

# Thinking Through the Basics: What We Shouldn't Take for Granted in Digital Health

University of Canberra Symposium

May 13, 2016

Catherine Middleton



**NEWS & MEDIA**  
RESEARCH CENTRE

**TED  
ROGERS  
SCHOOL OF  
MANAGEMENT** **RYERSON  
UNIVERSITY**

- Contact information:  
catherine.middleton@ryerson.ca
- @catm Middleton
- This presentation outlines some questions and observations to encourage critical thought about what how digital technologies can be brought into healthcare.
- The context is the use of smartphones and applications to support patient engagement with the healthcare system.

# Realising the promise of digital health

- Does *digital* add value? How?
- Does the initiative address a real problem and offer an outcome that meets users' needs?
  - Are potentially conflicting objectives recognised and addressed?
- Does the initiative recognise and address non-digital barriers to technology use?
- Does the initiative recognise and address the constraints on providers and users?



What does *digital* mean,  
and how does it improve health?

What do digital technologies  
do well? e.g.

- Facilitate information sharing, e.g. records
- Reduce touch points, e.g. scheduling
- Bridge distances, provide access to expertise
- Sense, monitor, track patient data, diseases
- Manage and analyse large volumes of data
- Genetic analysis/genomics

<

>

★

☰

📁

🏷️

🔄

Featured

Top Charts

Categories


Purchased

Updates

🔍


health

✕




**Break Reminder**  
Health & Fitness  

\$3.99 ▾




**Stop Smoking Now**  
Health & Fitness  

\$3.99 ▾




**Legs Trainer Pro - Exer...**  
Health & Fitness  

\$6.99 ▾




**Body Tracker**  
Health & Fitness  

\$6.99 ▾




**MyHealth**  
Health & Fitness  

\$13.99 ▾




**Weight N Watch - Daily...**  
Health & Fitness  

\$6.99 ▾




**FitJet for Fitbit**  
Health & Fitness  

\$2.79 ▾




**Blood Sugar Diary**  
Medical  

\$6.99 ▾




**Blood Pressure Diary**  
Medical  

\$6.99 ▾




**Sun Salutation - Yoga**  
Health & Fitness  

\$1.39 ▾




**Gestational Age**  
Medical  

\$11.99 ▾




**Pill Timer**  
Medical  

\$3.99 ▾




**Headache log**  
Health & Fitness  

\$2.79 ▾




**Absorb Water**  
Health & Fitness  

\$3.99 ▾




**Biorhythm Calculator**  
Lifestyle  

\$2.79 ▾




**My Medications**  
Medical  

\$2.79 ▾




**Medical Check-Up**  
Health & Fitness  

\$5.49 ▾




**Easy Belly Dancing**  
Health & Fitness  

\$9.99 ▾




**Stress Prevention with ...**  
Health & Fitness  

\$9.99 ▾




**Joe Ergo**  
Productivity  

\$2.79 ▾




**Biorhythm Pro**  
Lifestyle  

\$8.49 ▾




**Get Fit Stay Fit**  
Health & Fitness  

\$6.99 ▾















**Home Remedies**  
Medical  

\$6.99 ▾








**Yoga Poses by Hemala...**  
Health & Fitness  

\$3.99 ▾

 <p><b>Personal Workout</b> Health &amp; Fitness ★★★★★ 23 Ratings <a href="#">GET</a> In-App Purchases</p>	 <p><b>Health Assistant</b> Health &amp; Fitness <a href="#">GET</a></p>
 <p><b>Time Out - Break Remi...</b> Health &amp; Fitness <a href="#">GET</a> In-App Purchases</p>	 <p><b>All-in Yoga</b> Health &amp; Fitness ★★★★☆ 17 Ratings \$6.99</p>
 <p><b>Blood Pressure Expert</b> Medical <a href="#">GET</a> In-App Purchases</p>	 <p><b>Tai Chi Workout - Marti...</b> Sports \$9.99</p>
 <p><b>iWalk</b> Health &amp; Fitness <a href="#">GET</a></p>	 <p><b>Karate Dojo - At Home ...</b> Sports \$9.99</p>
 <p><b>Health Calculator</b> Health &amp; Fitness \$1.39</p>	 <p><b>WaterApp Lite</b> Health &amp; Fitness <a href="#">GET</a></p>
 <p><b>Healthier: Break Remin...</b> Health &amp; Fitness \$5.49</p>	 <p><b>Health Ark for Microsof...</b> Health &amp; Fitness \$6.99</p>

[Back](#)

## Charts & Vitals

Name	Release Date	Featured
 <p><b>MyChart</b> Medical</p>		<a href="#">GET</a>
 <p><b>Mayo Clinic</b> Medical</p>		<a href="#">GET</a>
 <p><b>iHealth</b></p>	<p><b>iHealth MyVitals</b> Health &amp; Fitness</p>	<a href="#">GET</a>
 <p><b>Prime: Caregiving</b> Simplified — Family H...</p>	<p>Medical</p>	<a href="#">GET</a> In-App Purchases
 <p><b>HumanaVitality</b> Health &amp; Fitness</p>		<a href="#">GET</a>

In a sea of options,  
what's the value proposition?



