

**NY STATE EMERGENCY MEDICAL SERVICES COUNCIL
NY STATE DEPARTMENT OF HEALTH BUREAU OF EMERGENCY MEDICAL SERVICES**

**QUALITY IMPROVEMENT
FOR
PREHOSPITAL PROVIDERS**

**Workbook and Guidance Document for
Service Level and Regional Level
Quality Improvement Activities**

Version 6 - January, 2007

EXECUTIVE SUMMARY

In 1996, in response to an amendment to Article 30 of the NY State Public Health Law (NYSPHL) that required EMS agencies to adopt Quality Improvement programs, the New York State Department of Health Bureau of EMS (NYSDOH BEMS) and the New York State Emergency Medical Services Council (SEMSCO) developed and distributed the first “Quality Improvement Manual and Workbook” and the educational slide presentation in an effort to assist providers and agencies in developing their service-level quality improvement activities. The NYS DOH and the SEMSCO have reviewed and updated this manual, workbook and educational presentation and present to you, the revised material, which remains a useful tool to EMS Providers and Ambulance and First Response Service Managers.

Since 1997, all EMS agencies in New York State have been required to participate in a QI program that fulfills the requirements established under NYS PHL Article 30 Section 3006. The intent of this manual is to aid organizations in developing and instituting a meaningful QI program. Included in the manual is a discussion of state legislation pertaining to QI, a list of agency responsibilities, as well as a workbook that contains sample forms and report outlines to further assist in the process. It reviews and elaborates on the universal basic steps for any QI program:

1. Selection of a subject for study;
2. Development / definition of criteria and standards of quality;
3. Collection of data;
4. Analysis of data in order to identify deficiencies as well as areas of excellence;
5. Determination of the causes of deficiencies and implementation of corrective action;
6. Evaluation of the study; and
7. Strategies for implementing change.

As a tool, this manual should be used by any of the stakeholders - EMS agencies, Regional Councils, Regional Emergency Medical Advisory Councils, Program Agencies, Course Sponsors, or hospitals - in developing and initiating QI programs for prehospital care.

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INTRODUCTION

Emergency Medical Services (EMS) lies at the crossroads of public health, public safety, and emergency medicine. The mission of EMS is to provide timely and appropriate emergency medical care and transportation of the ill and injured, thereby reducing death and disability. EMS is an integral part of every community's total health care delivery system. Consistent evaluation of organizational and operational efficiency is an essential component in ensuring that ambulance and first response services, and providers of out-of-hospital emergency medical care, are operating at peak efficiency. To achieve this end, EMS agencies should embrace the following fundamental principles, typically memorialized in an agency level mission statement or vision statement: *...that EMS agencies can and must be improved; that it is the responsibility of every provider to participate in the effort to improve EMS; that the foundation of EMS Quality Improvement begins at the agency level; and that there must be a commitment to quality care by the governing body of each EMS agency.*

In New York State, the goals established for meeting the mission for EMS are similar to nationally recognized standards. The public should be able to easily access an EMS system through an enhanced 911 system that uses medically approved dispatch protocols and functions under medical supervision. When initial responders to medical emergencies are members of the public safety sector, they should possess adequate training in basic life support to stabilize patients until more highly trained emergency medical personnel arrive. Emergency response vehicles should be appropriately equipped and staffed by trained EMS personnel. Patients should be transported to a medical facility that can provide appropriate care. A system of medical oversight of EMS must be in place to ensure optimal levels of care consistent with accepted standards of medical practice and available resources. Finally, all components of the EMS system should be linked together by a functioning EMS communications system and a quality improvement mechanism.¹

New York State Department of Health codes (405.19) address the hospital role in prehospital Quality Improvement (QI) activity. They reinforce the notion that EMS patients are hospital patients in the field, and that prehospital care is an extension of emergency medicine physician care. As a delegated medical practice, direction of care provided by prehospital providers is determined by protocols developed by physician oversight, both on and off line. From first responder to State Emergency Medical Advisory Committee (SEMACE), the system as a whole can be measured against established standards.

EMS provider agencies, hospitals, regional and state councils, must play a lead role in the implementation of Quality Improvement (QI) in an effort to advance the EMS system ever closer to meeting its stated goals. The quality improvement umbrella couples carefully identified, measurable performance indicators with information systems to monitor, analyze, and trend data. Ultimately, we want EMS delivered that is timely, consistent, appropriate, compassionate, cost-effective and, most importantly, beneficial to patient outcomes and comfort.

Health care is a constantly evolving and dynamic field. New discoveries and technologies regularly emerge. To assure that patients receive the best care, it is imperative to routinely re-evaluate standards of care and identify our strengths and weaknesses in meeting those standards. QI is a continuous, essential evaluation process used to assess EMS quality that includes retrospective, concurrent, and prospective analysis. Assessment of a system's effectiveness, related costs, and patient outcomes is a critical part of a comprehensive EMS system evaluation.

From a medical-legal perspective, such a program reduces risk by reinforcing the delivery of appropriate patient care.

The New York State EMS Council (SEMSCO) has established these guidelines in an effort to assist and coordinate New York State EMS system participants with the implementation of an effective non-punitive and standardized QI method.

Realizing that QI methods continue to evolve, we recommend the following resources to enhance your organization's QI plan:

- [A Leadership Guide to Quality Improvement for Emergency Medical Services \(EMS\) Systems](#), U.S Department of Transportation, National Highway Traffic Safety Administration, July 1997
- [The Baldrige National Quality Program, Health Care Criteria for Performance Excellence](#), National Institute of Standards and Technology, Technology Administration, Department of Commerce, 2001
- [Quality Management in Prehospital Care, 2nd Edition](#). Robert Swor (Ed). National Association of EMS Physicians, 2005.

We endorse the notion that QI is much more than retrospective review of Patient Care Reports (PCRs) and promotes the incorporation of QI into all aspects of an EMS system. Quality in emergency medical services is the sum of all activities undertaken that develop and maintain a standard of excellence in emergency care. System improvement should be continuous, customer-centered, data driven, and utilize a scientific approach based on quantitative methods, evidence-based practices, and organizational development principles. These modern-day approaches to QI have replaced older philosophies regarding punishing individual mistakes and changing group behaviors through deterrence. Instead the emphasis is with inspecting and searching for errors, problems, and deficiencies on the whole and then improving the process or system so that deviations from recognized standards of care are less likely to occur from the start.

