



MAHONING COUNTY PUBLIC HEALTH

PREVENT · PROMOTE · PROTECT

Quality Improvement Plan

Quality Improvement Plan Mahoning County Public Health

Section 1

Introduction

Mission. The mission of Mahoning County Public Health is to promote and protect the health of individuals and communities. We do this by educating, mobilizing, and collaborating with the public to prevent disease, reduce health disparities, and enhance the quality of life in Mahoning County.

Vision. We aspire to be the leader in population health improvement. Through the use of innovative, proactive, and collaborative approaches we will ensure conditions in which all people can be healthy.

Mahoning County Public Health is committed to the ongoing improvement of the quality of services its consumers receive, as evidenced by the outcomes of those services. The organization continuously strives to assure that the ten essential public health services are provided in the community:

- 1. Monitor health status to identify and solve community health problems.*
- 2. Diagnose and investigate health problems and health hazards in the community.*
- 3. Inform, educate, and empower people about health issues.*
- 4. Mobilize community partnerships and action to identify and solve health problems.*
- 5. Develop policies and plans that support individual and community health efforts.*
- 6. Enforce laws and regulations that protect health and ensure safety.*
- 7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.*
- 8. Assure competent public and personal health care workforce.*
- 9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.*
- 10. Research for new insights and innovative solutions to health problems.*

The following Quality Improvement Plan serves as the foundation of the commitment of this agency to continuously improve the quality of the services it provides.

Quality. Quality services are services that are provided in a safe, effective, customer-centered, timely, problem solving and equitable fashion.

Quality Improvement Principles. Quality improvement (QI) is a systematic approach to assessing services and improving them on a priority and ongoing basis. The Mahoning County Public Health approach to quality improvement is based on the following principles:

- **Customer Focus.** High quality organizations focus on their internal and external customers and on meeting or exceeding needs and expectations.
- **Employee Empowerment.** Effective programs involve people at all levels of the organization in improving quality.
- **Leadership Involvement.** Strong leadership, direction and support of quality improvement activities by the Board of Health and Health Commissioner are key to performance improvement. This involvement of organizational leadership assures that quality improvement initiatives are consistent with our mission and strategic plan.
- **Data Informed Practice.** Successful quality improvement processes create feedback loops, using data to inform practice and measure results. Fact-based decisions are likely to be correct decisions.
- **Statistical Tools.** For continuous improvement, tools and methods are needed that foster knowledge and understanding. Continuous quality improvement organizations use a defined set of analytic tools such as run charts, cause and effect diagrams, flowcharts, Pareto charts, histograms, and control charts to turn data into information.
- **Prevention Over Correction.** Continuous Quality Improvement entities seek to design good processes to achieve excellent outcomes rather than fix processes after the fact.
- **Continuous Improvement.** Processes must be continually reviewed and improved. Small incremental changes do make an impact, and providers can almost always find an opportunity to make things better.

Leadership. The key to the success of the Continuous Quality Improvement (CQI) process is leadership. The following describes how the leaders of the Mahoning County Public Health provide support to quality improvement activities.

The *Quality Improvement Council* provides ongoing operational leadership of continuous quality improvement activities at the Board of Health. It meets at least quarterly and consists of the following individuals:

Ryan Tekac	Director of Environmental Health – QI Council Chair
Shannon Sellards	Sanitarian - Deputy QI Council Chair
Susan Kovach	Deputy Director of Community Health
Erica Horner	Director of Nursing and Community Health
Ed Janik	Finance and Human Resources Director
Drew Stefan	Sanitarian
Diane Zagorsky	Clerical in Public Health Nursing Division
Loretta Floyd-Pleas	WIC Director
Julie Thompson	Administrative Specialist / PHAB Coordinator
Scott Bolam	Director of Laboratory Services
Patricia Sweeney	Health Commissioner

REVISIONS:

March 14, 2011	April 17, 2017
February 20, 2014	March 6, 2018
October 15, 2015	September 14, 2018
December 18, 2015	May 7, 2019
December 30, 2015	
December 5, 2016	

The responsibilities of the Council include:

- Develop and approve the Quality Improvement (QI) Plan.
- Establish measurable performance objectives based upon priorities identified in the Strategic Plan.
- Develop indicators of quality on small QI projects.
- Provide agency wide support to participating staff for specific quality improvement initiatives.
- Report to the Board of Health on quality improvement activities of the agency on a regular basis.
- Utilize a Continuous Quality Improvement process (*Plan-Do-Check-Act: PDCA*)
- Complete the Ohio State University Center for Public Health Practice *CQI for Public Health: the Fundamentals* course.
- Maintain the CQI proficiency by attending CQI continuing education trainings.
- Assign members to individual QI teams.
- Evaluate the Quality Improvement Plan annually (see Section Five).
- Assess the Organizational Culture of Quality using the NACCHO Self-Assessment Tool

biennially (see Appendix F).

The **Board of Health** also provides leadership for the Quality Improvement process as follows:

- Supporting and guiding implementation of quality improvement activities at the agency.
- Reviewing, evaluating and approving the Quality Improvement Plan annually.

The Leadership supports QI activities through the planned coordination and communication of the results of measurement activities related to QI initiatives and overall efforts to continually improve the quality of services provided. This sharing of QI data and information is an important leadership function. In order to continually improve performance, leadership, through a planned and shared communication approach, ensures that internal and external customers have knowledge of and input into ongoing QI initiatives.

This planned communication may take place through the following methods:

- Display of storyboards and/or posters in common areas;
- Provide newsletters and/or handouts for target audiences; and
- Inform both internal and external stakeholders of QI outcomes, as appropriate.

Section 3

Goals and Objectives

The Quality Improvement Council identifies and defines goals and specific objectives to be accomplished each year. These goals include training of clinical, environmental and administrative staff regarding both continuous quality improvement principles and specific quality improvement initiative(s). Progress in meeting these goals and objectives is an important part of the annual evaluation of quality improvement activities.

Continuous Quality Improvement Activities. Quality improvement activities emerge from a systematic and organized framework for improvement. This framework, adopted by the Mahoning County Public Health leadership, is understood, accepted and utilized throughout the organization, as a result of continuous education and involvement of staff at all levels in performance improvement. Quality Improvement involves two primary activities:

- Measuring and assessing the performance of objectives through the collection and analysis of data.
- Conducting quality improvement initiatives and taking action where indicated, including the design of new services, and/or improvement of existing services.

