Mobile Disease Management: Reviewing the mHealth Landscape

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Do you think that prescribing Digital Health products could become as common as prescribing medications?

a. Yes, in fact more common
b. Probably
c. Never
d. I don’t know what you are talking about
The Future of Medicine

“These days I’m prescribing more apps than medications!”

- “You can take the phone and make it a lab on a chip”
- “The Digital Revolution will create better healthcare”

Dr. Eric Topol
Chief Academic Officer at Scripps Health
Prominent cardiologist
Vice Chairman West Wireless Health Institute

http://video.msnbc.msn.com/rock-center/50582822#50582822

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Data → Information → Knowledge → Actions → Outcomes
New streams are producing more data

By 2015, there will be:

+1B smartphones
+1B personal computers
+400M tablets

Source(s): 2012 Rock Health Big Data in Digital Health Report
The ‘Big Data’ Explosion

The amount of data is growing 40 TIMES faster than the world population

130 1,227 2,720 7,910 35,000 Exabytes

1 EB = 1,000,000,000,000,000,000B = 10^{18} \text{ bytes} = 1,000,000,000 \text{ gigabytes}

Source(s): 2012 Rock Health Big Data in Digital Health Report

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Technology no longer an excuse

- **104.6%** US Wireless penetration *(CTIA, 2011)*
- **55%** Smartphones ownership, climbing @ **20%+ rate** *(Nielsen 2012)*
- **+80%** of **57-88** year olds have a phone, **20-30%** are smartphones *(Forester 2012)*
- **44 million** mHealth downloads in 2012, **142 Million** in 2016 *(Juniper 2012)*
- **93%** of physicians use mobile tech in their daily activities *(HIMSS 2012)*
- **19%** of smartphone users have health apps *(Pew Report, 2012)*
- **$60 billion** global mHealth projection by McKinsey
Labor is no longer an answer
The Rapid Emergence of Mobile Health (mHealth)

mHealth Defined
- Decentralizing healthcare
- Empowering patients and providers

Value Proposition
- Reducing costs
- Improving quality
- Driving engagement
- Creating satisfaction
- Enhancing outcomes
Digital health funding soared in 2012 while traditional healthcare declined.

YoY change in funding (2012 versus 2011)

- All sectors: -2%
- Software: +19% ($8.3B)
- Biotechnology: -4% ($4.5B)
- Medical devices: -16% ($2.3B)

Source(s): PwC Money Tree, based on TTM through Q3 2012 (latest data available)
Key mHealth User Insights

- Evenly distributed across age groups, skew towards women
- Willing to pay out of pocket
- World Wide: 75% have a phone, 25% a smartphone

More U.S. patients (90%) would take a mobile Rx from their doctor than a drug Rx (66%).

We check our phone 150x’s per day!!

Source: June 2013 Digitas Health survey n=2,000 patients with 20 different cardiac, gastrointestinal, and respiratory diseases as well as CNS and diabetes.
The mHealth product spectrum is wide; From Fitness Products to FDA Medical Devices
Those that use data from or control a Med Dev, or claim recommendations, analysis, or interpretations, or transform a mobile device into a Medical Device:
e.g. prevents, diagnoses, treats, or mitigates a disease.
FDA-cleared and regulated “mobile medical devices”

- MobiUS SP1 Ultrasound
- Proteus Helius Pill Sensor
- AirStrip OB
- AliveCor ECG

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Government is advancing mHealth

- NIH views mHealth as a science, holds mHealth summits
- The FDA issued guidance regulating mobile medical apps
- Aligning payment and incentives directly and indirectly (MCOT, PT/INR, Meaningful Use, ACO’s, quality, & satisfaction)
- FTC has fined and shut down mobile app manufacturers making unsubstantiated medical claims
- FCC hiring a Health Care Director to drive mHealth access, adoption, interoperability, and safety.
Affordable Care Act

- Focus on prevention
- Focus on Quality measures
- Cost pressures on providers
- Improved access to Insurance
- Demand for coordination of care
“Mobile Prescription Therapies” (MPT)

+30,000 Health Software Applications

~100 FDA Cleared

Published Clinical Data

Rx Only

<0.01% Mobile Prescription Therapies
End-to-end, integrated solution

0.3% Mobile Medical Devices
MPT Case Study: BlueStar™
Patient therapy reimagined.
What are the main features?

