

## Potential of Mobile Devices in New Zealand Healthcare

by  
Asfahaanullah Baig Mirza  
Massey University at Albany  
May 2008

### Abstract

This thesis examines the potential for the use of mobile devices in New Zealand healthcare. Adoption of mobile technology can potentially improve information access at point of care, increase efficiency and patient safety, significantly reduce costs, enhance workflow, and promote evidence-based practice to help make effective decisions.

Mobile devices of different size and form such as laptops, tablet PCs, PDAs, smart phones, mobile phones, and RFID offer portability, remote access to clinical data, traceability, convergence, and connectivity which traditional computers cannot emulate.

The pervasiveness of mobile devices is increasing both globally and within New Zealand. The potential of mobile technology in healthcare has been recognized by many developed countries; there is adequate evidence for improving productivity, efficiency, and patient engagement.

The study focuses on the three prominent healthcare sectors in New Zealand: Primary, Secondary, and Community. As mobile technology is still an underdeveloped area within New Zealand's healthcare industry, the use of a qualitative research approach involving surveys and interviews helps to determine which m-health applications are most appropriate to adopt here. The sample surveyed consists of health providers, health strategists, and technology vendors.

The potential of mobile devices that were identified from the interviews included real-time access to information such as clinical data, drug database, and medical references. the use of SMS reminders and alerts, use of RFID to reduce medical errors, manage patients and assets, and for identification of medical equipment and drug identification. Over 80 percent of the participants considered privacy, confidentiality, and security to be very important challenges in the m-health domain. Many challenges and implications were identified, including technical constraints such as form factor of mobile devices, storage space, limited battery life, durability, and reading distance of RFID devices. Privacy, security, and ethical issues were discussed including the sensitivity of personal data, sending and receiving of clinical data, RFID tracking ability, security, and encryption standards, authentication barriers, and cultural barriers.