



AGENDA

ICEMA MEDICAL ADVISORY COMMITTEE

June 23, 2016

1300

Purpose: Information Sharing

Meeting Facilitator: Phong Nguyen

Timekeeper: Chantae Wilson

Record Keeper: Chantae Wilson

	AGENDA ITEM	PERSON(S)	DISCUSSION/ACTION
I.	Welcome/Introductions	Phong Nguyen	
II.	Approval of Minutes	All	Discussion/Action
III.	Discussion/Action Items		
	A. Standing EMS System Updates		
	<ol style="list-style-type: none"> 1. Trauma Program 2. STEMI Program: STEMI Data <ul style="list-style-type: none"> • Chest Pain Society Accreditation 3. Stroke Program: Stroke Data 4. CQI Report Update <ul style="list-style-type: none"> • Core Measures 5. SAC Update 	<ol style="list-style-type: none"> 1. Chris Yoshida-McMath 2. Chris Yoshida-McMath 3. Chris Yoshida-McMath 4. Phong Nguyen <ul style="list-style-type: none"> • Ron Holk 5. Phong Nguyen 	<ol style="list-style-type: none"> 2. Discussion 3. Discussion 4. Discussion 5. Discussion 6. Discussion
	B. EMS Trends		
	<ol style="list-style-type: none"> 1. TXA Study Update 2. Paramedicine Step I Research Update 3. Cardiac Arrest Survival Enhancement Project (CARES/ART) 	<ol style="list-style-type: none"> 1. Reza Vaezazizi/ Michael Neeki 2. Michael Neeki 3. Reza Vaezazizi 	<ol style="list-style-type: none"> 1. Discussion 2. Discussion 3. Discussion
	C. Needle Cricothyrotomy	All	Discussion/Action
	D. Excited Delirium	All	Discussion
	E. Use of Dextrose in Cardiac Arrest	Ron Holk	Discussion/Action
	F. Magnesium Sulfate Dose	Ron Holk	Discussion/Action
	G. Narcan - Pediatric Route (IN/IM)	Ron Holk	Discussion/Action
	H. ePCR User Interface Task Force	Ron Holk	Discussion
IV.	Public Comment	All	Discussion
V.	Round Table/Announcements	All	Discussion
VI.	Future Agenda Items	All	Discussion
VII.	Next Meeting Date: August 25, 2016	All	Discussion
VIII.	Adjournment	Phong Nguyen	Action
IX.	Closed Session		
	A. Case Reviews		



MINUTES

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	AGENDA ITEM	DISCUSSION/FOLLOW UP	RESPONSIBLE PERSON(S)
I.	WELCOME/INTRODUCTIONS	Meeting called to order at 1300 hrs.	Michael Neeki
II.	APPROVAL OF MINUTES	The December 17, 2015, minutes were approved. Motion to approve. MSC: Lance Brown/Debbie Bervel Ayes: Phong Nguyen, Aaron Rubin, Sam Chua, Debbie Bervel, Joy Peters, Joe Powell, Leslie Parham, Susie Moss, Lance Brown, Joanna Yang, Stephen Patterson, Kevin Parkes	
III.	DISCUSSION ITEMS		
	A. Standing EMS System Updates		
	1. Review of Action Items	Action items were incorporated into the agenda.	Phong Nguyen
	2. Trauma Program	<ul style="list-style-type: none"> The State has completed its ACS survey and should be discussing the survey results at the State Trauma Summit in June. The next TSAC/TAC meeting is scheduled on May 11, 2016. 	Chris Yoshida-McMath
	3. STEMI Program: STEMI Data	<ul style="list-style-type: none"> Work is in progress on 12-lead ECG transmissions to the STEMI base hospitals. The training has been completed for the AMR crews, and LLUMC is nearly done with their training. ICEMA will be testing soon. The next STEMI meeting is scheduled on August 4, 2016. 	Chris Yoshida-McMath
	4. Stroke Program: Stroke Data	<ul style="list-style-type: none"> ICEMA and CDPH met for an official State Stroke Registry kick-off meeting. MOUs are currently being developed. The next Stroke meeting is scheduled on July 7, 2016. 	Chris Yoshida-McMath

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	5. CQI Report Update		Ron Holk
	<ul style="list-style-type: none"> Core Measures 	The 2015 Core Measures sent to the State were discussed regarding use and possible methods for developing improvement strategies. ICEMA will provide additional information for discussion at future meetings.	Ron Holk
	6. SAC Update	SAC Meeting Update was provided.	Kevin Parkes
	B. EMS Trends		
	1. TXA Study Update	<p>There have been 69 uses of TXA since the beginning of the study.</p> <p>There was 65% compliance rate to the inclusion criteria in the first four (4) months of starting the project and 90 - 95% compliance rate during the past three (3) quarters.</p> <p>MAC members were asked to review inclusion criteria and documentation points.</p>	Chris Yoshida-McMath
	2. Paramedicine Step I Research Update	Phase 1 is complete. Phase 2 will include additional training and education.	Phong Nguyen
	3. Cardiac Arrest Survival Enhancement Project (CARES/ART)	<p>ART: Nothing to report.</p> <p>CARES: ICEMA would like to ask support from the hospitals to obtain final outcome data for the CARES Registry.</p> <p>ICEMA is currently beta testing with AMR Redlands' data. St. Bernadine Medical Center and Community Hospital San Bernardino have completed training. An educational piece is being developed for AMR Redlands. ICEMA has a conference call planned regarding the State beta testing.</p>	Chris Yoshida-McMath
	C. Use of UV Light for Disinfection	Presentation regarding use of UV Light was presented by Dr. Ambrose.	Ron Holk
	D. Axial Spinal Immobilization	<p>Motion to have ICEMA add updated language to the policy as presented in the meeting and bring to a future MAC meeting for consideration.</p> <p>MSC: Joy Peters/Sam Chua Ayes: Phong Nguyen, Aaron Rubin, Sam Chua, Debbie Bervel, Joy Peters, Joe Powell, Leslie Parham, Susie Moss, Lance Brown, Joanna Yang, Stephen Patterson, Kevin Parkes</p>	Chris Yoshida-McMath
	E. ePCR User Interface Task Force	The ePCR User Interface Task Force was discussed.	Ron Holk
	F. Needle Cricothyrotomy	Tabled for future meeting.	All

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	G. Use of Fentanyl Outside of Protocol	Discussed changing verbiage for the Chest Pain policy. Motion to approve proposed change to verbiage for adding a medication disclaimer to the policy as presented. MSC: Joy Peters/Sam Chua Ayes: Phong Nguyen, Aaron Rubin, Sam Chua, Debbie Bervel, Joy Peters, Joe Powell, Leslie Parham, Susie Moss, Lance Brown, Joanna Yang, Stephen Patterson, Kevin Parkes	Ron Holk
	H. Triage tag vs ePCR	The use of Triage tags as acceptable form documentation and communication tools in MCI was discussed. No actions recommended at this time.	Ron Holk
	I. Continuity of Patient care Policy	A draft protocol/policy for Continuity of Patient Care and Data Policy is being developed and will be brought to MAC at a future meeting.	Ron Holk
IV.	PUBLIC COMMENT	None	All
V.	ROUND TABLE/ ANNOUNCEMENTS	None	All
VI.	FUTURE AGENDA ITEMS	-Excited Delirium -Use of Dextrose in Cardiac Arrest	Phong Nguyen
VII.	NEXT MEETING: May 11 , 2016		
VIII.	ADJOURNMENT	Meeting adjourned at 1525.	Phong Nguyen
IX.	CLOSED SESSION		
	A. Case Review	A total of two (2) cases were reviewed.	Ron Holk

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Attendees:

NAME	MAC POSITION	EMS AGENCY STAFF	POSITION
<input type="checkbox"/> VACANT <input type="checkbox"/> Jeff Grange - LLUMC	Trauma Hospital Physicians (2)	<input checked="" type="checkbox"/> Reza Vaezazizi, MD	Medical Director
<input checked="" type="checkbox"/> Phong Nguyen - RDCH (Chair) <input type="checkbox"/> Todd Sallenbach - HDMC	Non-Trauma Base Physicians (2)	<input type="checkbox"/> Tom Lynch	EMS Administrator
<input checked="" type="checkbox"/> Aaron Rubin - Kaiser	Non-Base Hospital Physician	<input checked="" type="checkbox"/> Mark Roberts	Technical Consultant
<input type="checkbox"/> Michael Neeki - Rialto FD	Public Transport Medical Director	<input checked="" type="checkbox"/> Ron Holk	EMS Coordinator
<input checked="" type="checkbox"/> Sam Chua - AMR	Private Transport Medical Director	<input checked="" type="checkbox"/> Chris Yoshida-McMath	Specialty Care Coordinator
<input checked="" type="checkbox"/> Debbie Bervel - SB City FD	Fire Department Medical Director	<input checked="" type="checkbox"/> Danielle Ogaz	Senior EMS Specialist
<input checked="" type="checkbox"/> Joy Peters - ARMC	EMS Nurses	<input checked="" type="checkbox"/> Chantae Wilson	Senior EMS Specialist
<input checked="" type="checkbox"/> Joe Powell - Rialto FD	EMS Officers		
<input checked="" type="checkbox"/> Leslie Parham	Public Transport Medical Rep (Paramedic/RN)		
<input checked="" type="checkbox"/> Susie Moss	Private Transport Medical Rep (Paramedic/RN)		
<input checked="" type="checkbox"/> Lance Brown	Specialty Center Medical Director		
<input checked="" type="checkbox"/> Joanna Yang - LLUMC	Specialty Center Coordinator		
<input type="checkbox"/> Troy Pennington	Private Air Transport Medical Director		
<input checked="" type="checkbox"/> Stephen Patterson - Sheriff's Air Rescue	Public Air Transport Medical Director		
<input type="checkbox"/> Michael Guirguis - SB Comm Center	PSAP Medical Director		
<input type="checkbox"/> VACANT	Inyo County Representative		
<input type="checkbox"/> Rosemary Sachs	Mono County Representative		
<input checked="" type="checkbox"/> Kevin Parkes	SAC Liaison		
<input type="checkbox"/> Andrea Thorp	Pediatric Critical Care Physician		

GUESTS	AGENCY
Sandy Carnes	Rancho Cucamonga FD
Carly Crews	SB City FD
Lisa Higuchi	AMR
Christopher Linke	AMR
Sara Morning	SB County FD
Miranda Mulhull	SB County FD
Ann Sandez	San Manuel FD
Dale Williams	Chino FD

2015 ICEMA Core Measures

	Measure ID (Reporting Units)	Denominator Value (Population)	Numerator Value	Reporting Value
Scene time for trauma patients	TRA-1 (90th %ile in mm:ss)	1,109		0:26:36
Direct transport to trauma center for trauma patients meeting criteria	TRA-2 (Percentage)	1,109	535	48%
Aspirin administration for chest pain/discomfort rate	ACS-1 (Percentage)	13,143	5,468	42%
12 Lead ECG Performance	ACS-2 (Percentage)	13,143	5,732	44%
Scene time for suspected heart attack patients age 35 and older	ACS-3 (90th %ile in mm:ss)	710		0:26:00
Direct transport to designated STEMI receiving center for suspected patients meeting criteria	ACS-5 (Percentage)	710	590	83%
Out of hospital cardiac arrests return of spontaneous circulation	CAR-2 (Percentage)	1,501	271	18%
Out of hospital Cardiac Arrests Survival to ED discharge	CAR-3 (Percentage)	1,501		
Out of hospital Cardiac Arrests Survival to Hospital discharge	CAR-4 (Percentage)	1,507		
Glucose testing for Suspected Acute Stroke Patients	STR-2 (Percentage)	2,145	1,711	80%
Scene time for Suspected acute stroke patients	STR-3 (90th %ile in mm:ss)	1,673		0:24:52
Direct transport to stroke center for suspected acute stroke patients meeting criteria	STR-5 (Percentage)	1,673	1,324	79%
Beta2 Agonist administration for adult patients	RES-2 (Percentage)	14,258	4,108	29%
Pediatric patients with wheezing who received bronchodilators	PED-1 (Percentage)	1,555	346	22%
Pain intervention	PAI-1 (Percentage)	21,132	6,964	33%
Endotracheal intubation success rate	SKL-1 (Percentage)	1,328	847	64%
Capnography measurement performed on any successful endotracheal intubation	SKL-2 (Percentage)	847	140	17%

