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HEALTHCARE DELIVERY DISRUPTION

Market Trends:

Patients:

- Patients are becoming more engaged and educated about their health
- Patients began to quantify their fitness and health using connected devices and applications
- People are deeply engaged in social networks and are looking for ways to apply that technology in healthcare
- People are increasingly engaged by games and gamification of everyday experiences
- People are spending an increasing amount of time on mobile devices and engage in social and casual interactions
- Mobile devices expanded their roles in the people's lives from basic communication to information gathering, social interactions, gaming, artistic creation, payments, and others

Providers:

- Large hospitals and IDN's are adopting basic electronic records and transitions of care technologies to meet meaningful use requirements as well as "low hanging fruit" type of technological solutions such as in-hospital messaging, storing data on the cloud, and in-hospital patient monitoring and tracking
- Large providers are piloting innovative technologies around readmission management and patient engagement
- A limited number of leading providers have established innovation centers and are formulating their mobile health strategies
- Medium and small providers as well as physician practices are slow to adopt emerging technologies and convert to electronic medical records due to high upfront cost, high maintenance, and resulting drop in productivity
- Physicians are increasingly using mobile devices (smart phones and tablets) for personal use but a the most resistant group to adopt or recommend mobile health solutions

Payers (Insurance Co's and Employers):

- Payers are actively looking for technological solutions to help manage costs and increase revenue
- Select number of most innovative payers (UHG-Optum, Aetna, BCBS) have invested in building or acquiring quantified and mobile health technologies to help them optimize administrative processes, engage patient populations, and manage chronically ill patients, while reducing the chances of an acute event
- Large payers have robust development capabilities and strategy around new healthcare technologies
- Payers have been acquisitive in the provider space in an effort to manage costs and improve outcomes
- Medium and smaller health plans are not nearly as advanced in quantified mobile health as the Top 5



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Government and Regulations:

- Fee for performance
- Accountable Care Organizations
- Affordable Care Act
- Meaningful Use Stages 1,2, and 3
- FDA guidance
- State HIEs, RHIOs, etc.
- Notational Health Information Exchange

Opportunity for Disruption:

- U.S. Healthcare expenditures are exceeding \$2.7T
- Outpatient Care represents 41% or \$1.1T and growing at 6.5% 5-year CAGR
- U.S. spends \$550B more on Outpatient Care on normalized basis than an index of modern western countries
- Outpatient Care describes medical care or treatment that does not require an overnight stay in a hospital or medical facility. Outpatient care may be administered in a medical office or a hospital, but most commonly, it is provided in a medical office or outpatient surgery center.
- Medical Office visits to PCPs and Specialists account for a significant portion of the Outpatient Care Expense
 - Patients wait for weeks to see a medical professional
 - The average time to schedule a family practice appointment is 20.3 days (2009 Marritt Hawkins Survey)
 - Medical expertise is in silos and patients need to make several appointments at different locations to receive consults, diagnostics, and therapeutic care
 - Most in-person visits do not include “on-patient” procedures and are unnecessary
 - 70% of office visits could have been handled by a phone call, or email. (The Wellness Councils of America)

Disruption Enablers:

- Emergence of electronic Personalized Health Records (PHR)
- Increasing adoption of EMR systems and HIEs
- Acceptance of digital technologies by younger healthcare professionals
- 62% of physicians use a tablet device (2012, Manhattan Research)
- Ubiquitous computing - 100% + mobile saturation (~50% have smart phones)
- Need and interest in preventative healthcare
- Increasing adoption of personal connected health devices
- Over 17,000 mobile health apps
- Financial constraints and economic demands



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Examples of Disruptive Innovation:

1. **Adaptive Clinical Intelligence System** – next generation of Clinical Decision Support solutions that enables dynamic learning based on incoming data to provide accurate clinical content and care plans, and continuously adjust the pathway
 - Based on continuous “big data” analysis
 - Broad number of “trackers” and vast library of content
 - Value: largely replacing 70-80% of PCP activity; save patients time, and save payers money
 - Mobile as a primary user interface with Web as a secondary interface
 - Target customers – large and medium payers; large hospital systems and specialty physician groups

2. **Virtual Specialty Clinic** – a virtual medical facility that brings together a nation-wide group of progressive general practitioners and specialists, and allows them to remotely perform consultative, diagnostic, and therapeutic activity on patients.
 - A Telehealth-based interface for providers and patients that serves as technology aggregation platform, pools existing mhealth and connected health solutions to create a virtual integrated care delivery system
 - 24/7/365 access to US board-certified doctors across all 50 states who can provide consultation, perform a diagnostic procedure, and in some cases provide therapeutic solutions utilizing mobile phones, online video, and connected medical devices
 - Utilize readily available technologies including web appointments, Telehealth, connected medical devices, EMR, CDS, and mHealth applications to bring doctors' expertise, relevant medical information, and patients together, while eliminating waiting times and significantly simplifying administrative processes
 - Compliment existing brick-n-mortar practices by providing on-demand consults and generating incremental revenue through up-sell of services
 - Off-loading patient volume for existing practices for revenue share
 - Access to nutritionists, certified dietitians, wellness coaches, diabetes coaches, sleep coaches, therapists in an online environment