An Introduction to Quality and Quality Improvement

Great Beginnings Great Families Conference
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Objectives for this training:

1) Have a better understanding of Quality history, concepts, and principles
2) Become more familiar with the QI Model – Plan, Do, Study, Act (PDSA)
3) Become aware of available QI tools and resources
4) Participate in an activity using a QI tool
Introductions

• Name/Organization
• What is your background in QI?
• What do you hope to get out of this training?
What is Quality?
So, What is Quality?

• It is difficult to define.

• It is a subjective term that means different things to different people.

• Quality experts have established definitions and standards used to measure quality.

• Quality extends beyond experts and industry standards; it is also defined by customers and their expectations.
Quality is...
Consistently meeting or exceeding the needs and expectations of the **customer**.

Public Sector?  
Healthcare?  

Helping the **customer** to be successful.
## Quality Evolution – six main periods

<table>
<thead>
<tr>
<th>Period</th>
<th>Key Characteristics</th>
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</table>
| 1. Medieval Guild (late 1200s) | • Craftsmen and merchant guilds formed across Europe  
• Inspection committees marked the goods  
• Quality = Individual Ownership + Skill + Reputation                                                                                           |
| 2. Industrial Revolution (1800s) | • Factory system emerged to meet demand (mass production)  
• Product inspection (Quality Control was defined)  
• Quality = Standard Work + Inspection to Remove Defective Products                                                                                   |
| 3. Pre-World War II (early 1900s) | • Quality assurance and process management included in manufacturing  
• Competition increased; cost and waste affected profitability                                                                                       |
Quality Evolution – continued...

<table>
<thead>
<tr>
<th>Period</th>
<th>Key Characteristics</th>
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<tbody>
<tr>
<td>4. World War II (1939 – 1945)</td>
<td>• USA enacts legislation controlling businesses under contract for military goods</td>
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<td></td>
<td>• Published standards and sampling inspection</td>
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<td>5. Total Quality Management (TQM) (1970s – 1990s)</td>
<td>• Response to quality revolution in Japan after WWII</td>
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<tr>
<td></td>
<td>• Quality = Assurance + Control + Improvement</td>
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<td>6. Beyond TQM (1990s – present)</td>
<td>• New quality systems emerge</td>
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<td></td>
<td>• Quality integrated into service, healthcare, education, government, others...</td>
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</table>
Why Quality Improvement in Public Health?
What the US gets for its investment...
Graph: Non-Defense Discretionary Spending Falling to Historic Lows

Spending as percent of gross domestic product

Note: Data available only back to 1962. Sequestration refers to budget cuts required under the 2011 Budget Control Act, and includes modifications made in the Bipartisan Budget Acts of 2013 and 2015. Source: CBPP based on Office of Management and Budget and Congressional Budget Office data.
Foundation for Quality in Public Health
Quality Improvement in Public Health

“Quality improvement in public health is the use of a deliberate and defined improvement process... to achieve measurable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality in services or processes which achieve equity and improve the health of the community.”

-- Accreditation Coalition, 2009

Improving how we do what we do to meet the need and expectations of our customers.
Terminology
Essential Parts of a Quality Management System

Quality Management System

Quality Assurance and Planning Practices
- Prevention by program and service design; design processes for excellence

Quality Control Practices
- Monitor, analyze and react to problems; data collection and reporting

Quality Improvement Practices
- Proactive change; Improve upon existing systems and processes; “Raise the Bar” for strategic purposes
Comparing Frameworks and Components

Public Health Foundation
Turning Point: Performance Management Project

Minnesota Department of Health:

Performance Management

Objectives
Where do we want to be?

Measurement
How will we know?

Quality Improvement
How will we improve?

Monitoring and Communicating Progress
How well are we doing?

Visible Leadership

- Customer Focus
- Strategic Alignment
- Transparency
- Culture of Quality

Performance Standards
- Identify relevant standards
- Select indicators
- Set goals and targets
- Communicate expectations

Performance Measurement
- Refine indicators
- Define measures
- Develop data systems
- Collect data

Reporting Progress
- Analyze and interpret data
- Report results broadly
- Develop a regular reporting cycle

Quality Improvement
- Use data for decisions to improve policies, programs, outcomes
- Manage changes
- Create a learning organization
Quality improvement is a product of performance management—a continuous cycle of measurement, analysis, and improvement.
Quality Improvement Principles in Public Health

1. Customer Focus
2. Improvement is Continuous
3. Involves All Employees and Requires Teamwork
4. Make data-driven decisions
Principle 1: Customer Focus