Inland Counties Emergency Medical Agency



2015 Core Quality Measures

Updated 03/22/2016

SCENE TIME FOR TRAUMA PATIENTS

MEASURE SET	Trauma	
SET MEASURE ID #	TRA-1	
PERFORMANCE MEASURE NAME	Scene Time for Trauma Patients	
Description	What is the 90th percentile for on scene time value for trauma patients (as defined by the 2011 Guidelines for Field Triage of Injured Patients) who were transported from the scene by ground ambulance?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	Time (in minutes) from time ground ambulance arrives at the scene until the time ambulance departs from the scene for Trauma patients, meeting criteria for transport to a trauma center, who received transport by ground ambulance to a hospital by EMS personnel (EMT, AEMT, and Paramedic). ***This population (n-value) should match the denominator population in TRA-2 (prior to determining where the 90th percentile lies)***	
Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; • D06_03 "vehicle type" corresponds to ground ambulance; • E02_20 "response mode to scene" has a value of 390 "lights and sirens" • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and logical; being not negative and less than 10 hours • Patients with E09_15 "provider primary impression" value 1740 "Traumatic Injury" or E09_16 "provider secondary impression" value 1875 "Traumatic Injury" AND • E14_19 "Total Glasgow Coma Score" value < 14; or • E14_04 "systolic blood pressure" value < 90; or • E14_11 "respiratory rate" value < 10 or > 29 for patients aged 1 year or older or E14_11 "respiratory rate" value < 20 for patients less than 1 year of age 	<ul style="list-style-type: none"> • Type of Service Requested (E02_04) • Vehicle Type (D06_03) • Response mode to scene (E02_20) • Arrived at Scene (E05_06) • Unit Left Scene (E05_09) • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Systolic Blood Pressure (E14_04) • Total GCS Value (E14_19) • Respiratory Rate (E14_11) • Date of Birth (E06_16) • Age Units (E06_15) • Age (E06_14)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is the 90th Percentile of the given numbers or distribution in their ascending order.	

SCENE TIME FOR TRAUMA PATIENTS

Example of Final Reporting Value (Number and Units)	14 minutes, 34 seconds (14:34)
Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

DIRECT TRANSPORT TO TRAUMA CENTER FOR TRAUMA PATIENTS MEETING CRITERIA

MEASURE SET	Trauma	
SET MEASURE ID #	TRA-2	
PERFORMANCE MEASURE NAME	Direct transport to trauma center for trauma patients meeting criteria	
Description	What is the percentage of trauma patients (as defined by the physiological criteria found in the 2011 Guidelines for Field Triage of Injured Patients) who were directly transported to a trauma center from the scene by ground ambulance.	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All trauma patients, meeting trauma criteria (as defined by the physiological criteria found in the 2011 Guidelines for Field Triage of Injured Patients) for transport from scene to a trauma center. ***This population (n-value) should match the denominator population in TRA-1 (prior to determining where the 90th percentile lies)***	
Denominator Inclusion Criteria	<u>Criteria</u>	
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; • D06_03 "vehicle type" corresponds to ground ambulance; • E02_20 "response mode to scene" has a value of 390 "lights and sirens" • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and logical; being not negative and less than 10 hours • Patients with E09_15 "provider primary impression" value 1740 "Traumatic Injury" or E09_16 "provider secondary impression" value 1875 "Traumatic Injury" AND • E14_19 "Total Glasgow Coma Score" value < 14; or • E14_04 "systolic blood pressure" value < 90; or • E14_11 "respiratory rate" value < 10 or > 29 for patients aged 1 year or older or E14_11 "respiratory rate" value < 20 for patients less than 1 year of age 	<ul style="list-style-type: none"> • Type of Service Requested (E02_04) • Vehicle Type (D06_03) • Response mode to scene (E02_20) • Arrived at Scene (E05_06) • Unit Left Scene (E05_09) • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Systolic Blood Pressure (E14_04) • Total GCS Value (E14_19) • Respiratory Rate (E14_11) • Date of Birth (E06_16) • Age Units (E06_15) • Age (E06_14)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>

DIRECT TRANSPORT TO TRAUMA CENTER FOR TRAUMA PATIENTS MEETING CRITERIA

Numerator Statement (Population)	Trauma patients, meeting criteria for transport to a trauma center, who received transport by ambulance directly to a trauma center by Ambulance	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; • D06_03 "vehicle type" corresponds to ground ambulance; • E02_20 "response mode to scene" has a value of 390 "lights and sirens" • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and logical; being not negative and less than 10 hours • Patients with E09_15 "provider primary impression" value 1740 "Traumatic Injury" <u>or</u> E09_16 "provider secondary impression" value 1875 "Traumatic Injury" AND • E14_19 "Total Glasgow Coma Score" value < 14; or • E14_04 "systolic blood pressure" value < 90; or • E14_11 "respiratory rate" value < 10 or > 29 for patients aged 1 year or older or E14_11 "respiratory rate" value < 20 for patients less than 1 year of age <p>And</p> <ul style="list-style-type: none"> • Patients who have "destination/transferred to" code (E20_02) of a trauma center 	<ul style="list-style-type: none"> • Hospital Destination (E20_02)
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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	

DIRECT TRANSPORT TO TRAUMA CENTER FOR TRAUMA PATIENTS MEETING CRITERIA

Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	Mean (x); Mode (m)
Trending Analysis	Yes
Benchmark Analysis	(TBD)

ASPIRIN ADMINISTRATION FOR CHEST PAIN/DISCOMFORT RATE

MEASURE SET	Acute Coronary Syndrome (ACS)	
SET MEASURE ID #	ACS-1	
PERFORMANCE MEASURE NAME	Aspirin administration for chest pain/discomfort rate	
Description	What is the percent of patients age 35 and older with suspected cardiac chest pain who received aspirin prior to hospital by pre-hospital personnel?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Improvement Noted As	An increase in the rate in terms of the percentage	
Denominator Statement (Population)	Number of patients over age 35 with a provider impression (primary or secondary) of chest pain/discomfort.	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units E06_15) Date of Birth (E06_16) Type of Service Requested (E02_04) - Note: Listed in Criteria; incorrectly skipped in Data Elements
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (Population)	Number of patients creating a provider impression of chest pain/discomfort who are eligible for and receive aspirin administration	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," <p><u>And</u></p> <ul style="list-style-type: none"> E18_03 "medications given" equal to 8625 "aspirin" 	<ul style="list-style-type: none"> Medications given (E18_03)
Exclusion Criteria	Criteria	Data Elements
	None	

ASPIRIN ADMINISTRATION FOR CHEST PAIN/DISCOMFORT RATE

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 and Units)	90%
Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	Mean (x); Mode (m)
Trending Analysis	Yes
Benchmark Analysis	(TBD)

12 LEAD ECG PERFORMANCE

MEASURE SET	Acute Coronary Syndrome (ACS)	
SET MEASURE ID #	ACS-2	
PERFORMANCE MEASURE NAME	12 Lead ECG Performance	
Description	What is the percentage of patients with cardiac chest pain discomfort who received 12 lead ECG by paramedics?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	Number of patients age 35 and older creating a provider impression of chest pain/discomfort ***This population (n-value) should match the denominator population in ACS-3 (prior to determining where the 90th percentile lies in ACS-3)***	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Type of Service Requested (E02_04) - Note: Listed in Criteria; incorrectly skipped in Data Elements
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (Population)	Number of patients creating a provider impression of chest pain/discomfort who have 12-lead ECG performed	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," And <ul style="list-style-type: none"> Have a E19_03 "procedure" value 89.820 6130 "12 Lead ECG-{Obtain}" or 89.821 154060 "12 Lead ECG-{Transmitted}" 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units E06_15) Date of Birth (E06_16) Procedures Performed (E19_03)

12 LEAD ECG PERFORMANCE

Exclusion Criteria	Criteria	Data Elements
	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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

SCENE TIME FOR SUSPECTED HEART ATTACK PATIENTS

MEASURE SET	Acute Coronary Syndrome (ACS)	
SET MEASURE ID #	ACS-3	
PERFORMANCE MEASURE NAME	Scene time for suspected heart attack patients age 35 and older	
Description	What is the 90th percentile for ground ambulance scene time of STEMI patients?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	<p>The 90th percentile time interval in an emergency from the time ground ambulance “arrived at scene” to “unit left scene”, for a given period of time, of patients having a recorded “STEMI” value for an indicator like E14_03 “cardiac rhythm”</p> <p>***This population (n-value) should match the denominator population in ACS-2 (prior to determining where the 90th percentile lies for ACS-3)***</p> <p>***This population (n-value) should match the denominator population in ACS-5 (prior to determining where the 90th percentile lies for ACS-3)***</p>	
Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; • D06_03 "vehicle type" corresponds to ground ambulance; • E02_20 "response mode to scene" has a value of 390 "lights and sirens" • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and logical; being not negative and less than 10 hours • Patients aged 35 years and older • Patient has a "STEMI" value recorded for an indicator like E14_03 "cardiac rhythm", such as 3005, 3010, 3015-IT02_02 "EKG Ectopy" value of 9190 "S-T Segment Elevation (STEMI)" 	<ul style="list-style-type: none"> • Type of Service Requested (E02_04) • Vehicle Type (D06_03) • Arrived at Scene (E05_06) • Unit Left Scene (E05_09) • Cardiac Rhythm (E14_03) • EKG Ectopy (IT02_02) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Response Mode to Scene (E02_20) - Note: Listed in Criteria; incorrectly skipped in Data Elements
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is the 90th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (Number and Units)	14 minutes, 34 seconds (14:34)	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	

SCENE TIME FOR SUSPECTED HEART ATTACK PATIENTS

Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	Mean (x); Mode (m) 90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

DIRECT TRANSPORT TO DESIGNATED STEMI RECEIVING CENTER FOR SUSPECTED PATIENTS MEETING CRITERIA

MEASURE SET	Acute Coronary Syndrome (ACS)	
SET MEASURE ID #	ACS-5	
PERFORMANCE MEASURE NAME	Direct transport to designated STEMI receiving center for suspected patients meeting criteria	
Description	What percentage of suspected STEMI patients are transported by ground ambulance directly to a designated STEMI receiving center?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	Number of patients having a recorded "STEMI" value for an indicator like E14_03 "cardiac rhythm" ***This population (n-value) should match the denominator population in ACS-3 (prior to determining where the 90th percentile lies for ACS-3)***	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients aged 35 years and older Patients having E14_03 "cardiac rhythm" recorded with a "STEMI" value, such as 3005, 3010, 3015 an IT02_02 "EKG Ectopy" value of 9190 "S-T Segment Elevation (STEMI)" All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; D06_03 "vehicle type" corresponds to ground ambulance; E02_20 "response mode to scene" has a value of 390 "lights and sirens" Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and logical; being not negative and less than 10 hours 	<ul style="list-style-type: none"> Type of Service Requested (E02_04) - Note: Listed in Criteria; incorrectly skipped in Data Elements Vehicle Type (E06_03) - Note: Listed in Criteria; incorrectly skipped in Data Elements Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Cardiac Rhythm (E14_03) EKG Ectopy (IT02_02) Response Mode to Scene (E02_20) - Note: Listed in Criteria; incorrectly skipped in Data Elements Arrived at Scene (E05_06) - Listed in ACS-3; ACS-5 expected to be duplicate of ACS-3; updated accordingly Unit Left Scene (E05_09) - Listed in ACS-3; ACS-5 expected to be duplicate of ACS-3; updated accordingly

