Telehealth in Aotearoa
(the land of the long white cloud)

Global Telehealth 2012
Pat Kerr, Principal Consultant, NZ Telehealth Forum
Telehealth context

*Narrow definition:* web based services

*Broader definition:* healthcare practice supported by electronic processes & communication - health informatics, EHRs, PMS, etc

... the technology and infrastructure that enables healthcare (& related processes) to be delivered at a distance
Telehealth – a disruptive force

It’s not only about the technology...

But very much about enabling changes in clinical practice
Telehealth in NZ – slow progress since early 1990s

- Fragmented approach
- Clinical awareness & support not cohesive
- Strong on innovation (pilots); weak on sustainability
- Low priority at funding and planning level – lip service only in most places
- Slow uptake, especially for our size and population, compared to other like jurisdictions such as Australia, UK, Alaska, Canada

... but that is changing...
• Promote telehealth as a change agent for health services

• Ensure telehealth on agenda for national & regional strategies

• Instigate, support & participate in trailblazing telehealth deployments

• Maximise ultrafast & rural broadband

• Promote *sustainable* services (move from pilots to broad deployments)
Telehealth touchpoints & enablers

Clinical content is needed for effective Telehealth
Governance & work programme

**Governance**

**NHITB**
- Sponsorship and leadership

**NZTF**
- Chair and Executive
  - Strategy, decision making, commercial
- Telehealth Leadership Group
  - Advice and execution
- Operations Centre
  - Secretariat, consulting, communications

**Workstreams**

**Forum support:** planning, QA, mentoring, evaluations

**Clinical initiatives (projects)**

**Capability building:** converting barriers to enablers

**Stakeholder engagement:** education / awareness
The Forum’s landscape

Applications

- Telemedicine (interactive / store & forward)
- mHealth
- Robotics
- Help Lines
- Telemonitoring
- Interactive Portals
- Telecare (alarms)

Priorities

Support for
- small hospitals and integrated family health centres (IFHCs)
- in home monitoring
- better quality videoconferencing for clinicians and clinical networks

Standards development /adaptation
Progress on the priorities...

4 regions

Northern
Midland
Central
Southern
Telemedicine – store & forward

Well established...

**Teleradiology**
- Imaging and diagnosis - public and private, incl. support for rural centres and out of hours

**Teledermoscopy**
- Imaging and diagnosis
  - Public-private collaboration (Molemap NZ & Waikato DHB) for Virtual Lesion Clinics
  - Private (Molemap)

Source: Molemap NZ
Rural / small hospital support – videoconferencing

**Northland DHB** Whangarei to Bay of Islands, Kaitaia
Clinics - renal, paediatrics, methadone, nutrition
  case reviews with ADHB, clinical network meetings

**Waikato DHB** Teledermatology clinics Waikato Hospital
to Taranaki DHB (New Plymouth Hospital)

**Bay of Plenty DHB** Speech language therapy

**Canterbury DHB to West Coast DHB** Outpatient
clinics - paediatrics, oncology, etc

**West Coast DHB** Outpatient clinics Greymouth to
Westport, Haast etc - gen’l surgery, methadone,
nutrition, speech therapy etc

**Mental Health Networks**

Multi-vendor / network environment emerging for VC
An established (and growing) network...

Telehealth across the Southern Alps
Telehealth across the Southern Alps

- 24 hour acute paediatric care
- inpatient and outpatient consults
Allied health - home and community

Speech Language Therapy
using Skype, Cisco / Jabber & larger enterprise VC network tools for:
- therapy with patients in their homes
- review, training, multi-disciplinary team evaluation and supervision

Telerehabilitation Working Group
mainly SLTs & dieticians - collaborating on technology solutions, protocols, etc
Clinical Networks – Education / Forums

- Rural teaching
- Grand Rounds
- Team handovers
- Nationwide meetings
- Multi-Disciplinary Meetings
Clinical Networks – MDMs
Clinical Networks – MDMs
Work in progress & being considered