• Customers are our reason for being.
• Internal and external customers
  • Who are your customers?
  • What are their needs / requirements?
  • How will you know if you are successful?
Principle 2: Improvement is Continuous

• Improvement is always possible!
• Quality improvement is the science of process management.
Principle 3: Involves all Employees and Requires Teamwork

• Most problems are complex, and multiple perspectives are needed

• Teams require structure and development

• Employees are empowered to prevent and solve problems at the point of customer contact
Principle 4: Make Data-Driven Decisions

- Decisions based on thoughts, feelings, or power may not be the best method.
- Data systems must be in place in order to make data-based decisions.
- Improvement requires a clear aim based on data
Nine Dot Exercise

**Instructions:**
Connect all dots with only 4 straight lines and without lifting your pen!
Nine Dot Answers...
QI Models
How do you solve problems at work?

• Copy someone else
• Hope for a miracle
• Avoid/deny the problem
• Give it to someone else
• Apply a Band-Aid
• Use intuition or past experience or random methods
• Identify a process that could or should be performing better... think up a way to improve it ... do it... hope for the best

Did any of these methods lead to an improvement? Maybe... but how do we KNOW?
A Comparison of QI Models:

<table>
<thead>
<tr>
<th>FADE</th>
<th>PDSA</th>
<th>Six Sigma (DMAIC)</th>
<th>Six Sigma (DMADV)</th>
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<tbody>
<tr>
<td>Focus</td>
<td>Define</td>
<td>Define</td>
<td></td>
</tr>
<tr>
<td>Analyze</td>
<td>Measure, Analyze</td>
<td>Measure, Analyze</td>
<td>Design</td>
</tr>
<tr>
<td>Develop</td>
<td>Plan</td>
<td></td>
<td>Design</td>
</tr>
<tr>
<td>Execute</td>
<td>Do</td>
<td>Improve</td>
<td></td>
</tr>
<tr>
<td>Evaluate</td>
<td>Study</td>
<td>Control</td>
<td>Verify</td>
</tr>
<tr>
<td>Act</td>
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</table>

- FADE: Used to improve existing processes
- PDSA: Used to develop new processes

Duke University School of Medicine, Department of Community and Family Medicine - [http://patientsafetyed.duhs.duke.edu/module_a/module_overview.html](http://patientsafetyed.duhs.duke.edu/module_a/module_overview.html)
Plan-Do-Study-Act
(or Plan-Do-Check-Act)
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
7. Develop Improvement Theory
8. Develop Action Plan

PLAN

Identify and prioritize quality improvement opportunities

www.adesblog.com/category/getting-things-done/
PLAN

Develop an AIM Statement

• WHAT are we striving to accomplish?
• WHEN will this occur (what is the timeline)?
• HOW MUCH? What is the specific, numeric improvement we wish to achieve?
• FOR WHOM? Who is the target population?
Develop an AIM Statement

• **Statement #1:** “We will improve the number of hearing tests given by the health department.”

• **Statement #2:** “Between September 1 and December 15, 90% of first grade students enrolled in the county’s schools will receive hearing tests.”
PLN

Describe the current process
Collect data on the current process
PLAN

Identify all possible causes

The cause of bad hair days...

... and horrible dreams
PLAN

Identify potential improvements
PLAN

Develop an improvement theory

IF...THEN...

scipp.ucsc.edu/theory/theoryhomepage.htm
PLAN

Develop an action plan
DO

• Implement the improvement
• Collect and document the data
• Document the problems, unexpected observations, lessons learned, and knowledge gained
STUDY

• Analyze the results: was an improvement achieved?

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

• Take action:
  • Adopt – standardize
  • Adapt – change and repeat
  • Abandon – start over

• Once you’ve adopted – monitor and hold the gains!
Key Elements of QI:

• Understanding **process**

• Determining the **root cause**

• Identifying and monitoring progress toward **measurable objectives**

Institute for Healthcare Improvement – Model for Improvement: http://www.ihi.org/resources/Pages/HowtoImprove/default.aspx
QI and the Use of Tools
## Project Methodology and Tools

