Model for Improvement

Safe and Healthy Beginnings
August 4, 2007
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1 The Improvement Guide
Associates in Process Improvement
Fundamental Questions for Improvement

☐ What are we trying to accomplish?

☐ How will we know that a change is an improvement?

☐ What changes can we make that will result in an improvement?

Source: Improvement Guide, p 3, 4, QItPE, p.7
The Improvement Model

What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

The Improvement Guide
Associates in Process Improvement
The PDSA Cycle
Four Steps: Plan, Do, Study, Act

Also known as:
• Shewhart Cycle
• Deming Cycle
• Learning and Improvement Cycle

Source: Improvement Guide, p 7, QIPE, p.7
Aim
Fundamental Questions for Improvement

- *What are we trying to accomplish?*

- *How will we know that a change is an improvement?*

- *What changes can we make that will result in an improvement?*

*Source: Improvement Guide, p 3, 4, QItPE, p.7*
Example (poor)

☐ Our nursery will improve care for all newborn infants by using the AAP guidelines.
What Are We Trying to Accomplish?

Aim: A written statement of the accomplishments expected from improvement effort

Key components:
- A general description of aim — should answer, “what are we trying to accomplish?”
- Some guidance for carrying out the work and rationale
- Specify target population and time period
- Measurable goals

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Project Aim

☐ S - Specific
☐ M - Measurable
☐ A - Actionable
☐ R - Realistic
☐ T - Time bounded
Example

☐ By December 31, 2007, our nursery will assess all newborns for risk of severe hyperbilirubinemia, document our assessment prior to discharge, and assure appropriate follow-up for infants at risk.
Measure
Fundamental Questions for Improvement

☐ What are we trying to accomplish?

☐ *How will we know that a change is an improvement?*

☐ What changes can we make that will result in an improvement?

*Source: Improvement Guide, p 3, 4, QItPE, p.7*
Measures

☐ Need to define
- Target population
- Numerator
- Denominator
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☐ Target Population:
  ■ All newborn infants admitted to NBN in target hospital
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☐ Numerator:

- # infants whose clinical risk factors are assessed (with particular emphasis on gestational age and breastfeeding) AND/OR who have hour-specific bilirubin levels on chart (either TC or serum)
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☐ Denominator:

- All newborn infants admitted to NBN in target hospital whose charts are reviewed
Effective Measurement

- Build measurement into daily work routine
  - Data should be easy to obtain and timely
  - Small samples over time
- Use quantitative and qualitative data
  - Qualitative data is highly informative
  - Qualitative data is easy to obtain
Tests of Change

Need 2 components:
1. Change concepts (ideas)
2. PDSA test method
Fundamental Questions for Improvement

- What are we trying to accomplish?

- How will we know that a change is an improvement?

- *What changes can we make that will result in an improvement?*

*Source: Improvement Guide, p 3, 4, QItPE, p.7*
PDSA

Plan
  • Always includes a prediction

Do

Study
  • Did my prediction hold?
  • What assumptions need revision?

Act
  • Adapt
  • Adopt
  • Abandon
Use of PDSA Cycles

- Changes That Result in Improvement
- Implementation of Change
- Wide-Scale Tests of Change
- Follow-up Tests
- Very Small Scale Test
- DATA

Evidence
Best Practice
Testable Ideas

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What Are Tests?

☐ Putting a change into effect on a temporary basis and learning about its potential impact
Why Test?

☐ Forces us to think small

☐ Increase your belief that the change will result in improvement

☐ Opportunity for learning without impacting performance

☐ Help teams adapt good ideas to their specific situation
The PDSA Cycle

**Act**
- What changes are to be made?
- Next cycle?

**Plan**
- Objective
- Questions and predictions
- Plan to carry out the cycle (who, what, where, when)

**Study**
- Complete the analysis of the data
- Compare data to predictions
- Summarize what was learned

**Do**
- Carry out the plan
- Document problems and unexpected observations
### Form for Planning a PDSA Cycle

<table>
<thead>
<tr>
<th>MODEL FOR IMPROVEMENT</th>
<th>CYCLE: ___</th>
<th>DATE: ___</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APSD</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Objective for this PDSA Cycle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PLAN:</strong> QUESTIONS:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PREDICTIONS:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PLAN FOR CHANGE OR TEST:</strong> WHO, WHAT, WHEN, WHERE</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PLAN FOR COLLECTION OF DATA:</strong> WHO, WHAT, WHEN, WHERE</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DO:</strong> CARRY OUT THE CHANGE OR TEST; COLLECT DATA AND BEGIN ANALYSIS.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STUDY:</strong> COMPLETE ANALYSIS OF DATA; SUMMARIZE WHAT WAS LEARNED.</td>
<td></td>
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</tr>
<tr>
<td><strong>ACT:</strong> ARE WE READY TO MAKE A CHANGE? PLAN FOR THE NEXT CYCLE.</td>
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</tbody>
</table>