

**Chapter 1 : How to Use Continuous Quality Improvement Tools - Social Solutions**

*Page 1 of Section 4 of the CAHPS Ambulatory Care Improvement Guide discusses the concept of microsystems in the context of improving patient experience and provides an overview of the quality improvement process.*

Service relationship with internal customers Never compromise quality Customer driven standards The Concept of Continuous Improvement by TQM TQM is mainly concerned with continuous improvement in all work, from high level strategic planning and decision-making, to detailed execution of work elements on the shop floor. It stems from the belief that mistakes can be avoided and defects can be prevented. It leads to continuously improving results, in all aspects of work, as a result of continuously improving capabilities, people, processes, technology and machine capabilities. Continuous improvement must deal not only with improving results, but more importantly with improving capabilities to produce better results in the future. The five major areas of focus for capability improvement are demand generation, supply generation, technology, operations and people capability. A central principle of TQM is that mistakes may be made by people, but most of them are caused, or at least permitted, by faulty systems and processes. This means that the root cause of such mistakes can be identified and eliminated, and repetition can be prevented by changing the process. Preventing mistakes defects from occurring mistake-proofing or poka-yoke. Where mistakes recur, stopping production until the process can be corrected, to prevent the production of more defects. If the current reality does not include important preconditions, TQM implementation should be delayed until the organization is in a state in which TQM is likely to succeed. If an organization has a track record of effective responsiveness to the environment, and if it has been able to successfully change the way it operates when needed, TQM will be easier to implement. If an organization has been historically reactive and has no skill at improving its operating systems, there will be both employee skepticism and a lack of skilled change agents. If this condition prevails, a comprehensive program of management and leadership development may be instituted. A management audit is a good assessment tool to identify current levels of organizational functioning and areas in need of change. An organization should be basically healthy before beginning TQM. If it has significant problems such as a very unstable funding base, weak administrative systems, lack of managerial skill, or poor employee morale, TQM would not be appropriate. People need to feel a need for a change. Kanter addresses this phenomenon by describing building blocks which are present in effective organizational change. Departures from tradition are activities, usually at lower levels of the organization, which occur when entrepreneurs move outside the normal ways of operating to solve a problem. A crisis, if it is not too disabling, can also help create a sense of urgency which can mobilize people to act. In the case of TQM, this may be a funding cut or threat, or demands from consumers or other stakeholders for improved quality of service. After a crisis, a leader may intervene strategically by articulating a new vision of the future to help the organization deal with it. A plan to implement TQM may be such a strategic decision. Such a leader may then become a prime mover, who takes charge in championing the new idea and showing others how it will help them get where they want to go. Finally, action vehicles are needed and mechanisms or structures to enable the change to occur and become institutionalized. Task identification would include a study of present conditions assessing current reality, as described above ; assessing readiness, such as through a force field analysis; creating a model of the desired state, in this case, implementation of TQM; announcing the change goals to the organization; and assigning responsibilities and resources. This final step would include securing outside consultation and training and assigning someone within the organization to oversee the effort. This should be a responsibility of top management. In fact, the next step, designing transition management structures, is also a responsibility of top management. In fact, Cohen and Brand and Hyde assert that management must be heavily involved as leaders rather than relying on a separate staff person or function to shepherd the effort. An organization wide steering committee to oversee the effort may be appropriate. Developing commitment strategies was discussed above in the sections on resistance and on visionary leadership. Special all-staff meetings attended by executives, sometimes designed as input or dialog sessions, may be used to kick off the process, and TQM newsletters may be an effective ongoing communication tool to keep employees aware of

