Technology Enabled KT for Digital Health: Principles and Practice

MSFHR KT Connects Webinar Series

June 29th, 2018

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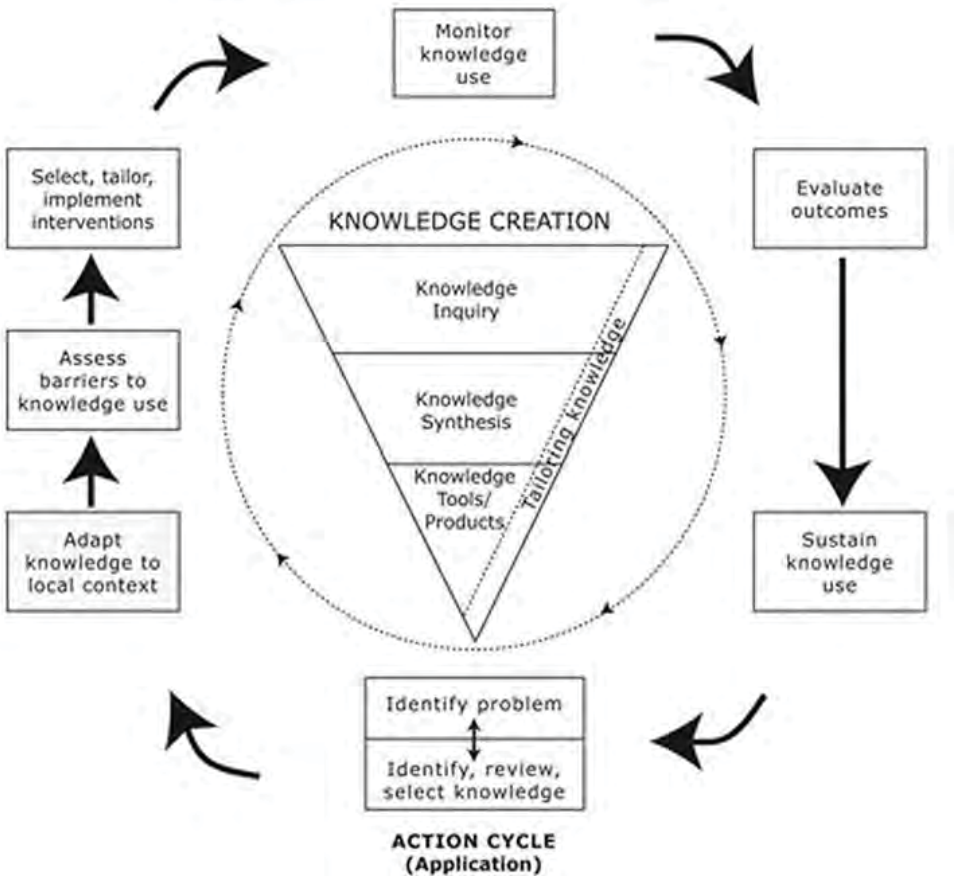
Professor
Department of Emergency Medicine
Lead
Digital Emergency Medicine

Digital Emergency Medicine

- **Single portion recipe**
- **Batch (300 portions)**
- **Branding**
- **Distribution channels**

Knowledge Translation Defined (CIHR)

Knowledge to Action



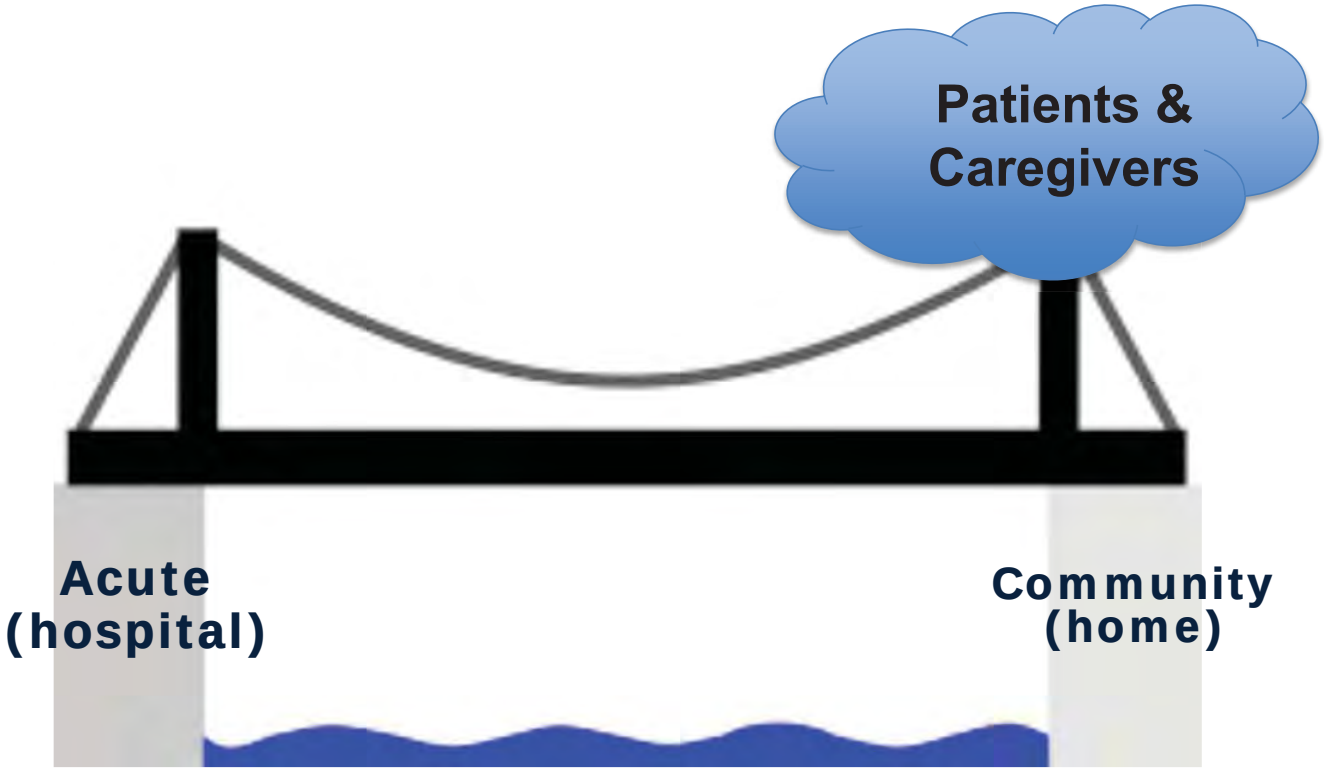
Graham ID et al. Journal of Continuing Education in the Health Professions, Vol; 26, No. 1, 2006.

Technology Enabled KT…

- Health Professionals-patient communicate clearer?
- Patients have better outcomes?
- Improved evidence-based decisions easier?
- Knowledge exchange with colleagues faster?

