

EMS SYSTEM QI OVERVIEW

SAN DIEGO COUNTY EMS





I. State Regulations for EMS System Quality Improvement

II. Local Policies for EMS System Quality Improvement

- S-004: EMS System Quality Improvement
- S-409: Reporting of Issues in Patient Care Management
- S-006: Prehospital Audit Committee

III. EMS Quality Improvement System

- Components
- Process
- Outcomes
- Future Changes

OUTLINE

STATE REGULATIONS FOR EMS SYSTEM QUALITY IMPROVEMENT

EMSA has the following regulations under Title 22, Division 9, Chapter 12 – EMS System Quality Improvement:

§ 100404. Local EMS Agency

- The local EMS agency shall:
 - 1) Develop and implement, in cooperation with other EMS system participants, a system-wide written EMS QI program.
 - 2) Review system-wide EMS QI Program annually for appropriateness to the system and revise as needed.
 - 3) Develop, in cooperation with appropriate personnel/agencies, a performance improvement action plan when the EMS QI Program identifies a need for improvement.
 - 4) Provide the EMS Authority with an annual update, from date of approval and annually thereafter, on the local EMS Agency's EMS QI Program

STATE REGULATIONS FOR EMS SYSTEM QUALITY IMPROVEMENT

EMSA has the following regulations under Title 22, Division 9, Chapter 12 – EMS System Quality Improvement:

§ 100403. Paramedic Base Hospital and Alternate Base Station Responsibilities

- A paramedic base hospital and alternate base station shall:
 - 1) Develop and implement, in cooperation with other EMS system participants, a **hospital-specific** written EMS QI program.
 - 2) Review **hospital-specific** EMS QI Program annually for appropriateness to the **operation of the base hospital or alternative base station** and revise as needed.
 - 3) **Participate in the local EMS agency's EMS QI Program that may include making available mutually agreed upon relevant records for program monitoring and evaluation.**
 - 4) Develop, in cooperation with appropriate personnel/agencies, a performance improvement action plan when the **base hospital or alternative base station** EMS QI Program identifies a need for improvement.
 - 5) Provide the **local EMS agency** with an annual update, from date of approval and annually thereafter, on the **hospital** EMS QI Program.

STATE REGULATIONS FOR EMS SYSTEM QUALITY IMPROVEMENT

EMSA has the following regulations under Title 22, Division 9, Chapter 12 – EMS System Quality Improvement:

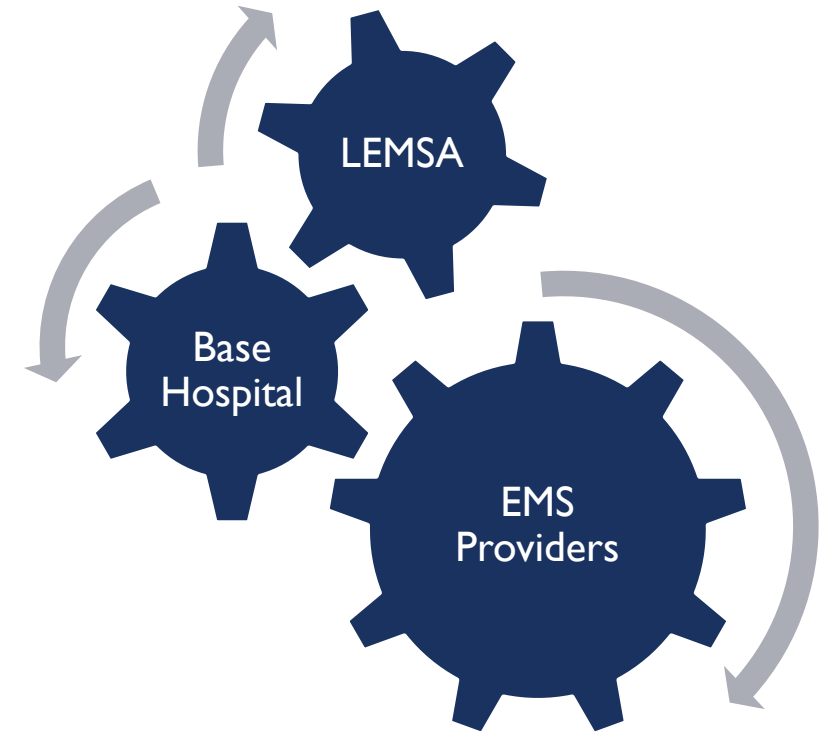
§ 100402. EMS Service Provider Responsibilities

