

**APPENDIX 6**

**Emergency Medical Services**

**Quality Improvement Program (EQIP)**

**Plan and Toolkit**

Effective: August 1, 2019

Napa County EMS Quality Improvement Program

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## INTRODUCTION

### Mission Statement:

The Napa County EMS Agency will improve community health by facilitating a collaborative and integrated emergency medical services (EMS) system that delivers high-quality, cost-effective, and reliable clinical care.

### Vision Statement:

The Napa County EMS Agency envisions a sustainable EMS system that is driven to improve community health through robust systems of care, focused prevention strategies, research-driven decision making, and a culture of innovation & accountability.

## Napa County Emergency Medical Services

Napa County is one of four counties making up the greater North Bay Area, serving a population of 139,417 residents (United States Census, 2018), and comprising 748 square miles. Napa County consists of urban, suburban, rural and wilderness areas.

Continuous Quality Improvement (CQI) is a formal approach to the analysis of system performance and efforts to improve it. The Napa County EMS Agency is committed to the process of CQI. CQI is, by its very name, a continuous process. CQI includes such things as:

- Recognizing excellence, both individually and organizationally;
- Quantifying objectively what EMS does by trending, analyzing and identifying issues, concerns, and excellence based on those trends;
- Setting benchmarks;
- Promoting remediation rather than discipline. CQI also makes a powerful distinction between the two. Remediation is education. Discipline involves licensure/certification;
- Working hand in hand with training, education and with risk management;
- Identifying system issues when possible rather than individual issues;
- Presenting itself as an evidence-based process equal to industry programs for education and personnel.

Continuous Quality Improvement is a never-ending process in which all levels of healthcare workers are encouraged to work together, without fear of repercussions, to develop and enhance the system they work in. Based on EMS community collaboration and a shared commitment to excellence, CQI reveals potential areas for improvement of the EMS system, identifies training opportunities, highlights outstanding clinical performance, audits compliance with treatment protocols, and reviews specific illnesses or injuries along with their associated treatments. These efforts contribute to the continued success of our emergency medical services through a systematic process of review, analysis, and improvement.

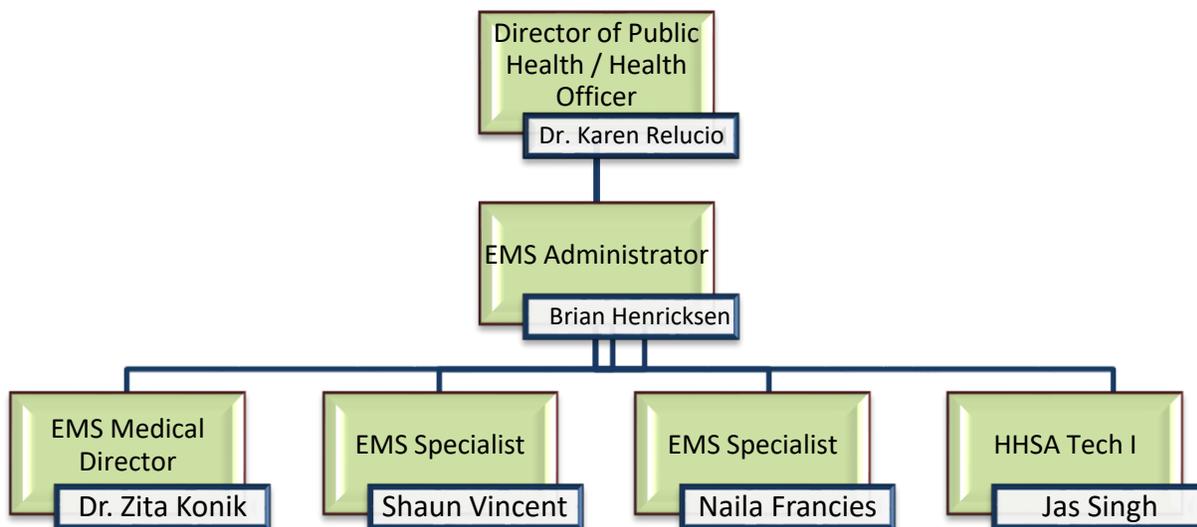
The Napa County EMS Agency monitors the Continuous Quality Improvement (CQI) activities of all of the different components of the EMS System in a prospective (protocols, research), concurrent (ride-alongs, Field Training Officers), and retrospective (incident investigation, random audits) manner. Many of the QI activities take place at the organizational level.

This plan is a guideline for each Napa County provider and Base Hospital to use when rewriting their organization's CQI plan. All EMS providers and Base Hospitals are required to submit their CQI plan to the Napa County EMS Agency for review and approval. All CQI plans must be in accordance with the Napa County EMS Agency's CQI plan.

The Napa County Emergency Medical Services Agency is responsible for the oversight of the Emergency Medical Services (EMS) system in Napa County. This system consists of Advanced Life Support (ALS) and Basic Life Support (BLS) First Responders; ALS, BLS and Critical Care Transport (CCT) Ambulances; BLS rescue, ALS rescue and Air Ambulance aircraft; dispatch agencies with trained dispatchers; Base Hospitals; Prehospital Receiving Centers; and various specialty centers (STEMI, Stroke Receiving Centers and a Trauma Center). Guided by EMS Agency protocols, online medical direction is provided by the Base Hospitals to the EMS personnel in the field.

The Napa County EMS Agency CQI Plan has been written in accordance with the Emergency Medical Services System Quality Improvement Program Model Guidelines (Rev. 3/04).

### Napa County EMS Agency Organization Chart



**Deputy Director of HHS - Public Health/Health Officer:** Dr. Karen Relucio

**EMS Administrator:** Brian Henricksen, EMT-P

**EMS Medical Director (contractor):** Dr. Zita Konik

**EMS Agency Administrative Assistant:** Jaswindar Singh

**EMS Specialist:** Shaun Vincent, EMT-P

**EMS Specialist:** Naila Francies, EMT-P

### **Authority:**

On January 1, 2006 the California Emergency Medical Services Authority (EMSA) implemented regulations related to quality improvement for EMS throughout the state. Napa County EQIP satisfies the requirements of Title 22, Chapter 12, Section 4 of the California Code of Regulations.

In addition, EMSA document #166 “Emergency Medical Services System Quality Improvement Program Model Guidelines” provided additional information on the expectations for development and implementation of a Quality Improvement Program for the delivery of EMS for Local EMS Agencies and EMS service providers. Fundamental to this process is the understanding that the program will develop over time and allows for individual variances based on available resources.