4 Digital Trends in Knowledge Translation:

Digital Emergency Medicine



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U.S. National Library of Medicine
MedlinePlus
Trusted Health Information for You
dizziness
GO
About MedlinePlus Site Map FAQs Contact Us
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Drugs & Supplements
Videos & Tools
Español
Home → Search Results
www.nlm.nih.gov/medlineplus
Search Help
Refine by Type
All Results (1,323)
Health Topics (34)
External Health Links (42)
Drugs and Supplements (889)
Medical Encyclopedia (330)
Videos and Tutorials (1)
News (4)
MedlinePlus Magazine (20)
Other Resources (3)
Multiple Languages
Results 1 - 10 of 1,323 for dizzin
1. Dizziness and Vertigo (Nat
... feel that the room is spinning,
being ... up too quickly from sittin
is easily ...
https://www.nlm.nih.gov/medline
2. Benign positional vertigo
Vertigo - positional; Benign paro
Benign positional vertigo is also
caused by a problem in the inner
https://www.nlm.nih.gov/medline
3. Dizziness and vertigo - aft
Meniere disease - aftercare; Ben
describe two different symptoms
you feel like you might faint. ...
FOR
DATE
ADDRESS
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Search labyrinthitis
www.nlm.nih.gov/medlineplus
www.Bcemergencynetwork.ca
DISPENSE AS WRITTEN
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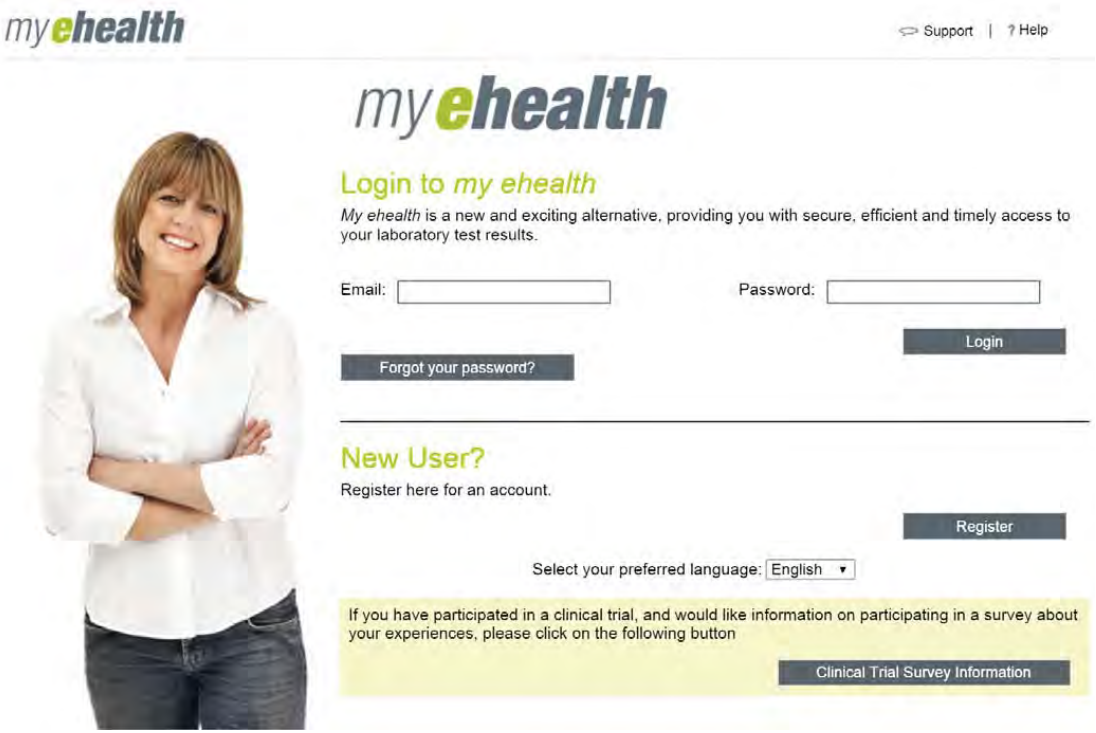
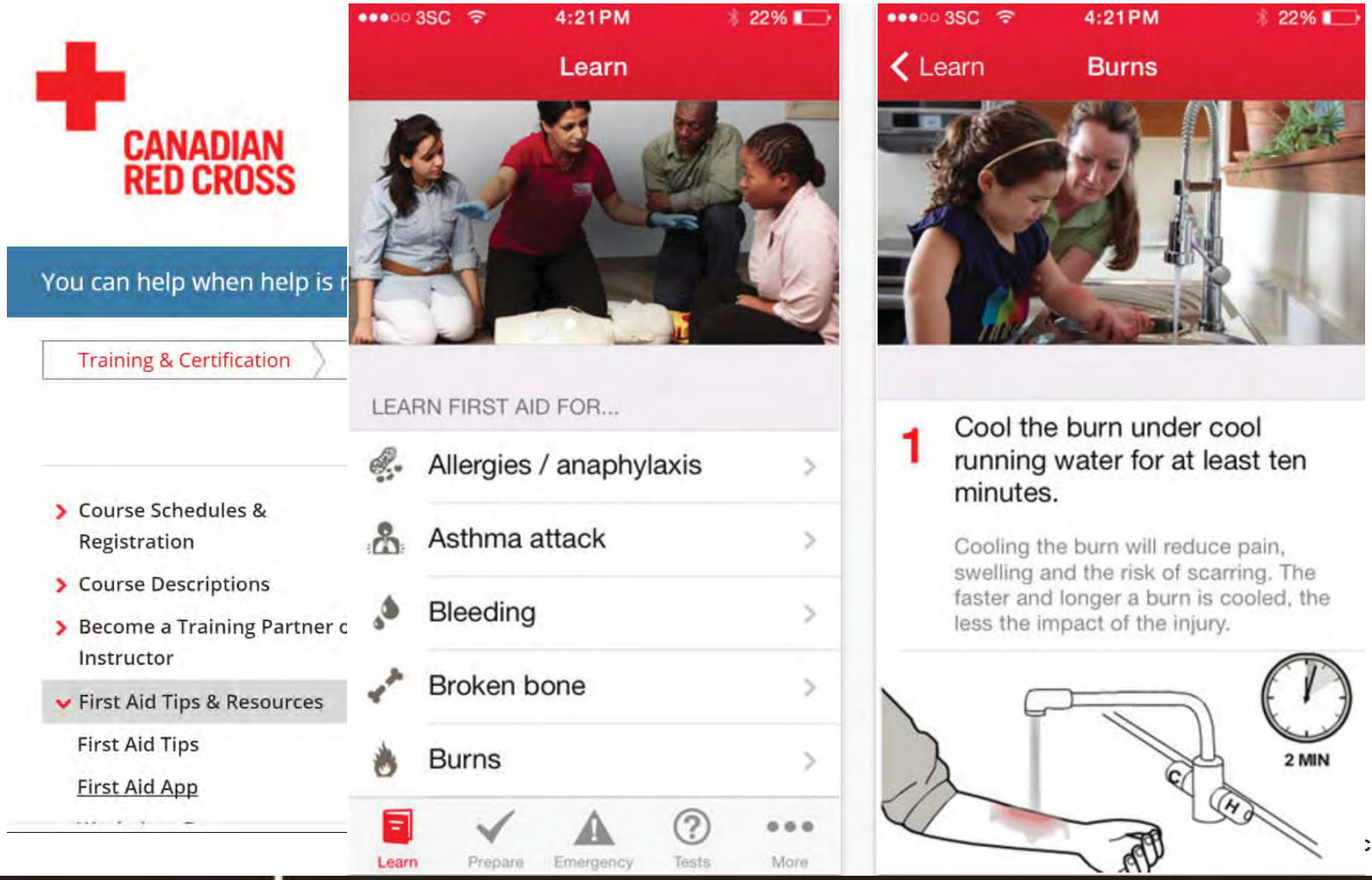
Patient Portals

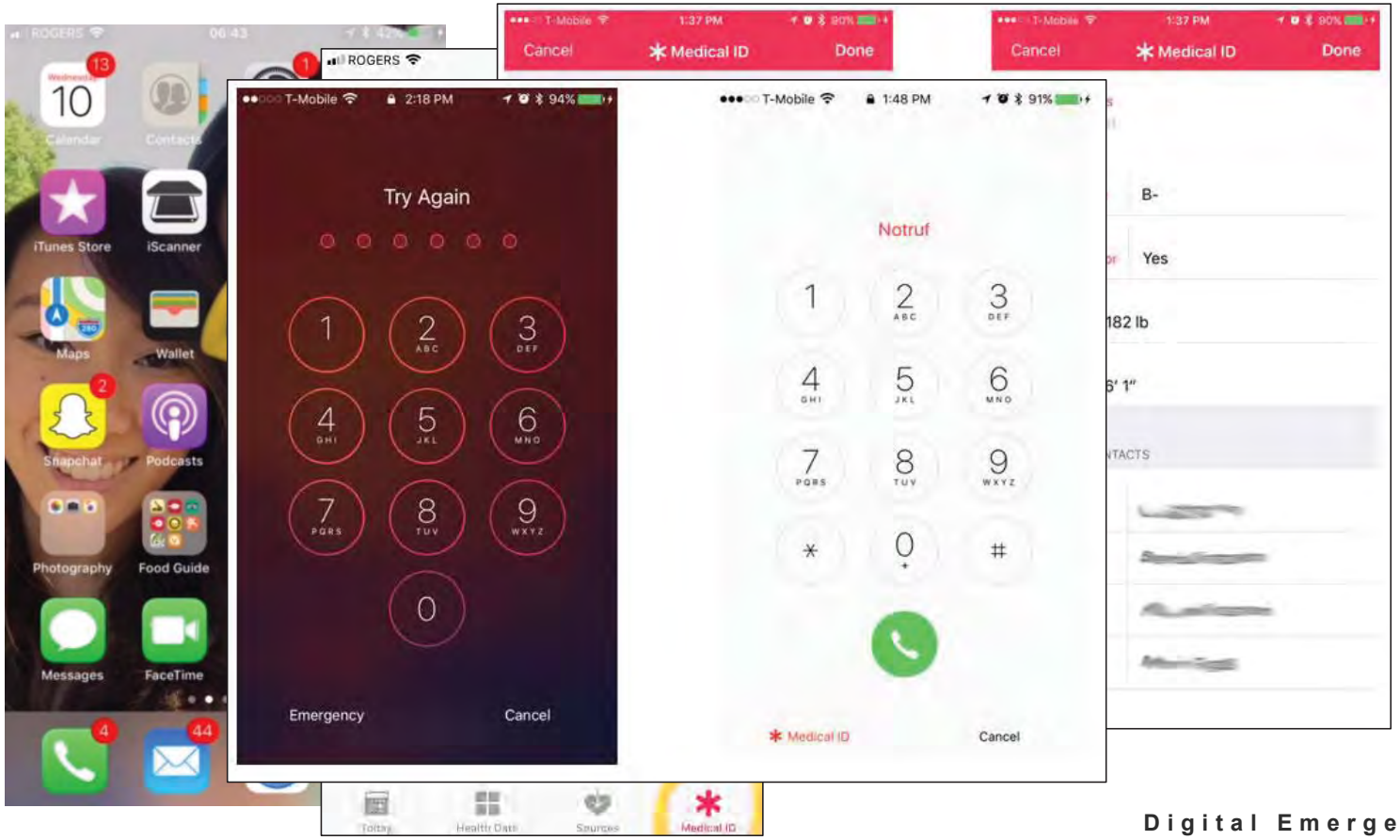


Downloading Apps to your Smartphone

	Apple	Android
1. Open:		
2. Search:	“First Aid”	
3. Download:		


