



**Personal
Connected
Health
Alliance**

How Connected Health Builds Patient Engagement

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North Dakota HIMSS Chapter

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HIMSS
transforming health through IT™

About Me

- Senior Manager, Consumer Health IT
PCHAlliance of HIMSS
- HIMSS staff since 2013 – work at the HIMSS
Innovation Center in Cleveland
- HIMSS member since 2002
- HIMSS Fellow
- Former chapter leader
- Previously at Cleveland Clinic in
Clinical Research Informatics
- Adjunct Faculty at Kent State University in
Health Informatics Masters program



About the Personal Connected Health Alliance

- Focus is on consumer/patient perspective on connected health technology, such as, apps and devices (fitness, remote monitoring, wearables)
- Result of a merger of the mHealth Summit and the Continua Alliance
- Now sponsor the Connected Health Conference (October in Boston)
- Several events at the HIMSS Annual Conference and HIMSS Europe



Objectives

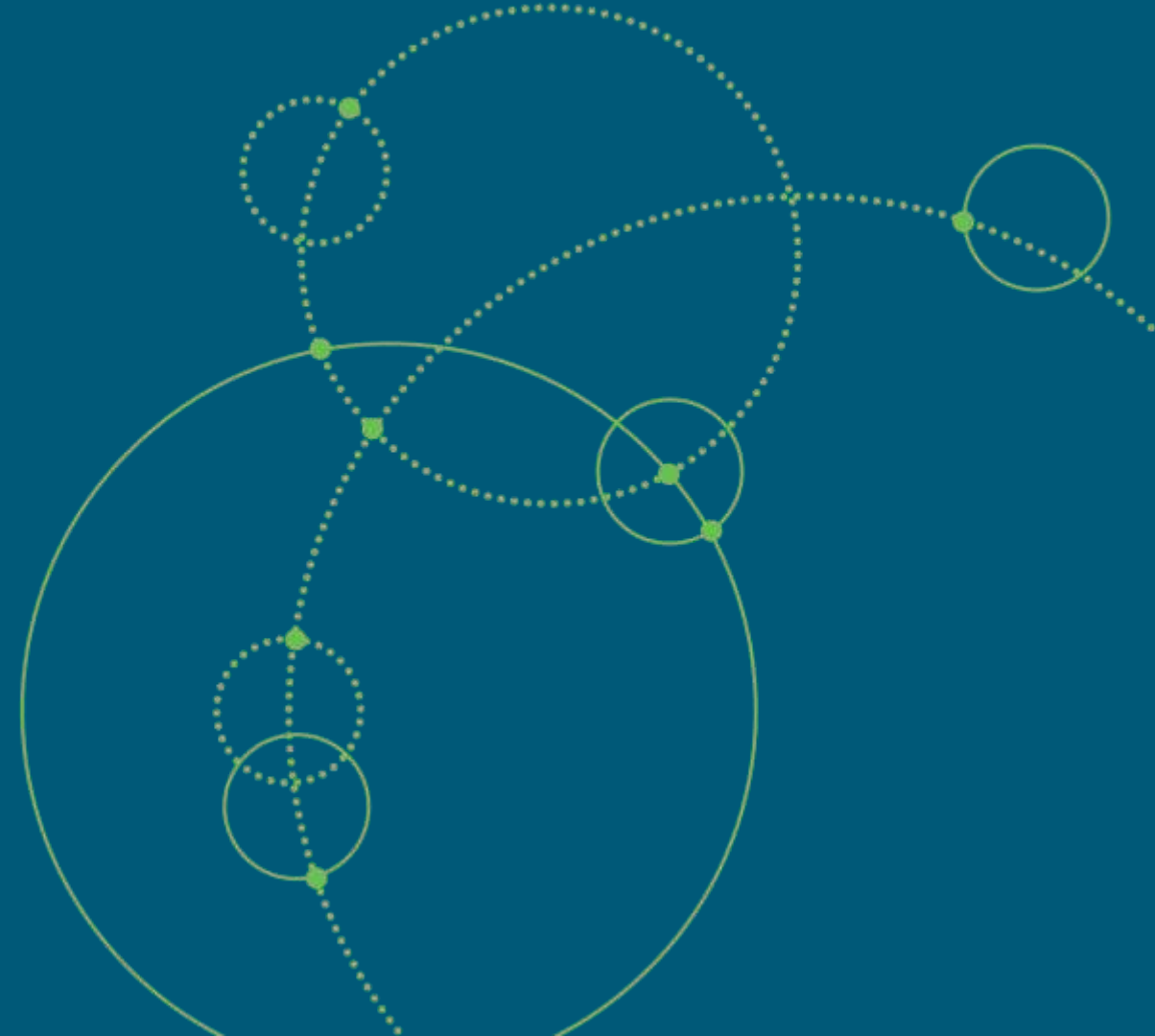
- Patient Engagement is more than a patient portal
- Connected Health tools are available to enhance engagement
- Personalization is needed to engage
- How patient engagement technologies fit with population health
- Helping those lacking health and digital literacy and access
- The future is bright for Personal Connected Health

The patient must be at the center of this transition.

- Our largest struggle is not with the patient who takes their medication regularly,
- but with the patient who does not engage in their own care.
- Technology can be the driver that excites a patient with the prospect of wellness.

– *Stephen Beck, chief medical information officer at Mercy Health*

Patient Engagement
is more than an
patient portal



Convenience

- Scheduling
- Viewing appointments/orders
- Maps and directions
- Online bill viewing and payment
- Prescription refills

Results

- Lab and radiology
- Visit summaries
- Open notes
- Immunizations and allergies
- Discharge instructions

Communication

- Secure messaging
 - Appointment follow up questions
 - Non-urgent questions
- Signup for text or phone reminders
- Patient education

Portal Features

Challenges of Patient Portals

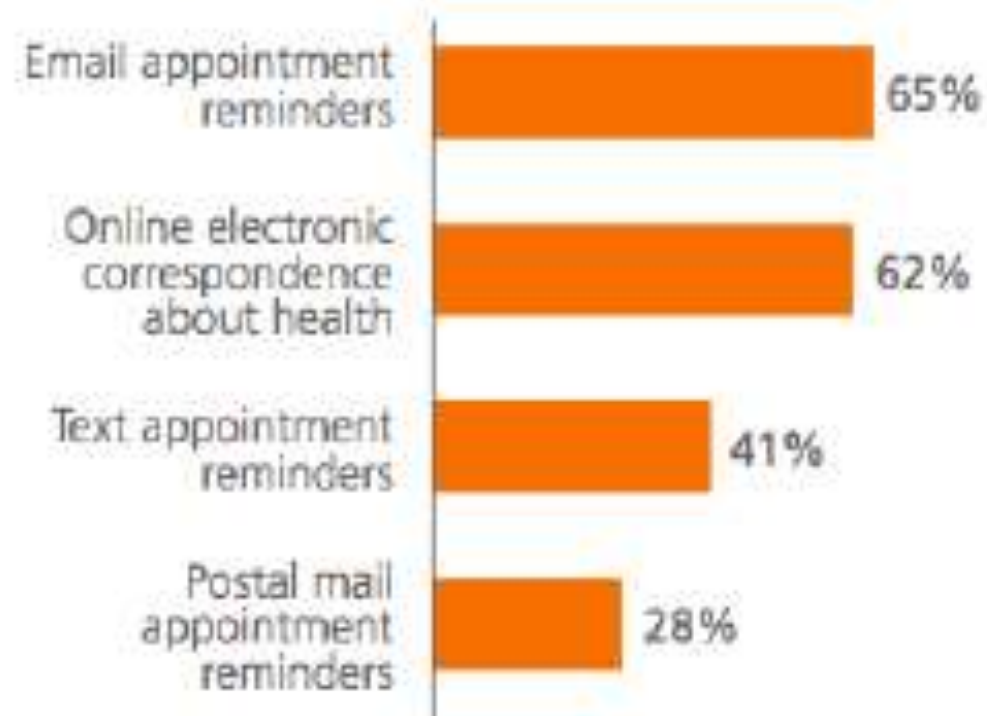
- Portal adoption below expectations
- What is the value to an individual patient?
- Activated patients demand their data but what about the rest?
- Patient navigators as portal educators



- High interest in portal functionality nationally:

Consumers: Interest in Online Communication

Percent "interested or very interested"



Consumers: Interest in Online Tools

Percent Willing or Very Willing



Portal Adoption below expectations

- 29% according to an athenahealth survey
- Not related to age
- May be related to income
- Registering or Logging in one time does not equal adoption
- Some drop off may be due to usability

Drivers of Point-of-Care
Consumerism
Increasingly Taking Hold
HDHP = high deductible
health plans