This document defines eight areas of focus for QI activities as it relates to the entirety of the EMS system and not just in the areas of patient care and training. These are:

- Personnel
- Equipment and Supplies
- Documentation
- Critical Care and Patient Outcome
- Skills Maintenance/Competency
- Transportation/Facilities
- Public Education and Prevention
- Risk Management

## **STRUCTURE, ORGANIZATIONAL DESCRIPTION, RESPONSIBILITIES**

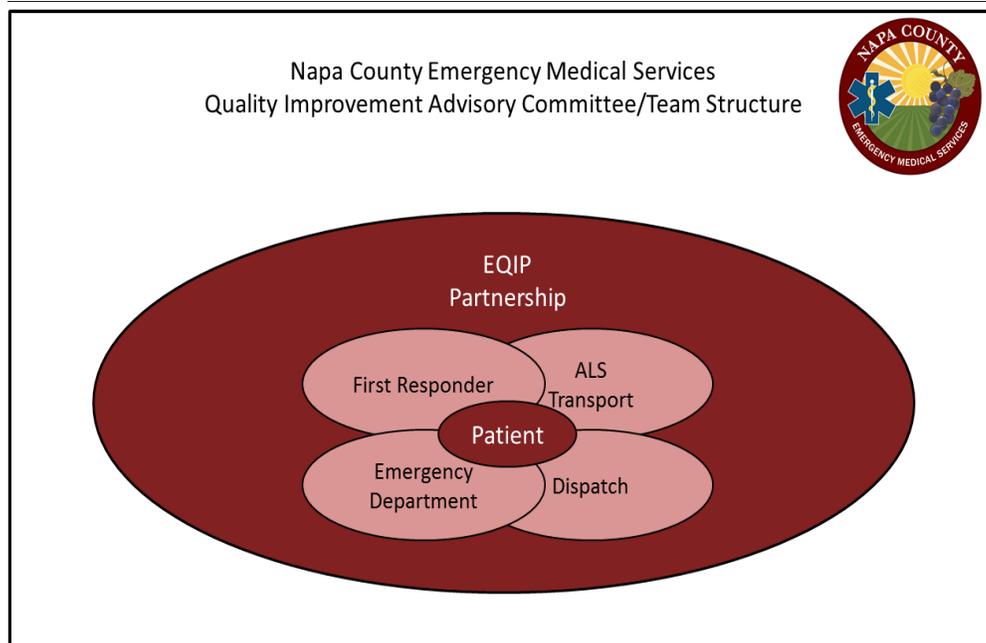
### **Local Emergency Medical Services Continuous Quality Improvement (CQI)**

The purpose of the Napa County EMS Continuous Quality Improvement (CQI) Program is to monitor, review, evaluate, and improve the delivery of prehospital care services in Napa County. The Quality Improvement Plan of the Napa County EMS system is designed to create a consistent approach to facilitate attainment of the key EMS quality objectives based on input from the providers and customers of those services. These objectives include:

- Assuring that the level of patient care is consistent with policies, procedures and guidelines.
- Maintain and continually improve the quality of patient care given by all EMS personnel/providers.
- Provide a mechanism whereby EMS personnel or other interested parties can have quality improvement (QI) issues and questions related to out-of-hospital care and the continuum of care addressed.
- Evaluate, on a continual basis, the Napa County EMS Plan and/or Emergency Medical Services Quality Improvement Program (EQIP), including the effectiveness of local policies and treatment protocols.
- Evaluate and improve system performance.
- Establish an advisory committee to the EMS Agency to: monitor; evaluate and report on the quality of care given by EMS personnel (e.g. County CQI, Medical Advisory Committee [MAC], Prehospital Trauma Advisory Committee [Pre-TAC], Cardiovascular Systems of Care [C-SOC]).
- Create a consistent approach to QI and a resource document for Paramedic Liaison Officers (PLO), Prehospital Liaison Nurse (PLN) and base hospital Physicians.

## EMS Quality Improvement Partnership: Napa County EMS Continuous Quality Improvement (CQI) Committee

The Napa County EMS CQI Committee is a patient focused partnership consisting of designated stakeholders, EMS Agency Medical Director, Provider EMS Medical Directors, and members of the EMS Agency staff assigned to clinical programs. EMS QI activities are coordinated under the EMS Medical Director and assigned EMS staff. This committee is advisory to the EMS Medical Director.



### EMS CQI Team Membership Comprisal

Membership shall consist of the following:

1. EMS Agency:
  - a. Medical Director
  - b. Assigned staff member(s)
2. BLS First Responder Providers
  - a. One representative from each provider agency.
3. ALS First Responder Providers
  - a. One representative from each provider agency
4. ALS Ground Ambulance Providers
  - a. One representative from each provider agency
5. BLS Ground Ambulance Providers
  - a. One representative from each provider agency

6. Base Hospital
  - a. One representative
7. Aircraft Providers
  - a. One representative from each helicopter/fixed-wing provider
8. Receiving Hospitals
  - a. One representative from each facility
9. Dispatch
  - a. One representative from each EMS dispatch center

### **Responsibilities of EMS CQI Committee**

The EMS QI Committee performs the following functions in accordance with state guidelines as defined in the California Code of Regulations Title 22, Division 9, Chapter 12, Section 100400:

- Develop and implement a system-wide EMS QI program which will include indicators to address the State EQIP focus areas.
- Annual evaluation of the system-wide EMS QI Program for effectiveness and outcomes
- Incorporation of input and feedback to and from EMS provider groups.
- Assure availability of training and in-service education for EMS personnel.
- Develop in cooperation with appropriate personnel/agencies a performance improvement action plan to address identified needs for improvement and provide technical assistance and medical oversight for system and clinical issues.