# 10 Waiting Room Apps That Engage Patients

Waiting room stress raising your patients' blood pressure? Use these apps to keep patients busy and your practice running smoothly.

◀ 1 of 11 ▶

Whose  
problem  
is the  
initiative  
addressing?



Just about every aspect of healthcare is transforming -- everything but the traditional waiting room, which hasn't advanced much since the invention of television. Forward-thinking practices are changing that, introducing mobile devices and apps that make patients more productive, more educated, or entertained when they visit the doctor.

# Big value from simple initiatives

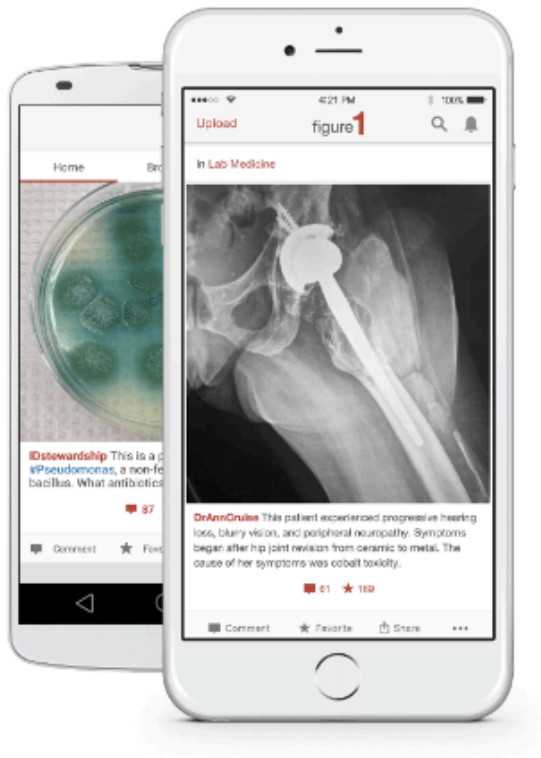
--> But cultural change is often needed

“On average, patients sit around for 20 minutes before seeing a doctor -- and some wait as much as 45 minutes past their scheduled time. *That's time healthcare providers could use to enhance their relationship with patients, rather than alienating them.*” (10 Waiting Room Apps)

“*While I sit in the doctor's waiting room looking through a three-month-old copy of Food and Wine, I am not producing any useful output. My experience is not unique.* Every day, hundreds of thousands of patients sit in hundreds of hospitals and clinics across America, waiting — 23 minutes on average in 2010 — to see the doctor. But averages can be misleading and meaningless for the patient who waits more than an hour.” (Quote from a frustrated healthcare researcher reflecting on personal experience)



# Patients can benefit without adopting technology themselves



## Discover compelling medical cases

- Global community focused on education and collaboration
- Used by 1 million healthcare professionals and students
- Built-in patient privacy tools

Sign Up

Log In



★★★★★  
Based on 784 ratings



★★★★★  
Based on 4,806 ratings

# It might not be as easy as it looks



“Before starting, there are two basic steps to complete. The first is *creating a profile on the app* and the second is *pairing the monitor with your smartphone*. Both are straightforward and quick to complete. After the initial pairing is done, *opening the app will automatically launch to the testing screen if your monitor is within range*. On the rare



occasions that it did not automatically pair, it turned out *I'd let the battery drain on the monitor.*”

Dr. Satish Misra is a Cardiology Fellow at the Johns Hopkins Hospital and a founding partner and Managing Editor at iMedicalApps.



# Different users, different constraints

- Access
  - availability of technology/service (e.g. urban vs. rural)
  - affordability, willingness to pay
- Literacy/motivation for use/skill
- Adoption and ongoing use
- But be careful with assumptions:
  - e.g. 2011 US data show 17 percent of seniors use personal health records—the highest proportion of any age group

