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# *Making Care Mobile:*

## *Shifting Perspectives on the Virtualization of Health Care*

*CIO Connect Breakfast  
June 11, 2013*

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# *Agenda*

**1**

Key Trends Shaping Healthcare

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Making Care Mobile: Study Highlights

**3**

A Possible Future...

**4**

Moving Your Organization Forward

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# *Key Trends Shaping Health Care*

# *1*

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# ***Health Care in Canada: We are Tracking Four Key Innovation Trends***

## **1 Focus on “Frequent Flyers” (Health Links) as a Solution to Integration**

- The 1% who account for a third of healthcare dollars
- Create more efficient and accountable care paths
- Integrate and standardize care; more efficient usage of resources

## **2 Activity-Based Payments (QBP)**

- Identify the leading practice treatment pathways for specific diagnosis
- Funding based on that pathway and a fixed prices for services model which allows for innovation
- Allows funder to pay for what they want (and not what they don't want)

## **3 Digitization Continues and Morphs into mHealth**

- eHealth is currently providing little or no core support for hospital system upgrades
- Fast-changing environment threatens centrally planned models
- mHealth is a huge new factor in the last three years

## **4 Continued Model of Care: Innovation shifts to Virtual Care**

- Advances in technology are enabling “care anywhere” networks
- Smart phones and tablets are being used as an educational platform in Medical School

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***Making Care Mobile: Shifting perspectives  
on the virtualization of health care***

Highlights and Key Findings

2

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# ***Making Care Mobile: Shifting Perspectives on the Virtualization of Health Care***



[www.pwc.com/ca/virtualcare](http://www.pwc.com/ca/virtualcare)

## **Goal of the report**

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- Report explores Canadians' attitudes towards pertinent issues in the health care industry
- Provides analysis of what citizens expect decision makers to keep in mind when thinking of the future of health care in Canada

## **Key Questions**

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- What improvements are citizens looking for in health care?
- What channels are citizens using to access health care and information now, and in the future?
- What innovations are citizens ready to use that can make health care delivery more efficient?
- What are the future possibilities in health care delivery?

# ***Nearly 2,500 Canadians helped us address the central question: “What does the future of health care delivery look like?”***

## **Methodology**



[www.pwc.com/ca/virtualcare](http://www.pwc.com/ca/virtualcare)

- 2,413 Canadians participated over 3 week period

### *Respondent profile:*

**58%**  
3+ medical  
appointments

**39%**  
3+ medical  
appointments  
for same condition

**39%**  
suffer from  
chronic  
conditions

**12%**  
care  
givers

- Research was conducted through interactive online ‘Choicebook’ where respondents:
  - Learned about vHealth and mHealth
  - Explored important questions related to key issues
  - Reviewed advantages, disadvantages and trade-offs involved in scenarios
  - Thought through and identified what services they would like to use in the future

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## ***Making Care Mobile***

Mobile devices and virtualization of care make it possible to provide and receive health care treatment and preventative services outside of traditional care settings.

Mobile health and virtual health tools may include:

- remote patient monitors
- video conferencing
- online consultations
- personal healthcare devices
- smartphone or tablet apps
- wireless access to patient records and prescription applications using a cellphone, smartphone or wireless tablet



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## ***vHealth and mHealth are related, but different***



### ***What's virtual health?***

Virtual health (vHealth) allows health care professionals to collaborate with each other and deliver care remotely. This means health care providers can collect patient data and deliver care from a different location than the patient, using technologies such as video conferencing, so that patients can receive care from the comfort of their own home or in their local community.

### ***What's mobile health?***

Mobile health (mHealth) is the use of wireless tools to deliver and access virtual care and health information.

Often, virtual health services will be delivered using mobile devices. The device could be a cellphone or tablet, a wireless medical monitor or some other device that's not on the market yet. A doctor, nurse and/or patient could use these devices to communicate, share information, or monitor health in many different situations.

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# What are Canadians Saying?



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## Perspectives on our Healthcare System...

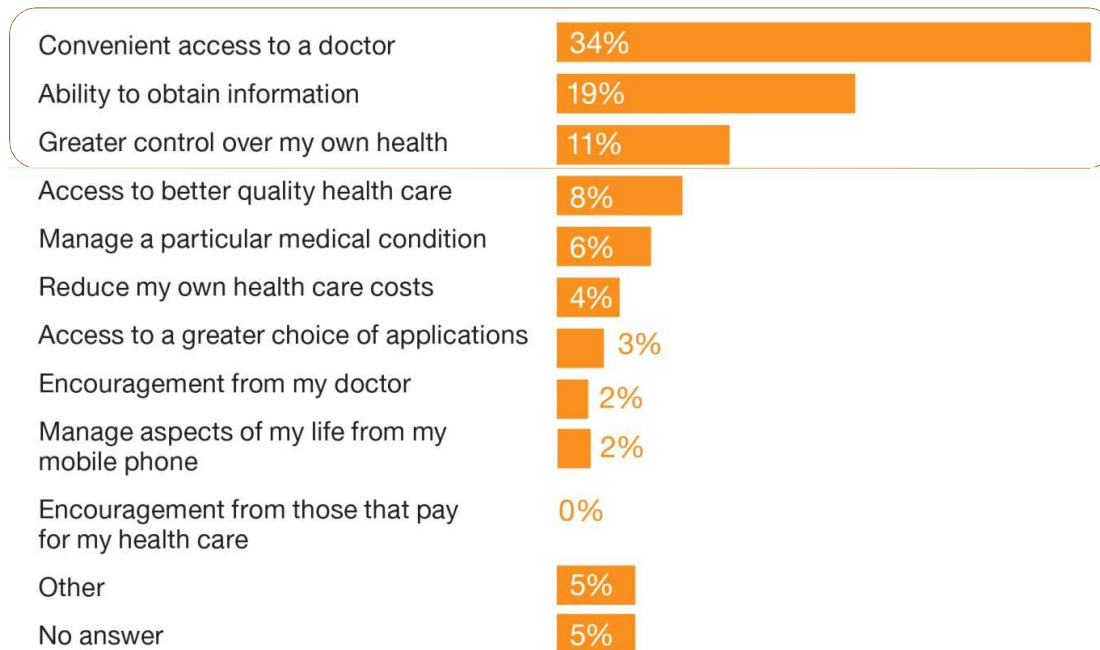
- Canadians are aware of the challenges and growing demand facing our health care system
- Canadians are gaining comfort interacting online, and see mHealth solutions as a way to address concerns
- Overall, respondents are satisfied with health care quality they receive
- However, respondents indicate that there are key areas for improvement related to improved access to health care providers through the use of more modern communication channels

# Canadians are interested in mHealth tools that can improve access to a doctor and health information...

34%

*of patients report that convenient physician access would motivate them to adopt a mHealth service or app*

*What would be the main motivation for you to use mHealth services and applications?*

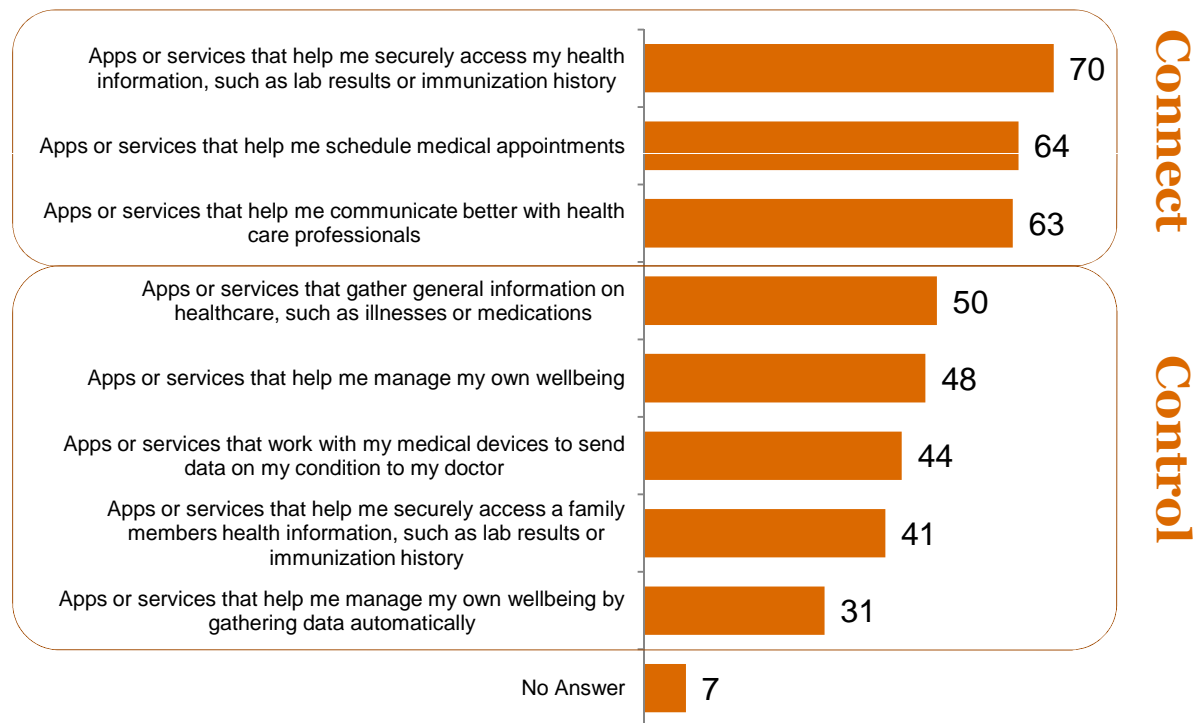


***... such as apps for secure access to personal health info, scheduling & communication with health care professionals***

**70%**

*are interested in apps that provide secure access to personal health information (such as lab results)*

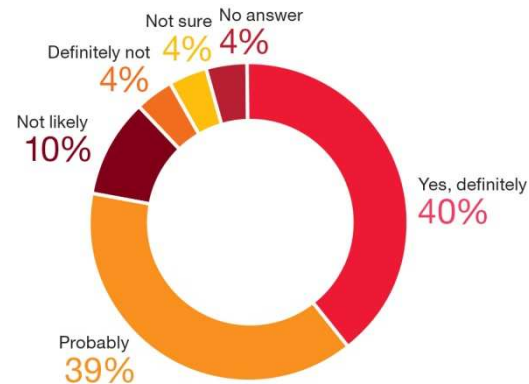
*Which of the following mHealth apps/services would you be interested in using?*



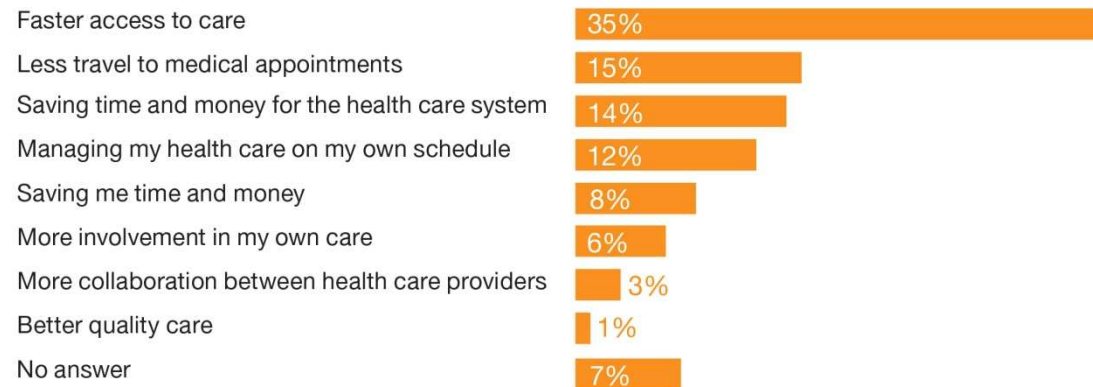
# Most Canadians would use secure email for non-urgent health concerns

**79%**  
*of patients indicate that they would definitely, or probably, use secure email for non-urgent health concerns*

Likelihood of using secure email for a non-urgent health concern



Perceived benefits of secure email for a non-urgent health concern

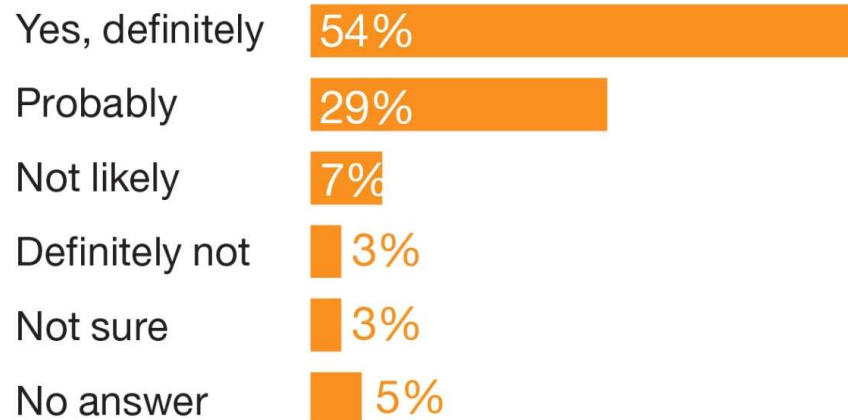


## *There is latent demand amongst Canadians for mobile-enabled prescription renewal services*

83%

*of patients surveyed would definitely, or are likely to, use online prescription renewal services*

### Likelihood of using prescription renewal service



**Leading the Way:** More than 50% of Walgreens online prescription refills done through mobile device (vs.10% three years ago). Walgreens is refilling one prescription per second on a mobile device.

# Virtual assessments via apps are good options in the right situation...

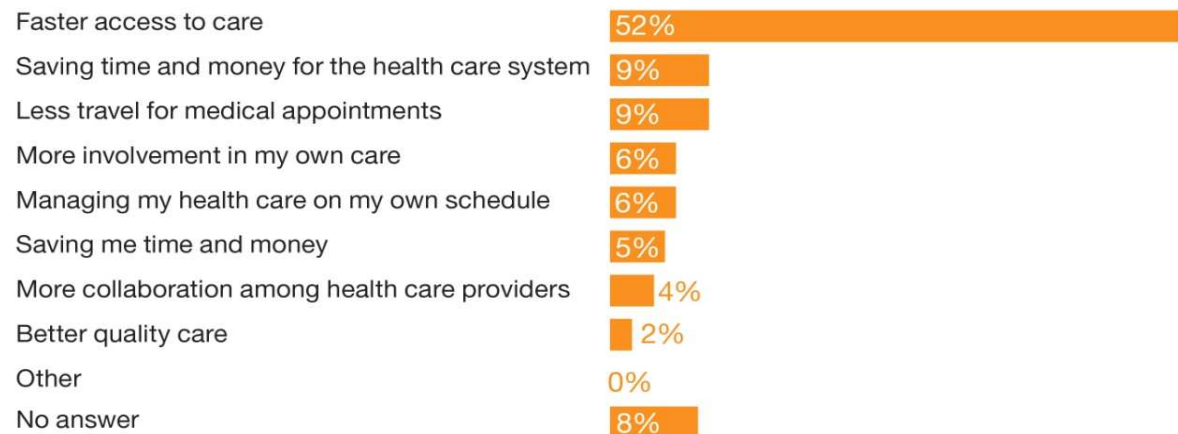
52%

*of patients indicate that faster access to care is the primary appeal of virtual assessment*

Canadians were comfortable with virtual mole assessment app scenario – although, at this time, most prefer doctor-controlled option.



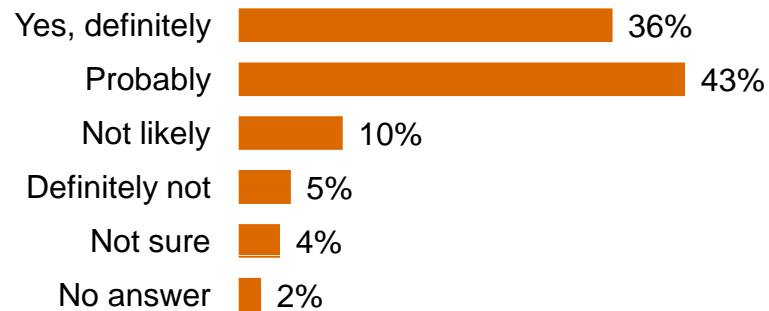
## Appeal of virtual assessment tool



# ... Canadians told us they are ready for virtual monitoring for chronic conditions...

**79%**  
*of Canadians indicate that they are comfortable with virtual monitoring for chronic conditions*

## Most Canadians indicated they would be comfortable having a chronic condition monitored virtually...

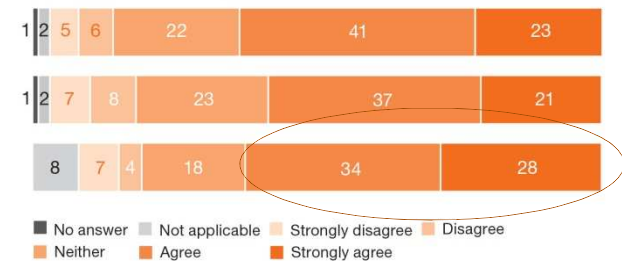


## ... and 62% of caregivers indicated that virtual health care would help them to provide care for someone else (e.g. parent/ child)

I think we should try to deliver health care virtually wherever appropriate

I would be interested in receiving health care virtually for myself

I provide care for someone else (e.g., parents, children) and we would benefit from virtual health care for them\*



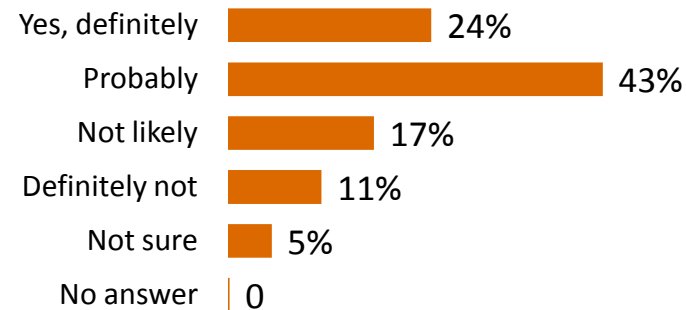
\*Only includes those who care for someone else.

## *... And virtual visits for post-surgical follow-up.*

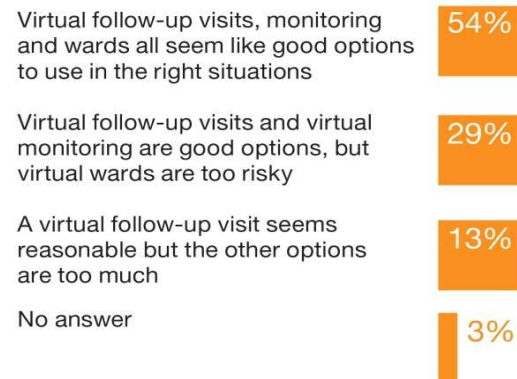
**54%**

*of Canadians indicate that virtual visits, home monitoring, and virtual wards are good care delivery options*

**The majority of Canadians indicated they would be comfortable having post-surgical follow-up visit done by video conference.**



### **Virtual Ward – options**

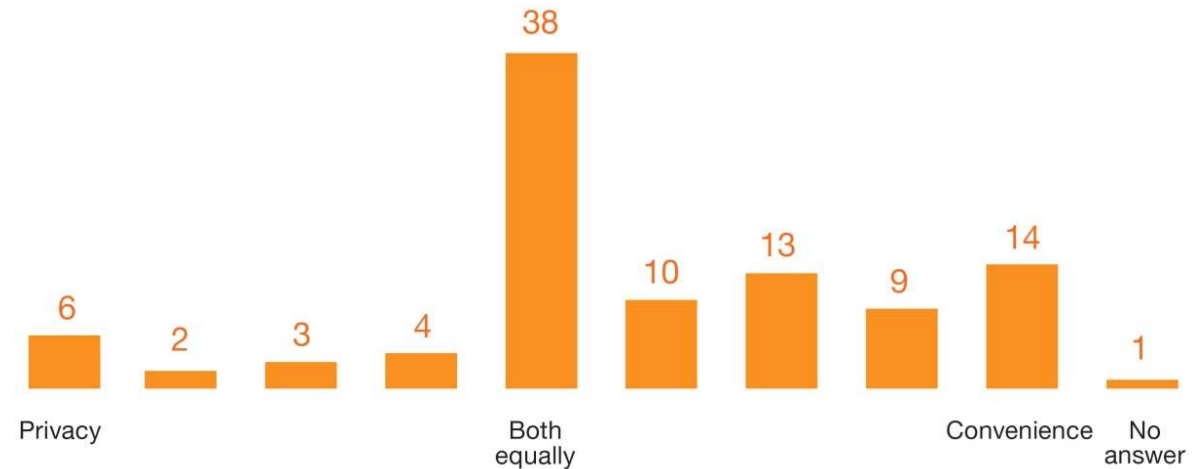


**Canadians want more opportunity to engage in their health care – the convenience of virtual monitoring offsets concerns related to risk of exposed personal data.**

**46%**

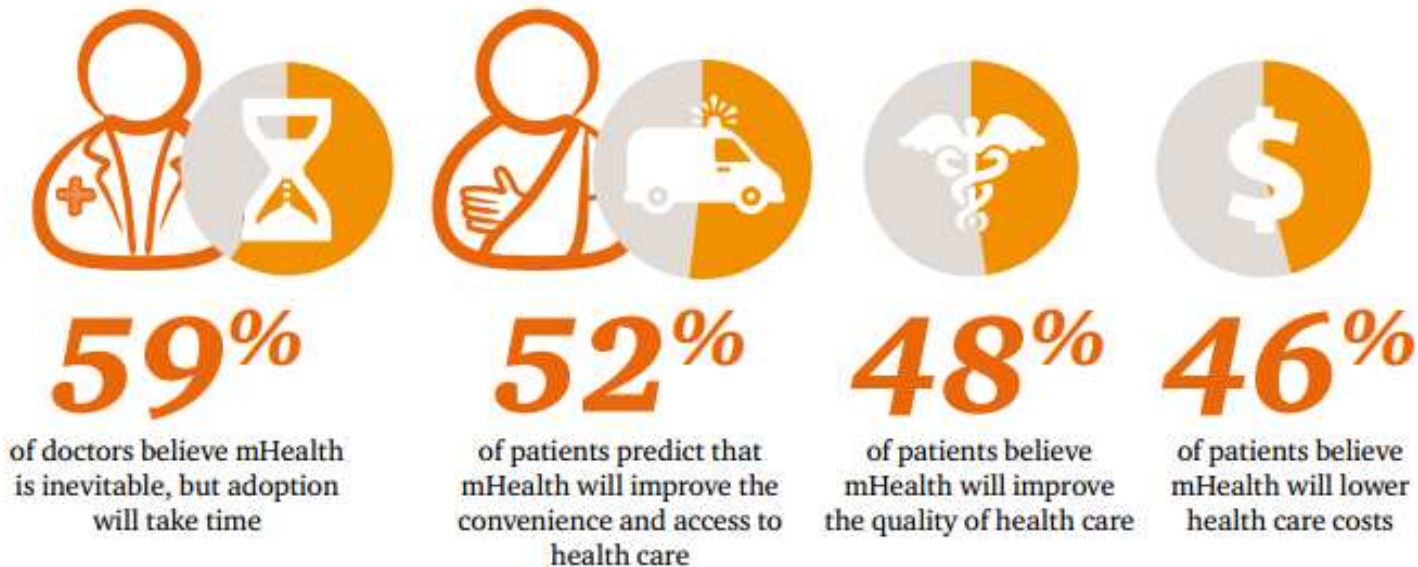
*of Canadians ranked convenience higher than privacy when considering virtual monitoring trade-offs*

Virtual monitoring: Importance of privacy vs. convenience



**Respondents expect privacy to be addressed as table stakes. However, privacy concerns must be balanced with innovation in service delivery.**

***Doctors and patients all over the world not only believe the virtualization of health care is coming, but that it will improve the delivery of care when it does.***



***For the Canadian health care sector to remain competitive as a leader in medical services, new delivery methods need to be explored and implemented***

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# *A Possible Future...*

# 3

# We need to construct the Apps Formulary

## Tech Rx

NAME OF THE MEDICAL CENTRE  
 DR YOUR NAME, formation title, physician number  
 DR YOUR NAME, formation title, physician number  
 DR YOUR NAME, formation title, physician number  
 ADDRESS  
 PHONE / FAX / E-MAIL

For: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Date: \_\_\_\_\_

R 00000

Take 2 Apps and  
 Call Me in the  
 Morning

Physician signature: \_\_\_\_\_  
ATTENTION: FOR VALIDATION OF THIS FORMULA,  
 AN HALF TONE BACK GROUND MUST APPEAR IN THE MIDDLE.  
 THE NUMBERING MUST BE IN RED INK COLOUR.

REP	1	2	3	4	5	6	NR
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## Apps Pharmacy not Apps Store



## Apps Formulary

AliveCor	Cardiac
Withings	Blood Pressure
bant	Diabetes
Pain Squad	Pain Mgmt
MyIBD	Crohn's Disease

UK (Cambridge Healthcare): “Europe’s First Health-App Store” developing certification process for apps it sells.

US (Happtique): market-leader in health apps published set of standards to certify apps operability, privacy, security, content reliability

# *We need a process and standards for selection, and a taxonomy for regulation of apps*

Criteria for evaluation include:

- Operability
- Privacy & Security
- User Data Safeguards
- Functional Validation
- Clinical Efficacy



# *Front of store apps are mHealth 'vitamins' that supplement a healthy lifestyle*

## **Fitness and Health**

- Fitbit
- Nike+ Fuelband
- MyFitnessPal
- Sleep Cycle Alarm Clock

## **Wayfinding Apps**

- BC Health Service Locator App
- Hamilton Health Sciences App
- Alberta Health Services App



# *Fitbit – Helps you achieve your fitness goals*

Front of  
Store



## Fitbit – Flex

- Measures data such as the number of steps and distance walked, stairs climbed, calories burned, activity duration and intensity as well as sleep quality.

# Health services apps to enhance patient experience

Hamilton Health Sciences App

Front of Store



BC Health Service Locator App



Alberta Health Services App

***Over the counter apps may be dispensed after an assessment of the patient's needs***

- My Heart&Stroke Health <30 Days
- MyNetDiary
- Medication Reconciliation (MyMedRec)
- Withings (blood pressure tracking)
- Masimo – iSpO2 Device
- Mood Watch
- Education Apps



# ***Withings– Blood Pressure Monitor***

Over the Counter



## **Withings Blood Pressure Monitor**

- Monitors blood pressure and heart rate
- Attaches directly into any iOS device
- Allows users to view measurements, graphs and trends over time

## *Masimo – iSpO2 Device*



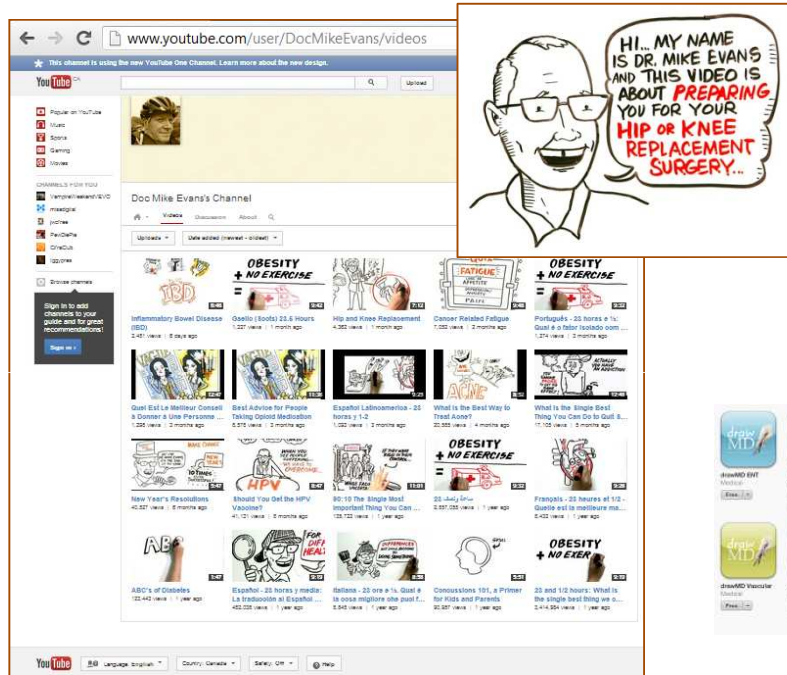
Over the  
Counter

### **Masimo – iSpO2 Device**

- Accurate noninvasive measurement of blood oxygenation, pulse rate and perfusion index
- Connects to any iOS device
- Allows users to view measurements, graphs and trending over time

# Patient / client / family education apps provide a standardized, yet tailored experience

Over the Counter



## Education Apps

- Standardized, customizable approach to client/patient education in real-time or asynchronous manner
- Teach-out, follow-up, triggered instructions for self-care

## ***Prescription apps: plan of care written by physician or other health professional***

### **Supported self-management**

- Diabetes – bant
- Mental health - Lawson SMART record
- Asthma – breathe
- MyIBD

### **Post-surgical patient follow-up**

- QoC

### **PHR / test results viewing**

- Wellx
- MyChart
- InstantPHR



# Lawson Supportive Mental Assessment Rehabilitation and Treatment (SMART)



SMART record  
IN PARTNERSHIP WITH



- Home
  - Manage My Health
  - Measurements
  - Medical History
  - Reports
  - Profile & Settings
  - References
- Health Journal
  - My Daily Tasks
  - Appointments
  - Exercise Log
  - Care Provider Messages
  - Activity Plan Overview
  - Reminders



## Health Journal

Welcome, Andrew Wheeler | [sign out](#)

Keep a health journal! Log items such as your mood, pain, and sleep so your providers can understand all elements that impact your health. Use "Manage My Fields" to add new fields/scales customized to your needs.

### HEALTH JOURNAL ENTRY FORM

Date:

Time:  :  AM  PM

**MY MOOD**

\* On a scale from 1 (extremely sad) to 7 (extremely happy), how is your mood at the moment?

Extremely Sad

*Slide the circle to indicate your answer.*

Value: **1**

**MY SLEEP**

How many hours did you sleep?  
 hours

Quality of Sleep

**MY FIELDS** [Manage My Fields](#)

How many times did you smile today?

### MY HEALTH JOURNAL

< > Week of August 5 - August 11, 2012

	5-8 SUN	6-8 MON	7-8 TUE	8-8 WED	9-8 THU	10-8 FRI	11-8 SAT
<b>MY MOOD</b>							
On a scale from 1 (extremely sad) to 7 (extremely happy), how is your mood at the moment?				12:00 PM 5/7 + Add New			
<b>MY SLEEP</b>							
How many hours did you sleep?				12:00 PM 5.5 hours			
Quality of Sleep				12:00 PM Good			
<b>MY FIELDS</b>							
How many times did you smile				12:00 PM 10			

## Lawson SMART Record

- Created for Lawson Health Research Institute, the Lawson Supportive Mental Assessment Rehabilitation and Treatment (SMART) record is an example of a customized mental health PHR, built using the instant PHR (iPHR) Toolkit.

# Wellx

Prescribed



## Wellx

- Allows patients to easily and securely connect with their healthcare provider
- Receive lab results
- Refill prescriptions

# *breathe* – Improved asthma control

Self  
Management



Improved  
Asthma Control



Improved  
Health  
Outcomes

Prescribed



## *QoC Health Software*



Prescribed

### **QoC Health Software**

- Allows doctors to communicate with and monitor their patients' progress as they recover from surgery.