### **EMS Continuous Quality Improvement (CQI) Committee Procedures**

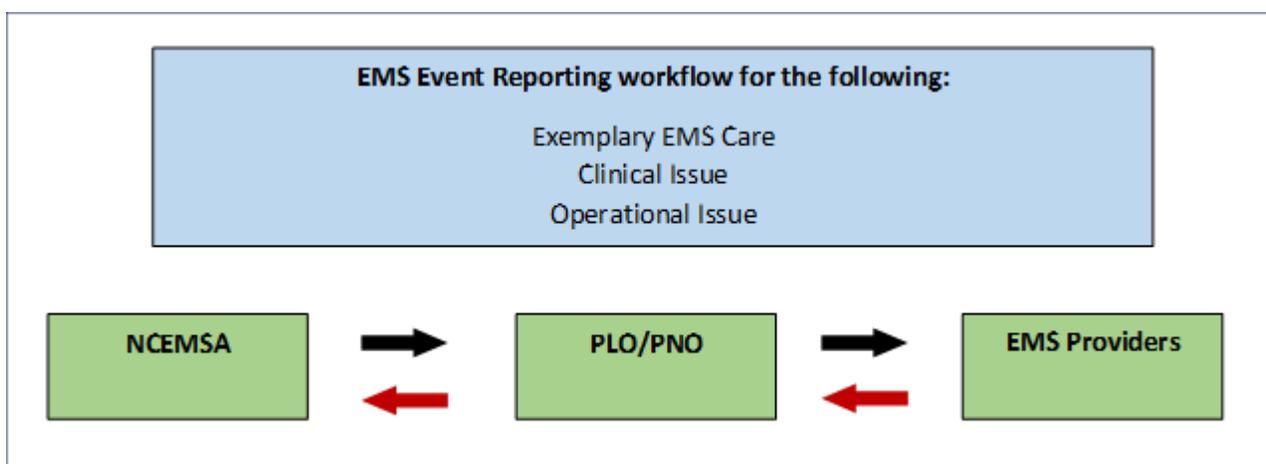
- The EMS Agency Medical Director will oversee the QI program.
- EMS Staff will act to coordinate CQI committee programs and activities.
- The EMS CQI Committee shall meet at regular intervals as identified in EMS Agency policy. The CQI Committee currently meets bi-annually.
- All proceedings, documents, and discussions of the County CQI Committee are confidential and are covered under sections 1040, 1157.5 and 1157.7 of the Evidence Code of the State of California. All members shall sign a confidentiality agreement not to divulge or discuss information that has been obtained through County CQI Committee membership.
- The EMS Agency shall maintain all records in a confidential manner during the review process, and shall destroy identifiable patient information directly following the review process.

### **EMS Event Reporting**

The Napa County EMS system has developed an EMS Event Reporting system, designed so that each system participant has the opportunity to provide clinical and operational feedback and

input into the operation and effectiveness of the EMS system. The EMS Event Report affords the EMS Agency and affected providers a process to document and evaluate policies, treatment guidelines, and general system performance issues (both positive and negative). This form replaces both the previous Quality Improvement Reporting and the Unusual Occurrence Form. Positive recognition and acknowledging exemplary patient care is an important part of the EMS Event Reporting structure. Since implementation of this new form, EMS system participants and the Napa County EMS Agency have used it to recognize a job well done on several occasions. It is the goal of Napa County EMS to develop a HIPAA compliant online mechanism for submitting EMS Event Reports no later than 2021.

The Napa County EMS Event Reporting policy is included in this plan as Appendix B.



## Interagency Quality Improvement Responsibilities

Interagency quality improvement responsibilities are summarized below and are based on Title 22 California Code of Regulations Chapter 12 EMS System Quality Improvement.

### EMS Agency Responsibilities

1. Approve and review of primary training programs for: public safety first aid and first responder; Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT) and paramedic programs and continuing education (CE) programs for all levels of certification.
2. Seek innovative training programs and materials.
3. Certification of all EMTs and Emergency Medical Dispatchers (EMDs) in the Napa County EMS system.
4. Accreditation of paramedics in the Napa County EMS system.
5. Provide prospective system-wide direction through established county policies, treatment guidelines and procedures.

6. Establish procedures for informing all providers and hospitals of EMS system changes and updates.
7. Retrospective review of the Napa County EMS system via advisory committee(s), data collection and review, patient care report and tape reviews and special studies.
8. Coordination of data from the receiving hospitals into the PCR system.
9. Review and investigate all EMS Event Reporting forms and take appropriate action. The EMS Agency will notify involved parties of resolutions.
10. Develop mechanism for the Paramedic Liaison Officers (PLO's) to notify the EMS Agency when paramedics are hired or leave their agency.

### **Base Hospital Responsibilities**

1. The Base Hospital Shall:
  - a. Designate an emergency department (ED) physician as base hospital medical director.
  - b. Designate a PLN.
  - c. Assure the presence of a base hospital physician in the ED at all times to give radio direction / medical control to pre-hospital personnel.
  - d. Provide for CE of certified EMS personnel, including clinical exposure time in specified areas in the hospital for both BLS and ALS pre-hospital care personnel.
  - e. Establish and utilize a system of critiquing ALS care responses, both written and taped. This system would include but is not limited to:
    - i. Providing feedback to the personnel involved.
    - ii. Providing EMS Agency with findings and suggestions for changes, improvements, etc.
  - f. Provide the EMS Agency with statistics and information needed for monitoring and evaluating all aspects of the EMS system.
  - g. Maintain a log of all EMS calls related to patient care.
  - h. Maintain a medically and legally proper system for documentation and storage of all out of hospital care written reports.
  - i. EMS tape transmissions will be kept for ninety (90) days and used for the purpose of QI only.
  - j. Develop and implement a QI program within the ED consistent with guidelines outlined in the Napa County's QI Program.
2. Criteria for PLN:
  - i. Experienced in or have knowledge within the Napa County EMS system.
  - ii. Knowledge of regulations, policies, treatment guidelines, protocols and local optional scope of practice items developed for pre-hospital care providers.

- iii. Comprehension of QI principles and practices.
3. PLN shall:
- i. Cooperate with the EMS Agency, hospitals, and providers in providing any necessary information needed on QI issues.
  - ii. Investigate, critique, document, and report to the EMS Agency all reported incidences of deficiencies in patient care or non-compliance with local policy.
  - iii. Provide both base hospital staff and field personnel with feedback on the outcome of any EMS Event Reporting Form which were initiated by them.
  - iv. Actively participate on appropriate EMS Committee(s). This would include but not be limited to:
    - v. Field Care Audit
    - vi. Emergency Medical Care Committee (EMCC);
    - vii. Medical Advisory Committee (MAC);
    - viii. Prehospital Trauma Advisory Committee (Pre-TAC)
    - ix. County CQI Committee and
    - x. Cardiocascular Systems of Care (C-SOC)
    - xi. Facilitate education programs for pre-hospital care personnel.
    - xii. Relay information on EMS activities, system changes, and EMS policies to hospital administration, medical and nursing staff, as needed.
    - xiii. Keep monthly statistics of base hospital activities and other statistics that may be needed for system planning.
    - xiv. Organize and/or assist with pre-hospital training (e.g. FCA).
    - xv. Assist providers with remedial education as needed.
    - xvi. Provide pre-hospital feedback via:
      - xvii. EMS Event Reporting form.
      - xviii. Verbal or written patient care follow up.
      - xix. Flagging calls via computer for County CQI Committee audit.
      - xx. Assist in tracking information/data needed by the County CQI Committee.
4. Base hospital physicians shall:
- i. Provide on-line medical control to all EMS personnel.
  - ii. Participate in the clinical training of EMT's, paramedics and other base hospital Physicians.
  - iii. Act as a liaison between EMS personnel and physicians not familiar with the policies, treatment guidelines, protocols and local optional scope of practice items developed for pre-hospital care providers.
  - iv. Report any QI issues, according to County policy.
  - v. Provide vision for system improvement.

