Section 100: The EMS System

Policy 101: Quality Improvement Program

Revision 5/22/20
Effective 8/1/18

I. Purpose:

A. To establish a system wide Quality Improvement (QI) Plan for evaluating the Emergency Medical System of Santa Cruz County to foster continuous improvement in performance and quality patient care. To assist the EMS Agency, EMS Providers, Receiving Hospitals and Base Hospitals in defining standards, evaluating methodologies and utilizing the evaluation results for continued system improvement.

B. This policy describes the role, composition and procedure for regular assessment of key quality indicators and a process for categorizing incidents that are reviewed.

II. Authority:

A. California Code of Regulations, Title 22, Section 100136, 100141.2, 100166, 100167, 100168, and 100172. Health and Safety Code Division 2.5, Section 1797.220. California Evidence Code, Section 1157.7

III. Definition:

A. Quality Improvement (QI) means a method of evaluation of services provided, which includes defined standards, evaluation methodologies and utilization of evaluation results for continued system improvement. Such methods may include, but not be limited to, a written plan describing the program objectives, organization, scope and mechanisms for overseeing the effectiveness of the program.

B. This reference to Quality Improvement (QI) is comparable to State Regulations' reference to Continuous Quality Improvement.

IV. Principles:

A. To be effective, a Quality Improvement (QI) Plan must foster a positive working relationship between all components of the emergency medical system.

B. This document will allow each agency to continue meeting its own unique QI needs as well as providing an avenue for meaningful collaboration system wide. This QI Plan encourages the utilization of the processes that affect patient outcomes most significantly.

V. Policy:

A. At a minimum, the QI Plan shall include:

1. Statement of quality improvement program goals and objectives.

2. Description of how the Quality Improvement Plan is integrated into the Santa Cruz

County EMS system.

3. Description of those processes used in conducting quality improvement activities, action plans and results.
4. Methods to document those processes used in quality improvement activities.
5. Common database from which to compare data system participants.
6. Methods to retrieve data from participating non-base receiving hospitals regarding patient diagnoses and disposition.

VI. Base Hospital Contributions:

A. Implementation and maintenance of a Quality Improvement (QI) Plan in conjunction with prehospital care providers assigned to the base hospital.

B. Designation of a representative to participate in the Santa Cruz County EMS QI Committee.

C. Collection of outcome data on patients brought to the Base Hospital as outlined in the EMS CQI Plan.

VII. Provider Agencies Contributions:

A. Implementation and maintenance of a Quality Improvement (QI) Plan in conjunction with assigned base hospitals and receiving hospitals.

B. Evaluation of prehospital care performance standards.

C. Designation of a representative to participate in the Santa Cruz County EMS QI Committee.

VIII. EMS Agency Contributions:

A. Implementation and maintenance of a Quality Improvement (QI) Plan in conjunction with base hospitals, receiving hospitals, and provider agencies.

B. Provide for a multidisciplinary team approach and provide staff support for the EMS QI Committee.

C. Assist in ongoing monitoring and evaluation of clinical and organizational performance.

D. Provide information to support system improvement of those processes that are important to the quality of patient care.

E. Provide confidential patient outcome and informational system reports to assist in improving the functions targeted by the QI program.

IX. EMS Quality Improvement Committee

A. The EMS Quality Improvement Committee membership shall consist of:

1. EMS Medical Director

2. EMS Program Manager
3. Physician from each Base Hospital
4. PLN from each Base Hospital
5. EMSIA QA Manager
6. EOA Ambulance CES Coordinator
7. Emergency Medical Dispatch Program Manager
8. Other representatives of the Santa Cruz County EMS community as approved by the EMS Medical Director and Program Manager

B. The EMS Quality Improvement Committee will:

1. Meet monthly. The proceedings and records of this committee shall be free from disclosure and discovery. (CEC, Sect. 1157.7)
2. Focus on system processes for improvement.
3. Coordinate and compile focused studies/research on selected issues.

C. At such time when the EMS Quality Improvement Subcommittees develop, the proceedings and records of the Subcommittees shall be free from disclosure and discovery. (CEC, Sect. 1157.7)

X. Benchmark Quality Indicators

A. The following quality indicators shall be continuously monitored and reported at Quality Improvement Committee meetings monthly.

1. Dispatch/EMD (see also Policy 306, *Emergency Medical Dispatch*)
    a) Code 2/Code 3 returns
        (1) All cardiac arrests
        (2) Random audit
        (3) Aqua reports/Drift reports (NetCom QA Program)
2. Cardiac Arrest
    a) Bystander CPR (PUB-1)
    b) AED prior to arrival (CAR-1)
    c) First Arrival time to rescuer CPR
    d) Initial rhythm recorded
    e) Defibrillation (number and dose)
    f) Intubation (see #6)

g) ROSC (y/n) (CAR-2)

h) $EtCO_2$ readings (initial and continuous)

i) survival to ED discharge (CAR-3)

j) survival to hospital discharge (CAR4)

3. STEMI

a) Arrival to EKG

b) ASA (ACS-1)

c) Scene time (ACS-3)

d) STEMI alert (ACS-4)

e) 911-to balloon

f) Appropriate destination (ACS-5)

