



California EMS System Core Quality Measures

Emergency Medical Services Authority
California Health and Human Services Agency

EMSA #166 - Appendix E (8th Edition)
EMS System Quality Improvement Program Guidelines





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STATUTORY AUTHORITY

The California Emergency Medical Services Authority (EMSA or the EMS Authority) is charged with creating a “statewide system for emergency medical services” and the responsibility for the “coordination and integration of all state activities concerning emergency medical services ((Health and Safety Code (HSC) 1797.1))”. Moreover, the EMS Authority is required to assess each emergency medical services (EMS) area or the system’s service area, utilizing regional and local information, for “the purpose of determining the need for additional emergency medical services, coordination of emergency medical services and the effectiveness of emergency medical services” (HSC 1797.102). Local EMS agencies (LEMSAs) are required to plan, implement, and evaluate an EMS system (HSC 1797.204).

HSC 1797.103 identifies one of the required elements of an EMS system as data collection and evaluation. Additionally, the development of quality improvement guidelines must be established (HSC 1797.174). As a result of this statutory mandate, EMSA has developed regulations requiring system data collection and evaluation of prehospital care reports ((California Code of Regulations (CCR), Title 22, Division 9, Chapter 4, Sections 100147, 100169, and 100170)).

Additionally, EMS system quality improvement regulations (CCR, Title 22, Division 9, Chapter 12) have been established that define the requirements for LEMSAs, EMS service providers, and base hospitals in their role as part of the EMS system. These requirements include, but are not limited to, the implementation of an EMS Quality Improvement Program (EMS QI) and the use of defined indicators to assess the LEMSA system as found in EMSA #166, Appendix E. EMSA’s aim with the Core Quality Measures Project is to develop appropriate indicators to reflect ongoing LEMSA efforts at quality improvement aimed at clinical and transport activities that are reflective of quality improvement activities at the local level.

To evaluate system impact on patients, the continuum of care from dispatch to prehospital to hospital disposition must be connected. In addition, we need to report on performance measures, such as those included in the Core Quality Measures. By using the data, we can begin to understand how care provided by EMS personnel translates to improved outcomes and system effectiveness.

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PROJECT HISTORY

The purpose of the California EMS System Core Quality Measures is to increase the accessibility and accuracy of prehospital data for public, policy, academic, and research purposes to facilitate EMS system evaluation and improvement. This project was originally developed in 2012 through a grant from the California Health Care Foundation. Ultimately, the project highlights opportunities to improve the quality of patient care delivered within an EMS system.

During the one year period, from July 31, 2013 to June 30, 2014, EMSA performed the following activities to deliver a set of publicly available data reports:

1. Created a formal data system profile and written analysis to identify areas for data quality improvement and inform an action plan to address the issues.
2. Sought opportunities for both short-term and long-term data improvement plans.
3. Focused on achieving reliable measures that are high-value and feasible within a short time frame.
4. Refined and published core quality measure sets that describe the coordination and effectiveness of EMS utilizing regional and local information for California. This project focused on the following core measure sets:
 - Trauma
 - Acute Coronary Syndrome/Heart Attack
 - Cardiac Arrest
 - Stroke
 - Respiratory
 - Pain Intervention
 - Pediatric
 - Skill Performance by EMS Providers
 - EMS Response and Transport
 - Public Education Bystander CPR
5. Conducted data workshops for LEMSAs across the state to implement improved data collection and reporting practices with those LEMSAs participating in the California Emergency Medical Services Information System.

EMSA continues to utilize Core Quality Measures to collect information on an annual basis (calendar years 2012 - 2019) while maintaining similar direction and goals to the objectives stated above.

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WHAT ARE CORE QUALITY MEASURES?

Core Quality Measures are a set of standardized performance measures that are intended to examine an EMS system or treatment of an identified patient condition.

CORE QUALITY MEASURES DEFINITION

The California EMS System Core Quality Measures focus on processes and interventions that have some evidence of patient benefit for a condition or illness. These measures help EMS systems improve the quality of patient care. Measure benchmarks include the following: the performance of EMS systems, performance of recommended treatments determined to get the best results for patients with certain medical conditions and transport of patients to the most appropriate hospital. The data most closely focused on system performance is contained in the following data pieces:

- Arrival at the scene in a timely manner;
- Timely, focused patient assessment;
- Delivery of time-sensitive prehospital therapy; and
- Transport to a hospital capable of providing necessary care.