activities and accomplishments. Management of resources for the change effort is important with TQM because outside consultants will almost always be required. Choose consultants based on their prior relevant experience and their commitment to adapting the process to fit unique organizational needs. While consultants will be invaluable with initial training of staff and TQM system design, employees management and others should be actively involved in TQM implementation, perhaps after receiving training in change management which they can then pass on to other employees. A collaborative relationship with consultants and clear role definitions and specification of activities must be established. In summary, first assess preconditions and the current state of the organization to make sure the need for change is clear and that TQM is an appropriate strategy. Leadership styles and organizational culture must be congruent with TQM. If they are not, this should be worked on or TQM implementation should be avoided or delayed until favorable conditions exist. Remember that this will be a difficult, comprehensive, and long-term process. Leaders will need to maintain their commitment, keep the process visible, provide necessary support, and hold people accountable for results. Use input from stakeholder clients, referring agencies, funding sources, etc. TQM can be a powerful technique for unleashing employee creativity and potential, reducing bureaucracy and costs, and improving service to clients and the community. Conclusion TQM encourages participation amongst shop floor workers and managers. What Is Total Quality Control?

## Chapter 2 : Apply - AQAF Health Care Quality Improvement Services

*Background. The necessity for quality and safety improvement initiatives permeates health care. 1, 2 Quality health care is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" 3 (p. ).*

Establish a culture of quality in your practice. The culture of a practiceâ€™ attitudes, behaviors, and actionsâ€™ reflect how passionately the practice team embraces quality. The QI culture looks different for every practice, but may include establishing dedicated QI teams, holding regular QI meetings, or creating policies around your QI goals. Determine and prioritize potential areas for improvement. You will need to identify and understand the ways in which your practice could improve. Examine your patient population e. Use established quality measures, such as those from the National Quality Forum [www.nqf.org](http://www.nqf.org). Collect and analyze data. Data collection and analysis lie at the heart of quality improvement. Your data will help you understand how well your systems work, identify potential areas for improvement, set measurable goals, and monitor the effectiveness of change. Quality improvement efforts should be transparent to your staff, physicians, and patients. Include the entire practice team and patients when planning and implementing QI projects, and communicate your project needs, priorities, actions, and results to everyone patients included. When a project is successful, celebrate and acknowledge that success. Commit to ongoing evaluation. Quality improvement is an ongoing process. A high-functioning practice will strive to continually improve performance, revisit the effectiveness of interventions, and regularly solicit patient and staff feedback. Quality Improvement Models and Tools Quality improvement models present a systematic, formal framework for establishing QI processes in your practice. Examples of common QI models include the following: The result is a framework that uses PDSA cycles to test interventions on a small scale. Six Sigma is a method of improvement that strives to decrease variation and defects. Quality improvement tools are standalone strategies or processes that can help you better understand, analyze, or communicate your QI efforts. Examples of QI tools [www.nqf.org](http://www.nqf.org).

**Chapter 3 : Introduction and Implementation of Total Quality Management (TQM)**

*Quality improvement (QI) is a systematic, formal approach to the analysis of practice performance and efforts to improve performance. A variety of approaches or QI models exist to help you.*