4. Suspected Cardiac Ischemia

a) 12 Lead EKG Obtained

b) 12 Lead EKG transmitted

c) 12 Lead EKG interpretation

d) STEMI alert

e) ASA given

f) NTG given

g) Morphine given

h) Destination Hospital

i) Mode of transport

5. Stroke

a) Time Last Known Well

b) Stroke scale recorded (STR-1)

c) Blood Glucose recorded (STR-2)

d) Scene time (STR-3)

e) Stroke alert called (STR-4)

f) 911-to needle time

6. Trauma (see also Policy 107, *Trauma Quality Improvement and System Evaluation*)

a) Scene times (TRA-1)

b) PAM scale recorded

c) Appropriate destination (TRA-2)

d) Advanced Airway Management (See Procedure 704 Advanced Airway Management)

e) Indications for invasive airway

f) Date/Time Airway Device Placement Confirmation

g) Airway Device Being Confirmed

h) Airway Device Placement Confirmed Method

i) Tube Depth

j) Type of Individual Confirming Airway Device Placement

k) Crew Member ID

l) Airway Complications Encountered

m) Suspected Reasons for Failed Airway Management

n) Waveform capnography readings through duration of care

(1) $EtCO_2$ initial (SKL-2)

(2) $EtCO_2$ continuous (SKL-2)

B. Additional quality indicators may be added as deemed necessary through the quality improvement process

XI. EMS Retrospective Review

A. This section of the quality improvement policy establishes a framework for EMS system participants to categorize clinical questions that arise in the EMS system for ensuring proper reporting, analysis and follow-up. This is indented to encompass incidents with positive and negative outcomes. Every incident that may occur represents an opportunity for system improvement provided that the analysis is properly conducted with emphasis on identifying systemic contributing factors that may have led to the occurrence, and adequately reported to the Quality Improvement Committee.

B. This section may be implemented by any EMS system participating agency/provider. It may be used by County EMS, Hospital, SCR911, and Prehospital Personnel alike. In all cases the concept of “Just Culture” should govern all incident investigations.

C. Level I: Low level of concern or risk

1. Description: This includes minor deviations in care or communication that do not affect

the clinical outcome of the patient. Examples include failure to perform spinal immobilization in a patient who is neurologically intact, failure to get a base station consultation on a "grey area" trauma patient who is in fact appropriately managed locally, etc.

2. Indicated Actions: Level I incidents should result in on-the-spot feedback and communication between personnel, and an email/phone call FYI to QI staff.

3. Follow-up and Reporting: Agency level QI staff will close the loop with the personnel involved and may optionally report back to the reporting agency. Generally, these incidents need not be reported at the monthly EMS QI Committee meetings and monitored for trends.

D. Level II: Moderate level of concern or risk

1. Description: Significant deviations from the standard of care, repetitive occurrences, or serious communication conflicts between caregivers. Examples include medication administration errors, failure to transport a major trauma patient to the appropriate destination resulting in a delay of care, command and control issues occurring on scenes, etc.

2. Indicated Actions: A Level II Incident requires the involved agency to convene a review of the case. This review can be held with just the involved crew but may be expanded to include all involved EMS personnel (fire, transport, SCR911, hospital staff, etc.) as indicated.

3. Follow-up and Reporting: In all cases, Level II Incident investigations will result in a written document including analysis of the incident, and recommendations for remediation. This write up will be presented to County EMS and all involved agencies. All Level II Incidents will be presented at the County QI Committee meeting.

E. Level III: Highest level of concern or risk

1. Description: A Level III Incident includes substantial deviations in the standard of care that present a high level of risk to the patient and/or the EMS system. This may include possible negligent or grossly negligent behavior by a provider. Examples include abandoning a patient on scene, failing to check for/recognize an esophageal intubation, administering a drug that is clinically contraindicated, etc.

2. Indicated Actions: A Level III Incident will result in immediate notification of agency QI staff and County EMS staff. Responses to this level of incident may include an ASAP formal call review, temporary suspension of personnel County accreditation pending investigation, etc.

3. Follow-up and Reporting: All Level III Incidents will be presented at the County QI Committee meeting.

F. Level IV: Exceptional Occurrences

1. Description: These may include publicly visible events, large-scale incidents, best practices, exemplary performance, etc.

2. Indicated Actions: Reviews may be held outside of the Level I-III structure for incidents not meeting those criteria, but which have the potential for system improvement.

3. Follow-up and Reporting: These events may result in a review with individual caregivers, unit crews, or all involved EMS, hospital, and dispatch personnel as indicated. These cases should be reported at the county QI committee meeting.

XII. Multiple Casualty Incidents (MCI) or Complex Incidents

A. A multiple casualty incident represents a non-routine event that, due to the number of patients or complexity of the situation, exceeds the capacity of a standard EMS response. An MCI often involves of multiple responders from multiple agencies and includes critical interventions. (see Reference 811: Multiple Casualty Incident Plan). Therefore, each MCI represents an important learning opportunity that can identify the need for policy, procedure or plan refinement and/or training needs.

B. Incident Review (Hot Wash)

1. A hot wash is the immediate discussion and performance evaluation by each respective agency. Typically, the most expedient opportunity for a hot wash is prior to clearing the scene/hospital or shortly thereafter, but generally should occur no later than 48 hours.

2. The strengths and weaknesses identified during the hot wash should be recorded by each agency in preparation for the subsequent After-Action Review (AAR).

C. After-Action Review (AAR)

1. The After-Action Review provides the opportunity for a multidisciplinary discussion of the Hot Wash findings from each agency and the preparation of a report summarizing the lessons learned.

2. The AAR is typically attended by the leadership or other representatives of each involved agency (Dispatch, Fire, EMS, Hospital, Law etc.)

3. The lessons learned from the AAR should be summarized and reported to each respective agency and to the EMS Agency within 14 days of the incident.

4. The EMS Agency will review the findings in the AAR and make policy, protocol or training recommendations, as needed, to the Prehospital Advisory Committee and other relevant committees.