DIRECT TRANSPORT TO DESIGNATED STEMI RECEIVING CENTER FOR SUSPECTED PATIENTS MEETING CRITERIA

Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (Population)	Number of patients having a recorded "STEMI" value for an indicator like E14_03 "cardiac rhythm" that have an E20_02 "destination/ transferred to code" of an interventional cardiac cath center (STEMI Center)	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients aged 35 years and older • Patients having E14_03 "cardiac rhythm" recorded with a "STEMI" value, such as 3005, 3010, 3015 an IT02_02 "EKG Ectopy" value of 9190 "S-T Segment Elevation (STEMI)" <p>And</p> <ul style="list-style-type: none"> • that have an E20_02 "destination/transferred to code" of an interventional cardiac cath center (STEMI Center) 	<ul style="list-style-type: none"> • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Cardiac Rhythm (E14_03) • EKG Ectopy (IT02_02) • Destination/Transferred to Code (E20_02)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	
Rationale for Data	Need to find sources supporting this measure	

DIRECT TRANSPORT TO DESIGNATED STEMI RECEIVING CENTER FOR SUSPECTED PATIENTS MEETING CRITERIA

References	NEMSIS Core Measure Indicator 9
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OUT-OF-HOSPITAL CARDIAC ARRESTS RETURN OF SPONTANEOUS CIRCULATION

MEASURE SET	Cardiac Arrest	
SET MEASURE ID #	CAR-2	
PERFORMANCE MEASURE NAME	Out-of-hospital cardiac arrests return of spontaneous circulation	
Description	Per Utstein definition of ROSC (see references section): What is the percentage of patients experiencing cardiac origin cardiac arrest who have ROSC?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	Total number of patients in a given period experiencing cardiac origin cardiac arrest	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients having a recorded E11_01 "cardiac arrest" value of 2240 "yes, Prior to EMS arrival" or value of 2245 "yes, after EMS arrival"; E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac" E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions" 	<ul style="list-style-type: none"> Cardiac Arrest (E11_01) Cardiac Arrest Etiology (E11_02) Resuscitation Attempted (E11_03) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Traumatic Cardiac Arrest E09_15 "Providers Primary Impression" value 1740 "Traumatic Injury"; or E09_16 "Providers Secondary Impression" value 1875 "Traumatic Injury"; or E10_03 "Mechanism of Injury" values 2035 "Blunt" or 2050 "Penetrating". 	<ul style="list-style-type: none"> Providers Primary Impression (E09_15) Providers Secondary Impression (E09_16) Mechanism of Injury (E10_03)
Numerator Statement (Population)	Number of patients experiencing cardiac origin cardiac arrest who have a return of spontaneous circulation (ROSC)	
Numerator Inclusion Criteria	Criteria	Data Elements

OUT-OF-HOSPITAL CARDIAC ARRESTS RETURN OF SPONTANEOUS CIRCULATION

	<ul style="list-style-type: none"> • Patients having a recorded E11_01 "cardiac arrest" value of 2240 "yes, Prior to EMS arrival" or value of 2245 "yes, after EMS arrival"; • E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac" • E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions" <p><u>And</u></p> <ul style="list-style-type: none"> • E11_06 "any return of spontaneous circulation" values 2370 "yes, prior to ED Arrival Only" or 2375 "yes, prior to ED arrival and at the ED" 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Any Return to Spontaneous Circulation (E11_06)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	25%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

OUT-OF-HOSPITAL CARDIAC ARRESTS SURVIVAL TO ED DISCHARGE

MEASURE SET	Cardiac Arrest	
SET MEASURE ID #	CAR-3	
PERFORMANCE MEASURE NAME	Out-of-hospital Cardiac Arrests Survival to ED discharge	
Description	Per Utstein definition of ROSC (see references section): What is the percentage of patients experiencing cardiac origin cardiac arrest, where resuscitation was attempted, who survived to ED discharge?	
Type of Measure	Outcome	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	Total number of patients experiencing cardiac origin cardiac arrest with resuscitation attempted in a given period	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients having a recorded E11_01 "cardiac arrest" value of 2240 "yes, Prior to EMS arrival" or value of 2245 "yes, after EMS arrival"; • E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac" • E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions" 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • None • E09_15 "Providers Primary Impression" value 1740 "Traumatic Injury"; or • E09_16 "Providers Secondary Impression" value 1875 "Traumatic Injury"; or • E10_03 "Mechanism of Injury" values 2035 "Blunt" or 2050 "Penetrating". 	<ul style="list-style-type: none"> • Providers Primary Impression (E09_15) • Providers Secondary Impression (E09_16) • Mechanism of Injury (E10_03)
Numerator Statement (Population)	Number of patients experiencing cardiac origin cardiac arrest who survive to ED discharge	
Numerator Inclusion Criteria	Criteria	Data Elements

OUT-OF-HOSPITAL CARDIAC ARRESTS SURVIVAL TO ED DISCHARGE

	<ul style="list-style-type: none"> • Patients having a recorded E11_01 "cardiac arrest" value of 2240 "yes, Prior to EMS arrival" or value of 2245 "yes, after EMS arrival"; • E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac" • E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions" <p><u>And</u></p> <ul style="list-style-type: none"> • E22_01 "emergency department disposition" values 5335 "admitted to hospital floor" or 5340 "admitted to hospital ICU" or 5355 "released" or 5360 "transferred" 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Emergency Department Disposition (E22_01)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	25%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

OUT-OF-HOSPITAL CARDIAC ARRESTS SURVIVAL TO HOSPITAL DISCHARGE

MEASURE SET	Cardiac Arrest	
SET MEASURE ID #	CAR-4	
PERFORMANCE MEASURE NAME	Out-of-hospital Cardiac Arrests Survival to hospital discharge	
Description	Per Utstein definition of ROSC (see references section): What is the percentage of patients experiencing cardiac origin cardiac arrest, where resuscitation was attempted, who survived to hospital discharge?	
Type of Measure	Outcome	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	Total number of patients experiencing cardiac origin cardiac arrest in a given period	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients having a recorded E11_01 "cardiac arrest" value of 2240 "yes, Prior to EMS arrival" or value of 2245 "yes, after EMS arrival"; • E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac" • E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions" 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • None • E09_15 "Providers Primary Impression" value 1740 "Traumatic Injury"; or • E09_16 "Providers Secondary Impression" value 1875 "Traumatic Injury"; or • E10_03 "Mechanism of Injury" values 2035 "Blunt" or 2050 "Penetrating". 	<ul style="list-style-type: none"> • Providers Primary Impression (E09_15) • Providers Secondary Impression (E09_16) • Mechanism of Injury (E10_03)
Numerator Statement (Population)	Number of patients experiencing cardiac origin cardiac arrest who survive to discharge from the hospital	
Numerator Inclusion Criteria	Criteria	Data Elements

OUT-OF-HOSPITAL CARDIAC ARRESTS SURVIVAL TO HOSPITAL DISCHARGE

	<ul style="list-style-type: none"> • Patients having a recorded E11_01 "cardiac arrest" value of 2240 "yes, Prior to EMS arrival" or value of 2245 "yes, after EMS arrival"; • E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac" • E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions" <p><u>And</u></p> <ul style="list-style-type: none"> • E22_02 "hospital disposition" values 5370 "discharged" or 5375 "transfer to hospital" or 5380 "transfer to nursing home" or 5385 "transfer to other" or 5390 "transfer to rehabilitation facility" 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Hospital Disposition (E22_02)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	25%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

GLUCOSE TESTING FOR SUSPECTED ACUTE STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-2	
PERFORMANCE MEASURE NAME	Glucose Testing for Suspected Acute Stroke Patients	
Description	<p>What is the percentage of suspected acute stroke patients meeting local criteria who received a glucose test in a pre-hospital setting?</p> <p>***This population (n value) should match the denominator population in STR-3 (prior to determining where the 90th percentile lies)***</p>	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All Suspected Acute Stroke patients	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; • Patients aged 18 years of age or older; • All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," 	<ul style="list-style-type: none"> • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Type of Service Requested (E02_04) - Note: Listed in Criteria; incorrectly skipped in Data Elements
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (Population)	Glucose level checked on all suspected acute stroke patients	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>

GLUCOSE TESTING FOR SUSPECTED ACUTE STROKE PATIENTS

	<ul style="list-style-type: none"> • Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; • Patients aged 18 years of age or older; • All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," <p><u>And</u></p> <ul style="list-style-type: none"> • Patient received glucose testing E19_03 "procedure" with a value of 38.995 6370 "blood glucose analysis" OR Patient has a recorded numeric value (not null or zero) for E14_14 "Blood Glucose Level" 	<ul style="list-style-type: none"> • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Procedure (E19_03) • Blood Glucose Level (E14_14)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

SCENE TIME FOR SUSPECTED ACUTE STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-3	
PERFORMANCE MEASURE NAME	Scene time for suspected acute stroke patients	
Description	<p>What is the 90th percentile for on scene time value for suspected acute stroke patients meeting local criteria who were transported from the scene by ground ambulance?</p> <p>***This population (n-value) should match the denominator population in STR-2 (prior to determining where the 90th percentile lies)***</p> <p>***This population (n-value) should match the denominator population in STR-5 (prior to determining where the 90th percentile lies)***</p>	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	All suspected stroke patients	
Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; • D06_03 "vehicle type" corresponds to ground ambulance; • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and pass logic test; being not negative and less than 10 hours • Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; • Patients aged 18 years of age or older 	<ul style="list-style-type: none"> • Type of Service Requested (E02_04) • Vehicle Type (D06_03) • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Type of Service Requested (E02_04) • Unit Arrived at Scene (E05_06) • Unit Left Scene (E05_09) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Indicator Formula Numeric Expression	The formula is the 90th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (Number and Units)	14 minutes, 34 seconds (14:34)	
Sampling	Yes	

SCENE TIME FOR SUSPECTED ACUTE STROKE PATIENTS

Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	Mean (\bar{x}); Mode (m) 90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

DIRECT TRANSPORT TO STROKE CENTER FOR SUSPECTED ACUTE STROKE PATIENTS MEETING CRITERIA

MEASURE SET	Stroke	
SET MEASURE ID #	STR-5	
PERFORMANCE MEASURE NAME	Direct transport to stroke center for suspected acute stroke patients meeting criteria	
Description	<p>What percent of suspected acute stroke patients meeting local criteria were transported from the scene by ground ambulance directly to a designated stroke center?</p> <p>***This population (n-value) should match the denominator population in STR-3 (prior to determining where the 90th percentile lies)***</p>	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All acute stroke patients, meeting local stroke criteria for transport to a designated stroke center	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; • Patients aged 18 years of age or older • All events for which E02_04 "type of service requested" has value 30 "911 response (scene),"; and vehicle type corresponds to ground ambulance; has value 7370 "Ambulance" 	<ul style="list-style-type: none"> • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Type of Service Requested (E02_04) • Vehicle Type (E06_03) - Note: Listed in Criteria; incorrectly skipped in Data Elements • Arrived at Scene (E05_06) - Listed in STR-3; STR-5 expected to be duplicate of STR-3; updated accordingly • Unit Left Scene (E05_09) - Listed in STR-3; STR-5 expected to be duplicate of STR-3; updated accordingly
Exclusion Criteria	Criteria	Data Elements
	None	

