Achieving The Triple Aim: Quality Improvement Methods and Value in Health Care

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Health Care Payment System

• Paradox
• Severe Market Failure
Four Forces of Transformation in Health Care

• The Triple Aim
• The Value Equation
• Health Care Finance
• Payment Reform
Oral Health
And The

TRIPLE AIM

Improve the Patient EXPERIENCE
Achieve Better HEALTH Through Improved Outcomes
Manage or Reduce COSTS
The Value Equation

Value = Quality

Cost
Value Proposition

• Product or service that can help customs more effectively, conveniently, and affordably to get what they want done.
Value Drivers

• Macro Level
  • Policy
  • Financing System
  • Industry Structure

• Organizational Level
  • Leadership
  • Value Proposition

• Micro Level
  • Process Maps
  • Statistical Process Control
Components of Value at the Micro-System Level

Value = Technical Skills + Non-technical skills + Designed Processes

Culture of Health

Critical Human Factors for Team skills:

- **Situational Awareness-ME**
  - Being aware of what is going on around you and understanding what the information means

- **Communication- YOU**
  - SBAR (Out)
  - Closed-Loop Communication (IN)

- **Shared Mental Model-US**
  - Common understanding of the situation and the plan
Human Factors #1
Human Factors #2
Failure Proof

• Failure Proof: When complex system has set of defensive barriers that provide defenses in depth.

• Accomplished By Process Design
  • Forcing Functions
  • Countermeasures
Process Design
Premier Perinatal Safety Initiative (PPSI)
2006 to 2012

• Initiative to improve perinatal safety in 14 hospitals across 12 states
• 7-year prospective design using Quality Improvement Collaborative (QIC).
• Three-part intervention:
  1. Standardization of evidence-based care
  2. Interdisciplinary teamwork training
  3. Systematic performance feedback coupled with routine education
Care Standardization

- Care was standardized using three bundles
- Each hospital created an interdisciplinary team of a physician and nurse champion who directly led all interventions.
- A train-the-trainer method deployed to sequentially train a team from each hospital, which in turn trained staff in their respective perinatal units.

Table 1: Three Perinatal Care Bundles and Bundle Elements

<table>
<thead>
<tr>
<th>Elective Induction</th>
<th>Augmentation</th>
<th>Vacuum Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestational age ≥ 39 weeks</td>
<td>Documentation of estimated fetal weight</td>
<td>Alternative labor strategies considered</td>
</tr>
<tr>
<td>Or documented medical indication for induction if less than 39 weeks gestation</td>
<td>Normal fetal status</td>
<td>Informed consent discussed and documented</td>
</tr>
<tr>
<td>Normal fetal status prior to onset of oxytocin</td>
<td>Pelvic exam prior to onset of oxytocin</td>
<td>Estimated fetal weight, fetal position, and station known</td>
</tr>
<tr>
<td>Pelvic exam prior to onset of oxytocin</td>
<td>Recognition and management of tachysystole</td>
<td>Maximum application time and number of pop-offs predetermined</td>
</tr>
<tr>
<td>Recognition and management of tachysystole</td>
<td></td>
<td>Cesarean and resuscitation team available at delivery</td>
</tr>
</tbody>
</table>
Findings

• Birth outcome and malpractice claim activity analyzed for:
  • 185,373 births
  • 125 perinatal malpractice claims
  • Malpractice costs: $27,266,019
    • Indemnity: $23,151,569
    • Legal defense: $4,114,449

• Overall, hospitals’ bundle compliance significantly improved from baseline to intervention periods (shown at right)
Reducing maternal AOI harms

**PPSI trend in reducing maternal harms**

Run Chart of the Average Number of Patients with Maternal Adverse Events per 1,000 Deliveries by Quarter over 28 Quarters (14 PPSI Hospitals)