The tools used to conduct these activities are described in Appendix B, at the end of this Plan.

The QI Council seeks suggestions from staff in deciding priorities for QI projects each year via Parking Lot and monthly electronic newsletter. In addition, staff suggestions for QI projects are intentionally solicited during all departmental staff meetings, monthly Board of Health, bi-monthly leadership team meetings, and included suggestions on the yearly employee evaluations.

Team Charter. Once the Quality Improvement (QI) Council decides on the formation of a new QI team and its members, the Team Leader will develop the team charter. The team charter is a crucial document that should be completed at the start of a QI team. It serves as a guide for the team through the process. However, this document is a living document and can be changed throughout the course of QI process. A copy of the Team Charter along with an explanation on how to fill it out is located in Appendix A of this document.

PDCA (Plan, Do, Check, Act). The decision to undertake the initiative is based upon agency priorities. The purpose of an initiative is to improve the performance of existing services or to design new ones. The model utilized at Mahoning County Public Health is called Plan-Do-Check-Act (PDCA).

- **Plan** - The first step involves identifying preliminary opportunities for improvement. After a decision is made to undertake a QI initiative, a QI team is assembled. This team should consist of staff that will be directly affected by the outcomes of the team, with the exception of the team facilitator, who should have no vested interest in the process. At this point, the focus is to analyze data to identify concerns and to determine anticipated outcomes. Ideas for improving processes are identified. This step requires the most time and effort. Affected staff or people served are identified, data compiled, and solutions proposed. (For tools used during the planning stage, see sections “a” thru “k” in Appendix: B.)
- **Do** - This step involves using the proposed improvement theory. If measuring and assessing the improvement theory demonstrates success, the solution will be implemented on a trial basis. If it proves successful, as determined through measuring and assessing, implementing the solution usually on a trial basis as a new part of the process.
- **Check** - At this stage, data is again collected to compare the results of the new process with those of the previous one.
- **Act** - This stage involves two actions. The first is to decide, based upon the data collected in the Check phase whether to adopt the change theory, adapt (make slight changes to the theory) or to abandon the improvement theory and start over. The second action in this phase is to decide future plans. So if the team decided to adopt or adapt the improvement theory, it must indicate how it will monitor the gains going forward. If the improvement theory was abandoned, it must decide on how it will continue.

Storyboard. Once the process is complete, QI teams may complete a storyboard, which is a one page snapshot of the project in each step of the PDCA cycle. Appendices C, D and E contain a Storyboard Template and Example respectively.

An evaluation is completed at the end of each calendar year. The annual evaluation is conducted by the agency and kept on file along with the Quality Improvement Plan.

The evaluation summarizes:

- 1) the goals and objectives of the agency's Quality Improvement Plan, and
 - 2) the quality improvement activities conducted during the past year, including the: targeted process; systems and outcomes; the performance indicators utilized; the findings of the measurement, data aggregation, assessment and analysis processes; and the quality improvement initiatives taken in response to the findings.
- Summarize the progress towards meeting the Annual Goals/Objectives.
 - For each of the goals, include a brief summary of progress.
 - Provide a brief summary of the findings for each of the indicators used during the year. These summaries should include both the outcomes of the measurement process and the conclusions and actions taken in response to these outcomes. Progress is to be summarized in relation to the quality initiatives.
 - For each initiative, provide a brief description of the activities that took place including the results. Outline the next steps to be taken and how gains will be held. Recommendations: Based upon the evaluation, state the actions needed to improve the effectiveness of and changes to the QI Plan.
 - Council reviews all small QI – continuous quality improvement activities.

Mahoning County Public Health Quality Improvement Plan

The PHAB site visit report for the Mahoning County Public Health (MCPH) stated that the agency had an opportunity for improvement relating to Domain 9 standard 9.2.1A “The major elements of a quality improvement plan were presented... There were no time-framed objectives and very little information about how the plan would be implemented.”

In response, during our first year as an accredited local health department, MCPH revised our Quality Improvement Plan. The plan now includes specific time-framed goals and objectives that demonstrate how staff will gain and maintain quality improvement process competencies. In addition, the plan describes how the MCPH QI Plan will be implemented, monitored and evaluated as well as how QI Projects will be selected and how QI Project outcomes will be communicated to the governing board and internal and external customers.

Mahoning County Public Health Quality Improvement Plan - 2018

QI Plan Goals	Objectives & Activities	Measures	Timeframe
All MCPH staff are fully integrated into the QI.	<ul style="list-style-type: none"> ➤ Each employee will participate in a QI Team no less than once every 2 years. ➤ Two staff members from each division shall serve as members on every QI Project Team (1 senior and 1 junior level) 	<ul style="list-style-type: none"> ➤ Membership Identified in Team Charters 	<ul style="list-style-type: none"> ➤ New employees within 2 years of hire date ➤ Existing employees will be integrated immediately
New employees are competent in the MCPH QI Plan and process.	<ul style="list-style-type: none"> ➤ 100% of new hires receive QI training as part of the New Employee Orientation Curriculum 	<ul style="list-style-type: none"> ➤ Certificates of Participation ➤ Survey Monkey Knowledge evaluations/test 	<ul style="list-style-type: none"> ➤ New staff - Within 8 weeks of hire date
MCPH employees are competent in the department's QI Plan and process	<ul style="list-style-type: none"> ➤ Each staff member will complete the OSU QI modules ➤ 95% of MCPH staff will participate in annual QI continuing educational sessions. 	<ul style="list-style-type: none"> ➤ Certificates of Participation ➤ Survey Monkey Knowledge Evaluations 	<ul style="list-style-type: none"> ➤ Current staff – prior to 2016 performance evaluation ➤ Annually in the 1st Quarter
MCPH QI projects represent performance across the department	<ul style="list-style-type: none"> ➤ Performance Management outcomes will reflect projects referred for QI ➤ Each MCPH division shall propose a minimum of one QI project annually 	<ul style="list-style-type: none"> ➤ QI Council Meeting Minutes ➤ Storyboards ➤ Team Charters 	<ul style="list-style-type: none"> ➤ Quarterly during QI Council meetings ➤ During special QI Council meetings as needed
Monitor and Evaluate the QI Plan	<ul style="list-style-type: none"> ➤ QI Plan Implementation follows the established timeline ➤ Revise QI Plan as needed 	<ul style="list-style-type: none"> ➤ QI Council meeting minutes ➤ Team Charter updates 	<ul style="list-style-type: none"> ➤ Yearly and/or as needed
Internal and external customers are knowledgeable of QI outcomes	<ul style="list-style-type: none"> ➤ Annual reports to the Board ➤ MCPH monthly news letter ➤ MCPH Annual Report ➤ External customer presentations ➤ Project presentation by Team Leader during Board meetings ➤ QI Storyboards will added to MCPH webpage 	<ul style="list-style-type: none"> ➤ Staff and Board meeting minutes ➤ Meeting attendance forms ➤ QI articles published in MCPH monthly news letter ➤ Storyboard postings to the webpage 	<ul style="list-style-type: none"> ➤ Annually