CANADIAN RED CROSS
You can help when help is
Training & Certification
Course Schedules & Registration
Course Descriptions
Become a Training Partner
Instructor
First Aid Tips & Resources
First Aid Tips
First Aid App
3SC 4:21PM 22%
Learn
LEARN FIRST AID FOR...
Allergies / anaphylaxis
Asthma attack
Bleeding
Broken bone
Burns
Learn
Prepare
Emergency
Tests
More
3SC 4:21PM 22%
Learn
Burns
1
Cool the burn under cool running water for at least ten minutes.
Cooling the burn will reduce pain, swelling and the risk of scarring. The faster and longer a burn is cooled, the less the impact of the injury.
2 MIN

Apple OS: Medical ID



Digital Emergency Medicine

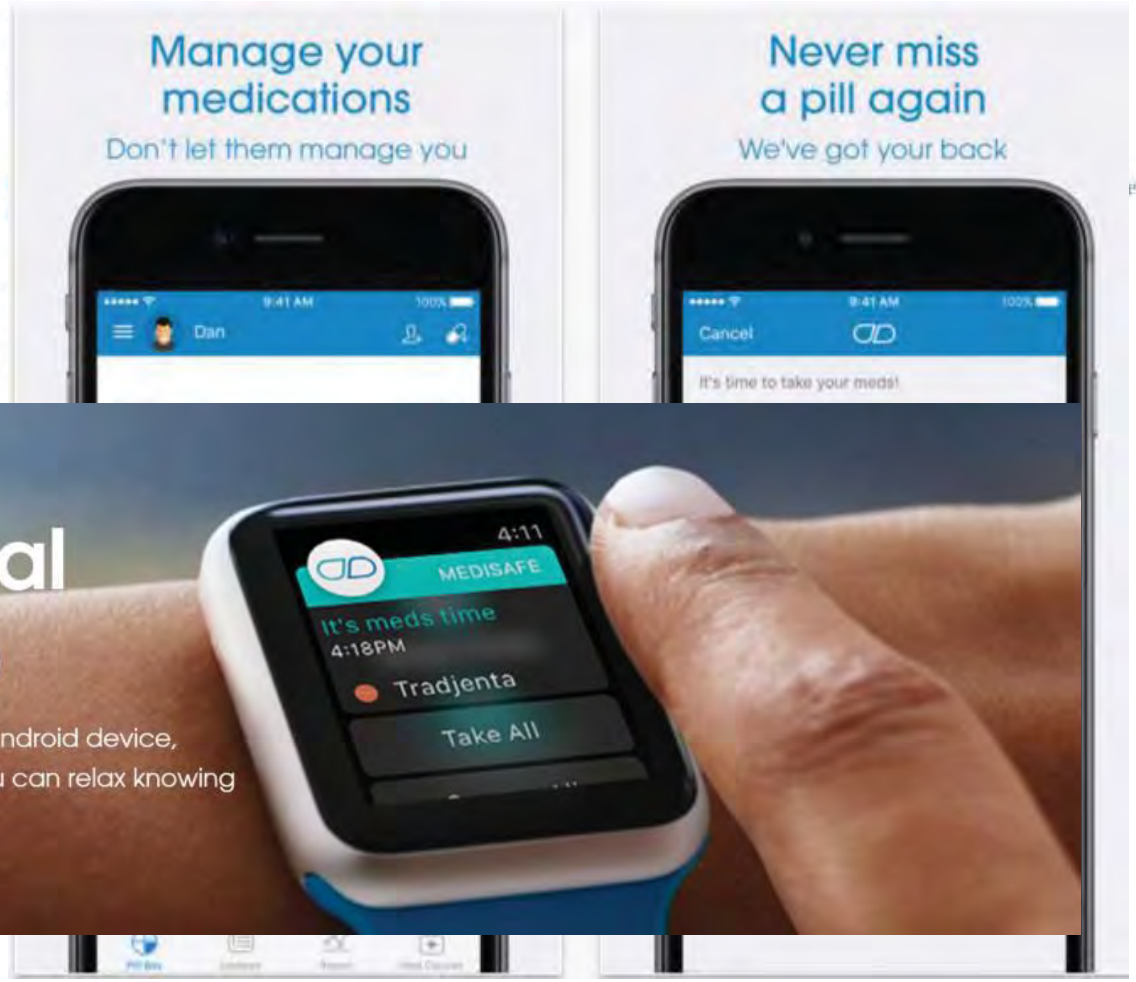
Medisafe Medication Reminder and Pill Organizer

View More by This Developer

By MediSafe Inc.

Open iTunes to buy and download apps.

View in iTunes

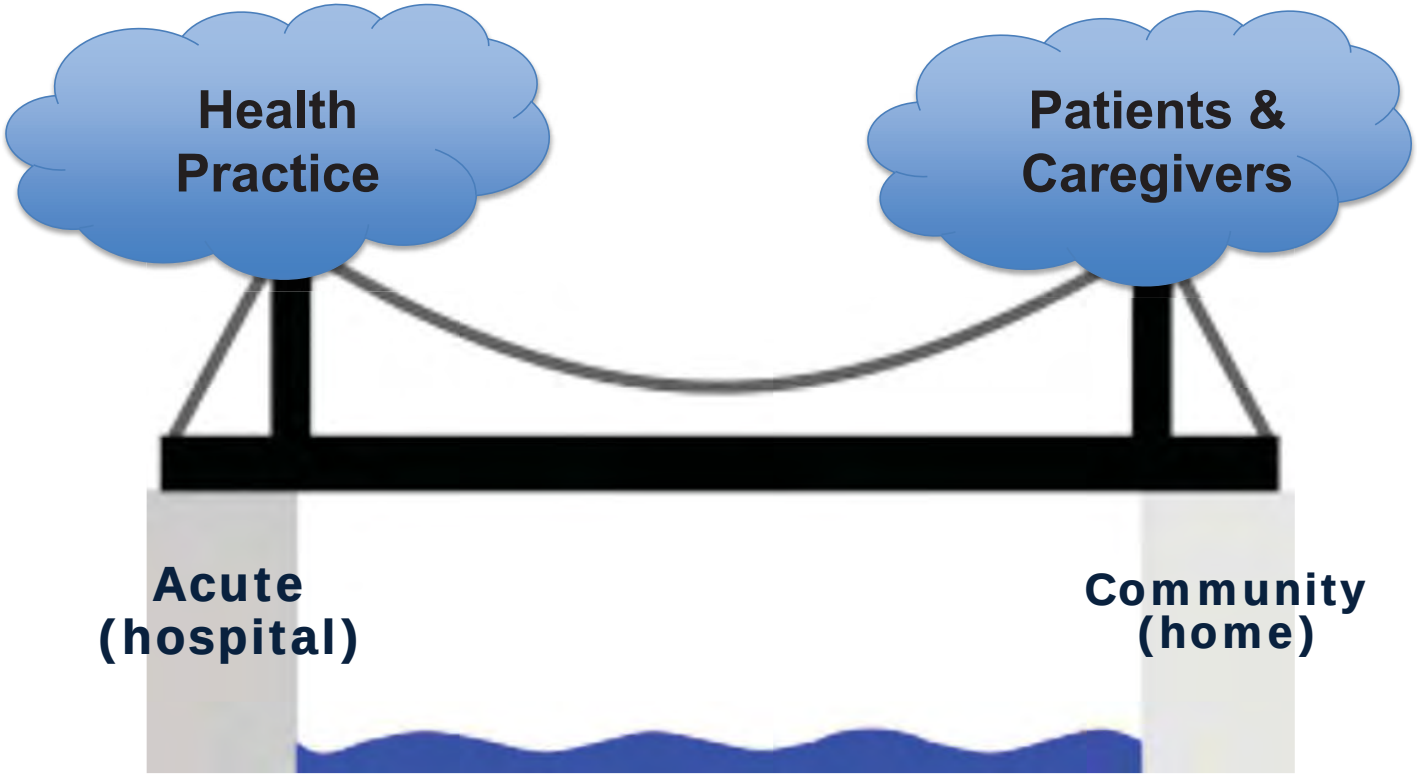


Emergency Department App for Patients

- Communicate with ED HPs
- Provide just-in-time information
- Capture necessary test results
- Capture discharge information
- Liaise with GPs & primary care
- …