- A paramedic base hospital and alternate base station shall:
 - 1) Develop and implement, in cooperation with other EMS system participants, a **provider-specific** written EMS QI program.
 - 2) Review **the provider-specific EMS QI Program** annually for appropriateness to the **operation of the EMS provider** and revise as needed.
 - 3) **Participate in the local EMS agency's EMS QI Program that may include making available mutually agreed upon relevant records for program monitoring and evaluation.**
 - 4) Develop, in cooperation with appropriate personnel/agencies, a performance improvement action plan when the EMS QI Program identifies a need for improvement.
 - 5) Provide the **local EMS agency** with an annual update, from date of approval and annually thereafter, on the **provider EMS QI Program**.

STATE REGULATIONS FOR EMS SYSTEM QUALITY IMPROVEMENT

The state regulations outline a collaborative process with shared responsibilities between the LEMSA, base hospitals, and EMS providers.

Each organization must be an active participant in the QI process to ensure system success. Along with the state regulations, we have local policies to reinforce this collaborative effort.




POLICY S-004 EMS SYSTEM QUALITY IMPROVEMENT

Policy S-004 reiterates state regulations and includes agreement requirements between base hospitals and EMS service providers.

Per agreements, base hospitals and EMS providers are required to:

- 1) Comply with all provisions in Title 22, Division 9
- 2) Comply with all local policies, procedures and protocols
- 3) Report significant issues in medical management to the LEMSA Medical Director
 - A. Incidents in which medications or treatments are provided which are outside approved treatment protocols shall be reported to the EMS QI Program through the Base Hospitals or Provider Agencies in a timely manner. These incidents will also be reported at the Prehospital Audit Committee (PAC).
 - B. Actions outside of the scope of prehospital personnel and actions or errors resulting in untoward patient effects, such as errors in the administration of medications, invasive procedures, defibrillation/cardioversion, or other patient treatments, shall be reported to the CoSD EMS Medical Director, within 48 hours.

 County of San Diego EMS A Division of San Diego County Fire	SYSTEMS	S-004
	EMS SYSTEM QUALITY IMPROVEMENT	
	Date: 1/1/2005	Page 1 of 3

PURPOSE

To identify primary responsibilities of all participants in the County of San Diego, Emergency Medical Services (CoSD EMS) system for achievement of optimal quality of prehospital care for patients who access the system.

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.204, 1797.220, 1798.1798.100, and 1798.102.

I. DEFINITION(S)

Emergency Medical Services Quality Improvement Program (EMS QI): Methods of evaluation that are composed of structure, process, and outcome evaluations that focuses on improvement effort to:

1. Identify root causes of problems
2. Intervene to reduce or eliminate these causes
3. Take steps to correct the problems
4. Recognize excellence in performance and delivery of care

II. POLICY

A. CoSD EMS shall:


1. Develop and implement, in cooperation with other EMS system participants, a system-wide written EMS QI plan.
2. Review the system EMS QI Program annually for appropriateness to the system and revise as needed.
3. Develop, in cooperation with appropriate personnel/agencies, a performance improvement action plan when the EMS QI Program identifies a need for improvement.
4. Provide the EMS Authority with an annual update of QI Program activities.

POLICY S-409 REPORTING OF ISSUES IN PATIENT CARE MGMT

Policy S-409 outlines the reporting responsibilities of EMS system participants by including a lot of the same language from Policy S-004; however, there are (3) important additions.