Median = 37.1

*According to run chart technique, observations that fall on the median are discounted from the analysis.*
Table 2: T-tests for Composite Adverse Outcomes Index (January 2006-December 2012)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse Outcome Index</td>
<td>0.055</td>
<td>0.047</td>
<td>-0.008 (-14.5)</td>
<td>0.032</td>
</tr>
</tbody>
</table>

Figure 3: Run Chart of the Composite Adverse Outcome Index of Fourteen Hospitals (January 2006–December 2012)

Note: The run chart shows the effects of the interventions on the adverse outcome index. Intervention launches are indicated. Two periods of special cause are noted.
Changes in OB vs. Non-OB Malpractice Activity

- Significant declines in obstetrics claims activity:
  - Number of claims paid
  - Total malpractice losses paid
  - Total indemnity losses paid

- No significant declines in non-obstetrics claims activity

### Table 5: Changes in Baseline versus Intervention Period Malpractice Liability for Perinatal versus Nonperinatal Related Claims at Participating Hospitals (2006-2009)

<table>
<thead>
<tr>
<th></th>
<th>Nonperinatal Claims</th>
<th>Perinatal Claims</th>
<th>p-Value for Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of claims paid (average per hospital)</td>
<td>6.54 (6.96)</td>
<td>3.00 (30.70)</td>
<td>-55.0%</td>
</tr>
<tr>
<td>Number of claims paid</td>
<td>11.54 (10.28)</td>
<td>10.00 (79.01)</td>
<td>-13.3%</td>
</tr>
<tr>
<td>Total amount of losses paid (average per hospital)</td>
<td>$4,039,164 (6,899,083)</td>
<td>$4,184,698 (5,349,142)</td>
<td>-10.4%</td>
</tr>
<tr>
<td>Total amount of indemnity losses paid (average per hospital)</td>
<td>$4,031,426 (6,158,116)</td>
<td>$3,637,287 (5,047,903)</td>
<td>-9.8%</td>
</tr>
<tr>
<td>Total legal defense costs (average per claim)</td>
<td>$157,738 (371,444)</td>
<td>$557,411 (480,822)</td>
<td>-18.3%</td>
</tr>
<tr>
<td>Average amount per claim paid</td>
<td>$438,349 (478,019)</td>
<td>$1,240,960 (2,074,385)</td>
<td>588%</td>
</tr>
</tbody>
</table>

Note: *Significance tested using paired t-test.
*significant p-value.
QI Techniques to Improve Value

Process Map
Statistical Process Control
Process Engineering and System Design

• System
  • A set of interdependent component parts forming a complex whole

• System Design
  • Assemble and align interdependent components to achieve desired goals

• Process
  • Series of steps to produce an outcome
Process Engineering:  
*Definition of a Process*

1. Series of steps to produce output (product or service)  
2. Is a value chain  
3. Organization is only as effective as its processes
Process Map

• A diagram with symbols to illustrate process steps and relationships
Example of a Process Map:
School Based Immunization Clinic

- Process Begins
  - Send permission letters to parents
  - Consent form returned?
    - Yes
      - Review which vaccine is needed
      - Make clinic appointment
    - No
      - Contact parent to get form

- Student registration
- Administer vaccine
- Observation
  - Adverse reaction?
    - Yes
      - Discharge
        - Process Ends
    - No
      - Observe until

- Discharge
Basic Flow Chart
Process Maps

[Flow chart diagram]

- Oval = process beginning and end
- Box = task
- Diamond = decision
- Arrow = connects

[Legend]

ASU School for the Science of Health Care Delivery
Arizona State University
Newborn Screening Kaizen Event

• Ensure that infants who screen positive for metabolic, genetic, or hearing disorders are
  ➢ Referred for diagnostic confirmation
  ➢ Receive appropriate intervention and
  ➢ Receive long-term follow-up services