Market Shift



**Greater financial
responsibility on
consumers**



**Emergence of
meaningful alternatives**



**Improvement of
transparency tools**




**Weakening of physician
recommendations**



**Growth in consumer
experience with HDHPs**

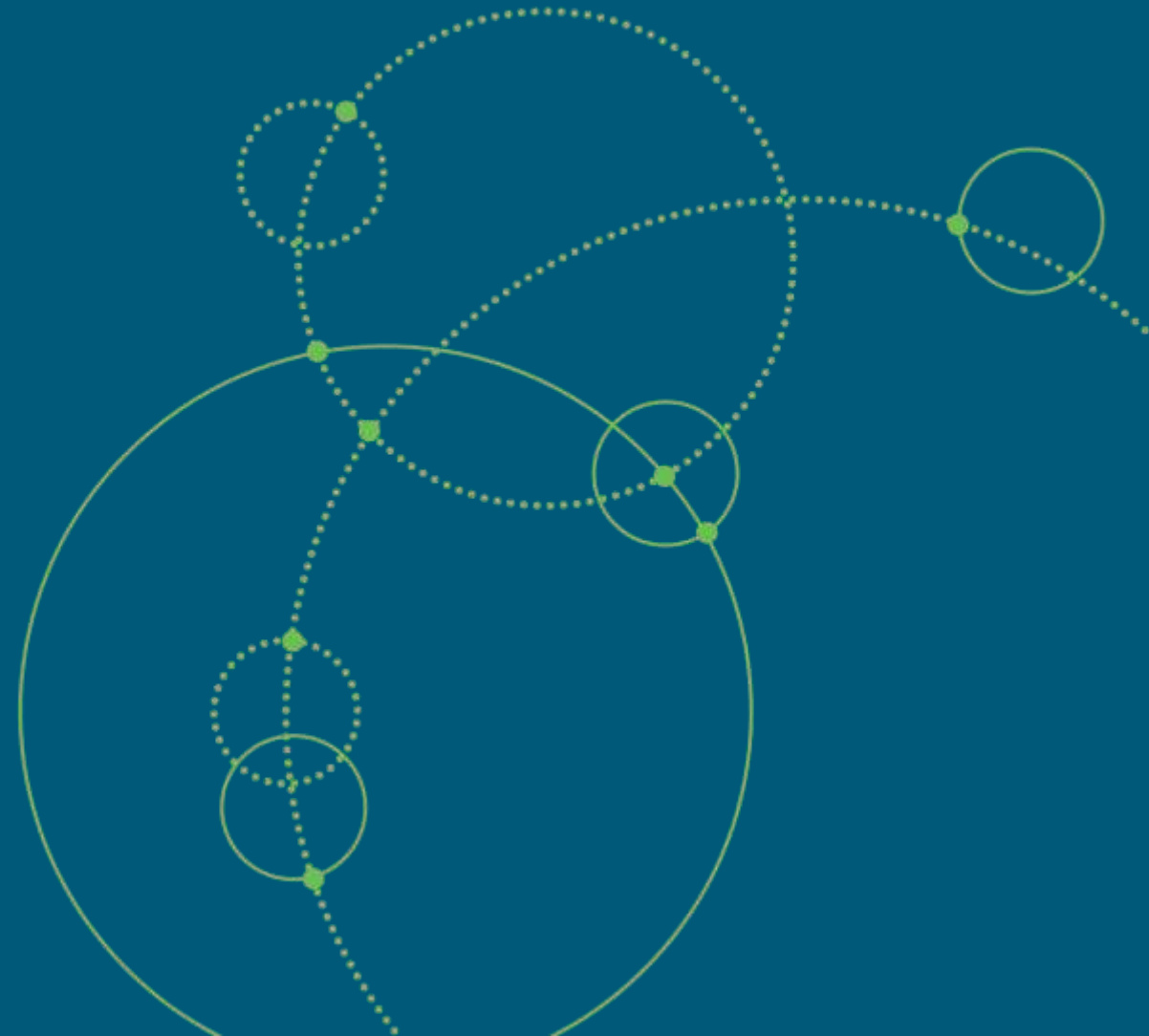
Development of a chronic kidney disease patient navigator program

[Stacey E Jolly](#)  , [Sankar D Navaneethan](#), [Jesse D Schold](#), [Susana Arrigain](#), [Victoria Konig](#), [Yvette K Burrucker](#), [Jennifer Hyland](#), [Priscilla Dann](#), [Barbara H Tucky](#), [John W Sharp](#) and [Joseph V Nally](#)

Conclusions

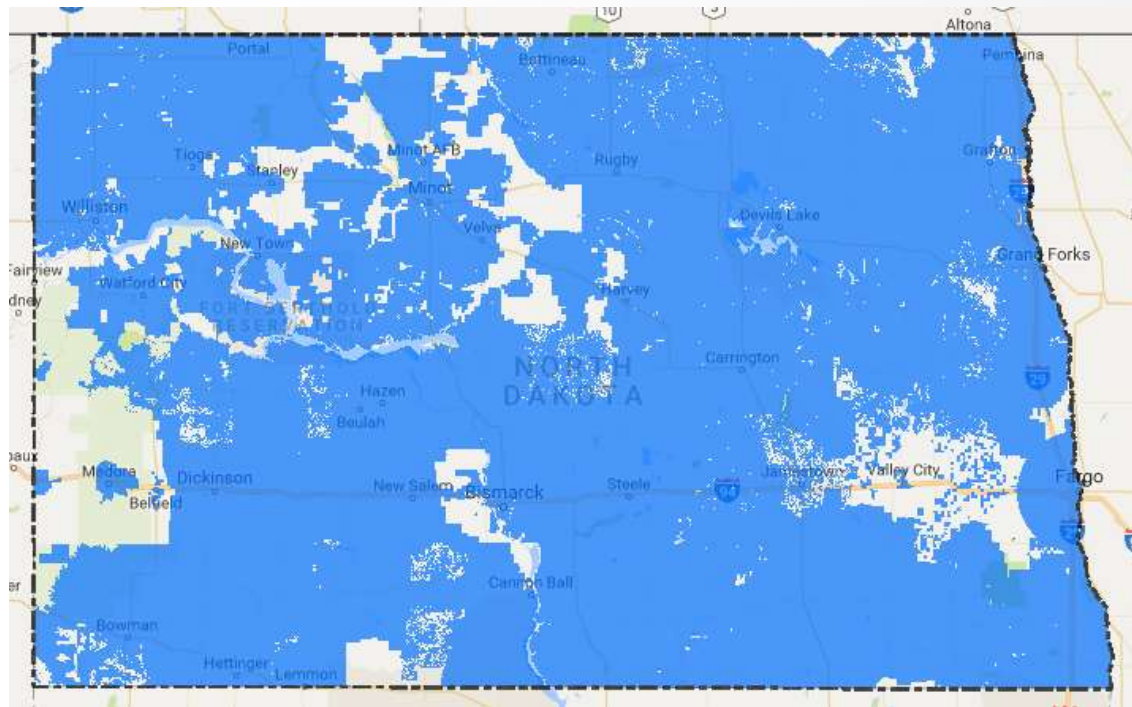
The need for novel approaches like our CKD patient navigator program designed to impact CKD care is vital and should utilize **team-based care and health information technology** given the changing landscape of our health systems.