1. TEAM CHARTER

- Project
- Task Force

2. Team Name:	3. Version:	4. Subject:
5. Problem / Opportunity Statement:		
6. Strategic Alignment:		7. Team Leader:
8. Team Sponsor:		
9. Team Members:		Area of Expertise:
1.		
2.		
3.		
4.		
5.		
6.		
10. Performance Improvement AIM (Mission):		
11. Scope (Boundaries):		
12. Customers (primary and other):		Customer Needs Addressed:
13. Objectives:- SMART - Specific, Measurable, Achievable, Realistic, Time Frame		
✓		
✓		
✓		
14. Success Metrics (Measures):		
15. Considerations (Assumptions / Constraints / Obstacles / Risks):		
16. Available Resources:		17. Additional Resources Needed:
18. Key Milestones:		Date:
19. Communication Plan (Who, How, and When):		
20. Key Stakeholders:		Area of Concern (as it relates to the Charter):

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Team Charter Detail by Section:

Section 1. Charter: (Project or Task Force)	
What it does:	Establishes the nature of the work.
Why it is important:	Differentiates the team work in the following way: <ul style="list-style-type: none"> • A Project is typically a well-defined system or process change, the scope and implementation needs are known up front, the project timeline is predictable, and the outcome known. • A Task Force is usually less prescribed, usually focusing on a problem to be solved or an improvement opportunity. The charter is a vehicle by which the team can reach consensus on the aim, define the boundaries of the process, and identify the means by which the effort will measure its success.
Example:	Project: Implementation of a scheduling system. Task Force: Waits and Delay, Improvement Team.

Section 2. Team Name:	
What it does:	Identifies the team.
Why it is important:	Enables the team to distinguish the effort from others. Tip: Keep it simple, unique, and easily stated.
Example:	WIC Waiting Room Time Reduction Team.

Section 3. Version (Number/Date):	
What it does:	Tracks and clarifies versions of the charter, identifies current charter.
Why it is important:	Charters if used well will be iterative; it is important to establish the last time the document was edited. Tip: Using only the last edited date is the simplest method.
Example:	December 12, 20XX or Version #5, December 12, 20XX.

Section 4. Subject:	
What it does:	Identifies the area of focus.
Why it is important:	Clarifies the intent of the project.
Example:	WIC Intake Department.

Section 5. Problem / Opportunity Statement:	
What it does:	States why this effort was initiated and what will be affected by the outcome.
Why it is important:	Orients team and others to the true need for the effort. The source and analysis of the data that identified the problem or opportunity should be included and used as a baseline.
Example:	WIC applicants are complaining that it takes too much time to process their in-person application and there is a lack of privacy while giving information to the clerk.

Section 6. Team Sponsor:	
What it does:	Identifies the senior leader that supports and/or initiated this effort.
Why it is important:	Established who in senior leadership cares about this effort and has overall operational accountability. The Sponsor will be expected to break down barriers and “go to bat” for the team.
Example:	Mary James, Health Officer

Section 7. Team Leader:	
What it does:	Identifies one individual who will guide the team to achieve successful outcomes and who will communicate to senior leaders.
Why it is important:	Established who will conduct team meetings, provide focus and direction, and will ensure productive use of team member’s time. This person is not necessarily the same individual who will be “in charge” of the process, but should be a person who will “lose sleep” over the outcome.
Example:	Joe Smith, WIC Department Manager

Section 8. Team Members and Area of Expertise:	
What it does:	Defines who will be on the team and why.
Why it is important:	Assure that all the people necessary to effect change will be involved. Tip: You may have people that you do not need on the core team however, they are key stakeholders and must be consulted with, and made aware of, changes. These individuals should be identified in the Charter. Refer to the high level process utilized to define the scope to verify that the team has representation from each major process step.
Example:	Team Member: Bill Bates – WIC Intake supervisor

Section 9. Performance Improvement AIM (Mission):	
What it does:	It describes what the team intends to do, providing the team with a focus and a way to measure progress. The aim should be derived from a known problem (data) and need for corrective action.
Why it is important:	Clarifies where the team is going and enables them to know when they get there. A well stated aim affords a team the opportunity to improve many aspects of the system or process related to the aim. TIP: Most successful improvement efforts have a succinct aim with a measurable stretch goal. The measure should be monitored over time and tracked in the form of a statistical process control chart.
Example:	AIM: To reduce the waiting time by 50%.

Section 10. Scope (Boundaries):	
What it does:	Specifies the boundaries of the process you are involved in. They may be stated in time frames and/or process steps.
Why it is important:	Sets the stage; provides focus; identifies limits. Tip: Map out a 7-9 step high-level process flow for the scope you've defined. This will help you understand what you need to be successful, including validating team membership.
Example:	"The time the person arrives in the WIC Department to the time they have successfully filled out the application and leave."

Section 11. Customers (primary and other) and Customer Needs Addressed:	
What it does:	Identifies the primary (and other) customers of the product or service you provide and specifies the ways in which you meet their stated needs.
Why it is important:	Identifying customers early helps you decide if they need to be represented on the actual team. The identification of their needs and how well you are or are not meeting them must be continually assessed during the improvement process.
Example:	Applicant for WIC benefits.

