### Small Tests of Change: Using PDSA Cycles to Drive Improvement



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COLLABORATION FOR HOME CARE ADVANCES IN MANAGEMENT AND PRACTICE

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# **Objectives**

- Learn the 4 steps in a PDSA cycle (Plan-Do-Study-Act) Cycle
- Understand the rationale for testing changes.
- Distinguish between tests and tasks
- Develop your capacity to construct and execute PDSA cycles

# The Model for Improvement Answers the Question

#### When making improvements, how do I

- test and learn?
- adapt and implement changes?



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?

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?



# Sample Aim Statements

By December 2010, our team will improve medication management for our patients over age 65 with multiple medications so that:

- 95% of patients have medication adherence assessed at Start of Care and at least one other time
- 85% of patients with a sign/symptom of a potential medication-related complication have their physician notified

# What Are We Trying to Accomplish?

- What are your team's aims
- An Aim Statement is a clear and concise statement of what the team intends to do
- They include an unambiguous target for improvement – using numerical goals

# Aim statement components

- By when?
- What?
- For whom (pt pop)?
- How much (goals)



Also known as:

- Shewhart Cycle
- Deming Cycle
- Rapid Cycle
   Improvement



#### The PDSA Cycle for Learning and Improvement



## **Question and Predict**

- A test of change answers a specific question
- A test of change requires a prediction



Sequential Building of Knowledge Includes a Wide Range of Conditions in the Sequence of Tests





That won't harm a hair on the head of a patient?

# Requirements for a PDSA Cycle:

- The test or observation was planned (including a plan for collecting data)
- 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
- Results were compared to prediction

# Why Test?

- Increase belief that the change will result in improvement
- Predict how much improvement can be expected from the change
- Learn how to adapt the change to conditions in the local environment
- Evaluate costs and side-effects of the change
- Minimize resistance upon implementation

3 Principles for Testing a Change

- Test on a small scale
- Collect data over time
- Build knowledge sequentially with multiple PDSA cycles for each change idea, include a wide range of conditions in the sequence of tests

# Test on a Small Scale

- Have others with knowledge comment on feasibility
- Test the change on team members who develop it before introducing the change to others
- Incorporate redundancy in the test by making the change side-by-side with the existing system
- Conduct the test over a short time period

# Test on a Small Scale (Cont.)

- Conduct the test with one member of your team, or with one patient
- Test the change on a small group of volunteers
- Develop a plan to simulate the change in some way

## Test or task?

- Inservice education
- Make form
- Determining whether email or phone call works best with physician notification of problem
- Posting data
- Newsletter to physicians about project
- Team meeting

# Tip 1: Decrease Scope

Years
Quarters
Months
Weeks
Days
Hours
Minutes

Drop down next "two levels" to plan Test Cycle!

# Tip 2: Test of Oneness

- 1 patient
- 1 day
- 1 admit
- 1 physician



# Plan One PDSA Cycle

Select one change idea Plan:

- What question are you trying to answer?
- What is your prediction?
- How will you carry out the test?
- How will you measure success?
- How will you analyze the data?

# Fundamental Questions for Improvement

- What are we trying to accomplish?
  - Team Aim Statement
- How will we know that a change is an improvement?
  - Measures
- What changes can we make that will result in an improvement?
  - Changes and change concepts



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