Successful Quality improvement programs and meaningful study, outcome and change requires:

- Strong leadership at all levels to articulate a vision and inspire a lasting commitment;
- A focus on the customer (both internal and external to the organization);
- Collaborative efforts between partners that can improve the process and outcomes of emergency care;

- Links to strategic planning goals, education and training, and program development;
- Data and information that is reliable, rapidly accessible, standardized, and timely;
- Patient clinical guidelines and measures of performance that assist in guiding, evaluating, and improving EMS; and
- A commitment to research that contributes evidence for changes in practice.

EMS Quality Improvement presents complex challenges and opportunities to continually improve care for patients. Accepting a vision for the future of EMS is an integral part of an EMS plan. EMS must work with other health care providers as well as with social service and public safety agencies. EMS will strive to improve community health and facilitate the appropriate use of acute health care resources. EMS is, and will remain, the emergency medical safety net for anyone in New York State with a perceived need for emergency care.

GLOSSARY OF KEY TERMS

Continuous Quality Improvement: The sum of activities undertaken by the service to provide confidence to its patients and maintain a standard of excellence. It is a dynamic process based on multiple activities to maintain the ultimate goal of the Emergency Medical Service System: the provision of timely, efficient and effective prehospital care to all those who need it.

Appropriateness Monitor: Types of measurable outcome to ensure compliance with protocol policy or procedure; such as: PCR completion reports; RMA review; Time reports; Protocol appropriate treatment; Policy appropriate action; and Diagnosis Comparison.

Adverse Event: an event in which injury to the patient results from the medical care or intervention.

Benchmark: A scientifically validated, regionally accepted, or nationally recognized endpoint.

Concurrent Review: Real time review of processes through on-line medical control, ED observation, field observation, etc.

Indicators: Any of a group of predetermined values that are of high risk to the provider or service that should be periodically reviewed to reduce risk. They can be either high or low volume.

HIPAA: Health Insurance Portability and Accountability Act, promulgated in 1996. Designed to simplify the administration of the health insurance industry by setting national standards for transfer of protected health information, confidentiality of protected health information, and the management of health care financing.

Near Miss: Occurrence of an error or hazard that could have resulted in an adverse event but did not because of intervention or chance (also called a potential adverse event).

Outlier: Case that falls out of acceptable standards, accompanied by documented reason for the anomaly.

Patient Outcome Monitors: Types of measurable outcome to gauge effectiveness of prehospital interventions; such as: Difficulty breathing rating pre/post treatment; Correlation of return of spontaneous circulation (ROSC) to time of defibrillation/presenting arrhythmia; Hospital disposition for patients receiving ALS care; and Correlation between survivability and cumulative prehospital care options

Process Evaluation: Deals with the use of resources and appropriateness of such utilization. This deals with patient processing, triage, utilization of available resources, etc.

Program Outcome Monitors: Types of measurable outcome to gauge effectiveness of the organization; such as: Performance consistent with medically accepted standards; Adequacy of resource allocation; resource management; vehicle maintenance/preventive maintenance; and training program.

Prospective Review: Measuring future events against predetermined standards. This is accomplished through standardized protocols, establishment of time standards, etc.

Protected Health Information: Individually identifiable information; linking a person's health information to their identity.

Red Flag Monitor: Types of measurable episodes of actual or potential harm to patients or EMS providers. Serious misapplication of procedure or protocol.

Remediation Process: The scope of resolution to identified results, includes efforts to foster a partnership between prehospital EMS providers, provider agencies, and those individuals and agencies responsible for medical oversight in the region. Guiding change is a principal activity of the QI program, and positive feedback is an essential part of the process.

Reportable Event: Title 10 of the New York State Codes, Rules and Regulations (10NYCRR), Part 800.21(q) and (r) delineate the specific circumstances which require an EMS agency to immediately report to the Department of Health, Bureau of Emergency Medical Services. Examples of a reportable event may include, but not be limited to a defibrillator failing to analyze and/or shock or an ambulance stretcher toppling over from its highest position and injuring a patient.

Retrospective Review: Review of system processes after they occur. This is accomplished through PCR review, critique sessions, patient complaints, etc.

Statistical Monitor: Types of measurable outcome to ensure compliance with pre-established benchmarks, such as: Cardiac arrest outcome; Time of dispatch to arrival of ambulance; technician skills report; and Treatment appropriate to patient condition and technician availability.

Structural Evaluation: Deals with the presence of mandated resources and includes standard setting for non-personnel issues. This includes evaluating physical facilities, equipment stocking and control procedures, etc.

Outcome Evaluation: Deals with the results of care provided. This deals with stabilization and survival through to recovery and hospital discharge.

Red-Flag Monitors: Types of measurable outcome to monitor in response to problem cases, such as: Deviations from protocol / procedure / untoward events; Citizen or response agency complaints; Technical malfunction of equipment; Time of Call Rec'd to time of dispatch > 2 minutes (or regionally acceptable benchmark); and Time of Call Rec'd to time of arrival > 9 minutes (or regionally acceptable benchmark).

Chapter 1

How to Establish a QI Committee – “*The Nuts and Bolts of the Organization*”

There are many models from which to choose, depending on the availability of resources in your particular agency or region. Service - specific quality improvement activity should ideally be conducted by the most capable person(s) available within each service. Per PHL Article 30, Section 3006, every ambulance service and advanced life support first response service shall establish and participate in a quality improvement program, which shall be an ongoing system to monitor and evaluate the quality and appropriateness of medical care provided by the ambulance service or advanced life support first response service pursue opportunities to improve patient care and resolve identified problems.