4 Digital Trends in Knowledge Translation:

Digital Emergency Medicine



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Calculate by QxMD

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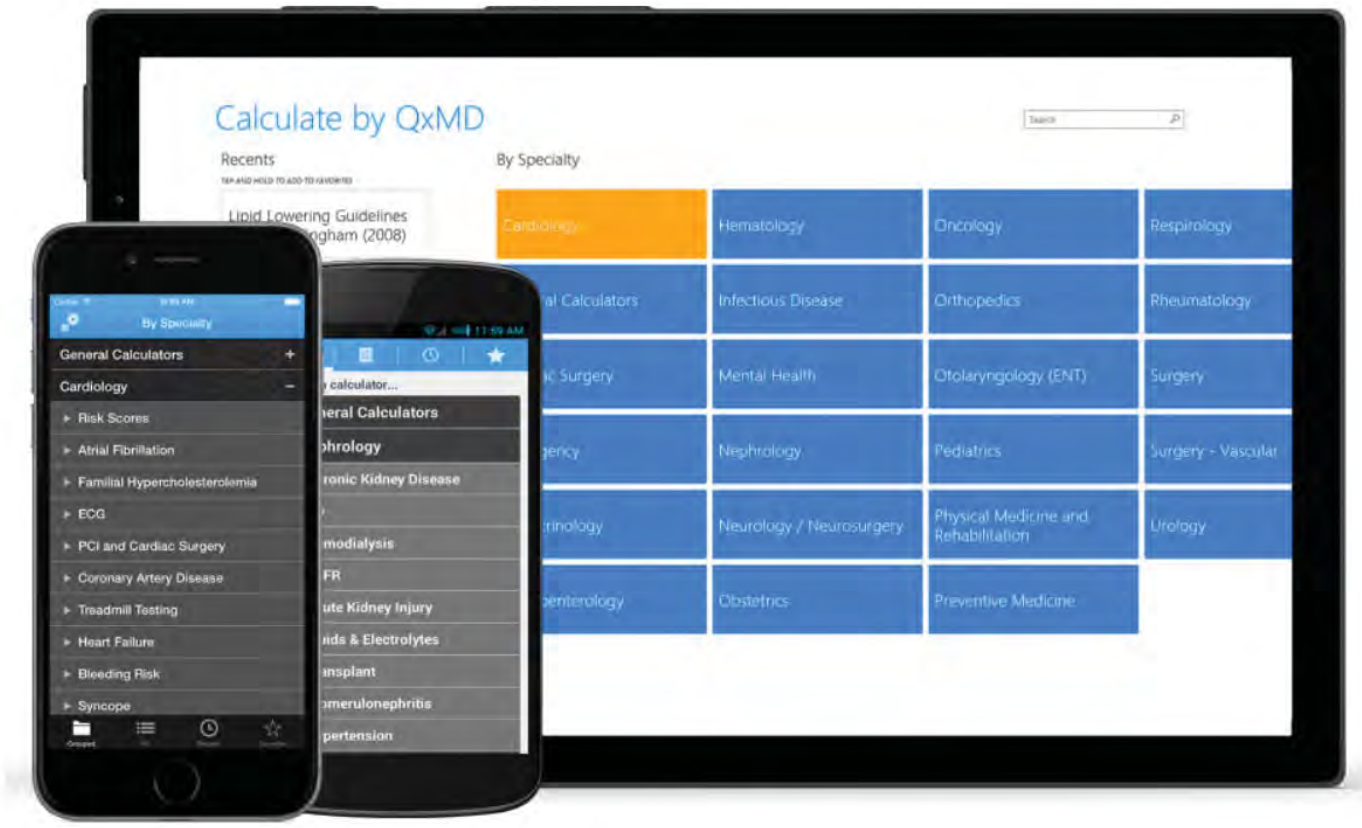
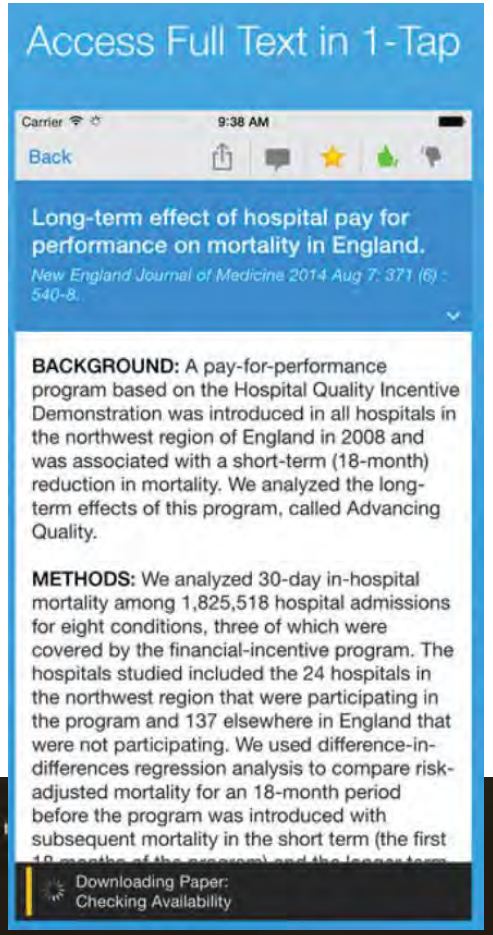
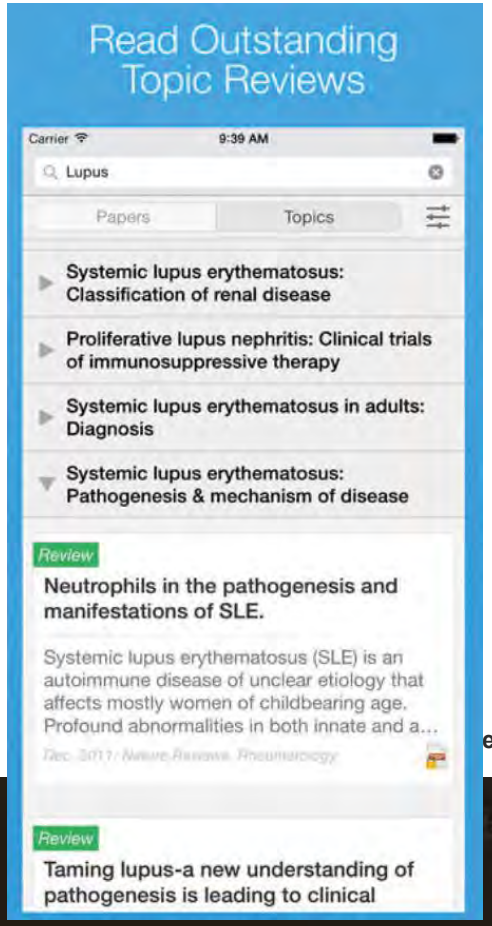


Read by QxMD

By QxMD Medical Software





EM:RAP
Emergency Medicine: Reviews and Perspectives

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LIFE IN THE FASTLANE

Dr. Mike Cadogan
@sandsurf
#FOAMed

LITFL | Education | **Creating the FOAMed network**

Creating the FOAMed network

by Mike Cadogan

What M

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I have been trying (with limited success) for the last 5 years to define the use of social media in emergency medicine and critical care. Trying to persuade other healthcare professionals of the importance of online communication and collaboration as well as the immense potential of social media in the development of educational resources. But nobody would listen. I really felt that we had the scope to pull fragmented

Save time

JMIR Med Educ. 2017 Aug 4;3(2):e13. doi: 10.2196/mededu.6429.

Attitudes of Health Professional Educators Toward the Use of Social Media as a Teaching Tool: Global Cross-Sectional Study.