DIRECT TRANSPORT TO STROKE CENTER FOR SUSPECTED ACUTE STROKE PATIENTS MEETING CRITERIA

Numerator Statement (Population)	Suspected acute stroke patients, meeting local stroke criteria, who received transport by ground ambulance directly to a designated stroke center	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; • Patients aged 18 years of age or older <p><u>And</u></p> <ul style="list-style-type: none"> • E20_01 "Destination Transferred To, Name" represents a stroke center 	<ul style="list-style-type: none"> • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Destination/Transferred To (E20_01)
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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

BETA2 AGONIST ADMINISTRATION FOR ADULT PATIENTS

MEASURE SET	Respiratory	
SET MEASURE ID #	RES-2	
PERFORMANCE MEASURE NAME	Beta2 agonist administration for adult patients	
Description	What is the percentage of beta2 agonist (bronchodilator or Ipratropium) administration by EMS personnel for patients older than 14 years old with signs and symptoms of suspected bronchospasm?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	Adult patients with suspected bronchospasm	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients for whom E09_15 "provider's primary impression" has value 1700 "Respiratory Distress"; or for whom E09_16 "provider's secondary impression" has value 1835 "Respiratory Distress" Patients aged 14 years or older 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (Population)	Adult patients who received beta2 agonist by EMS personnel in the pre-hospital setting.	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients for whom E09_15 "provider's primary impression" has value 1700 "Respiratory Distress"; or for whom E09_16 "provider's secondary impression" has value 1835 "Respiratory Distress" Patients aged 14 years or older <p><u>And</u></p> <ul style="list-style-type: none"> Who have a E18_03 value 8620 "aerosolized or nebulized beta 2 specific bronchodilator", 8635 "Beta agonist", or 8700 "Ipratropium Bromide"; or a E18_03 element indicating any of the above of 156222 "Aerosolizer or Nebulized Beta 2 Specific Bronchodi"; 31 "Albuterol Sulfate"; 60 "Atrovent (Ipratropium Bromide)"; 156223 "Beta Agonist (Any Drug)"; or 156224 "Beta-2 Bronchodilator". 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Medication Given (E18_03) Medication Route (E18_04)

BETA2 AGONIST ADMINISTRATION FOR ADULT PATIENTS

Exclusion Criteria	Criteria	Data Elements
	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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

PEDIATRIC PATIENTS WITH WHEEZING WHO RECEIVED BRONCHODILATORS

MEASURE SET	Pediatric	
SET MEASURE ID #	PED-1	
PERFORMANCE MEASURE NAME	Pediatric patients with wheezing who received bronchodilators	
Description	What is the percentage of beta2 agonist (bronchodilator or Ipratropium) administration by EMS personnel for pediatric patients younger than 14 years old with signs and symptoms of suspected bronchospasm?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All pediatric patients with suspected bronchospasm	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients for whom E09_15 "provider's primary impression" has value 1700 "Respiratory Distress"; or for whom E09_16 "provider's secondary impression" has value 1835 "Respiratory Distress" Patients less than 14 years of age 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (Population)	Pediatric patients with wheezing who received bronchodilators	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients for whom E09_15 "provider's primary impression" has value 1700 "Respiratory distress" or for whom E09_16 "provider's secondary impression" has value 1835 – "Respiratory distress" Patients less than 14 years of age <p><u>And</u></p> <ul style="list-style-type: none"> Who have a E18_03 value 8620 "aerosolized or nebulized beta 2 specific bronchodilator", 8635 "Beta agonist", or 8700 "Ipratropium Bromide"; or a E18_03 element indicating any of the above of 156222 "Aerosolizer or Nebulized Beta 2 Specific Bronchodi"; 31 "Albuterol Sulfate"; 60 "Atrovent (Ipratropium Bromide)"; 156223 "Beta Agonist (Any Drug)"; or 156224 "Beta-2 Bronchodilator". 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Medication Given (E18_03)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	

PEDIATRIC PATIENTS WITH WHEEZING WHO RECEIVED BRONCHODILATORS

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 and Units)	90%
Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	Mean (x); Mode (m)
Trending Analysis	Yes
Benchmark Analysis	(TBD)

PAIN INTERVENTION

MEASURE SET	Pain Intervention	
SET MEASURE ID #	PAI-1	
PERFORMANCE MEASURE NAME	Pain intervention	
Description	What is the percentage of adult patients with pain (value of 7 or greater on a 10 point scale) that received a pain intervention by EMS personnel?	
Type of Measure	Process	
Reporting Value and Units	Percentage	
Denominator Statement (Population)	The total number of events over a given period in which patients reported as having a pain value of 7 or greater in the pre-hospital setting.	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Events in which patients had recorded a pain value of 7 or greater for E14_23 • Patient aged 14 years or older (E06_14) 	<ul style="list-style-type: none"> • Pain Scale (E14_23) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Patients with no value recorded for E14_01, who have no value for either E18_01 or E19_01, to indicate the intervention occurred after pain measurement; 	<ul style="list-style-type: none"> • Date Time Vitals Taken (E14_01) • Date Time Medication Administered (E18_01) • Date Time Procedure Performed Successfully (E19_01)
Numerator Statement (Population)	The total number of patients over a given period in which patient reported as having a pain value of 7 or greater who received pain intervention in the pre-hospital setting	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>

PAIN INTERVENTION

	<ul style="list-style-type: none"> Events in which patients had recorded a pain value of 7 or greater for E14_23 Patient aged 14 years or older (E06_14) <p><u>And</u></p> <ul style="list-style-type: none"> Associated value for NEMSIS E14_01, Who have at least one value for E18_03 or E19_03 representing a accepted intervention recognized for pain relief value of 92 "Morphine Sulfate", 72 "Nitroglycerin" or 325 "Fentanyl", and the related NEMSIS E18_01 or NEMSIS E19_01 elements indicate the interventions occurred after the pain scale was assessed. Time between E14_01 "Date Time Vitals Taken" and E18_01 "Date Time Medication Administered" must be present, logical, not negative or over 10 hours. 	<ul style="list-style-type: none"> Pain Scale (E14_23) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Date Time Vitals Taken (E14_01) Date Time Medication Administered (E18_01) Medication Given (E18_03) Procedure (E19_03) Date Time Procedure Performed Successfully (E19_01)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with no value recorded for NEMSIS E14_01 associated with administration of the pain scale E14_23; or who have no logical values for E18_01 or E19_01 to indicate the intervention occurred after assessment of pain scale >=7 	<ul style="list-style-type: none"> Date Time Vitals Taken (E14_01) Date Time Medication Administered (E18_01) Date Time Procedure Performed Successfully (E19_01)
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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	

PAIN INTERVENTION

Trending Analysis	Yes
Benchmark Analysis	(TBD)

ENDOTRACHEAL INTUBATION SUCCESS RATE

MEASURE SET	Performance of Skills	
SET MEASURE ID #	SKL-1	
PERFORMANCE MEASURE NAME	Endotracheal intubation success rate	
Description	What is the percentage of patients who received successful endotracheal intubation within two attempts in a pre-hospital setting?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All endotracheal intubation attempts	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Events in which E19_03 "procedure" has values indicating intubation such as 96.040 6280 "Airway-endotracheal intubation" or 96.041 "airway – intubation, other (stoma, nasal)" 6240 "Airway-Nasotracheal Intubation" with related element E19_05 "number of procedure attempts" 	<ul style="list-style-type: none"> Procedure (E19_03) Attempts (E19_05)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (Population)	All Successful endotracheal intubations, defined as success within 2 attempts.	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Events in which E19_03 "procedure" has values indicating intubation such as 96.040 6280 "Airway-endotracheal intubation" or 96.041 "airway – intubation, other (stoma, nasal)" 6240 "Airway-Nasotracheal Intubation" with related element E19_05 "number of procedure attempts" <p><u>And</u></p> <ul style="list-style-type: none"> E19_05 "number of procedure attempts" value listed as one or two; and E19_06 "Procedure successful" noted as value of 1 "yes" 	<ul style="list-style-type: none"> Procedure (E19_03) Attempts (E19_05) Procedure Successful (E19_06)
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 $N/D = \%$	

ENDOTRACHEAL INTUBATION SUCCESS RATE

Example of Final Reporting Value (Number and Units)	90%
Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	Mean (x); Mode (m)
Trending Analysis	Yes
Benchmark Analysis	(TBD)

CAPNOGRAPHY MEASUREMENT PERFORMED ON ANY SUCCESSFUL ENDOTRACHEAL INTUBATION

MEASURE SET	Performance of Skills	
SET MEASURE ID #	SKL-2	
PERFORMANCE MEASURE NAME	Capnography measurement performed on any successful endotracheal intubation	
Description	What is the percentage of intubated patients where capnography measurement is performed?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All successful endotracheal intubations	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Events in which E19_03 "procedure" has values indicating intubation such as 96.040 6280 "Airway-endotracheal intubation" or 96.041 "airway – intubation, other (stoma, nasal)" 6240 "Airway-Nasotracheal Intubation" with related element E19_05 "number of procedure attempts" • E19_05 "number of procedure attempts" value listed as one or two; and • E19_06 "Procedure successful" noted as value of 1 "yes" 	<ul style="list-style-type: none"> • Procedure (E19_03) • Attempts (E19_05) • Procedure Successful (E19_06)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (Population)	All successful endotracheal intubations where capnography measurement was performed	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>

CAPNOGRAPHY MEASUREMENT PERFORMED ON ANY SUCCESSFUL ENDOTRACHEAL INTUBATION

	<ul style="list-style-type: none"> • Events in which E19_03 "procedure" has values indicating intubation such as 96.040 6280 "Airway-endotracheal intubation" or 96.041 "airway – intubation, other (stoma, nasal)" 6240 "Airway-Nasotracheal Intubation" with related element E19_05 "number of procedure attempts" • E19_05 "number of procedure attempts" value listed as one or two; and • E19_06 "Procedure successful" noted as value of 1 "yes" <p><u>And</u></p> <ul style="list-style-type: none"> • E19_03 "procedure" has values of 96.992 "airway-end-tidal CO2 intubation" 6210 "Airway-Intubation Confirm Esophageal Detector Device/Bulb (EDD)" or 89.391 6380 "capnography" 	<ul style="list-style-type: none"> • Procedure (E19_03) • Attempts (E19_05) • Procedure Successful (E19_06)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

AMBULANCE RESPONSE TIME BY AMBULANCE ZONE (EMERGENCY)

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-1	
PERFORMANCE MEASURE NAME	Ambulance response time by ambulance zone (Emergency)	
Description	What is the 90th percentile time value of the Ambulance Response time in Ground Ambulance Transport Zone as defined by the EMS Plan?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	Time (in minutes and seconds) from time ambulance is en route to arrival at the scene for emergency responses (Code 3) to patients by BLS, LALS, or ALS ambulances. The 90th percentile time interval from "unit en route date/time" (E05-05) in an emergency to EMS "unit arrived on scene date/time" (E05-06), for a given period of time	
Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> All events in a particular ambulance zone E02_04 "type of service requested" has value 30 "911 response (scene)"; and E02_05 "Primary role of the unit" value is 75 "transport"; E02_20 "response mode to scene" is 390 "lights and sirens"; Values for E05_05 "unit en route date/time" and E05_06 "unit arrived on scene date/time" are present and logical. <p style="color: red;">Times cannot be negative or over 2 hours.</p>	<ul style="list-style-type: none"> Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) Primary role of unit (E02_05) Type of Service Requested (E02_04) Response Mode to Scene (E02_20) Unit En Route Date/Time (E05_05) Unit Arrived on Scene (E05_06)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Non-Transport Providers excluded 	
Indicator Formula Numeric Expression	The formula is the 90th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (Number and Units)	8 minutes 30 seconds	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	