Information about these treatments is taken from the prehospital care reports.

DEMONSTRATING PERFORMANCE

The preliminary Core Quality Measures were derived largely from a set of quality indicators developed through a project by the National Quality Forum and the National Association of State EMS Officials EMS Compass Project. EMS systems across the state are measured on their performance in these measures and can compare their results to other similar LEMSAs. There is a delay between when data is reported from EMS systems and when it is available for review because EMSA allows time for data to be compiled before it posts quality data for a given period. EMS providers can utilize these measures to assist in quality assurance and continuous quality improvement activities.

CORE QUALITY MEASURES PURPOSE

The primary purpose of the Core Quality Measures Project is to develop a mechanism to reflect as accurately as possible the LEMSA activity so that EMSA can better fulfill its obligation to assess the effectiveness of emergency medical services and provide quality improvement information. The collection of the measures and those selected by the Core Quality Measures Task Force provide the best mechanism for EMSA to do this. The data will become even more useful when all LEMSAs in California participate fully in the project. EMSA looks forward to more robust project participation.

EMSA prioritizes data quality and analysis. EMSA formed a data advisory group consisting of representatives from LEMSA administrators and medical directors to help

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determine a cooperative strategy for improving EMS data and enhancing data quality efforts.

ESSENTIAL DATA ELEMENTS

The table below lists all essential data elements found in this instruction manual. Each data element plays a vital role in the ability to collect and report the Core Quality Measures. EMS providers and LEMSAs should ensure that these data elements are appropriately captured and populated in every patient care record.

Data Element Description	Data Element Name
Cardiac Arrest	eArrest.01
Incident/Patient Disposition	eDisposition.12
EMS Transport Method	eDisposition.16
Additional Transport Mode Descriptors	eDisposition.18
Hospital Capability	eDisposition.23
Destination Team Pre-Arrival Alert or Activation	eDisposition.24
Trauma Center Criteria	eInjury.03
Vehicular, Pedestrian, or Other Injury Risk Factor	eInjury.04
Medication Administered Prior to this Unit's EMS Care	eMedications.02
Medication Given	eMedications.03
Age	ePatient.15
Age Units	ePatient.16
Date/Time Procedure Performed	eProcedures.01
Procedure	eProcedures.03
Type of Service Requested	eResponse.05
Additional Response Mode Descriptors	eResponse.24
Provider's Primary Impression	eSituation.11
Provider's Secondary Impressions	eSituation.12
Cardiac Rhythm/Electrocardiography (ECG)	eVitals.03
Pulse Oximetry	eVitals.12
Respiratory Rate	eVitals.14
Blood Glucose Level	eVitals.18
Stroke Scale Score	eVitals.29

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QUALIFYING DATA FOR 2019 CALENDAR YEAR REPORTING

The data for all measures will come from the calendar year 2019 for which period the National Emergency Medical Services Information System (NEMSIS) 3 standard was utilized as measurement specifications are designed for NEMSIS 3. For consistency, only data from this version of NEMSIS should be reported to EMSA.

CORE QUALITY MEASURES TASK FORCE

A task force makes recommendations and reviews the Core Quality Measures. The Core Quality Measures Task Force consists of key data and quality leaders from LEMSAs, medical directors, hospitals, and prehospital EMS providers that continue to provide clarity and insight into the data elements.

REFERENCE INFORMATION

The Core Quality Measures contain various references and coding from other documents. All data elements and values referenced in the Core Quality Measures are coded using NEMSIS. Please refer to the following documents regarding the codes found in each measure:

NEMSIS 3.4.0 Data Dictionary – Updated 7/13/2016

http://nemsis.org/media/nemsis_v3/release-3.4.0/datadictionary/PDFHTML/DEMEMS/index.html

National Association of State EMS Officials – EMS Compass Project

<https://nasemso.org/projects/ems-compass/>

NHTSA: Emergency Medical Services Performance Measures – Updated 12/2009

https://www.ems.gov/pdf/research/Studies-and-Reports/EMS_Performance_Measures_2009.pdf

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INSTRUCTIONS FOR RUNNING MEASURE REPORTS

Run each Core Quality Measure exactly as specified on each Core Quality Measure specification sheet. This consistency is key to comparing the reported results throughout the state. EMSA intends to eventually run the reports for all LEMSAs and will be utilizing this same approach (a single specification/query for the entire state). EMSA requests that only data elements and codes found in this document be used to calculate each indicator and not use any custom elements or fields specific to a local jurisdiction or an EMS provider.