The QI program may be conducted independently, or in collaboration with other services, regional EMS councils, Program Agencies or hospitals. Agency-level QI committees must be comprised of at least five (5) members, at least three (3) of whom do not participate in the provision of care by that service. *Realistically, the number of members is more likely determined by availability of people with the dedication to do the required work and who are drawn from a pool of people with a common goal. Therefore, it may be more practical to combine a smaller number of agency level members with others from other services within a region to meet the statutory requirements of QI Committee size and representation.* This is done to ensure objective review, thus avoiding “witch-hunting” expeditions as a result of inherent intra-agency biases. At least one (1) member shall be a physician and the others shall be EMTs/AEMTs, nurses, or other appropriately qualified health care personnel. Like any other working committee, the total number of members should be determined by availability of people with the dedication to do the work and who are drawn from a pool of people with commitment to a common goal. The size of the Committee should be manageable, yet of sufficient size to support the anticipated workload. As this group now assumes a leadership role in the organization or the region, recognition of a common need for structured feedback, education & training, mutual respect, and professionalism is essential.

The Committee should then select a QI Coordinator. The QI Coordinator should be knowledgeable in prehospital policies, protocols and procedures and the general QI process. Agencies should consider enlisting the expertise of their Service Medical Director, the local hospital’s QI Coordinator, the Regional Medical Director, an emergency department physician, or a senior prehospital provider from the agency.

The duties of QI Coordinator center around interfacing with Medical Directors, agency members, educators & field supervisors; reviewing PCRs; reviewing existing protocols & standards; developing CME curricula; and reviewing consumer communications.

The QI Coordinator sets the direction for, and the character of, the Committee’s activity. Historically, QI programs have focused on the clinical aspects of the EMS providers, typically by retrospective review of patient care reports. This method is important and has its place, however, it is narrow in its scope. QI Coordinators should be “big-picture” thinkers and consider all aspects of the organization having either direct or indirect affect on patient outcome and customer satisfaction.

There are many resources available to the QI Coordinator, including, but not limited to: existing protocols and standards; agency specific data from PCRs; input from field supervisors and other experienced providers; educational curricula; and customer satisfaction surveys. A more extensive list of resources can be found in the APPENDICES SECTION of this manual.

The Committee should document its authority and process in the form of a written QI Plan. Typically, the written plan provides a pathway for the QI process in the following sections:

- Introduction;
- Mission Statement;
- Justification;
- Goals & Objectives;
- Methods ;
- Identification of benchmarks and monitors;
- Flow of information; and
- Feedback loop

The QI Process – “Two-Way Communication”

The essence of the quality improvement process is to identify areas of excellence and to identify areas in need of improvement. Quality Improvement is a way of looking at improving care, not finding problems for punitive action. As such, it is imperative that QI Committees establish a pathway for two-way communications. Communicating information to the QI Committee is generally the first step in the process. This can be accomplished in a number of ways, following these easy steps:

- Selecting a subject for study, which includes an operational definition of the condition or procedure under study and a definition of patients to be included;
- Developing criteria and standards, defining acceptable levels of quality;
- Collecting data;
- Comparing data to criteria and standards in order to identify areas of excellence and deficiencies;
- Determining causes of deficiencies and taking corrective action, including: determining who or what is expected to change; determining who is responsible for implementing action to bring about change; determining what action is appropriate to bring about change; and to determine when changed is expected to occur.
- Evaluating the change to ensure desired outcome; and
- Re-evaluating to ensure consistent performance.

It is an essential component of the program to make sure that findings are communicated back to the individuals involved on the calls, the entire membership of the agency, the region, or to the NYSDOH BEMS as needed.

The scope of resolution includes efforts to foster a partnership between prehospital EMS providers, provider agencies, and those individuals and agencies responsible for medical oversight in the agency and the region. It cannot be overstated that the purpose of the QI initiative is to ensure the highest quality patient care. As such, guiding change is a principal activity of a QI program, and positive feedback is an essential part of the process. The following are some suggested courses of action:

- Identify areas of excellence and reinforce positive behavior in an attempt to encourage continued excellence; and
- Rationalization of proper behavior in an attempt to effect change through the educational process.

To maximize the QI review process, agencies are encouraged to develop programs to facilitate behavioral changes as follows:

- Develop skills remediation labs that will allow for supervised reinforcement in the clinical setting;
- Develop a mentoring program utilizing previously identified preceptors within each agency; and
- Develop a series of didactic workshops to rationalize appropriate actions.

From time to time, actions or omissions identified in the QI process are of a caliber that may require punitive action by a REMAC or administrative action by the NY State DOH. Agencies are encouraged to follow due process, and local and state policies for such sanctions.

Confidentiality and Protected Health Information – “It’s OK to Share”

The use of protected health information (PHI) is an essential component of a Quality Improvement Program ***and is acceptable under the law when used in health care operations.*** Agencies and providers are responsible, however, for ensuring that health information and a patient’s identity are limited to bona fide QI activities required by statute, regulation, and policy. In essence, agency policy determines who has access to PHI, and how that information is shared.

Since its enactment in 2003, the federal Health Insurance Portability and Accountability Act (HIPAA) has provided strict guidance on how protected health information (PHI) can be utilized with the health care industry, including emergency medical services.

In summary; the major thrusts of HIPAA are to:

- Establish a universal language for healthcare providers and payers of healthcare services;
- Modify pre-existing privacy standards;
- Give patients new rights to access their own health care records and to know who else has access to them;

- Restrict disclosure of health information to the minimum number of people needed to fulfill the intended purpose;
- Establish new criminal and civil sanctions for improper use and disclosure; and to
- Establish new requirements for access to records by researchers and others.

Our discussion of HIPAA requirements within the scope of this document is limited to the use of PHI in the quality improvement process. As stated in 45CFR 164.512:

A covered entity may disclose PHI to a health oversight agency for said oversight activity authorized by law including audits; civil administrative or criminal investigations; inspections; licensure or disciplinary actions; civil, administrative or criminal proceedings or actions; or other activities necessary for appropriate oversight in the health care system”

Notwithstanding any other provision of law, none of the records or documentation or QI committee actions or records required pursuant to Section 3001.6 of Article 30 shall be subject to disclosure under Article 6 of the Public Officers Law or Article 31 of the Civil Practice Law and Rules, except as provided in any other provision of law, and no person in attendance on a Quality Improvement Committee shall be required to testify as to what transpired at a quality improvement review.