## Receiving Hospital Responsibilities

1. Provide admission or treatment and release diagnosis of patients transported to the facility by ambulance, upon request.
2. Assign a nurse liaison to interact with provider agencies, EMS Agency, base hospital and CQI Committee.
3. Participate in educational activities.

## Prehospital ALS Provider Agencies

1. Pre-Hospital ALS provider agencies shall:
  - a. Participate in accreditation courses and the training of pre-hospital care providers. Design and participate in educational programs based on problem identification and trend analysis.
  - b. Establish procedure for promptly informing all field personnel of system changes/updates. Assure all employees are properly oriented to the EMS System.
  - c. Designate a Pre-hospital Liaison Officer (PLO) who will be responsible for coordinating the provider agency's interaction with the EMS system.
  - d. Utilize criteria, approved by the local EMS medical director, for evaluation of individual pre-hospital care personnel. These should include, but not be limited to, the following:
    - i. PCR / audio tape review.
    - ii. Field evaluations.
    - iii. New employee evaluations.
    - iv. Routine and problem orientated evaluations.
  - e. Establish a system to maintain current records on all personnel. These should include copies of the items listed below:
    - i. ACLS competency;
    - ii. BLS certification;
    - iii. Employee and field evaluations;
    - iv. Paramedic/EMT licensure/certification; and
    - v. County accreditation confirmation.
2. RN license for the State of California (flight and CCT nurses) shall:
  - a. Develop and implement a QI program within the provider agency consistent with guidelines outlined in the Napa County EMS Quality Improvement Program (EQIP). In addition, all aircraft provider agencies shall:
    - i. Provide the EMS Agency with statistical reports on all helicopter activity regulated by Napa County EMS policies / treatment guidelines.
    - ii. Provide area hospitals and provider agencies with helicopter safety courses.

- iii. Assign a paramedic or RN to the County CQI Committee.
  - iv. Facilitate education programs for flight crews specific to out of hospital care and flight medicine.
3. Criteria for PLO:
- a. Experienced in or have knowledge in the EMS system in Napa County.
  - b. Knowledge of regulations, policies, treatment guidelines, protocols and local optional scope of practice items developed for pre-hospital care providers.
  - c. Comprehension of QI principles and practices.
4. PLO shall:
- a. Cooperate with the EMS Agency, hospitals, and other providers agencies in providing any necessary information needed on QI issues.
  - b. Investigate, critique, document, and report to the EMS Agency all reported incidences of deficiencies in patient care or non-compliance with local policy.
  - c. Provide both base hospital staff and field personnel with feedback on the outcome of any EMS Event Reporting form which were initiated by them.
  - d. Actively participate on appropriate EMS Committee(s). This would include but not be limited to:
    - i. Emergency Medical Care Committee (EMCC);
    - ii. Field Care Audit;
    - iii. Medical Advisory Committee (MAC);
    - iv. Prehospital Trauma Advisory Committee (Pre-TAC);
    - v. County CQI Committee and
    - vi. Cardiovascular Systems of Care (C-SOC)
  - e. Facilitate education programs for pre-hospital care personnel.
  - f. Relay information on EMS activities, system changes, and EMS policies to provider administration and other staff as needed.
  - g. Keep monthly statistics of provider activities and other statistics that may be needed for system planning.
  - h. Organize and or assist with pre-hospital training (e.g. FCA).
  - i. Provide remediation for QI issues and keep appropriate documentation on file.
5. Pre-hospital care personnel shall:
- a. Participate in QI within own agency.
  - b. Provide thorough and complete documentation on all PCRs as per policy.
  - c. Promptly comply with the investigation of any QI incident your agency is involved in.
  - d. Maintain record of your attendance at CE courses and tape reviews.
  - e. Maintain certification/licensure as required by the State of California and the Napa County EMS Agency.

## DATA COLLECTION & REPORTING

### State Core Measures

The Napa County EMS system participates in the Emergency Medical Services Authority Core Measures Project. All measurable Core Measures are submitted to the State EMS Authority by March 31<sup>st</sup> of each year. The measureable Core Measures that Napa County currently submits are listed below:

CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED	
<b>D Clinical Care and Patient Outcome</b>	<b>Trauma (n=5)</b>	TRA-1	Scene time for trauma patients	2014	
		TRA-2	Patients meeting CDC Step 1 or 2 or 3 criteria originating from a 911 request who were transported to a trauma center.	2014	
	<b>Acute Coronary Syndrome (n=4)</b>	ACS-1	Aspirin administration for chest pain/discomfort	2014	
		ACS-3	Scene time for suspected heart attack patients	2014	
		ACS-4	Advance hospital notification for suspected STEMI patients	2017	
		ACS-6	Time to EKG	2017	
	<b>Hypoglycemia (n=1)</b>	HYP-1	Treatment administered for hypoglycemia	2017	
	<b>Stroke (n=3)</b>	STR-1	Suspected Stroke Patient Receiving Prehospital Screening	2017	
		STR-2	Glucose testing for suspected stroke patients	2014	
		STR-4	Advance hospital notification for suspected stroke patients	2017	
	<b>Pediatric (n=1)</b>	PED-3	Pediatric Respiratory Assessment	2017	
	<b>F Transportation and Facilities</b>	<b>Response and Transport (n=2)</b>	RST-4	Rate of emergency lights and sirens responses to include each vehicle responding to an incident	2017
			RST-5	Rate of emergency lights and sirens transports to include each vehicle transporting from incidents with one or more patients	2017

HEALTH AND SAFETY CODE 1797.120	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED
	<b>Ambulance Patient Offload Times (n=2)</b>	APOT-1	An ambulance patient offload time interval measure. This metric is a continuous variable measured in minutes and seconds then aggregated and reported at the 90th percentile.	2016
		APOT-2	An ambulance patient offload time interval process measure. This metric demonstrates the incidence of ambulance patient offload times expressed as a percentage of total EMS patient transports within a twenty (20) minute target and exceeding that time in reference to 60, 120 and 180 minute time intervals,	2016

### Local Indicators

In addition to the Emergency Medical Services Authority Core Measures Project, the Napa County EMS System has developed additional indicators locally. The measureable Local Indicators that the Napa County EMS system currently uses or plans to use in the future are listed below:

AREAS OF FOCUS	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED
<b>A Personnel</b>	<b>Cert/Licensure (n=1)</b>	NPER-1	Certification/Authorization/licensure for all EMS personnel is current	2015
<b>B Equipment and Supplies</b>	<b>Narcotics Check Sheets (n=1)</b>	NNARC-1	Narcotics are checked daily, and narcotic check sheets are completed daily	2015
<b>C Documentation</b>	<b>ePCRs (n=1)</b>	NDOC-1	Each patient encounter shall have at least one ePCR completed	2015

<b>D Clinical Care and Patient Outcomes</b>	<b>Cardiac Arrest (n=7)</b>	NCAR-1	Cardiac arrest patients where waveform ETCO2 was performed	2014
		NCAR-2	Cardiac arrest patients where mechanical compressions were utilized	2014
		NCAR-3	Cardiac arrest patients where ROSC was achieved (shockable)	2014
		NCAR-4	Cardiac arrest patients where ROSC was achieved (non-shockable)	2014
		NCAR-5	Cardiac arrest patients who survived to hospital discharge with CPC of 1 or 2 (UTSTEIN-1)	2013
		NCAR-6	Post ROSC 12-lead obtained	2019
		NCAR-7	Cardiac Arrests where continuous compressions are performed for duration of case	2019
	<b>Pain Intervention (n=1)</b>	NPAI-1	Analgesia administered within 15 minutes	2014
	<b>Acute Coronary Syndrome (n=7)</b>	NACS-1	911 to balloon time less than 90 min	2015
		NACS-2	911 to ED in less than 30 min	2015
		NACS-3	ED to Cath Lab in less than 30 min.	2015
		NACS-4	ED to balloon (Ambulance) in less 60 min	2015
		NACS-5	ED to balloon (Private Auto)	2015
		NACS-6	Documented reason for no ASA administration	2019
		NACS-7	Transmission of 12-lead or notification to STEMI Receiving Center within 10 minutes of identifying a STEMI	2019
	<b>Stroke (n=1)</b>	NSTR-1	Last Known Well Time documented in clock time.	2019

<b>E Skills Maintenance and Competency</b>	<b>Performance of Skills (n=6)</b>	NSKL-1	Overall advanced airway success rate	2014
		NSKL-2	Overall Endotracheal tube (ETT) success rate (per attempt)	2014
		NSKL-3	Overall Endotracheal tube (ETT) success rate (per patient)	2019
		NSKL-4	Endotracheal tube first attempt success rate	2014
		NSKL-5	Endotracheal tube greater than three attempts	2014
		NSKL-6	Endotracheal tube not successfully placed	2014
		NSKL-7	Supraglottic airway (SGA) as primary first attempt success	2014
		NSKL-8	Overall supraglottic airway success rate	2014
<b>F Transportation and Facilities</b>	<b>EMD (n=2)</b>	NEMD-1	Key Questions asked	2019
		NEMD-2	Pre-Arrival Instructions	2019
	<b>Helicopter Utilization (n=5)</b>	NHEL-1	Overall helicopter utilization	2014
		NHEL-2	Transport by Air Ambulance	2014
		NHEL-3	Transport by ALS Rescue	2014
		NHEL-4	Utilization of ALS Air Rescue (non-transport)	2014
NHEL-5	Utilization of BLS Air Rescue (non-transport)	2014		
<b>G Public Education</b>	<b>Bystander CPR/AED (n=2)</b>	NPUB-1	Out-of-hospital cardiac arrests receiving bystander (non-EMS personnel/responder) CPR	2014
		NPUB-2	Out-of-hospital cardiac arrests receiving bystander use of public access AED	2014
<b>H Risk Management</b>	<b>Against Medical Advice (n=1)</b>	NAMA-1	% of all 9-1-1 calls that result in the patient refusing medical treatment and/or transport against medical advice	2015

# EVALUATION OF EMS SYSTEM INDICATORS

## Current Status of EMS System

### Personnel

Napa County EMS has established policies related to the initial certification, re-certification, and accreditation of EMT, paramedic, and dispatch personnel in Napa County. Additional requirements for EMS personnel are included in provider contracts, including requirements for Advanced Cardiac Life Support (ACLS) or equivalent, Pediatric Advanced Life Support (PALS) or equivalent, and Prehospital Trauma Life Support (PHTLS) or equivalent.

EMTs, paramedics and dispatchers are required to stay current and knowledgeable regarding the policies and procedures of Napa County EMS. This is accomplished via the provider agencies holding treatment guideline and policy update classes during the fourth quarter of each year. Napa County EMS assists with this process by developing training tools and hosting a train-the-trainer session each year on the new guidelines and procedures.

Prehospital personnel performance issues are primarily addressed at the employer level. However, if an incident involves a potential threat to public health and safety, or if the incident involves the potential for patient harm, the incident must be reported to the Napa County EMS Agency. The Napa County EMS Agency established an EMS Event Reporting policy to replace both the Quality Improvement and Unusual Occurrence policy. The policy is attached as Appendix B of this document and addresses the process for providing feedback and input regarding the EMS system.

### Equipment and Supplies

The Napa County EMS Agency has established minimum equipment requirements for ALS ambulances and first response vehicles and BLS ambulances and first response vehicles. These requirements can be found in Administrative Policy-401.

The minimum equipment requirements are reviewed no less than once annually. Provider agencies are invited to provide feedback regarding minimum equipment requirements.

### Documentation

Napa County EMS providers are currently using several different software vendors for electronic patient care reporting. These vendors include, but are not limited to: MEDS, Zoll, ESO, and Emergency Reporting. The Napa County EMS Agency has implemented ImageTrend as a data repository. All Napa County EMS Providers are expected to be integrated into this repository by early 2020. This repository is essential to enhancing our robust quality improvement program. Additionally, we have acquired a Tableau license for data analytics to complement our data repository.

### **Clinical Care and Patient Outcome**

Clinical care in Napa County is guided prospectively by treatment guidelines. This effort is led by the Medical Advisory Committee (MAC), a group made up of the Napa EMS Agency Medical Director and interested personnel from provider agencies and hospitals. Napa County currently uses a smartphone app and its webpage for distribution of policy and treatment guideline updates. Both the smartphone application and webpage can be updated anytime there is a policy or treatment guideline change. Changes to existing or the establishment of new policies and treatment guidelines is usually done effective January 1<sup>st</sup> of each year when possible. The Napa County EMS Agency uses a public comment process prior to deploying planned/non-urgent treatment guideline changes.

