QI Tools to Support Measurement Activities

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Introduction

YET ANOTHER TWIST ON QI
Health Departments Are Using Quality Improvement (QI)

- By now you should each have a copy of the *Public Health Quality Improvement Encyclopedia*
  - 75 QI tools and methods
  - Public health examples
- One of many resources *Performance Improvement Managers (PIMs)* have to support their agencies’ use of QI in daily practice
- We know that many PIMs have been actively using QI these last three years

Live Poll: When Do You Use QI Tools in Your Current Practice?

(please select all that apply)

- To help analyze and understand problems
- To help identify solutions and solve problems
- To help monitor improvements
- To help interpret data
- None of the above
When Do You Use QI Tools in Your Current Practice?

___% To help analyze and understand problems
___% To help identify solutions and solve problems
___% To help choose measures and indicators
___% To help monitor improvements
___% To help interpret data
___% None of the above
QI Is Not Just for Problems

- A 2011 paper by Jack Moran & Grace Duffy (in the ASQ Newsletter) and on the Public Health Foundation (PHF) website
  - Success and Effect Diagram
  - Highlights the attributes of a successful process
  - “5 Whats” (instead of “5 Whys”)
- Ensuring right information is uncovered
- Ensuring the information is used effectively

Moran JW, Duffy GL. *Success and effect diagram: quality improvement is not just for problems*. Public Health Foundation, 2011.
Improving Measurement with QI

A TOOL FOR ALL SEASONS

- Applying QI tools to strengthen measurement activities
- PHF and National Network of Public Health Institutes (two capacity-building assistance partners)
- A menu of 25 tools potentially to use at progressive stages of measurement
- Purpose and applicability of each tool on the menu
- Comments on drafts of the tool provided by CDC, and PIMs from Houston, Kansas, Kentucky, Maine, Maricopa County
Stages of Measurement

- Choosing measures
- Choosing indicators
- Managing data quality
- Analyzing and interpreting data
Choosing Measures

Identifying the factors that the program aims to impact, and therefore what to measure in evaluating a project

- Affinity diagram
- AIM statement
- Brainstorming
- Cause and effect diagram/fishbone
- Five whys
- Force & effect diagram
- Pareto chart
- PEST chart
- SMART matrix
- Voice of the customer
Example: **SMART MATRIX**

- Use to develop clear, actionable goals and tactics
- Use to align plans with overall goals, and create a results-focused plan

<table>
<thead>
<tr>
<th>Improvement Areas</th>
<th>Specific (S)</th>
<th>Measureable (M)</th>
<th>Attainable (A)</th>
<th>Resources (R)</th>
<th>Time (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time to Receive Service</td>
<td>Reduce client wait time by 25%</td>
<td>• Reduce time from client call to exit from 15 minutes to 11.25 minutes</td>
<td>• Process owner buy-in</td>
<td>• Stopwatch</td>
<td>3 days per week from September 1- November 30</td>
</tr>
<tr>
<td>Registration Time</td>
<td>Analyze current clinic registration cycle time</td>
<td>• Measure current cycle</td>
<td>• Process owner buy-in</td>
<td>• Time tracking software</td>
<td>October 4, 6, 7, 11, 13, 14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Analyze current state for improvement</td>
<td>• Team trained in process mapping</td>
<td>• Access to registration area</td>
<td></td>
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Choosing Indicators

Choosing the specific metrics and indicators that reflect performance on target measures

- AIM statement
- Control & influence matrix
- Force & effect diagram
- Nominal group technique
- Prioritization matrix
- Tree diagram
Example: TREE DIAGRAM

- Use to move from the general to the specific and to explain details organized within categories

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objectives</th>
<th>Tasks</th>
<th>Measures</th>
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</thead>
<tbody>
<tr>
<td>Recruitment</td>
<td>Expand job posting locations</td>
<td>2 or more new posting sources</td>
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<td></td>
<td>Encourage internal applicants to apply</td>
<td>Increased number of internal applicants</td>
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<td></td>
<td>Create internship opportunities</td>
<td>Number of interns who apply for positions</td>
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<tr>
<td>Retention</td>
<td>Offer opportunity to telework</td>
<td>Write new telework policy</td>
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<td>Offer flexible hours</td>
<td>Write new policy detailing flexible scheduling</td>
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<td>Create mentorship program</td>
<td>Identify mentors and schedule initial program development meeting</td>
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<tr>
<td>Training</td>
<td>Provide professional development funds</td>
<td>Allot 5% of budget to professional development</td>
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<td>Create monthly email highlighting the Public</td>
<td>Send monthly emails</td>
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<td>Health Core Competencies</td>
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<td>Provide incentives for completing courses on</td>
<td>Update annual review form to include training evaluation</td>
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<td></td>
<td>TRAIN</td>
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Managing Data Quality

Putting safeguards in place to help ensure that data gathered are reliable and valid, and truly represent the target measures.

- Cause and effect diagram/fishbone
- Check sheet
- Control chart
- Critical path analysis
- Flowchart
- Gantt chart
- PDCA cycle
- Stop-start-continue-improve matrix
Example: CAUSE AND EFFECT DIAGRAM

- Use to organize ideas about potential causes of observed effects
- Helps to create a map of multiple causes contributing to an effect

![CAUSE AND EFFECT DIAGRAM](image)

Analyzing & Interpreting Data

Knowing how to “crunch” the numbers and make sense of trends in the data

- Control chart
- Radar chart
- Run chart
- Scatter diagram
- Variation plot
Example: RUN CHART

- Use to display performance over time
- Use to assess data stability
- Use to pinpoint areas needing improvement

Just a Starting Place

- Fitting tool selection and application to each unique circumstance
- Discovering where multiple tools can work together effectively
- A working document that is meant to prompt experimentation
- We welcome comments based on users’ experience and observations
All lines are **open** and **live**!

Please remember to use your mute button or *6
Thank you!

Please send comments and questions to pimnetwork@cdc.gov

For more information please contact CDC’s Office for State, Tribal, Local and Territorial Support.

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