Why do we need a systematic model for improvement?

“All improvements require change but not all change will result in improvement. A primary aim of the science of improvement is to increase the chance that a change will actually result in sustained improvement from the viewpoint of those affected by the change.”

--The Improvement Guide, 1996
Rapid Cycle Improvement

The idea behind rapid cycle improvement is to first try a change idea on a small scale to see how it works, and then modify it and try it again until it works very well for staff and customers. Then, and only then, does a change become a permanent improvement.

Testing a Change: Why Test?

Modified from Jane Taylor PhD

- Smaller Scale Tests
- More of them prior to implementation
Testing a Change: Why Test?

- Minimize risks of potential failure and of potential adverse or unanticipated side effects
- 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 to implementation

Rapid Cycle Improvement

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<td>What are we trying to accomplish?</td>
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<td>How will we know that a change is an improvement?</td>
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<td>What change can we make that will result in improvement?</td>
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Act

Study

Do

Ran
What Are We Trying to Accomplish?

- The first question is meant to establish an aim for improvement that focuses group effort.
- Aims should be as concise as possible – sometimes it takes a few trials of testing an aim before it becomes truly focused
  - Focus on what matters to the organization, staff and patients
  - Use numerical goals wherever possible
  - Guidance and resources (e.g. tools to be used, methods and systems to be changed)

How Will We Know That a Change is an Improvement?

- Measures and definitions are necessary to answer this question.
  - Data is needed to evaluate and understand the impact of changes designed to meet an aim.
  - When shared aims and data are used, learning is further enhanced because it can be shared. In this way, superior performance and best practices are more quickly identified and disseminated through benchmarking.
What Change Can We Make that Will Result in an Improvement?

• This step is also known as “How will we get there?”
• Formulate change concepts that may improve the process outcomes
• This is the who, what, when, and how of doing the actual test
• It compels the team to learn from the data collected, its effects on other parts of the system, and under different conditions

Consolidation of Relevant Knowledge and Experience

• Develop a set of change concepts
• Definition of Change Concepts - Ideas for interventions and actions for improvement with a greater likelihood of working based on
  – evidence,
  – quantitatively documented experience, and/or
  – internal data.
Some Sources for Improvement Interventions and Actions

- Published literature in scientific journals
- Documented (with data) experience from other public health agencies
- Internal qualitative analysis of work processes
  - Use qualitative analysis tools (e.g. fishbone diagrams, root cause concepts) to identify barriers
- Internal quantitative analysis of work processes
  - e.g. Pareto analysis
- National experts (e.g. IHI, NACCHO, PHF, ASQ, Goal/QPC, MLC states and many others)

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

- Test on a small scale
- Test a wider group
- Test new conditions
- Implement
- Spread
- Breakthrough Results

Theories, hunches, & best practices
Learning and improvement
Evidence & Data

Test on a small scale
Testing a Change

- **Testing** – Trying and adapting existing knowledge on small scale. Learning what works in your system
  - Testing is not permanent
  - Often we have more failures than successes
- Test on a small scale over a short period of time
- Have experts comment on feasibility
- Anticipate a sequence of tests on one change idea

Testing a Change: Tips

- Move from ideas to action quickly
- Decrease the scope of the test
  - Test of oneness
    - One stakeholder, one program, one day
  - As you are designing the test, ask ‘What design would enable us to do this test now, tomorrow or next week
Sequential Testing….when do you move to implementation?

• After each PDSA…
  – Implement as is
  – Abandon it
  – Increase in scope
    • e.g. more clients, more programs
  – Modify it and test again
  – Test under different conditions

Implementing a Change

• Implementation – Making this change a part of the day-to-day operation of the system
  – Implement a change ONLY if it will lead to improvement
  – Involves more people and conditions: you will run into more resistance and factors which require “design tweaks”
What Can We Do Now…

… by Next Week,
… by Tuesday,
… by Tomorrow

… that we can learn from without harming clients or burdening staff?

Modified from Jane Taylor PhD

RCI – Example

• What are We Trying to Accomplish?
  – Increase accurate and complete reporting of CD to 80% or more of all reports by 10/07, and more than 95% by 2/08 with clear definition of complete reports. We do this in order to provide valid data for planning and program improvement.
How Will We Know When We Get There?: Measurements

- Increase (trended) in percent of accurately completed CD reports
- Decrease in staff time to input incomplete information
- Trend in overall measures in right direction (direction of goodness indicated by arrow)
  - Other CD reporting measures
  - Other process measures

What Changes Can We Make?

- Data analysis of reasons for incomplete reports.
  - Identify reasons with definitions
  - Assure that database can capture each reason
  - Initiate data collection process
  - Train staff and providers in definition and reporting process
- Address lack of knowledge of providers
- Create plan to identify high volume providers and target for extra training
Steps to Set Up a Rapid Cycle Improvement

- Establish a multi-disciplinary RCI team
- Identify a positive opinion leader
- Align leadership and administrative support
- Consolidation of relevant knowledge and experience (national) for multiple changes
- Development of an overall aim statement (using the three questions at a high level)
- Decide where to start and develop a strategy for a series of rapid cycles.

Guidance on Following the Steps

- It is important not to try to write the perfect AIM statement and develop the most thorough rapid cycle strategy at the start. It is more important to start small, rapid tests of change through PDSA cycles as soon as possible. The AIM statement and strategy evolve continually as you learn from testing.
- The major objective is to build organizational learning from small tests of change.
Key Lessons from RCI

- The rapid improvement work must be seen as The Work and not a separate project
- Implementation and holding the gains requires integration into daily work and meetings
- Start work with those interested in change
- Communicate what is happening persistently
- Provide support to providers and staff who take on this new work

What questions do you have?