Any person in good faith and without malice provides information to further the purpose of this section or who, in good faith and without malice participates on an agency-level or regional-level Quality Improvement Committee, shall not be subject to any action, civil damages or other relief as a result of such activity.

NYS DOH Code and Federal Regulations give hospitals a responsibility for prehospital quality improvement activity. This recognizes that EMS patients are hospital patients in the field and that prehospital care is an extension of emergency physician care. Written regional protocols are developed by off-line medical control physicians to direct real-time care. With this mechanism in place and hospital involvement identified, we can measure the system as a whole against established standards.

NYS DOH Regulation and Policy Statements and Federal Regulations give EMS providers guidance on how to use draft service-level PCR policies and how to properly collect, analyze, store and release PHI.

Therefore, according to HIPAA and other applicable standard practices, PHI can be shared among and between covered entities including, but not limited to: service level QI committees; regional level QI committees; REMACs; REMSCOs; Program Agencies; SEMAC; SEMSCO and the NY State DOH. Additional information regarding HIPAA compliance can be found at the web sites listed in the appendices section of this manual.

Agency Self-Assessment – “The Starting Point”

Every business – yes, EMS is indeed a business, can only benefit from conducting quality improvement reviews of all aspects of its operation. Predominant among the reasons to apply this strategy include: focusing your membership on organizational goals; jump-starting change initiatives; energizing improvement initiatives. As you well know, today’s healthcare environment is complex and rapidly changing and EMS agencies must rise and meet many challenges, including increasing call volume, dwindling volunteer pool, and stagnant budgets. Despite those obstacles, the public has an expectation that EMS will respond in a timely and competent manner when called. Therefore, it is up to each and every one of us to examine our inner strengths and weaknesses and make the modifications necessary to continue to meet public demand.

An understanding of the Strategic Planning Process is essential for today’s EMS manager. No longer is it just about answering calls. Rather, today’s EMS manager must deal with the complexities of developing short-term and long-term organizational goals and measuring the success of the organization, essentially creating a seamless integration of QI initiatives into all aspects of EMS operations.

Benchmarking is a common process used to perform a self evaluation and begin the Strategy Change Cycle, more formally addressed in Chapter 3. This type of activity can be viewed as the on-going and systematic process for measuring and comparing the work process of one organization to those of another, by bringing an external focus to internal activities functions or operations. The goal of benchmarking is to provide policy makers with a standard for measuring the quality and cost of internal activities and to help identify where opportunities for improvement may reside. Asking the following questions, and reacting positively to the answers to those questions, provides decision makers with the opportunity to strive for improvement and promote healthy competition. This approach perpetuates constant improvement as agencies continually try to “one-up” each other, and over time, an entire region can be operating at peak efficiency. As part of your agency self-assessment, ask:

- How well are we doing compared to others?
- How good do we want to be?
- Who is doing it the best?
- How do they do it?
- How can we adapt what they do in our organization?
- How can we be better than the best?

According to the National Highway Traffic Safety Administration, the following developmental stages provides the framework for the modern day EMS manager: building potential for success by developing an awareness throughout the organization that QI is a worthwhile endeavor; expanding agency-wide knowledge of, and capability in, QI practices and techniques; and fully integrating the strategic quality planning process and related actions into daily EMS operations.²

Strategic issues often center around how the organization (what's inside) relates to the larger environment it resides in (what's outside). Effective strategic planning will take advantage of the strengths and weaknesses, found within the organization to minimize or overcome the opportunities and threats (found in the external environment). These forces, strengths and weakness from within the organization, and opportunities and threats from outside the organization are constantly stressing the middle man – that's you – the agency! The best way to handle the stress is to capitalize on your strengths and minimize your weaknesses, while taking advantage of every opportunity to succeed and reducing or eliminating threats to your organization's performance.

So, its not "*just sittin' round the table, reviewing PCR's*", its all about attitude and behavior. W. Edwards Demming, noted consultant in behavioral and managerial improvement, has taught us that quality is maintained and improved when leaders, managers and the entire workforce understand and commit to constant customer satisfaction through continuous quality improvement. To illustrate the process, let's take a look at his PDCA Cycle. **Plan, Do, Check, Act** – you can apply this process to virtually every aspect of operating an EMS agency, and the process of improvement is never ending. Here's one small example applicable to the meaning behind this manual: PLAN to implement a policy to improve response times; DO it by putting the plan (which is your new policy) into action; CHECK to see if the desired effect was achieved; and ACT to either maintain the improvement or determine what went wrong with the plan.

An Effective Approach to Issues Identified by the QA Process – “*Converting Information to Positive Actions*”

Once a problem has been identified by the QA process, it is important to approach improvement from a systems perspective. Although in some cases a provider may be the root cause of an event, the vast majority of cases involve several contributing factors. Since it is impossible to eliminate human error, and we can thus expect errors to be repeated (usually by other providers), correcting the contributing factors is an effective means to reduce the likelihood of repeating the event in the future. Because of this it is important that the QA process looks beyond the human error, and seek to determine what system factors might have facilitated the error. For example, if a paramedic gave the wrong drug to a patient, did the two medications come in similarly labeled vials, and were they stored next to each other? What changes can be made to prevent similar events from occurring in the future?

Donald Berwick of the Institute for Healthcare Improvement has said, “Most serious medical errors are committed by competent, caring people doing what other competent, caring people would do.” The “old” attitude towards adverse events in medicine is that only bad and incompetent providers commit errors, and they should be fired, demoted, or retrained. It is clear that this method (sometimes referred to as the “name, blame, and train” approach) does not improve patient safety over time. This is because even when the “bad” provider is replaced, it is inevitable that someone else will eventually commit the same error. If no systems improvements have been instituted as a result of the first error, another patient will be harmed. In addition, this approach creates a “culture of secrecy and blame,” which causes providers to hide their mistakes. This makes it impossible to respond appropriately with system improvements which might otherwise prevent future repeated or similar adverse events.

