The Role of Technology to Support the Management of Chronic Health Conditions

Chronic Disease Self-Management Innovation Community

Presenters: Jeremy Nelson, CEO Afia Inc.
Laura Galbreath, Director, Center for Integrated Health Solutions, National Council for Behavioral Health
Anthony Salerno, Senior Consultant, National Council for Behavioral Health

April 16, 2015
Where have we been?

The Innovation Community has involved the following informational webinars:

• The principles and practices of quality chronic disease self-management approaches
• The Stanford Model of CDSM
• The role of Peers in promoting positive outcomes
• Planning and establishing an organizationally aligned CDSM approach (Using an organizational self assessment of best practices in CDSM)
• Today’s Topic: Technology- It’s role in supporting health
Rationale and Purpose of this webinar

• As in most aspects of our lives, technology is playing an increasingly important role
• There are many ongoing initiatives to explore the added value of technology to support health
• Chronic disease self management for individuals with serious mental health and/or substance use problems is very challenging
• Technology may contribute to improving outcomes for individuals with mental illness, substance use and chronic health conditions
AGENDA

• Introduction
  Tony Salerno

• Overview of Health Related Technology
  Jeremy Nelson

• Lessons learned from a Learning Community on Technology and Health
  Laura Galbreath
Poll Question 1:

How likely is it that technology (apps, smartphones, computer assisted health communication, patient informational portals, wearable devices etc.) will play an increasingly important role in supporting health?

A. Very likely
B. Likely
C. Somewhat likely
D. Not likely (it’s will fizzle out)
Poll Question 2:
What best describes your current thinking about your organizations use of technology to support CDSM?

A. We have comprehensively explored technology supports
B. We have explored in a limited way
C. We have talked about it but not taken any action
D. We haven’t thought much about this topic
Smart Devices

Internet of Health 1.0
Withings Smart Scale
Withings Blood Pressure
Glooko MeterSync
Who tracks their health?

● 45% of U.S. adults live with at least one chronic condition.

Of those who are living with two or more conditions:
● 78% have high blood pressure
● 45% have diabetes

Source: Pew Research
Who tracks their health?

- No Chronic Conditions: 0.19%
- 1 Chronic Condition: 0.4%
- 2+ Chronic Conditions: 0.62%

Source: Pew Research
“Wearables”
Show of Hands
Fitbit Flex ($99)

- Steps Taken
- Distance Traveled
- Calories Burned
- Active Minutes
- Hours Slept
- Quality of Sleep

Sync your stats wirelessly

www.integration.samhsa.gov
Apple Watch
Common Sensors

- Heart rate sensor
- Accelerometer
- BTLE + Wifi
- GPS (Phone)
Watch apps already available

- WebMD Med Reminders
- HealthTap – DocNow
- Vocera – Critical Notifications
- Dexcom – Continuous Glucose
Age of Wonders

Our Amazing Future
“Invisibles”

- Minimal, simple, intuitive
- Seamlessly integrated into the human body
- Potential for better adoption and engagement
- Examples
“Apple to fix Health app after blood glucose measurement issue”

“Diabetics are being warned that Apple’s Health app is not compatible with some blood glucose measurements, meaning [some users] could see inaccurate readings.” – CNET, October 15, 2014
HealthKit/Epic Integration

- Patient is downloads the MyChart app
- Doctor “prescribes” tracking of certain data points
- EHR notifies doc if data is “abnormal”

“I’m sorry, there was nothing we could do for the patient. We tried our hardest, but they had an iPhone 4S. We can’t get their data.”
HealthKit/Epic – Ochsner Health System

● Avoiding readmissions of CHF patients by monitoring weights at home via Withings scales

● Alert docs and pharmacists when weight goes up (likely water retention) to titrate medication

● “O-bar” for support a la Genius Bar
Lessons Learned:

1. Everyone wants Patient-generated Data
2. Epic integration is 1-way
3. Current data points is just the beginning
4. Apple can’t access patient data
5. Healthkit is reimbursable by CMS
6. Hospitals won’t leave out Android
7. Apple Glucose goof not stopping anyone
8. ResearchKit will have big implications
Apple ResearchKit
A software framework made specifically for medical research
ResearchKit

- Enabled by Aggregator technology & device sensors
- Very large pool of potential participants
- Manages secure data collection, sign-ups, consents, compatible devices, etc.
Parkinson’s disease

mPower

University of Rochester
Xuanwu Hospital, Capital Medical University
Sage Bionetworks
Signature
Please sign using your finger on the line below

Use 2 fingers to alternately tap as fast as you can for 20 seconds.

Total Taps
20

Gait and Balance Test
This test measures your gait and balance as you walk and stand still. To complete this test, you’ll need to put your phone in your pocket and connect headphones to follow audio instructions.

