Canton City Public Health
Accreditation Document Cover Sheet

Domain:	9	Standard:	9.2	Measure:	9.2.1

RD:	1	Example:	1 of 1	Dated Within:	5 years

Document Title:	Quality Improvement Plan

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File Name:	**9.2.1 RD1 – 1 of 1 – Quality Improvement Plan.pdf**

Document Description:	**Department policy 800-015-P establishing a quality improvement plan**

Page #	Required Element
	The health department must provide a quality improvement plan. The plan must address:
6 - 9	Key quality terms to create a common vocabulary and a clear, consistent message.
12 - 17	Key elements of the quality improvement effort's structure
17 – 20	Types of quality improvement training available and conducted within the organization
20 - 23	Project identification, alignment with strategic plan and initiation process
23 - 25	Quality improvement goals, objectives and measures with time-framed targets
26 - 29	The health department's approach to how the quality improvement plan is monitored: data are collected and analyzed, progress reported toward achieving stated goals and objectives, and actions taken to make improvements based on progress reports and ongoing data monitoring and analysis
30 - 31	Regular communication of quality improvement activities conducted in the health department
31	Process to asses the effectiveness of the quality improvement plan and activities

Quality Improvement Plan

Canton City Health District

SUBJECT: Quality Improvement Plan for years 2016-2017

Applicability: All staff

TOTAL NUMBER OF PAGES: 31

REVIEW FREQUENCY: Every 2 years (Due 12/31/2017)

ORIGINAL DATE ADOPTED: 06/09/2016

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CONTACT PERSON & DIVISION: Terri Dzienis, APC Administrator, APC Division

FINAL

BOARD OF HEALTH APPROVAL DATE: N/A

REFERENCE NUMBER: 800-015-P

Public Health

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Canton City Health District

A. APPROVAL

This document has been approved in accordance with the “800-001-P Standards for Writing and Approving Policies, Procedures, Standard Operating Guidelines, and Forms” procedure as of the effective date listed above.

B. REVISION & REVIEW HISTORY

Revision Date	Review Date	Person	Notes on what changed

C. TABLE OF CONTENTS

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D. PURPOSE

The Canton City Health District (CCHD) is committed to the protection and improvement of the health of the residents of the City of Canton. The CCHD Quality Improvement Plan (QI Plan) serves as a key component of the overall performance improvement. The plan, along with the CCHD Strategic Plan (SP) and Workforce Development Plan (WDP), serve in synchrony to provide a framework to direct the CCHD as it moves forward in the fulfillment of its mission.

E. POLICY

This QI Plan articulates the commitment to move the CCHD forward in development of a culture of quality improvement. Leadership of the CCHD commits the necessary resources of staff time and fiscal resources so that the workforce is prepared to execute basic quality improvement projects. In preparation for implementation of the QI Plan, the CCHD commits to an assessment of the current status of the CCHD workforce in terms of level of knowledge with QI principles. Our plan is to measure this over the plan period, assessing progress on the "Roadmap to a Culture of Quality Improvement." Our goal is to develop a workforce with increasing skill and comfort with the implementation of QI projects. We have established the Quality Improvement Committee (QIC) to accomplish the varying components of the work, which consists of staff committing to serve in a role as leader and mentor with peers and project teams (Quality Improvement Project Team - QIPT). The QIPTs are expected to encourage enthusiasm and assist in creating a shift towards establishing a culture of quality improvement in the organization.

Identified projects are expected to align with the CCHD plans and performance management system (PMS), which link the CCHD mission to its vision. As progress is made in skill sets of staff and leadership, it is expected that projects will increase in scope and align with the Community Health Improvement Plan (CHIP). All documentation of the work of teams will be placed on the CCHD shared drive, easily accessible to staff. We aim to create an atmosphere of teamwork and transparency in the work, critical to a shift in the culture.

F. BACKGROUND

National public health department accreditation was first available on September 14, 2011 through the Public Health Accreditation Board (PHAB). The CCHD is committed to apply for and become an accredited public health department through PHAB. The CCHD accreditation preparation and planning efforts were formally initiated in January 2015 with the formation of the Accreditation Team. PHAB standards and measures version 1.5 were made available for application starting July 1, 2014. Per PHAB standard and measure 9.2.1, CCHD is to have established quality improvement based on organizational policies and direction, which includes a written QI Plan. This document fulfills that standard and measure.

G. GLOSSARY OF TERMS AND ACRONYMS

This section defines the key quality terms used by the CCHD and other terms used within this document. Other quality related terms are located at the LeanOhio reference listed in Section P. of this document.

Administrative area project: A formal or mini QI project that involves non-program functions, which are typically administrative in nature. Examples: employee attendance tracking, phone call answering, interactions with customers, etc.

BOH: Board of Health

Community Health Improvement Plan (CHIP): Defined in PHAB measure 5.2.1L.

Customer satisfaction: Customer satisfaction is a measure of how products and services supplied by an organization meet or surpass customer expectations. Customer satisfaction is the number of customers, or percentage of total customers, whose reported experience with an entity, its products, or its services (ratings) exceeds specified satisfaction goals. *[Ref: Farris, Paul W.; Neil T. Bendle; Phillip E. Pfeiffer; David J. Reibstein (2010)].*

Division: Defined in section I.1.c. of this document.

Division Leader: Division leader staff are in the leadership job position over the respective division or agency unit of the CCHD and is responsible for all activities and direction of the respective division or agency unit. Division Leader staff include the following job positions: APC Administrator, EH Director, Fiscal Officer, Laboratory Director, Nursing Director, and WIC Director. The Health Commissioner position serves as the OPHI division leader.

Division Leadership Team (DLT): The Division Leader positions make up the Division Leadership Team along with the Health Commissioner and Accreditation Coordinator (i.e. Executive Assistant). The Division Leadership Team meets regularly to make decisions that affect the CCHD and to review/approve new/revised policies.

Division-specific: Involves only a single division's activities or programs. Therefore, any changes made will only impact the single division.

Just-do-it solutions: Identified problems that already have an identified solution. These problems don't require a team to determine the solution, so they should just be completed in accordance with section K.1.f. of this document.

Kaizen event: An event in which QIPT members meet for five straight days or less (one business week) to overhaul a CCHD work process identified as the topic of the QI project. The event timeframe is designed to complete the Plan-Do-Check-Act (PDCA) planning phase nonstop to ensure continuity and efficiency. The event begins with training on the QI tools to be used. Then completing a process map of the current state of the process, analyzing every step of the way to find all forms of waste (TIM U WOOD tool). Then use the findings to develop a new process map that is simpler, faster, better and more cost-effective. At the end, action plans are developed to address all aspects of the implementation, including training and communication. Implementation of the action plan begins as soon as the event has concluded. *[Ref: LeanOhio Bootcamp manual, 2015]*

Lean: Lean refers to a collection of principles and methods that focus on the identification and elimination of non-value added activity (waste) involved in producing a product or delivering a service to customers.

Mini-QI projects: Quality improvement projects for the improvement of division-specific processes and only division staff are included on the team. These projects follow the procedures included in section K.1.e. of this document.

Performance management system (PMS): The process of actively using performance data to improve the public's health. It includes the strategic use of performance standards, performance measures,

progress reports and ongoing quality improvement efforts to ensure an agency achieves desired results. *[Ref: Turning Point, 2003].*

Plan-Do-Check-Act (PDCA): An iterative, four-stage problem-solving model for improving a process or carrying out change. PDCA stems from the scientific method (hypothesize, experiment, evaluate). A fundamental principle of PDCA is iteration. Once a hypothesis is supported or negated, executing the cycle again will extend what one has learned. *[Ref: Embracing Quality in Local Public Health: Michigan's QI Guidebook, 2008].*

Professional staff: Professional staff include job positions that generally, but not limited to, require an education of 4-year college degree or higher and are assigned a pay greater than pay range four. Professional staff includes the following job positions: APC Engineer, APC Monitoring and Inspections (M&I) Technician, Epidemiologist, Health Services Coordinator, Project Coordinator, Project Manager, Staff Nurse II, Staff Sanitarian I & II, WIC Breastfeeding Coordinator and WIC Dietitian.

Program area project: A formal or mini QI project that involves a single program's functions. Program areas per division are defined in the PMS.

QI projects or Formal QI projects: Quality improvement projects are for improvement of the CCHD processes that involve a team of members from more than one division and that follows the procedures included in section K. of this document.

Quality culture: QI is fully embedded into the way the agency does business, across all levels and programs. Leadership and staff are fully committed to quality, and results of QI efforts are communicated internally and externally. They do not assume that an intervention will be effective, but rather they establish and quantify progress toward measurable objectives. *[Ref: Roadmap to a Culture of Quality Improvement, NACCHO, 2012].*

Quality improvement (QI) (also known as continuous quality improvement): The use of a deliberate and defined improvement process, such as Plan-Do-Check-Act, which is focused on activities that are responsive to community needs and improving population health. It refers to a continuous and ongoing effort 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. *[Ref: Roadmap to a Culture of Quality Improvement, NACCHO, 2012]*.

Quality Improvement Committee (QIC): Committee to oversee the implementation of the QI program at the CCHD. This document discusses extensively the roles and responsibilities of this committee.

Quality Improvement Plan (QI Plan): A document (i.e. this document) which outlines how the CCHD will conduct continuous quality improvement activities for the plan period. The plan will highlight goals, key activities, roles and responsibilities and forms used for quality improvement-related activities.

Quality Improvement Project Team (QIPT): Team assigned to complete QI project improvement planning, analysis, determination and implementing. This document discusses extensively the roles and responsibilities of the QIPT.

Quality tools (QI tools): Tools designed to assist a team when solving a defined problem or project. Tools will help the team get a better understanding of a problem or process they are investigating or

analyzing. Tools used by the CCHD are outlined in the appendix 800-015-12-A (Quality Improvement Toolbox) of this document. *[Ref: Public Health QI Handbook, Public Health Foundation, 2012].*

Roadmap: A guide that describes six key phases on a path to a QI culture, outlining common characteristics for each phase and strategies an agency can implement to move to the next phase. Incorporating principles of change management, the roadmap identifies these characteristics on both the human and process aspect of change within an agency. *[Ref: Roadmap to a Culture of Quality Improvement, NACCHO, 2012].*

Six Sigma: A method that provides an organization with tools to improve the capability of their business processes. This increase in performance and decrease in process variation lead to defect reduction and improvement in profits, employee morale and quality of products or services.

Strategic Plan (SP): Defined in PHAB measure 5.3.1A.

Supervisor: Supervisor staff includes job positions that supervise one or more employees or are responsible for an entire program area. Supervisor staff includes the following job positions: APC M&I Supervisor, Executive Assistant, Office Manager, Staff Nurse III, Staff Sanitarian III and WIC Dietitian III.

