

# Connected Health: Mobile Technology's Impact on New Care Models

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transforming health through IT™



# Why Mobile?

- The mobile health market, is expected to reach \$26 billion by 2017, according to 2013 report, Mobile Health Trends and Figures 2013-2017, from Research and Markets.<sup>1</sup>
- A June 2013 Nielsen report indicated 3 out of 5 U.S. mobile subscribers, or more than 60 percent, own a smartphone, which is comparable to having an internet-enabled computer in their pocket.<sup>2</sup>
- According to industry estimates, 500 million smartphone users worldwide will be using a health care application by 2015, and by 2018, 50 percent of the more than 3.4 billion smartphone and tablet users will have downloaded mobile health applications.<sup>3</sup>
- Today, mobile devices are more powerful than ever before. A typical smartphone has more computing power than Apollo 11 did when it landed on the moon.<sup>4</sup>

# WHO credits mHealth app with helping Nigeria get rid of Ebola

- WHO declared Africa's most populous country Ebola-free for 42 days Oct. 20, 2014
- Nigerian Minister of Communication Technology credited a social media campaign and a real-time reporting Android app used during the outbreak as integral in containing the deadly virus
  - "The phone app helped in reducing reporting times of infections by seventy-five percent,"
  - "Test results were scanned to tablets and uploaded to emergency databases, and field teams got text message alerts on their phones informing them of the results."
  - The phone app, utilized by health workers in Nigeria, was provided by the Santa Ana, Calif.-based non-profit eHealth & Information Systems Nigeria.
  - Mobile plans among Nigerians have skyrocketed from 87 million active users four years ago to more than 131 million now, Johnson pointed out, in her statement

<http://m.mhealthnews.com/news/who-credits-mhealth-app-helping-nigeria-get-rid-ebola>

# Rise of Connected Health

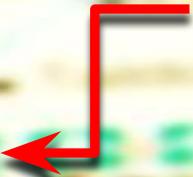
- In 2012, the IOM published [The Role of Telehealth in an Evolving Health Care Environment](#).
- The February 2014 issue of Health Affairs “Early Evidence, Future Promise Connected Health” also included a [“live” Rise of Connected Health briefing](#)
  - “What Is Telehealth; Where And How Is It Used?”



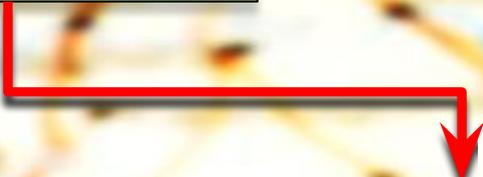
# #mHIMSSROADMAP



A Strategic Framework for Hospitals and Health Systems  
Present and Future State of mHealth

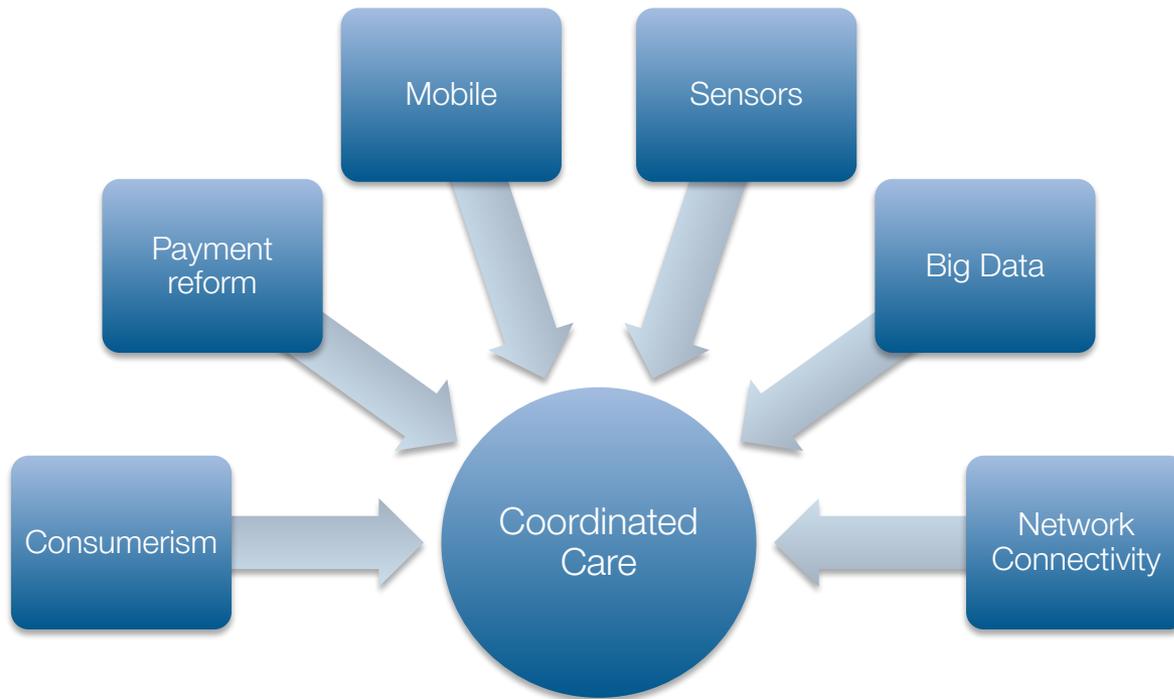


- New Care Models
- Technology
- ROI and Payments
- Policy
- Privacy and Security
- Standards and Interoperability



[www.himss.org/mobilehealthit/roadmap](http://www.himss.org/mobilehealthit/roadmap)

# TECHNOLOGY CONVERGENCE



## Examples

Diabetes Management

Smartphone accessories for monitoring

MBAN sensors

Mobile, low-cost, cloud-based imaging mgt.

