Redesigning patient-centered care through digital health technology and quality improvement

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Andrey Ostrovsky, MD
Care at Hand
@andreyostrovsky

Greg Mascavage
GE
@gmascavage

A Bit About Your Faculty

Andrey Ostrovsky, MD
Co-Founder & CEO

Greg Mascavage
Experience Design Leader
Session Objectives

- List at least three ways in which technology is upsetting the status quo of health care delivery
- Explore tools and methods that organizations can use to redesign care experiences
- Apply design thinking and QI to improving use of technology in the primary and community based care experience

Session Outline

- The Need and the Opportunity
- Emerging technology trends and challenges
- How design fits into QI
- Introduction to design thinking
- Break (10 min)
- Workshop #1: New City Experience
- Workshop #2: New Primary Care Experience
- Summary and Take-aways
The Need and the Opportunity

**EXHIBIT 1**

STATE OF THE HEALTH CARE SYSTEM

1. Homicide 10,600
2. Parkinson's disease 20,500
3. Suicide 36,650
4. Pneumonia and flu 53,600
5. Cerebrovascular diseases 128,600
6. Cancer 568,700
7. Heart disease 598,600
8. Iatrogenic 1,000,000

Our current health care system is the #1 contributor to sickness and death in the US.

Wasteful spending in behavioral, clinical, and operational areas includes things like:

- $2.6T annual investment in the US
- $1.2T wasteful spending

- 8.9 Million unnecessary hospitalizations
- 7.5 Million unnecessary medical and surgical procedures

If you are admitted to a hospital today:

- 1 in 6 chance you will end up back in the hospital in a month
- 1 in 10 chance your treatment will include a medical error
- 1 in 300 chance you will be killed

You are 33,000x more likely to die from a hospital error than a plane crash.

IATROGENIC adjective [ˌaɪtrəˈdʒenɪk] 
A condition that is caused by medical personnel, procedures or by exposure to the environment of a healthcare facility.

1,000,000 deaths = 7 jumbo jets crashing every day for a year.

Proportional Contribution to Premature Death

Genetic predisposition 30%
Environmental exposure 5%
Health care 10%
Behavioral patterns 40%
Social circumstances 15%

Source: Schroeder, NEJM. 2007. Adapted from McGinnis et al.
Enter New Payment Models

Source: 2012 Bipartisan Policy Center Report: Lots to Lose: How America’s Health and Obesity Crisis Threatens our Economic Future
Enter New Payment Models

- Readmission reduction program
- Value-based purchasing program
- Medicare Shared Savings
- Bundled payments
- Duals demonstration program
- Community based care transitions program
- Medicaid Waivers
- Money follows the person
- Community First Choice
- Chronic Care Management
- Balanced improvement program
- State innovation models

Enter New Technology

The Obamacare Start-Up Boom: Health ventures rush to cash in on the law

Never Offline.
Many apps – little guidance

In Search of a Few Good Apps

Many more apps coming

Funding in the first three quarters of the year has skyrocketed past the total invested in 2013. Although deal volume is lower, investors are putting more money in fewer startups, indicating the market’s gradual maturation.
The Gartner Hype Cycle for Technology

Adapted from: “Hype Cycle for Healthcare Provider Technologies, 2005” G00127850

Apps come, apps go, some stay

Source: Gartner 2014
Only 23% of vendors had research to support their claims.

![Bar Chart]

How to get from 1,000 to 5 to 1 app?

![Innovation Report]

Only 2% of technologies improved all 3 aims

Major gap in patient-focused technologies

How do we design experiences and technology to improve patient outcomes and experience?

Transforming Care at the Beside

- Launched in 2003
- Collaboration between Robert Wood Johnson Foundation & IHI
- Leverages Quality Improvement & Design Thinking
Design Thinking

Design Thinking involves the integration of technology, business, and human values to drive innovation. The diagram illustrates how these three elements intersect to create a new approach to problem-solving and innovation.

Human Centered

The human-centered approach focuses on understanding and empowering users to drive innovation and success. This involves considering user needs, preferences, and behaviors in the design process.
Design Innovation

Iterative
The Process

- **Empathize**
- **Define**
- **Ideate**
- **Prototype**
- **Test**

Empathy
Empathy

Define
Ideate

Prototype

Source: IDEO
Test

Debrief
Workshop #1: Redesign the New City Experience

Break
Where does design thinking fit into QI?

Process Improvement 101
Rapid Cycle Testing – Quality Improvement

Why is rapid cycle testing so important?

Cash Balance

Adapted from Langley et al. The Improvement Guide
Why is rapid cycle testing so important?  

Get better outcomes faster and cheaper
Quality Improvement: Aim

Adapted from Langley et al. The Improvement Guide

Examples

We will help hospitals | reduce 30 day readmissions | by 40% | by providing care transitions services | at ½ the cost of traditional transition services | within 6 months

We will help hospitals | achieve MU2 compliance | for 2 of 16 requirements | by serving as a post-acute recipient of a discharge care plan | while providing essential community resources | within 12 months

We will help Duals plans | decrease SNF LOS | by 30% | by providing a community based transition service | that can identify and prevent early medical and nonmedical risk factors for readmission | within 6 months
Quality Improvement: Measurement

Quality Improvement

- Aim
- Measurement
- Drivers

Adapted from Langley et al. The Improvement Guide

Measurement: Tips for effective measurement

Remember: Data will be plotted over time
- Improvement requires change, and change is, by definition, a temporal phenomenon

Seek usefulness, not perfection
- Measurement is not the goal; improvement is the goal

Use sampling
- Sampling is a simple, efficient way to help a team understand how a system is performing

Integrate measurement into the daily routine
- Useful data are often easy to obtain without relying on information systems
Quality Improvement: Drivers

Drivers: component parts

Aim or goal of the improvement effort

Primary drivers - system components that contribute directly to the chosen aim or goal. Processes, rules of conduct, structure

Secondary drivers - elements of the primary drivers and which can be used to create change projects. Components and activities

Relationship arrows - show the connection between the primary and secondary drivers. A single secondary driver may impact upon a number of primary drivers

Change Strategies - Specific actions/interventions can you make that will affect these drivers, aka, potential QI ‘changes’ to be tested
Aim Statement

Help AAI secure direct reimbursement from hospitals by providing care transitions services at net positive ROI for hospitals | 3 months

Primary Drivers

- Inefficient use of coaches
- Inefficient data management
- High refusal rate
- Opt-in process
- Coaches doing administrative work rather than enrolling
- Same coaches doing hospital and field work
- Inefficient enrollment process
- Paper based/access-based data management
- Opt-in process

Secondary Drivers

- Use partial FTE of admin staff to do scheduling
- Reinforce hospital vs field role for each hospital
- Care at Hand on-boarding & risk assessment
- Care at Hand to house patient profiles, care plans, list bill
- Formally change language to opt-out process

Change Strategies

Workshop #2: Redesigning the Primary Care Experience
We all die.

The goal isn't to live forever, the goal is to create something that will.

-Chuck Palahniuk