The most effective approach to patient safety, which has been adapted from other complex and high-risk environments such as aviation, is to design a system which anticipates and expects human error but has built-in safeguards which protect the patient from incurring any harm as a result of these errors. Dr. Charles Vincent, a leading patient safety expert, wrote that “Eliminating harm is the objective, not eliminating error.” (Clinical Risk Management: Enhancing Patient Safety). Thus the most effective QA systems are those that focus on improving the system, not just remediating the provider.³

Adverse Event and Near Miss Reporting Systems

Significant knowledge has been developed in other high-risk industries, such as aviation and nuclear power generation, which allows problems to be reported and system safety interventions and solutions to be implemented and studied. These initiatives have focused on *system* problems as opposed to the failings of any one individual as the root cause of adverse events. This method is applicable to EMS for the characterization and analysis of hazards and errors as well as the ultimate improvement of EMS patient safety.

Without knowledge of what types of errors and hazards exist, a system cannot be designed to protect the patient from adverse outcome as a result of these hazards. There are several ways to investigate the nature of error, but event reporting systems have been shown to identify problems and trends that can otherwise go unnoticed.

It is important to note that there are two main types of event reporting systems, mandatory and voluntary. Mandatory reporting systems have two major downfalls: They are often punitive in nature (a barrier to self-reporting), and their reporting criteria select for accidents and errors which cause harm. Thus, “near miss” data, which are known to be highly valuable for predicting future problems, are absent from the database. The importance of near-miss reporting and analysis has been emphasized by the Institute of Medicine. In medicine, near misses are thought to occur 300-400 times more often than adverse events, and the higher rate allows for more powerful analysis. Non-punitive voluntary reporting systems avoid both of these vulnerabilities: they have a high degree of acceptance among system participants and therefore capture a much larger proportion of actual errors. They also permit participants to report “near miss” events, increasing the total amount of analyzable information that is captured.

The Institute of Medicine, Agency for Healthcare Research and Quality, American College of Emergency Physicians, and other prominent medical organizations all support standardized systems of event reporting as a method for improving patient safety. Some states (such as Pennsylvania) and some local EMS systems (such as Houston) have developed their own confidential, non-punitive event reporting systems for EMS. At press, only two national EMS reporting systems are known to exist, and both are fairly new. EMSclosecalls.com focuses on the sharing of stories which are individually submitted or found in the media. Mepars (EMSSafePatient.com) conducts a more formal analysis and plans to publish results to be shared among agencies. In addition, the fire service has developed a reporting system (firefighternearmiss.com). New York State EMS agencies are encouraged to participate in event reporting systems in order to contribute to data collection as well as to learn from the past experiences of others.

Chapter 2

Emergency Medical Services – “At the Crossroads of Public Safety, Public Health and the Community Healthcare System”

The provision of emergency medical services is at the crossroads of the a community’s healthcare system, its public health system, and its public safety system. In this unique role, EMS providers routinely work side by side with other medical professionals from the hospital, medical, and clinic environments, as well as with their counterparts from the fire, rescue and law enforcement disciplines. Regardless of the type of service that provides prehospital emergency medical response, the prevailing factor we must always acknowledge is that EMS is a patient care entity. As such, providers and agencies must be willing and able to engage in quality improvement activities, as do all other healthcare professionals, to ensure that patients receive timely medical care from well-trained and competent individuals.

Ambulance services are but a small microcosm of larger, and more complex community healthcare and emergency response systems, each with sometimes independent missions, but always dependant on each. It is imperative that EMS providers and agency managers understand that just as they do not respond to calls in a vacuum, neither can they perform quality review in a vacuum. In this chapter, we will explore the QI proves at various levels.

Ambulance or First Response Service Level – “Where the Rubber Meets The Road”

It is at the agency, or ambulance/first response service level, where the nuts and bolts of the QI process are placed together. Each agency is responsible for establishing service level QI committees, and performing organizational reviews, as discussed in Chapter 1. Remember that if the agency is a small agency and there are but a few available members, the committee must be officially linked to a properly populated larger committee, per the requirements Article 30, Section 3006. Service level activities are typically limited to monitoring and evaluating organizational efficiency. Parameters for review at the agency level typically include, but are not limited to:

- Accuracy and completeness of the Patient Care Report (PCR);
- Time of call for help to patient contact;
- Accuracy of patient assessment;
- Adherence to patient care protocols;
- Patient outcome;
- Appropriateness of care and skills proficiency;
- Appropriateness of time spent on scene;
- Appropriateness of destination hospital; and
- Requests for diversion.

Agencies should be encouraged to expand on the above items as the QI process evolves to measure other areas or organizational efficiency, including, but not limited to:

- Ratio of in-service – to – out of service hours for apparatus;
- Staffing pattern – to – peak call volume intervals;
- Customer satisfaction;

- Vehicle performance/reliability;
- Availability of provider educational opportunities;
- Emergency Department turn around times;
- Recruitment and retention of members;
- Job satisfaction;
- Employee absenteeism;
- Workforce relationships;
- Compliance with OSHA/PESH standards;
- Compliance with Worker's Compensation regulations;
- Billing and collection processes; and
- Safe communities initiatives/injury prevention strategies.

In addition to the QI process, agencies need to remember that there is a reporting component required by 10 NYCRR Part 800. These section of the regulations, Part 800.21 (q) and (r), require that agencies report to the appropriate Department of Health Regional Office no later than the following business day and in writing within five (5) working days in each of the following instances in which:

1. A patient dies, is injured or otherwise harmed due to actions of commission - acting purposefully, or omission - failing to perform a duty or protocol, by a member of the EMS agency;
2. An EMS response vehicle operated by the agency is involved in a motor vehicle crash in which a patient, member of the crew or other person is killed or injured to the extent requiring hospitalization or care by a physician;
3. Any member of the EMS agency is killed or injured to the extent requiring hospitalization or care by a physician while on duty;
4. Patient care equipment fails while in use, causing patient harm; OR
5. It is alleged that any member of the EMS service has responded to an incident or treated a patient while under the influence of alcohol or drugs.

EMS Agencies are also responsible for maintaining a written record of all unexpected authorized EMS response vehicle and patient care equipment failures that could have resulted in harm to a patient and the corrective actions taken by the agency.