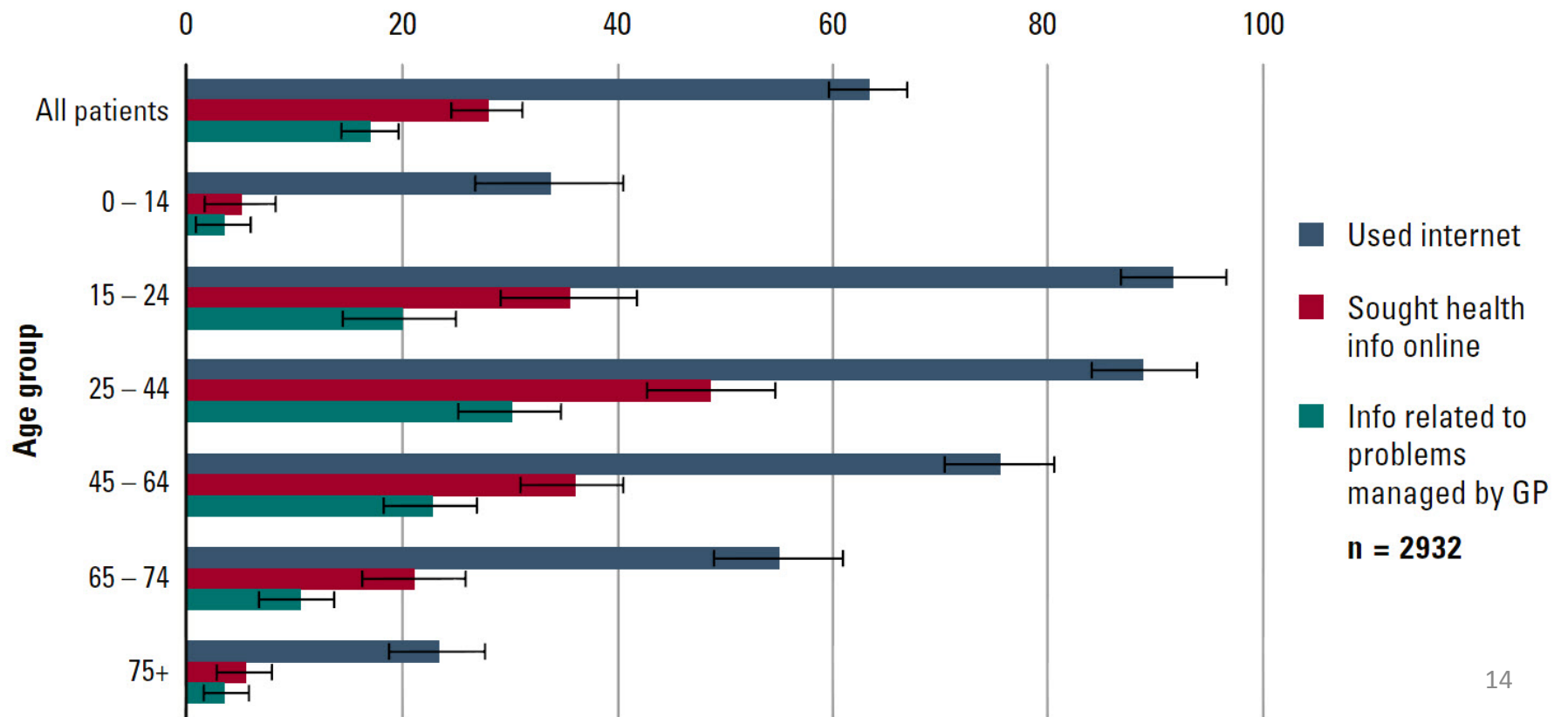
Extensive data available on access, adoption, skills: age, education, income are key determinants



Research

[RACGP Home](#) / [AFP](#) / [2014](#) / [December](#) /

Authors: Carmen Wong, Christopher Harrison, Helena Britt, Joan Henderson



# The basics

- What is the objective?
- Who are the potential users and how will the initiative offer value?
- What are the non-technical barriers? (e.g. culture, routines, policies)
- What are the constraints on users?

# Notes to slides

## Slide 7

- <http://www.informationweek.com/healthcare/patient-tools/10-waiting-room-apps-that-engage-patients-/d/d-id/1113775>
- - apps promote other services, offer targeted advertising, have patients fill out forms (passing work to patients), provide info on the healthcare providers, offer services to patient's family members (but apparently not to the patient)

## Slide 8

- [http://articles.baltimoresun.com/2012-05-31/news/bs-ed-health-costs-20120531\\_1\\_health-care-productivity-of-american-workers-medicaid-services](http://articles.baltimoresun.com/2012-05-31/news/bs-ed-health-costs-20120531_1_health-care-productivity-of-american-workers-medicaid-services)
- <http://www.qless.com/>
- <https://open-proposals.ucsf.edu/comment/1353>



# DIGITAL POTENTIALS FOR HEALTH: **NARROWING THE DIVIDE**

*A Public Symposium co-hosted by:*

**News & Media Research Centre**, University of Canberra  
**Health Research Institute**, University of Canberra

**FRIDAY 13<sup>TH</sup> MAY 2016, 9:00AM - 3:00PM**

**ANN HARDING CONFERENCE CENTRE, UNIVERSITY OF CANBERRA**

Registrations available via [www.eventbrite.com.au/e/digital-potentials-for-health-narrowing-the-divide-tickets-24942943014](http://www.eventbrite.com.au/e/digital-potentials-for-health-narrowing-the-divide-tickets-24942943014)

This symposium explores the promise of digital connectivity in the health context. In the hands of the individual, digital technologies have potential to improve health care and well-being of the user through self-management. However, those who experience poor health are often those who are not equipped with appropriate digital access and skills. Furthermore, health risks are largely correlated with social exclusion factors. The uneven distribution of digital health benefits may widen the already existing gap.