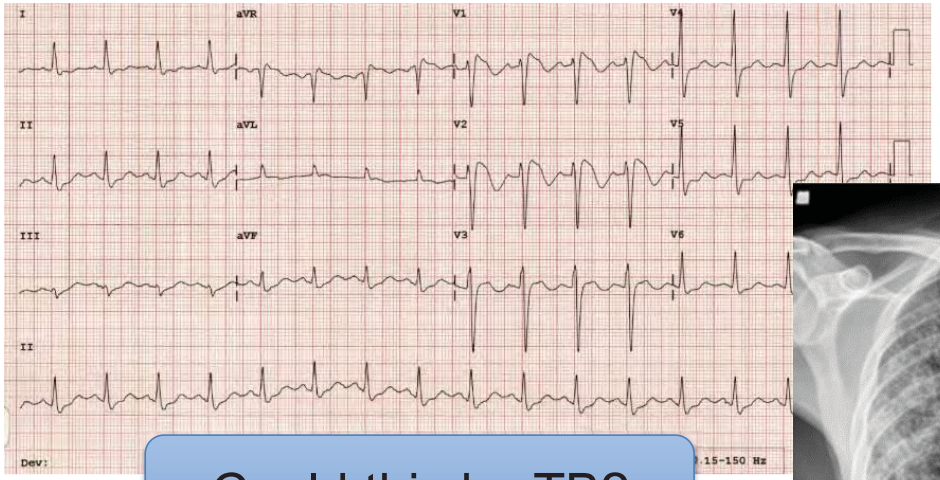
D'Souza K[1], Henningham L[2], Zou R[3], Huang J[4], O'Sullivan E[5], Last J[5], Ho K[6].

cy Medicine

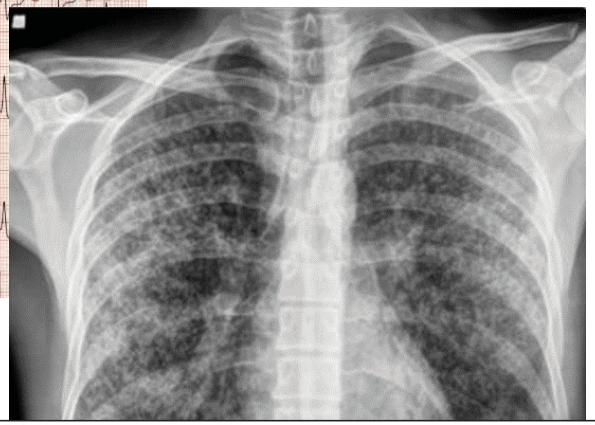
UBC

MEDICINE

Collegial Consultations



What do you think?



Could this be TB?

J Telemed Telecare. 2016 Jun;22(4):244-51. doi: 10.1177/1357633X15595734. Epub 2015 Jul 21.

Speed and accuracy of mobile BlackBerry Messenger to transmit chest radiography images from a small community emergency department to a geographically remote referral center.

Scheuermeyer F[1], Grunau B[2], Cheyne J[3], Grafstein E[4], Christenson J[4], Ho K[5].

J Telemed Telecare. 2016 Mar;22(2):105-13. doi: 10.1177/1357633X15587626. Epub 2015 May 29.

Speed and accuracy of text-messaging emergency department electrocardiograms from a small community hospital to a provincial referral center.

Scheuermeyer FX[1], Grunau BE[2], Findlay T[3], Grafstein E[2], Christenson J[2], Lang E[4], Rowe B[5], Ho K[6].

From telehealth to mHealth

Digital Emergency Medicine

BC EMERGENCY MEDICINE NETWORK

Real Time Virtual Support in BC

95 EDs

1100 MDs

2 million Pt visits/yr

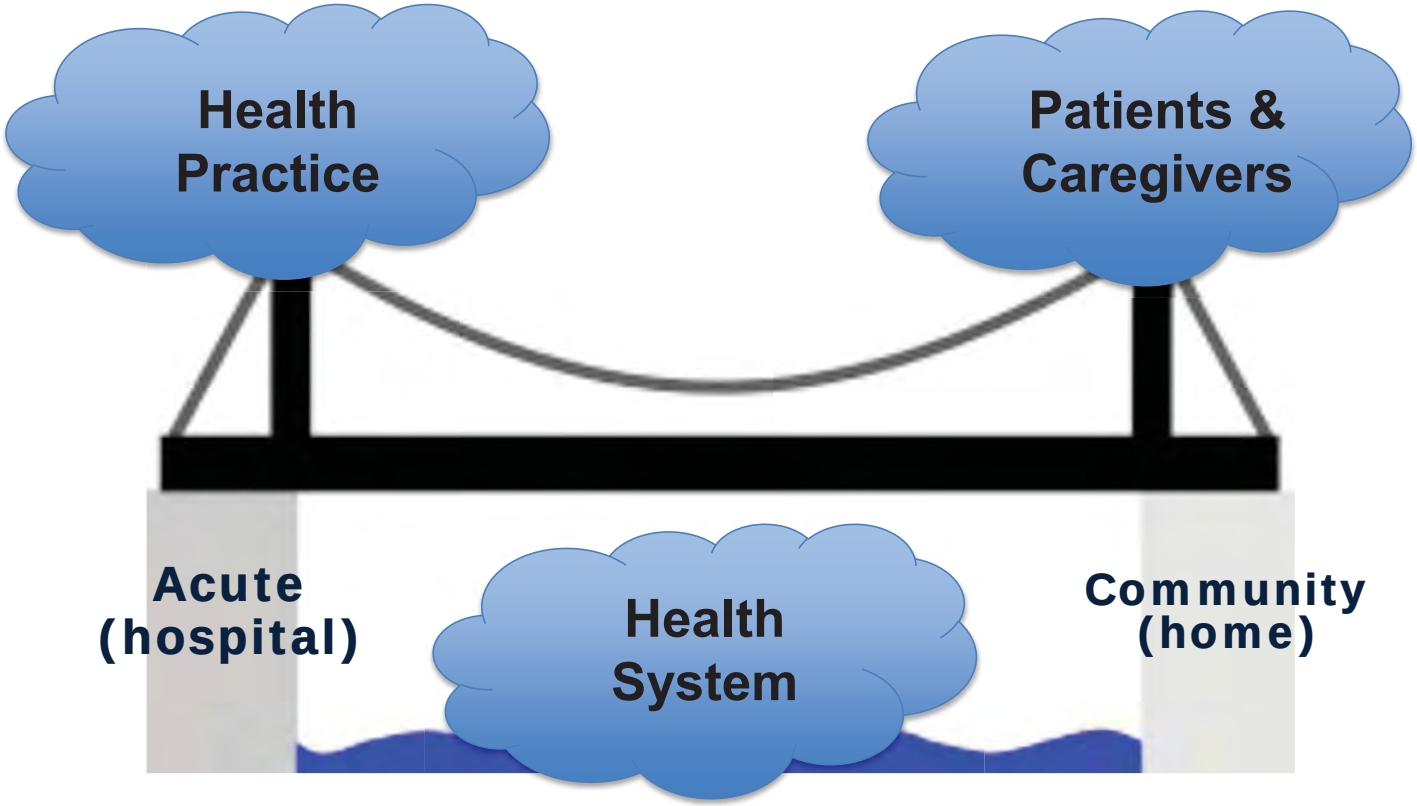
Cureus. 2018 Jan 4;10(1):e2022. doi: 10.7759/cureus.2022.

The British Columbia Emergency Medicine Network: A Paradigm Shift in a Provincial System of Emergency Care.

Abu-Laban RB[1], Drebit S[1], Lindstrom RR[1], Archibald C[1], Eggers K[2], Ho K[1], Khazei A[1], Lund A[3], MacKinnon C[1], Markham R[4], Marsden J[1], Martin E[2], Christenson J[1].