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<tr>
<th>Plan</th>
<th>Do</th>
<th>Check</th>
<th>Act</th>
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<tr>
<td><strong>Define</strong></td>
<td><strong>Measure</strong></td>
<td><strong>Analyze</strong></td>
<td><strong>Improve</strong></td>
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<tr>
<td>Project Charter</td>
<td>Swim Lane Map</td>
<td>Brainstorming</td>
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</tr>
<tr>
<td>Team Norms</td>
<td>Value Stream Map</td>
<td>Cause and Effect Analysis (Fishbone)</td>
<td>Idea Box</td>
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<tr>
<td>SIPOC Diagram</td>
<td>Spaghetti Map</td>
<td>5 Whys</td>
<td>Ranking and Voting</td>
</tr>
<tr>
<td>Voice of the Customer Techniques</td>
<td>Process Analysis</td>
<td>Affinity Diagram</td>
<td>2 x 2 Table</td>
</tr>
<tr>
<td>Stakeholder Map</td>
<td>Control Chart</td>
<td>Relations Diagram</td>
<td>Decision Matrix</td>
</tr>
<tr>
<td>Benchmarking</td>
<td>Statistics</td>
<td>Surveys</td>
<td>Cost/Benefit Analysis</td>
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</table>
Flow Charts - Macro to Micro

Hands Are Dirty

Start

Wash hands

End

Hands Are Clean

Start

Wash hands

Turn on water
Dispense soap
Wash hands till clean
Rinse soap off
Turn off water
Dry hands

End

Start

Wash hands
Turn on water
Dispense soap
Rub hands together

Hands clean?

No

Rinse hands till clean

Yes

Rinse soap off
Turn off water
Dry hands

End
WIC Client Visit Process

Client Checks In With Receptionist For:
- Scheduled Appointment
- Walk-In Appointment

Start of WIC Client Visit Process

Client Makes WIC Appointment:
- Through Call Center
- At End of Current Visit

Client Attends Nutrition Class

Client Screened for Eligibility Determination

Client Attends Nutritionist Interview

Client Sees Navigator

Is Client Pregnant or Breast Feeding?

No

Client Sees Breast Feeding Peer Counselor

Client Benefits Issued

Client Makes Return Appointment

End WIC Client Visit/s

Yes

Client Sees Breast Feeding Peer Counselor

Client Receives Appointment Reminder Follow Up Phone Call

Client Receives Missed Appointment Letter With Walk-In Schedule
Problem Solving – What we usually see is the tip of iceberg – “The Symptom”

The symptom → The root causes (Invisible and hidden)
Cause and Effect Diagrams

Other names:
- Fishbone Diagram
- Root Cause Analysis
- Ishikawa Diagram
Cause and Effect Diagrams - Construction

- Generate ideas as to what are the major causes of the effect

- Label these as the major branch headers

- Organizes group knowledge about causes of a problem and display the information graphically
Cause and Effect Diagrams - Construction

- For each major cause category brainstorm ideas as to what are the related sub-causes that might effect our issue

- Use the 5 Why techniques when a cause is identified

- Keep repeating the question until no other causes can be identified

- List the sub-cause using arrows
Exercise

Why Are Employees Late For Work?

- It is a question that management has wrestled with for a long time.
- Every time we think we have heard all the excuses someone invents another creative one.
Investigating The Reasons:

• Why Are Employee Late For Work?

• Use a Cause and Effect diagram to understand the causes.

• Use the 5 Why Technique to get to Root Cause.
Why are employees late for work?
Carver County Public Health
HAN Project

Policies
- Lack of agency policy
  - Changes in required list of recipients
    - Grant requirements change
- Lack of procedure

Procedures
- Lack of written procedure
- Incorrect contact information
  - Need to monitor responses
- Tracking actual time fax received
- Logging results is tedious
  - Fax machine doesn't log fax responses
  - Incorrect time stamps on faxes
  - Time changes don't get made

Plant/Technology
- Fax machine - slow
  - Can't resend corrected faxes through JBlaster
  - Need to resend as corrections made
  - Limited staff
    - Only one person assigned
- Recipients are not oriented to the HAN process

Measurement
- Too much staff time to conduct HAN test

People
So... Why QI?

• Improve the effectiveness and efficiency of our work

• Standardize how we measure and show improvements in our work

• Collaboration drives change

• Document and share with others
QI Resources

• PHQIX – https://www.phqix.org/


• PHF – Public Health Foundation – http://www.phf.org

• Minnesota Department of Health – QI Resources and Tools – http://www.health.state.mn.us/divs/opi/qi/toolbox/
In summary...

• Quality Improvement is a philosophy for achieving organizational excellence.

• There are four Principles of Quality Improvement.

• Quality Management involves planning, monitoring and improving.

• There are numerous tools designed to improve, control and assure quality... Use the ones that make sense to you!
Questions???

Thank you!

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