Support/Clerical staff: Support/Clerical staff includes job positions that generally, but not limited to, require an education of 2-year college degree or less and are assigned a pay equal to or less than pay range four. Support/Clerical staff includes the following job positions: Dental Program Manager; Laboratory Technician; Public Health Clerk I, II and PT; WIC Assistant FT and PT; and WIC Peer Helper.

Workforce Development Plan (WDP): Defined in PHAB measure 8.2.1A.

H. CULTURE OF QUALITY

1. CURRENT STATE

   a) Until this time, quality improvement efforts have been limited; they have been focused on meeting program specific measures in the divisions of the CCHD. The efforts have largely been conducted in an isolated manner within divisions and programs and lacking integration in the manner of reporting to the Division Leadership Team (DLT) and the Board of Health (BOH) and lacking a framework to connect these activities to overall CCHD performance outcomes. Examples include, post-clinic chart audits, monitoring of immunization rates for children, the collection of limited customer satisfaction survey data, adjustment of clinic schedules based on customer satisfaction survey results and adjustment of processes based on staff feedback.

   b) At this time, the Health Commissioner, as leader of the organization, has committed the CCHD to develop a Quality Improvement Plan for the purposes of:

      i) Formalizing a structure for reporting all QI activities currently being conducted within the CCHD to assess the quality of services.

      ii) Creating a Quality Improvement Committee (QIC) and Quality Improvement Project Teams (QIPT) within the CCHD to implement QI initiatives.

      iii) To outline the methodology for selection of QI projects within the CCHD, programs or divisions.

iv) To assure staff at all levels receive training in QI principles. This is also reflected in the CCHD Workforce Development Plan (WDP).

v) To shift CCHD towards a culture of quality improvement.

c) A survey using the QI Maturity Tool (29-question) available from OSU Center for Public Health Practice (see reference in section P.) was conducted by Accreditation Domain 9 team staff on October 20, 2015 to quantitatively assess the current culture of quality at the CCHD. The following table contains a summary of the survey results:

	Points received / total points possible
Culture	14 / 25 = 57%
Capacity & Competency	20 / 55 = 36%
Alignment & Spread	32 / 65 = 49%
Total	**66 / 145 = 46%**

The above results show that the CCHD is in the beginning of the development of a culture of quality since it has not yet adopted formal QI projects, applied QI methods in a systematic way or engaged in efforts to build a culture of QI.

d) The Accreditation Domain 9 team then compared the above survey results to the National Association of County and City Health Officials (NACCHO) "Roadmap to a Culture of Quality Improvement" ("Roadmap"), which provides guidance for qualitative assessment and placement in development and institutionalization of continuous quality improvement. Per the Roadmap, the CCHD is likely between Phase 1 and Phase 2 on the continuum. Using the Roadmap as guidance, CCHD's current culture of quality can be further summarized as the following qualitative "Human" and "Process" characteristics:

Human Characteristics	**Process Characteristics**
• Leadership is beginning to explore and have rudimentary knowledge of QI activities, while staff are most likely without formal knowledge or understanding of QI principles. • Staff and leadership are not known to be resistant to quality improvement activities, but at this time staff in particular are simply uneducated in the language of QI and its processes. • Leadership has awareness of principles of quality assurance activities used to measure program performance, but not with the broader concepts of QI.	• The CCHD is, with the creation and implementation of this QI Plan, committing to those actions required to create a culture of quality improvement. • This includes the commitment of resources, alignment of activities with the Strategic Plan, improving the capacity to collect and analyze data and to use the data as a foundation for decision-making. • There is a commitment to move towards a more formal process for monitoring CCHD performance. • Leadership is committed to the principles of QI and recognizes its value in strengthening the overall performance of the CCHD to meet its mission.

e) Part of the Quality Improvement Goals listed in section L. of this document is to conduct a survey including all CCHD staff to establish baseline data on the overall CCHD developmental status. This will be accomplished using the QI Maturity Tool (10-question version) contained in appendix 800-015-09-A (QI Maturity 10-Question Survey) of this document to produce quantitative numbers and will be compared to the Roadmap for the qualitative "human" and "process" characteristics.

2. DESIRED FUTURE STATE

a) The CCHD desires to improve its culture of quality by progressing to the next phase on the Roadmap, which would be between Phase 2 and Phase 3. The following summarizes the "human" and "process" characteristics of this desired future state:

Human Characteristics	Process Characteristics
• Select staff has received advanced QI training to serve as QIPT Consultants. • Staff time is devoted to complete QI Projects and to serve on QIC. • Provide basic QI training to all staff to improvement their knowledge. • Develop project teams for the completion of selected QI projects. • Staff are beginning to embrace QI.	• Creation of the QIC to oversee the implementation of the QI program. • Use of QI model, tools and consistent documentation. • Use of data. • Reporting of QI efforts and lessons-learned. • QI plan fully implemented, evaluated, and revised periodically. • Customer satisfaction assessment is developed and implemented, including identification of internal and external customers. • A formal performance management system is developed and implemented (contained in a separate document).

b) Using the Roadmap as guidance, the goals and activities specified in section L. of this document are being implemented to progress toward the desired future state.

I. KEY ELEMENTS OF THE QUALITY IMPROVEMENT EFFORTS STRUCTURE

1. ORGANIZATIONAL STRUCTURE

a) As part of this initial QI plan for the CCHD, the Quality Improvement Committee (QIC) was created to oversee the quality improvement program at the CCHD. The QIC is responsible for overseeing and giving support in creating, maintaining and evaluating the quality improvement efforts at the CCHD with the intent to improve the level of performance and foster a culture of QI and excellence.

b) QI Project Teams (QIPT) will be created for each QI project selected for completion.

c) The CCHD is comprised of the following divisions/agency units, which are considered divisions for the sake of this document. Additionally, each division has the following estimated number of

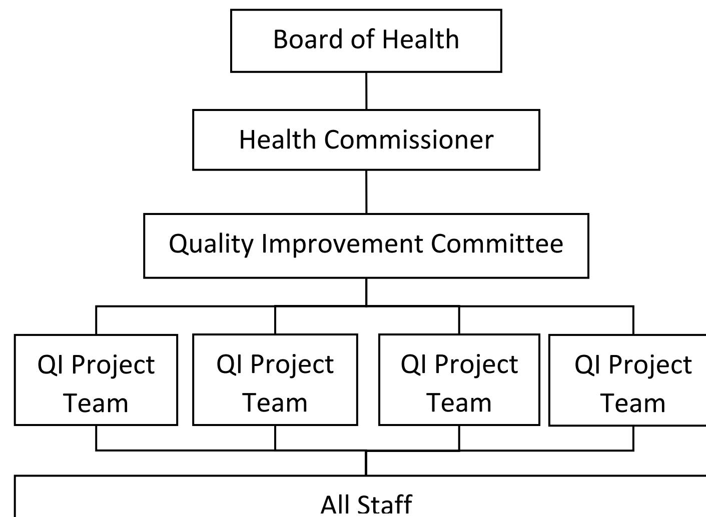
full-time equivalent (FTE) staff (as of 10/01/2015), to demonstrate the differences in size of the divisions:

- Air Pollution Control (APC) – 11 FTE
- Environmental Health (EH) – 9.2 FTE
- Laboratory (Lab) – 3 FTE
- Nursing – 13.7 FTE
- Office of Public Health Information (OPHI) – 2.3 FTE
- Vital Statistics and Administration (VS) – 6 FTE
- Women, Infants, and Children (WIC) – 10.4 FTE

d) The CCHD is comprised of the following levels of organization for the sake of this document, which excludes seasonal staff. Additionally, each level of organization has the following estimated number of FTE staff (as of 10/01/2015), to demonstrate the distribution of each level:

- Health Commissioner – 1 FTE
- Division Leader – 6 FTE
- Supervisor – 7 FTE
- Professional staff – 27.1 FTE
- Support/Clerical staff – 14.5 FTE

e) Below is a graphic which summarizes the organizational structure of QI efforts at CCHD:



2. MEMBERSHIP AND ROTATION

a) The QIC membership shall consist of the following:

i) One member from each division, so at least six of the seven divisions are represented. Total QIC membership shall not be less than six and not be more than seven members.

1. Since OPHI and Lab are small divisions, only one of these divisions needs to be represented at the same time. All other divisions shall always be represented.

ii) All levels of the organization shall be represented. In order to achieve that, the membership shall consist of the following (which is based on the actual distribution of staff listed in section I.1.d. of this document):

- Not more than one (1) division leader or Health Commissioner
- Not more than one (1) supervisor
- Not more than three (3) professional staff
- Not more than two (2) support/clerical staff

iii) Staff are qualified for membership if they meet a minimum of one of the following:

- Have advanced QI skill level or will have advanced QI skill level by completing training.
- Have an interest in and aptitude for performance improvement planning, QI and/or program evaluation.
- Commit to develop and promote continuous quality improvement throughout the CCHD.

iv) Staff become members of the QIC by recommendation and appointment by division leaders.

v) The QIC member representing the Division Leader or Health Commissioner level of the organization shall serve as the QIC Chairperson.

b) The QIC members shall serve a two-year term. After two years, members may be re-appointed by division leaders an unlimited amount of times or division leaders may appoint a new person. Division leaders should always consider new interested people for appointment. If a member is unable to fulfill a two-year term, the division leader shall appoint a replacement.

i) Note: If a QIC member that is part of an existing QIPT does not get re-appointed they will still remain a member of the QIPT until the completion of the project.

c) Current QIC membership is as follows:

Name	Title	Level	Division
Terri Dzienis	APC Administrator (serves as QIC Chairperson)	Division Leader	APC
Kim Koons	WIC Dietician III	Supervisor	WIC
Kim Campbell	Staff Sanitarian II	Professional	EH
Janet Copeland	Staff Nurse II	Professional	Nursing
Heather Macdonald	Laboratory Technician	Support	Lab
Debbie Mazzocca	Public Health Clerk II	Support	VS

d) The QIPT membership shall consist of the following:

i) There shall be one QIPT formed per QI project. For concurrent projects, each QIPT shall have separate and different members.

ii) For projects for processes that are CCHD-wide applicable, there should be one member from each division, so at least four of the seven divisions are represented.

iii) For projects for program area processes (which are typically also division-specific), the majority of the members should be from the specific division(s) that implements the program, with at least two additional members representing at least 2 divisions that don't implement the program.

iv) QIPT membership totals will vary depending on size of project. Total QIPT membership, including the QIPT Consultant, shall not be less than five and not be more than eight members.

v) All levels of the organization shall be represented, so at least one management (division leader or supervisor), one professional staff and one support/clerical staff should be members.

vi) Members are selected to fill the following needs for the QIPT:

- QIPT Consultant: This person is selected from the membership of the QIC. This person is competent in using QI tools and has advanced QI skills. This person is responsible for scoping, preparing, and running the project. They will train team members in the elements of QI Tools and facilitates and captures the results of the project. This person fulfills the role of facilitator.
- Fresh Perspective: Team members that have no prior knowledge of the process. This person can give new eyes and ask insightful questions. This is a full team member and expected to participate fully in the project. For program area projects, this person is normally a member of another division that doesn't implement the program.
- Subject Matter Expert: Team members that have in-depth knowledge of the process to be improved as part of the project.

vii) Staff become members of the QIPT by recommendation by division leaders, as documented on appendix 800-015-01-F (QI Project Proposal Form) and are approved by the QIC as part of the QI project approval and selection process.

viii) QIPT members do not change for the entire duration of the project until the project is completed. In the event a member cannot fulfill this term, they will not be replaced.

