The Future of Healthcare Technology

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US Healthcare Spending Is Unsustainable

• **$3.8T** — Annual US Healthcare spend
• **5.9%** — Compound Annual Growth Rate
• **75%** — Treatment of preventable illness ($2.8T = 16% US GDP)
• **1.6%** — US GDP growth rate (2010-14)

• Examples of preventable illness - diabetes, obesity, heart disease, lung cancer, alcohol & drug addiction
US Healthcare Economy Sea Change

- Corporations self-insuring for healthcare
- Insurance companies becoming contract health-plan managers
- Healthcare providers shifting from fee-for-service to value-based reimbursement
- Governments increasingly motivated to reduce healthcare costs
- Technology-adverse decision makers aging out of the system
And in Global Healthcare

- Not enough healthcare providers
- There will never be enough healthcare providers in the foreseeable future
- UN, Ministries of Health, and NGOs are prioritizing solutions to fill the global healthcare gap
- New technology facilitates solutions: mobile computing, artificial intelligence, wireless, “big data”, “tricorders”
The Future of Healthcare Technology

• **mHealth provider automation:**
  medical information, symptom assessment, treatment recommendations, telemedicine, patient engagement

• **mHealth patient empowerment:**
  health information, health assessment, health improvement

• **Analytics using medical and social media data:**
  medical & pharma resource allocation, disease & treatment discovery, patient empowerment
Sharing of Healthcare Data
(technically speaking)

Mark Daly  |  Programmer / Analyst  |  VITL
Senior Software Engineer
Are we talking the same language?

Healthcare Information System

Track 4: Health IT Innovators and Game Changers
Huh?
Are we talking about the same thing?

Healthcare Information System
Whatchoo talking ‘bout Willis?
Standards, Standards, Standards!!
Application of mHealth to Increase Healthcare Capacity and Quality

Barry Finette M.D., Ph.D.
CEO and Founder of THINKmd, Inc.
Professor of Pediatrics and Molecular Biology at the University of Vermont, University of Vermont Medical Center
Company Evolution

- Invention Disclosure
- Internal University review process
- Decision to not move forward with patent and commercialization

- Founder and CEO
- For profit social impact company
- Product with positive social impact
- Accountability and transparency
- Stakeholders = Shareholders
- Monitored through “Benefit Director”
Track 4: Health IT Innovators and Game Changers

Currently....

"If we continue on the current path, 68 million more children under five will die from mostly preventable causes...."

UNICEF 2015 Report: Progress for Children-Beyond averages: learning from the MDGs
Pediatric Global Health Problem

The poor die young simply because they are poor....
Pediatric Global Health Problem

These deaths occur because:

- Global shortage of skilled health workers, specifically doctors and nurses
- Lack of “end of the road” healthcare infrastructure where disease burden is greatest
- Lack of key epidemiological public health and surveillance data

Of all deaths in children less than 5 years, 99% die in these low and middle income countries

1 Physician / 20-100,000

1 Nurse / 2-10,000
MEDSINC is a simple to use integrated mobile clinical assessment, treatment and triage platform designed for minimally trained users.
MEDSINC employs the same medical approach used by board certified pediatricians to clinically assess sick children.

Demographic

Clinical History

Vital Signs

Physical Examination

Compared data with age-specific normative and corrective databases and evidenced-based algorithms (WHO-IMCI)

Weighted Scoring Systems Analysis

Treatment/Triage Recommendations
The beta-stage MEDSINC platform already delivers 80 to > 95% correlations with a physician’s assessment; **sufficient for deployment**
Track 4: Health IT Innovators and Game Changers

**MEDSINC: Innovation**

- Acquires Clinical Data
- Acquires GPS Data

**Clinical Outcomes Studies**

**Epidemiology & Public Health**

**Surveillance / “Outbreak” Analysis**
MEDSINC: Disrupt Health Care Delivery Paradigm

Local Clinic / Hospital

Connect

Village / Community

Empower

Community Health Worker

M.D. / 5,000 Children < 5 yrs old

500 Fold Increase in Pediatric Healthcare Capacity Building

1 CHW / 10 Children < 5 yrs old

M.D. / 5,000 Children < 5 yrs old

Track 4: Health IT Innovators and Game Changers
MEDSINC: Potential Health Outcomes

- Decrease in deaths and long-term disability
- Burden of Disease Children <5 y/o
- Time in years
- Increase in Pediatric healthcare capacity
- Decrease in deaths and long-term disability

Low and middle income countries
MEDSINC: Potential Health Outcomes

Middle-upper income countries

Home

Doctors Office

Emergency Room

Included patient video clip/“face-time” component

Healthcare cost Savings

Appropriate...

Improved Health Outcomes

Track 4: Health IT Innovators and Game Changers
Patient Empowerment with Self-tracking

Uwe Heiss
Founder of Healthcare Startups
A startup is the creation of a sustainable organization that addresses suffering.

The right startups liberate and empower us.

The wrong startups increase our attachment.
My Mission since 2001

PATIENT EMPOWERMENT
My Start-up Family Tree

Patient Empowerment Systems, LLC
2003

Dynamic Clinical Systems, Inc
2004

Zeebo Effect, LLC
2014

Überdas, LLC
2015

Track & Share Apps, LLC
2009

?  
2016
Patient Empowerment Systems, LLC

Hack into hardware for Self-Tracking

‘03: How to get hardware to all who need it?
Patient Reported Outcomes in Routine Care

‘04: What makes hospitals create transparency?
Self-Tracking Apps

August 18, 2013 - September 29, 2013

- Back-pain
- Golden Pill
- Physical Therapy
- Weight
- Sleep

‘09: How to help doctors work with patients’
self-tracked data?
Early Adopters of Self-Tracking

Worked with 11 out of these 12 hospitals

‘12: How to “Cross the Chasm”? 
Zeebo Effect, LLC

Integrated treatment and outcomes tracking

‘14: How to get from Medication “Compliance” to Smart Medicine?
überdas, LLC

Healthy User Interface Design

‘15: How to move from Addictive Gamification to Authentic Experience in the Digital World?’
Health Data Quants

Health Data Analytics and Solutions

Personal

Tracking Data

Medical  Commercial

'16: Methods, Ethics, Goals of Digital Health?
Match.com for Patients & Doctors
Minus the Romance

'16: Match drives Communication drives Collaboration drives Outcomes
Contact

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