Telehealth & Health Informatics

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Problem

Health Professional

- Limited time resource
- Increased demand
- Paucity and delays in information
- Delayed decisions

Patient

- Limited support between visits
- High service demands on time
- Health literacy challenged
- Access to health support ad hoc
- Disempowered

Health System

- Limited resources
- Minimal integration
- Increased DNAs
- Inflexible service delivery model
• the use of information and communication technologies to deliver health care when patients and care providers are not in the same physical location
Telehealth includes:

• the use of both store and forward and real time technologies for remote diagnosis, treatment and prevention of disease and injuries, as well as health care related education, research and evaluation (traditionally referred to as telemedicine)
• remote management between a patient in their domestic settings and their care providers (telemonitoring)
• the use of mobile devices to deliver healthcare and to support healthy lifestyle services.
The Benefits of Telehealth

Telehealth has the potential to be of enormous benefit across a range of different health care settings. Noted for its ability to reduce the barriers of time and distance faced by rural patients needing specialist consultations, telehealth can also improve patient outcomes for chronic illnesses, lower hospital admissions, reduce travel budgets and boost productivity.

Telehealth is identified as an important tool for clinical integration under the National Health IT Plan and the Ministry of Business Innovation and Employment has identified health as a priority area for faster broadband.
SMS4BG: You need to test your glucose more often when you are unwell and when changing meds/doses

• Purpose to support patients between clinic visits to increase motivation for good blood glucose control

• Text message based programme

• 2-way
ASSET Trial Report: Telecare led to patients and families taking a more active role in self-management

The results of the ASSET (Application of Self-Management Systems) Trial have been published.

The report shows that, despite early technical difficulties, patients at all sites were universally positive and there was an improvement in chronic disease awareness.

As has been shown in other trials, while there has been improvement in non-measurable factors, there wasn’t a significant reduction in hospital admissions, days in hospital, emergency department visits, outpatient visits and costs.

Although not specifically addressed in the report, this suggests that, in order to achieve the full potential of this type of intervention, the care model needs to be addressed holistically - including reward structures.

Read the full report online: Telecare for Diabetes, CHF or COPD: Effect on Quality of Life, Hospital Use and Costs. A Randomised Controlled Trial and Qualitative Evaluation.
New research challenges

New models of care for telemonitoring
- Identifying patients likely to benefit
- Integrating new user-friendly technology
- Algorithms to identify trends and trigger points where actions will prevent deterioration and hospital admission
- Integration into existing services and health IT systems
- Identifying the economic model(s)
- Transition timing from monitoring to self-management
- Shared information across teams / organisations
Health Informatics

“Health informatics is the science and practice around information in health that leads to informed and assisted healthcare”

*Health Informatics Society of Australia (HISA)*

MedTech Core ➔ emphasis on **practice**

**Informed**: right information & knowledge available at the right place and time & in a form that allows it to be used

**Assisted**: job of the healthcare worker is made safer and easier and that the health consumer is supported in their decisions and actions
Allergy death 'needless'

5:00 AM Wednesday Jun 10, 2015

Exclusive: Woman died after drug given despite warning on MedicAlert bracelet.

Laurie Richardson wants to know why medical experts ignored alerts about his wife Eunice's allergy.

A pensioner died an "agonising and needless" death after hospital staff administered a drug that a MedicAlert bracelet she wore warned she was allergic.
Health Informatics - Challenges

- Enormous size, complexity and variability
- More & more specialised & integrated
- Knowledge & Tech growing exponentially
- Do you think we can handle this?
  - ICT has been shown to be useful!
- Is this all?
  - What about human factors / culture?

Technology ↔ Information/Processes ↔ People/Organisations
Action Plan

• Make sure technology development & implementation follows scientific health informatics methods
  – From inception to evaluation

• Create awareness and training programs
  – In collaboration with HINZ, NHITB/MoH, HL7 NZ

• Our team and extended HI collaborators can assist you in your projects
  – Science and skills
  – Translational aspects: e.g. NIHI does 100s of projects from clinical trials to databases & HIT evaluations
What are our strengths?

- Clinical study design & conduct (NIHI)
- HIT & integrated care evaluation (e.g. Shared Care Planning)
  - Gayl Humphrey, Dr. Yulong (Helen) Gu
- Teaching: undergrad & graduate HI courses and PGDip in Health Informatics (UoA)
  - Dr. Karen Day (UoA SOPH), Dr. Dave Parry (AUT)
- Electronic Health Records & Standards
  - Lead globally and locally (openEHR, HL7)
  - Stewards of clinical registries/databases (Cardiac & Gestational Diabetes registry, Growing Up in NZ, SPARX)
- Decision Support Systems, AI and User Interaction Design
  - Jim Warren (CS)
- Knowledge management
  - Dr. Martin Orr (WDHB)
- Integration of Computational Physiology & Clinical Data (ABI)
• PIs Telehealth & Health Informatics Theme: Prof Simon Malpas & Assoc Prof Robyn Whittaker (UoA)
  – Discuss potential ideas and whether they fit with the theme & meet CoRE criteria
  – Assist with finding potential collaborators within the CoRE & partners