• It will start at the point that the lab provides a presumptive positive

Source: Kim McCoy Minnesota Health Department
<table>
<thead>
<tr>
<th></th>
<th>Current</th>
<th></th>
<th>Future</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qty</strong></td>
<td><strong>Time</strong></td>
<td><strong>Qty</strong></td>
<td><strong>Time</strong></td>
<td></td>
</tr>
<tr>
<td>Tasks</td>
<td>61</td>
<td>12.75 hrs</td>
<td>25</td>
<td>5.60 hrs</td>
</tr>
<tr>
<td>Waits</td>
<td>21</td>
<td>51 days</td>
<td>7</td>
<td>23 days</td>
</tr>
<tr>
<td>Handoffs</td>
<td>36</td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Decisions</td>
<td>11</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>File/stores</td>
<td>26</td>
<td></td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Total time</strong></td>
<td><strong>52.5 days</strong></td>
<td><strong>23.65 days</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Minnesota Department of Health, Sept, 2010 Kim McCoy
System Design

- Disruptive Innovation
- Zipnosis
  - Asynchronous e-health, virtual care visits
  - 50,000 visits, 31 clinical conditions (URI, UTI, conjunctivitis, etc.)
  - 95% compliance with EBM patients, compared with 61%
  - Average clinician time 2.2 minutes (compared with 21.6 minutes)

Statistical Process Control

1. Process Behavior
2. Process Stability
3. Process Capability
4. Process Acceptability
Run Chart of the Average Number of Adverse Events per 1,000 Deliveries by Quarter over 28 Quarters (14 PPSI Hospitals)

Median = 52.7

- Phase I Start
- Simulation Training
- Phase I End

According to run chart technique, observations that fall...
Macro Level Value

• Financing
• Payment Reform
Health Care Finance

• Prospective Payment
  • Pays for value

• Retrospective Payment
  • Pays for volume
History of US Government Involvement in Health Insurance

• Medicare and Medicaid (1965)
  • Medicare: federal health insurance for elderly population over 65 years
  • Medicaid: federal/state government health insurance welfare for families and individuals with low income who cannot afford to pay.

• Affordable Care Act (2010)
  • Officially the “Patient Protection and Affordable Care Act” (PPACA)
  • Requires most US citizens to have health insurance.
  • Launched ACO’s

• MACRA (2015)
  • HHS launched the LAN (on March 25, 2015) to help advance the work being done across sectors to increase the adoption of quality-based payments and alternative payment models
The Main Objectives of the ACA

• Increase the affordability of health insurance.
• Lower the rate of uninsured persons.
• Reform certain health insurance practices in the private sector
Accountable Care Organizations (ACO’s)

• Established by the ACA.
• ACOs are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give care management to their Medicare patients.
Goal of the ACO

• The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors.

• When an ACO succeeds it will share in the savings it achieves for the Medicare program.
Medicare Offers Three ACO Programs:

• Medicare Shared Savings Program
  • A program that helps a Medicare fee-for-service program providers become an ACO.
  • N = 404 Shared Savings Program ACOs with 7.3 million Medicare beneficiaries (April, 2015)

• Advance Payment ACO Model
  • Prepayment program for selected participants in the Shared Savings Program.
  • N = 35 organizations

• Pioneer ACO Model
  • Designed for health care organizations and providers that are already experienced in coordinating care for patients across care settings.
  • N = 19 organizations. Now closed for enrollment
The LAN’s mission is to help achieve better care, smarter spending, and healthier people.

The Department of Health and Human Services (HHS) is working to transform the nation’s health system to emphasize value over volume.
Purpose

• The Health Care Payment Learning & Action Network (LAN) was launched because of the need for:

  • Better Care
    • The LAN seeks to shift our health care system from the current fee-for-service payment model to a model that pays providers and hospitals for quality care and improved health.

  • Smarter Spending
    • In order to achieve this, we need to shift our payment structure to pay for quality of care over quantity of services.