3. ROLES AND RESPONSIBILITIES

In order to achieve CCHD-wide QI, all staff must be actively engaged and committed to applying QI principles and tools to daily work. Specific roles and responsibilities are listed below:

Role	Responsibility
Board of Health (BOH)	• Provide final approval of the QI Plan • Support QI efforts within the CCHD by authorizing resources for QI activities • Provide oversight and adopt policies for the CCHD • Receive reports of QI efforts from QIC Chairperson as a regular BOH meeting agenda item

Role	Responsibility
Health Commissioner	• Provide leadership for QI efforts within the CCHD • Promote a culture of QI within the CCHD • Allocate resources for QI efforts within the CCHD
Division Leaders	• Appoint QIC member to represent division • Recommend members for QIPT • Identify staff QI training needs, as needed, and report to the QIC • Encourage staff to utilize QI concepts, tools and processes • Communicate with division staff to identify proposed QI projects • Report results of mini-QI projects to QIC • Provide opportunity during regular division staff meetings for the QIC division representative to report results of QI efforts to division staff • Facilitate the implementation of QI activities at the program level
Division Leadership Team (DLT)	• Review and provide feedback of draft QI Plan received from the QIC • Approve the QI Plan • Integrate QI principles in the CCHD plans, policies and procedures • Decide which QI Projects will be posted on the CCHD website, social media and/or PHQIX
QIC Chairperson	• Act as liaison and report activities of the QIC to the DLT and the BOH • Provide guidance and leadership to the QIC • Schedule and facilitate QIC meetings • Develop and distribute QIC meeting agendas • Approve and distribute QIC meeting minutes • Coordinate all QIC activities, including periodic QI Plan/QIC evaluations
QIC	• Advocate for and foster a QI culture within the CCHD • Develop and maintain the QI Plan; ensure plan meets PHAB requirements *Note: The initial 2016-2017 QI Plan was developed by the Accreditation Domain 9 team. All plans after this will by the responsibility of the QIC.* • Evaluate, revise and update QI plan periodically • Attend and participate in scheduled QIC meetings • Assign team member to record meeting minutes • Assist in the identification, development and implementation of QI projects • Prioritize and select QI projects • Monitor and evaluate QI projects • Track and report on customer satisfaction activity • Monitor and evaluate customer satisfaction activities • Communicate progress on QI projects to staff at periodic all-staff meetings • Communicate progress on QI projects to staff during regular division staff meetings • Serve as QIPT consultants for QI projects, as assigned, including providing technical assistance • Recognize individuals and teams and celebrate milestones and successes • Plan and evaluate QIC reporting and communication activities

Role	Responsibility
	• Evaluate and update QIC operations periodically • Identify and apply for scholarship/grants for supplemental funding sources to use for QI activities and training • Develop QI training plan based on training needs
QI Project Teams (QIPT)	• Attend and participate in scheduled QIPT meetings and/or Kaizen events • Complete project team charter • Complete project improvement planning, analysis, determination and implementing • Complete all necessary documentation of project improvement efforts • Report results to the QIC • Present findings/QI Project summary and lessons learned during periodic all-staff meetings • Use QI tools to determine root cause of issues and areas that can/should be improved to make the process more efficient • Conduct Plan-Do-Check-Act (PDCA) cycle(s), including: establishing measurable aim, collecting and analyzing data, identifying root cause, selecting and implementing intervention and studying results to determine action and achieve QI project goals • Attempt to reach consensus on significant issues. If consensus cannot be reached, majority vote prevails.
QIPT Consultant	• Provide technical assistance to develop project proposals • Provide refresher training on QI tools prior to their use during QIPT meetings and/or Kaizen events • Provide guidance as to which tools to implement during the QIPT meetings and/or events to ensure appropriate root cause determinations are made • Provide or sources needed technical assistance for QIPT • Assure that projects follow the PDCA process, that data is used to measure improvement and that QI Project Worksheets and Storyboards are completed for assigned projects • Facilitate QIPT meetings • Report progress of the project during QIC meetings periodically
All Staff	• Participate in QI training when offered • Develop an understanding of basic QI principles and tools through QI training • Identify areas for improvement to develop project proposals, paying particulate interest to projects that align with strategic priorities and program performance measures • Suggest improvement actions to address identified areas for improvement in your division to the division leader • Apply QI principles and tools to daily work • Participate as member of the QIC and/or a QIPT as requested or required • Participate in QI projects and efforts as requested, including but not limited to data collection, process changes and identifying areas of improvement

4. STAFFING AND ADMINISTRATIVE SUPPORT

a) Staffing support is in the form of staff participation in the QIC and a QIPT, training and other QI efforts. This is detailed in section I.3. of this document.

b) Administrative support staff utilized for Performance Management System (PMS) data handling will also support QI Plan data handling for the QIC and a QIPT as needed.

5. BUDGET AND RESOURCE ALLOCATION

a) As detailed in section I.3. of this document, the resource of staff participation time in the QIC and a QIPT, training and other QI efforts is supported by the Health Commissioner and BOH.

b) Funding necessary for providing QI training, including materials and travel expenses, is budgeted. To keep these costs at a minimum, available scholarship/grant funding will be pursued to use for advanced QI training and free online training tools will be used to eliminate travel and registration expenses.

c) Funding necessary to supply project materials is provided. To keep these costs at a minimum, standard City office supplies and/or electronic recording will be utilized as much as possible.

J. TRAINING

As part of the CCHD efforts to build a culture of quality and to continuously integrate QI, the CCHD recognizes the need to train all employees on the principals of quality improvement. The CCHD plans to use an incremental approach to training for this initial QI plan. The overall goal is to develop basic skills and knowledge of QI process and to move the CCHD forward along the Roadmap during the year, as mentioned in section H. of this document. The WDP has integrated the below specifics as to resources and responsible parties.

Below are the desired future state QI training requirements and the training plan to progress toward that future state

1. QI TRAINING REQUIREMENTS (DESIRED FUTURE STATE)

Training shall provide staff with a certain level of QI knowledge and skill dependent on the person's role in QI at the CCHD, as detailed in the table below:

Level of Skill / **Role**	Understanding of the CCHD QI Plan	Introduction	Intermediate	Advanced
New Employees	X	X		
All existing staff	X	X		
QIC members (that are not QIPT Consultants)	X	X		
QIPT Consultants (who are also QIC members)	X	X	X	X
QIPT Members (non-Consultant)	X	X	X	

Level of QI knowledge and skills are defined in the table below:

Understanding of the CCHD QI Plan	• Has read the CCHD QI Plan.
Introduction	• Introduction to the concept and principles of continuous QI
Intermediate	• Hands-on training via work on QI project • Exposure to QI Tools: PDCA Cycle, DMAIC, SIPOC, 5 Whys, Affinity Diagram, Impact/Control Matrix, Waste identification (TIMUWOOD), Process Mapping, Team Charter, Action Register/Plan.
Advanced	• Hands-on use of several QI tools, including but not limited to: DMAIC, SIPOC, 5 Whys, Affinity Diagram, Impact/Control Matrix, Waste identification (TIMUWOOD), Process Mapping, Five S, Team Charter, Action Register/Plan, Control Chart, PDCA Cycle, Data Collection & Analysis, AIM Statements, SMART goals. • Classroom training on Lean and/or Six Sigma subjects

2. ONGOING QI TRAINING

a) Division leaders are required to report staff training needs to the QIC in order to assess CCHD-wide needs and create a training plan.

b) Training records (past and current employment) and workforce development gap analysis via the WDP will also be utilized to identify training needs and be incorporated into the training plan.

e) Staff attendance at division staff meetings and annual all-staff meetings receive QI updates (lessons learned, outcomes, etc.) as ongoing training.

f) Staff receives hands-on QI training when they participate as members of the QIC and a QIPT. Rotating staff that are QIC and QIPT members provides more staff with that training opportunity.

g) During QIPT meetings/events, the QIPT Consultant will provide training on the specific QI Tools to be used by the team, prior to using the tool. This will provide knowledge to the QIPT members so the effort using the QI tool is effective.

3. QI TRAINING PLAN AND GOALS

The following is the QI Training plan in order to achieve the desired future state QI skill level.

Training title	**Content**	**Skill Level**	**Audience**	**Completion Date goal**
QI 101	Introduces the concept and principles of continuous QI and the PDCA model.	Introduction.	All employees not at skill level including new hires not at skill level.	12/31/2016 for existing and within six months for new.

Training title	Content	Skill Level	Audience	Completion Date goal
CCHD QI Plan	Review of the written CCHD QI Plan to understand the CCHD QI Infrastructure and the PDCA model.	Understanding of the CCHD QI Plan.	All employees including new hires.	10/31/2016 for existing and within 6 months for new.
QI Tools (conducted by QIPT Consultant)	Short summaries of QI Tools used by QIPT teams. Includes the following tools: 5 Whys, SIPOC, Affinity Diagram, Pareto Chart, Impact/Control Diagram, Process mapping, Waste identification.	Intermediate.	QIPT Members.	Conducted during QIPT meetings prior to using QI tool. To be completed prior to end of project.
LeanOhio Boot Camp (5 days)	Comprehensive training covering Lean and Six Sigma concepts, QI Tools and hands on skills.	Advanced.	QIPT Consultant, QIC members that want to be QIPT Consultants and any other interested staff.	12/31/2017

Additional goals to complete to have a comprehensive training program have been added to the Quality Improvement Goals listed in section L. of this document.

4. PRIOR TRAINING

The following staff completed the LeanOhio Boot Camp training prior to the approval date of this plan and is considered having advanced QI skills.