AMBULANCE RESPONSE TIME BY AMBULANCE ZONE (EMERGENCY)

Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

AMBULANCE RESPONSE TIME BY AMBULANCE ZONE (NON-EMERGENCY)

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-2	
PERFORMANCE MEASURE NAME	Ambulance response time by ambulance zone (non-emergency)	
Description	What is the 90th percentile value of the ambulance response time for the Ground Ambulance Transport Zone as defined by the EMS Plan?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	Time (in minutes and seconds) from time ambulance is en route to arrival at the scene for non-emergency (Code 2) responses to patients by BLS, LALS, or ALS ambulances. The 90th percentile time interval from "unit en route date/time" (E05_05) in an emergency to EMS "unit arrived on scene date/time" (E05_06), for a given period of time	
Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • All events in a particular ambulance zone • E02_04 "type of service requested" has value 30 "911 response (scene)"; and • E02_05 "Primary role of the unit" value is 75 "transport"; • E02_20 "response mode to scene" is 395 "no lights and sirens"; • Values for E05_05 "unit en route date/time" and E05_06 "unit arrived on scene date/time" are present and logical. <p>Times cannot be negative or over 2 hours.</p>	<ul style="list-style-type: none"> • Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) • Primary role of unit (E02_05) • Type of Service Requested (E02_04) • Response Mode to Scene (E02_20) • Unit En Route Date/Time (E05_05) • Unit Arrived on Scene (E05_06)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Non-Transport Providers excluded 	
Indicator Formula Numeric Expression	The formula is the 90th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (Number and Units)	8 minutes 30 seconds	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	

AMBULANCE RESPONSE TIME BY AMBULANCE ZONE (NON-EMERGENCY)

Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

TRANSPORT OF PATIENTS TO HOSPITAL

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-3	
PERFORMANCE MEASURE NAME	Transport of patients to hospital	
Description	What is the percentage of EMS Patients transported to a General Acute Care Hospital with a Basic Permit for emergency services?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (Population)	All 911 incidents which requested or required a response by at least one EMS unit, and the unit arrived at scene	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • All unique EMS incidents in a particular ambulance zone • E02_04 "type of service requested" has value 30 "911 response (scene)"; and • E02_05 "Primary role of the unit" value is 75 "transport"; • E02_20 "response mode to scene" is 390 "lights and sirens"; • Values for E05_05 "unit en route date/time" and E05_06 "unit arrived on scene date/time" are present and logical. <p style="color: red; margin-top: 0;">Times cannot be negative or over 2 hours.</p>	<ul style="list-style-type: none"> • Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) • Incident Number (E02_02) • Primary role of unit (E02_05) • Type of Service Requested (E02_04) • Response Mode to Scene (E02_20) • Unit En Route Date/Time (E05_05) • Unit Arrived on Scene Date/Time (E05_06)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Non-Transport Providers excluded 	
Numerator Statement (Population)	All patients who received transport to a General Acute Care Hospital, with a Basic Permit, by BLS, LALS, or ALS Ambulances	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>

TRANSPORT OF PATIENTS TO HOSPITAL

	<ul style="list-style-type: none"> • All unique EMS incidents in a particular ambulance zone • E02_04 "type of service requested" has value 30 "911 response (scene)"; and • E02_05 "Primary role of the unit" value is 75 "transport"; D06_03 "Vehicle Type" has value 7370 "Ambulance" • E02_20 "response mode to scene" is 3905 "lights and sirens"; • Values for E05_05 "unit en route date/time" and E05_06 "unit arrived on scene date/time" are present and logical. Times cannot be negative or over 2 hours. <p><u>And</u></p> <ul style="list-style-type: none"> • E20_17 has a value of 5050 7280 "hospital" 	<ul style="list-style-type: none"> • Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) • Incident Number (E02_02) • Primary role of unit (E02_05) • Vehicle Type (D06_03) • Type of Service Requested (E02_04) • Response Mode to Scene (E02_20) • Unit En Route Date/Time (E05_05) • Unit Arrived on Scene Date/Time (E05_06) • Patient Destination (E20_17)
Exclusion Criteria	Criteria	Data Elements
	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 and Units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	



California EMS System Core Quality Measures Data Year 2015

Emergency Medical Services Authority
California Health and Human Services Agency

EMSA #166 - Appendix E (4th Edition)
EMS System Quality Improvement Program Guidelines





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1 • California EMS System Core Quality Measures

STATUTORY AUTHORITY

The California EMS Authority (EMSA or 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” (HS 1797.1). Moreover, the authority is required to assess each 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” (HS1797.102). And local EMS agencies are required to plan, implement, and evaluate an EMS system (HS 1797.204).

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

Additionally, EMS system quality improvement regulations have been established (CCR, Title 22, Division 9, Chapter 12) that define the requirements for local EMS agencies, 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 local EMS system as found in EMSA #166, Appendix E. EMSA’s aim with the Core Measures Project is to develop appropriate indicators to reflect on-going LEMSA efforts at quality improvement aimed at clinical and transport activities that are reflective of Quality Improvement activities at the local level.

A report to the Legislature must be made on the effectiveness of EMS systems annually related to the EMS system’s impact on death and disability (HS 1797.121).

In order to achieve this mandate to evaluate system impact on patients, the continuum of care from dispatch to pre-hospital to hospital disposition must be connected. Only in this way, we can begin to understand how care provided by EMS personnel translates to improved outcomes and system effectiveness.

2 • California EMS System Core Quality Measures

PROJECT HISTORY

The purpose of the EMS system core measures is to increase the accessibility and accuracy of pre-hospital data for public, policy, academic and research purposes to facilitate EMS system evaluation and improvement. This program was originally developed through a grant from the California Health Care Foundation (CHCF) in 2012. Ultimately, the project highlights opportunities to improve the quality of patient care delivered within an EMS system.

During the 1 year period, from July 31, 2013 to June 30, 2014, The California EMS Authority (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. Worked to reveal opportunities for both short-term and long-term data improvement plans.
3. Focus on achieving reliable measures that are high value and feasible within a short-term time frame.
4. Refined and publish core measure sets that describe the coordination and effectiveness of EMS utilizing regional and local information for California. This project focuses upon 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 local EMS agencies across the state to implement improved data collection and reporting practices with those Local Emergency Medical Services Agencies who participate in California Emergency Medical Services Information System.

EMSA has continued to utilize the EMS system core measures project to collect information on an annual basis (calendar year 2014 and 2015) while maintaining similar direction and goals to the objectives stated above.

3 • California EMS System Core Quality Measures

WHAT ARE CORE MEASURES?

They are the use of standardized performance measures and are intended to examine an EMS system or treatment of an identified patient condition.

CORE MEASURES DEFINITION

The California Core Measures are based on scientific evidence about processes and treatments that are known to get the best results for a condition or illness. These measures help emergency medical services systems improve the quality of patient care by focusing on the actual results of care.

The measures benchmark 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. Information about these treatments are taken from the pre-hospital care reports and converted into a percentage. The preliminary California EMS Core Measures were derived largely from a set of quality indicators developed through a project by the National Quality Forum.

COMPARING PERFORMANCE

Emergency medical services systems across the state are measured and compared on their performance in these Core Measures. There will be a delay between when data are reported from EMS systems and when they are available for review because EMSA allows time for all local systems in the state to be compiled before it can post its quality data for a given period. EMS providers can utilize these core measures to assist in continuous quality improvement activities.

In terms of system evaluation, the data most closely focused on performance are contained in the following data pieces:

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

CORE MEASURES PURPOSE

The primary purpose of the Core Measures Project is to develop a mechanism to reflect as accurately as possible the local EMS activity so that EMSA can better fulfill its legislative obligation to assess the effectiveness of emergency medical services and provide quality Improvement information. The collection of the 17 clinical measures and the three response and transport measures selected by the Core Measures Task Force

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provide the best mechanism for EMSA to this. The data will become even more useful when more of California's 33 LEMSAs participate fully in the project. EMSA looks forward to more robust project participation as a means to share data on a national level.

EMSA has made data quality and analysis a priority over the past 3 years and has recently formed a data advisory group consisting of three local EMS agency administrators and an equal number of medical directors to help determine a cooperative strategy for improving EMS data and its application and enhancing data and quality efforts.

FUTURE CORE MEASURES

It is anticipated that the EMS system cores measures may be modified and reflect future core measure modifications in the future, especially with the anticipated data changes related to the NEMSIS version 3 application, which will become mandatory January 1, 2017

CORE MEASURES TASK FORCE

A task force has been convened to review the core measures and make recommendations. The task force consists of key data and quality leaders from local EMS agencies, medical directors, hospitals, and pre-hospital EMS providers and continues to provide clarity and insight into the best data elements for EMSA to use to meet the mandate for data quality improvement and coordination, integration, and assessment of statewide emergency medical services.

QUALIFYING DATA

The data derived for all measures will come from the calendar year 2015.

STANDARD ELEMENTS FOR EVERY MEASURE

The following standard elements are necessary to sort by time and location:

- Date/Time E05_01
- County E08_13

REFERENCE INFORMATION

The California EMS System Core Quality Measures contains various references and

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

NEMESIS 2.2.1 Data Dictionary – Updated 4/9/2012

(http://www.nemesis.org/v2/downloads/documents/NEMESIS_Data_Dictionary_v2.2.1_04092012.pdf)

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

(www.ems.gov/pdf/811211.pdf)

Utstein Definitions (<http://circ.ahajournals.org/content/110/21/3385.full>)

Pediatric patients are defined throughout this document as being younger than age 14

Trauma patients are defined as meeting the physiological criteria for “Measure vital signs and level of consciousness” by the “[2011 Guidelines for Field Triage of Injured Patients](#)”.

INSTRUCTIONS FOR RUNNING MEASURE REPORTS

Run each core measure exactly as specified on each core measure specification sheet.

If the core measure cannot be run as specified, run the measure based on the intent of the core measure according to the question provided in the description box on the specification sheet.

If a core measure is ran based on intent (as described above), the LEMSA must indicate so in the “Measure Run Exactly As Written” column on the reporting spread sheet and provide the data elements that were used, including all relevant values, as well as inclusion and exclusion criteria, to achieve a value for the core measure. This must be provided when submitting the report to EMSA.

LEMSA DATA FLOW DESCRIPTION

Please provide a detailed description of the flow of information from the point of documentation/collection to the submission of the LEMSA annual core measures report to EMSA. The intent is to provide a mechanism to better understand the data being submitted. In the event your data flow includes the local providers sending data to EMSA instead of the LEMSA, please note that.

Please include in your data flow description:

- Paper Patient Care Records (PCRs)
 - How many providers are using paper PCRs;

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- How the data from the paper PCRs are being entered into the system from those providers;
- Electronic Paper Patient Care Records (ePCRs)
 - How many providers are using electronic PFCRs;
 - How the data form the ePCRs are being entered into the system;
- A general description of your data system to include:
 - A general idea of the data flow from the providers to EMSA;
 - Who compiles the data for the Core Measures Reports (LEMSA staff, contractor, provider, etc.);
 - Who submits the Core Measures Reports to EMSA;
 - Who compiles the data for the Core Measures Reports (LEMSA staff, contractor, etc.); and
 - Any other information that would help us better understand the Core Measures data submitted

RECENT LEGISLATION

Recent state legislation is driving changes in EMS data systems related to data quality and data accuracy. Specifically, four bills were enacted in 2015 and became effective January 2016. These include:

- AB 1129 which requires each provider to utilize electronic health record systems that are compliant with the "current version of NEMESIS" to collect EMS data;
- AB 503 which authorizes a health facility to share patient-identifiable information with EMSA or other appropriate EMS entities for the purposes of addressing quality improvement;
- AB 1223 which requires EMSA to adopt standards related to data collection for ambulance patient off-load time; and
- SB 19 which requires EMSA to establish a pilot project to be known as the California POLST eRegistry for the purpose of collecting information received from a physician or their designee.