Core Quality Measures Specification Sheets

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TRANSPORT OF TRAUMA PATIENTS TO A TRAUMA CENTER

MEASURE SET	Trauma	
SET MEASURE ID #	TRA-2	
PERFORMANCE MEASURE NAME	Transport of Trauma Patients to a Trauma Center	
Description	What percentage of trauma patients meeting CDC Step 1 or 2 or 3 criteria were transported to a trauma center originating from a 911 response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of trauma patients meeting CDC Step 1 or 2 or 3 criteria originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> eResponse.05 = 2205001 “911 Response (Scene)” <p><i>AND</i></p> <ul style="list-style-type: none"> (eInjury.03 = 2903001, 2903003, 2903005, 2903007, 2903009, 2903011, 2903013, 2903015, 2903017, 2903019, 2903021 <p><i>OR</i></p> <ul style="list-style-type: none"> eInjury.04 = 2904001, 2904003, 2904005, 2904007, 2904009, 2904011, 2904013, 2904015) <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> Type of Service Requested (eResponse.05) Trauma Center Criteria (eInjury.03) Vehicular, Pedestrian, or Other Injury Risk Factor (eInjury.04)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of trauma patients meeting CDC Step 1 or 2 or 3 criteria transported to a trauma center originating from a 911 response	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> eResponse.05 = 2205001 “911 Response (Scene)” <p><i>AND</i></p> <ul style="list-style-type: none"> (eInjury.03 = 2903001, 2903003, 2903005, 2903007, 2903009, 2903011, 2903013, 2903015, 2903017, 2903019, 2903021 	<ul style="list-style-type: none"> Type of Service Requested (eResponse.05) Trauma Center Criteria (eInjury.03) Vehicular, Pedestrian, or Other Injury Risk Factor (eInjury.04) Hospital Capability (eDisposition.23)

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	<p>OR</p> <ul style="list-style-type: none"> eInjury.04 = 2904001, 2904003, 2904005, 2904007, 2904009, 2904011, 2904013, 2904015) <p>AND</p> <ul style="list-style-type: none"> eDisposition.23 = 9908021 “Trauma Center Level 1”, 9908023 “Trauma Center Level 2”, 9908025 “Trauma Center Level 3”, 9908027 “Trauma Center Level 4” <p><i>Count by patients treated rather than by number of responses.</i></p>	
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	95%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> Retrospective data sources for required data elements include administrative data and prehospital care records. Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency. 	

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ASPIRIN ADMINISTRATION FOR STEMI OR SUSPECTED CARDIAC CHEST PAIN

MEASURE SET	Acute Coronary Syndrome	
SET MEASURE ID #	ACS-1	
PERFORMANCE MEASURE NAME	Aspirin Administration for STEMI or Suspected Cardiac Chest Pain	
Description	What percentage of patients aged 35 and above with STEMI or suspected cardiac chest pain received aspirin originating from a 911 response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of patients aged 35 and above who had a primary or secondary impression of STEMI or suspected cardiac chest pain originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 "911 Response (Scene)" • ePatient.15 ≥ 35 • ePatient.16 = 2516009 "Years" <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I20.9 "Chest Pain-Suspected Cardiac", I21.3 "Chest Pain-STEMI" <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I20.9 "Chest Pain-Suspected Cardiac", I21.3 "Chest Pain-STEMI") <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Age (ePatient.15) • Age Units (ePatient.16) • Provider's Primary Impression (eSituation.11) • Provider's Secondary Impressions (eSituation.12)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of patients aged 35 and above who had a primary or secondary impression of STEMI or suspected cardiac chest pain originating from a 911 response and received aspirin	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 "911 Response (Scene)" • ePatient.15 ≥ 35 • ePatient.16 = 2516009 "Years" <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I20.9 "Chest 	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Age (ePatient.15) • Age Units (ePatient.16) • Provider's Primary Impression (eSituation.11)

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	<p>Pain-Suspected Cardiac”, I21.3 “Chest Pain-STEMI”</p> <p>OR</p> <ul style="list-style-type: none"> eSituation.12 = I20.9 “Chest Pain-Suspected Cardiac”, I21.3 “Chest Pain-STEMI”) <p>AND</p> <ul style="list-style-type: none"> (eMedications.03 = 1191 “Aspirin” <p>OR</p> <ul style="list-style-type: none"> eMedications.02 = 9923003 “Yes”) <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> Provider’s Secondary Impressions (eSituation.12) Medication Given (eMedications.03) Medication Administered Prior to this Unit’s EMS Care (eMedications.02)
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> eMedications.03 = 8801001, 8801003, 8801007, 8801009, 8801019, 8801023 “Pertinent Negatives” eMedications.02 = 7701001 “Not Applicable”, 7701003 “Not Recorded” 	<ul style="list-style-type: none"> Medication Given (eMedications.03) Medication Administered Prior to this Unit’s EMS Care (eMedications.02)
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	95%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> Retrospective data sources for required data elements include administrative data and prehospital care records. Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency. 	

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ADVANCED HOSPITAL NOTIFICATION FOR STEMI PATIENTS

MEASURE SET	Acute Coronary Syndrome	
SET MEASURE ID #	ACS-4	
PERFORMANCE MEASURE NAME	Advanced Hospital Notification for STEMI Patients	
Description	What percentage of STEMI patients transported by primary care provider originating from a 911 response included an advanced hospital notification or pre-arrival alert to a STEMI receiving center?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of patients who received a 12 Lead ECG and yielded a positive STEMI measurement originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” • eProcedures.01 = Not Null • eProcedures.03 = 268400002 “12 Lead ECG Obtained” <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I21.3 “Chest Pain-STEMI” <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I21.3 “Chest Pain-STEMI” <p><i>OR</i></p> <ul style="list-style-type: none"> • eVitals.03 = 9901051 “STEMI Anterior Ischemia”, 9901053 “STEMI Inferior Ischemia”, 9901055 “STEMI Lateral Ischemia”, 9901057 “STEMI Posterior Ischemia”) <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Date/Time Procedure Performed (eProcedures.01) • Procedure (eProcedures.03) • Provider’s Primary Impression (eSituation.11) • Provider’s Secondary Impressions (eSituation.12) • Cardiac Rhythm/ Electrocardiography (ECG) (eVitals.03)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • eArrest.01 = 3001003 “Yes, Prior to EMS Arrival”, 3001005 “Yes, After EMS Arrival” • eDisposition.16 = 4216001 “Air Medical-Fixed Wing”, 4216003 “Air Medical-Rotor Craft” 	<ul style="list-style-type: none"> • Cardiac Arrest (eArrest.01) • EMS Transport Method (eDisposition.16)
Numerator	Number of patients who received a 12 Lead ECG and yielded a	

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Statement (subpopulation)	positive STEMI measurement originating from a 911 response and resulted in a documented advanced hospital notification or pre-arrival alert to a STEMI receiving center	
Numerator Inclusion Criteria	<p style="text-align: center;"><u>Criteria</u></p> <p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” • eProcedures.01 = Not Null • eProcedures.03 = 268400002 “12 Lead ECG Obtained” <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I21.3 “Chest Pain-STEMI” <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I21.3 “Chest Pain-STEMI” <p><i>OR</i></p> <ul style="list-style-type: none"> • eVitals.03 = 9901051 “STEMI Anterior Ischemia”, 9901053 “STEMI Inferior Ischemia”, 9901055 “STEMI Lateral Ischemia”, 9901057 “STEMI Posterior Ischemia”) <p><i>AND</i></p> <ul style="list-style-type: none"> • eDisposition.23 = 9908031, “Cardiac-STEMI/PCI Capable”, 9908033 “Cardiac-STEMI/PCI Capable (24/7)”, 9908035 “Cardiac-STEMI/Non-PCI Capable” • eDisposition.24 = 4224013 “Yes-STEMI” <p><i>Count by patients treated rather than by number of responses.</i></p>	<p style="text-align: center;"><u>Data Elements</u></p> <ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Date/Time Procedure Performed (eProcedures.01) • Procedure (eProcedures.03) • Provider’s Primary Impression (eSituation.11) • Provider’s Secondary Impressions (eSituation.12) • Cardiac Rhythm/ Electrocardiography (ECG) (eVitals.03) • Hospital Capability (eDisposition.23) • Destination Team Pre-Arrival Alert or Activation (eDisposition.24)
	Numerator Exclusion Criteria	<p style="text-align: center;"><u>Criteria</u></p> <ul style="list-style-type: none"> • eArrest.01 = 3001003 “Yes, Prior to EMS Arrival”, 3001005 “Yes, After EMS Arrival” • eDisposition.16 = 4216001 “Air Medical-Fixed Wing”, 4216003 “Air Medical-Rotor Craft”
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	95%	