Regional Level – “System Administration and Medical Oversight”

Regional level quality improvement activities typically center around measuring the efficiency of the regional EMS system, that being the collaborative efforts of all ambulance/first response services operating within a region. Regional QI activity is generally performed by a committee of representatives of the Regional EMS Council (REMSCO), the Regional Emergency Medical Advisory Committee (REMAC) and the Program Agency (PA). Parameters for review at the regional level include, but are not limited to:

- Adherence to regional or state medical protocol;
- Adherence to regional or state standard operating procedure or policy;
- Comparison of prehospital impression to hospital diagnosis;
- Comparison of prehospital presentation to outcome;
- Priority Dispatch (EMD) criteria compliance;

- Statistical analysis of critical skills;
- Patients who decompensate while en route to the hospital
- Appropriateness of selection of destination hospital;
- Systems status management and resource allocation;
- Supply and demand of educational opportunities;
- Affects of prehospital patient care activity on length of hospital stay;
- Cardiac arrest survivability;
- Emergency Medical Dispatch and pre-arrival instructions; and
- Public access to EMS.

State Level – “*Certification of Technicians and Services*”

Agencies should be encouraged to expand on the above items as the QI process evolves to measure other areas or organizational efficiency, including, but not limited to:

- Supply & Equipment standard compliance;
- Presence of, and adherence to, required written policies;
- Maintenance of certification and training records;
- Adherence to the requirements of Part 800 – *State EMS Code*;
- Adherence to the requirements of Part 80 – *Accessibility to Controlled Substances for Pre-Hospital Settings* (If applicable); and
- Adherence to NYSDOH BEMS Policy Statements and SEMAC Advisories.

Types of Review – “*How To Evaluate Your Performance*”

Now that the Committee has been established, and a plan has been developed, its time to start the evaluation process. The first order of business is to establish the **OBJECTIVE**, which is your comparison of actual performance against predetermined established standards. Next, decide on the **MECHANISM**, which is how you identify and monitor the pre-selected key indicators. Begin your **AUDIT**, which consists of the actual review process. There are several types of audits to choose from.

STRUCTURAL EVALUATION refers to the structure of your organization and deals with the presence of mandated resources, and centers around non-personnel issues. Selected criteria may be used to evaluate things such as: physical facilities; equipment/inventory control; staffing patterns; mutual aid; and qualifications and credentialing.

PROCESS EVALUATION refers to the appropriateness of the use of available resources. Selected criteria may be used to evaluate things such as: history taking, focused physical exam and vital signs; and appropriateness of treatment procedures.

OUTCOME EVALUATION refers to the results of the care provided to the patient.

There are several methods of evaluation commonly used in the healthcare industry. The **PROSPECTIVE** method measures future performance against predetermined standards. Typically, prospective review consists of picking a time frame going forward and reviewing PCRs for your chosen objective(s) against accepted standard(s). The **RETROSPECTIVE** method measures past performance against accepted standards. This type of review is often

the most convenient, in that the committee need only pull PCRs from the file and screened for your topic-oriented and relevant information.

Although convenient, this type of review is the least beneficial in that time may be spent on issues or trends that may have already been identified and resolved. The CONCURRENT method is a strategy that capitalizes on direct or on-site activities, such as on-line medical control / on-scene medical control, or field observations made during actual patient care activities.

Now that the type of review and evaluation have been chosen, its time to conduct the actual audit. Prepare a data tool, which is nothing more than a way to record the data elements you have chosen to study. The data tool should be developed with the endpoints in mind. Oftentimes, when data points are identified and data are pulled, the end of the review period is upon us and we find that we did not pull enough data points to answer the questions we want answered. Therefore, the more efficient way to proceed is to identify the questions you want answered first, and then choose the data points that best provide those answers.

Choose a time period that the review will encompass. For example – in a retrospective review, “ we are going to pull PCRs for all calls that occurred this past January to evaluate our response times for the month.” As an alternative – in a prospective review, “we are going to pull all PCRs with a chief complaint of chest pains that occur between January 1 and March 31 to check compliance with protocol.” Finally, in a concurrent review – “from January 1-March 31, all ALS providers must send EKG biotelemetry to medical control and we will measure concordance between technician and physician EKG interpretation.”

Results are recorded on the data collection tool, which facilitates entry into a database, where multiple queries can be then be run to answer your pre-determined questions. Reports with results are generated and analysis of the findings is made.

The process continues with individual or agency feedback, the acknowledgement of a job well done or the development of a corrective plan of action as indicated, and concludes with a re-audit at some point in the future to assure that desired outcome is either maintained or achieved.

Chapter 3

Steps for Monitoring, Evaluating, and Improving Organizational Efficiency - “From Data Collection to Performance Enhancements”

Strategic Planning is effectively the development of strategies to cope with changing circumstances, and to set a pathway from where the organization is, to where leaders think the organization needs to be. This pathway is typically broken down into time frames and milestones, based on realistic expectations. The data collected and analyzed in the QI process provides decision makers with the information necessary to make factual decisions, and the process results in a disciplined effort to produce decisions and actions that guide what an organization is, what it does, and how it does it, by:

- Setting the organization’s direction;
- Formulating broad policies;
- Making internal/external assessments;
- Paying attention to needs of key stakeholders;
- Identifying key issues;
- Developing strategies to deal with each issue;
- Implementing procedures; and
- Continually monitoring and assessing results. ⁴

We can translate that from the philosophical approach to the operational approach by identifying five (5) easy steps:

1. What are practical alternatives, dreams and visions you might pursue?
2. What are the barriers to realizing those alternatives, dreams and visions?
3. What proposals might you pursue to overcome those barriers?
4. What steps are needed to implement those proposals?
5. Who is responsible to implement these proposals?

It all begins with conducting an audit, and thus, the general steps in the process are as follows:

- Collect and organize data;
- Identify areas of excellence;
- Identify deficiencies;
- Define the magnitude and scope of problem;
- Evaluate care/service provided;
- Develop a plan for corrective action;
- Provide feedback;
- Implement the corrective action;
- Reevaluate after specified period of time;
- Communicate relevant information and trends to responsible persons;
- Retrain as needed;
- Re-visit in future; and
- Share information with REMAC QI

Lets examine the following example to add some perspective.

