Conducting Successful Quality Improvement Projects

April 20, 2012

Marlene Mason, MarMason Consulting
Today’s Learning Objectives

In today’s session the participants will:

- Review the Plan-Do-Study-Act Cycle for Improvement
- Review the QI Team project steps and Rapid Cycle Improvement Method
- Discuss characteristics of effective QI teams
Plan
1. Identify and Prioritize Opportunities
2. Develop AIM Statement
3. Describe the Current Process
4. Collect Data on Current Process
5. Identify All Possible Causes
6. Identify Potential Improvements

Adapted from *The ABC’s of PDCA*, Gorenflo and Moran

7. Develop Improvement Theory
8. Develop Action Plan

Check/Study
1. Review analysis and make conclusions

Act

Do
1. Test the Improvement
2. Collect and Analyze the data
3. Document Problems, Observations, and Lessons Learned

Adopt
Standardize/ Hold the Gains

Adapt
DO - Modify/ Try Again

Abandon

Plan
Step One: Getting Started

- Identify area, problem, or opportunity for improvement
- Estimate and commit needed resources
- Obtain approval (if needed) to conduct QI

Embracing Quality in Local Public Health: Michigan’s Quality Improvement Guidebook
http://www.accreditation.localhealth.net

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PLAN Steps for Implementing QI Project*

* The ABCs of PDCA & MI Guidebook

• Identify QI opportunities
  • Performance measurement data or data related to health indicators
  • Community health assessment, health status report, or behavioral risk factor survey results
  • Data related to births, deaths, and diseases in your community
  • Survey data related to customer/client satisfaction
  • Data related to the internal operations of your LHD, such as, time studies, response rates, employee morale, or workforce development

• Prioritize issues to address for improvement
Criteria for Prioritizing Issues

- Size
  - How many people are affected?
- Seriousness
  - Deaths, hospitalizations, disability
- Trends
  - Is it getting worse or better?
- Equity
  - Are some groups affected more?
- Intervention
  - Is there a proven strategy?
- Values
  - Does our community care about it?
- Resources
  - Build on current work – available $?
- Others?
  - Social Determinant, root cause
Criteria for Prioritizing Issues

- Measure processes that are:
  - High-risk
    - Health Alerts, Drinking Water, CD Investigations
  - High-volume
    - WIC, Food Safety, OSS, Immunizations
  - Problem-prone
    - Emergency Preparedness
<table>
<thead>
<tr>
<th>Improvement Area</th>
<th>Importance</th>
<th>Control</th>
<th>Hi Risk</th>
<th>Hi Vol.</th>
<th>Prob. Prone</th>
<th>Total points</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>HI (3)</td>
<td>MED (2)</td>
<td>LOW (1)</td>
<td>HI (3)</td>
<td>MED (2)</td>
<td>LOW (1)</td>
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<tr>
<td>1. Immunization</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>2. Engage Community</td>
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<td></td>
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<td></td>
<td>X</td>
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<tr>
<td>3. CHIP</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>4. Food Safety</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
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<td>5. Family Planning</td>
<td>X</td>
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</table>
PLAN Steps for Implementing QI Project*

* The ABCs of PDCA & MI Guidebook

- Assemble The Team
- Develop an AIM Statement
  - AIM Statement Template
- Describe the current process
  - Work Flow or Logic Model
- Collect data on the current process
  - Run Charts, Histograms, Pie Charts
- Identify all possible causes
  - Fishbone Diagram, The Five Whys

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Why Use Teams for QI?

- QI efforts need buy-in from all stakeholders
- Creative ideas are needed
- Division of labor is needed
- Process often crosses functions
- Solution generally affects many
## Differences Between Teams and Groups

<table>
<thead>
<tr>
<th>GROUP</th>
<th>TEAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>A number of persons or things gathered, located, or classified together.</td>
<td>Two or more people who pursue a common purpose together.</td>
</tr>
<tr>
<td>An association by virtue of a common characteristic.</td>
<td>A unity by virtue of a common purpose and commitment.</td>
</tr>
<tr>
<td>A collection.</td>
<td>A force.</td>
</tr>
<tr>
<td>Multiple members and multiple performances. Best integration is &quot;enabling&quot;.</td>
<td>Multiple members but a single performance. Best integration is &quot;synergistic&quot;.</td>
</tr>
<tr>
<td>Best performance is: <strong>Cooperation!</strong></td>
<td>Best performance is: <strong>Unified Success!</strong></td>
</tr>
</tbody>
</table>
Team Selection Criteria

• Balance team/input “horizontally” (across process) and “vertically” (mgrs & staff)
  • Anticipate resistance – seek input from all stakeholders*
  • Remember: “People support what they help to build …”
  • 5-7 is ideal team size

*Not all stakeholders need to be team members – but you need to find a way to get their input and keep them updated
Components of a Team Charter

- **Goal**
  - Why the team exists, who it serves, the benefits it should produce, the conditions under which it operates, and the criteria that define its success

- **Responsibilities**
  - Identifies the major duties of each team member
    - Identify and remove barriers, Identify and utilize opportunities, Monitor progress, Monitor performance as a team
Components of a Team Charter

- Connections
  - The individuals/teams/groups with which the team must coordinate

- Procedures
  - Meeting
    - When will the team meet? Where? For how long? Who chairs?
  - Agenda
    - What is the standard agenda that supports that helps the team achieve its goal?

