

Napa Fire Department
Emergency Medical Services
Quality Improvement Plan (EQIP)



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INTRODUCTION

The Napa Fire Department (NFD) provides primary first-response advanced life support (ALS) within the City limits of Napa and by agreement to automatic aid areas to the Napa County Fire Department. As an ALS provider within the Napa County Emergency Medical Services Agency (NCEMSA) system, the NFD is committed to active participation in the continuous quality improvement (CQI) program established by NCEMSA. The NFD is responsible for conducting internal CQI activities by analyzing processes, structures, and outcomes in key areas in compliance with the identified State of California Core Measures. This CQI plan describes how the NFD, as part of a team comprised of other ALS providers, receiving hospitals, and Napa Central Dispatch develops the processes utilized for evaluating and improving the quality of prehospital care in the City of Napa and ensures that the delivery of emergency medical services is consistent with the NFD mission and values statement.

MISSION

“Always here, always ready, serving you
with pride and excellence”

VALUES

Responsibility
Professionalism
Integrity
Competence
Knowledge
Service

NAPA FIRE DEPARTMENT CQI PLAN PURPOSE

The purpose of the Napa Fire Department CQI plan is to develop a system for evaluating the delivery of ALS care in the City of Napa.

In addition to the evaluation and reporting of key indicators as required by the NCEMSA, the NFD employs an internal process that evaluates medical responses and provides feedback on cases in which controlled substances were administered and cases of chest pain of suspected origin.

The NFD EMS Captain is the staff member assigned quality assurance/improvement activities in the Department. The EMS Captain also represents the Department at the EMS CQI, EMS Coordinators, MAC and other committees as required.

The NFD EQIP has been written in accordance with the California Emergency Medical Services System Quality Improvement Program Model Guideline (Rev. 3/04).

SECTION I ORGANIZATIONAL DESCRIPTION

The NFD EMS Captain has primary responsibility for the quality improvement activities within the Department. The EMS Captain works in cooperation with the Fire Chief, Operations Division Chief and Battalion Chiefs in the performance of his/her duties. Responsibilities of the EMS Captain, include, but are not limited to:

- Review/perform CQI audit of EMS calls
- Attend NCEMSA required meetings
- Develop and deliver training plans to meet requirements outlined by the State or Local EMS Agency
- Act as liaison with other allied EMS system providers
- Incorporate the PDSA improvement cycle into the NFD EQIP
- Provide recommendations for provider training and remediation as required
- Participate in the selection and development of NCEMSA quality improvement indicators

Primary Healthcare Services/Processes and Associated Standards and Requirements

The NFD is the primary patient care provider for medical incidents within the City limits of Napa. As an ALS provider since 1978 in Napa County, the NFD meets or exceeds established standards in the following areas:

- Dispatch
- Equipment and Supplies
- Communications
- Disaster Preparedness
- System Committee Participation
- Community Education/Prevention
- Receiving Facility Relations
- Safety and Infection Control
- CQI Program
- Inquiries and Complaints
- Reporting Responsibilities

Organizational Goals and Objectives

- Provide orientation to the NCEMSA to new personnel
- Ensure personnel meet NCEMSA training requirements (skill competencies)
- Develop and assist CQI program participants in the development of performance indicators
- Coordinate the provision of, or directly provide the necessary training for implementation of new procedures
- Review and revise internal procedures as required
- Communicate to other allied EMS system participants the predetermined relevant systems information and statistics
- Provide a central information center for educational activities
- Educate and counsel personnel who do not meet established thresholds
- Recognize, reward and reinforce the positive position of prehospital care

SECTION II DATA COLLECTION AND REPORTING

A. List of Indicators

The NFD provides the NCEMSA with performance indicator data on a regular basis. Data is collected, reviewed, and analyzed by the EMS Captain in conjunction with representatives of other Napa County EMS system participants. The indicators are chosen from the following data collection and reporting categories to determine those elements to be included in the Napa County Indicator Report Card:

1. Personnel
2. Equipment and Supplies
3. Documentation
4. Clinical Care and Patient Outcomes
5. Skills Maintenance/Competency
6. Transportation/Facilities
7. Public Education and Prevention
8. Risk Management

Indicators may be added during the calendar year based upon trend analysis or opportunities for improvement that present through the quality improvement process.