Nearly , certifications have been issued to dedicated professionals worldwide. Invest in your career and your future with an ASQ certification. Gain an advantage over your competition and increase your potential for a higher salary. These exams are delivered via PBT paper-based testing and are available only in high demand locations at ASQ sponsored sites. Once you have applied and been approved by ASQ, exam location information will be sent in your seating letter via email approximately weeks before the exam date. If you want to take an exam at a conference, etc. Mail or Fax Your Application- Download an application. A biomedical auditor analyzes all elements of the system and reports on how well it adheres to the criteria for management and control of process safety. Certified Calibration Technician CCT The Certified Calibration Technician tests, calibrates, maintains and repairs electrical, mechanical, electromechanical, analytical and electronic measuring, recording and indicating instruments and equipment for conformance to established standards. The HACCP Auditor analyzes all elements of the system and reports on how well it adheres to the criteria for management and control of process safety. The Certified Quality Auditor analyzes all elements of a quality system and judges its degree of adherence to the criteria of industrial management and quality evaluation and control systems. This body of knowledge and applied technologies include, but are not limited to, development and operation of quality control systems, application and analysis of testing and inspection procedures, the ability to use metrology and statistical methods to diagnose and correct improper quality control practices, an understanding of human factors and motivation, facility with quality cost concepts and techniques, and the knowledge and ability to develop and administer management information systems and to audit quality systems for deficiency identification and correction. Certified Quality Inspector CQI Apply The Certified Quality Inspector is an inspector who, in support of and under the direction of quality engineers, supervisors, or technicians, can use the proven techniques included in the body of knowledge. Under professional direction, the Quality Inspector evaluates hardware documentation, performs laboratory procedures, inspects products, measures process performance, records data and prepares formal reports. Certified Quality Technician CQT Apply The Certified Quality Technician is a paraprofessional who, in support of and under the direction of quality engineers or supervisors, analyzes and solves quality problems, prepares inspection plans and instructions, selects sampling plan applications, prepares procedures, trains inspectors, performs audits, analyzes quality costs and other quality data, and applies fundamental statistical methods for process control. This body of knowledge BOK and applied technologies include, but are not limited to, design review and control; prediction, estimation, and apportionment methodology; failure mode effects and analysis; the planning, operation and analysis of reliability testing and field failures, including mathematical modeling; understanding human factors in reliability; and the ability to develop and administer reliability information systems for failure analysis, design and performance improvement and reliability program management over the entire product life cycle. Master Black Belts have outstanding leadership ability, are innovative, and demonstrate a strong commitment to the practice and advancement of quality and improvement. This covers finished human and veterinary drugs and biologics, ectoparasitacides, and dietary supplements alternatively called nutraceuticals where regulated as drug products, as well as their component raw materials includes active pharmaceutical ingredients APIs and excipients , and packaging, and labeling operations. Certified Quality Process Analyst CQPA Apply The Certified Quality Process Analyst is a paraprofessional who, in support of and under the direction of quality engineers or supervisors, analyzes and solves quality problems and is involved in quality improvement projects. A Certified Quality Process Analyst may be a recent graduate or someone with work experience who wants to demonstrate his or her knowledge of quality tools and processes. Certified Software Quality Engineer CSQE The Certified Software Quality Engineer understands software quality development and implementation, software inspection, testing, verification and validation; and implements software development and maintenance processes and methods.

The Certified Supplier Quality Professional tracks data, identifies improvement projects, and manages cross functional implementation to improve performance of key components and suppliers. A Black Belt should demonstrate team leadership, understand team dynamics and assign team member roles and responsibilities. They have basic knowledge of Lean enterprise concepts, are able to identify non-value-added elements and activities and are able to use specific tools. A Green Belt is someone with at least three years of work experience who wants to demonstrate his or her knowledge of Six Sigma tools and processes. Yellow belts can be entry level employees that seek to improve their world or executive champions who require an overview of Six Sigma and DMAIC. This certification will adopt the approach of advancing the concept and potential of using Six Sigma tools and methodologies within an organization.

**Chapter 4 : Quality Improvement - Health Quality Ontario (HQO)**

*The health sector could learn much from industry. People who work in the health system can be resistant to learning from other sectors. They claim that health care is different, and it is hard to argue otherwise when you look at the range and diversity of the stakeholders and the ways in which authority is distributed between them.*