- Work
  - What are the default methods for operating as a team (generating ideas, making decisions, taking action)

- Measure
  - How will the team check its progress and performance as a team?
Four Stages - Team Development

• Forming

• Storming

• Norming

• Performing
Guidelines for Team Effectiveness

1. Establish goals and objectives all team members accept
2. Allow members to disagree in a constructive way to resolve problems
3. Review past actions when making plans for the future
4. Make decisions by consensus or modified consensus
5. Remain cohesive and maintain a sense of unity
6. Develop a comfortable working atmosphere
7. Use physical space that is conducive to the team process

Source: Growing Teams” by G. Fetteroll, G. Hoffherr, and J. Moran, Goal/QPC, 1993
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.

* Institute for Healthcare Improvement (IHI) model
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
AIM Statement

Step 1: What Are We Trying to Accomplish?

- Increase by 10% the number of mothers in the WIC program who initiate breastfeeding, and increase by 5% the number of moms in the WIC program who breastfeed for at least one year.

- We do this because it helps mothers return to their pre-pregnancy weight and lowers the rate of obesity and overweight in children.
AIM Statement

Step 2: How Will We Know That a Change is an Improvement?

• Long term
  • 5 years – decrease % of adult females of childbearing age that are obese

• Medium term
  • 12 months – Increase the number of women still breastfeeding at 12 months by 5%.

• Short term
  • 6 months – Increase the number of women still breastfeeding at 6 months by 10%.
Let’s Discuss!

What has been your experience in identifying QI team members and effective AIM statements?
Step Three: Examine the Current Approach

- Examine the current approach or process flow
- Obtain existing baseline data, or create and execute data collection plan to understand the current approach
- Obtain input from customers and/or stakeholders
- Analyze and display baseline data
- Determine root cause(s) of problem
- Revise Aim Statement based on baseline data as needed
Complete Task

Is it correct?

Review w/ Mgr

yes

Pass form to Accounting

no

Input into System

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Work Flow Chart - Things to look for

- Decision/Inspection
- Step
- Step
- Step
- Decision/Inspection
- Re-work Loops – esp. long ones
- Step
- Decision/Inspection
- Step
- Decision/Inspection
- Step
- Decision/Inspection
- Multiple inspections
- Step
- Wait states
- Wait
- Step
- Too many steps; Hand-offs
- Step
- Step
- Step
- Step

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PLAN Steps for Implementing QI Project*

- Identify potential improvements
  - Steps: Conduct Root Cause Analysis, Review model or best practices to identify potential improvements and pick the best solution to test
  - Tools: Fishbone Diagram, Pareto Chart, Affinity Diagram

- Develop an improvement theory
  - Definition: a statement that articulates the effect that you expect the improvement to have on the problem
  - Steps: Make Conclusions, Promising Practices search

- Develop an action plan
  - Tools: Gantt Chart or workplan

* The ABCs of PDCA & MI Guidebook
W. Edwards Deming transformed quality control processes by applying his beliefs

- Measuring outputs/outcomes at the end ignores root cause and ensuing poor results.
- Addressing root causes through ongoing evaluation and quality improvement avoids problems and improves quality.
- Ongoing measurement with feedback loops helps processes.
Fishbone Example (IL MLC-3 Team)

- Language
- Personal
- Cultural
- Distribution
- Frequency
- Timing
- Limited supply
- Staff explanations of Farmer’s Market option
- Methods
- Small dollar value
- No change is given
- Hours
- WIC clients do not redeem all of the farmer’s market coupons
- Materials
Service Coordinators express difficulty in maintaining HMG Caseloads

- Timelines
  - ET blackout days
  - 48 hour initial contact
  - 45 day initial contact
  - IFSP 180 days and with changes

- Data Entry
  - 10 day data entry rule

- Paperwork/Protocol
  - Improper use of forms
  - Information Overload
  - Rapidly changing paperwork
  - Excessive paperwork obligation
  - Inaccurate perception of actual caseload
  - Ineffective Case tracking methods
  - Number of children needed to meet the contract amount is greater than the FTE caseload guidelines

- Partners
  - DS involvement/Assignment
  - DCFS contact
  - Transition to Schools
  - Large influx of cases
  - Perception of high visit frequency (83% of cases per month)
  - Lengthy amount of ongoing visit time (33% > 2 hours)
  - Perception of SC role involvement with family
  - Assignment of cases by location

- Referrals
  - Staff resistance to change
  - SCs carrying for non-billable cases
  - Low staff morale

- Management
  - FTE SCs must carry >50 cases to meet contract
  - Tracking tools to ensure compliance measures
  - Unknown length or content of visits

Aim statement: Optimize and consistently maintain Service Coordinators caseload to maximize the HMG contract ($348,086).