4 Digital Trends in Knowledge Translation:

Digital Emergency Medicine



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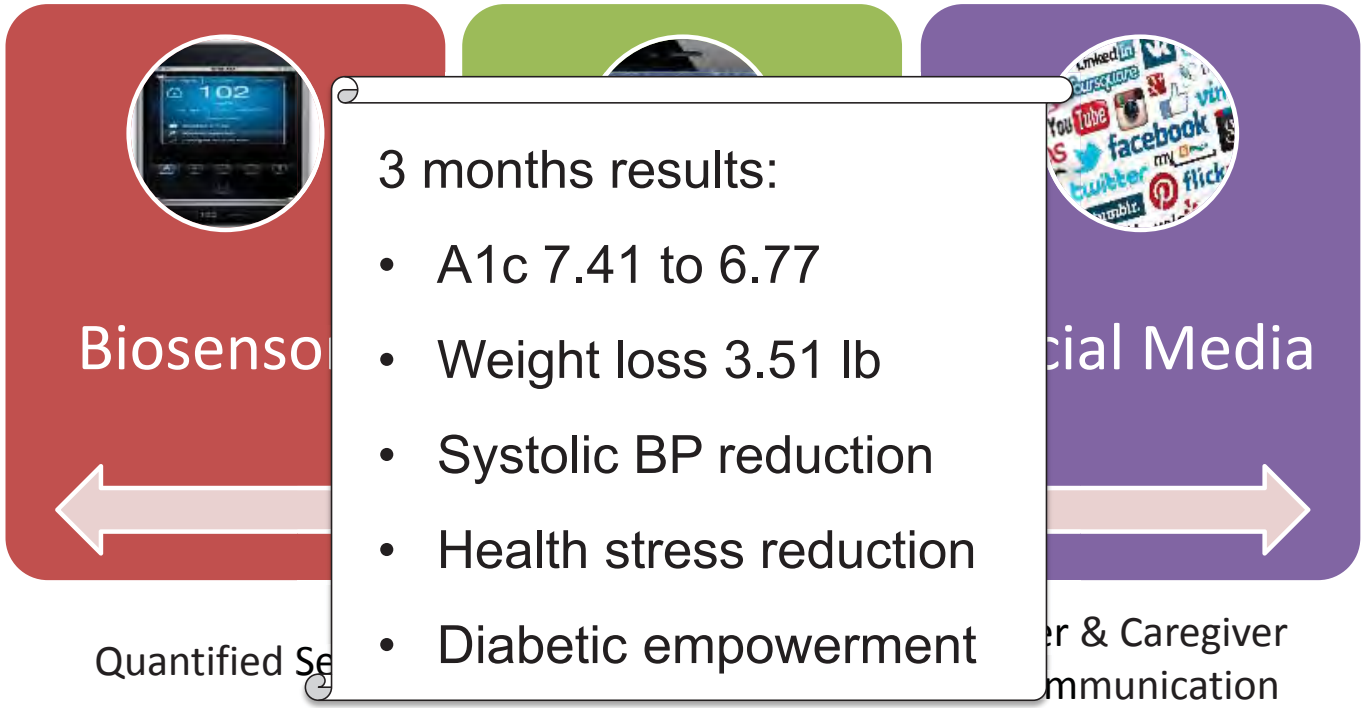
Mobile Digital Access to Wireless Network (mDAWN)



Digital Emergency Medicine

AMIA Annu Symp Proc. 2015 Nov 5;2015:621-9. eCollection 2015.

mobile Digital Access to a Web-enhanced Network (mDAWN): Assessing the Feasibility of Mobile Health Tools for Self-Management of Type-2 Diabetes.

Ho K[1], Newton L[1], Boothe A[1], Novak-Lauscher H[1].

MEDICINE

Telehealth for Emergency Community Continuing of Care Connectivity via Home monitoring

TEC4Home

From hospital to home: Safe & high quality care

Supporting Heart Failure Patient Transitions From Acute to Community Care With Home Telemonitoring Technology: A Protocol for a Provincial Randomized Controlled Trial (TEC4Home)

TEC4Home Healthcare Innovation Community‡

Digital Emergency Medicine, Department of Emergency Medicine, University of British Columbia, Vancouver, BC, Canada

JMIR Publications
The Leading eHealth Publisher

Published on 18.12.16 in Vol 5, No 4 (2016): Oct-Dec

Remote Monitoring for Heart Failure Patients in BC

Phase 1 (3 hospitals, 70 pt):

- 59% decr. Readmissions
- 44% decr. ED revisits
- 44% decr. Per patient cost
- Improved Quality of Life

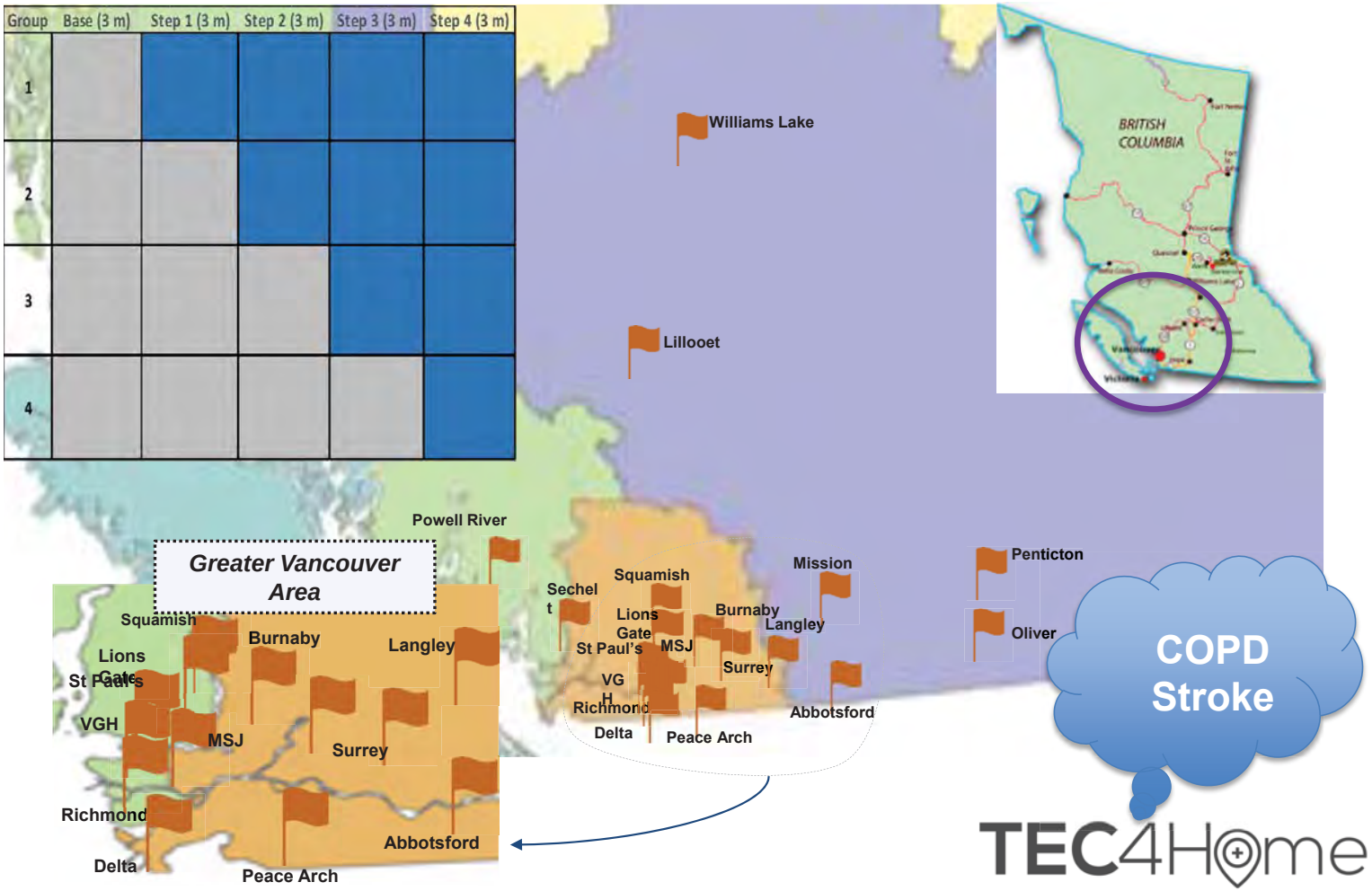
"This is the best I have felt in 2 years."

"this is the longest I have stayed out of hospital"

"I may not let Telus in the door to collect the equipment" (joking)

"people who have not seen me for a while tell me 'What a difference'" and "even your voice is stronger"

HF Phase 2 2018-19: 19 Sites



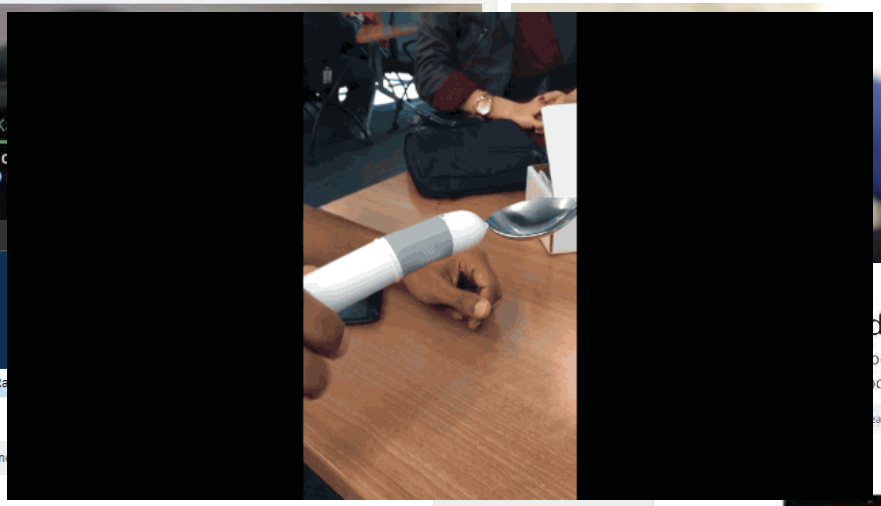
Mobile Technologies & Wearables: The Future is here!