Name	Division	Completion Date
Terri Dzienis	APC	03/27/2015
Heather Macdonald	Lab	06/03/2015
Kim Campbell	EH	06/03/2015
Janet Copeland	Nursing	06/17/2015
James Adams	VS	12/15/2015
Amanda Archer	OPHI	12/15/2015
Colton Masters	EH	04/14/2016
Gus Dria	EH	04/14/2016
Patty McConnell	OPHI	04/14/2016
Neil DelCorso	APC	05/24/2016
Ashanti Parker	Nursing	06/23/2016
Christina Henning	Lab	06/23/2016

There are several existing staff with previous employment that may have provided QI training. Part of the Quality Improvement Goals listed in section L. of this document includes the development of an assessment to identify those employees and their level of QI skill.

K. QUALITY IMPROVEMENT PROJECTS

1. IDENTIFICATION OF POTENTIAL PROJECTS

a) Potential QI projects will be proposed based on the need to improve program processes, objectives and/or performance measures that align with the CCHD plans and performance management system (PMS). Potential projects may be identified in a number of ways, including, but not limited to: identification by Division Leadership Team (DLT) and/or the QIC during review of performance data, staff suggestions, after-action reports (AAR), customer satisfaction survey data, program evaluations, and audit or compliance issues, needs related to preparation for the accreditation process, etc.

b) Other potential projects are targeted problem areas in the CCHD's operations, or those overarching priorities identified in the Strategic Plan (SP) or Community Health Improvement Plan (CHIP). Consideration of national, state and local sources of benchmarks and measures, such as the National Public Health Performance Standards, the State of Ohio Improvement Standards and Health People 2020 goals may be used to assist in determination of priority areas for potential QI projects.

c) Potential QI projects are submitted to the QIC for consideration on appendix 800-015-01-F (QI Project Proposal Form) of this document. QIC members are available to offer technical assistance to staff to develop QI project proposals.

d) Staff will have the ability to make suggestions of potential projects through their division representative on the QIC, who will help development the project proposal. Documentation for the suggested project will be completed on appendix 800-015-01-F (QI Project Proposal Form) of this document, which will be discussed with the Division Leader, then submitted to the QIC for consideration.

e) In addition, divisions may choose to develop quality improvement projects outside of the formal QI project system, detailed in section K.1.a.-d. of this document), utilizing appropriate QI tools. These projects will be called Mini-QI projects.

   i) Mini-QI projects are division-specific and only division staff are included on the team. If it is desired to have outside division staff participate on the team, a formal QI project will need to be completed.

   ii) Mini-QI projects require the formation of a team and use of at least one QI tool for the planning phase of the project.

   iii) Mini-QI projects require data measurement to show improvement gained.

   iv) Mini-QI projects require simpler documentation than formal QI projects (see section K.5.b. of this document).

v) Division leaders are responsible to ensure mini-QI projects are aligned with the SP, CHIP, and/or Mission, Vision, and Values. Mini-QI projects not aligned with those shall not be conducted.

vi) If Mini-QI project teams develop a solution that impacts other divisions, then that project needs to be escalated and redefined as a formal QI project.

f) In addition, divisions may have identified problems that they know the solution to fix already, without having to implement QI tools (for example: A form in use has an error that needs fixed to resolve processing issues). These are not projects since the solution is already known. These also don't involve a team to develop the solution. These are called just-do-it solutions, which don't require any formal documentation.

i) Caution: QI tools are always encouraged to be used. Someone may think they know the solution, but after implementation of QI tools, realize another solution is more effective. Therefore, just-do-it solutions should be limited to simple problems with simple solutions.

2. PRIORITIZATION AND SELECTION PROCESS

a) QIC members will discuss and decide to accept a proposal, request more information or modifications or reject the proposal based on the appendix 800-015-02-F (QI Project Selection Criteria Form). Project proposals will have priority if they are data driven and if they are aligned with the CCHD SP, the CHIP, program strategic plans, program evaluations, accreditation, after action reports or customer satisfaction goals. Some accepted proposals that are prioritized lower than other accepted proposals may be placed on a wait list.

b) All QI projects selected will be in compliance with PHAB requirements under Measure 9.2.2, which will be projects for processes (either program area or administrative area process).

c) In order to not over use the limited resources at CCHD, the accepted proposals receiving high priority scores will be initiated until the number of projects committed to in the QI Goals (listed in section L. of this document) have been satisfied. Remaining accepted proposals will be placed on a wait list until the initiated projects are completed and resources are made available again.

3. PROJECT INITIATION PROCESS

a) For each accepted QI project, a QI Project Team (QIPT) shall be formed.

i) Selection of QIPT members

1. The QIC, with the assistance of division leader recommendations, will select QI project team (QIPT) members to ensure the criteria established in section I.2.d. of this document is met. The QIC should consider staff to be QIPT members that have not been members previously, so all staff can eventually have experience with QIPTs.

2. A QIC member will be assigned by the QIC to each QIPT to serve as the QIPT Consultant.

ii) A QI Project Team Charter will be completed and documented using the form 800-015-03-F (QI Project Team (QIPT) Charter Form) after the team is formed as part of the Quality Improvement Goals listed in section L. of this document.

b) The CCHD is committed to the use of the Plan-Do-Check-Act (PDCA) model for quality improvement. The QIPT are responsible to implement PDCA for their QI project either in the form of meetings, Kaizen events or a combination of both. All CCHD staff will receive training on this model and its use. The four stages of this model include *planning* an improvement, *doing* (implementing) the plan, *checking* (or *studying*), which includes measurement and evaluation of data associated with the implementation of the plan and then finally *acting* to adopt the change and incorporate into standard operations, or modifying the plan and repeating the cycle until the desired outcome is met or optimal benefit is realized. 800-015-11-A *The ABCs of PDCA* (Gorenflo and Moran, 2010) is provided as a supplement in which the details of this process are explained. 800-015-12-A Quality Improvement (QI) Toolbox, includes commonly used QI tools which may be used to assist the project teams in conducting the quality improvement project planning and evaluation portion of PDCA.

4. PROJECT LIMITATIONS

a) Due to the QI program at the CCHD being in its initial stages, QI projects will be limited in scope to include only CCHD processes. Once the CCHDs QI Maturity and experience has increased, larger QI projects can be tackled involving outside agencies and/or other City Departments.

b) Improvement strategies selected for projects shall be those which the CCHD has control over (i.e. is not dependent on another City Department or outside the CCHD to implement).

c) Improvement strategies selected for projects shall incur zero additional cost for the CCHD. It is easy to think an IT solution will solve all problems, but those typically cost money and time. There are measurable improvements that can be realized by eliminating the waste in CCHD processes to make them more efficient. These are the types of improvements the CCHD will be focused on.

5. PROJECT DOCUMENTATION

a) Each QIPT is expected to document the project via 800-015-04-F (QI Project Worksheet Form) and 800-015-06-F (QI Project Storyboard Form) and a summary graphic display to be shared with all staff. At the discretion of the DLT, the project documentation may also be posted on the CCHD website, social media and/or submitted to the Public Health Quality Improvement Exchange (PHQIX).

i) The summary graphic display shall be a collage of pictures taken, data charts/graphs and the like that will visually show the before and after state of the process that was improved.

b) In addition, divisions conducting mini-QI projects shall complete proper documentation. While completion of a storyboard is not required for mini-QI projects, documentation of the process, tools used, outcomes (before and after states) and lessons learned should be completed, either

in the form of progress notes, meeting minutes, graphic display summary or through the use of the form 800-015-04-F (QI Project Worksheet Form) by completing applicable sections.

c) Each project should have pictures taken of the initial process map with the waste marked and the picture of the chosen improvement strategy process map, if processing mapping was used, to show the before and after state of the process and visually show the improvement. Pictures shall also be taken of any other QI tools implemented.

L. QUALITY IMPROVEMENT GOALS, OBJECTIVES AND MEASURES WITH TIME-FRAMED TARGETS

The current goals were selected due to their direct correlation to advancing QI maturity of staff and establishing culture of QI in the CCHD. The goals are specified in the table below.

	Goal/Objective/Activity	Performance Measure	Person(s) or Team Responsible	Timing Target(s)
Organizational Culture	Conduct QI Maturity 10-Question Survey (800-015-09-A) assessment of all staff. Then compare to the Roadmap to determine human and process characteristics.	Documentation of survey and results	QIC	To be completed by 08/31/2016 to serve as baseline data then again by 12/31/2017
	Develop final QIC team charter (use 800-015-10-A as a template)	Documentation of charter	QIC	To be completed by 08/31/2016
	1. Complete QIPT charter for each QIPT; revise 800-015-03-F (QI Project Team (QIPT) Charter Form) if necessary. 2. Develop consistent PDCA implementation structure for QIPT meetings; revise 800-015-11-A (The ABC's of PDCA) and 800-015-12-A (Quality Improvement Toolbox) if necessary.	Documentation of charter and structure	QIC and QIPT Consultants	1. QIPT charters to be completed by 12/31/2016. Revisions completed by 12/31/2017. 2. To be completed by 12/31/2016 with current form for trial use and final revisions to be completed by 12/31/2017
Capacity and Competency	Develop and implement PMS	Documentation of PMS	Domain 9 Team	To be completed by 12/31/2016
	Introductory QI training • QIC to find and select online/free intro training • Conduct intro training for all staff needed	Documentation of training	QIC	To be completed by 12/31/2016
	QI skill assessments: • Development or select assessment • Conduct assessment of staff to determine level of QI skill • Develop procedures for ongoing use of assessment for new hires	Documentation of assessment and results	QIC	To be completed by 10/31/2016
	Advanced QI training for QIC members at introduction QI skill level or any other interested staff • Identify those members or staff • Apply for LGIF scholarship (if available) • Attend training (if scholarship is available)	Documentation of training	QIC	To be completed by 12/31/2017
	QIPT training: The QIC to find online/free specific QI Tool training modules to provide to QIPT members. The QIC to also research and apply for grant training	Documentation of training and grant applications (if applicable).	QIC	• Grant options to be completed by 10/31/2016 • Training modules grant options

	Goal/Objective/Activity	Performance Measure	Person(s) or Team Responsible	Timing Target(s)
	options.			to be completed by 12/31/2016
Alignment & Spread	Complete one QI project in an administrative area	QIPT meeting documentation; project documentation	QIPT selected for project; QIC to monitor	To be completed by 12/31/2017
	Complete one QI project in a program area	QIPT meeting documentation; project documentation	QIPT selected for project; QIC to monitor	To be completed by 12/31/2017
	Selection of QI Projects: 1. The QIC to solicit all staff to consider submission of QI project proposal(s) 2. QIC to select projects to fulfill goals above	1. Project proposal documentation 2. QIC meeting documentation; project proposal selection criteria documentation	1. All staff (who are interested) 2. QIC	1. To be completed by 08/31/2016 2. To be completed by 12/31/2016
	Collect the CCHD website and social media views data to serve as baseline data	Documentation of data collected	QIC	To be completed by 08/31/2016
	1. Develop at least one customer satisfaction survey. This effort may be coordinated with the accreditation team efforts. 2. Conduct the survey.	Documentation of Survey form and results	QIC	To be completed by 12/31/2017

M. MONITORING AND EFFECTIVENESS OF THE QI PLAN AND QI ACTIVITIES

1. DATA COLLECTION, MONITORING AND ANALYSIS

   a) The QIC will assess staff QI maturity once every two years. 800-015-09-A (QI Maturity 10-Question Survey) consists of ten questions that represent the key domains of QI Maturity: Organizational Culture, Capacity/Competency and Alignment and Spread.

      i) The assessment is sent to all staff via free electronic survey method at the end of the calendar year (late December) every two years.