Condition-specific solutions incorporating mobility

Mobile patient management with social components

# System Of Engagement

People view themselves as consumers of healthcare throughout the care continuum

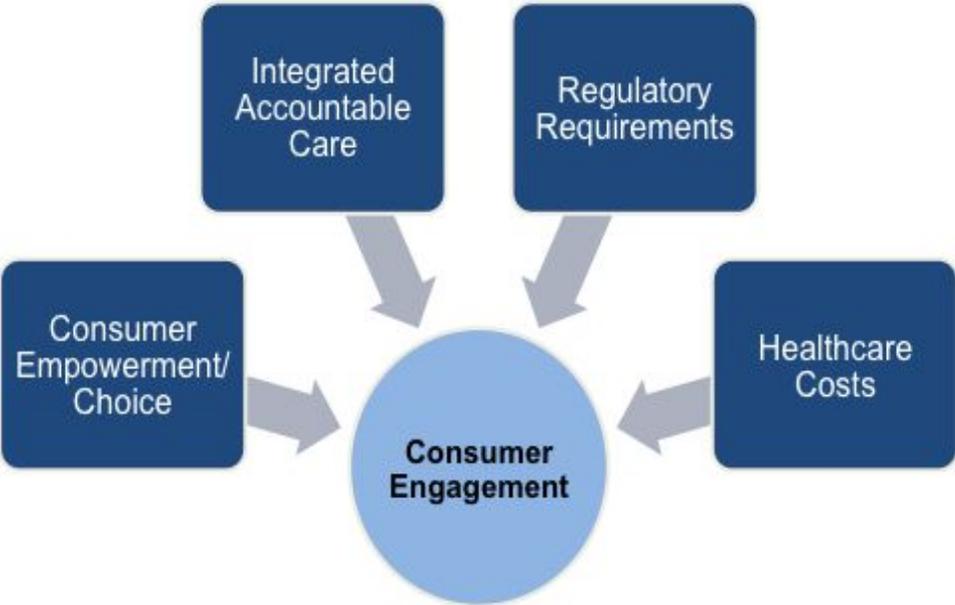
Mobile technology enabling consumers to:

- Better manage health
- Make better healthcare decisions
- Find appropriate care
- Engage and access providers
- Manage ongoing health
- Better access to information