Service Coordinator/Caseload

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Can be changed or addressed

Cannot be changed but can be mitigated

External factor larger systemic effort

No Control
# Develop an Action Plan (Gantt Chat)

## Preparation of materials to support the process

| Person(s) Responsible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Download most current version of CoCASA | Amy | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Contact test clinic to schedule chart review | Amy | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

## Pilot #1

| Person(s) Responsible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Visit clinic and conduct review | Erin and Amy | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Meet with MLC3 group to discuss results | All | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Contact test clinic 2 to schedule review | Amy | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

## Pilot #2

| Person(s) Responsible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Visit clinic and conduct review | Erin and Amy | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Meet with MLC3 group to discuss results | All | X |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

## Full Implementation

| Person(s) Responsible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Contact all clinics to schedule reviews | Amy |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Visit clinics and conduct reviews | Erin and Amy | X |   |   |   |   |   |   |   |   | X |   |   |   |   |   |   |   |   |   |   |   |   |

## Planning and Improving Intervention

| Person(s) Responsible | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Compile clinic specific results of reviews | Amy |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
| Compile countywide results of reviews | Amy |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | X |
Adapted from *The ABC’s of PDCA*, Gorenflo and Moran

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3. Document Problems, Observations, and Lessons Learned

**Adopt**
- Standardize/ Hold the Gains

**Adapt**
- DO - Modify/ Try Again

**Abandon**
- Plan

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DO Steps for Implementing QI Project*

- Test the improvement
- Carry out the test on a small scale (Michigan Guidebook)
- Collect, chart, and display data to determine effectiveness of the test
- Document the problems, unexpected observations, lessons learned, and knowledge gained

* The ABCs of PDCA & MI Guidebook
Testing a Change: Why Test?

- Smaller Scale Tests
- More of them prior to implementation

Confidence in success

Level of risk

Minor          Major

Low            High

Modified from Jane Taylor PhD
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
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
Sequential Building of Knowledge Includes a Wide Range of Conditions in the Sequence of Tests

- Theories, hunches, & best practices
- Test on a small scale
- Test a wider group
- Implement
- Spread
- Breakthrough Results

Learning and improvement:
- Test new conditions

Evidence & Data
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
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Plan

Adapted from *The ABC’s of PDCA*, Gorenflo and Moran
CHECK/STUDY Steps for Implementing QI Project*

• Analyze the results: was an improvement achieved?
  • Compare results against baseline data and the measures of success stated in the Aim Statement
  • Did the results match the theory/prediction?
  • Did you have unintended side effects?
  • Is there an improvement?
  • Do you need to test the improvement under other conditions?

• Document lessons learned, knowledge gained, and any surprising results that emerged.

* The ABCs of PDCA & MI Guidebook
Step Eight: Standardize the Improvement or Develop a New Theory

- If your improvement was successful on a small scale test it on a wider scale
  - Continue testing until an acceptable level of improvement is achieved
  - Make plans to standardize the improvement
- If your change was not an improvement, develop a new theory and test it; often several cycles are needed to produce the desired improvement
ACT Steps for QI Project*

- Take action:
  - Adopt - standardize
  - Adapt – change and repeat
  - Abandon – start over
- If your change was not an improvement, develop a new theory and test it; often several cycles are needed to produce the desired improvement
- Once you’ve adopted – monitor and hold the gains!

* The ABCs of PDCA & MI Guidebook
Tying It all Together

Problem to Consider – AIM

Identify Stakeholders Needs & Prioritize Issues

Sector Maps
Force Field Analysis
Affinity Diagram
Prioritization Tools

Describe current process

Logic Model
Flow Chart

Identify Potential Root Cause

Fishbone Diagram

Data Collection to Identify Root Causes

Pareto Charts
Meeting Effectiveness

Modify Intervention or Implement if Improvement

• Flow Charts
• Analysis Reports

Plan & Test Potential Solution

Gantt Chart
Data Collection

Analyze Information & Develop Solutions

PDSA Cycle

Translate Data Into Information

Run Charts, Pie Charts
Step Nine: Establish Future Plans

- Celebrate your success
- Communicate your accomplishments to internal and external customers
- Take steps to preserve your gains and sustain your accomplishments
- Make long term plans for additional improvements
- Conduct iterative PDSA cycles, when needed
Holding the Gains

- Logic Model can link inputs of resources, capacity and staff to process outputs and outcomes/indicators
- Regular measurement established to monitor process outcomes and related health indicators
- Regular reporting of outcome results (including program evaluation)
- Agency infrastructure for taking action on monitoring results (e.g. QI program and QI teams)
- Remeasurement and new improvement action
Some QI References

- Breakthrough Method and Rapid Cycle Improvement [www.ihi.org](http://www.ihi.org)
What Questions Do You Have?