Connected Health
tools are available to
enhance
engagement

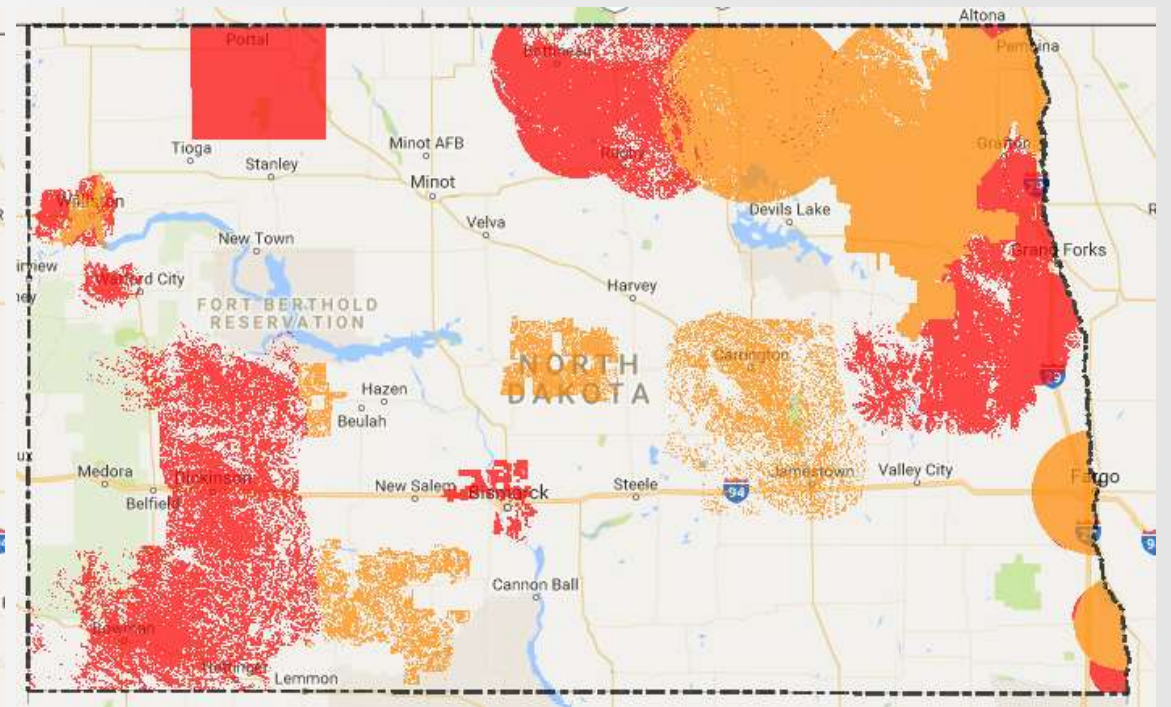


Good News - Connectivity

Broadband



Fixed Wireless



Apps that work

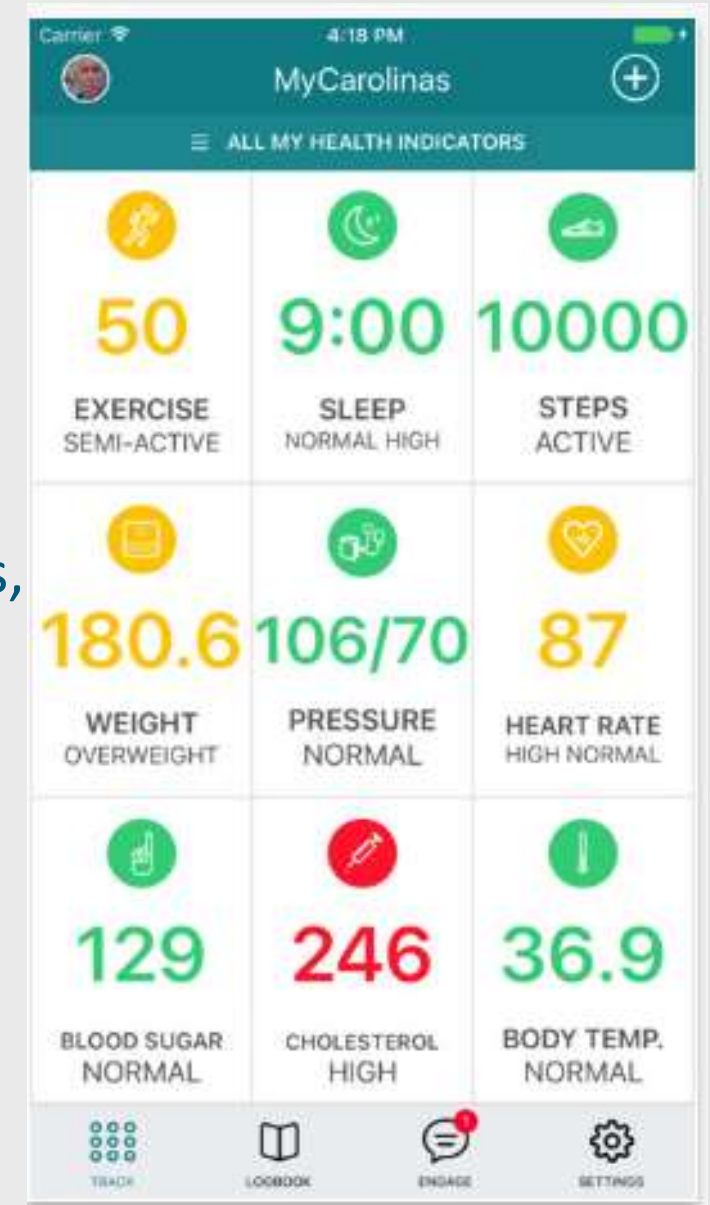
Rx Universe - Mobile Health Prescription Platform



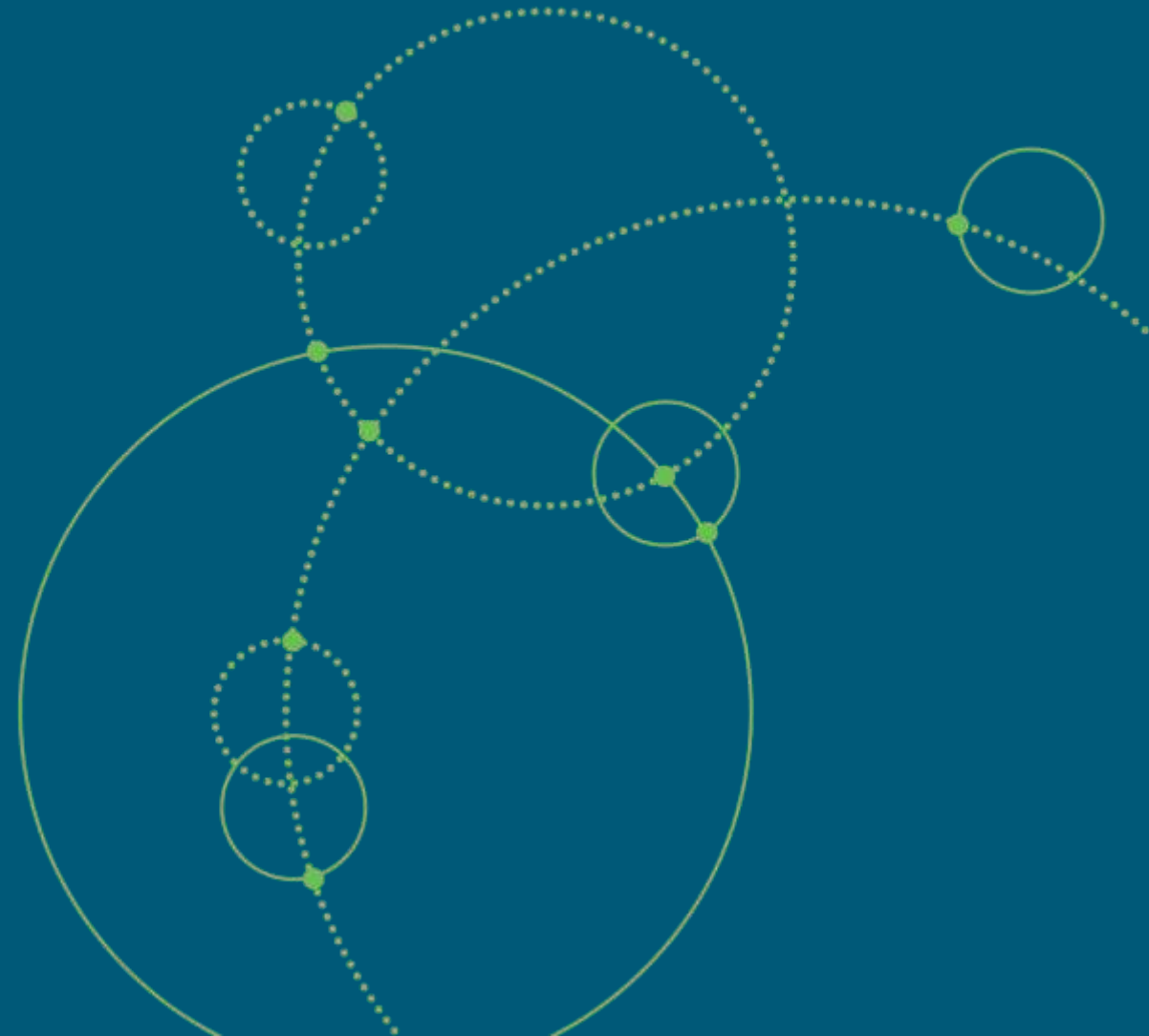
Example from Carolinas Healthcare

MyCarolinas Tracker

- Syncs and stores your health information from select exercise trackers, blood pressure cuffs, glucometers, scales, heart rate monitors, pulse oximeters, and thermometers. You can also add information manually by entering it into the app yourself.
- Tracks lab data, such as blood sugar and cholesterol levels.
- Creates reports that you can share with your doctor or health coach to help you reach your health goals. You can even see your dashboard in MyCarolinas.



How do we
capitalize on
consumerism in
healthcare?