Section 12. Objectives:	
What it does:	Listing out the specific and measurable objectives for the effort will help define the opportunities to improve.
Why it is important:	It enables the team to reach consensus on what will be addressed during the course of the effort. Tip: Group similar objectives and give them a descriptive title; for example, Eliminating Waste. Grouping objectives into change concepts facilitates creative thinking with improvement teams.
Example:	Eliminating Waste <ul style="list-style-type: none"> • Eliminate unnecessary waiting time • Reduce duplicative data entry

Section 13. Success Metrics (Measures):	
What it does:	Defines how you measure the success of the improvement effort or the project as a whole.
Why it is important:	Metrics help the team and sponsor to understand when and if an implemented improvement is meeting the desired goal.

	Tips: Be specific. Agree to definitions and data sources. It is ideal to have a balanced set of measures: satisfaction / costs / outcome. Identify one overarching measure that can be an assay for the entire effort – measure it over time and use a control chart. Keep it simple – use sampling.
Example:	Overall applicant cycle time to get service and complete an application will be reduced by 50% Obstacles: Departmental practices related to scheduling applicants differ widely. Risks: Changes may not conform to legal requirements

Section 14 Considerations (Assumptions /Constraints /Obstacles /Risks)	
What it does:	Describes both positive and negative factors that must be discussed and understood prior to the work beginning. Assumptions: statements of requirements that must be accepted; Constraints: an element that might restrict or regulate project actions or outcomes; Obstacles: a factor that might impede progress; Risks: a course of action that might pose a hazard or cause loss.
Why it is important:	Clarifies expectations; requires people to reflect on the effort in a more thoughtful way; can redefine the work; may facilitate the removal of known obstructions in advance; gives credibility to teams (that they have considered possible issues).
Example:	Assumption: The WIC intake area can be rearranged to make for private booths Constraints: Information Technology solutions will not be entertained at this time (system upgrade planned in 2 years).

Section 15. Available Resources:	
What it does:	Articulate who and what is available to support the team. This might include a facilitator, trainers, or funds.
Why it is important:	Provides both the team and senior leadership with an opportunity to negotiate what the team needs to be successful.
Example:	Facilitator: Cathy Lee. On campus team workshops. Up to \$5,000 is available for teaching assistant.

Section 16. Additional Resources: Required	
What it does:	Articulate what else will be needed to make this project successful. This might include a subject matter expert (SME), etc.
Why it is important:	Provides both the team and senior leadership with an opportunity to negotiate what the team needs to be successful.
Example:	SME: Ginger Mercy. SME for Value Stream Analysis. Up to \$5,000 is available for additional support personnel.

Section 17. Key Milestones: Date:	
What it does:	Marks significant expectations and/or deliverables the team can expect.
Why it is important:	Holds the team accountable. Maps progress.
Example:	Current State Assessment due March 15 th . Recommendations to be presented to senior leadership in 6 weeks.

Section 18. Communication Plan (Who, How, and When):	
What it does:	Clarifies your communication plan.
Why it is important:	Identifies everyone who is expecting to receive communication on this team effort.
Example:	The entire team will give a report out to the stakeholders 6 weeks from the start of the project (~Nov15). The Team Leader will update the Sponsor weekly (agenda item at the regular staff meeting).

Section 19. Key Stakeholders and Area of Concern (as it relates to the Charter):	
What is does:	Identifies individuals and/or departments that may be impacted by the outcome. These individuals should be sought out as a resource and communicated with on a regular basis.
Why it is important:	It recognizes their importance and increases the team's awareness.
Example:	John Smith - Information Systems

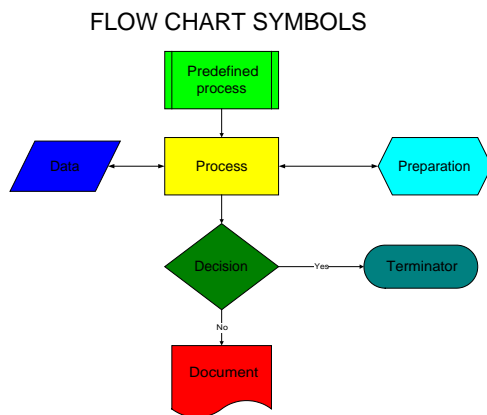
*Team Chartering by John W. Moran and Grace L. Duffy

<http://www.texas-quality.org/SiteImages/125/Newsletter/April%202010%20Newsletter.pdf>

Following are some of the tools available to assist in the Quality Improvement process.

a. Flow Charting: Use of a diagram in which graphic symbols depict the nature and flow of the steps in a process. This tool is particularly useful in the early stages of a project to help the team understand how the process currently works. The “as-is” flow chart may be compared to how the process is intended to work. At the end of the project, the team may want to then re-plot the modified process to show how the redefined process should occur. The benefits of a flow chart are that it:

- 1) Is a pictorial representation that promotes understanding of the process
- 2) Is a potential training tool for employees
- 3) Clearly shows where problem areas and processes for improvement are.



Flow charting allows the team to identify the actual flow-of-event sequence in a process.

b. Brainstorming: A tool used by teams to bring out the ideas of each individual and present them in an orderly fashion to the rest of the team. Essential to brainstorming is to provide an environment free of criticism. Team members generate issues and agree to “defer judgement” on the relative value of each idea. Brainstorming is used when one wants to generate a large number of ideas about issues to tackle, possible causes, approaches to use, or actions to take. The advantages of brainstorming are that it:

- 1) Encourages creativity
- 2) Rapidly produces a large number of ideas
- 3) Equalizes involvement by all team members
- 4) Fosters a sense of ownership in the final decision as all members actively participate
- 5) Provides input to other tools: “brain stormed” ideas can be put into an affinity diagram or they can be reduced by multi-voting.

c. Decision-making Tools: While not all decisions are made by teams, two tools can be helpful when teams need to make decisions.

- 1) Multi-voting is a group decision-making technique used to reduce a long list of items to a manageable number by means of a structured series of votes. The result is a short list

identifying what is important to the team. Multi-voting is used to reduce a long list of ideas and assign priorities quickly with a high degree of team agreement.

2) Nominal Group technique-used to identify and rank issues.

d. Affinity Diagram: The Affinity Diagram is often used to group ideas generated by brainstorming. It is a tool that gathers large amounts of language data (ideas, issues, opinions) and organizes them into groupings based on their natural relationship. The affinity process is a good way to get people who work on a creative level to address difficult, confusing, unknown or disorganized issues. The affinity process is formalized in a graphic representation called an affinity diagram.