B. Indicator Selection Process

Indicators utilized by the NFD are consistent with the California Core Measures (6th Ed., EMSA #166) as identified below:

CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME
D Clinical Care and Patient Outcome	Trauma (n=2)	TRA-1	Scene time for trauma patients
		TRA-2	Patients meeting CDC Step 1 or 2 or 3 criteria originating from a 911 request who were transported to a trauma center
		TRA-3	Measurement of patients with a pain scale value present
		TRA-4	Measurement of patients with two or more pain scale values present

		TRA-5	Measurement of patients with a decrease in their pain scale compared to initial pain scale
Acute Coronary Syndrome (n=4)		ACS-1	Aspirin administration for chest pain/discomfort
		ACS-2	12-lead ECG performance
		ACS-3	Scene time for suspected heart attack patients
		ACS-4	Advance hospital notification for suspected STEMI patients
		ACS-5	Direct transport to PCI Center for suspected ACS patients meeting criteria
		ACS-6	Time to EKG
	Stroke (n=3)		HYP-1
		STR-1	Suspected Stroke Patient Receiving Prehospital Screening
		STR-2	Glucose testing for suspected stroke patients
		STR-4	Advance hospital notification for suspected stroke patients

In addition, the NFD performs 100% chart audit on the following call types using the evaluation instruments:

- Administration of controlled substance (Fentanyl/Midazolam)
- Patients treated under SACS Protocol
- Patients treated under Pain Management AP-13 (NCEMSA)
- AMA/RAS

C. Internal Data Collection

The NFD collects internal data from its records management system ESO and from the results of internal CQI activities. The NFD EMS Captain uses the NFD CQI Audit Form (Appendix A) as the core of its CQI activities and any identified categories not meeting the standard are then tracked in ESO where feedback is given directly to the individual.

The NFD Controlled Substance Review form (Appendix B) is used by the EMS Captain as the basis for review of all incidents in which a controlled substance is administered. Any sub-standard review results in a completed review form, which is sent to the paramedic and the paramedic's company officer for review and any follow-up as needed.

In addition, the NFD SACS CQI Review form (Appendix C) is used by the EMS Captain as the basis for reviews of all incidents in which the primary impression of cardiac chest pain or NCEMSA Policy # C-09 Suspected Acute Coronary Syndrome is used.

Next, the NFD reviews all CodeSTAT reports with responders to identify areas for improvement and discuss responder performance on cardiac arrest calls. The areas reviewed during a CodeSTAT include but are not limited to:

- Compression Ratio
- Compression Rate
- Initial rhythm
- Discussion to identify cause and origin for any pause in CPR greater than ten (> 10) seconds
- Evaluation of pre and post shock CPR pauses

Lastly, the Department EMS Captain uses the Cardiac Arrest Post Event Analysis (CAPEA) form to provide more feedback to personnel regarding performance during SCA resuscitations. The form utilizes color coded indicators: green for success; yellow for performance of treatment, but failure to achieve established standard; red for failure to perform the skill/treatment. The standards evaluated are developed based on NCEMSA Treatment Guidelines or on trends identified during the cardiac arrest review process.

SECTION III EVALUATION OF INDICATORS

The NFD EMS Captain collects and analyzes performance indicator data each quarter in cooperation with other Napa County EMS System participants. The results of this evaluation process are presented at the Napa County CQI Committee meeting.

In addition to evaluating indicators that can be quantified in control charts, the NFD also routinely presents issues to the Napa County CQI Committee for discussion based upon individual chart reviews conducted by the NFD EMS Captain. These chart reviews are selected and presented to provide an opportunity to review performance data for trends in skills competency and to identify training needs.

Personnel

NFD personnel maintain accreditation status as outlined in NCEMSA policies and procedures. Additional requirements for ALS personnel include requirements for Advanced Cardiac Life Support (ACLS) or equivalent, Pediatric Advanced Life Support (PALS) or equivalent, and Prehospital Trauma Life Support (PHTLS) or equivalent.

NFD personnel stay current and knowledgeable regarding the policies and procedures of the NCEMSA via training provided by the Department regarding treatment guideline and policy update classes during the fourth quarter of each year. NCEMSA assists providers by developing training tools and hosting a train-the-trainer session each year on the new guidelines and procedures.

Equipment and Supplies

All NFD apparatus are equipped in accordance with NCEMSA Administrative Policy #4004.