20 steps
“Full Stack” Systems
Wellframe – Clinical Tracking

- Payer-, provider-, pharma-driven
- Mobile app for health data collection
- Customizable, flexible clinical protocol
- EHR Integration
Keith Hellickson – PTN0192
Diabetes Management, Depression
54 years old, Male
DAY 35/60

Global Risk Score 24/100

Engagement 68%
Adherence 45%
Responsiveness 72%

Hi Keith, I'm checking up to make sure you remember to get your foot exam!

Thanks Alice, I just had the exam a few hours ago. Things are feeling good!
- Keith

Allow patient response?
- Yes  - No

Send to All

Suggested messages:
Omada Prevent – Prediabetes

- 16-week program targeted at pre-diabetes (8 month self-directed afterwards)
- Smart scale + group chat/cohort
- Based on CDC research
Propeller Health – COPD

- Provider- and payer-driven
- Monitors inhaler use automatically
- Population health tracking (environment, etc)
Lively – Home Care

- Patient-driven
- Smartwatch included (med reminders, step counting, fall detection)
- Smart sensors available (pill boxes, motion sensors, door sensors, etc)
Lively Circle
Specific family members and caregivers can be provided "Circle" access

Safety Watch
Indicates safety—watch status, including whether it's being worn

Daily Activity
Displays certain daily activity patterns—and offers more detail when needed

Notifications
Set up notifications to be delivered by email, text or mobile app

Home/Away
Know when your loved one is home or away

LivelyGram
Pictures submitted to create a personalized photo mailer, delivered through the postal mail each month
“You can now count your steps, measure your glucose levels, monitor your blood pressure and track your caloric intake from your phone or high-tech wristband. But for those dealing with depression rather than diabetes, or trying to keep tabs on their bipolar disorder rather than their weight, the pickings are slimmer.”

Newsweek, November 21st 2014
Tracking Behavioral Health

- 25% of adults experiencing from some form of Mental Illness
- 6% of adults suffer from SMI (schizophrenia, major depression or bipolar disorder)
- 89.3 million U.S. residents lack access to mental health care.
Smartphone Ownership and Willingness to Use to Monitor Mental Health by Clinic

- State (n=100)
- County1 (n=50)
- County2 *(n=50)
- Private (n=100)

Clinic Type

- No Own + Not Willing
- Own + Not Willing
- No Own + Willing
- Own + Willing
Mood Tracking & Basic Interventions
Ginger.io

- Provider-driven

- Leverages smartphone data for behavioral analytics & alerts

- Enables more timely interventions
Tactio Health

Complete, Connected & Comprehensive Health Management.

Tracking points:
- Mood
- Weight
- Body Fat
- Steps / Activity
- Blood Pressure
- Cholesterol
- Glucose
- Nutrition

Additional Info:
- Securing Device
- Connected Devices
- Sharing Data
Age of Wonders
(behavioral health edition)
PRIORI – Passive Bipolar voice monitoring

- Joint research from University of Michigan Department of Psychiatry and College of Engineering
- Uses voice recognition to monitor for manic or depressive states
- Based on MIT research – 10 second review of vocal patterns w/ 98.6% accuracy for Parkinson’s

http://www.uofmhealth.org/news/archive/201405/listening-bipolar
Emotiv Insight

• Consumer EEG & inertial sensor

• Bluetooth integration with smartphone

• Available via API
Muse

- Guided Meditation
- Brain Training
- Improve Stress Response
- Form Habits
83-90% of all adults in the US own a cell phone

In a survey of consumers with serious mental illness (SMI), 72% reported owning and using a mobile device

Households with >$30,000/yr text twice as much as households who make <$75,000/yr

Medicaid patients (79%) are more likely to use text messages than privately insured individuals
National Council Learning Community

Using Mobile Applications to Support Physical Health Improvements For People with Mental Health and Addictive Disorders

• Select from 1 of 3 mobile apps and implement with 25 consumers
• Collect and use data from app in the clinical setting
• Identify how to embed mobile technology more broadly into the org.
Outcomes

- Highly engaged consumers
- New treatment opportunities (group + 1:1)
- There’s value to just having the data
Lessons Learned

• Access to phones & data

• Technology is tough--Android vs. iPhone, app issues, passwords, support, reporting data, EHR

• Experiment: split groups (high engagement / support vs low)
Tips & Tricks

• Affordable Android tablets
• Refurbished smartphones
• Open wifi access points (vs data plans)
• Prepare recruitment material
Q&A

Jeremy Nelson  jeremy@afiahealth.com

Laura Galbreath  Laurag@thenationalcouncil.org