Select a prehospital impression for review, in this case *Respiratory Difficulty secondary to Asthma*. Then identify patient population and length of study, in this case, *All patients with history of asthma and dyspnea for month of July*. Then, select standard based criteria i.e., applicable protocol, in this case, the *NY State Bronchospasm Protocol*.

Then, develop a data collection tool with the fields you need to capture the information you desire, review PCRs, collect and collate data. Importing data into a database or spreadsheet helps manipulate the data and provides the answers to the queries you establish. Remember, it is most helpful to decide what questions you want answers to before you begin to collect data so that your data fields and data tools are comprehensive enough to provide the required information.

Once the data are collected, ask if the patients who fit criteria receive medication, in this case, *If yes, was it appropriate per protocol? If no, why not?* Then, based on the numbers of cases, in each category, draw your conclusions about performance.

The ultimate goal of the QI review example used here is to document the following: Identify if patients who fit the protocol received the medication appropriately, and conversely, if patients received the medication, but did not fit the protocol; and to Identify patients who did not receive the medication but did fit the protocol. The ultimate goal of the review is to ensure that the right patient receives the right treatment in the right dose by the right route at the right time and whether or not the desired effect was achieved.

The QI review continues with providing structured feedback to involved technicians and all agency members, identifying and acknowledging excellent performance, and identifying and acknowledging weakness by publicizing results to all concerned. The QI review concludes with targeted remedial activity, if indicated by the results of your review by developing and delivering didactic or skills lessons on the subject matter.

This is but one of literally hundreds of clinical applications you can review based on this simple, yet highly effective, approach.

Chapter 4

Customer Service - “After All, For It Is The Customer, That We Exist”

What do you think of when you hear the term *Customer Service* and do you view yourself as a provider of *services*? Before we understand the basic practices of customer service, we need to appreciate the intricacies of customer service, and how that relates to the letter “S” in EMS. We also need to appreciate the fact that a patient that is ill or injured is not your typical “customer” in the common sense of the word. A patient does not have a choice when calling for emergency medical services. A patient does not have the opportunity to shop around when calling for emergency medical services. A patient is in their most vulnerable state when calling for emergency medical services. EMS providers need to be mindful of this, and while we recognize that patients are indeed customers and consumers of our service, they are also in a fragile state of mind or body, and require an up-close, empathetic, and personal approach, not an aggressive sales pitch.

This chapter, we put it all together by concentrating on a concept that has its roots in private industry and is well established in the business community. Companies known for their excellent products and services rely on their ability to capture and hold a market share. This concept has been slow to make its way into the public sector, because very often, the local EMS agency views itself as “the only game in town” and there is generally little competition among providers of emergency services. Market share in our world is limited to individuals who have the misfortune to become acutely ill or injured in unplanned events that require emergency response, and thus, we are not in a position to aggressively seek out our customers by slick advertising and catchy phrases or jingles. Customers seek us out, based on emergent necessity, and do not have the choice to shop around for the best bargain. Because of the realities of what EMS providers do, we tend to become complacent when it comes to marketing ourselves and striving to provide the best product we can on a consistent basis.

This manual is designed to provide modern day leaders, managers, and providers of emergency medical services with the information and tools necessary to monitor their service, with an eye towards transitioning from data collection and analysis to action points of change. In order to successfully use quality improvement findings to promote positive behavior within services or regions, we need to fully understand the implications of what makes some businesses more successful than others, and apply those principles to every day operations.

Often seen in the first pages of any basic prehospital training textbook is a picture of a uniformed EMT or Paramedic in perfect attire, stethoscope around his/her neck, holding a blood pressure cuff with a caption beneath saying “a professional appearances inspires confidence.” Instructors offer that the appearance is synonymous to quality of patient care. With the advent of customer care surveys, professional appearance does rank high. However, customer service practice goes deeper into the caring and compassion provided to customer.

So, what is Customer Service? Customer Service is any contact, whether active or passive, between a customer and a company, that causes a negative or positive perception by a customer.

Most enterprising companies today are using customer service to separate themselves from the rest of their market. There has been a renewed interest in how the consumer wants to be treated. The perception is changing. We have seen large marketing campaigns urge for faster, friendly and reliable service. With the advent of strong and fast computer infrastructure and dynamic production lines, most companies are equal in their ability to improve service.

Today, the market is looking at the end-user, the customer for help in separating one company from another. We in emergency medical services can learn from their successes.

Not only is it important to listen to what the customer wants, it is equally important to “stay the course” and re-evaluate our effort to see it its modernized and allows for change to keep up with the times. Customer’s ideas, needs and wants change and companies need to change with them.

So, how do you know what the customer wants? First, you need to define the customer. In the prehospital setting, our customers include, but are not limited to:

- The patient;
- The patient’s family;
- Your supervisor;
- Your fellow employees;
- Your partner;
- Nurses;
- Doctors; and
- Hospital Registrars

As EMS providers, we must remember that in public and private service, anyone in our field of view must be considered our customer. Our conduct is being judged everyday. We have come to realize that the public perception of what we do, has long been identified with the media’s portrayal of our profession. From the old television show *Emergency*, through outcome based re-enactments of successful responses in *Rescue 911*, to its modern day counterpart *Third Watch*, television actors and actresses have defined our profession – in the public’s eye.

What does the customer want?

It is important to recognize that information is what most customers are seeking. Instructors are taught that if you do not know the answer to a question, that you must tell the student that you do not know and get back to them and to make sure that you follow through with that promise. When you follow this mantra, you are not faulted for lacking the answer, you are seen as a true communicator. It takes great maturity to admit what you do not know.

The customer is always right!

Everyone has experienced customers that are wrong. However, it is the attitude towards the customer that matters most. The customer is not always right, but there always the customer and needs to be treated with respect and dignity.

Is everything okay?

In a restaurant setting, for example, almost universally, the waiter/waitress will always ask “Is everything okay?” shortly after you are served your meal.

