Quality and Safety Series

Quality Improvement Models
OBJECTIVES

• Define quality improvement.
• Identify the primary quality improvement models.
• Discuss the differences between the models.
Defining Quality

“The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”

—Institute of Medicine

• Safe
• Effective
• Patient centered
• Timely
• Efficient
• Equitable
Quality Improvement

“Systematic approach using specific methods to improve quality; achieving successful and sustained improvement.”

—Institute of Medicine

Quality Improvement Models

Other Models

- **FOCUS**—Find, Organize, Clarify, Uncover, Start
- **Xerox 10 Steps**
- **IMPROVE**—Identify, Measure, Prioritize, Research, Outline, Validate, Execute
- **FADE**—Focus, Analyze, Develop, Execute
- **Juran’s QIP**—Organize, Diagnose, Remediate, Hold
- **AHIMA 11 Steps**
Shewhart Model: PDCA/PDSA

- Simple, 4-step model
- More suited to solving specific problems
- Not as adaptable for organization-wide problems
- Lacks a step for control/sustainability
Steps of PDCA

Plan
- Identify the problem
- Analyze the problem and data
- Define the problem
- Set goals
- Establish current-state process
- Create strategy

Do
- Begin implementation
- Pilot strategy

Act
- Fully implement, if adopted
- Continue to monitor results
- Consider spread and sustainability

Check
- Analyze data
- Determine effectiveness
- Decide to:
  - Adapt: modify process go back to plan
  - Adopt: continue to act
  - Abandon: end initiative
Six Sigma Model: DMAIC/DMADV

- Six $\sigma = 99.99966\%$ or 3.4 deficits per million
- Designed by Motorola for manufacturing improvement
- Focused on reducing variation and error
- Heavily data driven
- Formal certifications
  - White Belt: Introduction
  - Yellow Belt: Basic foundational knowledge
  - Green Belt: Comprehensive knowledge, lead projects
  - Black Belt: Expert knowledge, lead over multiple projects
  - Master Black Belt: Program level expert/trainer
DMADV vs. DMAIC

Methodology applied to a **new** process or service line

Methodology applied to improving an **existing** process or service line
Steps of DMAIC

**Control**
- Create policies and procedures
- Verify benefits/cost savings
- Develop a control plan
- Transition to process owners

**Define**
- Identify customers
- Conduct a stakeholder analysis
- Identify process impacted
- Develop high-level inputs and outputs

**Improve**
- Generate solutions
- Define benchmarks/goals
- Perform FMEA
- Conduct training

**Measure**
- Define opportunities
- Define metrics
- Create detailed process maps
- Establish data collection methodology

**Analyze**
- Evaluate process map
  - Value added
  - Non-value added
- Identify variation
- Determine root cause
- Analyze data
<table>
<thead>
<tr>
<th></th>
<th>Lean</th>
<th>Six Sigma</th>
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<tbody>
<tr>
<td>Reduction of</td>
<td>Waste</td>
<td>Variation</td>
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<td>Business Justification</td>
<td>Speed &amp; flow</td>
<td>Defects</td>
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<td>Savings from</td>
<td>Costs of inefficient operations</td>
<td>Costs of poor quality</td>
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<td>Enhanced value</td>
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<td>Project Leadership</td>
<td>Kaizen</td>
<td>Black Belt</td>
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<tr>
<td>Expected Duration</td>
<td>1 week–3 months</td>
<td>2–6 months</td>
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Resource: HSAG PDSA Worksheet

Plan, Do, Study, Act Team Worksheet

Purpose of this test of change (specify idea to help accomplish Aim):

Plan (the change, predictions, and data collection):

The Change
What are we testing, and who is conducting the test?

Who are we testing the change on?

When are we testing?

Where are we testing?

Predictions
What do we expect to happen?

Data Collection
What data do we need to collect?

Who will collect the data?

When will the data be collected?

Where will the data be collected?

Template available at: www.hsag.com/hqic-quality-series
Key Take-Aways

• Quality improvement can be an organization-wide approach or topic-specific approach.

• DMAIC can be very complex, especially when using the Six Sigma tools.

• PDCA does not have a clear end, sustainability, or hand-off.

• Not one approach fits all.

• A team approach and collaboration is critical.

• Leader support and frontline engagement are vital to sustained success.
Thank you!

Questions: hospitalquality@hsag.com