Per agreements, base hospitals and EMS providers are required to:

- 1) Report actions or behaviors that endanger the welfare of patients or adversely affects the public regard for prehospital emergency services.
- 2) Report CoSD EMS personnel or CoSD EMS provider agency trends indicating on-going frequency of errors, or non-compliance with established policies, protocols, or standards of patient care.
- 3) CoSD EMS prehospital personnel are expected to report significant issues in medical management of a patient to their agency, Base Hospital, and/or CoSD EMS Medical Director.

 County of San Diego EMS A Division of San Diego County Fire	MEDICAL CONTROL	S-409
	REPORTING OF ISSUES IN PATIENT CARE MANAGEMENT	
	Date: 7/1/2005	Page 1 of 2

PURPOSE

To establish the primary responsibilities of all participants in the County of San Diego, Emergency Medical Services (CoSD EMS) system for reporting to the CoSD EMS Medical Director issues of patient care management.

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.220 and 1798.102.

I. POLICY

A. CoSD EMS shall maintain agreements with Base Hospitals and CoSD EMS provider agencies requiring:

1. Reporting issues in medical management of patients to the CoSD EMS Medical Director including, but not limited to:
 - a. Actions outside of the scope of practice of prehospital personnel
 - b. Actions or errors that actually or potentially result in untoward patient outcomes, such as errors in administration of medications, invasive procedures, defibrillation/cardioversion or other patient treatments
2. Reporting actions or behaviors that endanger the welfare of patients or adversely affects the public regard for prehospital emergency services.
3. Reporting CoSD EMS personnel or CoSD EMS provider agency trends indicating on-going frequency of errors, or non-compliance with established policies, protocols, or standards of patient care.

B. CoSD EMS shall establish a Quality Improvement program in compliance with Policy S-004 "EMS System Quality Improvement".


C. Base Hospitals will implement their own Quality Improvement program in compliance with Policy S-004 "EMS System Quality Improvement". Patient care issues will be reported to the CoSD EMS through the Prehospital Audit Committee.

POLICY S-006 PREHOSPITAL AUDIT COMMITTEE

The Prehospital Audit Committee (PAC) was established as a confidential advisory committee to CoSD EMS that:

- Monitors, evaluates and reports on the quality of prehospital care.
- Promotes county-wide standardization of the QI process with an emphasis on education.
- Reviews issues and matters of a system-wide nature.

PAC does not function as a disciplinary body, nor is it directly involved in the disciplinary action of any specific individual.

 County of San Diego EMS A Division of San Diego County Fire	SYSTEMS	S-006
	PREHOSPITAL AUDIT COMMITTEE	
	Date: 7/1/2010	Page 1 of 4

PURPOSE

A. To establish an advisory committee to the local Emergency Medical Services (EMS) Agency to monitor, evaluate, and report on the quality of prehospital medical care.

B. To promote Countywide standardization of the quality improvement process with emphasis on the educational aspect.

C. To review issues and matters of a system-wide nature. It shall not be the function of this committee to become directly involved in the disciplinary action of any specific individual. The authority for actual disciplinary action rests with the County of San Diego EMS (CoSD EMS Medical Director and/or the State EMS Authority in accordance with Section 1798.200 c Division 2.5 of the Health and Safety Code.

AUTHORITY: Health and Safety Code, Division 2.5, Sections 1797.204 and 1798; and Evidence Code, Sections 1040 and 1157.7.