Napa County EMS currently has Trauma, STEMI, Stroke, and Cardiac Arrest systems of care in place. The Napa County EMS system recently hired an additional full-time EMS Specialist to replace the contracted Systems of Care Coordinator. Our new EMS Specialist oversees all systems of care with the EMS Medical Director, and is working to develop an Emergency Medical Services for Children Program compliant with state regulation.

### **Skills Maintenance/Competency**

Regular skills maintenance and competency verification is conducted by provider agencies throughout the Napa County EMS system. These skills competencies include review of infrequent skills, local optional scope of practice (LOSOP) skills, and any trial study skills that may be occurring in the EMS system. In 2018, Napa County EMS began working to improve endotracheal intubation success rates through the establishment of additional training requirements. In 2019, the Napa County EMS Agency continued this work through collaboration with ALS providers by establishing an “Airway Workgroup.” A design thinking process was used to address intubation challenges and airway management as a whole. This workgroup of dedicated clinicians produced several policy changes that will go into effect January 1<sup>st</sup> 2020. As a requirement for continuous accreditation, Napa County Paramedics are required to perform three successful simulated endotracheal intubations bi-annually.

### **Transportation/Facilities**

Napa County has a total of 2 prehospital receiving centers; both are STEMI receiving centers, and one is also a Base Hospital, Trauma, and Stroke receiving center.

9-1-1 callers receive at least both an ALS first responder (via fire department or AMR Quick Response Vehicle) in most areas of the county. American Medical Response provides all ALS transport services either directly or through a sub-contracted ambulance provider. Currently, The California Highway Patrol ALS Air Rescue program and REACH Air Ambulance Services are located at the Napa County Airport. Other ALS helicopters regularly respond to calls in Napa County, including neighboring REACH and CalSTAR programs.

ALS interfacility transports are handled by American Medical Response under their county-wide EOA and through their current agreement with Napa County. All ground BLS and CCT level calls are serviced by one of six different non-emergency providers.

### **Public Education and Prevention**

The Napa County EMS system is fortunate to have many providers dedicated to public education and prevention. The Emergency Medical Care Committee (EMCC) has established the sub-committee Public Information and Education (PIE) that focuses on providing information and education about EMS to the public. The EMS system also benefits from several fire departments, local ambulance providers, and hospitals that routinely provide critical public information and education from hands only CPR to “Every 15 Minutes” programs.

Significant efforts have been made to improve public education through the PIE group. This education includes the use of PulsePoint, Hands-only CPR, and “Know the Signs”.

### **Risk Management**

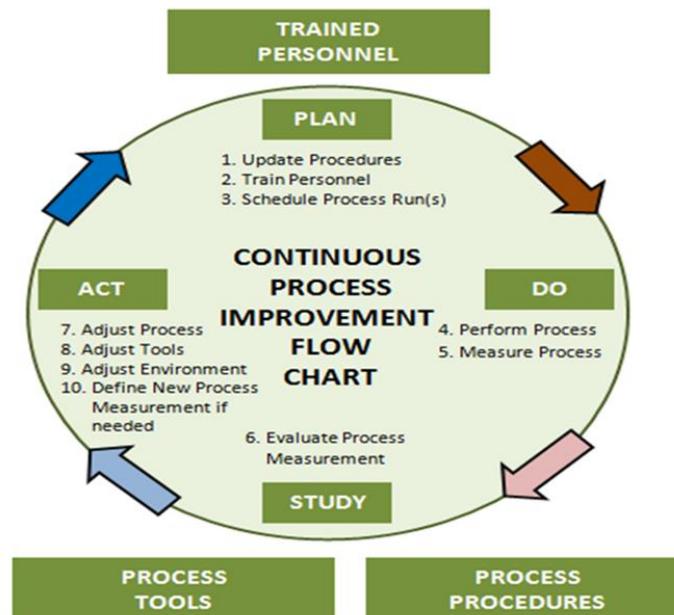
The Napa County EMS Agency fully investigates all complaints and issues regarding patient care or on-scene communications issues that are brought to their attention. These incident reviews are tracked and recorded and kept in a secure file. All incident reviews are protected from disclosure by the California Evidence Code 1157 and 1157.7. During annual inspection of each provider in Napa County, records are reviewed to ensure compliance with all federal, state, and local ordinances, laws, regulations, and policies.

No less than once annually, the Napa County EMS Agency inspects the records, equipment, personnel standards at all provider agencies in the County. These inspections include a thorough inspection of each ambulance for compliance with the Napa County Equipment and Supply Standard policy.

## ACTION TO IMPROVE

CQI is a dynamic process that provides critical feedback and performance data on the EMS system based on defined indicators that reflect standards in the community, state and the nation. The Napa County CQI Committee follows the Plan, Do, Study, Act (PDSA) Cycle for all improvements in the EMS system

1. Plan
  - a. What is the objective?
  - b. Questions and predictions
  - c. Plan to carry out the cycle (who, what where, when?)
  - d. Plan for data collection
2. Do
  - a. Carry out the plan
  - b. Document problems and unexpected observations
  - c. Begin analysis of the data
3. Study
  - a. Complete the analysis of the data
  - b. Compare data to predictions
  - c. Summarize what was learned
4. Act
  - a. What changes are to be made?
  - b. What is the next cycle?



# TRAINING AND EDUCATION

## Educational Process

Training and CQI go hand in hand. As the CQI model identifies trends and quantifies issues in the EMS system, the provider QI coordinators incorporate training programs directed at correcting opportunities identified in the CQI process.

Currently, required education is provided by providers and base hospitals, and consists of:

- Basic Cardiac Life Support (BCLS)
- Advanced Cardiac Life Support (ACLS)
- Pediatric Advanced Life Support (PALS)
- Prehospital Trauma Life Support (PHTLS) or International Trauma Life Support (ITLS)
- Annual Protocol and Policy Update

The EMS Medical Director performs case assessments and offers clinical feedback directly to field providers. Pre-hospital cases with a Stroke, STEMI, or Cardiac Arrest “Alert” are flagged for review. The focus of each case assessment is performance metrics unique to that system of care. Additionally, Cardiac Arrest feedback is accompanied by an annotated CPR Report providing an objective clinical summary of events. The Napa County EMS Agency aims to provide all feedback in a timely fashion in hopes of maximizing effectiveness. All Medical Director case assessment feedback forms are included in this document as Appendix E.

The Napa County EMS Agency recognizes the value of video based education as a training tool, and has collaborated with EMS system stakeholders to create several. Once viewed, they remain a resource to providers. Below are the videos currently available.

