

## Health in a Mobile Ontario



### Definition

Mobile health (m-health) refers to the use of mobile information and communications technology (ICT) across wired and wireless networks to provide health services and information to medical and public-health workers, as well as to patients and healthy residents of Ontario. M-health further refers to wireless devices such as glucometers, cardiograms and blood-pressure cuffs, which transmit information wirelessly. M-health takes advantage of the 24/7 connectivity, intensive personalization, communication and social media qualities, and context and location awareness of mobility. The ubiquity of mobile devices in both the developed and developing world presents the opportunity to improve health outcomes by delivering innovative medical and health services to the farthest reaches of the globe using ICT.

### Opportunity

Health in a mobile Ontario:

- Is patient-centric, providing new opportunities for the self-management of health.
- Provides enhanced access, productivity, inclusion and job creation.
- Affects all areas of care, including preventative care, chronic care, remote care, acute care and community care.
- Makes medical care and information convenient and accessible for physicians and/or patients, thus allowing clinical management decisions to be made more quickly.
- Keeps patients out of hospitals and in appropriate care settings in part through enabling the monitoring of chronic conditions outside of the clinical environment.
- Integrates electronic records and effective billing methods at each point of service.
- Allocates resources to those with appropriate skills in real time.
- Uses ICT for system coordination, access to records and data gathering, leading to accountability.
- Facilitates easy information access through multiple sources, including mobile telephones.
- Assists in collecting community and clinical health data, and delivering healthcare information to practitioners, researchers and patients.
- Allows the monitoring of remote patients' vital signs in real time.
- Uses mobile telemedicine to directly provide care.
- Allows healthcare professionals to engage in lifelong learning.
- Increases access to healthcare and health-related information (with special value for hard- to-reach populations).

For practitioners, m-health provides a practical, real-time mechanism with which to keep and share records, record medications and make decisions about the course of care.

Devices that help to routinely collect and/or send information may encourage patients to take “ownership” of their health, and could promote early interventions that reduce the need for costly critical-care approaches. Pilot projects that use mobile technology in this way are already underway in Ontario, for example: the Bant app for youth with diabetes, the Re-ACT program for seniors who want to be in a community setting, and the virtual ward for surgery aftercare at Women’s College Hospital.

### **Transition from Acute Care to Chronic Care**

- Mobility is particularly suited to chronic care, in that it:
- Provides mechanisms for the ongoing monitoring of patients.
- Provides the capacity to communicate alerts to patients, caregivers and health practitioners as needed.
- Enables more individuals to move out from acute/on-site care facilities.
- Creates productivity gains, as practitioners in chronic-care settings are able to care for more patients.

M-health also facilitates a distribution of labour within an integrated system in which “nurses, nurse practitioners, personal support workers and other staff members can apply their full range of skills.” Expertise can be available as a remote resource that healthcare workers can access as needed.

ABI Research estimates that 15 million wireless m-health devices and sensors will be in place by end of 2012. A plan that can integrate the outputs of these devices this with formal health care system data would ensure the ongoing relevance of the public system as more users begin to rely on informal sources for self-monitoring, prevention and communication about health issues. There is a need to ensure that health data is secure and private, especially in informal settings where privacy regulations may not be in place.

Mobile healthcare as a service and an industry may be stimulated through specific actions on the part of stakeholders. These solutions may be part of a broader action plan to support the infrastructure for and the privacy of mobile activity. An m-health solution must include strategies for interoperability, a clear regulatory framework for privacy and security, and a focus on preventative and remote care. Initiatives to enable remote care may also require new payment models and definitions of fees and services in order to encourage practitioners to adopt remote and mobile care solutions.