         1. Note: This initial 2016-2017 QI plan will include sending this survey by December 31, 2017 (less than two years), then every two years thereafter.

      ii) The initial baseline survey will be conducted per the timeline listed for this Quality Improvement Goal in section L. of this document.

   b) The QIC will assess the QIC progress on QI Plan goals quarterly and annually. Final assessment will be conducted every two years as part of the QI plan cycle.

   c) The QIC will review and assess all QI projects that were completed during the calendar year per the criteria in 800-015-08-F (QI Project Review Criteria Checklist) of this document at least annually. This assessment includes the review of 800-015-01-F (QI Project Proposal Form), 800-015-04-F (QI Project Worksheet Form) and 800-015-06-F (QI Project Storyboard From) for the project.

   d) The QIC will review and compile the data, at least annually, of lessons learned and efficiencies gained from the completion of QI Projects that are available on the completed 800-015-04-F (QI Project Worksheet Form), 800-015-06-F (QI Project Storyboard Form) and 800-015-07-F (QI Project Team (QIPT) Post-Project Evaluation Form).

   e) The QIC will review the CCHD website views and social media post views related to QI communication (as detailed in section N. of this document) to assess the effectiveness of this mode of communication. This will first be done to collect baseline data and again for year-end data annually.

2. EFFECTIVENESS OF THE QI PLAN AND QI ACTIVITIES

   a) Once every two years as part of the QI plan cycle, the QIC will discuss the effectiveness of the QIC operations (meetings, progress reporting, tracking, etc). The QIC will determine if any changes are needed to make improvements to better achieve the QIC objectives. The QIC Team Charter will be updated accordingly.

   b) The assessment data and results discussed in section M.1. of this document will be summarized and compared to the targets in the table below in order to determine the effectiveness of the QI Plan and QI activities:

	Goal	Measure	Data Source	Results		Target
				Base	2017	
Organizational Culture	Improve staff QI maturity	Show improvement of staff maturity compared to baseline	Every two year QI maturity assessment (to be completed by 12/31/2017) compared to 2016 baseline assessment	TBD	TBD	Any increase in maturity
Organizational Culture	Measureable success with QI efforts	% of AIM Statement objectives achieved in completed QI Projects	QIC 800-015-08-F (QI Project Review Criteria Checklist) assessment	n/a	TBD	50%
Capacity & Competency	Complete all QI Plan goals listed in section L. of this document	Completion of goals by deadlines	QIC assessment	n/a	TBD	100%
Capacity & Competency	Completed all QI training goals listed in section J.3. of this document	Completion of goals by deadlines	QIC assessment	n/a	TBD	100%
Alignment & Spread	Effectiveness of website and social media communication strategies	Show improvement of views	QIC assessment of website and social media views compared to 2016 baseline data	TBD	TBD	Any increase in views

3. PROGRESS REPORTS

a) QI projects progress

i) The QIPT Consultants will report the progress on their assigned QI projects and if they remain on target to meet the date of completion during the regular QIC meetings. This will be done at least quarterly.

b) QI project completion, outcomes and lessons learned

i) The QIPT are responsible to prepare the illustrative/graphic summary of their completed project outcomes. No later than 30 days after project completion the QIPT shall post the graphic summary in the bulletin board in the CCHD hallway.

ii) The QIPT are responsible to prepare the brief narrative written summary of their completed project outcomes. When prompted by the Executive Assistant to provide articles for the CCHD Annual Report, the QIC Chairperson shall promptly request the narrative from the QIPT Consultant. The QIPT Consultant shall promptly provide narrative. The QIC Chairperson shall provide the narrative to the Executive Assistant to include in the Quality Improvement section of the report. The Executive Assistant is responsible to complete the CCHD Annual Report.

iii) Each calendar quarter, the QIC will review which QI Projects are completed. If a QI Project is completed, the QIPT Consultant will provide a written summary of their completed

project outcomes and lessons learned and a list of staff that were part of the QIPT. The QIC Chairperson will provide the summary to the Executive Assistant for incorporation into the BOH Meeting packet (aka Board Report). A member of the QIC (preferably the QIPT Consultant for the completed project) will attend the BOH meeting to discuss the project with the BOH.

1. The QIC will develop the format of this written summary during the second calendar quarter of implementation of this 2016-2017 QI Plan.

iv) As soon as possible but no later than within 30 days of QI Project completion, the QIC Chairperson will notify the DLT during one of their regularly scheduled meetings that a QI project has been completed. The QIC Chairperson will present the project illustrative/graphic to the DLT and the DLT will decide whether to post it on the CCHD website and/or social media.

1. If the project will be posted to the CCHD website, the QIC Chairperson is responsible to provide the Executive Assistant the documents and language that should be posted to the website promptly after the DLT meeting. The Executive Assistant is then responsible to upload the documents to the CCHD website promptly after receipt.

2. If the project will be posted to social media, the QIC Chairperson is responsible to provide the HAN Coordinator the documents and language that should be posted to the social media website(s) promptly after the DLT meeting. The HAN Coordinator is then responsible to upload/post the information to the social media website(s) promptly after receipt.

c) QI Plan Goals progress during year

i) Each calendar quarter, the QIC will provide a written summary of the QI Plan goals progress and if they are on target. The QIC will provide the summary to the Executive Assistant for incorporation into the BOH Meeting packet (aka Board Report). A member of the QIC will attend the BOH meeting to discuss the progress of the QI Plan with the BOH.

1. The QIC will develop the format of this written summary during the first calendar quarter of implementation of this 2016-2017 QI Plan.

ii) Each calendar quarter, the QIC Chairperson will present the same quarterly summary to the DLT during their regular meetings.

d) QI Plan goal completion and QI effectiveness

i) Every two years at the end of the calendar year, the QIC will provide a written summary of the QI Plan goals completion status and the QI effectiveness results to the Executive Assistant for incorporation into the BOH meeting packet (aka Board Report). A member of the QIC will attend the BOH meeting to discuss the goals with the BOH.

ii) The QIC Chairperson will present the same summary to the DLT during one of their regular meetings.

e) All CCHD staff meeting

i) Before the all CCHD staff meeting, which occurs about once per year, the QIC will prepare the items to present during the meeting listed in section O. of this document to be shared during the meeting. A member of the QIC will conduct the presentation during the meeting.

4. ACTIONS TAKEN TO MAKE IMPROVEMENTS

a) During the QIC meetings, the QIPT progress and QI Plan goals progress will be discussed at least quarterly. If the progress is not on target to meet the goals on time, the QIC will decide what actions need to be taken, if any. These decisions will be documented in the QIC meeting minutes.

b) As part of the QIPT completing 800-015-04-F (QI Project Worksheet Form), 800-015-06-F (QI Project Storyboard Form) and 800-015-07-F (QI Project Team (QIPT) Post-Project Evaluation Form), data will be available of the efficiencies gained and lessons learned. This data will be used to make revisions to the QI Plan if necessary.

5. CUSTOMER / STAKEHOLDER SATISFACTION FROM SERVICES AND PROGRAMS

a) The CCHD currently has limited existing customer satisfaction surveys, which are used in the Nursing and WIC divisions. These surveys are offered to customers periodically. The Nursing and WIC divisions currently review the survey results, when available, and initiates mini-QI projects or just-do-it projects to implement improvements, as needed, based on the survey results.

b) The QIC will work with a program area or the Accreditation Team to develop a method and frequency for collecting customer satisfaction data, which is one of the Quality Improvement Goals listed in section L. of this document. This data will be utilized as part of an improvement tool.

c) Customers/stakeholders, both internal and external, are identified on 800-015-04-F (QI Project Worksheet Form) for QI Projects. QIPT are encouraged to consider collecting data related to customer satisfaction as part of the project process.

N. REVISION AND UPDATE OF THE QI PLAN

1. Once every two years at the end of the calendar year, the QIC will review and revise the QI Plan, including attached forms, based on the data, evaluations and effectiveness information compiled per section M. of this document.

   a) The initial 2016-2017 QI Plan will be reviewed by December 31, 2017 (less than two years), then all QI Plans thereafter will be every two years.

2. The (DLT) approves the QI Plan in accordance with policy 800-001-P.

3. The BOH also approves the QI Plan in accordance with policy 800-001-P.

a) The QIC will prepare a written summary of the plan changes to present to the BOH during the meeting in which the QI Plan is to be approved. This summary will also be provided to the Executive Assistant for incorporation into the BOH meeting packet.

O. COMMUNICATION OF QUALITY IMPROVEMENT ACTIVITIES

A number of methods will be used to assure regular and consistent communication of quality improvement activities. These methods include, but are not limited to the following:

Key Message	Mode of Communication	Target Audience	Frequency
Opportunities to apply QI tools and methods	Division staff meetings All staff meeting	All CCHD Staff	As requested
QI Project outcomes and lessons learned, including recognition of involved staff	All staff meeting	All CCHD Staff	As scheduled, about once per year
	Written report for BOH meeting packet for the Quality Improvement agenda line item under reports	BOH	Quarterly
QI Project outcomes – illustrative/graphic	Bulletin board in CCHD hallway	All CCHD Staff	Within 30 days of QI Project completion
	CCHD Website	Public	Within 30 days of QI Project completion if approved by the DLT
	Social media	Public	At least once per year
QI Project outcomes – brief narrative	New QI section created in written CCHD Annual Report to include brief narrative of QI project outcomes	Public	Annually
QI training opportunities	Email	All CCHD Staff	When available, at least two weeks in advance of training date
Progress of QI Plan goals and objectives	DLT meetings	DLT	Quarterly
	Written report for BOH meeting packet for the Quality Improvement agenda line item under reports	BOH	Quarterly
	All staff meeting	All CCHD staff	As scheduled, about once per year
QI Plan	Distribute plan per policy 800-001-P	All CCHD staff and BOH	Every 2 years

Key Message	Mode of Communication	Target Audience	Frequency
Expectation of all CCHD staff to contribute to QI per the QI plan	All staff meeting	All CCHD staff	As scheduled, about once per year
	QI plan distribution	All CCHD staff	Every two years
QI Plan effectiveness	DLT meetings	DLT	Annually
	Written report for BOH meeting packet for the Quality Improvement agenda line item under reports	BOH	Annually
	All staff meeting	All CCHD staff	As scheduled, about once per year
QIC progress	QIC meeting minutes stored on shared drive	All CCHD staff	Updated after regular meetings, reviewed as desired

P. CITATIONS & REFERENCES

http://lean.ohio.gov/ (accessed various areas on 04/29/2016)

QI Maturity Tool (29-question) from the Ohio State University (OSU) Center for Public Health Practice: http://cph.osu.edu/practice/workforce-development-plan-template (accessed "QI maturity Tool" linked document on 10/09/2015)

National Association of County and City Health Officials (NACCHO): (2012), The Roadmap to a Culture of Quality Improvement. Available: http://qiroadmap.org (accessed 04/29/2016).