Examples of Patient Engagement Apps

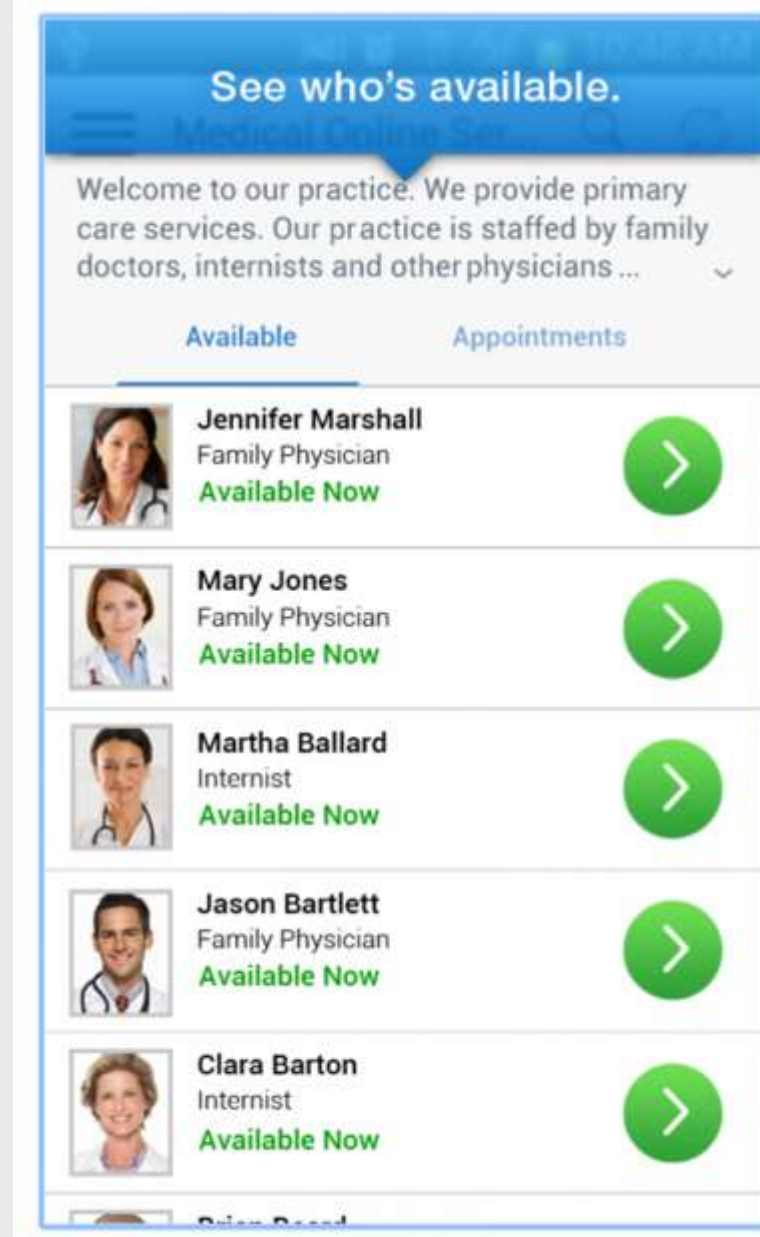
Nicklaus Children's Hospital, Miami, Florida

- **Discharge App** - Digital access to discharge instructions via the app. Patients and families can login to the app whenever and wherever to review discharge instructions by date and visit
- **CareNotify** - Provides a real-time "feed" of a patient's activity within the care setting. Now, parents/guardians/family members will be able to know what is going on during their child's visit



Telehealth and video visits

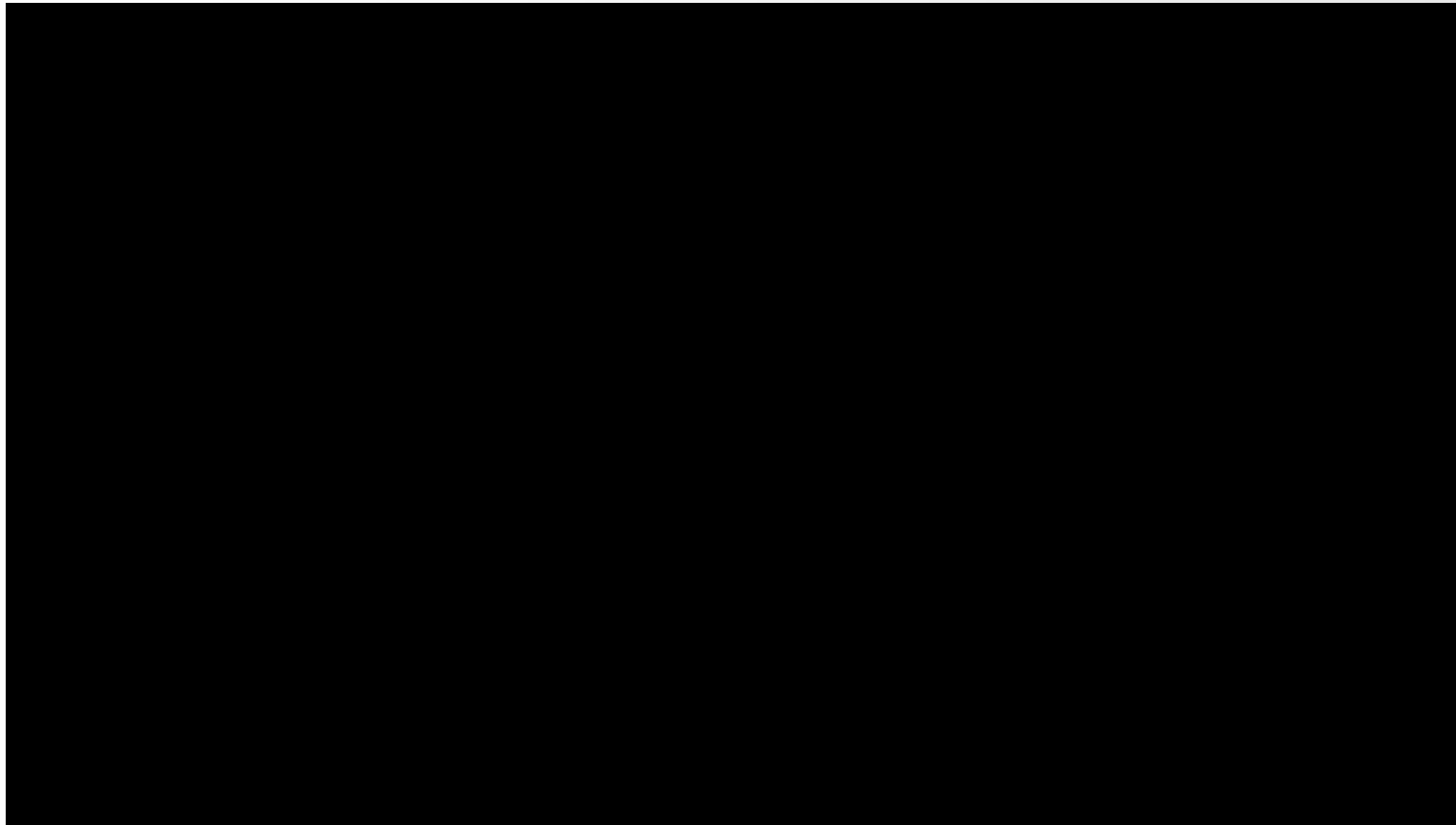
- University of Pennsylvania
- AnywhereCare app is actually intended for non-emergency ailments that nonetheless require urgent care, such as sore throats and respiratory illnesses.
- available for free on smartphones, tablets or desktop computers, and users can expect to wait a little over six minutes, on average, to see a clinician.
- <http://www.mobihealthnews.com/content/upmc-health-plan-launches-app-based-video-visits-all-pennsylvania-residents>