- Stroke Screening
  - With implementation of the Stroke System of Care, two additional screenings were included to capture posterior strokes including, “finger-to-nose,” and “visual fields” exam. This video explains brain pathophysiology, provides live skill demonstrations, and offers key takeaways consistent with county policy.
- CPR Reports
  - This offers step-by-step instructions on interpreting CPR Reports and clarifying expectations for transmitting cardiac arrest data.
- MIVT Trauma Reporting
  - To address a need identified by the Trauma Center, this video explains how to use a standardized reporting format for trauma patients during the initial notification and bedside report through a live demonstration.

## Annual Update

### Napa County Annual Report

The Napa County EMS Agency Medical Director will evaluate the QI Program with the EMS CQI Committee at least once annually. This group will be tasked with ensuring that the QI Plan is in alignment with the County's strategic goals, and will review the plan to identify what did and did not work. From this evaluation, an Annual Update will be provided that includes the following information:

1. Description of agency
2. Statement of EMS QI Program goals and objectives
3. List and define indicators utilized during the reporting year
  - a. Define state and local indicators
  - b. Define methods to retrieve data from receiving hospitals regarding patient diagnoses and disposition
  - c. Audit critical skills
  - d. Identify issues for further system consideration
  - e. Identify trending issues
  - f. Create improvement action plans (what was done and what needs to be done)
  - g. Describe issues that were resolved
  - h. List opportunities for improvement and plans for next review cycle
  - i. Describe continuing education and skill training provided as a result of Performance Improvement Plans
  - j. Describe any revision of in-house policies
  - k. Report to constituent groups
  - l. Describe next year's work plan based on the results of the reporting year's indicator review

# **Appendix A: Napa County EMS Quality Improvement (QI) Program Policy**



# EMS Quality Improvement Program

EMS ADMINISTRATION 603

<b>PURPOSE</b>	<p>I. This policy identifies the primary responsibilities of all participants in the Napa County EMS Quality Improvement Program (EQIP) and to ensure optimal quality of care for all patients who access the EMS system.</p>
<b>POLICY</b>	<p><b>I. REQUIREMENTS</b></p> <ul style="list-style-type: none"> <li>A. EQIP includes all Napa County EMS provider agencies participating in patient care and delivery.</li> <li>B. EQIP shall be compliant with the California Code of Regulations, Title XXII, Division 9, Chapter 12 and modeled after the State of California Emergency Medical Services Authority (EMSA) Publication: Emergency Medical Services System QI Program Model Guidelines.</li> <li>C. The oversight for EQIP will be the responsibility of the Napa County EMS Agency Medical Director, who will solicit input from stakeholders participating in the Prehospital Quality Improvement (QI) Committee.</li> <li>D. All proceedings, documents and discussions of the Prehospital QI Committee are confidential pursuant to section 1157.7 of the Evidence Code of the State of California.             <ul style="list-style-type: none"> <li>1. Each member of the Prehospital QI Committee shall sign a confidentially agreement.</li> <li>2. Each agency shall maintain all records in a confidential manner consistent with current patient privacy laws (HIPAA).</li> </ul> </li> <li>E. Appropriate QI indicators shall be reviewed at the EMS provider agency level on a monthly basis and a report of findings shall be made to the Napa County EMS Agency at agreed upon intervals. Aggregate data for the EMS System will be maintained by the Napa County EMS Agency and reported quarterly to all system stakeholders.</li> <li>F. Each provider agency shall submit an annual report of QI activities to the Napa County EMS Agency.</li> </ul>

# **Appendix B: Napa County EMS Event Reporting Policy**



<b>PURPOSE</b>	<p>I. To establish a system of patient safety and EMS response-related reporting requirements for the purposes of review, data analysis, patient safety and EMS system performance</p> <p>II. To define reporting requirements for events which may have the potential to cause community concern or represent a threat to public health and safety</p> <p>III. To define the reporting and monitoring responsibilities of all EMS system participants</p> <p>IV. To recognize exemplary prehospital care in the EMS system.</p>
<b>POLICY</b>	<p><b>I. REPORTING RESPONSIBILITY</b></p> <p>A. The reporting requirements established by this policy apply to prehospital care providers, EMS service providers, EMD centers, and hospitals.</p> <p>B. Providers shall directly report to the Napa County EMS Agency any event that is "required to be reported" by this policy.</p> <p><b>II. REPORTING REQUIREMENTS</b></p> <p>A. The following events shall be submitted to the Napa County EMS Agency on the <a href="#">Napa County EMS Event Reporting Form</a> within twenty-four (24) hours of the incident.</p> <ol style="list-style-type: none"> <li>1. Any event that has resulted in or has the potential to lead to an adverse patient outcome.</li> <li>2. Any deviation from a Napa County EMS Agency policy or protocol that resulted in patient harm, had the potential to result in harm or had a potential threat to public safety;</li> <li>3. Medication, treatment or clinical errors that resulted in patient harm, had the potential to result in harm or had a potential threat to public safety;</li> <li>4. Equipment failure or malfunction that resulted in patient harm, had the potential to result in harm or had a potential threat to public safety;</li> <li>5. Technology or communications systems errors or malfunctions that resulted in patient harm, had the potential to result in harm or had a potential threat to public safety;</li> <li>6. The collision of any ambulance or EMS response vehicle that results in injury;</li> <li>7. Any unusual event/occurrence (e.g. MCI, abnormal patient condition, Base Hospital communication failure);</li> <li>8. Any event or circumstance that is or shall be reported to another regulatory or enforcement agency, including but not limited to the California Emergency Medical Services Authority (EMSA), Napa County Public Health or California Department of Public Health (CDPH), or the Centers for Disease Control and Prevention (CDC).</li> </ol> <p>B. Timely reporting of the following types of events is strongly encouraged:</p> <ol style="list-style-type: none"> <li>1. Exemplary care in the field deserving of recognition and/or commendation.</li> <li>2. Great Catches: A "great catch" includes recognition of provider action that contributes to the prevention of negative or adverse patient outcomes.</li> <li>3. Any event in which the provider agency determines a case review would be beneficial (e.g. educational component; unusual/abnormal component).</li> </ol>

# Appendix C: Napa County EMS Event Reporting Form



### EMS EVENT REPORTING FORM

*CONFIDENTIAL*

Exemplary EMS Care <input type="checkbox"/>	Clinical Issue <input type="checkbox"/>	Operational Issue <input type="checkbox"/>
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Date: <input type="text"/>	Time: <input type="text"/>	Reporting Agency: <input type="text"/>	
On Scene <input type="checkbox"/>	Enroute <input type="checkbox"/>	At Hospital <input type="checkbox"/>	Other <input type="checkbox"/>

Event Number:

Personnel Involved	Agency	Discussed with Individual	
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<input type="text"/>	<input type="text"/>	Yes <input type="checkbox"/>	No <input type="checkbox"/>

**Reporting Party Information**

Signature:  Date:

Print Name:  Agency Name:

**Key Issue(s)**

**Provider Agency's Account of Incident**

**Initial:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Action Taken by Provider Agency**

**Initial:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**EMS Agency's Final Resolution**

Agree with action taken.