I. POLICY

A. Scope of Review

The scope of review to be conducted by the committee may include any patient encountered in the prehospital system in the County of San Diego. The review will include, but not be limited to:

1. Issues reported to CoSD EMS (refer to CoSD EMS Policy P-409 "Reporting of Issues in Patient Care Management")
2. Variations from protocols
3. Deviations from scope of practice
4. Medication errors
5. Intubation complications
6. Variations from standards of care
7. Unusual cases or cases with education potential

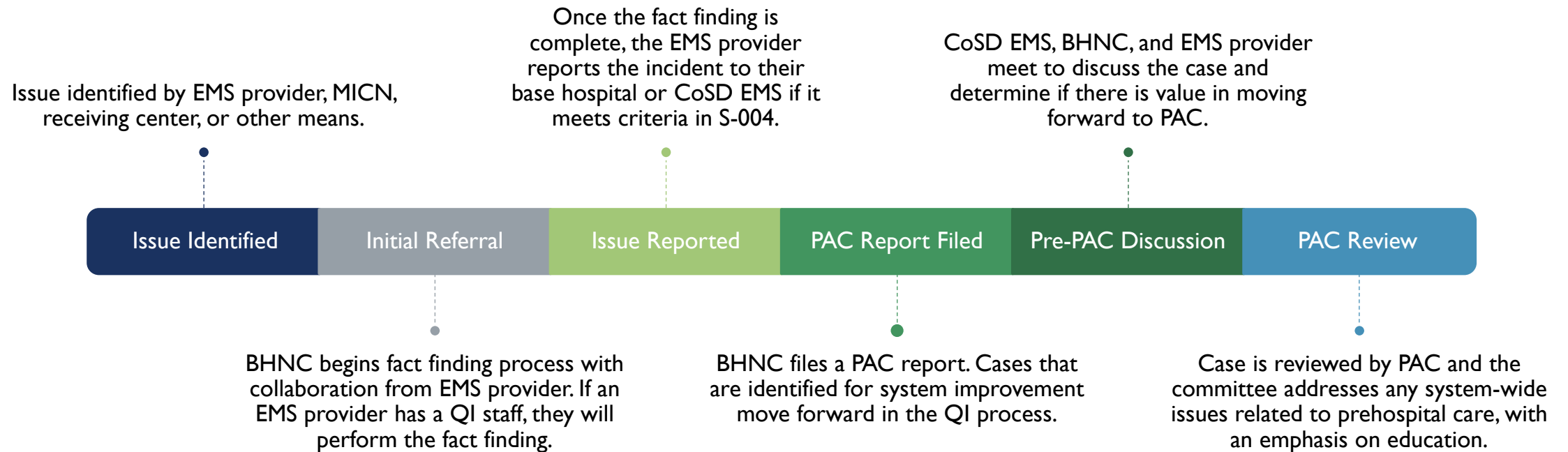
EMS QUALITY IMPROVEMENT SYSTEM – COMPONENTS

There are many advisory groups that support the EMS QI system, which are fundamental to the success of the program.

These groups are multidisciplinary, consisting of physicians, nurses, provider agency representatives, EMTs, paramedics and CoSD EMS staff.



EMS QUALITY IMPROVEMENT SYSTEM – PROCESS



OUTCOMES

PAC PEARLS



County of San Diego

Jeff Collins
DIRECTOR
(858) 974-5924

PUBLIC SAFETY GROUP
SAN DIEGO COUNTY FIRE
SAN DIEGO COUNTY EMERGENCY MEDICAL SERVICES OFFICE
5560 Overland Avenue, Suite 400, San Diego, CA 92123-1239
www.SanDiegoCountyEMS.com

ANDREW (ANDY) PARR
EMS ADMINISTRATOR
Deputy Director, Departmental Operations
(619) 285-6429

Communication from The Prehospital Audit Committee (PAC)

The San Diego County Prehospital Audit Committee (PAC) is a multi-disciplinary committee that focuses on quality assurance/improvement. Cases for review are referred to the PAC via the Base Hospital system. The PAC reviews current trends in care on a systemwide basis and identifies areas for improvement. Policy/protocol changes and systems improvements occur as a result of the PAC's work.