Processes that are inefficient and variable, changing case mix of patients, health insurance, differences in provider education and experience, and numerous other factors contribute to the complexity of health care. The goals of measuring health care quality are to determine the effects of health care on desired outcomes and to assess the degree to which health care adheres to processes based on scientific evidence or agreed to by professional consensus and is consistent with patient preferences. Because errors are caused by system or process failures, it is important to adopt various process-improvement techniques to identify inefficiencies, ineffective care, and preventable errors to then influence changes associated with systems. Each of these techniques involves assessing performance and using findings to inform change. This chapter will discuss strategies and tools for quality improvement—including failure modes and effects analysis, Plan-Do-Study-Act, Six Sigma, Lean, and root-cause analysis—that have been used to improve the quality and safety of health care. The rationale for measuring quality improvement is the belief that good performance reflects good-quality practice, and that comparing performance among providers and organizations will encourage better performance. In the past few years, there has been a surge in measuring and reporting the performance of health care systems and processes. One of the challenges in using measures in health care is the attribution variability associated with high-level cognitive reasoning, discretionary decisionmaking, problem-solving, and experiential knowledge. These measures are generally developed through a process including an assessment of the scientific strength of the evidence found in peer-reviewed literature, evaluating the validity and reliability of the measures and sources of data, determining how best to use the measure. Benchmarking in health care is defined as the continual and collaborative discipline of measuring and comparing the results of key work processes with those of the best performers in evaluating organizational performance. There are two types of benchmarking that can be used to evaluate patient safety and quality performance. Internal benchmarking is used to identify best practices within an organization, to compare best practices within the organization, and to compare current practice over time. The information and data can be plotted on a control chart with statistically derived upper and lower control limits. However, using only internal benchmarking does not necessarily represent the best practices elsewhere. Competitive or external benchmarking involves using comparative data between organizations to judge performance and identify improvements that have proven to be successful in other organizations. Quality Improvement Strategies More than 40 years ago, Donabedian<sup>27</sup> proposed measuring the quality of health care by observing its structure, processes, and outcomes. Structure measures assess the accessibility, availability, and quality of resources, such as health insurance, bed capacity of a hospital, and number of nurses with advanced training. Process measures assess the delivery of health care services by clinicians and providers, such as using guidelines for care of diabetic patients. Outcome measures indicate the final result of health care and can be influenced by environmental and behavioral factors. Examples include mortality, patient satisfaction, and improved health status. Twenty years later, health care leaders borrowed techniques from the work of Deming<sup>28</sup> in rebuilding the manufacturing businesses of post-World War II Japan. The TQM model is an organizational approach involving organizational management, teamwork, defined processes, systems thinking, and change to create an environment for improvement. This approach incorporated the view that the entire organization must be committed to quality and improvement to achieve the best results. CQI has been used as a means to develop clinical practice<sup>30</sup> and is based on the principle that there is an opportunity for improvement in every process and on every occasion. CPI, an approach led by clinicians that attempts a comprehensive understanding of the complexity of health care delivery, uses a team, determines a purpose, collects data, assesses findings, and then translates those findings into practice changes. From these models, management and clinician commitment and involvement have been found to be essential for the successful implementation of change.

Shojania and colleagues 38 developed a taxonomy of quality improvement strategies see Table 1 , which infers that the choice of the quality improvement strategy and methodology is dependent upon the nature of the quality improvement project. The lack of scientific health services literature has inhibited the acceptance of quality improvement methods in health care, 43 , 44 but new rigorous studies are emerging. It has been asserted that a quality improvement project can be considered more like research when it involves a change in practice, affects patients and assesses their outcomes, employs randomization or blinding, and exposes patients to additional risks or burdensâ€”all in an effort towards generalizability. This is a method that has been widely used by the Institute for Healthcare Improvement for rapid cycle improvement. Langley and colleagues 51 proposed three questions before using the PDSA cycles: The PDSA cycle starts with determining the nature and scope of the problem, what changes can and should be made, a plan for a specific change, who should be involved, what should be measured to understand the impact of change, and where the strategy will be targeted. Change is then implemented and data and information are collected. Results from the implementation study are assessed and interpreted by reviewing several key measurements that indicate success or failure. Lastly, action is taken on the results by implementing the change or beginning the process again. This method is applicable to preanalytic and postanalytic processes a. This method is suitable for analytic processes in which the precision and accuracy can be determined by experimental procedures. One component of Six Sigma uses a five-phased process that is structured, disciplined, and rigorous, known as the define, measure, analyze, improve, and control DMAIC approach. Next, continuous total quality performance standards are selected, performance objectives are defined, and sources of variability are defined. As the new project is implemented, data are collected to assess how well changes improved the process. To support this analysis, validated measures are developed to determine the capability of the new process. This methodology overlaps with the Six Sigma methodology, but differs in that Lean is driven by the identification of customer needs and aims to improve processes by removing activities that are non-value-added a. Steps in the Lean methodology involve maximizing value-added activities in the best possible sequence to enable continuous operations. Physicians, nurses, technicians, and managers are increasing the effectiveness of patient care and decreasing costs in pathology laboratories, pharmacies, 59â€”61 and blood banks 61 by applying the same principles used in the Toyota Production System. Two reviews of projects using Toyota Production System methods reported that health care organizations improved patient safety and the quality of health care by systematically defining the problem; using root-cause analysis; then setting goals, removing ambiguity and workarounds, and clarifying responsibilities. When it came to processes, team members in these projects developed action plans that improved, simplified, and redesigned work processes. Root Cause Analysis Root cause analysis RCA , used extensively in engineering 62 and similar to critical incident technique, 63 is a formalized investigation and problem-solving approach focused on identifying and understanding the underlying causes of an event as well as potential events that were intercepted. The Joint Commission requires RCA to be performed in response to all sentinel events and expects, based on the results of the RCA, the organization to develop and implement an action plan consisting of improvements designed to reduce future risk of events and to monitor the effectiveness of those improvements. Those involved in the investigation ask a series of key questions, including what happened, why it happened, what were the most proximate factors causing it to happen, why those factors occurred, and what systems and processes underlie those proximate factors. Answers to these questions help identify ineffective safety barriers and causes of problems so similar problems can be prevented in the future. Often, it is important to also consider events that occurred immediately prior to the event in question because other remote factors may have contributed. The notion has been put forth that it is a truly rare event for errors to be associated with irresponsibility, personal neglect, or intention, 71 a notion supported by the IOM. Even the majority of individual factors can be addressed through education, training, and installing forcing functions that make errors difficult to commit. Failure Modes and Effects Analysis Errors will inevitably occur, and the times when errors occur cannot be predicted. In health care, FMEA focuses on the system of care and uses a multidisciplinary team to evaluate a process from a quality improvement perspective. This method can be used to evaluate alternative processes or procedures as well as to monitor change over time. To monitor change over time, well-defined measures are needed that can provide objective