Documentation

The NFD now utilizes ESO electronic PCR documentation program for all medical responses and a printed version is left in the patient's file at the receiving hospital upon completion. Data is automatically imported into to a NFIRS version within the same operating program, eliminating the past duplication of work. This data can also be formatted into required reports using the AD-HOC reporting program within ESO itself.

In case of failure of electronic devices or the cellular network, then the NFD resorts back to the previous practice of utilizing paper 'Field Care Notes' (Appendix D) for each medical response and copies of the completed 'Field Care Notes' are left in the patient's file at the receiving hospital. Personnel then enter patient care and key indicator data in the ESO program upon returning to quarters.

Clinical Care and Patient Outcome

The basis of NFD quality assurance activities is to ensure complete compliance with all NCEMSA policies and procedures. Discrepancies are addressed directly with the involved personnel by the NFD EMS Captain.

Transportation/Facilities

All transports are performed in partnership with the Napa County EMS Agency exclusive ambulance provider. The current contract provider is American Medical Response (AMR).

Public Education and Prevention

The NFD actively participates as a member of the Napa County Emergency Medical Care Committee sub-committee Public Information and Education (PIE). This committee focuses on providing information and education about EMS to the public. The NFD actively leads the Hands-Only CPR (HOCPR) initiative in the City of Napa through direct provision of HOCPR training to high school freshmen, encouraging local business challenges and sponsoring HOCPR events throughout the City as examples of NFD efforts.

Risk Management

The NFD 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. The NFD cooperates with the NCEMSA during its annual inspection of each provider in Napa County, in which records are reviewed to ensure compliance with all federal, state, and local ordinances, laws, regulations, and policies.

SECTION IV EMS OPPORTUNITY 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 NFD complies with the NCEMSA and 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

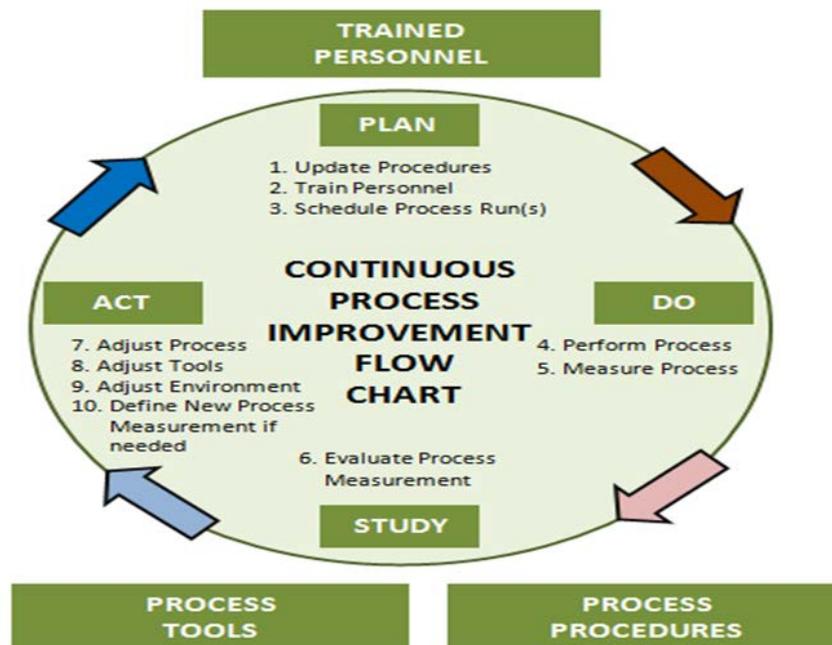
Educational Process

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, NFD assists personnel in obtaining the required training, 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))
- Endotracheal Intubation training utilizing direct laryngoscopy and video laryngoscopy on a quarterly basis or as required by NCEMSA Policy
- Annual Protocol and Policy Update

Once a Performance Improvement Plan has been implemented, the NFD will standardize the changes within the appropriate policies and protocols.



SECTION V ANNUAL UPDATE

Napa County Annual Report

The NFD and its Command Staff will evaluate the QI Program at least annually. This group will be tasked with ensuring that the QI Plan is in alignment with NCEMSA'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 provider specific indicators
 - c. Define methods to retrieve data from receiving hospitals regarding patient diagnoses and disposition
 - d. Audit critical skills
 - e. Identify issues for further system consideration
 - f. Identify trending issues
 - g. Create improvement action plans (what was done and what needs to be done)
 - h. Describe issues that were resolved
 - i. List opportunities for improvement and plans for next review cycle
 - j. Describe continuing education and skill training provided as a result of Performance Improvement Plans
 - k. Describe any revision of in-house policies
 - l. Report to constituent groups
 - m. Describe next year's work plan based on the results of the reporting year's indicator review
4. Sample Work Plan Template

Indicators Monitored	Key Findings / Priority Issues Identified	Improvement Action Plan / Plans for further action	Were goals met? Is follow-up needed?

