



FEAR OF TECHNOLOGY? DON'T BE!



PERSONAL HEALTH IS DIGITAL

Majority of Canadians say that they have used the internet to access health information

Interactive functions (e.g. e-visits, appointment booking) seem to be more highly used than stand-alone applications to record data

39% of Canadians say they are 'very involved' in their care

Number jumps to 86% when include 'involved' and 'very involved'

70% of those surveyed say *they have not received* any reminders about *preventive or follow-up care* in the past year

Almost 3 in 4 Canadians believe that if preventive care was recommended, then follow-up reminders should be conducted

Paper and Manual Processes will not help these involved individuals!



CANADIAN TECH STATS

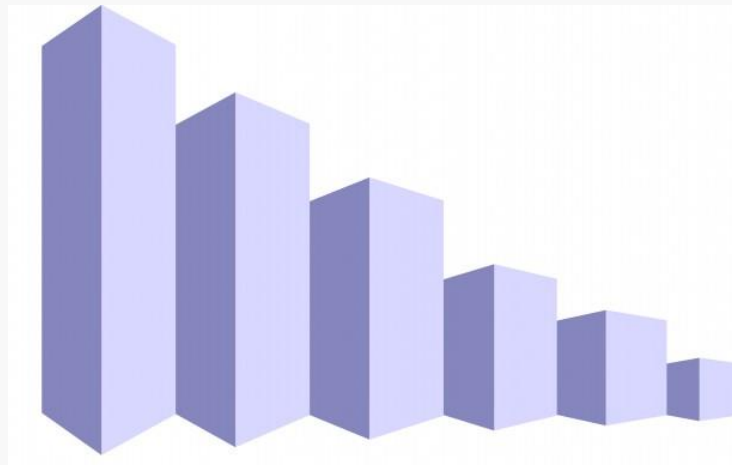
- 56% have Smart phones
- It's checked on average 127 times a day
- 44 million health apps downloaded
- >97 million apps
- #1 app =?
- "Internet of Healthy Things"

WITH ALL THIS TECHNOLOGY WHY ARE WE STILL HERE?



E- HEALTH'S GOAL

- Lower the Costs Of Care



- Mobile “Home” Technology

HEALTHCARE MEGATRENDS

All over the world, healthcare is changing. Technology is having a major impact on the direction it is taking, but these megatrends are driving the change.



GLOBAL AGING

From younger to older population



HEALTH AND PAYMENT REFORMS

From volume to value



COORDINATED CARE

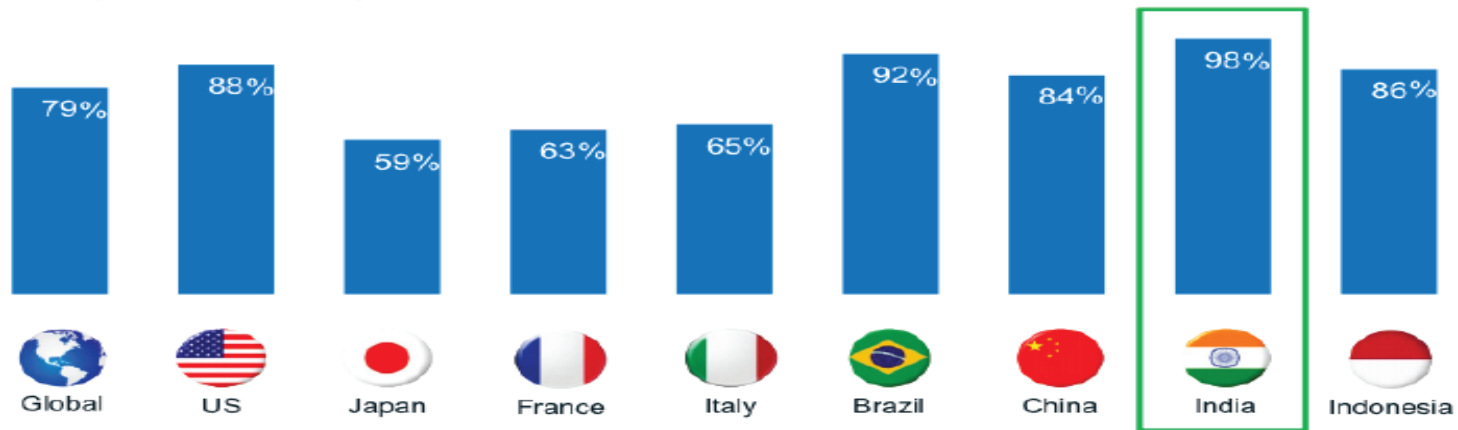
From solo- to team-based delivery



PERSONALIZED MEDICINE

From population-based to person-specific decisions

INTEL GLOBAL INNOVATION SURVEY:
12,000 INTERVIEWS WORLDWIDE SPANNING 8 COUNTRIES (2013)*



57% said traditional hospitals will become obsolete.

75% are willing to see a doctor via video conferencing.

70% said they would use prescription bottle sensors, toilet sensors, or ingested sensors to collect data.

All countries expressed optimism about the future of the tech industry in their country, but some countries were more optimistic than others.

* Source: Penn Schoen Berland, 2013

BENEFITS OF MOVING TO MOBILE HEALTH



18 SAVINGS OF
MINUTES
A DAY PER CLINICIAN



30%
REDUCTION IN
MEDICATION
ERRORS

due to the essential information clinicians need becoming available at the point of care.



DRAMATIC
IMPROVEMENTS
IN THE **TIME**

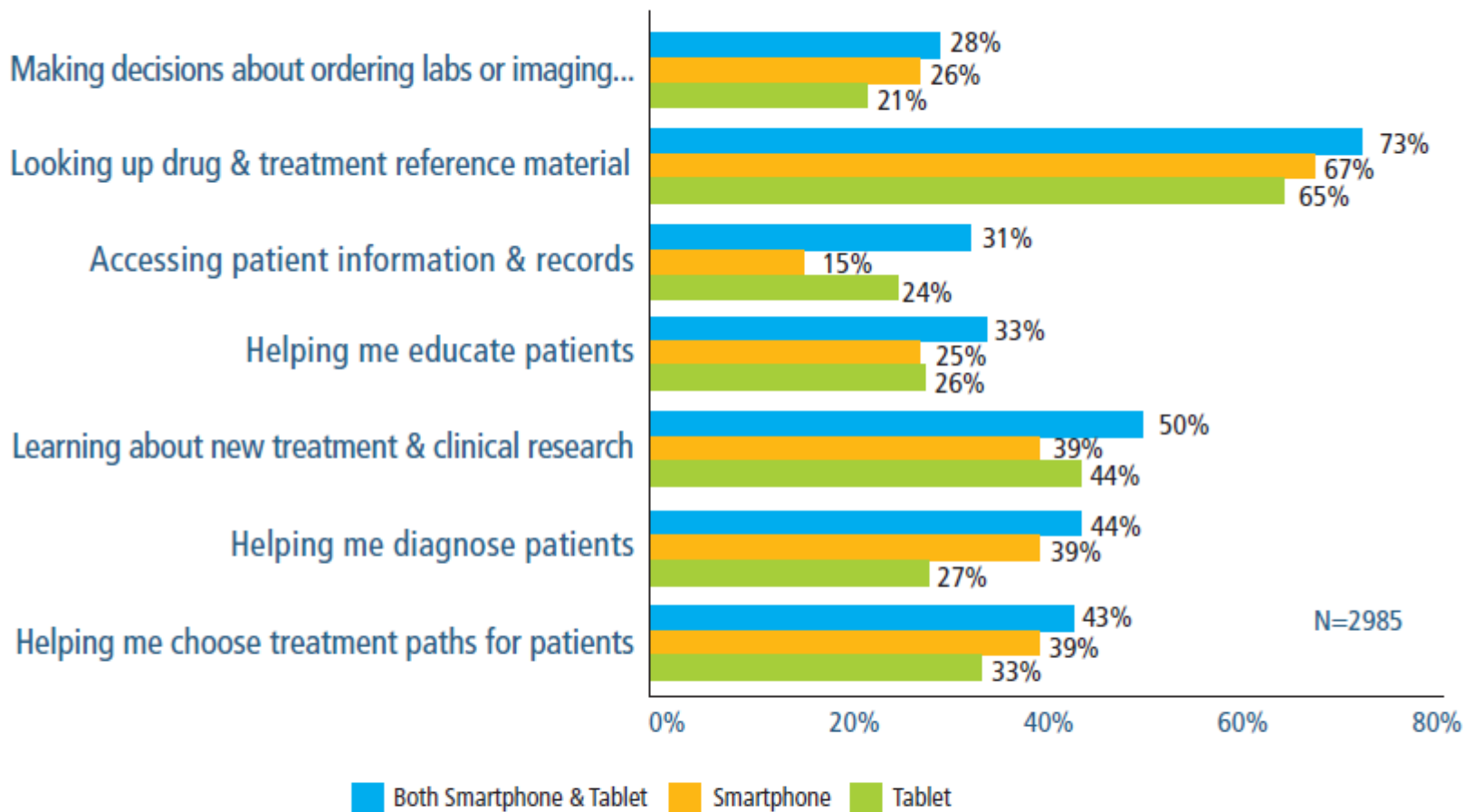
it will take to make a query, and to handle admissions, discharges, and transfers.



COST OF
MOBILE HEALTH IS
GOING DOWN—

time to break even is dropping fast as incentives encourage adoption.

HOW PROVIDERS CURRENTLY USE MOBILE DEVICES



The appropriate device (smartphone, tablet or PC) to match a clinical task is the key to higher functionality. Having the right mobile infrastructure in place so that the devices in use are functional and secure—is critical.

CHALLENGES TO mHEALTH ADOPTION



CLINICIAN ADOPTION—when clinicians are convinced the benefits outweigh the hassle.



LACK OF MEDICAL APPS that are fully integrated into a comprehensive healthcare information system. Meanwhile wearable devices connecting to integrated apps will propel mHealth forward.



BETTER MEDICAL APPS NEEDED to help clinicians manage their patients' medical conditions to accelerate adoption and use of mHealth.



AUTHORITATIVE COLLECTION OF MEDICAL APPS for clinical service in which physicians can have confidence is **LACKING**.



SECURITY/PRIVACY PROTECTION. The enterprise mHealth security must be good enough so the CIO can sleep at night.



INABILITY FOR HEALTHCARE ORGANIZATIONS TO HANDLE BYOD AND BYOC. Information Week posed the question "Will BYOD Become 'Bring Your Own Cloud?'" A recent study of healthcare IT professionals "[Managing the Healthcare Information Stream](#)" showed that 75% of the respondents are "concerned that protected health information in unstructured content (eMail, Word, Excel, etc.) may be getting stored outside of [their] environment."

LOOK AT A FEW OF THE CHALLENGES

- Cranky Clinicians
- Lack of Apps? Better Apps?
- “What physicians really want is mHealth that can connect to a interoperable EHR.”
- Security + BYOD + BYOC

- All these challenges are not too hard to overcome!

ADDITIONAL CHALLENGES TO TECHNOLOGY

- Missing Strong business cases for clinicians
 - Saves time -costs less- a better experience for the patient (CDC)
- Anticipate changes in the way mHealth will be regulated
 - *Guidelines for clinical diagnosis using mobile devices (VC)*
- Manage the ever-growing stream of data
 - *All the Real Time Data will require decision support systems*
- Anticipate increased patient engagement in healthcare
 - Patients are hungry for their own healthcare data

NEXT STEPS FOR *INNOVATIVE TECHNOLOGY*

- Transform Silo's of “Health Data” into Knowledge
- This drives Health Forward at the Point of Care –
 - Hospital – Home – Aged Homes
- With increased aging comes
 - Increased Acuity/Higher Case Loads
 - We cannot expect Clinicians to offer Consistent and Efficient Care without intelligent and immediate feedback IE:(paper wont work)
- “Gut Instincts” & Paper Processes will not manage care
- GOAL: Business Intelligence at our fingertips

PRACTICAL TECHNOLOGY ADAPTION

- Wearable Apps Collecting & Sharing Data
- Virtual Care Delivery Models
- Mobile Dashboards
- Monitor & Alert Clinicians & Practice Managers
 - - using data that is Collected - Viewed anywhere & anytime
- M-Health & E-Health Helping with Care Delivery
- Health info Exchanges/Portals for CDC & Engagement

... LOOK AT SMART DEVICES

Samsung launches S Health services: Monitors weight, blood sugar and graphs it all

By Mat Smith posted Jul 2nd 2012 4:41AM



<http://www.engageapp/>



glooko launches s-health-
 uses Bluetooth technology
 slim, lightweight design for travel
 reliable tempered glass platform
 standard step-on use
 maximum weight capacity: 330lbs/150kg
 measurement units: kg/lb/st
 AAA batteries included



free at the App Store. The scale reads and
 Bluetooth connection. The scale's displays are clear,
 personalized graph tools. Set target goals for
 easily share one-time readings or long-term trends
 across multiple mobile devices so family



MACHINE ASSISTED AIDS



REMOTE SURGERY

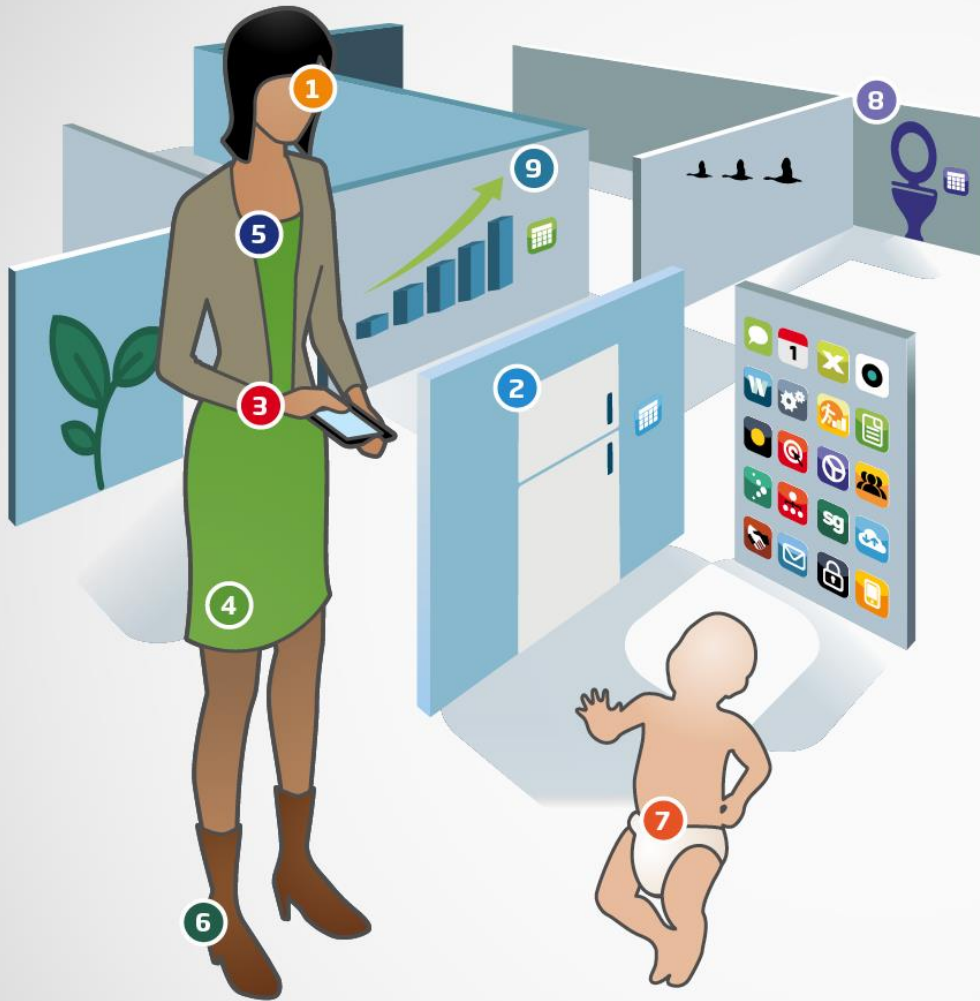


PERSISTENT & PREDICTIVE MONITORING



This all leads us to...

Mobile health in 2024



1. Contact lenses

A microscopic camera in the lens takes pictures of the **retina** and matches these to past cases, identifying early symptoms of **diabetic retinopathy**

Fact
1% of global blindness can be attributed to diabetes. Approximately 4,200 people in England are blind due to diabetic retinopathy

2. Fridge

The fridge monitors the **digestive system**: drinks consumed (thirst); vitamin consumption (**deficiencies**); calories/sugar consumption (insulin levels)

Fact
Diabetes is set to cost the NHS £16.9 billion by 2035/6

3. Artificial pancreas

Mini artificial **pancreas** to detect irregular **blood sugar** levels and injects insulin when necessary

Fact
Worldwide in 2013, 382 million people had diabetes; by 2035 this is projected to rise to 592 million

4. Clothes

Smart fibres in all clothes sense a rash or skin condition appearing, signalling the possible onset of diseases such as **skin cancer**

Fact
There are currently almost 13,000 new cases of skin cancer diagnosed each year in the UK

5. Thermometer patch

An electronic stick-on "tattoo", half the width of a human hair in size that detects precise **temperature changes** around the area of skin where it is placed, tracking **heat flow** through the bloodstream. This indicates **cardiovascular activity**

Fact
The number of people who die from cardiovascular diseases, mainly from heart disease and stroke, will increase to 23.3 million by 2030

6. Shoes and socks

Shoes and socks track movement of **feet**, detect when you are too sedentary and update you on **fitness** goals, as well as monitoring your **weight**

Fact
Physical inactivity costs the NHS £900 million annually

7. Nappies

Smart nappies monitor children's **sleeping patterns** and **body temperature** for symptoms of illness such as **dehydration**

Fact
Approximately 440,000 children around the world have diabetes with 70,000 new cases diagnosed each year

8. Toilet

The smart toilet monitors the **liver** and **kidney** by measuring the frequency and amount of urine passed, analysing for **glucose levels**, **dehydration**, **infection** and kidney problems. It also alerts for high **blood pressure**, a symptom of heart disease

Fact
Coronary Heart Disease is the UK's biggest killer with 82,000 deaths annually. Globally, more people die from cardiovascular disease than any other cause

9. Monitoring

Continuous **data collection** and instant **reporting** of fitness mean that prevention of disease can be **incentivised** with rewards for positive behaviour - the "gamification" of healthcare, driving **positive behaviour change**

Fact
Obesity could cost the NHS £9.7 billion more by 2050

Will this be our true connected world?

BUT WHERE IS THE CONSUMERS VOICE?

- “Those of us who have been on a quest to transform care have been standing on a two-legged stool. We’ve demonstrated higher quality and lower costs. Missing is the visible, vocal citizen-consumer demand. Without it, large-scale change will not happen.

Dr. Ira Byock

From New York Times article, Dying Shouldn't Be So Brutal
January 31, 2015

CONSUMER'S ARE GETTING LOUDER

Canada

- The population is Aging at it fastest rate
- *Home is where people want to be!*
- Home care costs less than the Hospital
- Majority of ALL individuals want to stay home!
- *Safer than the Hospital*
 - Eliminates the Dangers of Infections
 - No Travel / Transfer Hazard
 - Easier on the mind
 - I know where I am
 - Home cooking = Better Appetites = better nutrition



HOW CAN WE GET THERE?



- No Quick Answer
- Long-term - big picture exercise
 - Many Changes are Inevitable!
- Embrace value-created technology
- Technologies will be created that actually *improve people's quality of life*
 - Then shift the point of care *from hospital to the home*
- Cannot continue with Inefficient/Costly Healthcare Eco System

IF THE GOAL IS LOWERING COSTS

- Lets Push Policy Changes Today to help our Future
 - Get the Consumers of HealthCare Involved
 - P-Health People? - Change the way you do business
 - Don't Fear Technology Embrace it!
 - Technology Will Positively EFFECT the next generation of providers of Care, IF we allow it to
-
- Technological innovations + *Health Care policy changes* + Adaption of E & M Health strategies...

Will Result in Cost Effective

home based care

being our future **default ...**

and expensive hospital-based

care **the exception!**

THANK YOU FOR YOUR TIME
QUESTIONS?

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