The symposium is a springboard for inquiry: how we can enhance digital engagement in health? The purpose is to generate dialogue around digital inequalities in health in Australia and overseas, prioritise the policy agenda, and establish a long term network of stakeholders in the field.

Embedding mobile and digital technologies in health has potential benefits of improving health outcomes, and realising efficiencies in health services. We invite academics from various disciplines, health practitioners, policymakers and users of digital health tools for an open discussion about how we can better implement and utilise digital technologies in health care and management.

## **Speakers and moderators include:**

Sally Burford (News & Media Research Centre)  
Morris Carpenter (News & Media Research Centre)  
Girija Chetty (Health Research Institute)  
Deborah Davis (Health Research Institute)  
Paresh Dawda (Ochre Health)  
Leif Hanlen (Data61)

Moyez Jiwa (University of Notre Dame Australia)  
Jee Young Lee (News & Media Research Centre)  
Deborah Lupton (News & Media Research Centre)  
Catherine Middleton (Ryerson University)  
Sora Park (News & Media Research Centre)  
Alison Verhoeven (AHHA)

Visit [www.canberra.edu.au/research/faculty-research-centres/nmrc/news-and-events/digital-potentials-for-health](http://www.canberra.edu.au/research/faculty-research-centres/nmrc/news-and-events/digital-potentials-for-health) for more information.

**NEWS & MEDIA  
RESEARCH CENTRE**

  
**HEALTH RESEARCH  
INSTITUTE**

## Symposium Program

# DIGITAL POTENTIALS FOR HEALTH: NARROWING THE DIVIDE

Friday 13<sup>th</sup> May 2016

Ann Harding Conference Centre, University of Canberra

SESSION	SPEAKERS	AFFILIATION	PRESENTATION TITLE
9.15-9.30	Welcome Address	Steve Basson, Deputy Dean	Faculty of Arts and Design, University of Canberra
9.30-10.45 Chair: Sora Park	Alison Verhoeven	AHHA	My Health Record and its role in the Health Care Home trials
	Deborah Davis	Health Research Institute	The Eating4Two smartphone app
	Deborah Lupton	News & Media Research Centre	A sociological perspective on digital health
10.45-11.00	<b>Coffee Break</b>		
11.00-11.05	Report Launch	Jerry Watkins, Director	News & Media Research Centre, University of Canberra
11.05-12.00 Chair: Deborah Lupton	Sora Park	News & Media Research Centre	Reporting the results of “Mobile Health: Empowering people with type 2 diabetes using digital tools” (Funded by ACT Government)
	Sally Burford & Morris Carpenter	News & Media Research Centre	Digital engagement, self-management, and shifting the locus of control
	Jee Young Lee	News & Media Research Centre	Building health and digital capacity through mHealth programs
	Paresh Dawda	Ochre Health	Mobile devices in healthcare: Australian General Practitioners’ perspective
12.00-12.45	<b>Lunch Break</b>		
12.45-14.00 Chair: Sally Burford	Moyez Jiwa	University of Notre Dame Australia	Digital technologies in healthcare: Tools or toys?
	Girija Chetty	EsTEM, UC	Leveraging data fusion technologies for innovations in digital health
	Catherine Middleton	Ryerson University	Thinking through the basics: What we shouldn’t take for granted about devices and networks delivering digital health services
14.00-14.15	<b>Coffee Break</b>		
14.15-14.45	Open Discussion	Moderated by Leif Hanlen (Data61)	

# Notes to slides

## Slide 9

- Image: <https://www.flickr.com/photos/thespeakernews/20154025971>
- <https://figure1.com/>
- Slide 10
- <http://www.imedicalapps.com/2015/02/physician-review-ihealth-blood-pressure-monitor/2/>
- [https://ihealthlabs.com/files/9114/1564/2153/iHealth\\_BP7\\_Hero4.png](https://ihealthlabs.com/files/9114/1564/2153/iHealth_BP7_Hero4.png)

## Slide 12

<http://content.healthaffairs.org/content/32/2/376.full>

- Keckley PH, Coughlin S, Eselius L. *2011 survey of health care consumers in the United States: key findings, strategic implications* [Internet]. Washington (DC): Deloitte Center for Health Solutions; 2011.

## Slide 13

- <http://www.racgp.org.au/afp/2014/december/patient-use-of-the-internet-for-health-information/>