Each of these new laws may have some impact on the Core Measures effort, particularly AB 1129 and AB 1223.

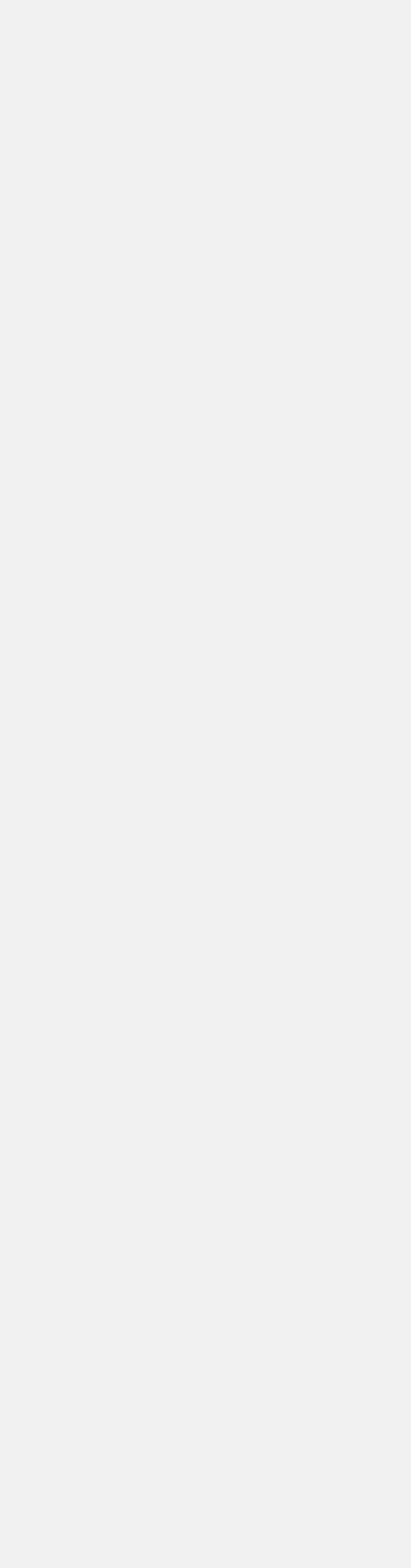
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CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME
D Clinical Care and Patient Outcome	Trauma (n=2)	TRA-1	Scene time for trauma patients
		TRA-2	Direct transport to trauma center for trauma patients meeting criteria
	Acute 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-5	Direct transport to designated STEMI receiving center for suspected patients meeting criteria
	Cardiac Arrest (n=3)	CAR-2	Out-of-hospital cardiac arrests return of spontaneous circulation
		CAR-3	Out-of-hospital cardiac arrests survival to emergency department discharge
		CAR-4	Out-of-hospital cardiac arrests survival to hospital discharge
	Stroke (n=3)	STR-2	Glucose testing for suspected stroke patients
		STR-3	Scene time for suspected stroke patients
		STR-5	Direct transport to stroke center for suspected stroke patients meeting criteria
	Respiratory (n=1)	RES-2	Beta2 agonist administration for adult patients
	Pediatric (n=1)	PED-1	Pediatric patients with wheezing who received bronchodilators
	Pain Intervention (n=1)	PAI-1	Pain intervention

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CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME
E Skills Maintenance and Competency	Performance of Skills (n=2)	SKL-1	Endotracheal intubation success rate
		SKL-2	Capnography measurement performed on any successful endotracheal intubation
F Transportation and Facilities	Response and Transport (n=3)	RST-1	Ambulance response time by ambulance zone (Emergency)
		RST-2	Ambulance response time by ambulance zone (Non-Emergency)
		RST-3	Transport of patients to hospital

Core Measures Specification Sheets



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SCENE TIME FOR TRAUMA PATIENTS

MEASURE SET	Trauma	
SET MEASURE ID #	TRA-1	
PERFORMANCE MEASURE NAME	Scene time for trauma patients	
Description	What is the 90 th percentile for on scene time value for trauma patients (as defined by the physiological criteria found in the 2011 Guidelines for Field Triage of Injured Patients) who were transported from the scene by ground ambulance?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	Time (in minutes) from time ground ambulance arrives at the scene until the time ambulance departs from the scene for Trauma patients, meeting criteria for transport to a trauma center, who received transport by ground ambulance to a hospital by EMS personnel (EMT, AEMT, and Paramedic). ***This population (n-value) should match the denominator population in TRA-2 (prior to determining where the 90th percentile lies)***	
Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> All events for which E02_04 “type of service requested” has value 30 “911 response (scene),”; D06_03 “vehicle type” corresponds to ground ambulance; E02_20 “response mode to scene” has a value of 390 “lights and sirens”; Values for “arrived at scene” E05_06 and “unit left scene” E05_09 are present and logical; Patients with E09_15 “provider primary impression” value 1740 “Traumatic Injury” or E09_16 “provider secondary impression” value 1875 “Traumatic Injury” <p>AND</p> <ul style="list-style-type: none"> E14_19 “Total Glasgow Coma Score” value < 14; or 	<ul style="list-style-type: none"> Type of Service Requested (E02_04) Response mode to scene (E02_20) Vehicle Type (D06_03) Arrived at Scene (E05_06) Unit Left Scene (E05_09) Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Systolic Blood Pressure (E14_04) Total GCS Value (E14_19) Respiratory Rate (E14_11) Date of Birth (E06_16) Age Units (E06_15)

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	<ul style="list-style-type: none"> E14_04 "systolic blood pressure" value < 90; or E14_11 "respiratory rate" value < 10 or > 29 for patients aged 1 year or older or E14_11 "respiratory rate" value < 20 for patients less than 1 year of age 	<ul style="list-style-type: none"> Age (E06_14)
Exclusion Criteria	Criteria	Data Elements
Indicator Formula Numeric Expression	The formula is the 90 th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (number and units)	14 minutes, 34 seconds (14:34)	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	90 th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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DIRECT TRANSPORT TO TRAUMA CENTER FOR TRAUMA PATIENTS MEETING CRITERIA

MEASURE SET	Trauma	
SET MEASURE ID #	TRA-2	
PERFORMANCE MEASURE NAME	Direct transport to trauma center for trauma patients meeting criteria	
Description	What is the percentage of trauma patients (as defined by the physiological criteria found in the 2011 Guidelines for Field Triage of Injured Patients) who were directly transported to a trauma center from the scene by ground ambulance.	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All trauma patients, meeting trauma criteria (as defined by the physiological criteria found in the 2011 Guidelines for Field Triage of Injured Patients) for transport from scene to a trauma center. ***This population (n-value) should match the denominator population in TRA-1 (prior to determining where the 90th percentile lies)***	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> All events for which E02_04 “type of service requested” has value 30 “911 response (scene); D06_03 “vehicle type” corresponds to ground ambulance;E02_20 “response mode to scene” has a value of 390 “lights and sirens”; Values for “arrived at scene” E05_06 and “unit left scene” E05_09 are present and logical; Patients with E09_15 “provider primary impression” value 1740 “Traumatic Injury” or E09_16 “provider secondary impression” value 1875 “Traumatic Injury” <p>AND</p> <ul style="list-style-type: none"> E14_19 “Total Glasgow Coma Score” value < 14; or E14_04 “systolic blood pressure” value < 90; or E14_11 “respiratory rate” value < 10 or > 29 for patients aged 1 year or older 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Type of Service Requested (E02_04) Vehicle Type (D06_03) Systolic Blood Pressure (E14_04) Total GCS Value (E14_19) Respiratory Rate (E14_11) Date of Birth (E06_16) Age Units (E06_15) Age (E06_14)

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	or E14_11 "respiratory rate" value < 20 for patients less than 1 year of age	
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • All patients who were not transported to trauma center • 	
Numerator Statement (sub-population)	Trauma patients, meeting criteria for transport to a trauma center, who received transport by ambulance directly to a trauma center by ground Ambulance	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene); • D06_03 "vehicle type" corresponds to ground ambulance; • E02_20 "response mode to scene" has a value of 390 "lights and sirens"; • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and logical; • Patients with E09_15 "provider primary impression" value 1740 "Traumatic Injury" <u>or</u> E09_16 "provider secondary impression" value 1875 "Traumatic Injury" <p>And</p> <ul style="list-style-type: none"> • E14_19 "Total Glasgow Coma Score" value < 14; or • E14_04 "systolic blood pressure" value < 90; or • E14_11 "respiratory rate" value < 10 or > 29 for patients aged 1 year or older <u>or</u> E14_11 "respiratory rate" value < 20 for patients less than 1 year of age <p>And</p> <ul style="list-style-type: none"> • Patients who have "destination/transferred to" code (E20_02) of a trauma center 	<ul style="list-style-type: none"> • Hospital Destination (E20_02)

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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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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ASPIRIN ADMINISTRATION FOR CHEST PAIN/DISCOMFORT RATE

MEASURE SET	Acute Coronary Syndrome (ACS)	
SET MEASURE ID #	ACS-1	
PERFORMANCE MEASURE NAME	Aspirin administration for chest pain/discomfort rate	
Description	What is the percent of patients age 35 and older with suspected cardiac chest pain who received aspirin prior to hospital by pre-hospital personnel?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Improvement Noted As	An increase in the rate in terms of the percentage	
Denominator Statement (population)	Number of patients over age 35 with a provider impression (primary or secondary) of chest pain/discomfort. <u>***This population (n-value) should match the denominator population in ACS-2***</u>	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units E06_15) Date of Birth (E06_16)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (sub-population)	Number of patients creating a provider impression of chest pain/discomfort who receive aspirin administration	

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Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; • Patients aged 35 years and older; • E18_03 "medications given" equal to 8625 "aspirin" 	<ul style="list-style-type: none"> • Medications given (E18_03)
Exclusion Criteria	Criteria	Data Elements
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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12 LEAD ECG PERFORMANCE

MEASURE SET	Acute Coronary Syndrome (ACS)	
SET MEASURE ID #	ACS-2	
PERFORMANCE MEASURE NAME	12 Lead ECG Performance	
Description	What is the percent of patients age 35 and older with who received 12 lead ECG by paramedics?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	Number of patients age 35 and older creating a provider impression of chest pain/discomfort ***This population (n-value) should match the denominator population in ACS-31 (prior to determining where the 90th percentile lies in ACS-13)***	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	Number of patients age 35 and older creating a provider impression of chest pain/discomfort who have 12-lead ECG performed	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1650 "Chest pain/discomfort" "or E09_16 value 1785 "Chest pain/discomfort"; Patients aged 35 years and older; 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15)

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	<ul style="list-style-type: none"> Have a E19_03 "procedure" value 89.820 "12 lead -(Obtain)" or 89.821 "12 Lead (Transmitted) 	<ul style="list-style-type: none"> Date of Birth (E06_16) Procedures Performed (E19_03)
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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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SCENE TIME FOR SUSPECTED HEART ATTACK PATIENTS