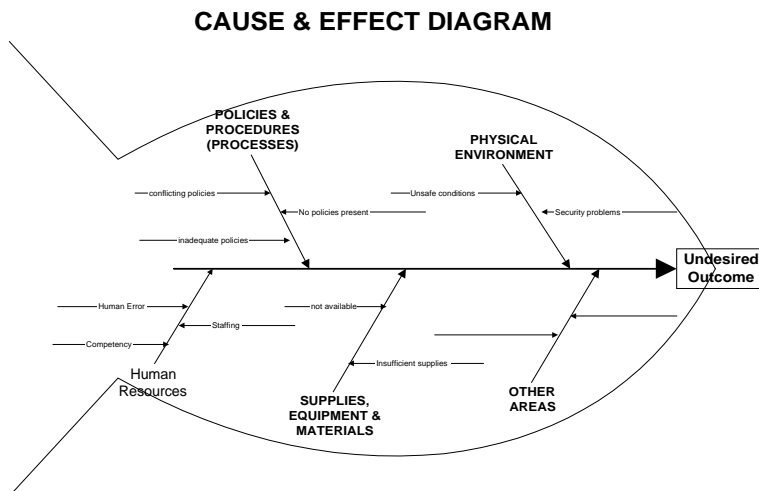
This process is useful to:

- 1) Sift through large volumes of data.
- 2) Encourage new patterns of thinking.

As a rule of thumb, if less than 15 items of information have been identified, the affinity process is not needed.

e. Cause and Effect Diagram (also called a fishbone or Ishakawa diagram): This is a tool that helps identify, sort, and display. It is a graphic representation of the relationship between a given outcome and all the factors that influence the outcome. This tool helps to identify the basic root causes of a problem. The structure of the diagram helps team members think in a very systematic way. The benefits of a cause-and-effect diagram are that it:

- 1) Helps the team to determine the root causes of a problem or quality characteristic using a structured approach
- 2) Encourages group participation and utilizes group knowledge of the process
- 3) Uses an orderly, easy-to-read format to diagram cause-and-effect relationships
- 4) Indicates possible causes of variation in a process
- 5) Increases knowledge of the process
- 6) Identifies areas where data should be collected for additional study.



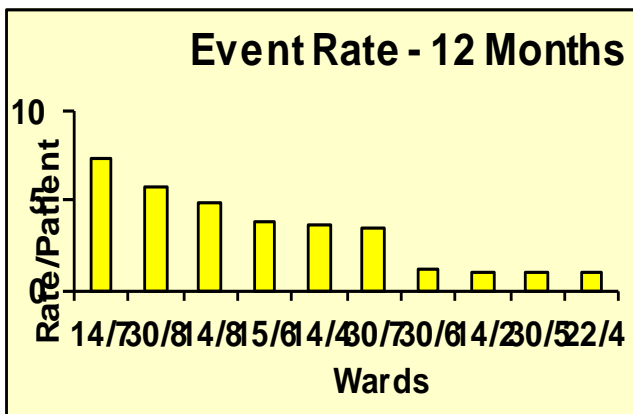
Cause and effect diagrams allow the team to identify and graphically display all possible causes related to a process, procedure or system failure.

f. **Histogram:** This is a vertical bar chart which depicts the distribution of a data set at a single point in time. A histogram facilitates the display of a large set of measurements presented in a table, showing where the majority of values fall in a measurement scale and the amount of variation. The histogram is used in the following situations:

- 1) To graphically represent a large data set by adding specification limits one can compare;
- 2) To process results and readily determine if a current process was able to produce positive results assist with decision-making.

g. **Pareto Chart:** Named after the Pareto Principle which indicates that 80% of the trouble comes from 20% of the problems. It is a series of bars on a graph, arranged in descending order of frequency. The height of each bar reflects the frequency of an item. Pareto charts are useful throughout the performance improvement process - helping to identify which problems need further study, which causes to address first, and which are the “biggest problems.” Benefits and advantages include:

- 1) Focus on most important factors and help to build consensus
- 2) Allows for allocation of limited resources.

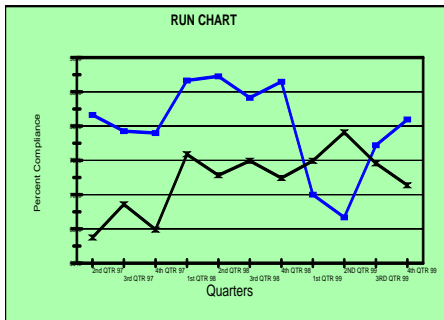


The “Pareto Principle” says 20% of the source causes 80% of the problem. Pareto charts allow the team to graphically focus on the areas and issues where the greatest opportunities to improve performance exists.

h. **Run Chart:** Most basic tool to show how a process performs over time. Data points are plotted in temporal order on a line graph. Run charts are most effectively used to assess and achieve process stability by graphically depicting signals of variation. A run chart can help to determine whether or not a process is stable, consistent and predictable. Simple statistics such as median and range may also be displayed.

The run chart is most helpful in:

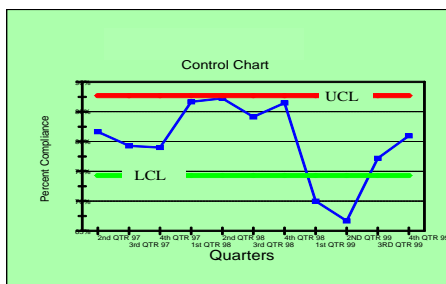
- 1) Understanding variation in process performance
- 2) Monitoring process performance over time to detect signals of change
- 3) Depicting how a process performed over time, including variation.



Allows the team to see changes in performance over time. The diagram can include a trend line to identify possible changes in performance.

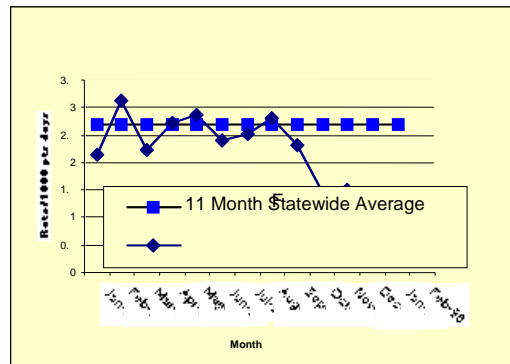
- i. **Control Chart:** A control chart is a statistical tool used to distinguish between variation in a process resulting from common causes and variation resulting from special causes. It is noted that there is variation in every process, some the result of causes not normally present in the process (special cause variation). Common cause variation is variation that results simply from the numerous, ever-present differences in the process. Control charts can help to maintain stability in a process by depicting when a process may be affected by special causes. The consistency of a process is usually characterized by showing if data fall within control limits based on plus or minus specific standard deviations from the center line. Control charts are used to:

- 1) Monitor process variation over time
- 2) Help to differentiate between special and common cause variation
- 3) Assess the effectiveness of change on a process
- 4) Illustrate how a process performed during a specific period.