July 2023 PAC Pearls

CASE #1

STEMI Interpretation

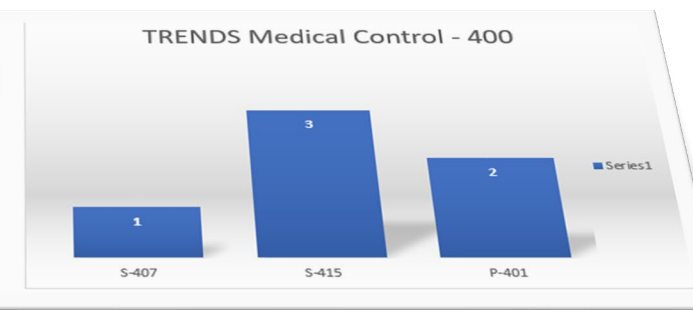
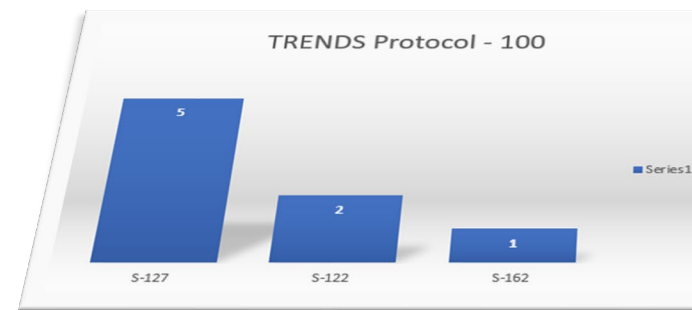
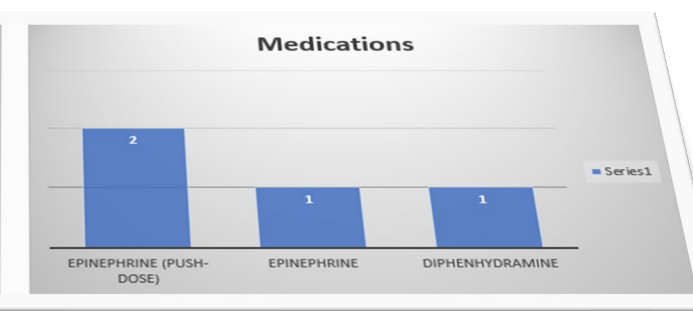
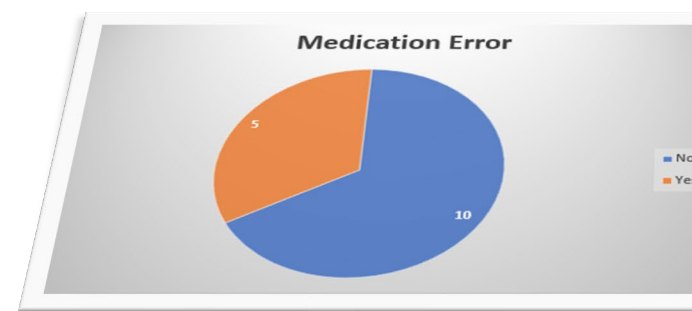
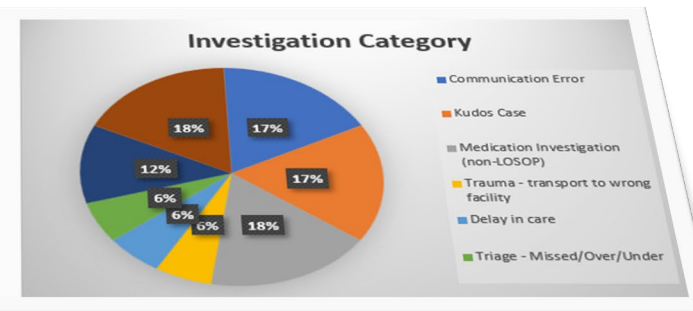
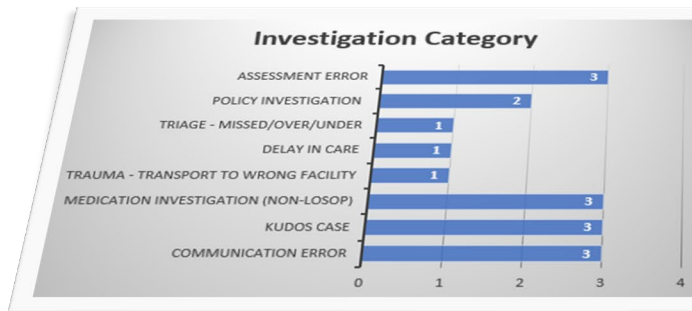
Paramedics were dispatched to a private residence for a female in her 80s with sudden-onset chest pain radiating to both arms. The patient had a medical history significant for type II diabetes mellitus, hypertension, and hyperlipidemia. She reported that her current chest pain felt analogous to the pain she felt during her previous myocardial infarction (MI). Paramedics administered 324 mg aspirin and two rounds of 0.4 nitroglycerin. Her vital signs on scene were 138/77 mmHg, 70 beats/minute, and 14 breaths/minute with no increased work of breathing and 99% SpO₂ on room air. Her blood glucose was 158 mg/dL.