## ***Controlled apps: require close supervision of management and use***

- Diagnostic testing and follow-up (m-CARDS)
- Remote Patient Monitoring (GE, Telus)
- Electrocardiograms
- Ultrasounds



## ***Mobile Cardiac Arrhythmia Diagnostic Service (m-CARDS)***

Controlled  
Substance



### **m-CARDS**

- Auto detect/ auto send wireless Event Loop Recorder (ELR) transmits ECG through BlackBerry Smartphone
- patients are taught to self “hook-up” using video instruction

## *AliveCor– iPhone Electrocardiogram*

Controlled  
Substance



### **AliveCor**

- Instant, portable electrocardiogram (ECG) rhythms
- Cleared by the FDA for sales in the USA to licensed medical professionals and prescribed to patients

## *MobiSante – MobiUS*



Controlled  
Substance

### MobiUS

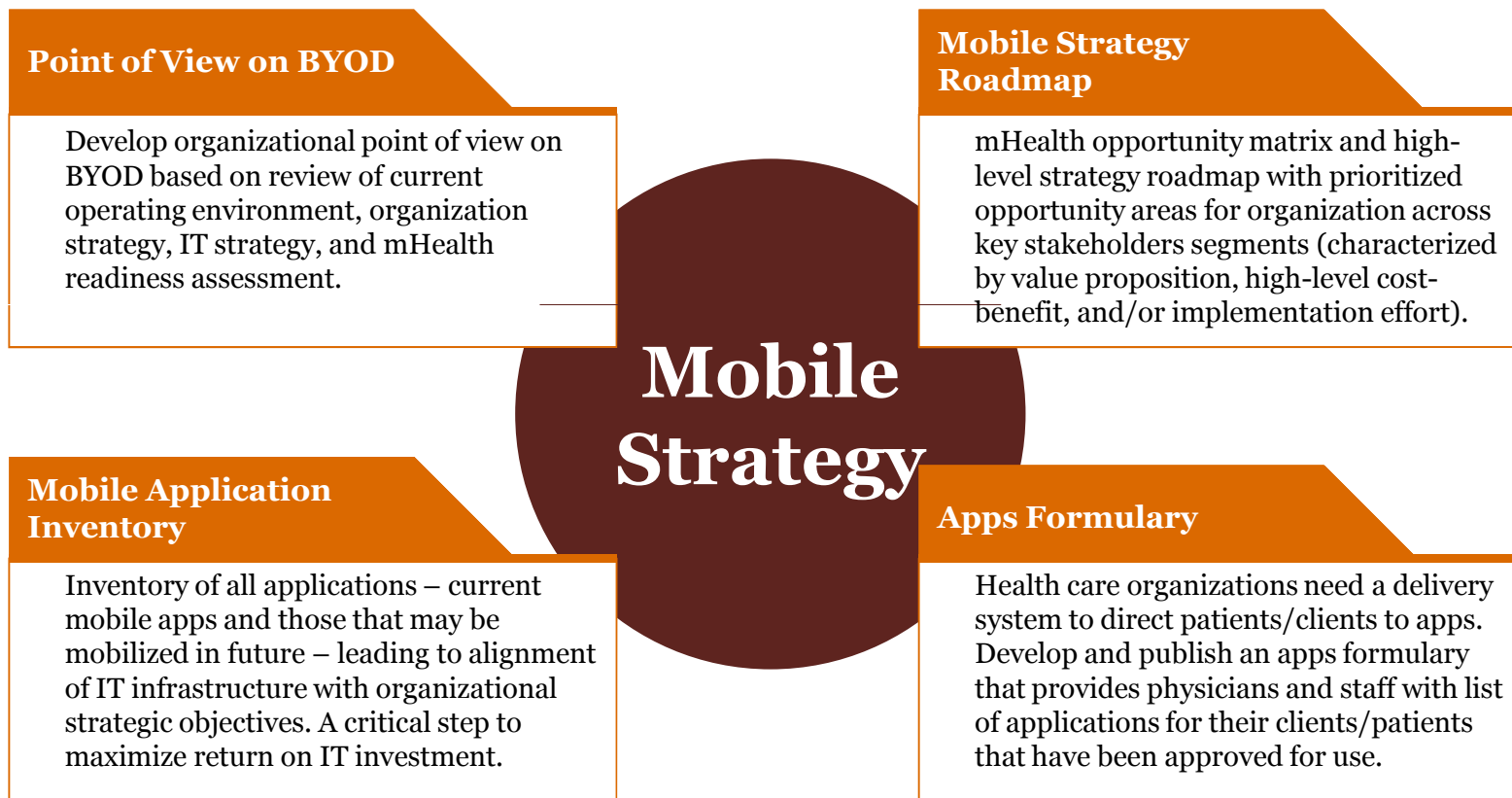
- Cleared by the FDA in 2011, accurate and inexpensive Smartphone-based ultrasound imaging system

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# *Moving Your Organization Forward*

# 4

# *Health care leaders should have four core planning assets for mHealth in 2013*



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# *Thank you*

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