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Sampling	No
Aggregation	Yes
Blinded	Yes
Data Collection Approach	<ul style="list-style-type: none">• Retrospective data sources for required data elements include administrative data and prehospital care records.• Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.

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TREATMENT ADMINISTERED FOR HYPOGLYCEMIA

MEASURE SET	Hypoglycemia	
SET MEASURE ID #	HYP-1	
PERFORMANCE MEASURE NAME	Treatment Administered for Hypoglycemia	
Description	What percentage of patients received treatment to correct their hypoglycemia originating from a 911 response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of patients who had a blood glucose level indicating hypoglycemia originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” • eVitals.18 < 60 <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Blood Glucose Level (eVitals.18)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of patients who received treatment to correct their hypoglycemia originating from a 911 response	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” • eVitals.18 < 60 • eMedications.03 = 4832, 4850, 92972, 237648, 237653, 260258, 309778, 317630, 377980, 1165823, 1795477, 1795480 <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Blood Glucose Level (eVitals.18) • Medication Given (eMedications.03)
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value	95%	

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(number & unit)	
Sampling	No
Aggregation	Yes
Blinded	Yes
Data Collection Approach	<ul style="list-style-type: none">• Retrospective data sources for required data elements include administrative data and prehospital care records.• Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.

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PREHOSPITAL SCREENING FOR SUSPECTED STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-1	
PERFORMANCE MEASURE NAME	Prehospital Screening for Suspected Stroke Patients	
Description	What percentage of suspected stroke patients received a prehospital stroke screening originating from a 911 response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of patients who had a primary or secondary impression of stroke originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 "911 Response (Scene)" <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I63.9 "Stroke/CVA/TIA") <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I63.9 "Stroke/CVA/TIA") <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Provider's Primary Impression (eSituation.11) • Provider's Secondary Impressions (eSituation.12)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of patients who had a primary or secondary impression of stroke originating from a 911 response and yielded a documented stroke assessment	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 "911 Response (Scene)" <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I63.9 "Stroke/CVA/TIA") <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I63.9 "Stroke/CVA/TIA") <p><i>AND</i></p> <ul style="list-style-type: none"> • eVitals.29 = 3329001 "Negative", 3329003 "Non-Conclusive", 3329005 "Positive" 	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Provider's Primary Impression (eSituation.11) • Provider's Secondary Impressions (eSituation.12) • Stroke Scale Score (eVitals.29)

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	<i>Count by patients treated rather than by number of responses.</i>	
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	95%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> Retrospective data sources for required data elements include administrative data and prehospital care records. Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency. 	

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GLUCOSE TESTING FOR SUSPECTED STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-2	
PERFORMANCE MEASURE NAME	Glucose Testing for Suspected Stroke Patients	
Description	What percentage of suspected stroke patients had an assessment of blood glucose level originating from a 911 response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of patients who had a primary or secondary impression of stroke originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I63.9 “Stroke/CVA/TIA” <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I63.9 “Stroke/CVA/ TIA” <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Provider’s Primary Impression (eSituation.11) • Provider’s Secondary Impressions (eSituation.12)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of patients who had a primary or secondary impression of stroke originating from a 911 response and yielded a documented blood glucose level assessment	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I63.9 “Stroke/CVA/TIA” <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I63.9 “Stroke/CVA /TIA” <p><i>AND</i></p> <ul style="list-style-type: none"> • eVitals.18 = Logical and Present <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Provider’s Primary Impression (eSituation.11) • Provider’s Secondary Impressions (eSituation.12) • Blood Glucose Level (eVitals.18)

