

# Researching new technologies – e-health applications for rural communities



# May 11, 2010

- Federal Budget announcement
- “\$466.7m investment over the next two years to “revolutionise the delivery of healthcare in Australia through the establishment of the national e-health records system.”

- “Every Australian will be able to check their own medical history online through the introduction of personally controlled electronic health records, which will boost patient safety, improve health care delivery, and cut waste and duplication.”
  - The Hon Nicola Roxon MP, Minister for Health and Ageing

Sound familiar?

# June 25, 2004

- “Medicare smart card on the way”
- “Australians will soon be offered a Medicare smart card that carries their photo and health records, giving paramedics and doctors quick access to potentially life-saving information.”
  - The Hon Tony Abbott MP, Minister for Health and Ageing



- Any substantial investment in e-health should be welcomed as long as it results in measurable improvements in access, quality and outcomes of health care delivery, especially for people living in rural and remote locations.

# What is e-health research?

- “In health informatics (e-health) research we study health information, communication and decisions, and the technologies to improve these.”
  - Jeremy Wyatt, What is health information? BMJ 2005

# What is the purpose of your research?

Our most important challenge is to determine how we can 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



# Rural clinicians can make great researchers



- Australia's rural workforce has long been at the forefront of research into the use of new technologies to support improvements in health care access for the people of rural and remote Australia

# Early Adopters

- “Rural clinicians were quick to recognise that e-health had the potential to help overcome the effects of distance.
- “There can be differences in the use of e-health in rural and remote areas.
- “Decision makers need to recognise different requirements for resources, infrastructure and training.”
- *Dr Kathryn Kirkpatrick, Chair, RACGP National Rural Faculty. June 2010*

# Golden rule for new researchers

- Find your passion and then research it
- The secret to successful research is passion.
- “You need to pick your passion.”
- And then find a research leader doing work in your area of passion which inspires you.
- And glue yourself to their research team.



- **1986-1990** – Computer Assisted Practice Project (CAPP) – 22 general practices across Australia
- **1988-1993**– MATRIX software for computerised medical education
- **1992** – first round of IT grants by Divisions (patient and disease registers, recall systems)
- **1993-1995** – Trial of rural GP use of a computerised message exchange system – PHOCUS
- **1998-2000** – computerisation of Australian general practice
- **2000-2002** - electronic transmission of prescriptions from GP to pharmacy (Ballarat, Launceston) - *MediConnect*

# Lessons from evaluation of the Field Tests of *MediConnect* 2000-2002

- 2 key rate limiting steps in field testing:
- Software readiness
- Potential medico-legal ramifications
- Led to delays in clinician recruitment and roll out
- Emphasised the importance of working with, and listening to, the software industry and clinicians and consumers on these developments

The majority of major health informatics projects funded in the past in Australia have failed

We need to learn the lessons from the past and not repeat mistakes

We can also learn from the expensive experiments underway in other nation's healthcare systems



- *George Pompidou*  
*President of France 1969-1974*



- “There are three roads to ruin; women, gambling and technicians.
- “The most pleasant is with women, the quickest is with gambling...
- but the surest is with technicians.”

- “Uncritical adoption of new systems based on the pressures of technological push continue to discredit policy makers.
- “ ... There are great opportunities for researchers interested in evaluation to fill the vacuum left by e-health developers.”
  - Frank Sullivan, What is health informatics? J Health Service Research Policy, 2001

- Problem is that people forget to apply the principles of research to their developments
- And funders forget to include evaluation components in the projects they have funded

# Evaluation is a key component of e-health research

- To learn from experiences to improve local systems
- To support decisions with regard to further introduction or improvement of systems
- To justify expenses related to system introduction
- To prove that systems are safe for patients