MEASURE SET	Acute Coronary Syndrome	
SET MEASURE ID #	ACS-3	
PERFORMANCE MEASURE NAME	Scene time for suspected heart attack patients age 35 and older	
Description	What is the 90 th percentile for ground ambulance scene time of STEMI patients?	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (Population)	<p>The 90th percentile time interval in an emergency from the time ground ambulance “arrived at scene” to “unit left scene”, for a given period of time, of patients having a recorded “STEMI” value for an indicator like E14_03 “cardiac rhythm”</p> <p>***This population (n-value) should match the denominator population in ACS-5 (prior to determining where the 90th percentile lies for ACS-5)***</p>	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • All events for which E02_04 “type of service requested” has value 30 “911 response (scene)”; • D06_03 “vehicle type” corresponds to ground ambulance; • E02_20 “response mode to scene” has a value of 390 “lights and sirens” ; • Values for “arrived at scene” E05_06 and “unit left scene” E05_09 are present and logical; • Patients aged 35 years and older; • Patient has a “STEMI” value recorded for an indicator like E14_03 “cardiac rhythm”, such as 3005, 3010, 3015 	<ul style="list-style-type: none"> • Type of Service Requested (E02_04) • Arrived at Scene (E05_06) • Unit Left Scene (E05_09) • Cardiac Rhythm (E14_03) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Vehicle Type (D06_03)
Exclusion Criteria	Criteria	Data Elements
	None	

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Indicator Formula Numeric Expression	The formula is the 90 th Percentile of the given numbers or distribution in their ascending order.
Example of Final Reporting Value (number and units)	14 minutes, 20 seconds (14:20)
Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	<u>90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions. Mean (\bar{x}); Mode (m)</u>
Trending Analysis	Yes
Benchmark Analysis	(TBD)

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DIRECT TRANSPORT TO DESIGNATED STEMI RECEIVING CENTER FOR SUSPECTED PATIENTS MEETING CRITERIA

MEASURE SET	Acute Coronary Syndrome	
SET MEASURE ID #	ACS-5	
PERFORMANCE MEASURE NAME	Direct transport to designated STEMI receiving center for suspected patients meeting criteria	
Description	<p>What percentage of suspected STEMI patients are transported by ground ambulance directly to a designated STEMI receiving center?</p> <p>***This population (n-value) should match the denominator population in ACS-3 (prior to determining where the 90th percentile lies in ACS-3)***</p>	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	<p>Number of patients having a recorded “STEMI” value for an indicator like E14_03 “cardiac rhythm”</p> <p>***This population (n-value) should match the denominator population in ACS-3 (prior to determining where the 90th percentile lies)***</p>	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Patients aged 35 years and older; Patients having E14_03 “cardiac rhythm” recorded with a “STEMI” value, such as 3005, 3010, 3015; All events for which E02_04 “type of service requested” has value 30 “911 response (scene),”; D06_03 “vehicle type” corresponds to ground ambulance 	<ul style="list-style-type: none"> Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Cardiac Rhythm (E14_03) Vehicle Type (D06_03)
Exclusion Criteria		
	None	

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Numerator Statement (sub-population)	Number of patients having a recorded “STEMI” value for an indicator like E14_03 “cardiac rhythm” that have an E20_02 “destination/ transferred to code” of an interventional cardiac cath center (STEMI Center)	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Patients aged 35 years and older; • Patients having E14_03 “cardiac rhythm” recorded with a “STEMI” value, such as 3005, 3010, 3015 ; • Patients that have an E20_02 “destination/transferred to code” of an interventional cardiac cath center (STEMI Center) 	<ul style="list-style-type: none"> • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Cardiac Rhythm (E14_03) • Destination/Transferred to Code (E20_02)
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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	

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Benchmark Analysis	(TBD)
Rationale for Data	Need to find sources supporting this measure
References	NEMSIS Core Measure Indicator 9

OUT-OF-HOSPITAL CARDIAC ARRESTS RETURN OF SPONTANEOUS CIRCULATION

MEASURE SET	Cardiac Arrest	
SET MEASURE ID #	CAR-2	
PERFORMANCE MEASURE NAME	Out-of-hospital cardiac arrests return of spontaneous circulation	
Description	Per Utstein definition of ROSC (see references section): What is the percentage of patients experiencing cardiac origin cardiac arrest who have ROSC?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	Total number of patients in a given period experiencing cardiac origin cardiac arrest	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients having a recorded E11_01 “cardiac arrest” value of 2240 “yes, Prior to EMS arrival” or value of 2245 “yes, after EMS arrival”; • E11_02 “cardiac arrest etiology” value of 2250 “presumed cardiac”; • E11_03 “resuscitation attempted” values 2280 “attempted defibrillation” or 2285 “attempted ventilation” or 2290 “initiated chest compressions” 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Traumatic Cardiac Arrest 	
Numerator Statement (sub-population)	Number of patients experiencing cardiac origin cardiac arrest who have a return of spontaneous circulation (ROSC)	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients having a recorded E11_01 “cardiac arrest” value of 2240 “yes, Prior to EMS arrival” or value of 2245 “yes, after EMS 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted

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	<ul style="list-style-type: none"> arrival"; E11_02 "cardiac arrest etiology" value of 2250 "presumed cardiac"; E11_03 "resuscitation attempted" values 2280 "attempted defibrillation" or 2285 "attempted ventilation" or 2290 "initiated chest compressions"; E11_06 "any return of spontaneous circulation" values 2370 "yes, prior to ED Arrival Only" or 2375 "yes, prior to ED arrival and at the ED" 	<ul style="list-style-type: none"> (E11_03) Any Return to Spontaneous Circulation (E11_06)
Exclusion Criteria	Criteria	Data Elements
	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 and units)	25%	
Sampling	No	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

OUT-OF-HOSPITAL CARDIAC ARRESTS SURVIVAL TO ED DISCHARGE

MEASURE SET	Cardiac Arrest	
SET MEASURE ID #	CAR-3	
PERFORMANCE MEASURE NAME	Out-of-hospital Cardiac Arrests Survival to ED discharge	
Description	Per Utstein definition of ROSC (see references section): What is the percentage of patients experiencing cardiac origin cardiac arrest, where resuscitation was attempted, who survived to ED discharge?	
Type of Measure	Outcome	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	Total number of patients experiencing cardiac origin cardiac arrest with resuscitation attempted in a given period	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients having a recorded E11_01 “cardiac arrest” value of 2240 “yes, Prior to EMS arrival” or value of 2245 “yes, after EMS arrival”; E11_02 “cardiac arrest etiology” value of 2250 “presumed cardiac”; E11_03 “resuscitation attempted” values 2280 “attempted defibrillation” or 2285 “attempted ventilation” or 2290 “initiated chest compressions” 	<ul style="list-style-type: none"> Cardiac Arrest (E11_01) Cardiac Arrest Etiology (E11_02) Resuscitation Attempted (E11_03) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	Number of patients experiencing cardiac origin cardiac arrest who survive to ED discharge	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients having a recorded E11_01 “cardiac arrest” value of 2240 “yes, Prior to EMS arrival” or value of 2245 “yes, after EMS arrival”; E11_02 “cardiac arrest etiology” value of 2250 “presumed 	<ul style="list-style-type: none"> Cardiac Arrest (E11_01) Cardiac Arrest Etiology (E11_02) Resuscitation Attempted (E11_03) Emergency Department

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	<p>cardiac”;</p> <ul style="list-style-type: none"> • E11_03 “resuscitation attempted” values 2280 “attempted defibrillation” or 2285 “attempted ventilation” or 2290 “initiated chest compressions”; • E22_01 “emergency department disposition” values 5335 “admitted to hospital floor” or 5340 “admitted to hospital ICU” or 5355 “released” or 5360 “transferred” 	Disposition (E22_01)
Exclusion Criteria	Criteria	Data Elements
	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 and units)	25%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

OUT-OF-HOSPITAL CARDIAC ARRESTS SURVIVAL TO HOSPITAL DISCHARGE

MEASURE SET	Cardiac Arrest	
SET MEASURE ID #	CAR-4	
PERFORMANCE MEASURE NAME	Out-of-hospital Cardiac Arrests Survival to hospital discharge	
Description	Per Utstein definition of ROSC (see references section): What is the percentage of patients experiencing cardiac origin cardiac arrest, where resuscitation was attempted, who survived to hospital discharge?	
Type of Measure	Outcome	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	Total number of patients experiencing cardiac origin cardiac arrest in a given period	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Patients having a recorded E11_01 “cardiac arrest” value of 2240 “yes, Prior to EMS arrival” or value of 2245 “yes, after EMS arrival”; • E11_02 “cardiac arrest etiology” value of 2250 “presumed cardiac”; • E11_03 “resuscitation attempted” values 2280 “attempted defibrillation” or 2285 “attempted ventilation” or 2290 “initiated chest compressions” 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation Attempted (E11_03) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (sub-population)	Number of patients experiencing cardiac origin cardiac arrest who survive to discharge from the hospital	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Patients having a recorded E11_01 “cardiac arrest” value of 2240 “yes, Prior to EMS arrival” or value of 2245 “yes, after EMS arrival”; 	<ul style="list-style-type: none"> • Cardiac Arrest (E11_01) • Cardiac Arrest Etiology (E11_02) • Resuscitation

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	<ul style="list-style-type: none"> E11_02 “cardiac arrest etiology” value of 2250 “presumed cardiac”; E11_03 “resuscitation attempted” values 2280 “attempted defibrillation” or 2285 “attempted ventilation” or 2290 “initiated chest compressions”; E22_02 “hospital disposition” values 5370 “discharged” or 5375 “transfer to hospital” or 5380 “transfer to nursing home” or 5385 “transfer to other” or 5390 “transfer to rehabilitation facility” 	<ul style="list-style-type: none"> Attempted (E11_03) Hospital Disposition (E22_02)
Exclusion Criteria	Criteria	Data Elements
	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 and units)	25%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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GLUCOSE TESTING FOR SUSPECTED ACUTE STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-2	
PERFORMANCE MEASURE NAME	Glucose Testing for Suspected Acute Stroke Patients	
Description	<p>What is the percentage of suspected acute stroke patients meeting local criteria who received a glucose test in a pre-hospital setting?</p> <p>***This population (n-value) should match the denominator population in STR-3 (prior to determining where the 90th percentile lies)***</p>	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All Suspected Acute Stroke patients	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; Patients aged 18 years of age or older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	Glucose level checked on all suspected acute stroke patients	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; Patients aged 18 years of age or older; Patient received glucose testing E19_03 "procedure" with a 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Procedure (E19_03) Blood Glucose Level (E14_14)

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	value of 38.995 “blood glucose analysis” OR Patient has a recorded numeric value (not null or zero) for E14_14 “Blood Glucose Level”	
Exclusion Criteria	Criteria	Data Elements
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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SCENE TIME FOR SUSPECTED ACUTE STROKE PATIENTS

MEASURE SET	Stroke	
SET MEASURE ID #	STR-3	
PERFORMANCE MEASURE NAME	Scene time for suspected acute stroke patients	
Description	<p>What is the 90th percentile for on scene time value for suspected acute stroke patients meeting local criteria who were transported from the scene by ground ambulance?</p> <p>***This population (n-value) should match the denominator population in STR-5 (prior to determining where the 90th percentile lies)***</p>	
Type of Measure	Process	
Reporting Value and Units	Time (Minutes and Seconds)	
Continuous Variable Statement (population)	All suspected stroke patients	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • All events for which E02_04 "type of service requested" has value 30 "911 response (scene)" ; • D06_03 "vehicle type" corresponds to ground ambulance; • Values for "arrived at scene" E05_06 and "unit left scene" E05_09 are present and pass logic test; • Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; • Patients aged 18 years of age or older 	<ul style="list-style-type: none"> • Provider Primary Impression (E09_15) • Provider Secondary Impression (E09_16) • Type of Service Requested (E02_04) • Unit Arrived at Scene (E05_06) • Unit Left Scene (E05_09) • Age (E06_14) • Age Units (E06_15) • Date of Birth (E06_16) • Vehicle Type (D06_03)
Exclusion Criteria	Criteria	Data Elements
	None	
Indicator Formula Numeric Expression	The formula is the 90 th Percentile of the given numbers or distribution in their ascending order.	