Virtual Patient Coach

- Personalized, Contextual, Real-time Feedback

Clinical Decision Support

- Extending Treatment beyond the office visit
- Longitudinal Analysis Evidenced Based Recommendations
Core Platform Modules

Helping each patient with what they need the most, day-by-day.

**Medication Management**
- Validation
- Reconciliation
- Dosing calculation
- Titration Support
- Drug specific education...

**Symptom Management**
- Sweating
- Nausea
- Blurred vision
- Hunger
- ...

**Lifestyle Management**
- Diet
- Exercise
- Stress reduction
- Sleep quality
- Social support
- ...

**Physiologic Management**
- Blood Glucose
- A1C
- Lab results
- Heart rate
- Weight
- ...

Clinical & Behavioral Algorithms

Educational Content

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Patient-Centered Curriculum

Clinical & Behavioral Content

• Content aligns with the National Standards for Diabetes Self-Management and Support and the AADE 7 Self-Care Behaviors™

• Algorithm driven (medication mgt., standards of care, lifestyle, behavior & metabolic management)

• **Meets Standard 8: “Ongoing Support”** of the National Standards for Diabetes Self-Management Education and Support
HCP Clinical Decision Support

Decision Support Summary

Blood Glucose
- Based on cardiovascular disease (CVD) risk, consider A1c target of < 8.0%.
- A1c and glucose are improved on current regimen. Fasting glucose is well controlled with basal insulin. Still with fluctuations in post-prandial glucose values. Consider adding short acting insulin with meals. Continue to reinforce exercise and proper diet. Refer for medical nutritional therapy if needed.

Blood Pressure
- BP consistently at target. No change indicated.

Lipids
- Good lipid profile. No action needed.

Behavioral
- Patient has not been smoking in the past 2 weeks. No action needed.

Other Recommendations
- Patient has not been meeting A1c targets. Consider adding short acting insulin with meals. Refer for medical nutritional therapy if needed.
- Peripherial Arterial Disease (PAD) screening is recommended.
- Dental visit appears to be overdue. Refer for dental evaluation.
What is the published evidence?

Clinical Outcomes
- 2.0% A1C

Clinical Outcomes
- 1.9% A1C

Influencing Physician Behavior
- 2x Medication Changes

Substantial Cost Savings
- Hospital & ER 58%

2008-2012 Published studies of the WellDoc platform
What are people saying about it?

Type 2 User Feedback

- 80% say “highly useful” to manage their diabetes
- 79% would continue to use
- 92% would recommend

Which Doctors will prescribe?

- 65% not in a pay-for-performance
- 90% in a pay-for-performance

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Commercial Distribution Model

Physician Detailing

Face-to-face physician detailing so they understand the product, its indication for use, and how to prescribe.

Patient Training

Patients are trained face-to-face within two weeks of prescription being dispensed.

Customer Care

Telephonic and online product support for Patients & Providers.

*These services come at no charge to the patient, provider, or healthplan.*
How is it dispensed and paid for?

- Dispensed nationwide via the Pharmacy
- Claims adjudicated via NDC Code through the pharmacy benefit
How do the results compare to the benefits of other prescription products?

Drugs will always be necessary, but they:

- Don’t change patient **behavioral** or clinical pathways
- Don’t **connect** patients, providers, health plans, employers, etc.
- Don’t provide **real-time** data/insight into patient and provider behaviors
- Don’t provide a **platform** to manage quality & reporting
- Don’t provide a **path** to “Meaningful Use” of HIT

Source: Manufacturers’ prescribing information

*Highest available doses were chosen to show maximum A1C reduction*
Thank You!

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