# Rules for e-health evaluation

## 10 'c's

Clinical focus

Clinician champions

Clinician involvement, training and support

Confidentiality

Consumer involvement

Compatible systems

Common record structure

Communication standards

Change management

Cash







# Potential areas for e-health research for rural communities

- Mobile applications
- Chronic disease management
- Mental health
- Health promotion and disease prevention
- Medication management
- Sharing of traditional knowledge
- Continuing professional development
- Video-conferencing between health professionals
- Home care and remote monitoring

# Most exciting e-health research I have seen this past month

- 21.05.10
- *“Home Health Monitoring may significantly improve blood pressure control”*
- Study led by Kaiser Permanente in collaboration with the American Health Association and Microsoft
- 348 patients with uncontrolled hypertension, aged 18-85 years



- Those randomised to the home monitoring group used an at home BP measurement device that uploaded data to the patient's account in Microsoft's HealthVault
- Clinical pharmacists at Kaiser Permanente monitored readings and consulted with patients by phone or email to adjust their prescribed antihypertensive medications based on proven protocols
- Control group continued their routine care with their family physician

- Patients in study arm were 50% more likely to have their blood pressure controlled to healthy levels than those in control arm.
- “Study shows the potential benefits of combining the use of secure e-health technologies based at home or work to complement the established doctor-patient relationship, which remains the cornerstone of care.”

The electronic health record is the basis for much of current e-health research



# The use of Electronic Medical Records in Australian General Practice

- **Ref: DK McInnes, DC Saltman, MR Kidd. GPs' use of computers for prescribing and electronic health records. MJA 2006;185:88-91**
- 90% of Australia's GPs use a clinical software package. Of these GPs:
  - 98% e-prescribing
  - 88% check drug-drug interactions
  - 85% order pathology tests
  - 78% patient recall for follow up and continuing care
  - 64% record progress notes
  - <20% access computerised information on the internet during consultations

# The use of electronic medical records in Australia

- The primary use of electronic medical records in Australia is not to provide data for research
- The primary use is to support the provision of the highest possible quality of care to our individual patients
- They are an aide memoire for clinicians
- They are increasingly used for audit and quality improvement initiatives
- They are not used much for wider research ...yet



We are yet to harness the power of the information contained in our electronic medical record systems in general practice in Australia to support decision making, communication and research

# nehta

- National E Health Transition Authority established in 2005 by Australian Commonwealth and State and Territory Governments to develop better ways of electronically collecting and securely exchanging health information
- Initial focus on standards
- Australia poised to be a “fast follower”
- Role out of the Healthcare Identifier – 16 digit electronic health number to identify you when you have an encounter with the health system

# Research ideas



# VeriChip™

“there when you need it”



- October 2004 - the world's first subdermal personal verification technology
- A microchip containing medical information that can be implanted into the arm has been approved for use in humans in USA
- Able to be scanned by health care workers to gain key health information
- Invited to sign up now and be one of the first 100,000 to Get Chipped™
  - <http://www.adsx.com/prodservpart/verichipprreregistration.html>



# 2008 – Personally Controlled Health Records

- Personally controlled health record
- Your own health record on the internet
- Information gathered from all your health providers
- Hosted by a third party, such as Microsoft Healthvault or Google Health
- You control the content
- Basis of 2010 Federal Budget announcement

# Who do you trust most with our personal health information?

- Given the choice of having governments create and exert a degree of control over your internet-based personal health record, and being able to do it yourself with a little help from Microsoft or Google or other commercial providers, which will you choose?

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# In looking for research ideas, keep your eye on the changes in consumer use and acceptance of technology

- Use of portable technology
- Use of web for personal information
- Social networking (e.g. Facebook)
- Concerns about privacy and confidentiality
- Videocalls
- Desire for cyberconsultations



# Cyberconsultations

A challenge to our traditional method of clinical care delivery

Many people would like to communicate with their own doctor/s online

Email for pathology and radiology test results

Email follow up questions after a consultation

Email requests for repeat prescriptions and referrals

Could cyberconsults transform rural health care?

But let's make sure it doesn't go  
too far



# Visit to a rural GP Super Clinic circa 2020