information of the effectiveness of a process. In , the Joint Commission mandated that accredited health care providers conduct proactive risk management activities that identify and predict system weaknesses and adopt changes to minimize patient harm on one or two high-priority topics a year. In conducting a hazard analysis, it is important to list all possible and potential failure modes for each of the processes, to determine whether the failure modes warrant further action, and to list all causes for each failure mode when the decision is to proceed further. After the hazard analysis, it is important to consider the actions needed to be taken and outcome measures to assess, including describing what will be eliminated or controlled and who will have responsibility for each new action. Several common themes emerged: Substantial and strong leadership support, 80â€™83 involvement, 81 , 84 consistent commitment to continuous quality improvement, 85 , 86 and visibility, 87 both in writing and physically, 86 were important in making significant changes. Substantial commitment from hospital boards was also found to be necessary. Yet adopting a nonpunitive culture of change took time, 61 , 90 even to the extent that the legal department in one hospital was engaged in the process to turn the focus to systems, not individual-specific issues. There were many advantages to basing the work of the quality improvement strategies on the teamwork of multidisciplinary teams that would review data and lead change. Team leaders that emphasized efforts offline to help build and improve relationships were found to be necessary for team success. The multidisciplinary structure of teams allowed members to identify each step from their own professional practice perspective, anticipate and overcome potential barriers, allowed the generation of diverse ideas, and allowed for good discussion and deliberations, which together ultimately promoted team building. Teams were seen as being able to increase the scope of knowledge, improve communication across disciplines, and facilitate learning about the problem. Group work was seen as difficult for some and time consuming, and problems arose when everyone wanted their way, 97 which delayed convergence toward a consensus on actions. Team members needed to learn how to work with a group and deal with group dynamics, confronting peers, conflict resolution, and addressing behaviors that are detrimental. As suggested by Berwick, the leaders of the quality improvement initiatives in this review found that successful initiatives needed to simplify; 96 , standardize; stratify to determine effects; improve auditory communication patterns; support communication against the authority gradient; 96 use defaults properly; automate cautiously; 96 use affordance and natural mapping e. Several initiatives standardized medication ordering and administration protocols, 78 , 87 , , , â€™ , , â€™ realizing improvements in patient outcomes, nurse efficiency, and effectiveness. Related to simplification and standardization is the potential benefit of using information technology to implement checks, defaults, and automation to improve quality and reduce errors, in large part to embedding forcing functions to remove the possibility of errors. Often workflow and procedures needed to be revised to keep pace with technology. Using and analyzing data was viewed as critical, yet some team members and staff may have benefited from education on how to effectively analyze and display findings. Repeated measurements were found to be useful for monitoring progress, but only when there was a clear metric for measuring the degree of success. It was also purported that the costs associated with change will be recouped either in return on investment or in reduced patient risk and thus reduced liability costs. There were several examples of this. Two initiatives that targeted pain management found that educating staff on pain management guidelines and protocols for improving chronic pain assessment and management improved staff understanding, assessment and documentation, patient and family satisfaction, and pain management. Lack of time and resources made it difficult to implement the initiative well. Influential factors attributed to the success of the initiatives were effecting practice changes that could be easily used at the bedside; 82 using simple communication strategies; 88 maximizing project visibility, which could sustain the momentum for change; establishing a culture of safety; and strengthening the organizational and technological infrastructure. Collaboratives could also be a vehicle for encouraging the use of and learning from evidence-based practice and rapid-cycle improvement as well as identifying and gaining consensus on potentially better practices. Quality tools used to define and assess problems with health care were seen as being helpful in prioritizing quality and safety problems 99 and focusing on systems, 98 not individuals. The various tools were used to address errors and growing costs 88 and to change provider practices. These are discussed as follows: The rapid-cycle aspect of PDSA began with piloting a single new process, followed by