Public Health Quality Improvement Exchange (PHQIX): www.phqix.org (accessed 04/29/2016).

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- Washington County, Department of Public Health and Environment, Minnesota
- Medina County Health Department, Ohio
- Knox County Health Department, Illinois

Q. CONTRIBUTORS

The following staff contributed to the authorship of this document:

1. Carl Safreed, APC Engineer
2. Sharon Foster, WIC Assistant
3. Heather Macdonald, Laboratory Technician
4. Terri Dzienis, APC Administrator

R. APPENDICIES AND FORMS

800-015-01-F: QI Project Proposal Form

800-015-02-F: QI Project Selection Criteria Form

800-015-03-F: QI Project Team (QIPT) Charter Form

800-015-04-F: QI Project Worksheet Form

800-015-05-F: QI Project Action Plan Form

800-015-06-F: QI Project Storyboard Form

800-015-07-F: QI Project Team (QIPT) Post-Project Evaluation Form

800-015-08-F: QI Project Review Criteria Checklist

800-015-09-F: QI Maturity 10-Question Survey

800-015-10-A: Draft Quality Improvement Committee Team Charter

800-015-11-A: The ABCs of PDCA

800-015-12-A: Quality Improvement Toolbox

Public Health
Prevent. Promote. Protect.
Canton City Health District

800-015-01-F: QI PROJECT PROPOSAL FORM

Project Title:	**Submitted By:**
Explain the gap in service, efficiency, or process targeted for improvement (what is the problem)?	
What type of process is the project for: ☐ **Administrative** ☐ **Program**	
Key Project Objective(s) (what are you trying to accomplish):	
Project aligns with (check all that apply): ☐ Accreditation ☐ After Action Reports ☐ Customer Satisfaction ☐ CCHD Mission, Vision, Values	☐ CCHD Strategic Plan ☐ Community Health Improvement Plan ☐ Program Planning or Evaluation ☐ Other (specify):
Explain why this project is a priority and how it aligns with the selections above:	
Has baseline data been identified to measure change? ☐ **Yes** ☐ **No** **If yes, which data:**	
Resources needed (financial, personnel and other):	
List the stakeholders you plan to involve:	
Who should be the QIPT Consultant of this team?	**Who should be on this QI team?**
Anticipated start date:	**Anticipated project duration:** ☐ **3 mth** ☐ **6 mth** ☐ **9 mth** ☐ **1 yr** ☐ **> 1 yr**
QIC to Complete: Date Submitted: QIC Review Date: Initials: Proposal: ☐ Accepted ☐ Requesting more information or modifications ☐ Denied QIC Comments:	

800-015-02-F: QI PROJECT SELECTION CRITERIA FORM

Below are the QI Project Selection criteria to prioritize project proposals. Any item that receives an answer of "yes" shall receive a check mark. The more items that receive check marks in the boxes below indicate the proposal will receive higher priority (high priority = high quantity of check marks).

Technical:

☐ Is it a CCHD process?

What type: ☐ Administrative ☐ Program

☐ Is the problem that is targeted for improvement clearly defined?

☐ Is the scope manageable?

☐ Can it be reliably measured?

☐ Can it be completed within the proposed timeframe?

☐ Is data available?

☐ Will the resources selected incur zero additional cost?

Strategic:

☐ Is it important to several staff and/or to the community?

Specify who it is important to:____

☐ Does it align with one or more of the CCHD plans?

☐ Does the project support the CCHD mission, vision and values?

☐ Does it have a customer focus?

☐ Does the project have potential to be replicated across programs or have an impact on other programs/activities?

☐ Are there no other active QI projects related to same strategic objective?

Empowerment:

☐ Is it within the proposed QIPTs control?

☐ Is it free from pre-conceived solutions?

☐ Is leadership prepared to implement change?

☐ Is there probability of success?

800-015-03-F: QI PROJECT TEAM (QIPT) CHARTER FORM

The QIPT should create this document utilizing the information on the QI Project Proposal and, if necessary, discussions with proposal submitter and/or process manager.

Charter Last Updated Date:

Project Title:

Project Objectives:

Process Manager:

Background ***(what is the problem, strategic importance, importance to customer)*****:**

Boundaries ***(limits on scope of process change allowable by Process Manager, legal restrictions, budget, etc.)*****:**

Process Scope	
	First Step in the process (to be included in project):
	Last Step in the process (to be included in project):

Performance Metrics: **What measures will tell you if you are successful?**	**Performance Metrics**		**Baseline Data? (Y/N)**
	Current	**Goal**	

What team has authority to do:

☐ Pilot improvement ☐ Make recommendations to process owner prior to pilot

Estimated Date of Completion:

Meeting Frequency and Duration:

Team Members:

Member Need	Name	Title	Level	Division
QIPT Consultant (also serves as timekeeper)				
Subject Matter Expert				
Subject Matter Expert				
Subject Matter Expert				
Fresh Perspective				
Fresh Perspective				

Note taker/Scribe:

Other Notes about team/work:

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800-015-04-F: QI PROJECT WORKSHEET FORM

Division / Program / Process Area:	**Program / Process Manager:**
Project Title:	
QIPT Consultant:	
Project Team Members:	
Project Start Date:	
PLAN PHASE	
Describe the problem / situation / process:	
Process customers / stakeholders (both internal and external):	
AIM Statement (Specific, Measurable, Achievable/Action oriented, Realistic, Time Sensitive)	
How will you measure improvement? What baseline data will you use?	
List contributing factors and root cause(s) to the problem and describe what QI tools were used:	
List potential improvement strategies and describe what QI tools were used:	
Select improvement strategy and describe what QI tools were used to make decision:	
Insert link to where project documents are stored, including 800-015-05-F (QI Project Action Plan Form):	

Develop and list process measures:
Develop and list outcome measures:
DO PHASE
Test improvement strategy (conduct key action steps):
CHECK PHASE
Study the results. What does the data indicate?
ACT PHASE
Describe what action you will take: 1. Adopt the change 2. Adapt the change and repeat the cycle 3. Abandon the project
Describe the key lessons learned (two to three):
List any measure that will continue to be tracked, frequency, and who will track the measure (this will be added to the PMS)**:**
List process efficiencies gained as a result of this implemented improvement (if any):
List the QI Tools used for this project:

Project End Date:	

800-015-05-F: QI PROJECT ACTION PLAN FORM

Action Steps / Tasks	Responsible Person(s)	Target Completion Date

800-015-06-F: QI PROJECT STORYBOARD FORM

CANTON CITY HEALTH DISTRICT – QI PROJECT SUMMARY		
Division / Program Area: **Project Title:** **Team:** **Project Start and End Dates:**		
PLAN	**6. Develop Process & Outcome Measures**	**ACT**
1. Describe the Problem		**9. Adopt, Adapt or Abandon**
2. Define the AIM	**DO**	
	7. Test Improvement Strategy (Conduct key action steps)	
3. Identify Baseline Data		**10. Describe Lessons Learned**
4. List Potential Improvement Strategies	**CHECK**	
	8. Study the Results	**11. Identify On-going Measures**
5. Select Improvement Strategy		

800-015-07-F: QI PROJECT TEAM (QIPT) POST-PROJECT EVALUATION FORM

To be completed by all QIPT members within 30 days after the project completion.

Describe the degree of the QI process that you learned:
Describe your perceived contribution to the project:
Describe the value of the project experience and ultimate outcome:
Describe lessons that you learned specifically:
Your suggestions to improve the QIPT experience:
Your suggestions to improve the overall CCHD QI efforts:

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800-015-08-F: QI PROJECT REVIEW CRITERIA CHECKLIST

Below are the QI Project review criteria to evaluate projects. Any item that receives an answer of "yes" shall receive a check mark. The more items that receive check marks in the boxes below indicate the project will receive higher review score.

QI Project Initiation and Status:

☐ Has a draft AIM statement been developed that is specific, time-sensitive and measurable?
☐ Has data been identified to measure improvement?
☐ Has the PDCA model been outlined to date on the QI Project Worksheet?
☐ Does the project have an action plan with timelines?
☐ Does the project appear to be on schedule?
☐ Is pilot-testing part of the plan?
☐ Was baseline data collected?
☐ Will data be available to measure improvement?
☐ Have QI tools been used?
☐ Are there opportunities to use additional QI tools in the PDCA model?

What are the technical assistance needs at this point?
Specify:____

What are the project successes to date and current challenges?
Specify:____

Projects Nearing Completion

☐ Are the strategies appropriate without revision?
If require revision, specify:____
☐ Is no additional testing needed?
If additional testing needed, specify:____
☐ Does the data indicate improvement?
☐ If yes to the above, is the team satisfied with the level of improvement?

Completed QI Projects

☐ Has the project been outlined on the QI Project Storyboard Form (800-015-06-F)?
☐ Has the project been summarized in a illustrative/graphic display?
☐ Did the project accomplish the primary goals it set out to achieve?
☐ Has the target within the AIM Statement been achieved?
☐ Did the project stay within the limitations (see section K.4. of the QI Plan)?
☐ Have opportunities for follow-up (continued activity or measurement) been identified with timelines?
☐ Are there opportunities to replicate the project elsewhere in CCHD and/or the City?

800-015-09-F: QI MATURITY 10-QUESTION SURVEY

Organizational QI Maturity

10-Question Survey

The questions on this survey are drawn from a QI maturity survey developed to evaluate the Robert Wood Johnson Foundation Multi-State Learning Collaborative (MLC)[1]. This select set of ten questions was developed by the Minnesota Public Health Research to Action Network to represent the key domains of QI maturity.