A subsequent 12-lead ECG read "****STEMI****" by the machine (Figure 1). The EMS crew considered transporting the patient to a ST-segment-elevation myocardial infarction (STEMI) receiving center; however, upon base hospital physician review, both parties determined the ECG was not indicative of a STEMI. She was subsequently transported to facility without a catheterization laboratory. At that hospital, she was diagnosed with a STEMI and required transportation to another facility for a higher level of care. Subsequent review of her ECG revealed a posterior STEMI was visible on the field ECG.

Pearls

- This patient had a history of MI, symptoms consistent with MI, and indicated that her current pain felt like her previous episode, making it more likely the machine read of STEMI was correct.
- Reference [S-126: Discomfort / Pain of Suspected Cardiac Origin](#). If a STEMI is suspected, immediately notify the base hospital, transmit the 12-lead ECG to appropriate STEMI receiving center and transport to the STEMI center.

OUTCOMES — MONITORING TRENDS



OUTCOMES

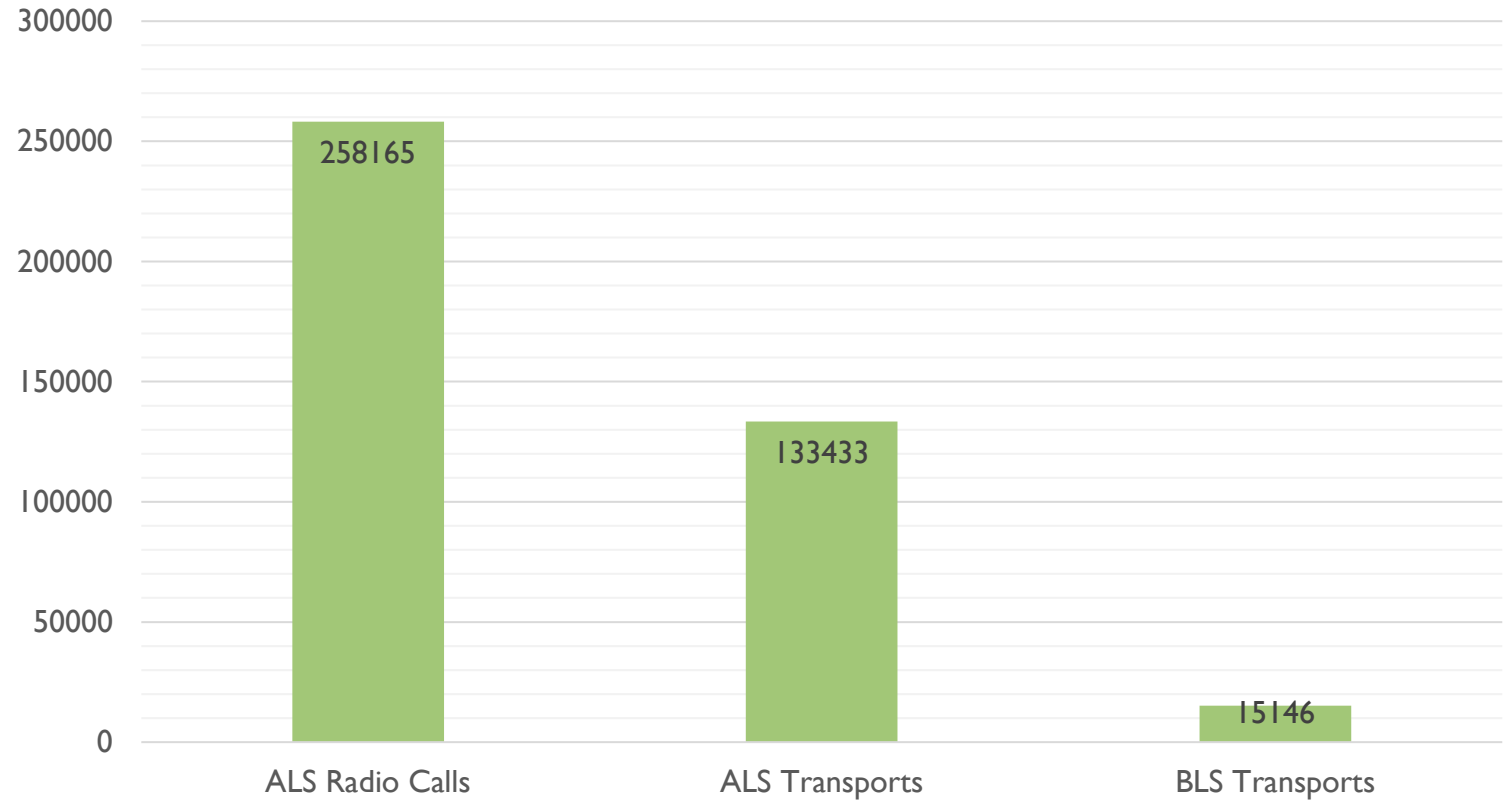
—

MONITORING UNIFIED SCOPE DATA

LEMSA	Date 01/01/01	Scene vs IFT	Age	MH/DWY	Gender	Practitioner	Vent: Flight Crew Initiation	Vent: Flight Crew Continued	Breath Delivery Mode	Ventilation Mode	Appropriate Rate for Age/Clinical Condition	Appropriate Tidal Volume/BW/Clinical Condition	PIPes up Pressures Checked # PIPs Greater than 3.0cm H2O	PEEP Greater than 1.0cm H2O Required	Volumes Monitored in Pressure Control	EtCO2 Monitored
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Pressure Regulated	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Female	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Female	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	Yes	No	N/A	N/A	Yes	
an Diego	IFT	y	Female	Paramedic	No	Yes	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Female	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	Yes	Yes	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	IFT	y	Female	Paramedic	No	Yes	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Female	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Pressure Control	Assisted / Controlled	Yes	Yes	N/A	No	Yes	N/A	Yes	
an Diego	Scene	y	Female	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Male	Paramedic	Yes	No	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	IFT	y	Male	Paramedic	No	Yes	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	Scene	y	Female	Paramedic	Yes	No	Pressure Control	Assisted / Controlled	Yes	Yes	N/A	No	Yes	N/A	Yes	
an Diego	IFT	y	Male	Paramedic	No	Yes	Volume Control	Assisted / Controlled	Yes	Yes	N/A	No	N/A	N/A	Yes	
an Diego	IFT	y	Male	Paramedic	No	Yes	Volume Control	Adaptive Support	Yes	Yes	N/A	No	N/A	N/A	Yes	

OUTCOMES
—
MONITORING
BASE HOSPITAL
REPORTS

2022 BH Report



FUTURE CHANGES

How the EMS QI System will provide improvements in 2024:

- Review of FAST-ED data to determine potential changes in our prehospital stroke system
- The San Diego County EMS Quality Improvement Plan will be updated in January
- Revision of Policy T-460A:Trauma Decision Algorithm
- Revision of protocols based on feedback from PAC



EMS SYSTEM QI OVERVIEW

QUESTIONS?