This gives you an opportunity to identify excellence or promote change, increasing your chances for a satisfactory experience. All EMS providers are also consumers of many types of service. The key is to treat your customers the way you expect you and your family to be treated.

In EMS, we should develop a standard of questions that go to the heart of the matter. Certainly open-ended questions may lead to verbose responses and the appropriate close-ended responses may be useful. Asking the patient/customer questions about the care and attention they received will tell the patient/customer that you are concerned about their well-being. Examples are:

- Has the service met your expectations?
- Did you receive and understand the information given to you?
- Are there any questions that you may have about the care you have or will receive?

Mannerisms & Non Verbal Communications

If you go into a retail store and the cashier overcharged you, you must believe that this was not intentional. You bring it to the attention of the cashier and the cashier, in an apathetic tone, tells you to see the manager. Frustrated, you either leave overpaying on the product or you see the manager, enraged that this mistake occurred and could not be rectified by the cashier. What kind of messages do we send with our actions, and not our words? Does your body language exude confidence and a general interest in what you are doing, or does your body tell the patient that their emergency is an imposition on your day?

Customer Service Strategies

Programs that involve active listening is a great start. It is important not just to ask your patient / customer how they are feeling or about their needs, it is detrimental to the overall success of the care that you listen, be attentive and care.

EMS is a young person’s profession. Most of us have not lived long enough to struggle with death and disability to understand the pain someone is going through. However, it is important to know that one should not have to live a traumatic event in their lives to appreciate or empathize with their suffering. Cold and callous behavior will not help in the care of patient and their family. Keyword: EMPATHY. All EMS providers should know what the word means and how to demonstrate it!

Most patients are likely to ask very difficult questions. Getting the most truthful answer is important. Be sure to respond to the patient’s needs. Delivering what is asked for is key. If the patient is uncomfortable, then fix the problem. If they are cold, cover them with a blanket. It’s not a bad idea during your mentoring program to have your trainee ride on the stretcher and other carrying devices to see how they feel.

Having them live through it will have some effect on how they deliver the same care. As for how the provider should act, great interpersonal skill will always win out. The ability to communicate will place the provider well in front of others.

The provider should be proud of the choice they made in choosing this health field, knowing that many before laid the ground work to make this an honest profession. Since most Americans are living longer and expected to increase, the elder patient judges their caretaker by their presentation. Looking the part is important. Walking in someone's home with sunglasses on at midnight or wearing an ear bud for your Bluetooth® cell phone does not ensure patient confidence.

Not only does the provider need to maintain a strong customer service connection, so too does the supervisor. Supervisors can greatly affect the outcome a patient care. Several tools in their toolbox will help maintain a strong connection with their clients. Supervisors have a great deal of responsibility in the customer service area. They are usually in the front lines with the provider and will likely have to interact with the customer during an unfavorable circumstance. How they deal with this opportunity, may alter the outcome or return of the customer to your service.

A supervisor welcoming complaints, or opportunities to intercede before a situation results in a formal complaint, may turn a negative situation into a satisfied and loyal customer.

The supervisor needs to connect with the customer in the same manner as the provider. When faced with the unhappy customer, the supervisor should correct the situation at hand and then work with the complainant to identify the root cause of the circumstance. It is important to determine if the problem was personal (individual based), or procedural (agency based). Having the complainant involved, empowers them and they are likely to have an enhanced opinion of the service controls.

Remember, as an agency or regional leader or manager, the EMS provider is one of your "customers." In this relationship, the following is necessary for successful customer service and tools available to the supervisor.

Feedback

Feedback to the provider is always necessary. Negative feedback should be given during appropriate times and never in front of the patient/customer. Telling the patient/customer that the employee is wrong without investigation will damage the relationship between the provider and supervisor.

Consistency

Providers look for consistency in their supervisor. Showing favoritism to some employees causes abhorrence and animosity from the workforce. It is difficult to have a functional workforce driven to provide excellent patient care and customer service when the provider themselves do not feel that they themselves are treated well.

Employee Development

All providers need to have development in their responsibilities. Not all want to develop, but every effort should be made to have development sessions available. Most CME is structured around patient care, not people care. Emphasis should be placed on whole, not just the part.

Have Fun

The responsibility of the patient care and those giving direction in patient care environments comes with enormous pressures. The supervisor should remain cognizant of this and attempt to organize social opportunities to have fun from time to time. However, you must not ever do this in patient care scenarios or at the employee or employer expense. Laughter is good and healthy.

Recognition

It is equally important to establish a recognition process in order to highlight outstanding customer service activity. This recognition is important to tell everyone that it not just okay to have a customer service initiative but it is in your mission to meet that objective.

In conclusion, there are many benefits to having a customer service program in an EMS agency. From a public service perspective, patient's hold the providing agency or region accountable under the guise of a public trust issue. The public can seek to demand change through the legislator or community council. Mergers or disbanding agencies can affect the provider's livelihood. For-profit companies can simply choose a competitor for alternative service. In summary, there are simple examples of Customer Service Standards. EMS Providers should:

- Make everyone feel at home;
- Smile and introduce themselves;
- Be courteous and try to go the extra mile; and
- Be professional and dress the part.

Always remember to handle patients with care and put yourself in the shoes of your patient and family. Respecting privacy is not only mandated but also needed in maintaining the confidence of the patient. Customer Service means doing what you say you will do and anticipating customer's needs.

Appendices

- Article 30, Section 3006
- Part 800.21(q)
- Part 800.21(r)
- Sample audit tools, plans, etc.

¹ New York State Department of Health, “Emergency Medical Services Plan”, 1998.

² National Highway Traffic Safety Administration (NHTSA), “EMS Agenda for the Future”, 1996.

³ O’Connor RE, Fairbanks RJ, Reducing Adverse Events in EMS. In Quality Management in Prehospital Care, 2nd Edition. R. Swor (Ed). National Association of EMS Physicians, 2005).

⁴ Bryson, John M. Strategic Planning for Public and Non-Profit Organizations/A Guide to Strengthening and Sustaining Organizational Achievement. Jossey-Bass: San Fransisco, CA, 1995.