Organizational Culture	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	I don't know
1. Staff members are routinely asked to contribute to decisions at my public health agency.	☐	☐	☐	☐	☐	☐
2. When trying to facilitate change, staff has the authority to work within and across program boundaries.	☐	☐	☐	☐	☐	☐
3. The *key* decision makers in my agency believe quality improvement is very important.	☐	☐	☐	☐	☐	☐
4. My public health agency *currently* has a *pervasive culture* that focuses on continuous quality improvement.	☐	☐	☐	☐	☐	☐

Capacity / Competency	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	I don't know
5. The leaders of my public health agency are trained in basic methods for evaluating and improving quality, such as Plan-Do-Check-Act.	☐	☐	☐	☐	☐	☐
6. My public health agency has a Quality Improvement Plan.	☐	☐	☐	☐	☐	☐
7. My public health agency *currently* has a *high level of capacity* to engage in quality improvement efforts.	☐	☐	☐	☐	☐	☐

Alignment and Spread	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	I don't know
8. Job descriptions for many individuals responsible for programs and services at my public health agency include specific responsibilities related to measuring and improving quality.	☐	☐	☐	☐	☐	☐
9. Customer satisfaction information is routinely used by many individuals responsible for programs and services in my public health agency.	☐	☐	☐	☐	☐	☐
10. My public health agency *currently* has *aligned our commitment* to quality with most of our efforts, policies and plans.	☐	☐	☐	☐	☐	☐

[1]Joly, B.M., Booth, M., Mittal P., & Shaler, G. Measuring quality improvement in public health: the development and psychometric testing of a QI Maturity Tool. *Eval Health Prof., 35*(2):119-47.

For more information on this tool: www.health.state.mn.us

800-015-10-A: DRAFT QUALITY IMPROVEMENT COMMITTEE TEAM CHARTER

Charge

As part of the continuous quality improvement and performance management system, the Quality Improvement Committee (QIC) exists to oversee and support continuous quality improvement efforts, QI projects, QI training, customer satisfaction and performance/QI-related communications.

Primary Goals

- assure measureable CCHD success with quality improvement efforts
- improve staff capacity to engage in quality improvement efforts
- use customer feedback for improvement planning
- implement effective performance communications strategies
- make the use of quality improvement tools and techniques user friendly, participatory and part of daily work

Primary Activities

- prioritize and select QI projects
- monitor and evaluate QI projects
- provide and/or source technical assistance for QI projects
- assist in the identification, development and implementation of QI Projects
- recognize individuals and teams and celebrate milestones and successes
- select, coordinate and evaluate staff quality improvement training
- develop QI training plan based on training needs
- identify and apply for scholarship/grants for supplemental funding sources to use for QI activities and training.
- plan and evaluate QIC reporting and communications activities
- track and report on customer satisfaction activity
- monitor and evaluate customer satisfaction activities
- evaluate and update QIC operations periodically
- advocate for and foster a QI culture within the CCHD
- develop and maintain the QI Plan; ensure plan meets PHAB requirements
- evaluate, revise and update QI plan periodically
- communicate progress on QI projects to staff at periodic all-staff meeting

Composition/Membership

One member from each division, so at least six of the seven divisions are represented. [Note: Since OPHI and Lab are small divisions, only one of these divisions needs to be represented at the same time. All other divisions shall always be represented.] Total membership shall not be less than six and not be more than seven members.

All levels of the organization shall be represented. In order to achieve that, the membership shall consist of the following:

- Not more than one (1) division leader or Health Commissioner
- Not more than one (1) supervisor
- Not more than three (3) professional staff

- Not more than two (2) clerical/support staff

The QIC member representing the division leader or Health Commissioner level of the organization shall serve as the QIC Chairperson.

Appointment to the QIC
Staff becomes members of the QIC by recommendation and appointment by division leaders

Term
Members shall serve a two-year term. After two years, members may be re-appointed by division leaders an unlimited amount of times or division leaders may appoint a new person. Division leaders should always consider new interested people for appointment. If a member is unable to fulfill a two-year term, the division leader shall appoint a replacement. [Note: If a member that is part of an existing QIPT does not get re-appointed, they will still remain a member of the QIPT]

Membership Criteria
Staff are qualified for membership if they meet a minimum of one of the following:

- Have completed or will complete advanced QI training
- Have an interest in and aptitude for performance improvement planning, QI and/or program evaluation
- Commit to develop and promote continuous quality improvement throughout CCHD.

Roles and Duties

Role	Duties
Chairperson	• Provide guidance and leadership to the QIC • Develop and distribute meeting agendas • Approve meeting minutes; save on share drive and notify members • Facilitate meetings • Coordinate all QIC operations • Schedule meeting rooms and equipment • Provide member orientation • Act as liaison and report activities of the QIC to the DLT and BOH
Note Taker	This position rotates monthly among all members other than Chairperson. • Take minutes during meetings • Draft minutes on the share drive; notify Chairperson
Members	• Attend and participate in scheduled QIC meetings • Complete required work between meetings • Assign team member to record meeting minutes • Actively learn about QI • Promote QI to other staff • Complete respective assignments, as determined by the QI Plan and QIC decisions • Serve as QIPT Consultants for QI projects, as assigned • Communicate progress on QI projects to staff at periodic all-staff meeting • Communicate progress on QI projects to staff during regular division staff meetings

Role	Duties
QIPT Consultants	• Provide technical assistance to develop project proposals • Provide refresher training on QI tools prior to their use during QIPT meetings • Provide guidance as to which tools to implement during the QIPT meetings to ensure appropriate root cause determinations are made • Provide or sources needed technical assistance for QI project teams (QIPT) • Assure that projects follow the PDCA process, that data is used to measure improvement and that QI Project Worksheets and Storyboards are completed for assigned projects • Facilitate QIPT meetings. • Report progress of the project during QIC meetings at least quarterly.

Voting
QIC members will attempt to reach a consensus on significant issues. If consensus cannot be reached, majority vote prevails. Voting can only occur if a quorum is present. A quorum is four out of six members or five out of seven members, depending on the size of the QIC.

Meetings
Meetings are held monthly for ninety (90) minutes, on the second (2nd) Monday of the month, from 1:30-3:00 pm.

Time Commitment
The maximum time commitment for QIC members is anticipated to be three to five hours per month. This includes meetings and meeting preparation time.

The ABCs of PDCA

Grace Gorenflo and John W. Moran[1]

The Public Health Accreditation Board's (PHAB) voluntary accreditation program emphasizes the importance of quality improvement, and has catalyzed health department activity in this arena. The Accreditation Coalition, comprising national public health leaders, defines quality improvement in public health as the following:

> "Quality improvement in public health is the use of a deliberate and defined improvement process, such as Plan-Do-Check-Act, which is focused on activities that are responsive to community needs and improving population health. It refers to a continuous and ongoing effort 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. "[2]

The Plan-Do-Check-Act cycle (PDCA) has been embraced as an excellent foundation for, and foray into, quality improvement for public health departments, as it is both simple and powerful. Its simplicity comes from the systematic, straightforward and flexible approach that it offers. Its power is derived from its reliance on the scientific method, i.e., it involves developing, testing, and analyzing hypotheses. This foundation offers a means to become comfortable with a host of quality improvement methods and techniques, and to progressively evolve into addressing more complex problems, employing additional QI tools, and migrating to system-wide approaches to QI.

PDCA is based on the "Shewhart cycle," and was made popular by Dr. W. Edwards Deming, considered by many to be the father of modem quality control.[3] During his lectures in Japan in the early 1950s, Deming noted that the Japanese participants shortened the cycle's steps to the now traditional plan, do, check and act. It is interesting to note that Deming preferred plan, do, *study,* and act because the translation of "study" from Japanese to English has connotations closer to Shewhart's intent than does "check."[4] This model has been around for 60 years and it is relevant in today's public health world, providing a defined and well tested process to achieve lasting improvement to the problems and challenges public health is now facing.

Spending adequate time in each phase of the PDCA cycle is imperative to having a smooth and meaningful quality improvement process. The elements put forth here comprise a deliberate process based on the scientific method, and help ensure that improvement efforts are conducted in a way that will maximize the degree of success achieved.

Before beginning the PDCA process, it is important to assemble the team that will participate and to develop a communications plan about the effort.

<u>Assemble the team</u>

PDCA involves a team approach to problem solving. To begin, designate a team leader and team members, and address the following questions:

Do we have the right people (i.e., those who are directly involved with the area needing improvement)?

Does the team need training?

Who will facilitate the team and process?

Another key step is to develop a team charter[5], which serves to provide focus and clarity regarding the team's work. Additional resources on tending to teams as they move through the PDCA process may prove useful to optimize the team's performance.[6]

Communication plan

Those involved with or impacted by improvements must be kept informed of the changes, timing, and status of the quality improvement project. It's important to establish a communication plan at the outset of the improvement effort, and to communicate and post progress on a regular basis, in a highly visible location, for all to see. Storyboards[7] offer a cogent picture of key points in the PDCA cycle, and can be an effective venue to tell the story as the team moves through its improvement work.

Phases of the PDCA Model

The phases of the PDCA model below assume that just one underlying, or root cause will be addressed by testing just one intervention. When undertaking the PDCA process, the team may decide to address more than one root cause, and/or to test more than one intervention to address a root cause. In such instances, it will be important to measure the effect of *each* intervention on the root cause it is intended to address.

Plan: The purpose of this phase is to investigate the current situation, fully understand the nature of any problem to be solved, and to develop potential solutions to the problem that will be tested.

1. **Identify and prioritize quality improvement opportunities.** Usually a team will find that there are several problems, or quality improvement opportunities, that arise when programs or processes are investigated. A prioritization matrix[8] may help in determining which one to select. Once the quality improvement opportunity has been decided, articulate a problem statement. Revisit and, as appropriate, revise the problem statement as you move through the planning process.

2. **Develop an AIM statement**[9] that answers the following questions:
   a. What are you seeking to accomplish?
   b. Who is the target population?
   c. What is the specific, numeric measure(s) you are seeking to achieve?
   d. The measurable improvement objective is a key component of the entire quality improvement process. It's critical to quantify the improvement you are seeking to achieve. Moreover, the entire aim statement also will need to be revisited and refined as you move through the planning phase.

3. **Describe the current process** surrounding the problem in order to understand the process and identify areas for improvements. Flow charts and value stream mapping are two examples of methods to accomplish this.

4. **Collect data on the current process.** Baseline data that describe the current state are critical to further understanding the process and establishing a foundation for measuring improvements. The data may address, for example, time, people, space, cost, number of steps, adverse events, and customer satisfaction. A host of tools are available to collect and interpret data on the

process, such as Pareto charts, histograms, run charts, scatter plots and control charts. The data collected must be aligned with the measures listed in the aim statement.