## M-Health Action Plan

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### Private Sector

The private health care industry and public health care providers could take the lead in setting the stage for widespread m-health success:

- Support a self-regulating industry model by adopting interoperability standards to ensure that wireless and other medical devices (such as those provided by the Continua Health Alliance, a non-profit open-industry organization of health and technology companies) have the ability to communicate in a common “language,” regardless of the manufacturer, enabling better integration of mobile services and devices by consumers and healthcare providers.
- To be successful, industry and government need to work together to facilitate the commercialization and widespread adoption of innovations, and to establish regulatory policies and best-practice guidelines that will inspire confidence in and promote the use of mobile applications within the public health system. These policies will have the secondary effect of stimulating the industry and supporting job retention and creation in this sector.
- Lead with best practices by rolling out mobile solutions that can help seniors stay independent longer, such as personal emergency response systems (PERS), motion sensors, activity-detection devices, video cameras, vital-signs detectors, pill-compliance devices and iShoe. Educating seniors about how mobile devices can assist with independence is an important solution to facilitating mobile health in this group.
- Develop partnerships with healthcare institutions, such as the 2011 Information Technology Association of Canada Award-winning partnership between Ontario Shores Centre for Mental Health Services and HealthTech consultants, which saw the implementation of Meditech 6.0, a complete electronic health-record system that utilizes mobile devices such as tablets, laptops and mobile-equipped medication carts for point-of-care documentation and treatment.

### Academia and the Health Care Sector

Ontario post-secondary institutions and hospital-research institutions—either working alone or in consort with industrial partners—are at the core of innovations related to m-health. The research environment suffers from fragmentation, with the result that successful pilots are not easily generalized. To accelerate capacity building in Ontario post-secondary institutions and research hospitals, the government can:

- Foster the development of a culture that looks to the commercialization of research and innovation.
- Coordinate m-health research to allow more effective investment by industry and to facilitate outcomes that can be generalized.

- Develop collaborative relationships with industry that enable intellectual property development by industrial partners.
- Include education about the use of mobile technologies and the challenges of data collection and management in doctor and nursing education.

## **Government**

As the provider of healthcare for Ontario, the government has the ability to foster m-health solution development and encourage uptake in the province. To achieve this, the government can:

- Modify incentive models through the Ontario Health Insurance Plan (OHIP) to reward m-health solutions that promote prevention and community care over acute care.
- Facilitate the adoption of interoperability standards by industry and, as a condition of funding, require that public-health providers and hospitals include these interoperability standards in any procurement policy for healthcare technology.
- Provide services through mobile platforms that are eligible for OHIP coverage. A payment scheme that makes use of micropayments is needed. There may be cost savings if patients can use a mobile application rather than visiting their doctor in person, so the government could develop payment models like the MiHealth system developed in North Bay, Ontario, that enables physicians to receive payment for services that utilize mobile systems (e.g., test results, personal health-record validation, updating).
- Follow many other jurisdictions around the world by providing specific industry incentives to encourage the development of m-health applications; examples include Business Link in the UK and incentive changes across the United States that have resulted from the US Health Reform Act. Government can incentivize private-sector/public-health collaboration through funding allocations that favour institutions that innovate.
- Work with stakeholders to develop a regulatory process for m-health applications that provides safeguards but does not stifle innovation or commercialization, and continue to develop appropriate privacy legislation and consumer-protection revisions that take into account the adoption of m-health solutions such as self-care and monitoring by Ontario residents. Protocols for accessing and sharing individual user's data as well as for integrating it into health data such as medical records require systems design and a clear policy regarding data security and privacy.
- Help hospitals and other public-health providers to develop a procurement policy that supports m-health solutions, especially those related to prevention and service for Ontarians in remote locations.
- Support experiments such as mobile apps that provide real-time updates of ERs' expected wait times, which would allow non-emergency patients to self-distribute to the locations with the shortest wait times, with the result that wait times would equalize across ERs, leading to a more efficient use of healthcare resources. Such an app would enable an even greater equalization of healthcare resources and time savings for patients if it included after-hours clinics, urgent-care clinics and medical laboratories that carry out routine tests.