation for the patient who has lost their appointment card. It also enables a GP to 'see' who is in the 'waiting room' and how far behind schedule they are.

Diagnostic test management

Receiving test results electronically saves on manual filing. With the development of improved messaging systems (ie. HL7), results can also be automatically transferred to the appropriate section of a patient's record. For example, the HbA1c can now find its way into the diabetes record, making it easier to keep track of a patient's diabetic control.[5]

Efficient and safer medication management

Remember the days of writing by hand long lists of repeat medications? There is no doubt that computers save time on these chores. They can also automatically check for drug-drug and drug-disease interactions, although for these benefits to become manifest, the GP must make a commitment to electronic data entry in the first place.[6]

Comprehensive and current health summaries

If you need to provide a health summary to go with a patient to hospital or other health care provider, then computers provide a very efficient means for doing so.

The use of templates

Most clinical software contain templates for medical, CentreLink and WorkCover certificates, referral letters, and forms to assist in chronic disease management such as the 'general practitioner management plan' and the 'team care arrangement'. These templates facilitate the entry of relevant information, in part by 'auto-populating' certain data fields such as demographic data, clinical history and medication lists, and are a great time saving device.

Communication via email

Email has revolutionised communication, and for many people it is the main benefit of the internet. A reminder

from your division of general practice about a clinical meeting, or asking a specialist a quick question about a new form of treatment, are just two reasons why email can be an efficient means of communication in general practice. Unfortunately, detailed clinical information that allows the identification of patients should not be sent without encryption, and this is not yet widely available between GPs, other health care providers and consumers.[7]

Chronic disease management

Computers can help GPs track the management of chronic diseases such as diabetes. They can be used to generate recall letters for patients who require regular review. Similarly, the computer can be programmed so that a 'prompt' pops up when an electronic file is opened, thus reminding the GP that some action is due.

Searchable health records

If you want to send influenza vaccination recall letters to all your patients aged 65 years and over, you can easily identify this group and generate form letters using a computer system. Or you could identify all patients on any medication that has been withdrawn from sale. Clinical audits based on querying your electronic health records are also increasingly feasible.

Seeking information on the internet

General practitioners can search for clinical information on the internet or conduct their continuing professional development requirements on-line. These tools are improving in quality and efficiency.[8]

The top 10 list of computer hurdles

Hurdles should not turn GPs off computerisation, but they do exist and require due consideration. For every hurdle there is a reasonable solution; it is only a matter of working it out on a practice-by-practice basis.

Time for software training

It takes time to learn how to use software. The temptation is to reach only a basic level of skill – enough 'to get you through the day' – and then fail to make any further progress. This could mean missing many of the benefits that computers can provide.

Data entry time

From day one of computers arriving on doctors' desktops, GPs have complained about their lack of typing skills. They still complain! However, there are 'shortcuts' for entering information and moving around the program.

Interference with the doctor-patient relationship

With GPs tapping away at their keyboards, it can be easy to lose rapport with the patient. Some GPs are concerned that computers are a potential barrier between them and their patients. However, involving patients in their own health record might help them to accept the presence of the computer.

Changing old work habits

It might seem that the good old (paper based) days in general practice were not so bad after all. Patients attended with their problems and these were dealt with without the use of computers. The system did not seem so 'broken' that it had to be fixed. In addition, variable levels of computer uptake by individual GPs can prove particularly challenging in group practices.

Lack of 'interoperability'

In spite of pilot studies showing that information can be electronically transferred between health professionals and organisations, this remains elusive in the 'real world'. If only a benevolent dictator would mandate a uniform system that all health providers have to use!

Cost (establishment and operational)

Although the price of computers has dramatically reduced in relative terms, there is still a temptation to buy too cheap a system. Group practices need powerful servers with good network capabilities, otherwise computers operate too slowly causing frustration. Getting IT technical support to fix a problem costs much more than a GP house call, and this reluctance to pay is another reason why GPs might not have efficiently operating computer systems (*Table 1*).

'Clunky' hardware and software

Systems 'crash' with regular monotony. However, having well maintained systems will help prevent too many problems. In addition, clinical software does not readily do what GPs want it to do, such as make the patient's family and social history readily accessible and as active a part of the health record, as are the medication and clinical problem lists.

Inadequate GP oriented IT technical support

IT technical support professionals have considerable expertise about computer hardware and operating system software, but not about clinical software. If

Table 1. What might it cost to set up?*	
• Server	$3500–4500
• Workstation (each)	$2500 (includes monitor)
• Printer (laser)	$250
• Full back-up system	$1000
• Network infrastructure	$1000–3000 (depends on extent of network)
• Internet (broadband)	$50–100 per month (unlimited downloads)**
• Technical IT support	$60–150 (on-site, per hour)#
• Clinical software	From $500 per full time equivalent (FTE)/year
• Practice management software	From $500 per FTE/year
• Accounting software	From $500–1000 per FTE/year

* Prices are based on brand names; clones can be up to 50% cheaper

** The Broadband for Health subsidy will reduce the cost to almost zero for 2 years

\# Try to negotiate a fixed rate contract

Table 2. The top 10 list of how computers will assist general practice in the near future
1. Videoconferencing and videoconsulting
2. Voice and/or handwriting recognition
3. Remote monitoring of patients
4. Wireless access (remotely and locally) to main database
5. Improved decision support and better access to clinical information
6. VoIP (voice over internet protocol, ie. cheaper phone calls)
7. Improved electronic data exchange
8. Improved data utilisation for audit
9. Virtual health records – HealthConnect +/- smartcards
10. Off-site data warehousing

something does not work, it can be difficult to get the right help at the time you most need it. However, an increasing number of computer companies have come to understand both worlds; it is a matter of finding them, usually by word of mouth.

Information overload on the internet

The internet can be both a blessing and a distraction. It can be quicker to phone a colleague than look for clinical information on the internet.

Concerns about security of electronic information

Can your financial information be 'hacked' into? Will the next computer crash lead to the loss of important clinical data? Maintaining data security requires effort by appropriately designated people within the practice, as well as the use of appropriate software.

Conclusion

Computers can make certain aspects of general practice more efficient and improve the quality of patient care.[9] Maximising the benefits of computers requires a particular mindset. Practices that embrace computers, and are enthusiastic about their potential and not afraid to invest time to develop their computer skills, will get the most out of them. Having a computer 'champion' in the practice helps, as does nominating someone who is prepared to act as a 'coordinator' for such matters as staff training and liaison with an IT technical support person. Practices also need to accept that paying adequately for a reasonable system, one that is stable and fast, is a worthwhile long term investment (*Table 2*).

Financial rewards will depend largely on extra services created by the use of recall systems, grants from the Practice Incentives Program, and the wider use of the Enhanced Primary Care Medicare item numbers, especially those pertaining to chronic disease management. These will support the 'business case' for computers. However, computers offer at least two other rewards for GPs: satisfaction in knowing that patient care can be enhanced, and the intrinsic thrill and challenge of using computers as 'partners' in the delivery of primary health care. These factors, along with the inevitability of computers, should encourage GPs to make the most of them.[10,11]

Summary of important points

- Computers are here to stay – make the most of them.
- Spend enough so that you have a stable and reasonably fast system – get expert advice.
- Keep improving your computer skills.
- Ensure your staff are adequately trained – they will help keep the system operating.
- Don't ignore computer security – when disasters happen, it can be disastrous!

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