  • Healthier People
    • Such alignment requires the participation of the entire health care community.
Better Care, Smarter Spending, Healthier People

Adoption of Alternative Payment Models (APMs)

2016
30%
In 2016, at least 30% of U.S. health care payments are linked to quality and value through APMs.

2018
50%
In 2018, at least 50% of U.S. health care payments are so linked.

Goals for U.S. Health Care

These payment reforms are expected to demonstrate better outcomes and smarter spending for patients.
APM Framework

• At-a-Glance

The Framework is a critical first step toward the goal of better care, smarter spending, and healthier people.

The framework situates existing and potential APMs into a series of categories.

Category 1
Fee for Service – No Link to Quality & Value
A
Foundational Payments for Infrastructure & Operations
B
Pay for Reporting
C
Rewards for Performance
D
Rewards and Penalties for Performance

Category 2
Fee for Service – Link to Quality & Value
A
APMs Built on Fee-for-Service Architecture

Category 3
APMs with Upside Gainsharing
B
APMs with Upside Gainsharing/Downside Risk

Category 4
Population-Based Payment
A
Condition-Specific Population-Based Payment
B
Comprehensive Population-Based Payment

The framework situates existing and potential APMs into a series of categories.

N = payment models in Categories 3 and 4 that do not have a link to quality and will not count toward the APM goal.

3N = example payment models will not count toward APM goal.

4N = payment models in Categories 3 and 4 that do not have a link to quality and will not count toward the APM goal.

Population-Based Accountability

The Framework is a critical first step toward the goal of better care, smarter spending, and healthier people.

School for the Science of Health Care Delivery
Arizona State University
The National Safety Net Advancement Center: Advancing Payment & Care Delivery Reform in the Safety Net

Supported by the Robert Wood Johnson Foundation
<table>
<thead>
<tr>
<th>National Umbrella Organization</th>
<th>Safety Net Sector</th>
<th>Number of Organizations</th>
<th>Population Able to Serve</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Association of Community Health Centers (NACHC)</td>
<td>Federally Qualified Health Centers (FQHCs)</td>
<td>1,202^a</td>
<td>23,000,000^a</td>
</tr>
<tr>
<td>National Council for Behavioral Health</td>
<td>Community Mental Health Centers</td>
<td>2,200^b</td>
<td>8,000,000^b</td>
</tr>
<tr>
<td>America’s Essential Hospitals</td>
<td>Public County Hospitals</td>
<td>250^c</td>
<td>45,000,000</td>
</tr>
<tr>
<td>National Indian Health Board (NIHB)</td>
<td>Tribal Health Centers</td>
<td>678^d</td>
<td>5,200,000^e</td>
</tr>
<tr>
<td>American Hospital Association (AHA)</td>
<td>Critical Access Hospitals</td>
<td>1,325^f</td>
<td>9,900,000^g</td>
</tr>
<tr>
<td>National Network for Oral Health Access (NNOHA)</td>
<td>Oral Health Providers</td>
<td>850^g</td>
<td>14,900,000^f</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>6,505</strong></td>
<td><strong>106 million</strong></td>
</tr>
</tbody>
</table>
Safety Net Sectors & Priority Topic Areas

- Clinical Care Team Transformation Strategies
- Financial Planning, Implementation, and Control
- Clinical Integration Across Settings
- Network Structure, Governance, and Operations
- Patient Attribution and Activation
- Risk Management and Adjustment Strategies
Safety Net Partners

We will be working closely with organizations in 30 states for the six virtual learning collaboratives.

Grantee organizations located in:
- Alabama
- Illinois
- Iowa
- New Mexico
- New York
- Oklahoma
• Thank You!
Expected Outcomes of the Grants

- Completing your projects to advance payment and care delivery reform work within your organizations
- Capture and synthesize lessons learned from your work
- Disseminate evidence on solutions
Health Care System
Small Group Discussion

• What are the biggest issues in health care today?
### Most Important Issue to Americans

<table>
<thead>
<tr>
<th>Issue</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrorism</td>
<td></td>
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<tr>
<td>Immigration</td>
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<td>Jobs/unemployment</td>
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<td>Health Care</td>
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<td>Climate Change</td>
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<tr>
<td>Taxes</td>
<td></td>
</tr>
</tbody>
</table>
# Most Important Issue to Americans

<table>
<thead>
<tr>
<th>Issue</th>
<th>Ranking</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terrorism</td>
<td>#3</td>
<td>11%</td>
</tr>
<tr>
<td>Immigration</td>
<td>#4</td>
<td>10%</td>
</tr>
<tr>
<td>Jobs/unemployment</td>
<td>#2</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Health Care</strong></td>
<td>#1</td>
<td>35%</td>
</tr>
<tr>
<td>Climate Change</td>
<td>#4</td>
<td>10%</td>
</tr>
<tr>
<td>Taxes</td>
<td>#5</td>
<td>4%</td>
</tr>
</tbody>
</table>

Monday, July 18, 2017; Bloomberg Poll
Current Situation

- Paradox of Health Care in the United States
  - Misalignment between Health Expenditure and Health Status of population
- Discouraging health trends
  - We are living shorter, sicker lives
  - One in five of live in neighborhoods with high rates of crime, pollution, inadequate housing, lack of jobs, and limited access to nutritious food
- Increasing evidence how we can become a healthier, more equitable society
System Property

• Safety and Quality are based on expertise, commitment of providers
  • Human Factors (stress, fatigue, interruption, task saturation, attention limitations)
  • Poor interdisciplinary team training and communication failures
• Safety and Quality must also be property of the system
  • Deliberate design, implementation and monitoring
  • Forcing Functions and Countermeasures
Performance Management

• All the activities undertaken to ensure that goals of an organization are consistently being met in an effective and efficient manner.

• A comprehensive approach to manage two critical elements of an organization: the behavior and results of an organization.

• Focuses on results at all levels and areas: organization wide, a department, employee, and its processes.
Macro Level Value Creation

- Advance payment model
- Competitive compensation
Value in Health Care

- System Design
- Process Engineering
Institute of Medicine
Crossing the Quality Chasm (2002)
Three Major Quality/Value Problems

• Overuse
  • 30% of Care is waste
• Underuse
  • MyGlynn, NEJM, 2003  54% of Care for Adults
• Misuse
  • Unintended injury
Value Issues

1. Overuse
   • Penicillin
   • 30% of care is waste

2. Underuse

3. Misuse
Value Issues

1. Overuse
2. Underuse
3. Misuse
Value Issues

1. Overuse
2. Underuse
3. Misuse
   1. Patient Safety Epidemic
   2. Opioid prescriptions over-used 80% at Mayo Clinic¹

¹ Annals of Surgery July 13 2017
Cause of Low Value

Micro Level

• Bottleneck
• Re-Work
• Redundancy
• Inventory—5S
• Transport
• Defects
• Motion—Spaghetti diagram
Value in Health Care

• The major deterrent to value is an industry structure that is absurdly designed and perpetuated by zero sum paradigm.

• It is inconceivable that a deliberately, methodically designed system would be developed the way our has evolved.
Opportunities for Alternative Payment

1. Providers focus on improving population health
2. All providers practice at top of their license
3. Providers get paid for what they do not do
4. Fewer benefit restrictions and limitations
Barriers for Prospective Payment

1. If payments are actuarially unsound
2. If system is complex to administer
3. If population is not identified in advance
4. Requires an interdisciplinary team
5. Requires a care management system
6. Requires a focus on the individual and the population
RWJF Culture of Health (CoH)

• *To Provide all people the opportunity to live as healthy as possible.*

• Every person has an equal opportunity to live the healthiest life they can—regardless of where they may live, how much they earn, or the color of their skin.
The Culture of Health Action Framework

- The broad range of sectors and people involved in building a Culture of Health converge into four interconnected areas.