IN A HEARTBEAT —

FDA clears first medical accessory for the Apple Watch—an EKG sensor

KardiaBand uses a neural network and the Apple Watch to detect abnormal heart rate.

VALENTINA PALLADINO - 11/30/2017, 6:27 AM



U.S. Department of Health and Human Services

FDA U.S. FOOD & DRUG ADMINISTRATION

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News & Events

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FDA News Release

FDA approves pill with sensor that digitally tracks if patients have ingested their medication

New tool for patients taking Abilify

f SHARE | TWEET | in LINKEDIN | PIN IT | EMAIL | PRINT

For Immediate Release November 13, 2017

Summary FDA approves Abilify MyCite, a pill with a sensor that digitally tracks if patients have ingested their medication

Inquiries

Media

Sandy Walsh
301-796-4669

Consumers

888-INFO-FDA

Related Information

- Approved Drug Products

d-pressure smartwatch

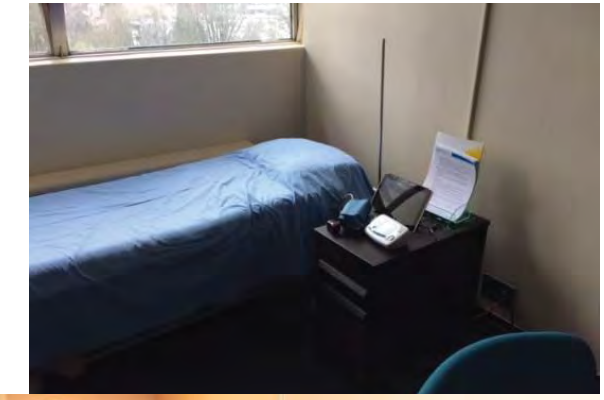
od Pressure Monitor + EKG, the first single
d pressure and EKG.

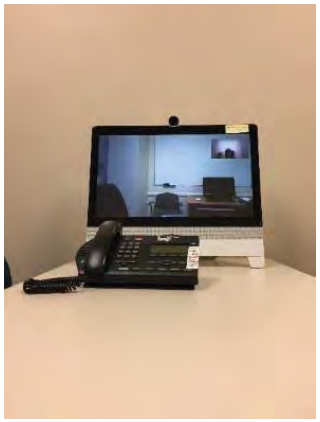
althcare, Wearables

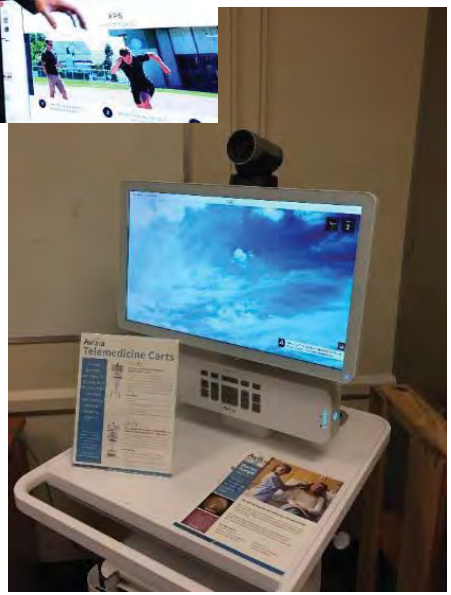
4 Digital Trends in Knowledge Translation:

Department of Family Practice: Dr. John Pawlovich
Department of Emergency Medicine: Dr. K. Ho

Demonstration & Simulation Studio for Health (DaSSH)







eHealth Strategy Office

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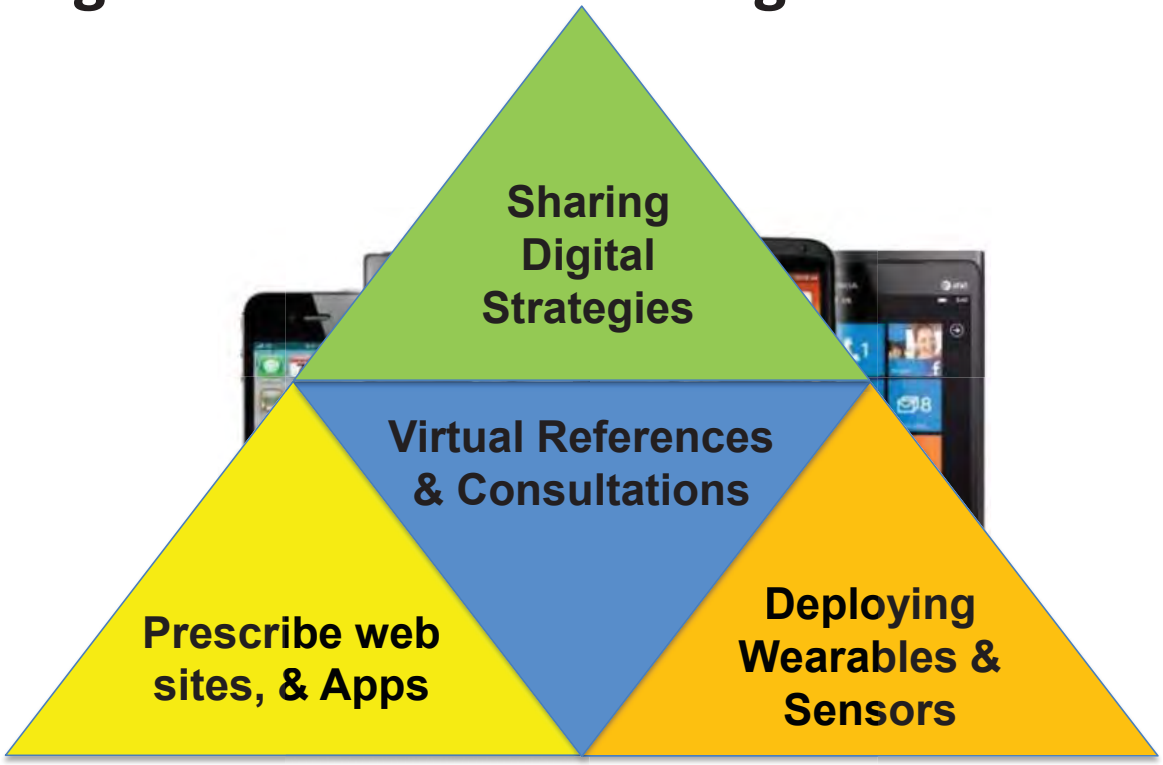
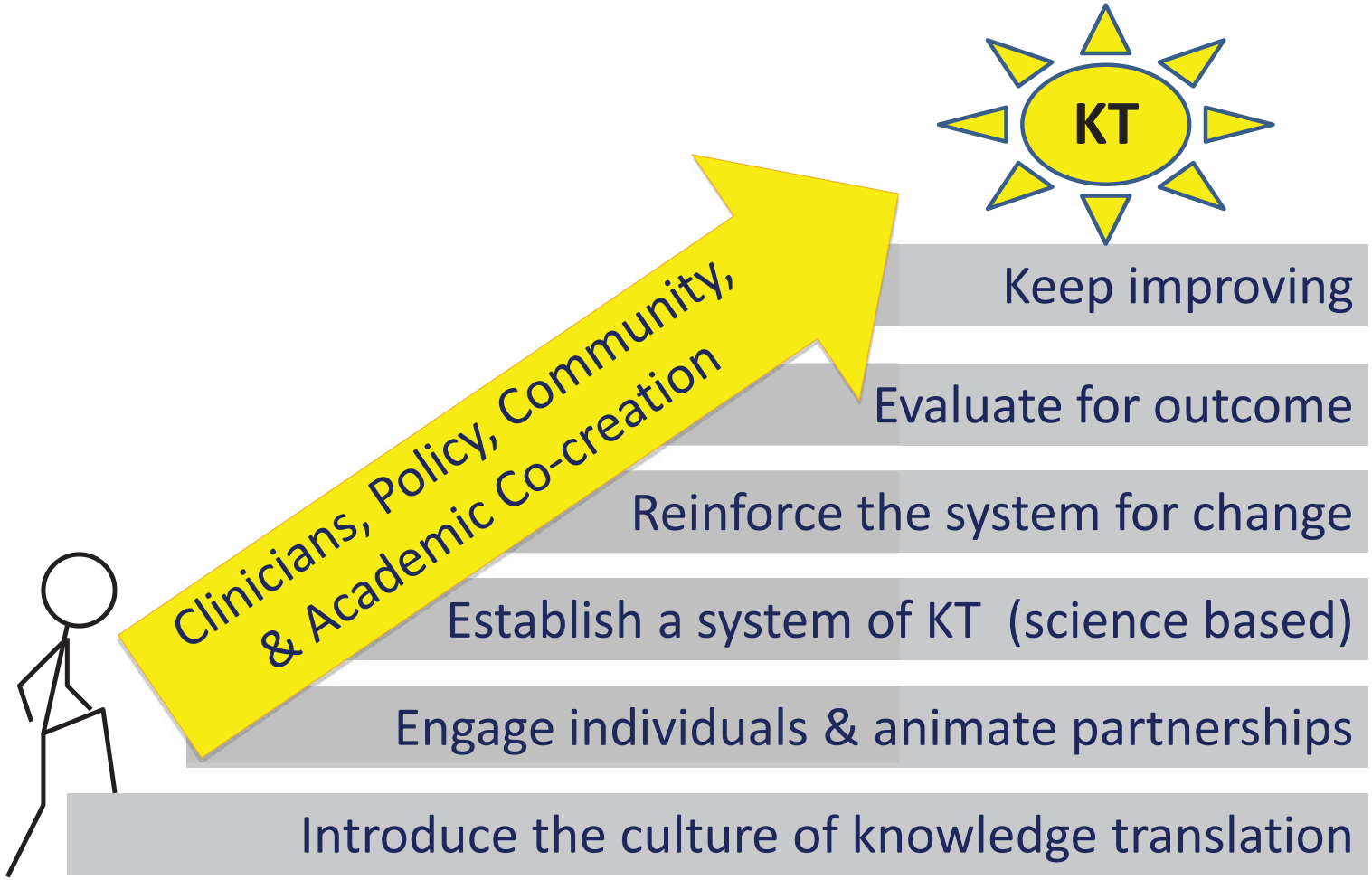