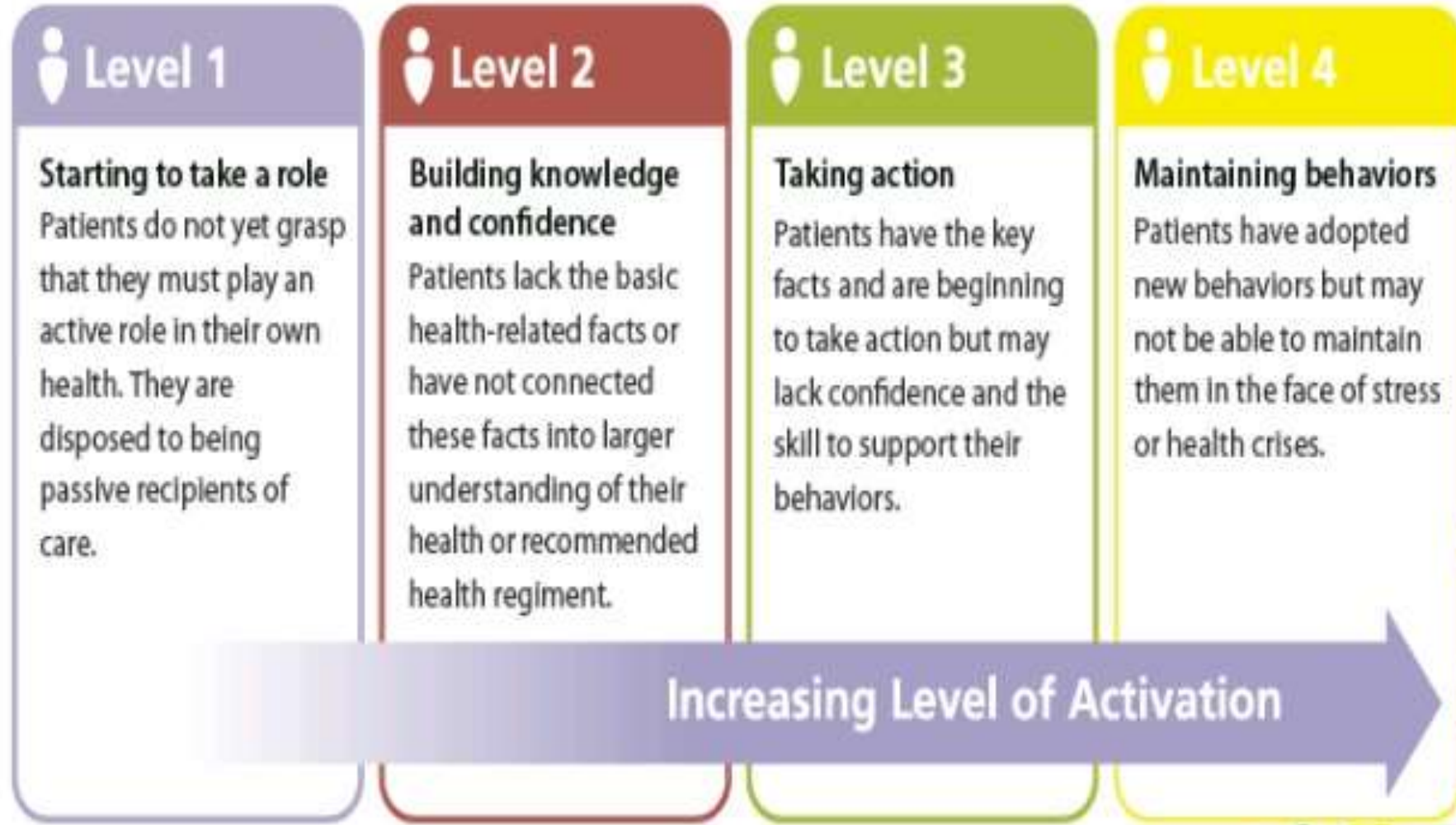
Patient Engagement in Patient Safety

- ✓ Customized patient education in ***preparing for surgery***
- ✓ Patient ***reporting errors*** in their record – especially outdated or missing medications
- ✓ ***After visit summary*** and open notes to allow patient and family caregivers to review instructions given during the outpatient visit

Open Notes – It's OK to ask



What is patient activation?



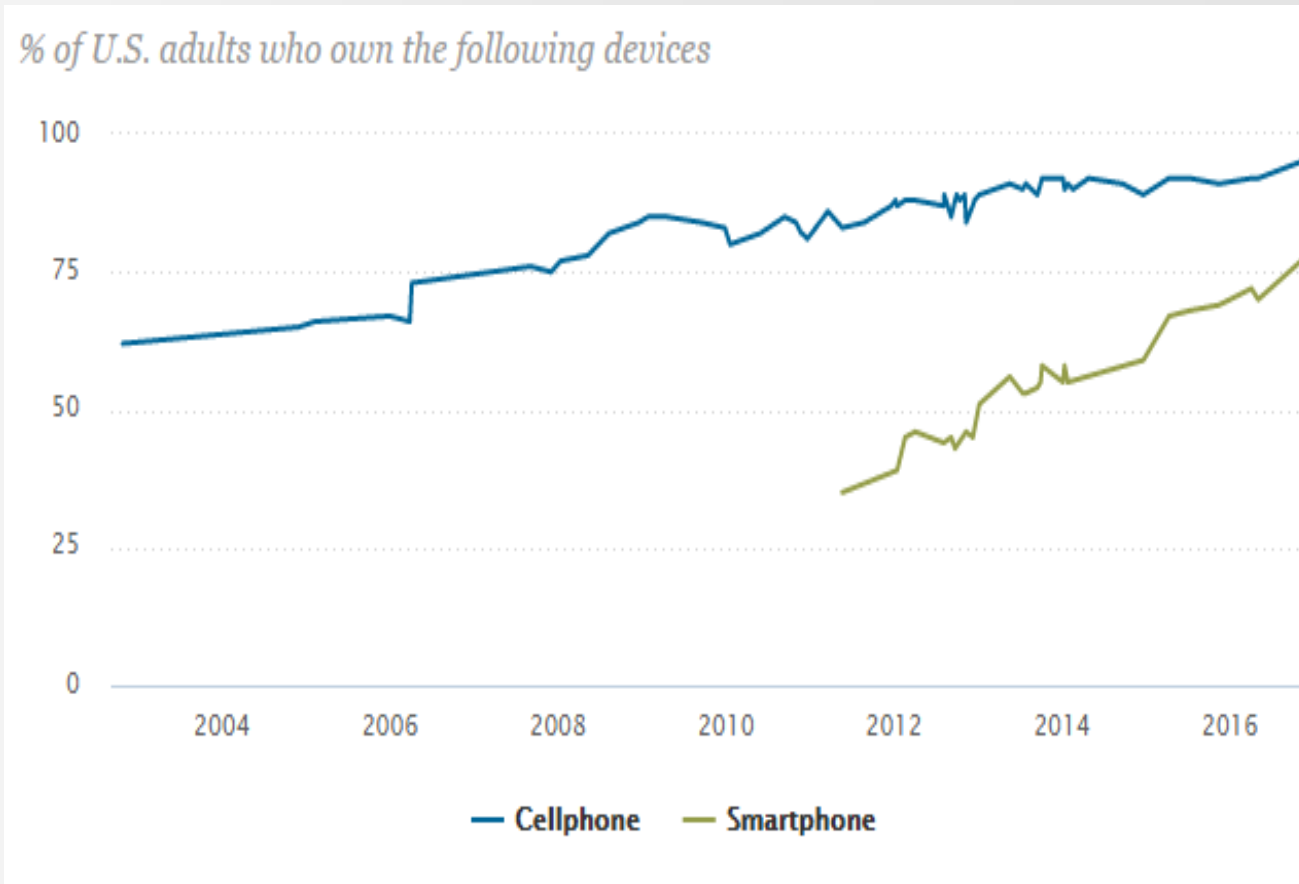
J Hibbard et al, 2009

Co-design of Patient Engagement

- Patient Advisory Councils for patient engagement initiatives
- Surveys of portal users
- According to Donna Smith, MD, executive medical director for patient care services at Virginia Mason Medical Center in Seattle :
“We view patients and their families as equal partners as we **co-design** healthcare processes together, based on their feedback and needs.”
- <https://www.healthdatamanagement.com/news/virginia-mason-builds-on-patient-engagement-tools>

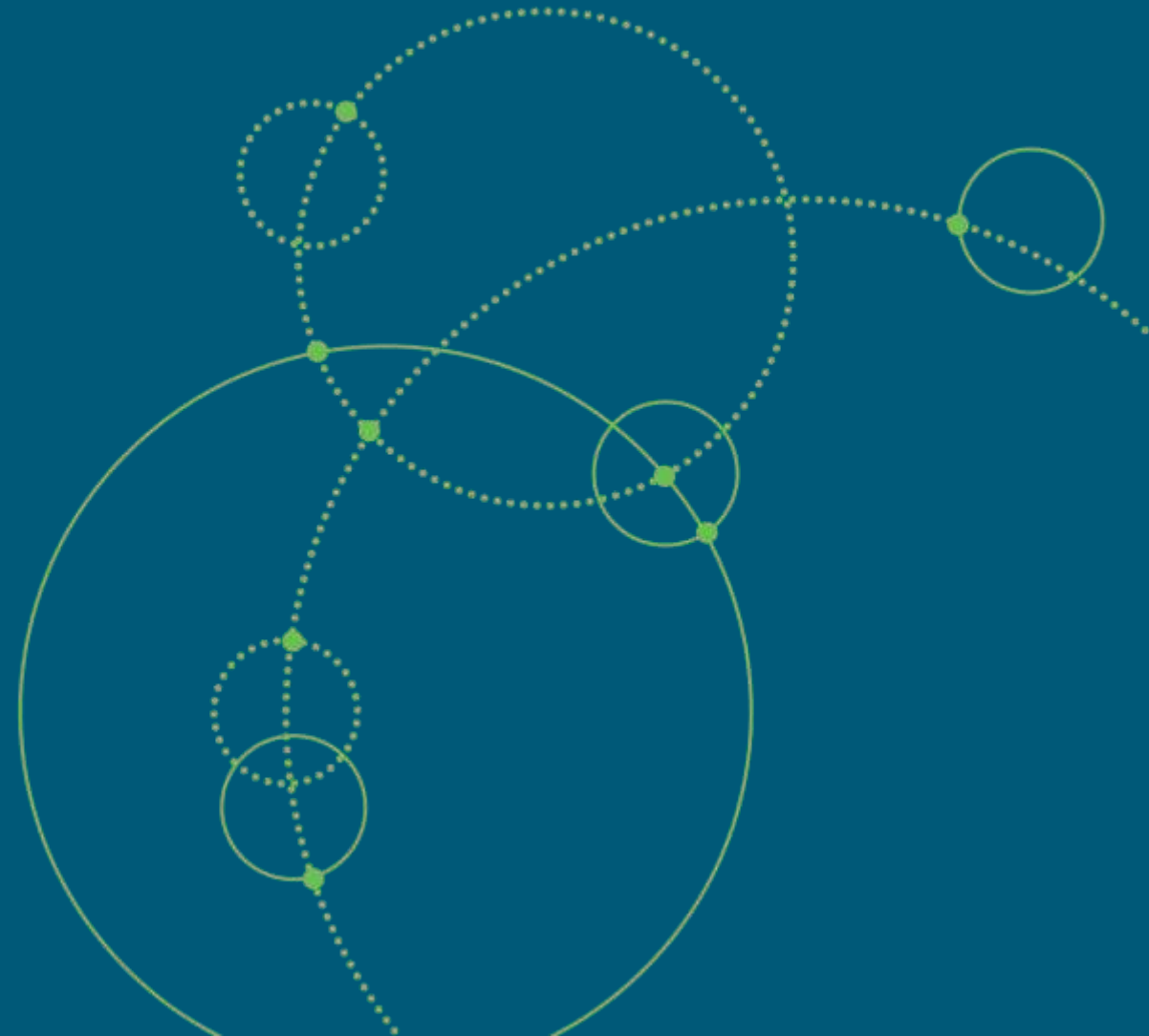
The Need to Go Mobile

- 77% of citizens own smart phones, 95% own mobile phones
- People look at their phones 85 times a day
- Expectation that they can receive any kind of information on mobile