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	<u>Criteria</u>	<u>Data Elements</u>
Numerator Exclusion Criteria	<ul style="list-style-type: none"> eVitals.18 = 7701001, 7701003 “Not Values” eVitals.18 = 8801019, 8801023 “Pertinent Negatives” 	<ul style="list-style-type: none"> Blood Glucose Level (eVitals.18)
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	90%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> Retrospective data sources for required data elements include administrative data and prehospital care records. Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency. 	

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ADVANCED HOSPITAL NOTIFICATION FOR STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-4	
PERFORMANCE MEASURE NAME	Advanced Hospital Notification for Stroke Patients	
Description	What percentage of stroke patients transported by primary care provider originating from a 911 response included an advanced hospital notification or pre-arrival alert?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of patients who received a stroke scale and yielded a positive stroke measurement originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 "911 Response (Scene)" <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I63.9 "Stroke/CVA/TIA") <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = I63.9 "Stroke/CVA/TIA") <p><i>AND</i></p> <ul style="list-style-type: none"> • eVitals.29 = 3329005 "Positive" <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Provider's Primary Impression (eSituation.11) • Provider's Secondary Impressions (eSituation.12) • Stroke Scale Score (eVitals.29)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • eDisposition.16 = 4216001 "Air Medical-Fixed Wing", 4216003 "Air Medical-Rotor Craft" 	<ul style="list-style-type: none"> • EMS Transport Method (eDisposition.16)
Numerator Statement (subpopulation)	Number of patients who received a stroke scale and yielded a positive stroke measurement originating from a 911 response and resulted in a documented advanced hospital notification or pre-arrival alert	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 "911 Response (Scene)" <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = I63.9 "Stoke/CVA/TIA") <p><i>OR</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Provider's Primary Impression (eSituation.11) • Provider's Secondary Impressions (eSituation.12)

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	<ul style="list-style-type: none"> eSituation.12 = I63.9 “Stroke/CVA/TIA” <p>AND</p> <ul style="list-style-type: none"> eVitals.29 = 3329005 “Positive” <p>AND</p> <ul style="list-style-type: none"> eDisposition.24 = 4224015 “Yes-Stroke” <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> Stroke Scale Score (eVitals.29) Destination Team Pre-Arrival Alert or Activation (eDisposition.24)
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> eDisposition.16 = 4216001 “Air Medical-Fixed Wing”, 4216003 “Air Medical-Rotor Craft” 	<ul style="list-style-type: none"> EMS Transport Method (eDisposition.16)
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	95%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> Retrospective data sources for required data elements include administrative data and prehospital care records. Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency. 	

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RESPIRATORY ASSESSMENT FOR PEDIATRIC PATIENTS

MEASURE SET	Pediatric	
SET MEASURE ID #	PED-3	
PERFORMANCE MEASURE NAME	Respiratory Assessment for Pediatric Patients	
Description	What percentage of pediatric patients who had a primary or secondary impression of respiratory distress received a documented respiratory assessment originating from a 911 response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of pediatric patients who had a primary or secondary impression of respiratory distress originating from a 911 response	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” • ePatient.15 < 15 • ePatient.16 = 2516009 “Years” <p><i>AND</i></p> <ul style="list-style-type: none"> • (eSituation.11 = J80 “Respiratory Distress/Other”, J98.01 “Respiratory Distress/Bronchospasm” <p><i>OR</i></p> <ul style="list-style-type: none"> • eSituation.12 = J80 “Respiratory Distress/Other”, J98.01 “Respiratory Distress/Bronchospasm”) <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Age (ePatient.15) • Age Units (ePatient.16) • Provider’s Primary Impression (eSituation.11) • Provider’s Secondary Impressions (eSituation.12)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of pediatric patients who had a primary or secondary impression of respiratory distress originating from a 911 response and yielded a documented respiratory assessment	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> • eResponse.05 = 2205001 “911 Response (Scene)” • ePatient.15 < 15 • ePatient.16 = 2516009 “Years” <p><i>AND</i></p>	<ul style="list-style-type: none"> • Type of Service Requested (eResponse.05) • Age (ePatient.15) • Age Units (ePatient.16) • Provider’s Primary Impression