5. **Identify all possible causes** of the problem and determine the root cause. While numerous causes will emerge when examining the quality improvement opportunity, it is critical to delve in and carefully identify the underlying, or root cause of the problem, in order to ensure that an improvement or intervention with the greatest chance of success is selected. Brainstorming is a useful way to identify possible causes and a cause and effect/fishbone diagram and the 5 Whys are useful for determining the actual root cause.

6. **Identify potential improvements** to address the root cause, and agree on which one to test. Once the improvement has been determined, carefully consider any unintended consequences that may emerge as a result of the implementing improvement. This step provides an opportunity to alter the improvement and/or develop countermeasures as needed to address any potential unintended consequences. Revisiting the aim statement and revising the measurable improvement objectives are important steps at this point.

7. **Develop an improvement theory.** An improvement theory[10] is a statement that articulates the effect that you expect the improvement to have on the problem. Writing an improvement theory crystallizes what you expect to achieve as a result of your intervention, and documents the connection between the improvement you plan to test and the measurable improvement objective.

8. **Develop an action plan** indicating what needs to be done, who is responsible, and when it should be completed. The details of this plan should include all aspects of the method to test the improvements - what data will be collected, how frequently data are collected, who collects the data, how they are documented, the timeline, and how results will be analyzed.

Do: The purpose of this phase is to implement the action plan.

1. Implement the improvement.
2. Collect and document the data.
3. Document problems, unexpected observations, lessons learned and knowledge gained.

Check/Study: This phase involves analyzing the effect of the intervention. Compare the new data to the baseline data to determine whether an improvement was achieved, and whether the measures in the aim statement were met. Pareto charts, histograms, run charts, scatter plots, control charts and radar charts are all tools that can assist with this analysis.

1. Reflect on the analysis, and consider any additional information that emerged as well. Compare the results of your test against the measurable objective.
2. Document lessons learned, knowledge gained, and any surprising results that emerged.

Act: This phase marks the culmination of the planning, testing, and analysis regarding whether the desired improvement was achieved as articulated in the aim statement, and the purpose is to act upon what has been learned. Options include:

1. **Adopt:** Standardize the improvement if the measurable objective in the aim statement has been met. This involves establishing a mechanism for those performing the new process to measure and monitor benchmarks on a regular basis to ensure that improvements are maintained. Run charts or control charts are two examples of tools to monitor performance.

2. **Adapt:** The team may decide to repeat the test, gather different data, revise the intervention, or otherwise adjust the test methodology. This might occur, for example, if sufficient data weren't gathered, circumstances have changed (e.g., staffing, resources, policy, environment, etc.), or if the test results fell somewhat short of the measurable improvement goal. In this case, adapt the action plan as needed and repeat the "Do" phase.

3. **Abandon:** If the changes made to the process did not result in an improvement, consider lessons learned from the initial test, and return to the "Plan" phase. At this point the team might revisit potential solutions that were not initially selected, or delve back into a root cause analysis to see if additional underlying causes can be uncovered, or even reconsider the aim statement to see if it's realistic. Whatever the starting point, the team will then need to engage in the Plan cycle to develop a new action plan, and move through the remaining phases.

PDCA offers a data-based framework based on the scientific method. This simple yet powerful format drives continuous and ongoing efforts 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.

Please direct any comments on this article to Grace Gorenflo at ggorenflo@naccho.org or John Moran atjmoran@phf.org.

References:

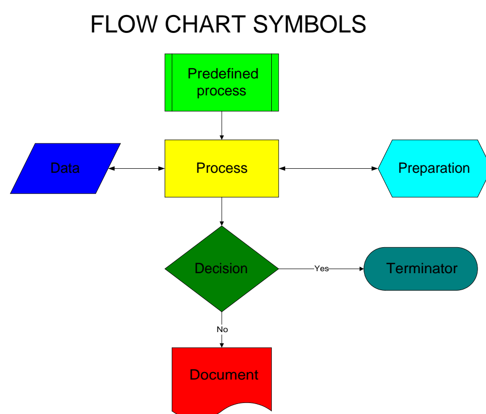
[1] Grace Gorenflo is Director, Accreditation Preparation and Quality Improvement, NACCHO and John W. Moran is Senior Quality Advisor to the Public Health Foundation and a Senior Fellow at the University of Minnesota School of Public Health in the Division of Health Policy and Management
[2] This definition was developed by the Accreditation Coalition Workgroup (Les Beitsch, Ron Bialek, Abby Cofsky, Liza Corso, Jack Moran, William Riley, and Pamela Russo) and approved by the Accreditation Coalition on June 2009.
[3] http://en.wikipedia.org/wiki/PDCA - accessed 12/2/2009
[4] http://en.wikipedia.org/wiki/PDCA - accessed 12/2/2009
[5] J. Moran and G. Duffy. Team Chartering. *Quality Texas Newsletter,* April 10, 2010 (available at www.naccho.org/toolbox/ in the Quality Improvement Toolkit)
[6] Team Assessment, team charter, team manager self-assessment, team process review checklist, and T. Kuras and J. Moran. 20 Questions to Ask Your Team. *The Quality Management Forum,* Winter Edition, Vol. 23, Number 4, 1997 are all available at http://www.naccho.org/toolbox/ in the Quality Improvement Toolkit
[7] A number of national efforts to support QI in public health have used a storyboard format that was developed by the Michigan department of public health and can be accessed at http://nnphi.org/CMSuploads/Storyboard-Guidelines-FINAL-05868.pdf (accessed 3/26/10)
[8] Bialek, R., Duffy, G. L., Moran, J. W. (2009). *The Public Health Quality Improvement Handbook.* Milwaukee, WI: ASQ Quality Press. This resource contains all of the quality improvement tools mentioned in this paper.
[9] http://www.accreditation.localhealth.net/MLC-2%20website/Michigans QI Guidebook.pdf – accessed 3/26/10
[10] Ibid.

The complete LeanOhio Tool Kit is available at the following website link:
http://lean.ohio.gov/resources.aspx

Below is a list of commonly used QI Tools:

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.

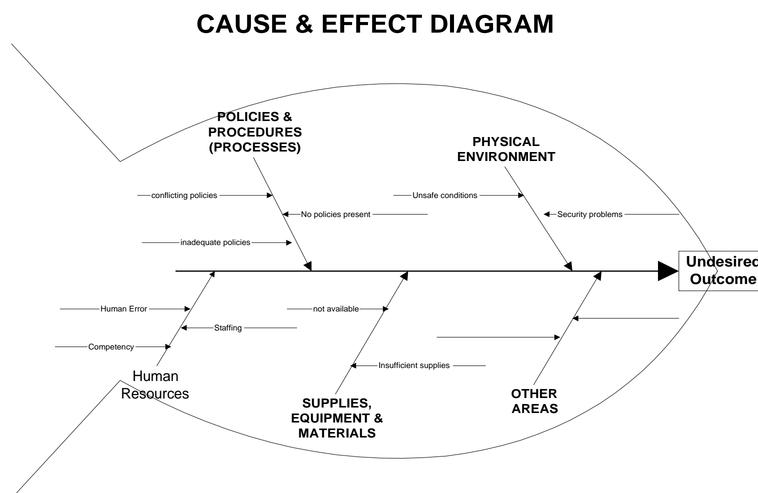
d. **Affinity Diagram:** The Affinity Diagram is often used to group ideas generated by brainstorming. It is a tool that gathers large amounts of language data (ideas, issues, opinions) and organizes them into groupings based on their natural relationship. The affinity process is a good way to get people 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.



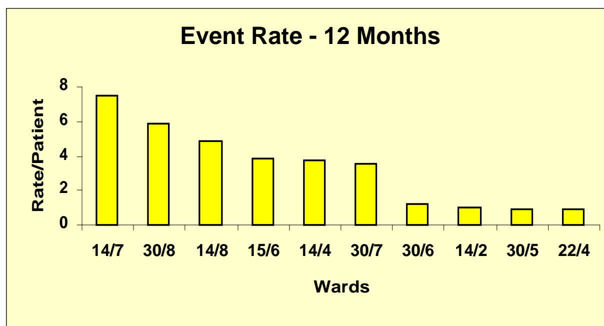
Cause and effect diagrams allow the team to identify and graphically display all possible causes related to a process, procedure or system failure.

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:

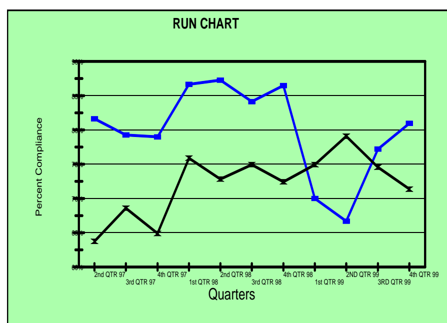
1) Focus on most important factors and help to build consensus.
2) Allows for allocation of limited resources.



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:

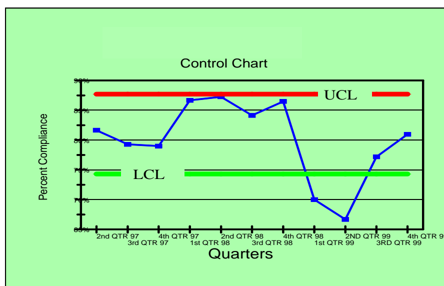
1) Understanding variation in process performance.
2) Monitoring process performance over time to detect signals of change.
3) Depicting how a process performed over time, including variation.



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

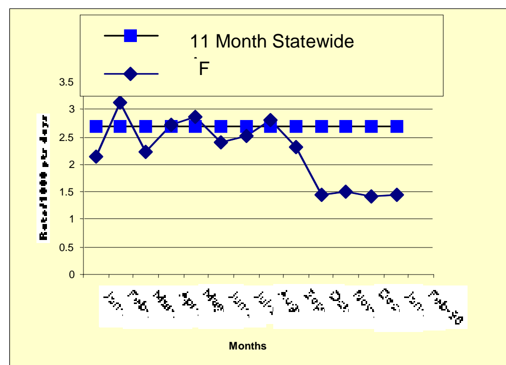
i. **Control Chart:** A control chart is a statistical tool used to distinguish between variation in a process resulting from common causes and variation resulting from special causes. It is noted that there is variation in every process, some the result of causes not normally present in the process (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. A common root cause analysis approach is the 5 Whys. To use the 5 whys, you do the following:

1) Once you have identified a problem, ask the question "Why did this problem occur?" There may be multiple answers to that question.
2) Then take each of the answers and ask the question again.
3) Continue to do this until you have uncovered the possible root causes of the problem. It may be necessary to ask "why" several times (about five) before you uncover the root causes.