<http://www.pewinternet.org/fact-sheet/mobile/>

Personalization is
needed to engage



Shift in thinking needed

- ❑ Health systems have 5 or 10 times as many patient users as employee users
Example – 10,000 employees, 100,000 patients with portal accounts
- ❑ Information Technology Departments need dedicated help desk for patients, trained in staff in understanding the virtual patient experience and dealing with people who may be challenged by technology
- ❑ Patient use needs to be part of the BYOD strategy
- ❑ Need usability testing for portals and apps which are patient-facing
- ❑ Example: Oschner Clinic in New Orleans – O-Bar – in person help desk on apps

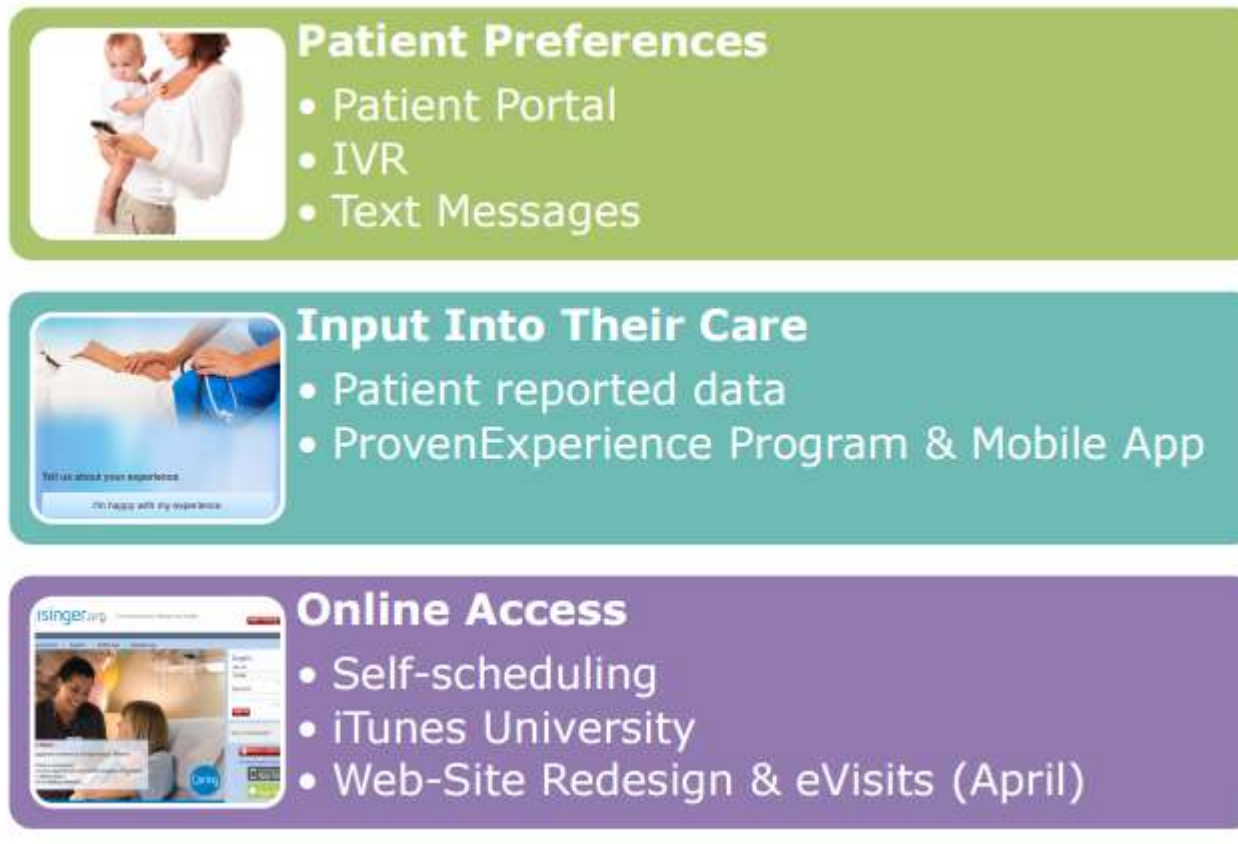
Personal Health Dashboard



How difficult is personalization to implement?

Geisinger Medical Center, Pennsylvania

- Using customer relationship management



Patient Preferences

- Patient Portal
- IVR
- Text Messages

Input Into Their Care

- Patient reported data
- ProvenExperience Program & Mobile App

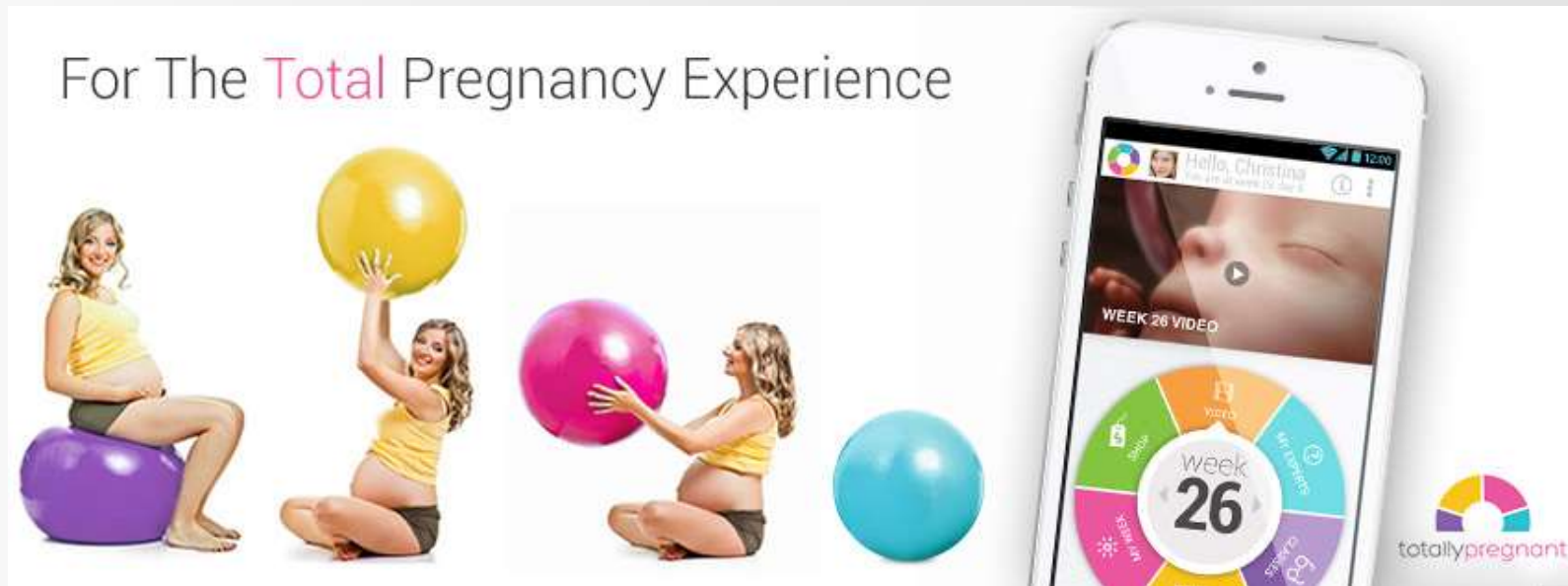
Online Access

- Self-scheduling
- iTunes University
- Web-Site Redesign & eVisits (April)