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	<ul style="list-style-type: none"> • (eSituation.11 = J80 “Respiratory Distress/Other”, J98.01 “Respiratory Distress/Bronchospasm” <p>OR</p> <ul style="list-style-type: none"> • eSituation.12 = J80 “Respiratory Distress/Other”, J98.01 “Respiratory Distress/Bronchospasm”) <p>AND</p> <ul style="list-style-type: none"> • eVitals.12 = Logical and Present <p>AND</p> <ul style="list-style-type: none"> • eVitals.14 = Logical and Present <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> • (eSituation.11) • Provider’s Secondary Impressions (eSituation.12) • Pulse Oximetry (eVitals.12) • Respiratory Rate (eVitals.14)
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	95%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> • Retrospective data sources for required data elements include administrative data and prehospital care records. • Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency. 	

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911 REQUESTS FOR SERVICES THAT INCLUDED A LIGHTS AND/OR SIRENS RESPONSE

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-4	
PERFORMANCE MEASURE NAME	911 Requests for Services That Included a Lights and/or Sirens Response	
Description	What percentage of EMS responses originating from a 911 request included the use of lights and/or sirens during a response?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of EMS responses originating from a 911 request	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<i>All events where:</i> <ul style="list-style-type: none"> eResponse.05 = 2205001 "911 Response (Scene)" 	<ul style="list-style-type: none"> Type of Service Requested (eResponse.05)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of EMS responses originating from a 911 request that included a lights and/or sirens response	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<i>All events where:</i> <ul style="list-style-type: none"> eResponse.05 = 2205001 "911 Response (Scene)" eResponse.24 = 2224015, 2224017, 2224021, 2224023 	<ul style="list-style-type: none"> Type of Service Requested (eResponse.05) Additional Response Mode Descriptors (eResponse.24)
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number & unit)	75%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Data Collection Approach	<ul style="list-style-type: none"> Retrospective data sources for required data elements include administrative data and prehospital care records. Variation may exist in the assignment of coding; therefore, coding 	

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	practices may require evaluation to ensure consistency.
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911 REQUESTS FOR SERVICES THAT INCLUDED A LIGHTS AND/OR SIRENS TRANSPORT

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-5	
PERFORMANCE MEASURE NAME	911 Requests for Services That Included a Lights and/or Sirens Transport	
Description	What percentage of EMS transports originating from a 911 request included the use of lights and/or sirens during patient transport?	
Type of Measure	Process	
Reporting Value & Unit	Percentage (%)	
Denominator Statement (population)	Number of EMS transports originating from a 911 request	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> eResponse.05 = 2205001 "911 Response (Scene)" eDisposition.12 = 4212033 "Patient Treated, Transported by this EMS Unit" <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> Type of Service Requested (eResponse.05) Incident/Patient Disposition (eDisposition.12)
Denominator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (subpopulation)	Number of EMS transports originating from a 911 request that included a lights and/or sirens patient transport	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<p><i>All events where:</i></p> <ul style="list-style-type: none"> eResponse.05 = 2205001 "911 Response (Scene)" eDisposition.12 = 4212033 "Patient Treated, Transported by this EMS Unit" eDisposition.18 = 4218011, 4218013, 4218017, 4218019 <p><i>Count by patients treated rather than by number of responses.</i></p>	<ul style="list-style-type: none"> Type of Service Requested (eResponse.05) Incident/Patient Disposition (eDisposition.12) Additional Transport Mode Descriptors (eDisposition.18)
Numerator Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to	

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Expression	report. Therefore, the indicator expressed numerically is N/D = %
Example of Final Reporting Value (number & unit)	15%
Sampling	No
Aggregation	Yes
Blinded	Yes
Data Collection Approach	<ul style="list-style-type: none"> • Retrospective data sources for required data elements include administrative data and prehospital care records. • Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.

California EMS System Core Quality Measures

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