Additional action needed. Comments below.

**Initial:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# **Appendix D: Napa County EMS Continuous Quality Improvement (CQI) Committee Policy**



# Continuous Quality Improvement Committee

EMS ADMINISTRATION 606

<b>PURPOSE</b>	<p>I. To establish an advisory committee to the respective medical control committees and the Napa County EMS Agency to monitor, evaluate and report on the quality of out of hospital care.</p> <p>II. This committee will not address individual performance or practice issues.</p>
<b>POLICY</b>	<p><b>I. OBJECTIVES</b></p> <ul style="list-style-type: none"> <li>A. Delineate/evaluate scope of care including policies and treatment guidelines.</li> <li>B. Set up criteria for identifying potential system problems before patient care is compromised.</li> <li>C. Identify concurrent system problems involving patient care.</li> <li>D. Develop and recommend to the medical control committees criteria for correcting potential or real problems.</li> <li>E. Monitor effectiveness of corrective action strategies through re-audit activities.</li> <li>F. It shall not be the function of this committee to become directly involved in the certification review process of any specific individual as the authority lies with the State EMS Authority or the Napa County EMS medical director or designee (Division 2.5, Section 1798.200 of the Health and Safety Code).</li> </ul> <p><b>II. CONFIDENTIALITY</b></p> <ul style="list-style-type: none"> <li>A. All proceedings, documents, and discussions of the County CQI Committee are confidential and are covered under sections 1040, 1157.5 and 1157.7 of the Evidence Code of the State of California. All members shall sign a confidentiality agreement not to divulge or discuss information that has been obtained through County CQI Committee membership.</li> </ul> <p><b>III. MEMBERSHIP GUIDELINES</b></p> <ul style="list-style-type: none"> <li>A. Membership will be assigned from each provider agency or hospital.</li> <li>B. Each committee member shall be active in quality improvement (QI) within their agency or hospital.</li> </ul> <p><b>IV. MEMBERSHIP COMPRISAL</b></p> <ul style="list-style-type: none"> <li>A. Membership shall consist of the following:             <ul style="list-style-type: none"> <li>1. EMS Agency:                 <ul style="list-style-type: none"> <li>a. Medical director.</li> <li>b. Staff member(s).</li> </ul> </li> <li>2. BLS First Responder Provider(s):                 <ul style="list-style-type: none"> <li>a. One (1) representative (PLO or designee) from each provider agency.</li> </ul> </li> <li>3. ALS First Responder Provider(s):                 <ul style="list-style-type: none"> <li>a. One (1) representative (PLO or designee) from each provider agency.</li> </ul> </li> <li>4. ALS Ground Ambulance Provider(s):</li> </ul> </li> </ul>

- a. One (1) representative (PLO or designee) from each provider agency.
- 5. Angwin Community Ambulance (ACA).
- 6. Base Hospital (Queen of the Valley Medical Center – QVMC):
  - a. One (1) representative (PLN or designee).
- 7. Helicopter Providers:
  - a. One (1) representative from each helicopter provider.
- 8. Receiving Hospital(s):
  - a. One (1) representative from each facility.
- 9. Dispatch:
  - a. One (1) representative from each EMS dispatch center.

#### V. SCOPE OF REVIEW

- A. Delineate/evaluate scope of care including policies and treatment guidelines.
  - 1. Take an inventory of the most common types of patients served, diagnoses and conditions treated, treatments and activities performed and types of practitioners providing care. This helps assure all aspects of care provided are considered during the evaluation process.
  - 2. This inventory provides a basis for subsequent steps in the monitoring and evaluation process by helping assure that all aspects of the care provided are considered.
  - 3. Utilization statistics collected at the EMS Agency, Dispatch, each facility and EMS provider agency, will help in determining high volume important activities.
  - 4. Identify special cases that may serve to educate or allow the system to develop future contingency plans or changes in policies and/or guidelines.

#### VI. SENTINEL INDICATORS

- A. The following are examples of indicators that may be used on a rotational basis to track trends in out of hospital care:
  - 1. High volume areas-the aspect of care that occurs frequently or affects a large number of patients (e.g., chest pain, dyspnea, seizures).
  - 2. High-risk areas-patients that are at risk for serious consequences or are deprived of substantial benefit if the care is not provided correctly (e.g. STEMI, RAS/AMA, local optional scope of practice [LOSOP] items, SCA management, etc.).
  - 3. The aspect of care has tended to produce problems for prehospital personnel or patients (e.g., MCIs, pediatric patients).
  - 4. Deviations from standards of care (e.g., treatment/procedure variation).
  - 5. Transportation issues (e.g., non-transports, helicopter utilizations, code three (3) transports).
  - 6. Appropriateness of protocol/treatment guideline adherence to specific criteria for a condition or procedure.
  - 7. Adverse patient outcomes-unexpected events.
  - 8. Threshold indicators-from statistical data.

# **Appendix E: Medical Director Case Assessment Feedback Forms**

## Medical Director Case Assessment-Stroke

Call Number: [REDACTED]

Date sent to medics: [REDACTED]

### Best Practices:

	Case	Goal
Stroke screen done and documented:	[REDACTED]	<i>CPSS, visual fields, FNF documented</i>
Stroke alert called:	[REDACTED]	
BS done:	[REDACTED]	
Last Known Well documented:	[REDACTED]	<i>Documented in clock time</i>

### Comments for the case:

**Medical Director Case Assessment-STEMI Case**

Call Number: [Redacted]

Date sent to medics: [Redacted]

**Best Practices:**

	Case	Goal
ECG done	[Redacted]	Within 10 min on scene
Aspirin given by EMS or prior to arrival: If not, why documented:	[Redacted]	Always given, either by EMS or prior to arrival. If not, valid reason why not
ECG transmitted to hospital:	[Redacted]	Always
STEMI alert made:	[Redacted]	Within 10 min of ECG showing STEMI

**Comments for the case:**

### Medical Director Case Assessment-SCA

Call Number:	
Date sent to medics:	

**Best Practices:**

Measure	Goal
Compression fraction:	<i>80-100%</i>
Pre-shock pause	Longest:
	Average:
Post-shock pause	Longest:
	Average:
Longest Pause:	<i>&lt;10 seconds</i>
Number of pauses >10 seconds	
12-lead obtained after ROSC	

**Comments for the case:**