examining results and responding to what was learned by problem-solving and making adjustments, after which the next PDSA cycle would be initiated. The majority of quality improvement efforts using PDSA found greater success using a series of small and rapid cycles to achieve the goals for the intervention, because implementing the initiative gradually allowed the team to make changes early in the process and not get distracted or sidetracked by every detail and too many unknowns. HFEMA was viewed as a valid tool for proactive analysis in hospitals, facilitating a very thorough analysis of vulnerabilities. The strength of the following practice implications is associated with the methodological rigor and generalizability of these strategies and projects: The importance of having strong leadership commitment and support cannot be overstated. Leadership needs to empower staff, be actively involved, and continuously drive quality improvement. Without the commitment and support of senior-level leadership, even the best intended projects are at great risk of not being successful. Champions of the quality initiative and quality improvement need to be throughout the organization, but especially in leadership positions and on the team. A culture of safety and improvement that rewards improvement and is driven to improve quality is important. The culture is needed to support a quality infrastructure that has the resources and human capital required for successfully improving quality. Quality improvement teams need to have the right stakeholders involved. Due to the complexity of health care, multidisciplinary teams and strategies are essential. Quality improvement teams and stakeholders need to understand the problem and root causes. There must be a consensus on the definition of the problem.

### Chapter 5 : Apply to the Quality Training Program | ASCO Practice Central

*The Quality Improvement Support contributes to the cost for Prince Edward Island companies to hire a professional to create or improve a system for quality improvement within the company or provide a certified quality education program for management and employees.*

### Chapter 6 : How To Apply For a Quality Certification

*The content (knowledge, attitude, and skills practice) for the quality improvement projects is covered in the Leadership class, and the data collection part of the project is conducted during the students' clinical experiences, in collaboration with the clinical faculty.*

### Chapter 7 : Applying quality improvement principles to achieve healthy work organizations.

*A major nonprofit organization that accredits more than 20, healthcare organizations, including hospitals, long-term care organizations, home care agencies, clinical laboratories, ambulatory care organizations, behavioral health organizations, and healthcare networks or managed care organizations.*

### Chapter 8 : Basics of Quality Improvement -- Practice Management

*A culture of improvement frequently develops in an organization that is committed to quality, because errors are reported and addressed. "Improved communication with resources that are internal and external to an organization, such as, funders, civic and community organizations.*

### Chapter 9 : Applying Quality Improvement Skills in the Acute Care Setting

*Why is quality improvement important for primary care practices? Engaging primary care practices in quality improvement (QI) activities is essential to achieving the triple aim of improving the health of the population, enhancing patient experiences and outcomes, and reducing the per capita cost of care, and to improving provider experience.*