Using upper control limits (UCLs) and lower control limits (LCLs) that are statistically computed, the team can identify statistically significant changes in performance. This information can be used to identify opportunities to improve performance or measure the effectiveness of a change in a process, procedure, or system.

- j. Bench Marking:** A benchmark is a point of reference by which something can be measured, compared, or judged. It can be an industry standard against which a program indicator is monitored and found to be above, below or comparable to the benchmark.



- k. Root Cause Analysis:** A root cause analysis is a systematic process for identifying the most basic factors/causes that underlie variation in performance.

LOCAL HEALTH DEPARTMENT NAME:

ADDRESS:

PHONE NUMBER:

SIZE:

POPULATION SERVED:

PROJECT TITLE:



**MAHONING COUNTY
PUBLIC HEALTH**

PREVENT · PROMOTE · PROTECT

PLAN

Identify an opportunity and Plan for Improvement

1. Getting Started

Start typing here

2. Assemble the Team

Start typing here

3. Examine the Current Approach

Start typing here

4. Identify Potential Solutions

Start typing here

5. Develop an Improvement Theory

Start typing here

6. Test the Theory

Start typing here

CHECK

Use Data to Study Results of the Test

7. Check the Results

Start typing here

ACT

Standardize the Improvement and Establish Future Plans

8. Standardize the Improvement or Develop New Theory

Start typing here

9. Establish Future Plans

Start typing here

DO

Test the Theory for Improvement

LOCAL HEALTH DEPARTMENT NAME:
 ADDRESS:
 PHONE NUMBER:
 SIZE:
 POPULATION SERVED:
 PROJECT TITLE:

Mahoning County District Board of Health
 50 Westchester Dr., Youngstown, Ohio 44515
 330 270-2855
 49 employees
 175,000
 Time Reduction in Conducting Point of Sale Real Estate Septic and Well Inspections



Public Health
 Prevent. Promote. Protect.
 Mahoning County
 District Board of Health

PLAN
 Identify an opportunity and Plan for Improvement

1. Getting Started

The Mahoning County District Board of Health, in wanting to keep a promise to local realtors, we want ensure timely inspections of residential septic and well systems when properties are to be sold. So a decision was made to examine our current processes to see if we were fulfilling our promise.

2. Assemble the Team

The team members who were Board of Health Employees were chosen because they specifically work in or frequently with Septic and Well Inspection Program with the exception of the facilitator who was chosen to because he is the Accreditation Coordinator and has experience facilitating quality improvement teams. We also wanted to involve some realtors as they are key external stakeholders to this process. As a result, we invited members from the local Board of Realtors Association.

We did have some difficulty with getting members of the Realtors Association attend due to scheduling conflicts. This was one of the major barriers in getting the process started. The way we overcame this barrier was to have a meeting at their location early in the process to engage them and express the value of their input to our process. We also reduced the requirement to attend all meetings. Ever since having the meeting at their office they are fully engaged.

AIM Statement

Between October 18th and November 30th, we will reduce the average time it takes to conduct septic and well evaluations for real estate transactions by 15% (from 11.8 to 10 calendar days).

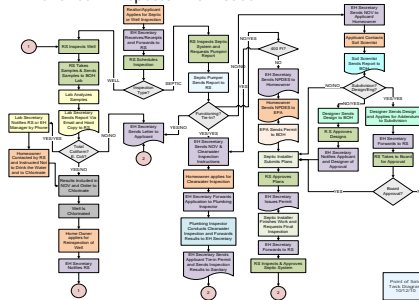
3. Examine the Current Approach

The flowchart above is a representation of the current process for septic and well inspections as a result of real estate transactions. Each inspector is assigned different part of the county to conduct inspections using this process.

We chose to do a force field analysis to look at where the process tends to slow down and may be cause the process to unnecessarily take longer. Below is a list of the restraining forces identified in the force field analysis.

- The step in the process whereby the lab secretary is supposed to notify the inspector the results of the well test sometimes takes longer than expected.
- The time it takes for the inspector to schedule the inspection
- The time it takes for the septic pumper to send the report to the Board of Health
- No system in place to follow up on the Clearwater Inspection Report for those properties who are required to tie in to the sanitary sewer and cease using their septic system.
- Realtors wait too long to apply for inspections
- Waiting on external parties when the case dictates - the involvement of the EPA, a soil scientist, Board of Health approval, or engineers.
- The lack of follow through on part of the homeowner

- The inspector forwards hand written notes to be typed by secretary
- Each inspector may do this process a little differently.
- We require the septic system pumped even if it is functioning properly.
- Variance in inspector workloads.



4. Identify Potential Solutions

We evaluated whether or not some of the items indicated as restraining forces were changes were in our control and could be changed in a short timeframe so that they could be tested. The team decided by consensus the change to test using this criterion. In examining the baseline data below, we will test a more equitable redistribution of the workload among the three inspectors to reduce the time it takes to conduct the inspection.

We looked at two sets of baseline data. The first set of data was to collect the time it took for various critical points in the process from the time it takes for the applicant to apply for the septic and well inspection to the time the process was complete. We collected baseline data on 55 properties on three particular time frames beginning at the end of July through beginning of October where the processes have been completed.

- The average time it takes from application to scheduling is 7.4 days.
- The average time it takes from application to inspection is 11.8 days.
- The average time it takes from application to process completion is 22.3 days.

The second set of baseline data was to examine the variance in workloads. One thing in looking at the data was that many of the areas were these time frames took longer to inspect were the townships furthest from the health department. We then analyzed the workload data of the three inspectors who worked in that program. Many of these inspections were conducted by the same inspector and when looking at the total workload (this includes other types of inspections beyond this process), this inspector had completed more inspections than any other in the program.