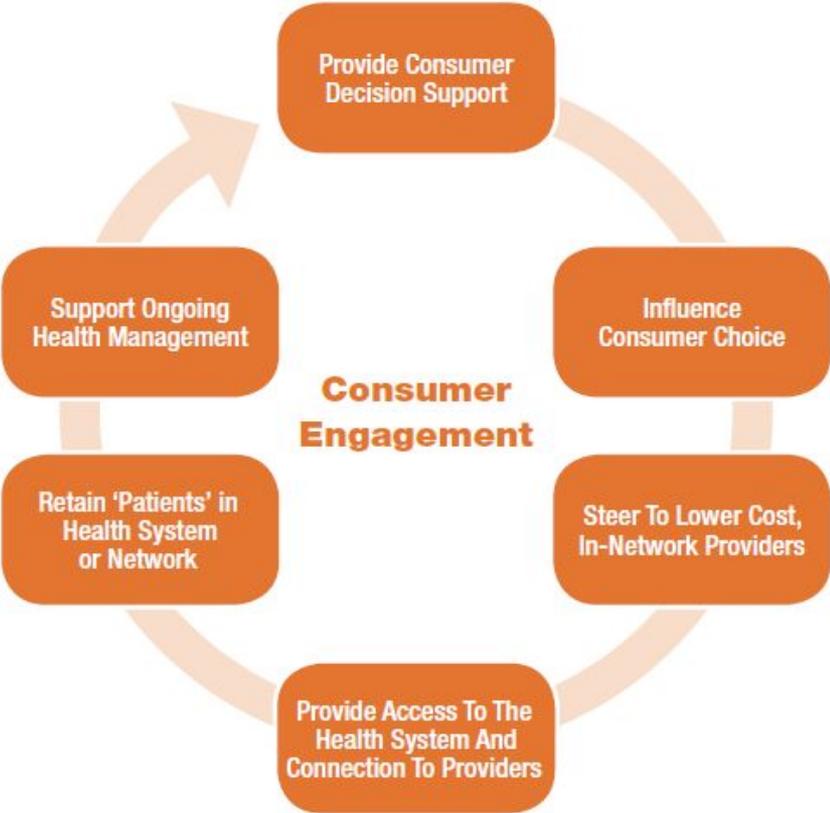


# Consumer Engagement Shifting...

## Key Drivers



## Support Provider Initiatives



# From Hospital To Home

Patient Seeks Care



Patient Transitions to Chronic Care Monitoring Kit



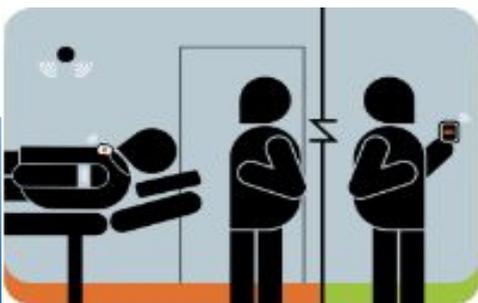
Patient with a Planned Procedure at Hospital



Patient Enters Hospital



Patient Requiring Long-Term Care



Early Patient Discharge/Supplied Monitoring Kit



# Age of the Quantified Self

As of September 30, 2014

- 266 wearable devices on the market (including 118 fitness wearables)
- 23 slated for release before the year is out
- 45 percent of US adults are dealing with at least one chronic condition
  - 19 percent of people with no chronic conditions track their health indicators, 40 percent of adults with one chronic condition do so, and 62 percent of adults with two chronic conditions do so.
- \$2.8 billion has been spent on wearable medical devices
- Expected to grow to \$8.3 billion in the next five years

<http://www.wired.com/2014/11/where-fitness-trackers-fail/>

# Where Fitness Trackers Fail

If you took all the fitness bracelets and smart watches sold in 2014 and multiplied that retail number by six, it still wouldn't match the \$6.3 billion US market for blood glucose test strips.

- People with chronic diseases don't suddenly decide that they're over it and the novelty has worn off
- More developers who'd rather make a splash at a hackathon than create apps and devices for people who can benefit hugely from innovation in this area.
- <http://www.wired.com/2014/11/where-fitness-trackers-fail/>

# Hackensack Alliance ACO: RPM for Chronic Disease

- 40,000 patient population, many of which are elderly, disabled, and living with chronic disease
- Piloted outpatient, mobile disease monitoring and management tool for patients to use in their own homes
- The ACO's goals:
  - 1) Evaluate the impact of nurse-directed patient education on patient self-management of their chronic diseases
  - 2) Evaluate the extent 30-day hospital readmissions decreased as a result of patient disease self-management using a 4G android tablet
- The ACO patients that used the tablet post hospital discharge
  - 5.5% 30-day readmission rate, compared
  - 28% readmission rate for the trial control group
  - Three 60-day readmissions and no 90-day readmissions

# Christus Health - Improving Health at Home: RPM and Chronic Disease

- Care Transition Intervention program to incorporate a Remote Patient Monitoring Solution [RPMS] Pilot study
- The RPMS
  - Home-based monitoring system
  - Engage patients and family members in their own care
  - Seamlessly involving healthcare providers through integration with their clinical information systems
- Prior to enrollment in the RPMS program,
  - 44 patients had an average cost of care of \$12,937 compared to \$1,231 post-RPMS program enrollment
- Overall Patient satisfaction 4.77 on a 5.00 scale
- ROI at \$2.44 at 5-month metric review
- 90% decrease in the average cost of care

# Decreasing Costs and Improving Outcomes Through Community-Based Care Transitions and Care Coordination Technology

- A Massachusetts based AAA, Elder Services of Merrimack Valley (ESMV),
  - Expanded service offering beyond traditional home and community based services
    - Include a care transition program
- Tablet-based Point of Care Surveys with Real-Time Triage Support
  - 39.6% reduction in readmissions
  - \$370,721 in net savings over 6 months
  - 257% ROI in technology

# Additional HIMSS Case Studies

## Patient Engagement

### Use Case Study: Geisinger Health System: Reducing Patient No-Shows

Patients missing appointments represents significant cost to providers, as well as reduces patient satisfaction and impacts quality of care. As part of its patient engagement initiative, **Geisinger Health System implemented a platform to do text messaging and selected appointment reminders.**

### Use Case Study: Geisinger Health System: Weight Management Text Program

Patient lack of compliance to care plans is a barrier to successful chronic disease management. Geisinger Health System **implemented a text message program to better engage patients and improve the quality of care.**

**Use Case Study: Mobile Telemedicine Provides Cost Effective Patient Care in Low-Income Neighborhoods** Children's Medical Center developed a program called MyChildren's School Telemedicine Program **to provide access to care for low income children in the Dallas area and to reduce unnecessary emergency room visits.** Children's is also adding new non-traditional venues.

**Use Case Study: Mobile PHR Improves Patient Engagement, Satisfaction and Care** Children's Medical Center Dallas teamed up with ONC on the "PHR Ignite!" pilot program, a personal health record (PHR) pilot program **designed to engage patients, encourage active involvement in disease management, and provide medication reminders via an iPhone**

# Thank you!

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