Overview of Quality Improvement

How to Get Involved

HQSC-NURF Health Equity Conference

Russell Migita, MD
Seattle Children’s Hospital
University of Washington School of Medicine
May 27, 2020
Seattle police searching for man who attacked, blamed Asian couple for coronavirus pandemic

COVID-19 outbreak exposes generations-old racial and economic divide in New York City

The Bronx is home to 1.5 million New Yorkers, many of them essential workers.
IHI Triple Aim

Patient Experience (Better Care)

Health of Populations (Better Health)

Reducing per capita cost (Better Value)
So how do we fix healthcare?

• Traditional methods
  • M & M Conferences
  • “Just do better”
  • Metrics without solutions
  • Top down initiatives

• Results
  • Disengagement
  • Burnout
  • Little improvement
“Everyone in healthcare has two jobs when they come to work; to do their work and to improve it. This is the essence of Quality Improvement”

- Paul B. Batalden, Senior Fellow, Institute for Healthcare Improvement
Florence Nightingale

DIAGRAM OF THE CAUSES OF MORTALITY IN THE ARMY IN THE EAST.

The areas of the blue, red, & black wedges are each measured from the centre as the common vertex.

The blue wedges measured from the centre of the circle represent areas for: for area, the deaths from Preventible or Mitigable Zymotic diseases; the red wedges, measured from the centre, the deaths from wounds; & the black wedges, measured from the centre, the deaths from all other causes.

The black line across the red triangle in Nov. 1854 marks the boundary of the deaths from all other causes during the month.

In October 1854, & April 1855 the black area coincides with the red; in January & February 1856 the blue coincides with the black.

The entire areas may be compared by following the blue, the red & the black lines enclosing them.
Walter Shewhart – Bell Labs

- 1920’s
- Physicist
- Studied variation in manufacturing
- Sought out how observing variation could predict and develop future process
- Developed statistical process control
W. Edwards Deming

• 1950’s
• Student of Shewhart
• Taught quality control to Japanese scientists and engineers
• Theory of Profound Knowledge
  • Appreciation of a system
  • Understanding of variation
  • Theory of knowledge
  • Understanding human nature
• PDCA / PDSA
QI Frameworks

- Six Sigma
  - Improve Reliability
  - Reduce variation
- LEAN
  - Eliminate Waste
  - Pull and flow
- Model for Improvement
  - Small Tests of Change
  - Three simple questions
Six Sigma

- Motorola 1980’s
- Focus on reducing defects to 6 sigma levels (3.4 per million)
- Derived from Shewhart’s work
- DMAIC
LEAN - FOCUS ON WASTE

- Keep/Improve
- Eliminate
- Reduce

95% Non-Value Added

Value Added

Necessary Work

Unnecessary Work
Theory of Constraints

- Eliyahu Goldratt – 1984
- The Goal
- Any goal-oriented system is most limited by constraint points
- The process won’t improve unless you address the constraint
- Iteratively identify, address and monitor constraints
What are we trying to accomplish?

DEFINE THE TEAM

• Sponsor
  • Often a senior leader who can endorse a project, ensure it is aligned with institutional goals and remove obstacles as they arise
• Champion
  • Leader of a project who oversees planning and maintains momentum, reports up to sponsor on progress
• Process Owner
  • Stakeholders who have expertise and/or oversight to a process impacted by the project
• Team Member
  • Multidisciplinary members providing varying viewpoints in an impacted process
What are we trying to accomplish?

• Keep it **SMART**
  - **S**pecific
  - **M**easureable
  - **A**chievable
  - **R**elevant
  - **T**imely

• What? How Much? By When? By Whom?
“We aim to improve the care of patients with chronic pain at VA Puget Sound. By October 2013, we will decrease the number of new starts on chronic opioids by 10%”
IHI Model for Improvement

**Model for Improvement**

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

**Act**

**Plan**

**Study**

**Do**
Types of Measures

- **Outcome**: Final product, result
  - *What happens to the patient?*
- **Process**: How system works
  - *What is done to the patient?*
- **Balance**: Capture unintended consequences
  - *How else does this effect the system?*
Pareto Charts

- Frequency chart to demonstrate what factors contribute to low quality
- Often demonstrates “80/20” rule
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Plan

Act

Study

Do
Lose 15 pounds in four months

Reduce caloric intake
Reduce amount of food
Eat lower calorie food

Increase calorie use
Exercise programs
Daily living exercises
PDSA cycles are the action portion of a QI project
Iterative small tests of change
1 test can demonstrate a fatal flaw
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<thead>
<tr>
<th>Current Situation</th>
<th>Staff/Clinician Readiness</th>
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<tbody>
<tr>
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<td>Resistant</td>
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<td><strong>Low Belief</strong></td>
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<td>Change leads to</td>
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<td>improvement</td>
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<td>Cost of failure</td>
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IHI Model for Improvement

Model for Improvement

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How will we know that a change is an improvement?

What change can we make that will result in improvement?

Act

Plan

Study

Do
Opportunities to Learn More

- UW Medicine Center for Scholarship in Patient Care Quality & Safety
  - [https://patientsafety.uw.edu](https://patientsafety.uw.edu)
  - Website has a curated selection of QI and Safety resources, tools and links

- Institute of Healthcare Improvement/NPSF
  - IHI Open School
  - Certified Professional in Patient Safety
    - CPPS Review Courses
  - IHI National and International Forums
Opportunities to Learn More

• James Anderson Center/Cincinnati Children’s
  • I2S2 Improvement Course
  • Advanced Improvement Methods

• Intermountain Healthcare
  • Advanced Training Program
  • MiniATP courses
UW Center Offerings

- QI Bootcamps
  - Several per year sponsored by UW Medicine
  - Ad hoc bootcamps
- UW Medicine/Seattle Children’s Certificate Program
  - 8 months
  - 6 full-day sessions
  - Full-day equity session
  - Extended QI bootcamp
  - Broad overview of QI and safety topics
  - Longitudinal QI Project
  - [https://patientsafety.uw.edu/certificate-program](https://patientsafety.uw.edu/certificate-program)
What questions do you have?

Thank you!