- Inspector 1 conducted 41% inspection activities. Many of this inspector's real estate evaluations took longer than the other two.
- Inspector 2 conducted 29.5% inspection activities
- Inspector 3 conducted 29.5% inspection activities

Through a more equitable redistribution of the workload, we believe we can reduce the time it takes from when the realtor or homeowner applies for an inspection to when the inspection is conducted by reducing the mean time from 11.8 to 10 days.

5. Develop an Improvement Theory

If the workload is redistributed among the inspectors more equitably, then we can reduce the average time it takes to conduct the septic and well inspection from 11.8 to 10 days. The mean time it takes to both schedule and conduct all septic and well inspections as a result of real estate transaction was calculated to determine if the redistribution of workload had the desired effect.

DO
 Test the Theory for Improvement

6. Test the Theory

The improvements were run according to plan. The redistribution of the workload began on October 18th, 2010 as proposed in the plan stage. We collected the dates of various critical incidents in the process. The date the applicant applied for a septic and well inspection, the date they were contact by an inspector to schedule the inspection, the date the initial inspection was conducted and the date the approval/disapproval letter was mailed out to the applicant.

CHECK
 Use Data to Study Results of the Test

7. Check the Results

The data collected were sufficient to conclude that the improvement tested was effective. We were able to collect all the information needed on 24 properties in the six week time frame after the improvement was put into place. The time it takes from application for a septic and well real estate evaluation to when the inspection was conducted was reduced from 11.8 to 7.1 calendar days, a 40% decrease in time. This far exceeded our final AIM statement goal of 10.0 days or a 15% decrease. Below is a summary of post test data.

- The average time it takes from application to scheduling is 2.7 days.
- The average time it takes from application to inspection is 7.1 days.
- The average time it takes from application to process completion is 13.8 days.

ACT
 Standardize the Improvement and Establish Future Plans

8. Standardize the Improvement or Develop New Theory

As a result of the success with reassigning the more equitable distribution of the workload, it was appropriate to adopt the workload changes among staff during the test of the improvement theory. There were no major challenges or obstacles with the change because the redistribution was actually decided and agreed upon among the three inspectors doing the work.

9. Establish Future Plans

We will continue to monitor this improvement theory because home sales in this part of the country tend to be seasonal in the warmer months. It is during the spring and summer when this program is the busiest. We will continue to monitor the gains for this program through the summer of 2011 to see if there any seasonal fluctuations.

SOCIAL MEDIA QUALITY IMPROVEMENT TEAM

LOCAL HEALTH DEPARTMENT NAME:	<u>Mahoning County District Board of Health</u>
ADDRESS:	<u>50 Westchester Drive, Youngstown, OH 44515</u>
PHONE NUMBER:	<u>330-270-2855</u>
SIZE:	<u>5 staff including health commissioner</u>
POPULATION SERVED:	<u>Mahoning County</u>
PROJECT TITLE:	<u>Social Media Utilization</u>



Public Health
Prevent. Promote. Protect.
Mahoning County
District Board of Health

PLAN

Identify an opportunity and Plan for Improvement

1. Getting Started

The project mission is to enroll 50% of local functional needs population service agencies in Notify Now voice and email alert network; increase Facebook "likes" by 100%. The assembled team will determine the service providers for the functional needs populations and provide more timely information during public health emergencies; the number of Facebook "likes" has leveled off at 70.

2. Assemble the Team

Susan Kovach-Medical Reserve Corp
Matthew Stefanak-Health Commissioner
Tracy Styka-Facebook
Julie Thompson-Website
Rosie Totterdale-Blast Fax network

3. Examine the Current Approach

There is a minimal presence with regards to Facebook-represented by the slow growth N=70. The Blast Fax network needs updated. There is no direct contact with functional needs partners (i.e. Nursing homes, EMA, Schools, Good Will, Salvation Army, Group Homes, Long-term care, Home health, Sherriff)

4. Identify Potential Solutions

Advertise to increase community knowledge with regards to Facebook and Public Health. Send lcontact messages to promote link to Facebook. Identify list of agencies in Mahoning County and establish an emergency contact for each agency. All contact information will be entered into the Notify Now system.

5. Develop an Improvement Theory

Notify Now-establish an emergency contact list and test the Notify Now System.

Blast Fax-update the list of physicians and test blast fax.
Facebook-remind staff and community via various mechanisms to increase "likes" on Facebook.
N=140 is the goal

Facebook- (6/2/2011)
41 monthly active users
70 likes
31 visits weekly
0 comments

DO

Test the Theory for Improvement

6. Test the Theory

Conduct a test for the emergency contacts established for the Functional needs groups. Weekly monitoring of Facebook page and updates.
Blast Fax- A letter was sent to physicians to update delivery preferences.

CHECK

Use Data to Study Results of the Test

7. Check the Results

Notify Now-Test results indicates that 48/60 (80%) of the emergency contacts responded.
Blast Fax-Some physicians requested Email contact only; some

physicians requested an actual letter via regular U.S. mail.
Facebook- (as of 12/14/11)
90 monthly active users
109 likes
58 visits weekly
5 comments

ACT

Standardize the Improvement and Establish Future Plans

8. Standardize the Improvement or Develop New Theory

Facebook-Reach out to community with new messages and information
Place reminders on BOH flyers and advertise internally.

Notify Now-follow up was conducted with the 12 emergency response contacts that did not respond in order to determine the reason.

9. Establish Future Plans

Notify Now will be retested in Spring 2012 and then annually. Notification will be sent to the contacts prior to the test so the test is using the most accurate contact information in order to improve the success of the test.

Facebook-continue to update and post pertinent public health information regarding BOH activities.

Thanks to Team Members:

Susan Kovach, Tracy Styka, Julie Thompson, Rosie Totterdale, and Team Leader Matt Stefanak

APPENDIX F.

