Quality Improvement: The Model for Improvement and Plan Do Study Act (PDSA)

Topics

• Common quality improvement (QI) methodologies
• Root cause analysis
• The Model for Improvement
  – Using the Plan Do Study Act (PDSA) Tool
QI Methodologies

• FADE: Focus, Analyze, Develop, Execute and Evaluate
• Six Sigma
• Lean
• Root cause analysis
• The Model for Improvement (PDSA)

QI Methodology Commonalities

All quality management methodologies share four common themes:
• Leadership
• Measurement
• Staff involvement and team approach
• Customer/patient focus

Root Cause Analysis (RCA)
What is Root Cause Analysis?

- A structured process used to determine why an unexpected or unintended outcome (an event) occurred and what can be done to prevent it from happening again
- A tool for quality improvement
- A team-based investigative approach that focuses on systems and processes, and their impact on individual behavior

Value of Root Cause Analysis

- Avoids choosing a 'quick fix'
- Engages staff in analyzing why events occur
- Promotes changing culture through encouraging a non-punitive approach
- Guides teams to measure the impact of changes made as the result of RCA
- Improves safety
- Most often used to address:
  - Unexpected events with serious outcomes
  - Repeat incidents
  - Near misses and good catches
RCA Process

1. Identify the event
2. Form a team
3. Describe the event – where did breakdowns occur
4. Identify all factors
5. Identify root causes and contributing factors
6. Design and implement process and system changes
7. Measure to determine results

RCA Process and System Thinking

Relies on systems and process thinking
- Process
  - The steps to be followed
  - Often guided by policies and procedures
- System
  - Processes
  - People and organizational culture
  - Environment, equipment, technology
5 Whys

1. Develop a clear and specific problem statement.
2. The team facilitator asks “Why?” the problem occurred and records the team response.
3. If the answer provided is a contributing factor to the problem, the team keeps asking “Why?”
4. Keep going until the team agrees the root cause has been identified. It often takes three to five times of asking “Why?” but it can take more than five.

5 Whys Tool

[Diagram of a worksheet and instructions on how to use the 5 Whys Tool]
The Model for Improvement: Step by Step

Model for Improvement: Key Benefits

• Encourages learning by testing change on a small scale
  – Pilot the change in one department, with one nurse, one shift, etc.
• Eliminates studying the problem to death
  – Moves the team from contemplation to action
• Minimizes data collection and data overload
  – Collect just enough data

The Three Questions and the PDSA Cycle

1. What are we trying to accomplish?
2. How will we know that change is an improvement?
3. What change can we make that will result in an improvement?

Question 1: What are we trying to accomplish?

- Improvement begins with setting aims
  - State aim clearly
    - Gain agreement from team
  - Make aim measurable
    - Use a percent goal
    - Make the goal a ‘SMART’ goal
  - Make aim achievable
    - Aim should be realistic
Question 1: SMART Goals

When setting your goal or aim, make sure it is:

- **Specific**
- **Measurable**
- **Achievable**
- **Relevant**
- **Time-based**

Question 1: Example

Goal:
We will reduce the occurrence of facility-acquired MRSA infections by 25% by September 30, 2019.
Question 2: How will we know that change is an improvement?

Measurement allows us to determine if change is an improvement.

Question 2: Example

Measure:
How many MRSA infections occur at our facility on a weekly basis?
Question 3: What changes can we make that will result in an improvement?

- Clarify actual, current process (process map)
- Try to identify these in your ‘current state’ process
  - Redundant or duplicate tasks
  - Forgotten tasks
  - Unnecessary steps that do not add value
  - Delays
  - Inconsistency with standards
  - Lack of continuity of care across units or between clinicians
- Utilize the “5 Whys” tool
- Review literature and best practices

Question 3: Example

Understand the current process:
- Why are we seeing our MRSA infection rate going up?
- Examine patterns of increased infections
  - Particular floors or units
  - Environmental triggers
  - Correlation with staffing patterns
- Seek input from those doing the work
Tips for Launching PDSA Cycles

- Be clear about the problem you trying to solve
- Look for ways to limit variations in the process (streamline and simplify)
- Learn what has worked for others
- COPY, COPY, COPY
- Remember, you don’t need a perfect solution the first time

Plan

- What change are you testing with the PDSA cycle(s)?
- What do you predict will happen and why?
- Who will be involved in this PDSA? (e.g., one staff member or patient, one shift?)
- When and where will the change be tested?
- How long will the change take to implement?
- What resources will they need?
- What data needs to be collected? What data have you already collected?
- Are you measuring a process or an outcome?
Do

Test the plan on a small scale pilot
• Carry out the test
• Collect data you identified as needed during the “plan” stage.
• Document observations, including any problems and unexpected findings

Study

Evaluation
• Analyze data
• Compare data to your benchmarks and the predicted outcome or goal
• What was learned?
  – Problems
  – Successes
  – Surprises
• Are you satisfied with the results?
Act

Based on what was learned from the test:
• What changes should be made before the next cycle?
• What will the next test be?
• Are you ready to implement more broadly?
• How will you maintain gains?
• Establish a new plan: PDSA cycle

Act (cont’d)

Based on what was learned from the test:
• Adapt: Modify the changes and repeat PDSA cycle
• Adopt: Consider expanding the changes in your organization to additional staff, patients, departments or units
• Abandon: Change your approach and repeat PDSA cycle
Act: Adopt – “Rule of 5”

- Spread the success incrementally
- Try 5 units, individuals, etc. as the ‘next’ step to spread change
- Prevents going too broad, too quickly

Confirm Appropriate Use of PDSA

- The test or observation was planned (including a plan for collecting data and a prediction about results)
- The plan was attempted (do the plan)
- Time was set aside to analyze the data and study the results
- Action was rationally based on what was learned
Repeated Use of PDSA Cycle

Changes that result in improvement

Hunches, theories, and ideas

PDSA Documentation
**Tips for Testing Changes**

- Continue to test changes on a small scale
- Involve care teams that have a strong interest in improving care
- Study the results after each change
- Involve others who do the work
- Ensure changes in one area don’t adversely affect another


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**Tips for Using PDSA in Your QI Team**

- Teach the PDSA tool to the group
- Discussed and answer the three questions of the Model for Improvement as a group:
  - What are we trying to accomplish?
  - How will we know that change is an improvement?
  - What change can we make that will result in an improvement?
- Assign individuals roles for the PDSA steps
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