Appendix A

NAPA FIRE DEPARTMENT CQI AUDIT FORM					
Call Date:					Incident #:
Review Date:					
<input type="checkbox"/> Medical		<input type="checkbox"/> Trauma		<input type="checkbox"/> Pedi	
				AMA <input type="checkbox"/>	
				Yes	No
				N/A	I/C
					Comments
History/Physical					
1. Patient: Age, Weight, Sex?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Chief Complaint documented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Mechanism of Injury documented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. History adequate for chief complaint?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Past medical hx, meds, allergies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Vital signs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Blood pressures per policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. ETCO2 readings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Complete assessment - skins, pupils, cap refill?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Is the patient assessment focused on chief complaint?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Treatment Procedures and Response to Treatment					
11. Care transferred to AMR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Truck 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kaiser Vallejo Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BLS - QVH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
NCFD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Response to treatment documented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Procedure(s) documented in flow chart?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. Was pain relief provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nitroglycerin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fentanyl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Is treatment appropriate for chief complaint or patient condition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Overall Evaluation					
16. Is AMA/RAS consistent with NCEMSA 7005?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. Is narrative adequately descriptive of events, history of present illness and treatments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18. Correct terminology, abbreviations & spelling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19. Was care rendered timely?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20. Were neuro evaluations completed before and after spinal precautions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21. Care consistent with protocols and policies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recommended Actions					
<input type="checkbox"/> No action necessary					
<input type="checkbox"/> Other:					
Additional Comments					

Appendix B

CITY OF NAPA FIRE DEPARTMENT						
EMS Continuous Quality Improvement						
Meets CQI Standard	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Controlled Substance CQI Review						
Date of Incident						
Fire Department Incident #						
Patient Paramedic						
Patient Assessment						
			Finding			
Chief Complaint Identified	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Clear description of events	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
10 Pain scale documented	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>	N/A	<input type="checkbox"/>
10 Pain scale on reassessment	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>	N/A	<input type="checkbox"/>
Oxygen saturation indicated	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Initial Vital Signs	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Treatment & Reassessment						
			Finding			
Protocol correctly documented	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Controlled substance given	Fentanyl	<input type="checkbox"/>				
	Versed	<input type="checkbox"/>				
	Tylenol (IV)	<input type="checkbox"/>				
Vital signs following procedure	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Response to medication documented	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Patient met criteria for medication	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Fentanyl administered within 20 min.	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>	N/A	<input type="checkbox"/>
Documented change in patient status	YES	<input type="checkbox"/>	NO	<input type="checkbox"/>		
Other comments:						
Good documentation.						

Appendix C

CITY OF NAPA FIRE DEPARTMENT					
EMS Continuous Quality Improvement					
Meets CQI Standard		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
SACS CQI Review					
Date of Incident					
Fire Department Incident #					
Radio Paramedic					
Patient Paramedic					
Patient Assessment					
			Finding		
Chief Complaint Identified		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Clear description of events		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
10 Pain scale used		YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
10 Pain scale on reassessment		YES <input type="checkbox"/>	NO <input type="checkbox"/>	N/A <input type="checkbox"/>	
Initial Vital Signs		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Treatment & Reassessment					
			Finding		
SACS Protocol correctly documented		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Asprin given		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Nitroglycerin given		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
IV Established		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
12-lead EKG performed		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Vital signs following nitroglycerin		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Response to medication documented		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Patient met criteria for medication		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Documented change in patient status		YES <input type="checkbox"/>	NO <input type="checkbox"/>		
Other comments:					

Appendix E



Cardiac Arrest Post Event Analysis

Date of call: _____ Incident Number: _____

Personnel: _____

Date review sent to crew: _____

Review of SCA best practices:

- Compression Fraction > 80%**
- Compression Rate 100-110**
- Less than 3 CPR pauses > 10 sec**
- Pre and Post Shock Pauses < 10 sec**
- Post ROSC 12-lead**
- Therapeutic Hypothermia N/A**
- First ETCO² within 3 minutes**

I (We) have reviewed this call:

