Building A Culture of Quality in Hospitals

Muhanad Hirzallah, PhD
Objectives

- Gain insight as to the journey of one of the best healthcare systems in the USA
- Develop a working understanding of selecting a quality framework and how to apply it across your enterprise
- Explore opportunities for collaboration
The Need for Performance Excellence

Every morning in Africa, a lion wakes up; it knows it must outrun the slowest gazelle or it will starve.

Every morning in Africa, a gazelle wakes up; it knows it must run faster than the fastest lion or it will not survive.

It doesn’t matter whether you are a lion or a gazelle: When the sun comes up, you had better be running!
IOM Reports
“If a man knows not what harbor he seeks, any wind is the right wind.”

Seneca
It’s Not About Working Harder….
Leadership – Not an Option!

• Leadership role and responsibility
  – Build an effective, engaged team
  – Serve as the Project Champion
• Prioritization
• Manage to succeed
• Acknowledge team efforts
The Leaders Role with Change

• Be visible and active throughout the project
• Build a coalition of forces (other physician and administrative leaders)
• Manage resistance, remove obstacles/roadblocks
• Communicate directly with staff
• Hold individuals accountable for change
Selecting the Framework

Operational Issues with healthcare?

• Patient Safety Issues: Med errors
• Patient Satisfaction Issues: Length of time, access
• High Cost Issues: Too many tests, repeated, resources, capacity
• Mix of different factors
A Good Lesson….

“Problems cannot be solved at the same level of thinking that created them…”

Albert Einstein
“Brilliant process management is our strategy. We get brilliant results from average people managing brilliant processes… our competitors often get average (or worse) results from brilliant people managing broken processes.”

President
Toyota Corporation
Tools selection

• Knowledge & Tools  
  – No one tool solves all organizational and process issues

“If you only have a hammer, you tend to see every problem as a nail.”  
Abraham Maslow
IOM Reports

First, Do No Harm

To Err Is Human
Building a Safer Health System

Building a Better Delivery System
A New Engineering/Health Care Partnership
Building the Team

• Skilled in: Lean, Six Sigma, Human Factors
• Experience in: Manufacturing, Services, Automotive, Aviation.
• Central Performance Improvement Team
• Knowledge sharing model: Staff rotations
If you can’t describe what you are doing as a process, you don’t know what you’re doing.

Deming
Lean or Six Sigma?
What is Lean?
# Types of Waste

<table>
<thead>
<tr>
<th>Waiting</th>
<th>Inventories</th>
<th>Overproduction</th>
</tr>
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<tbody>
<tr>
<td><img src="image1.jpg" alt="Waiting Icon" /></td>
<td><img src="image2.jpg" alt="Inventories Icon" /></td>
<td><img src="image3.jpg" alt="Overproduction Icon" /></td>
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<tr>
<td><strong>Transportation / Material Movement</strong></td>
<td><strong>Motions (movement)</strong></td>
<td><strong>Re-prioritization</strong></td>
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<td><img src="image4.jpg" alt="Transportation Icon" /></td>
<td><img src="image5.jpg" alt="Motions Icon" /></td>
<td><img src="image6.jpg" alt="Re-prioritization Icon" /></td>
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<tr>
<td><strong>Over-processing</strong></td>
<td><strong>Defects</strong></td>
<td><strong>Mis-utilization of skills</strong></td>
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<td><img src="image7.jpg" alt="Over-processing Icon" /></td>
<td><img src="image8.jpg" alt="Defects Icon" /></td>
<td><img src="image9.jpg" alt="Mis-utilization Icon" /></td>
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Breakdown of a typical process

NVA-E: Non Value Added – Essential: tasks that do not necessarily add value, but have to be done to support the existing system.
Breakdown of a typical process

**Traditional process improvement** focuses on improving efficiency in the value-add activities:
- Work longer, harder, faster
- Add more people
- Add more equipment

**Lean** focuses on improving the value stream by systematically eliminating waste:
- Increase capacity & speed of processes
- Work smarter / safer

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Value Add  
NVA-E  
Waste

Current process lead time

Value Add  
NVA-E  
Waste

Lead Time
Six Sigma

Six Sigma is a rigorous and systematic methodology that utilizes data and statistical analysis to measure and improve a company's operational performance, practices and systems.

Statistically...

Six Sigma refers to a process that produces only 3.4 Defects Per Million Opportunities.

<table>
<thead>
<tr>
<th>Sigma Level</th>
<th>DPMO</th>
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<tr>
<td>2</td>
<td>308,537</td>
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<td>3</td>
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<td>6,210</td>
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<tr>
<td>5</td>
<td>233</td>
</tr>
<tr>
<td>6</td>
<td>3.4</td>
</tr>
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</table>

~93.3% “Good”

99.99966% “Good”
## Six Sigma

### The Classical View of Quality

- **“99% Good” (Z = 3.8σ)**
  - 20,000 lost articles of mail per hour
  - Unsafe drinking water almost 15 minutes each day
  - 5,000 incorrect surgical operations per week
  - 2 short or long landings at most major airports daily
  - 200,000 wrong drug prescriptions each year
  - No electricity for almost 7 hours each month

### The Six Sigma View of Quality

- **“99.99966% Good” (Z = 6σ)**
  - Seven lost articles of mail per hour
  - One minute of unsafe drinking water every seven months
  - 1.7 incorrect surgical operations per week
  - One short or long landing at most major airports every five years
  - 68 wrong drug prescriptions each year
  - One hour without electricity every 34 years
Lean Six Sigma - DMAIC
A Typical Approach

Key Activities

- Define problem/issue
- Measure and create baseline
- Analyze root causes and identify solutions
- Develop solutions
- Test solutions
- Standardize the changes
- Standardize the changes
- Implement and monitor

Define opportunity
Measure performance
Analyze opportunity
Improve performance
Control performance
Building the Quality Academy
Quality Academy

• A family of courses focused on process improvement (quality, safety, service, cost)

• Multi-tiered
  – Champions
  – Teams Training
  – Individual Tools

• Multi-modal
  – Face to face, instructor-led
  – Online, self-paced
TEAMs Training

- Started 08/2006
- Face to face, instructor-led
- 10 days
- Teams come in with a project
- Didactic, hands-on exercises, and immediate application to the project
- Follows the DMAIC framework
- “Best of” Lean, Six Sigma, Change Management, Human Factors, Project Management
TEAMS Training Timeline

- Define: 5 days
- Measure: 4 weeks
- Analyze: 3 days
- Improve: 4 weeks
- Control: 2 days
Champions Training

– Started 01/2007
– Part 1 - Online 1.5 hrs
– Part 2 - Face to face, instructor-led, 4 hours
– For those sending a team to TEAMs training
– DMAIC framework & tollgate reviews
– Champion role
– Forming a team
– Chartering a project
– Closing a project
– Mix of didactic & case study
Individual Tools

• Examples:
  – Applied Value Stream Mapping
  – Root Cause Analysis
  – Failure Mode and Effect Analysis
  – Mistake proofing

• Typically 4 hours each class
Team Building
Basic Requirements

- Need to agree on a purpose
  - Know what “success” looks like and how it will be measured
- Identify stakeholders
- Identify expectations
- Agree on roles and responsibilities
- Ground rules
Best Practices
Improvement Team Structure and Roles

• Cross functional
• Work in the process
• Represent different roles/positions

Process owner
Measurement Coord
Process Improvement Expert
Ops/Nursing Mgmt
Content Experts
Infrastructure partners
Others as needed
Project Manager

IT, Communications, Education, Facilities, Finance, Legal, Regulatory
Change Management ADKAR

Awareness
Desire
Knowledge
Ability
Reinforcement®
Quality Fellows Program

- Bronze
- Silver
- Gold
  - Diamond
Quality Fellows Program Results

- Bronze: 30,201
- Silver: 3,954
- Gold: 150
- Diamond: 4
Questions
Muhanad Hirzallah, PhD, DSHS, CLSSMBB

- Dr. Hirzallah is the Founder and President of Healthcare Operational and Performance Excellence LLC (HOPE), a management consulting and training company focused on improving healthcare processes including clinical and administrative processes.
- Dr. Hirzallah has extensive experience in healthcare and has facilitated several process improvement projects at the USA and international levels.
- Dr. Hirzallah has almost 20 years of experience in process improvement consulting, training and performance excellence programs deployment. His past expertise include 7 years at Mayo Clinic at different capacities in addition to 5 years in consulting.
- Dr. Hirzallah is a certified Lean Six Sigma Master Black Belt, certified Patient Safety Officer, Certified ADKAR Change Management Professional, Malcolm Baldrige Examiner and holds the PhD degree in Industrial and Systems Engineering
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If Yes, please identify the company and the nature of the financial relationships and compensation below.

<table>
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<tr>
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<th>Type of Relationship</th>
<th>Nature of Compensation</th>
<th>Relevant to Presentation Content Yes/No</th>
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<tbody>
<tr>
<td>Example: Self</td>
<td>Company M</td>
<td>Board of Directors</td>
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<td>Suna Prop Health care operations</td>
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<tr>
<td>Performance Excellence</td>
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</table>

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