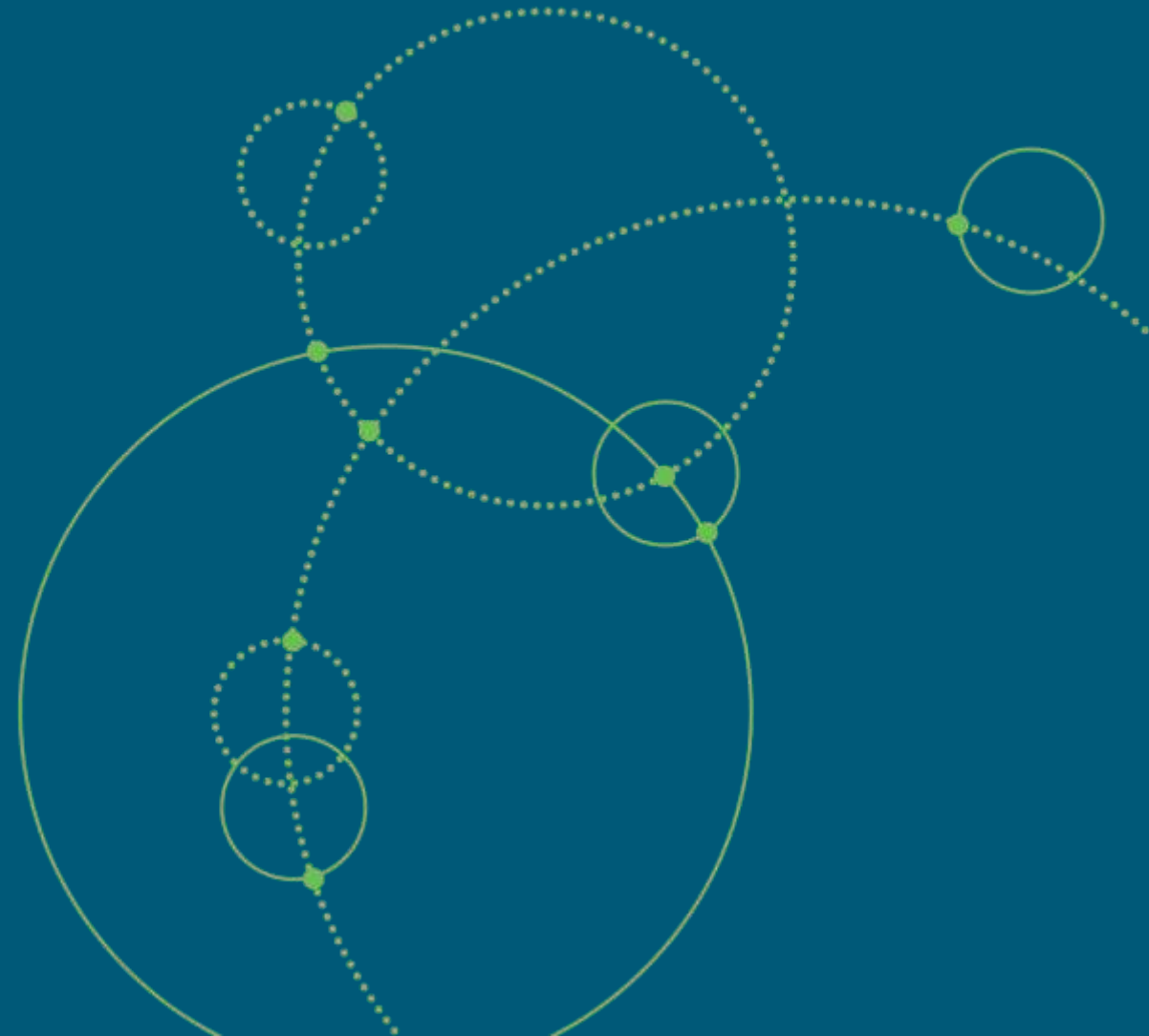
Personalization in Maternity Care

I_am_totaly – pregnant, that is - <http://www.iamtotally.com/>

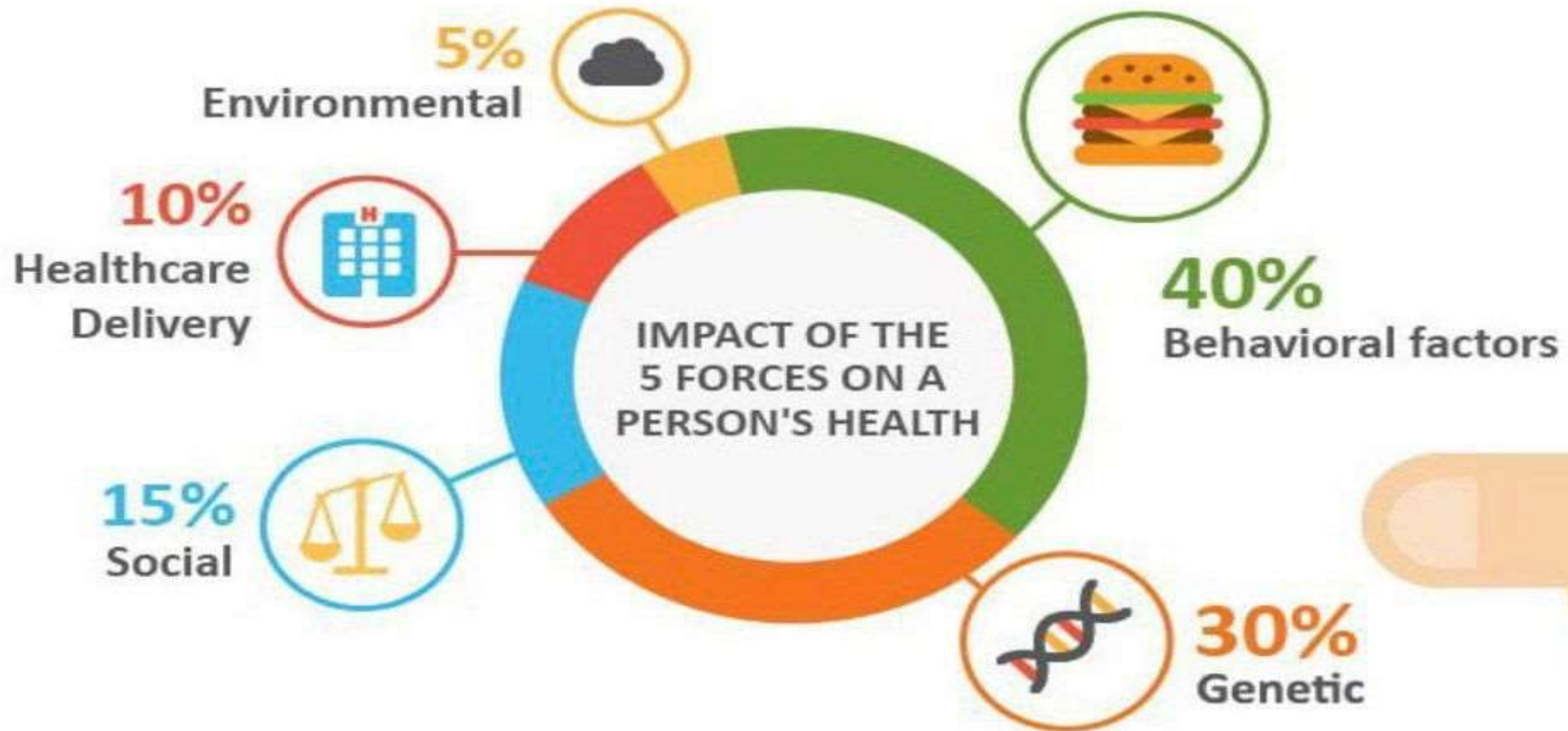
- Customized messaging based on week of pregnancy
- Ability to message care team
- Offer classes locally



How patient
engagement
technologies fit with
population health



THESE ARE THE 5 FORCES



Patient Generated Health Data



Technical Challenges

- Concerns about managing large volume of PGHD
- Questions about accuracy of measurements from devices that collect PGHD
- Use authentication risks
- Lack of PGHD interoperability standards inhibit data exchange and merging
- Data provenance issues
- Gaps in privacy and security protections

Patients and Caregivers Opportunities



PGHD use can...

- Empower patients and caregivers to better manage their health
- Support shared decision-making that considers patients' preferences
- Provide clinicians with a better understanding of the patient's health over times
- Reduce the time, effort, and cost associated with visiting a clinician or research site

Preventing readmission and unnecessary ER visits

Remote monitoring of patients with heart failure who had been admitted to the hospital or visited the emergency room yielded a **savings of \$8,375** per patient monitored.