- Northland – Kaitaia (Oncology), Dargaville (ward, maternity, addiction, outpt), ICU
- Auckland – strategy + foundation projects + programme mgr
- Waitemata – bus case for mobile technology for Community Allied Health
- Waikato – ED services between Waikato and Taumarunui, local telehealth forum and clinical group
- Bay of Plenty – outpatient Services (possible trials sponsored by MBIE), ED support
- Hawkes Bay - teleconsults - hospital to Wairoa
- Canterbury / West Coast – continued growth in clinical networks and specialist teleconsultations
- Shared Services – scoping for Elective Services, possibly FSAs included
- MDMs – Northern Cancer Network
Auckland Regional Public Health Service

- Directly Observed Therapy (DOT) to TB patients for better compliance with NZ and WHO guidelines

- Increase patients on daily DOT from 30% to 40% of cases (target), within current resource levels

Evidence base includes South Australia and Washington State
Other examples:
mHealth and interactive portals
Telemonitoring

- Operational service – Eastern Bay of Plenty
- Trials - focus on LTCs
- Others considering monitoring:
  - alarms providers (adding proactive monitoring services)
  - community based NGOs for remote nursing support and self-management for LTCs

*Common theme for NZ and international: there are benefits “if implemented properly”*
Videoconferencing in health – significant changes

Connected Health (CH): a network of networks
3 points of interconnect

- Interoperability across major providers via Connected Health gateway
- Technical standards developed, all major providers compliant
- Directories exchanged, operational procedures in progress
- Reduction in end-point charges
- Lower-cost VC collaboration / content sharing tools; not all are standards based, or suitable for telehealth
National Health Sector
VC Network Provider

NORTH ISLAND

SOUTH ISLAND

Vivid Solutions Ltd
New VC Services for Health Sector

Northern Region

Midland Region

Central Region

Southern Region

DHBs, GPs, PHOs, et al

Connected Health

Secure Voice/Video Call Gateway

Internet PSTN SIP etc.

3rd Parties

One.govt (inter agency)

Inter-regional and national MDMs
New VC Services for Health Sector

Connected Health Compliant

- Patient: Mobile or Internet Service Provider
- MobileCare Worker: Mobile Service Provider
- Rural GP: Connected Health or SecureMe Internet
- NGO, NASC: Connected Health or SecureMe Internet
- Primary Care: Connected Health WAN Service
- Secondary Care: Connected Health WAN Service
- Global Gateway:

Virtual Clinic

Cloud based service
Enablers: good progress
some progress

- Standards
- Education/Awareness
- Technology - options
- Resourcing
- Professional guidelines
- Strategy / funding (local)
  - Innovation funding
  - Ultrafast and rural broadband
## Telehealth Knowledge Systems Framework - Primary Care perspective

### Clinical Mandate

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing orders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triage and assessments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication adherence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care co-ordination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prescribing rights</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Support Integration

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whanau education packs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient clinical education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary care support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Records integration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulance dispatch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone integration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Staff & qualifications

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior practitioner(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile HCA/Nurses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telehealth HCA/Nurses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting CHCs/Pharm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Training

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical competency assessments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drug effects/interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology/maintenance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural/Social education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems integration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Telecommunications

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware function(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly fees costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient tools support</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Monitoring and Control

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web-enabled clinical intelligence workstations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telephone dispatch and co-ordination system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adverse reaction alert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human resource system - rostering/co-ordination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Continuous Improvement

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systems review processes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Funding

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHB district annual plans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHC/NHB/NHITB/MOH/WINZ/MSD/ACC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHO/SIA/HP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical programmes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private insurance/copay</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Reporting

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial monitoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical performance monitoring/management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business intelligence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stakeholder reporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longitudinal analyses</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hardware/software

<table>
<thead>
<tr>
<th>Task/Function</th>
<th>Valid</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 x Workstations (min)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Database (SQL) servers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-ordination package</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical analysis package</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecommunications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient-Practitioner tools</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

ProCare Health
Challenges / opportunities ahead

- National / regional strategies
- Collaboration-NZ & intl
- Health informatics

- Tracking progress
- Total cost of ownership
- Funding
- Evaluation / Evidence
Evaluation – Action Research

- Quantitative
- Qualitative
- Formative (during)
- Summative (learnings)

Demonstrate quality of care and sustainability
Thanks!

Global Telehealth 2012
Pat Kerr, Principal Consultant, NZ Telehealth Forum