MCDBOH 2018 Organizational Culture of Self-Assessment Results

QI Culture SAT Foundational Element	Sub-element	MCDBOH Sub-element Score	MCDBOH Foundational Element Score
1. Employee Empowerment	1.1 Enabling performance	5.5	5.55
	1.2 Knowledge, skills and abilities	5.6	
2. Teamwork and Collaboration	2.1 Team performance	5.7	5.55
	2.2 Communities	5.4	
3. Leadership	3.1 Culture	5.9	5.85
	3.2 Resourcing and structure	5.8	
4. Customer focus	4.1 Understanding the customer	5.1	5.533
	4.2 Satisfying the customer through the value stream	5.6	
	4.3 Reprioritizing and Creating programs and services	5.9	
5. Quality improvement infrastructure	5.1 Strategic planning	5.75	5.75
	5.2 Performance measurement	5.69	
	5.3 Annual quality improvement planning	5.86	
	5.4 Administrative process and functional systems	5.7	
6. Continual process improvement	6.1 Selecting and applying methods	5.62	5.6
	6.2 Planning and process improvement	5.8	
	6.3 Testing potential solutions	5.6	
	6.4 Extracting lessons learned	6.0	
	6.5 Sharing best practices	4.7	
	6.6 Effectively installing standardized work	5.6	
	6.7 Process management, results and continual improvement	5.9	

MCPH 2018 QI Self-Assessment Identified Priorities

Priority focus areas:

- Increased standardization
- Advanced QI education
- Expanded engagement
- Enhanced testing and auditing
- Automation through IT
- Enhanced rigor of data collection and analysis

Priority level	Activity to be undertaken	Actively Achievement Dates	Described Achievement
1	Ensure all members needs for improvement skills and additional capabilities are covered.	April 5, 2019	1. Dr. Amy Lee from Northeast Ohio Medical University (NEOMED) trained 66 MCPH staff. The focus was on standardizing the use QI tools (i.e. 5-Why's, fishbone diagram, affinity diagram.)
1	Ensure all members have and use a basic set of improvement skills on a regular basis.	January 2019	1. The QI handbook is designed to help every person in the organization to improve daily procedures, systems, quality, cost and yields related to their daily functions.
1	Enable individuals to seek out the opportunity to participate on		

	teams and judge their individual success based upon the teams		
1	Spread use of collaboration tools to all areas of organization including administrative processes. Make them the de-facto method for sharing		
1	Routinely seek out, address, and resolve areas of QI resistance		
1	Ensure customer focus and feedback are part of all organization member's performance feedback and development	4 th Quarter 2018	An overall agency customer satisfaction survey has been developed through Survey Monkey and a link is included in all MCPH email signatures. The survey results are analyzed and reviewed during monthly leadership meetings and any customer feedback that indicates a need for QI is distributed to the QI council for review.
1	Spread the value stream approach to all services of the organization. Define all value streams for the organization and identify measures and owners. (Measures should include customer perspective measures and the overall Value Added Ratio.)		Added value to the customer – more a manufacturing example...not in version 2 of QI SAT. Could be less time customer waits for appointment? Calling 3 times to speak to a specific individual?
1	Ensure that plans are part of annual performance reviews for team members		
1	Improve the accuracy and timeliness of data gathering		Improving our ability to data mine with training; GBS software
1	Give individuals the skills to reliably analyze data and measures		Improving our ability to data mine with training; GBS software
1	Expand the planning team and process to include external partner organizations		Aware of as a goal but building internally before we bring in external partners
1	Administrative functional process leaders define all processes' value streams (process input, suppliers, steps, process output, customers, measures scorecard, owner, system technology, and deficits)		We do this if required by a specific QI project
1	Evaluate, root cause, and modify the administrative and functional systems and processes to support the organizational structure		We do this if required by a specific QI project
1	Develop internal expertise (or utilize external expertise) to provide coaching on selection and application of improvement methods		QI council fully trained
1	Drive sharing and learning of applications of QI methods		Ongoing – we are driving
1	Utilize a standard format throughout the organization for defining process improvement		In QI plan

	objectives		
1	Build skills in statistical analysis techniques to improve the effectiveness of test plans		We are training in data mining but have a ways to go. Basic training for all staff?
1	Spread the use of conducting tests using standardized work throughout the organization		
1	Use test results to guide learning, modification, and installation of proposed solutions		
1	Share learnings externally with other organizations		Will put in annual report
1	Adopt across the organization a standard method and format for developing and documenting best practices		Storyboarding
1	Expand best practice sharing system across organization		Newsletter, storyboard posting
1	Visually display process performance measures in all work areas for all organization members and stakeholders.		

Priority level	Activity to be undertaken	Actively Achievement Dates	Described Achievement
2	Survey team members for input into effectiveness of performance systems; extract lessons learned and implement		
2	Ensure that organization performance is seen as "open book"; real time and trustworthy information is available to all		
2	Ensure all teams commonly use data to effectively solve problems, make decisions, take action and achieve goals		
2	Evaluate use of knowledge from learning communities, extract lessons learned and improve community use		
2	Make knowledge sharing a requirement of everyone in the organization		
2	Coach others on QI inside and outside the organization		
2	Staff the QI leader role(s) full time		
2	Leaders recognize, reward, and promote QI leaders for their personal and professional QI success		
2	Refine and automate systems of data collection based on lessons learned; include concept of looking for issues that "delight" customers (see Kano)		

2	Regularly review all value streams for improvement in customer satisfaction. Continue to create and execute improvement plans for each		
2	Ensure all members think of their role in the context of an integrated value stream; the measures of customer satisfaction and improvement targets are understood; inputs and outputs between process steps are understood by all members		
2	Ensure that the organization has a complete, ongoing and up to date understanding of trends in factors affecting their customers		
2	Share data regularly within the organization and with customers and partners		
2	Identify &/or develop the reliable sources of data that feed into measures for the entire organization; ensure that measures are standardized across the organization		
2	Establish automatic data generation		
2	Install IT tools in support of defined processes and their measures		
2	Use real time data and data analysis to increase the QI Plan's quality		
2	Utilize visual and IT tools to quickly track and communication progress		
2	Identify all necessary IT system changes from process value streams and customer requirements		
2	Internal experts audit for proper QI method use		
2	Utilize enhanced data analysis techniques (e.g., statistical analysis) in process analysis to understand causal relationships		
2	Implement advanced improvement techniques such as Flow to drive higher process Value Added Ratio		
2	Identify key best practices for the organization		
2	Maintain list of current best practices in all areas of the value stream, including administrative and functional processes		

2	Create standardized work for key work processes in all areas of the value stream		
2	Regularly audit the use of all standardized work to ensure it is being followed and updated; conduct cause and effect analysis and address gaps		
2	Engage Customers, Suppliers, and other affected work processes in continually identifying improvements		
4	Expand the leadership team structure and charter to include board members, suppliers, customers, & other partner organizations		