Issues and Considerations

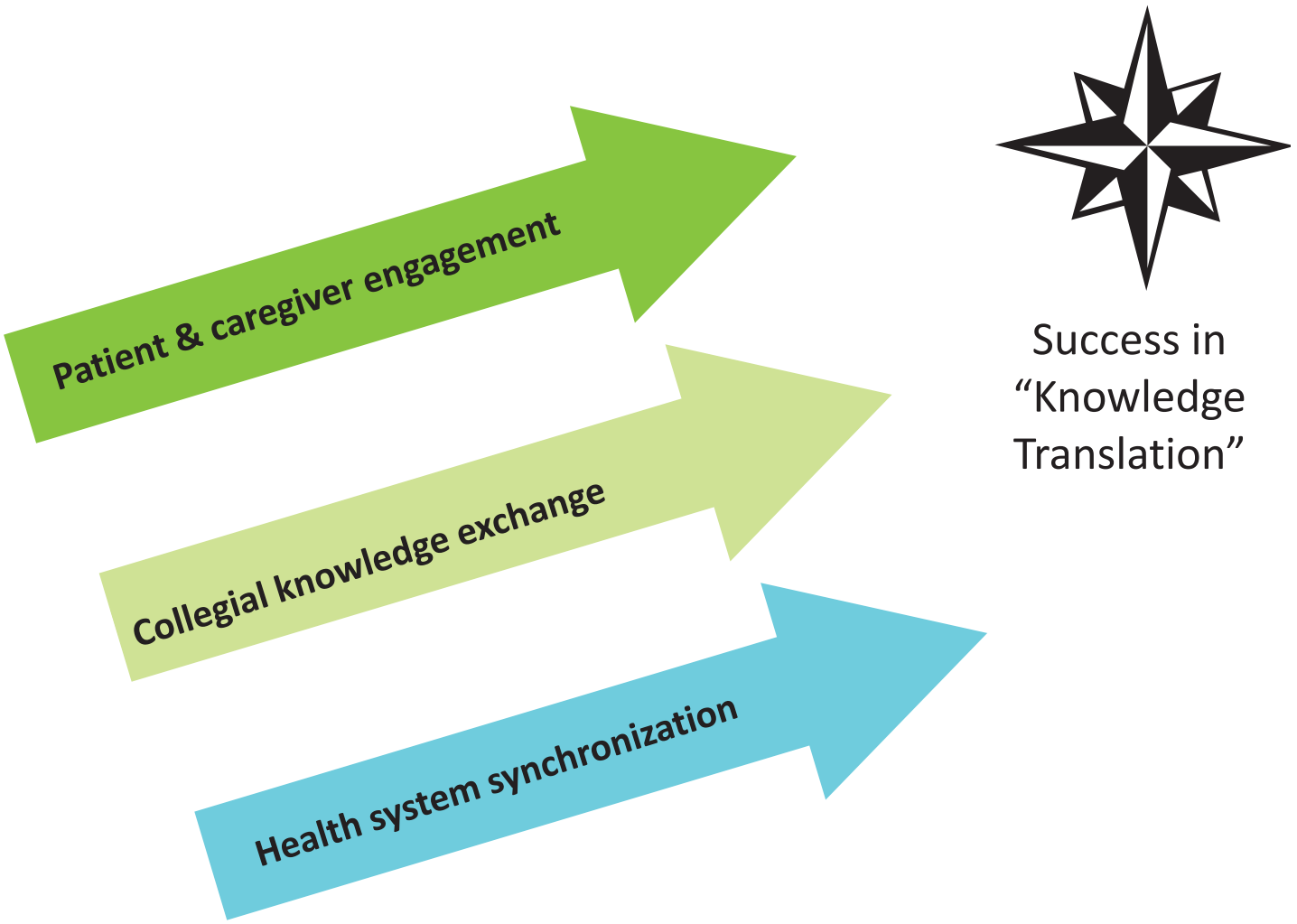
- eHealth literacy
- Paradoxical marginalization
- Privacy & confidentiality
- Data storage and security
- Increased time & efforts in workflow
- How to keep up?

Path Finding: 6 Reinforcing Steps

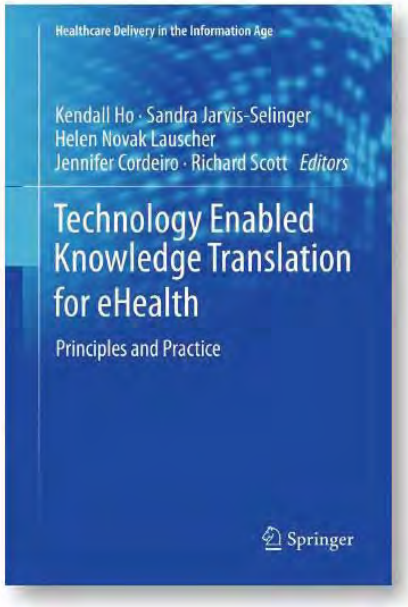


What makes a GREAT piano?

- Purity of each note
- Depth/warmth
- Connectivity/Harmony between notes


Patient & caregiver engagement
Collegial knowledge exchange
Health system synchronization
Success in "Knowledge Translation"

Springer



2012, 2012, XIV, 440 p. 89 illus., 43 in color.

BCMJ BC Medical Journal

Specialists of BC Become a member today

Part 2: Health apps, wearables, and sensors: The advancing frontier of digital health

Issue: BCMJ, Vol. 59, No. 10, December 2017, page(s) 503-506 Articles

Kendall Ho, MD, FRCPC, Christopher Yao, MSc, Helen Novak Lauscher, PhD

As public interest in consumer electronics for improving personal health grows, physicians have an important role to play in guiding patients and advocating for evidence to support the use of these technologies in clinical settings.

ABSTRACT: The proliferation of mobile technologies that can measure and gather a variety of data has increased public interest in using consumer electronics to take ownership of personal health and wellness. Apps, wearables, and sensors can unobtrusively gauge physiological and emotional states and collect, quantify, and monitor data regarding a user's day-to-day behaviors, can provide timely and patient-centred care to those living at a distance with chronic disease, and can be used to coordinate care when multiple providers are involved, reducing costs to the health care system. In all cases, merely tracking data is not enough to maintain health behaviors long-term, and the software must also incorporate motivational constructs important for the adoption and habituation of health-related behaviors. Even though all of these technologies are promising, fu... to identify possible risks, from physiological harm... how to mitigate any risks. Before recommending... technologies themselves so they understand the... these evolutionary times, guiding patients, advoc... in the development and incorporation of technol...

CONTENT
Abstract
Health apps and wearables
Sensor technologies
Mobile apps, wearables, and sensors in the clinical setting
Conclusions
Competing interests
References

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BCMJ Nov & Dec 2017 issues

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Faculty of Medicine
Department of Emergency Medicine

Let's build a community for digital emergency medicine!

Kendall Ho

Kendall.ho@ubc.ca

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www.youtube.com/ "UBC digem"

emergency.med.ubc.ca "DigEM interest group"
digem.med.ubc.ca