Improving Community Health with Technology: The Latest from the Health Technology Innovation Incubator

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The Perfect Storm

Big Data

Advances in Technology

Affordable Care Act
More than 5 billion people are calling, texting, tweeting and browsing on mobile phones worldwide.

Decoding the human genome originally took 10 years to process; now it can be achieved in one week.

YouTube users upload 48 hours of new video every minute of the day.

571 new websites are created every minute of the day.

Data systems have moved from relational databases to advanced analytics.
From Sick Care to Health Care
Better quality, accountability at lower costs
“Tipping Point” in its most basic meaning refers to a critical point when unprecedented changes occur rapidly with irreversible effect.
Silos and fragmentation
Objectives

- Explain the value and benefits of using mobile apps, texting, and gaming technology to incentivize health behavior change.
- Describe the stages of Innovation: Idea generation through to a technology product.
- Provide examples of and discuss the developmental process of two health tech products.
What is Innovation?

- Innovation is the sum of Education, Practice and Research plus the dissemination and commercialization of products.
Innovation is...

A process by which...

- Builds insights about its customers (students, providers of health care, and patients).
- Identifies and evaluates unique market opportunities
- Develops a stream of winning products that improve health and funds science.
The value and benefits of health technology strategies are far-reaching

- **Complete and accurate information**: Care givers have access to the information they need at their fingertips, to diagnose problems and provide the best possible care.

- **Improved coordination of care**: Information can be shared instantly across care communities, including physician offices, hospitals and health systems, leading to better care coordination.

- **Patient engagement**: With the ability to receive their health information electronically and share it securely over the Internet, patients can take a more active role in their health care and that of their families.

- **Improved patient safety**: Instant electronic access to information about medications, allergies, conditions and treatment history can greatly reduce the risk of medical errors.

- **Healthier patient populations and communities**: Crucial data about diseases and outcomes captured at the point of care becomes available to other health professionals locally, regionally and nationwide.
Penn Nursing Health Technology Incubator

http://www.nursing.upenn.edu/innovation/health-technology-lab/Pages/default.aspx
University of Pennsylvania School of Nursing Innovation & Technology Model

Social Impact Investing People-Society-Profit

Healthcare Silos complicate access, degrade quality, and inflate healthcare costs.

INCUBATOR for Innovative projects that use technology to solve access, quality and cost problems

Access
Care Coordination
Cost
Quality

Financial Assumptions
- A Social Impact Investing Model is foundational
- Projects focus on using technology solutions for healthcare
- Evaluation Research is a budgeted part of every project accepted for incubation
- Value propositions and value strategies are defined for each project and reflected in contracts
- Student-Faculty Collaboration contracts
- Investor-Student/Faculty-University contracts
- Licensing reflects value propositions defined in above contracts

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Steering Committee
- Nancy Hanrahan-Chair
- Yvonne Paterson, Nursing
- Kathy Bowles, Nursing
- Barry Silverman, Engineering
- Susan Margules, Engineering
- Chris Murphy, Computer Science
- Steve Sammut, Wharton
- Jacob Grey, Wharton Social Impact
- Joy McIntyre, Communications
- Cynthia Dahl, Law
- Karina Sotnik, UpStart, CTT
Typical elements in the innovation process …

* concept/specification
* generation of ideas
* preliminary screening
* feasibility testing
* evaluation
* development
* pilot production

* preliminary product test
* marketing plan
* test marketing
* production plant development
* market launch
Sexi U

Learn
Ask
Talk
Welcome to the Transplant Trail...

Your journey to making life full and happy and keeping your organ transplant healthy and long-
Adolescents with HIV
Medication Management

Nadia Dowshen, MD
Warren Longmire, BES
Scott Schmidt, BA, BSN, RN
Kerry McLaughlin, RN, BSN,  
Founder & St. John’s Employee

Jennifer Abraczinskas, MD,  
Clinical Programs Contractor Camden Coalition of Healthcare Providers

Business Development

Charles Coltman, CEO Health Platforms  
Mobile health for chronic disease

Technical

Seth Archambault,  
DoerCreator.com

Jacob Abraham,  
Application Architect

Kalai Jeganathan,  
Developer
Value

- 16,000 Nursing Homes in the U.S. with ONLY 88% occupancy
- 178 Billion dollar industry, with 2.5 million patients engaging with a Nursing Home annually
- 2020 projections are 6.6 million nursing home residents
- Food Drink
  - Likes Coke
  - Likes Hot dog
  - Dislikes Broccoli
  - Dislikes Turkey Sandwiches

+ Talk About
+ Don't Talk About
+ Past Life
+ Quirks
<table>
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<th>Grandpa Bob</th>
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Jane Bingley |
| Mood            | Feb 16 2013 12:00 AM  
GRUMPY  
Jane Bingley |
| Mood            | Feb 15 2013 12:00 AM  
ANXIOUS  
Jane Bingley |
| Fell            | Feb 15 2013 12:00 AM  
Jim Bird |
| Mental Status   | Feb 15 2013 12:00 AM  
Oriented x 2  
Jane Bingley |

- Real Time Monitoring of Patient’s Emotional and Physical Status
- Care Coordination and Collaboration
- Reduction of Hospital Readmissions
- Health Data Science:  
  http://www.youtube.com/watch?v=2uRKO9Tsmc4&feature=youtu.be

- Asteroid Assault:  
  http://youtu.be/-eBFNpOj7lw

- ED Optimized:  
  https://www.youtube.com/watch?v=KMr5IJqzdvM&;feature=youtube_gdata_player

- Interconnectify:  
  http://youtu.be/lwrBiWJdrNw