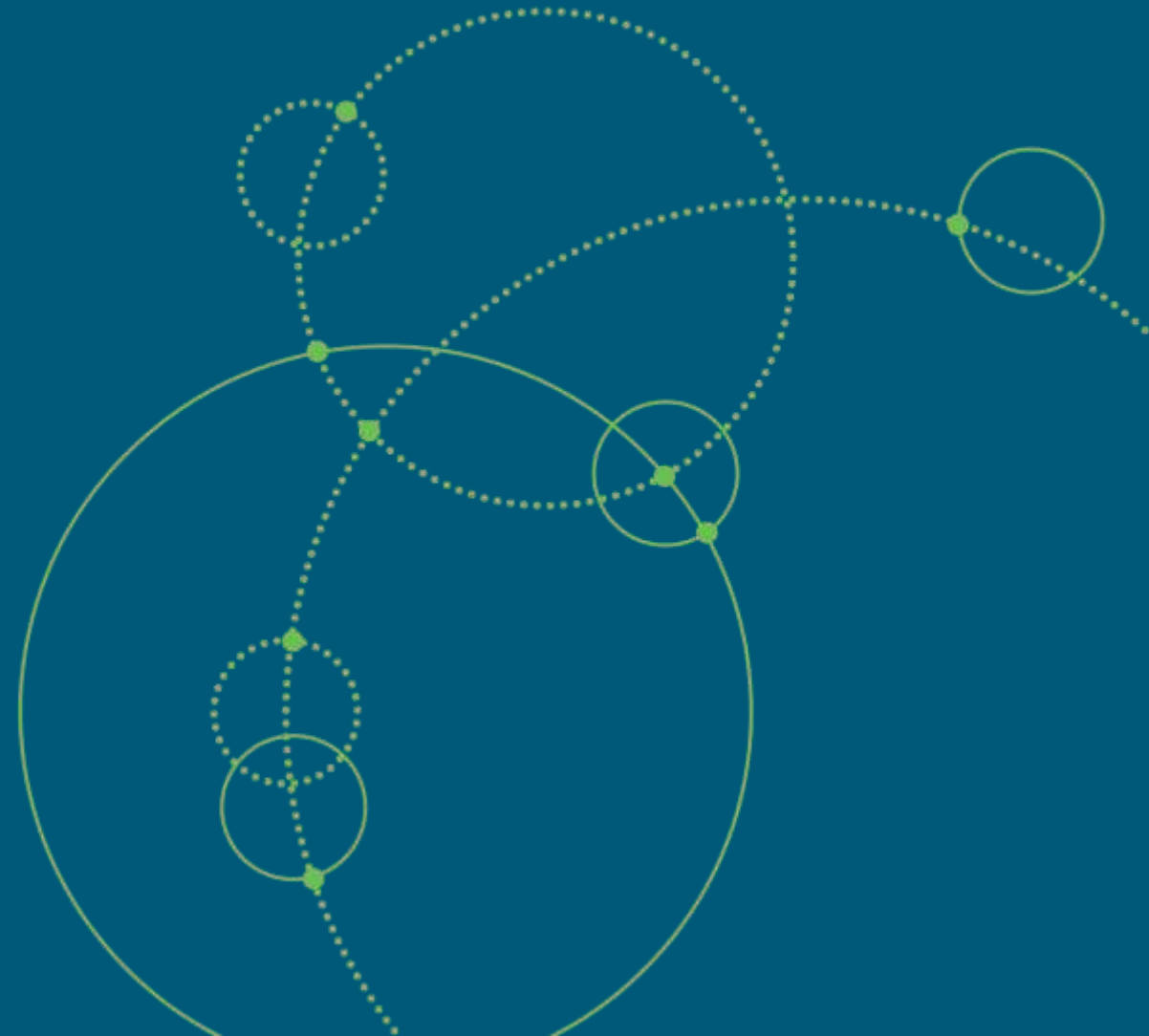
Effect of telemonitoring of cardiac implantable electronic devices on healthcare utilization: a meta-analysis of randomized controlled trials in patients with heart failure. Eur J Heart Fail Feb; 18(2):195-204

Managing Chronic Conditions

Remote patient monitoring for diabetes and hypertension

- University of Mississippi Center for Telehealth
- Monitoring in rural, underserved counties in the state
- 96 percent took their medications as directed
- 83 percent kept their scheduled telehealth appointments
- average hemoglobin A1c level dropped
- [https://www.umc.edu/Administration/Centers and Institutes/Center for Telehealth/Telehealth News.aspx](https://www.umc.edu/Administration/Centers%20and%20Institutes/Center%20for%20Telehealth/Telehealth%20News.aspx)

Helping those
lacking health and
digital literacy and
access



Literacy and Access

- Literacy is not just about health terminology anymore
- Tech literacy is as important
- Access to internet limited for some – both wired and wireless
- Simplifying apps can help



We Must Acknowledge lack of access

- Some users will still be on dialup or slow networks



- Some users only have access at the public library



Local classes on portal use, apps

Cleveland example

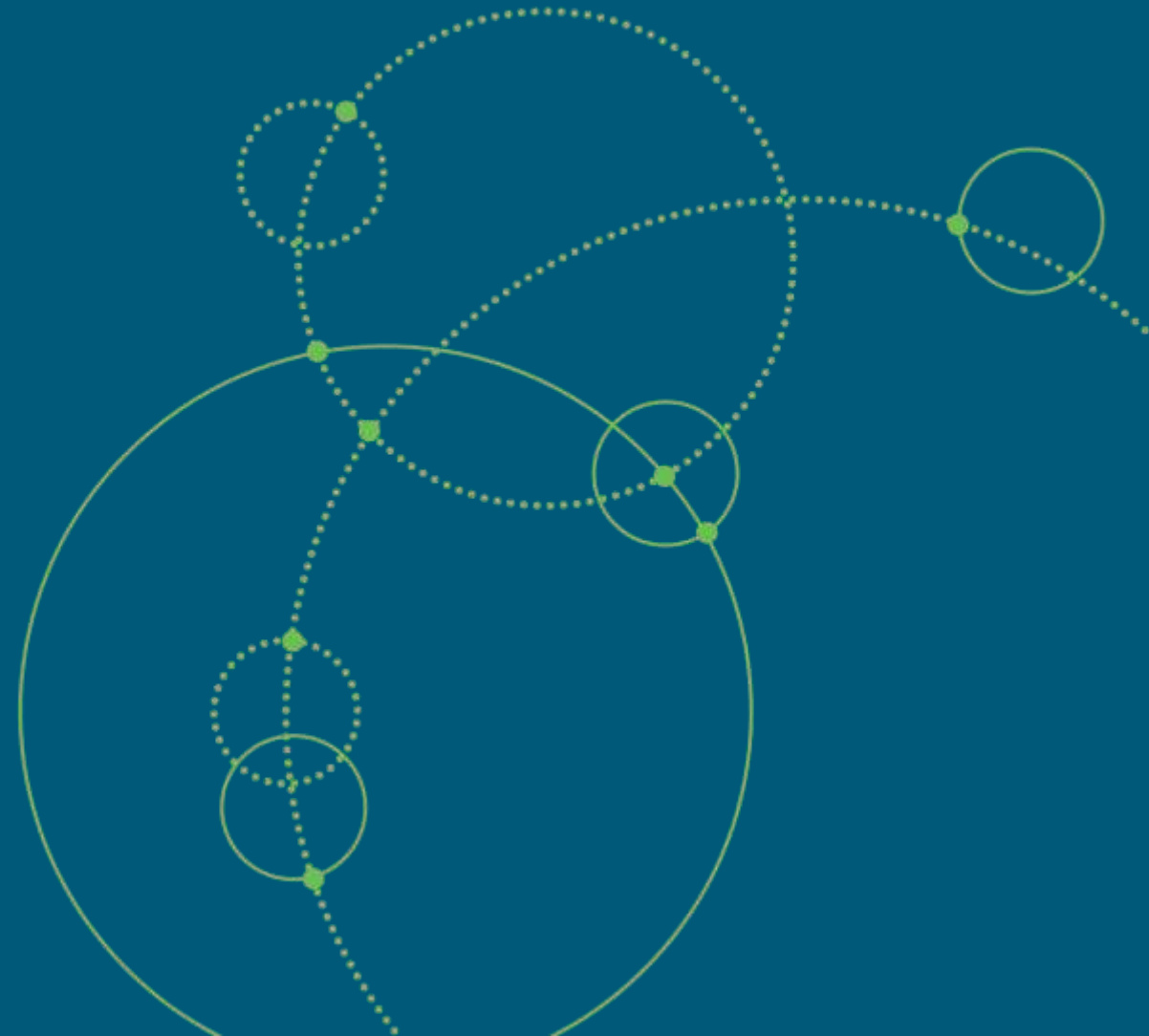
Under an FCC grant (Connect2Health), a researcher developed a program to train inner-city elderly in patient portal use

Classes were conducted in community-based senior centers

High satisfaction rate.



The future is bright
for Personal
Connected Health



Dawn of a New Age of Innovation



Evaluating what works

- ✓ Network of Digital Evidence – NODE Health
- ✓ Diabetes Prevention Programs with virtual coaching work
- ✓ Remoting monitoring in CHF prevents ER visits, readmission
- ✓ New, more sensitive and accurate devices coming
- ✓ Better Artificial Intelligence behind these apps and devices

Remote Monitoring and telehealth will become standard of care

Effect of Home Monitoring via Mobile App on the Number of In-Person Visits Following Ambulatory Surgery

Follow-up care delivered via a mobile app can be used to avert in-person visits following ambulatory surgery.


Mobile app follow-up care affects neither complication rates nor patient-reported satisfaction scores, but it improves patient-reported convenience scores.

JAMA Surgery:

<http://jamanetwork.com/journals/jamasurgery/article-abstract/2612832>

Take Aways

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The Office of the National Coordinator for
Health Information Technology
Patient Engagement Playbook

Use this playbook to help you:

- Facilitate easy enrollment to achieve greater portal adoption
- Meet patient needs online — while also streamlining practice workflow
- Involve caregivers in an appropriate way
- Integrate patient-generated health data to improve clinical decision-making and care

<https://www.healthit.gov/playbook/pe/>



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