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Promoting e-communication

Lessons from a feasibility study

There has been a rapid uptake in the use of computers in general practice during the past decade. General practitioners initially used computers primarily to generate prescriptions, but have increasingly adopted computers for health record keeping.[1] While most practices are now receiving pathology and radiology results via the internet, electronic communication (e-communication) between GPs and other health care providers remains limited.[2] Making referrals, communicating to and from medical specialists and allied health practitioners, and obtaining important health information from hospitals and other health care organisations have all proven difficult to implement in electronic form.

The Australian Government has funded several feasibility projects for developing e-communication strategies between the primary, secondary and tertiary health care sectors at regional levels. These grants have been administered through the Managed Health Network Program as part of the Broadband for Health Program.[3]

The general aim of the Southern Managed Health Network Project, for which the Monash Division of General Practice was the fundholder, was to develop an agreed process for e-communication between GPs and other health care providers in the southern region of Melbourne. Specifically, the objectives of this project were to:

- investigate the feasibility of electronically connecting primary, secondary and tertiary health services in this region
- explore other benefits of a 'managed health network', such as sharing of electronic health records between health sectors, and obtaining access to clinical resources, electronic web enabled services, telephony and videoconferencing
- develop a business case for a virtual private network (VPN) and other technical options
- document the political, social and cultural factors relevant to reaching an agreement for electronic data exchange in the region
- recommend the next steps along the road to electronic connectivity (e-connectivity) in the region.

Methods

Several methods were used to investigate the e-communication goals of health care providers and the organisations to which they belonged, and how they reach these goals. These methods consisted of:

- a review of policy documents and other literature which describe national and statewide initiatives in e-communication[4–6]
- semistructured interviews with key stakeholders (from hospital networks, primary care partnerships and general practice) plus information technology (IT) experts and commercial vendors
- a half day 'e-connectivity summit' which brought together representatives of these groups.

The literature review, the development of a schedule of questions for the interviews and the program for the e-connectivity summit, were undertaken by the project manager and principal investigator in consultation with the project steering committee. Questions were developed to understand the e-connectivity priorities for the three main stakeholder groups, the barriers to their implementation, and their suggestions for practical 'next steps' to improve the uptake of e-communication.

Results

Thirty-seven people were individually interviewed. Of those who attended the e-connectivity summit, most had already been interviewed (*Table 1*).

There was general agreement that e-communication requires not just technical solutions but also considerable human cooperation. Leadership is required to drive collaboration between groups, and stakeholders need their own priorities taken into account. For most groups, increasing the capacity of their internal computer systems was at this stage a higher priority than communication with external systems.

Electronic connectivity solutions need to be simple, seamless and invisible to the user, and should provide benefits to the participants without adding to their workload or costs. Privacy and security issues have to be addressed, and a quality, up to date service directory (*Table 2*) is required. It was unclear to this audience who should bear

the cost of implementing e-communication.

There was recognition that once a critical mass of users was established, e-communication was likely to 'take off'. Many also accepted that 'point to point' would provide a reasonable temporary solution for people's messaging requirements, even though this was not necessarily supportive of a truly interoperable environment.

Many were not convinced that there was a 'business case' for comprehensive e-connectivity and were unsure who the beneficiaries would be. There was a range of opinion as to who should pay for the installation and maintenance of computer systems: the organisation itself or government.

Pilot projects in the southern region, such as the demonstrably successful electronic hospital discharge summaries by Peninsula Health, had made some progress toward an electronic health (e-health) environment. Other experiments using messaging systems that were not integrated into current GP software – such as Connectingcare, a web based service directory and referral vehicle used by primary care partnerships in the area, showed that processes required ease of functionality to be adopted.

Table 1. Contributors to the consensus on e-connectivity in the Southern Managed Health Network project

Type of organisation	Interviewed (N)	Participated in the summit (N)
Divisions and GPs	10	12
Primary care partnerships	6	14
Hospitals	3	8
General Practice Divisions – Victoria	3	4
Department of Human Services	5	3
HealthSMART	1	0
Commercial vendors	8	5
Other	1	0
Total	37	46

Other projects such as HealthSMART (the Victorian Department of Human Service's information and communication strategy operating across the public health care sector from 2003–2009[5]) would have an uncertain impact on other e-connectivity initiatives. It is likely to dominate the planning of state funded health care organisations, which could impede e-communication with those outside that system. Working with commercial vendors was also not straightforward, as cooperation between services to adopt standards based interoperability processes did not always fit with the business imperative of a vendor providing a 'unique solution' for clients.

It was generally agreed that there was a lack of leadership to drive e-connectivity between primary, secondary and tertiary health care providers and organisations. No group saw interorganisational communication as their priority or responsibility; most were simply waiting for others to come up with 'solutions'. There was a feeling that adopting existing (ie. point to point) systems would actually inhibit e-connectivity in the long run; it was better to wait for improved systems – ie. to wait for 'someone else' to provide the answer.

