Challenges in Tele-Health & Cross-border Supply & the Australian Context

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What is Tele-Health?

- Tele-Health ➔ Integration of telecom systems into the practice of protecting and promoting health (Chanda, 2001)

- Tele-health ➔ A broad application of telecommunications in three areas: medicine, information, and education (Brauer, 1992)

- Telehealth ➔ The application of Information and Communication Technologies in medicine (Australian Telehealth Society)

- Telehealth ➔ The integration of telecom systems into the practice of protecting and promoting health
- Tele-health ➔ The utilisation of ever advancing telecommunication systems to address the range of health problems of distant patients (Mehryar and Narayan, 2007)

What is Tele-Health?

- Tele-medicine ➔ The use of electronic information and communications technologies to provide and support health care when distance separate the participants (Field 1996)

- Tele-medicine ➔ The facility to provide healthcare using telecommunications as the medium and modern medical technology as the tool. The delivery does't have to be in real time.(WTO)

- Tele-medicine ➔ The use of telecommunications technology to send data, graphics, audio, and video images between participants who are **physically separated** for the purpose of clinical care (Brecht and Barett, 1998)

- Tele-medicine ➔ Consultative, diagnostic or other medical services delivered via telecommunication technologies (Purcell)

- Tele-medicine ➔ Health related activities and services carried out over a **distance** by means of IT (Dacany et al, 2005)
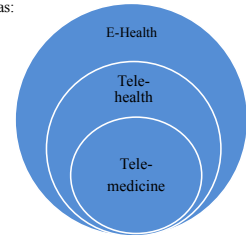

How Tele-health links to e-Health and Telemedicine?

e-Health ➔ the use of ICT in health sector for clinical, educational and administrative purposes, **both at the local site and at a distance.**

Telehealth ➔ application of ICT to provide (at a distance between two or locations) health-related activities such as:
-diagnostic and treatment services
-educational and support services
-Organisation and management of
 health services.

Telemedicine ➔ that subset of
Telehealth that deals with medical
 diagnostic and treatment services.

E-Health
Tele-health
Tele-medicine

What Drives the Growth of Tele-health Services?

- Advances in telecommunications technologies
- Increased separability of services from their production process
- Declining costs of electronic delivery
- Increased awareness & ease of use
- Reliability of tele-health systems
- Availability of ICT and medical infrastructure, resources, and competencies
- Resource deployment and market selection (medical transcription by India and the Philippines)

Telehealth Landscape in Developed and Developing Countries

Developed Countries	Developing Countries
• Advances in telecommunications technologies • Declining costs of electronic delivery • Ease of use • Reliability tele-health systems • Dominance of global medical sector • e-friendly business environment • Efficient e-health supply chain (payment procedure, delivery infrastructure, legal framework, quality assurance mechanism) • High connectivity • On-line medical education	• Low awareness, availability, and usage of tele-health services • Lack of telecommunication infrastructure • Indifferent business environment • Lack of resources at the enterprise and national level • Low connectivity • There are exceptions … Apollo Telemedicine and MedVarsity (Online medical education by Apollo)

Cross Border Supply of Tele-Health

- Telemedicine (e.g., on-line diagnosis)
- e-health education and training
- e-commerce and e-business applications for health management and health systems, data storage, and usage
- Use of IT in health management for better delivery and increased efficiency

Tele-health: Global Trends

- Increase demand for tele-diagnostic, surveillance, and consultation services provided by US hospitals to hospitals in Gulf and Central America.
- Provision of Tele-pathological services provided by Indian doctors to hospitals in Nepal and Bangladesh
- Tele-diagnosis services provided by hospitals in China's coastal provinces to patients in Chinese Taipei and Macao and some South East Asian countries.
- Outsourcing of Medical transcription which are being increasingly outsourced to developing countries such as India, Pakistan, and the Philippines
- Tele-health services provided by Australian providers in Indonesia and China

Cross-border Trade of Tele-health Services: Risks

- Data transmission, confidentiality and information security
- Professional responsibility
- Patients' rights and consent
- Reimbursements/payments
- Liability for negligence and abandonment
- Potential for fraud and abuse
- Secure access concerns

Cross-border Trade of Tele-health Services: Challenges

- GATS & Tele-health ---there are fewer commitments for Mode 1 than for any other mode
- Lack of established standards
- Cultural rigidities and mindset
- Organisational rigidities
- Technology
- Ethical & Privacy Issues
- Regulatory Issues
- Legal and insurance issues
- Diversion of resources from other health services
- Urban bias

Cross-border Trade of Tele-health Services: Challenges

- Inter-sectoral linkages between telecommunication network services, medical and non-medical professional services, and computers related services.
- Need to establish a standard of practice in tele-medicine to ensure:
  – Quality
  – Safety
  – Optimal patient care

Cross-border Trade of Tele-health Services: Key Barriers

Behavioural

- Resistance to telehealth – "fear that nurses are delegating tasks to machines"
- Lack of public awareness in developing world
- Change management – understanding the capabilities and limitations of the technologies and applying them appropriately.
- Lack of information technology knowledge and usage among healthcare professionals and clients
- Organizational, financial and attitudinal barriers to telemedicine adoption.