Following discussions with stakeholders, it became apparent that there are three options for supporting the further development of e-connectivity:

- the tactical opportunistic option – building on current pilot project activity, relying on established human contacts and goodwill, working with commercial vendors, and assuming that 'things will fall into place' in the fullness of time
- the virtual private network option – putting in place secure networking connections via the internet but with appropriate inbuilt security measures
- the regional strategic option – creating a coordination unit with dedicated funding, principally from government, to apply technical solutions, develop plans and budgets, and provide a leadership and management role to drive change. This was the preferred option, but depends on additional funding in the order of $175 000 per year.

Table 2. Explanation of e-communication terms used in health care

- e-connectivity: the ability to securely transfer electronic data between health care providers
- Interoperability: the ability of different computer systems to exchange data by utilising an agreed set of common protocols or standards
- Managed service: in which a third party holds patient health data and provides access to approved people; this is in contradistinction to a messaging service in which limited data are 'pushed' from one health care provider to another. The latter generally requires that both users have the same messaging system on their computers
- Messaging: the sending of discrete packets of information between two or more computers, but not allowing one party to obtain access to the health record contained in the computer system of the other
- Point to point: a standardised set of rules describing the procedures for computers to connect with each other. This allows data transmission between two or more computers instead of through a third party (some messaging systems require messages to be sent to the vendor's server which is then forwarded onto the recipient)
- Service directory: an up to date list of health care providers with their email addresses
- Standards: specific protocols developed by standards setting organisations to try to ensure that software from different vendors can interoperate
- Virtual private network: a private communication network using a 'public' system (the internet) using encryption, passwords and other security measures to ensure that only authorised users can access the network

Table 3. Practical 'next steps' for divisions of general practice to increase regional uptake of electronic communication*

- Inform all the stakeholders what e-connectivity means and what is currently being done in the region
- Bring stakeholders together (eg. via a 'connectivity summit')
- Link with existing information and communication technology groups within the primary, secondary and tertiary health care sectors
- Ensure that general practice has a voice on large scale information management initiatives within the health care system (eg. HealthSMART)
- Encourage GPs to become more comprehensive in their use of computer systems (eg. better data entry)
- Lobby hospitals to start with specific processes (eg. electronic discharge summaries)
- Promote services which suit the needs of the users (currently, one of the not for profit messaging services is favoured by the majority of primary health care provider organisations)
- Work with other commercial vendors to insist that they develop 'interfaces' with other products and adopt 'standards'
- Help keep a 'human services directory' up to date
- Encourage health care providers to send mail electronically (eg. specialist letters)
- Assist in the development of 'remote access' between health care facilities such as nursing homes and general practice
- Promote the use of electronic templates (eg. the 'service coordination tools template' for referrals to community health services)
- Encourage GPs to have a broadband connection by explaining the advantages (eg. electronic Medicare claims and faster access to internet based clinical information)

* Based on the views of the project participants

Discussion

There is general agreement among medical peak bodies, government and consumers alike that more timely and seamless access to essential clinical data would assist in providing higher quality health care.[7–12] Nevertheless – and despite the fact that substantial amounts have been spent on piloting and promoting various e-communication integration solutions, and that overseas experience has been not too dissimilar – the path forward remains unclear.[12–14]

This project has encapsulated many of the problems facing e-communication within the health care sector.[14,15] There is no single solution that everyone agrees they will use, and people are waiting to see what others – government, commercial vendors, IT experts, health care organisations – can deliver before they implement something which might prove to be either too costly or a 'lemon'.[16,17] This project was indeed unable to develop a specific, agreed process for e-communication between GPs and other health care providers in the southern region; what was achieved was agreement on the best steps to take to move in the right direction (*Table 3*). More isolated regions have found that limited success in e-connectivity is possible, but large metropolitan regions struggle with multiple small scale pilot projects instead of focusing on the development of a coordinated set of strategies to provide region wide, interoperable systems.[4]

Additionally, while various levels of e-health funding and support have been provided to the primary care and the hospital sector, little has been directed to medical specialists in private practice. This is a significant missing link in the chain, as correspondence from specialists now provides one of the major external paper loads on general practice.

The project covered a region which comprises more than 1 million residents, seven divisions of general practice, almost 600 general practices, 14 hospitals, four primary care partnerships and many other health care providers both in the public and private system. Is it any wonder that a 'single solution' for all was not developed within a 6 month project?

Although the project participants were mainly those interested in e-connectivity, it was clear that there was considerable variation in their technical knowledge. Many were also unfamiliar with policy initiatives such as HealthSMART, which are likely to have a major impact on attempts to improve e-communication.[6] The opinions therefore represent 'interested parties' rather than 'experts'.

Prioritising and adopting this will depend on commitment, funding and finding 'champions' who are willing to put in the time to help bring about sociotechnical change in the region. Nevertheless, there are opportunities for divisions of general practice to support regional e-connectivity.

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