Cross-border Trade of Tele-health Services: Key Barriers

Financial
- Access to capital
- Payment issues/re-imbursement of telemedicine consultations
- Consumer affordability

Cross-border Trade of Tele-health Services: Key Barriers

Technological
- Electronic Health Record
- Lack of universal language for interfacing and interconnectedness
- Network infrastructure
- Lack of connectivity – broadband is not everywhere
- Network capability
- Home (client or provider) and office automation

Potential for Cross-border Trade of Tele-health Services: The Case Tele-radiology

- Reliability of the technology
- Quality of the images
- Speed of decision making
- Ability to have a specialist in one location to provide advice to generalist staff at another site
- Portability of the technology (radiologists just need a notebook and the Internet connection to receive images)
- Decline in the price of tele-radiology technology

Telehealth- The Australian Scene

- Distance
- Diverse spread of health resources, facilities, and patients
- Limited coverage
- Large country with small population
- Excellent but overstretched health system

Australian Tele-Health Landscape

- High levels of R&D expenditure and long established medical research institutes
- Globalised approach
- Specialised technical skills gathered from around the globe
- National E-Health Standards Development
- Government's National E-Health Strategy in December 2008
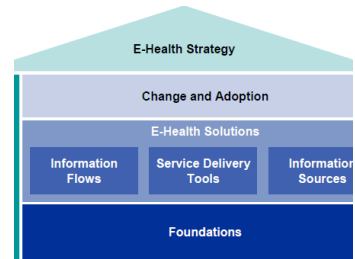- Emphasis is universal connectivity

Key Players

- **NEHTA - National E-Health Transition Authority**
- **Australian e-Health Research Centre (**A joint venture between CSIRO and the Queensland Government, the Australian e-Health Research Centre is a leading national research facility in ICT for healthcare innovations)

Strategic Drivers of Tele-Health: Australia

- An ageing population
- A paradigm shift from treatment to prevention and care
- Changing models of care
- Expanding diagnosis and treatment options
- Improved information technology and communication
- Market forces
- Pressures to reduce healthcare costs
- Consumer demand
- Urbanisation and globalisation (National Telehealth Plan)

Australia's E-Health Strategy

The National E-Health Transition Authority Strategic Plan (2009-2012)

Strategic Priorities

- Developing the **essential foundations** required to enable e-health:
  - Healthcare Identifiers
  - Secure messaging and authentication
  - Clinical terminology and information service.

- Coordinate the progression of the **priority e-health solutions and processes**:
  - Referrals and discharge
  - Pathology and diagnostic imaging
  - Medications management.

- Accelerate the adoption of e-health.

- Lead the progression of e-health in Australia.

Telehealth in Australia: The Case of Statewide Telehealth Services

Telehealth in Australia: The Case of Statewide Tele-Health Services , Queensland

Innovative Approaches to Healthcare delivery

- Delivery of Post-surgery ear, nose, throat out-patient sessions
- Direct delivery of pre-admission assessment
- Wound management services in patients home via video conferencing using mobile phone
- Retinal (Eye) screening using digital fundus cameras
- Medical teams using telehealth services to provide advice on mental health, aged care, and paediatrics
- Use of videoconferencing, remote vital sign monitoring, delivery of pathology, and digital x-ray images to provide support to remote ICU units

Telehealth in Australia: The Case of Statewide Tele-Health Services , Queensland

Innovative Approaches to Healthcare delivery

- Development and use of mobile wireless videoconferencing to facilitate pharmacy consultation at the patient bedside
- Tele-rehabilitation services using real time videoconferencing, video recording, and still picture
- Collaboration with 3 Australian universities to develop real-time digital stethoscope
- Collaboration with Australian Universities to develop telehealth outcomes for intensive care and pre-admission assessment

Annex 8. Challeges in Tele-Health & Cross-border Supply & the Australian Context

Australian Export of Tele-Health Services

- Wireless health monitoring systems for screening, diagnosis and management of chronic diseases, and for consumer health and fitness
- Development of health informatics software for use in the management and surveillance of sexual health, communicable diseases, HIV/AIDS, hepatitis C, family planning and staff health occupational risk exposure
- Electronic medication management
- Hospital Software
- Telemedicine
- On-line medical education and training

Future of Tele-Health and Tele-Health Export in Australia: Some Concluding Remarks

- Health is a priority and a politically sensitive area …Connectivity is not
- Cost pressure and resource constraints will drive the implementation of e-health strategy
- Implementation of e-health strategy will make Australian health sector among the most telehealth-intensive health sector in the world
- A highly telehealth –intensive health sector is a necessary but not a sufficient condition to boost the Australian export of telehealth services
- The focus of telehealth initiatives in Australia is to achieve equity and efficiency and not to earn foreign exchange or generate revenue , e-health education & training remain an exception