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Example of Final Reporting Value (number and units)	14 minutes, 20 seconds (14:20)
Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	<u>90th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.</u> <u>Mean (x); Mode (m)</u>
Trending Analysis	Yes
Benchmark Analysis	(TBD)

DIRECT TRANSPORT TO STROKE CENTER FOR SUSPECTED ACUTE STROKE PATIENTS MEETING CRITERIA

MEASURE SET	Stroke	
SET MEASURE ID #	STR-5	
PERFORMANCE MEASURE NAME	Direct transport to stroke center for suspected acute stroke patients meeting criteria	
Description	What percent of suspected acute stroke patients meeting local criteria who were transported from the scene by ground ambulance to a designated stroke center?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All acute stroke patients, meeting local stroke criteria for transport to a designated stroke center <u>***This population (n-value) should match the denominator population in STR-3 (prior to determining where the 90th percentile lies)***</u>	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1730 value "Stroke / CVA" or E09_16 value 1865 "Stroke / CVA"; Patients aged 18 years of age or older; All events for which E02_04 "type of service requested" has value 30 "911 response (scene)," vehicle type corresponds to ground ambulance 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Type of Service Requested (E02_04)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	Suspected acute stroke patients, meeting local stroke criteria, who received transport by ground ambulance directly to a designated stroke center	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with E09_15 value 1730 value 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15)

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	<p>"Stroke / CVA" or E09_16 value 1865 "Stroke / CVA";</p> <ul style="list-style-type: none"> • Patients aged 18 years of age or older; • E20_01 "Destination Transferred To, Name" represents a stroke center 	<ul style="list-style-type: none"> • Provider Secondary Impression (E09_16) • Destination/Transferred To (E20_01)
Exclusion Criteria	Criteria	Data Elements
	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	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

BETA2 AGONIST ADMINISTRATION FOR ADULT PATIENTS

Measure Set	Respiratory	
Set Measure ID #	RES-2	
Performance Measure Name	Beta2 agonist administration for adult patients	
Description	What is the percentage of beta2 agonist (bronchodilator or lpratropium) administration by EMS personnel for patients 14 years and older with signs and symptoms of suspected bronchospasm?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	Adult patients with suspected bronchospasm	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients for whom E09_15 “provider’s primary impression” has value 1700 “Respiratory distress” or for whom E09_16 “provider’s secondary impression” has value 1835 – “Respiratory distress”; Patients aged 14 years or older 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	Adult patients 14 years and older who received beta2 agonist by EMS personnel in the pre-hospital setting.	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients for whom E09_15 “provider’s primary impression” has value 1700 “Respiratory distress” or for whom E09_16 “provider’s secondary impression” has value 1835 – “Respiratory distress”; Patients aged 14 years or older; <u>And</u> Who have a E18_03 value 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Medication Given (E18_03) Medication Route (E18_04)

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	8620 "aerosolized or nebulized beta-2 specific bronchodilator", 8635 "Beta agonist", or 8700 "Ipratropium Bromide"; or <ul style="list-style-type: none"> E18_03 element indicating any of the above 	
Exclusion Criteria	Criteria	Data Elements
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

PEDIATRIC PATIENTS WITH WHEEZING WHO RECEIVED BRONCHODILATORS

MEASURE SET	Pediatric	
SET MEASURE ID #	PED-1	
PERFORMANCE MEASURE NAME	Pediatric patients younger than 14 years old with wheezing who received bronchodilators	
Description	What is the percentage of beta2 agonist (bronchodilator or Ipratropium) administration by EMS personnel for pediatric patients younger than 14 years old with signs and symptoms of suspected bronchospasm?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All pediatric patients with suspected bronchospasm	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients for whom E09_15 “provider’s primary impression” has value 1700 “Respiratory distress” or for whom E09_16 “provider’s secondary impression” has value 1835 – “Respiratory distress”; Patients less than 14 years of age 	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	Pediatric patients with wheezing who received bronchodilators	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients for whom E09_15 “provider’s primary impression” has value 1700 “Respiratory distress” or for whom E09_16 “provider’s secondary impression” has value 1835 – “Respiratory distress”; Patients less than 14 years of age <p><u>And</u></p>	<ul style="list-style-type: none"> Provider Primary Impression (E09_15) Provider Secondary Impression (E09_16) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Medication Given (E18_03)

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	<ul style="list-style-type: none"> Who have a E18_03 value 8620 "aerosolized or nebulized beta-2 specific bronchodilator", 8635 "Beta agonist", or 8700 "Ipratropium Bromide"; or a E18_03 element indicating any of the above 	
Exclusion Criteria	Criteria	Data Elements
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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PAIN INTERVENTION

MEASURE SET	Pain Intervention	
SET MEASURE ID #	PAI-1	
PERFORMANCE MEASURE NAME	Pain intervention	
Description	What is the percentage of adult patients 14 years or older with pain (value of 7 or greater on a 10 point scale) that received a pain intervention by EMS personnel?	
Type of Measure	Process	
Reporting Value and Units	Percentage	
Denominator Statement (Population)	The total number of events over a given period in which patients reported as having a pain value of 7 or greater in the pre-hospital setting.	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Events in which patients had recorded a pain value of 7 or greater for E14_23; Patient aged 14 years or older (E06_14) 	<ul style="list-style-type: none"> Pain Scale (E14_23) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Patients with no value recorded for E14_01, who have no value for either E18_01 or E19_01, to indicate the intervention occurred after pain measurement; 	<ul style="list-style-type: none"> Date Time Vitals Taken (E14_01) Date Time Medication Administered (E18_01) Date Time Procedure Performed Successfully (E19_01)
Numerator Statement (sub-population)	The total number of patients over a given period in which patient reported as having a pain value of 7 or greater who received pain intervention in the pre-hospital setting	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> Events in which patients had recorded a pain value of 7 or greater for E14_23; Patient aged 14 years or older (E06_14); Associated value for “ Date Time Vitals Taken” E14_01; Who have at least one value for E18_03 or E19_03 representing an accepted 	<ul style="list-style-type: none"> Pain Scale (E14_23) Age (E06_14) Age Units (E06_15) Date of Birth (E06_16) Date Time Vitals Taken (E14_01) Date Time Medication Administered (E18_01) Medication Given (E18_03) Procedure (E19_03)

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	<p>intervention recognized for pain relief,</p> <ul style="list-style-type: none"> • The related “Date Time Medication Administered” E18_01 or “Date Time Procedure Performed Successfully” E19_01 elements indicate the interventions occurred after the pain scale was assessed. 	<ul style="list-style-type: none"> • Date Time Procedure Performed Successfully (E19_01)
Exclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> • Patients with no value recorded for “Date Time Vitals Taken” E14_01 associated with administration of the pain scale E14_23; or • who have no logical values for “Date Time Medication Administered” E18_01; or • “Date Time Procedure Performed Successfully” E19_01 to indicate the intervention occurred after assessment of pain scale ≥ 7 	<ul style="list-style-type: none"> • Date Time Vitals Taken (E14_01) • Date Time Medication Administered (E18_01) • Date Time Procedure Performed Successfully (E19_01)
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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format &	Process control or run chart by month	

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Frequency	
Suggested Statistical Measures	Mean (x); Mode (m)
Trending Analysis	Yes
Benchmark Analysis	(TBD)

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ENDOTRACHEAL INTUBATION SUCCESS RATE

MEASURE SET	Performance of Skills	
SET MEASURE ID #	SKL-1	
PERFORMANCE MEASURE NAME	Endotracheal intubation success rate	
Description	What is the percentage of patients who received successful endotracheal intubation within two attempts in a pre-hospital setting?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All endotracheal intubation attempts	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Events in which E19_03 "procedure" has values indicating intubation such as 96.040 "endotracheal intubation" or 96.041 "airway – intubation, other (stoma, nasal)" with related element E19_05 "number of procedure attempts" 	<ul style="list-style-type: none"> Procedure (E19_03) Attempts (E19_05)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (sub-population)	All successful endotracheal intubations, defined as success within 2 attempts.	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> Events in which E19_03 "procedure" has values indicating intubation such as 96.040 "endotracheal intubation" or 96.041 "airway – intubation, other (stoma, nasal)" with related element E19_05 "number of procedure attempts" E19_05 "number of procedure attempts" value listed as one or two; E19_06 "Procedure successful" noted as value of 1 "yes" 	<ul style="list-style-type: none"> Procedure (E19_03) Attempts (E19_05) Procedure Successful (E19_06)
Exclusion	<u>Criteria</u>	<u>Data Elements</u>

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Criteria		
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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CAPNOGRAPHY MEASUREMENT PERFORMED ON ANY ENDOTRACHEAL INTUBATION

MEASURE SET	Performance of Skills	
SET MEASURE ID #	SKL-2	
PERFORMANCE MEASURE NAME	Capnography measurement performed on any successful endotracheal intubation	
Description	What is the percentage of intubated patients where capnography measurement is performed?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All successful endotracheal intubations	
Denominator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Events in which E19_03 “procedure” has values indicating intubation such as 96.040 “endotracheal intubation” or 96.041 “airway – intubation, other (stoma, nasal)” with related element E19_05 “number of procedure attempts” • E19_05 “number of procedure attempts” value listed as one or two; • E19_06 “Procedure successful” noted as value of 1 “yes” 	<ul style="list-style-type: none"> • Procedure (E19_03) • Attempts (E19_05) • Procedure Successful (E19_06)
Exclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	None	
Numerator Statement (sub-population)	All successful endotracheal intubations where capnography measurement was performed	
Numerator Inclusion Criteria	<u>Criteria</u>	<u>Data Elements</u>
	<ul style="list-style-type: none"> • Events in which E19_03 “procedure” has values indicating intubation such as 96.040 “endotracheal intubation” or 96.041 “airway – intubation, other (stoma, nasal)” with related element E19_05 	<ul style="list-style-type: none"> • Procedure (E19_03) • Attempts (E19_05) • Procedure Successful (E19_06)

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	<p>“number of procedure attempts”</p> <ul style="list-style-type: none"> E19_05 “number of procedure attempts” value listed as one or two; and E19_06 “Procedure successful” noted as value of 1 “yes” <p><u>And</u></p> <ul style="list-style-type: none"> E19_03 “procedure” has values of 96.992 “airway-end tidal CO₂ intubation” or 89.391 “capnography” 	
Exclusion Criteria	Criteria	Data Elements
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

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**AMBULANCE RESPONSE TIME BY AMBULANCE ZONE
(EMERGENCY)**

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-1	
PERFORMANCE MEASURE NAME	Ambulance response time by ambulance zone (Emergency)	
Description	What is the 90 th percentile time value of the Ambulance Response time in Ground Ambulance Transport Zone as defined by the EMS Plan?	
Type of Measure	Process	
Reporting Value and Units	Time (minutes and seconds)	
Continuous Variable Statement (population)	Time (in minutes and seconds) from time ambulance is en route to arrival at the scene for emergency responses (Code 3) to patients by BLS, LALS, or ALS ambulances. The 90 th percentile time interval from “unit en route date/time” (E05_05) in an emergency to EMS “unit arrived on scene date/time” (E05_06), for a given period of time	
Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> All events in a particular ambulance zone E02_04 “type of service requested” has value 30 “911 response (scene)”; E02_05 “Primary role of the unit” value is 75 “transport”; E02_20 “response mode to scene” is 390 “lights and sirens”; Values for E05_05 “unit en route date/time” and E05_06 “unit arrived on scene date/time” are present and logical. 	<ul style="list-style-type: none"> Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) Primary role of unit (E02_05) Type of Service Requested (E02_04) Response Mode to Scene (E02_20) Unit En Route Date/Time (E05_05) Unit Arrived on Scene Date/Time (E05_06)
Exclusion Criteria	Criteria	Data Elements
	None	
Indicator Formula Numeric Expression	The formula is the 90 th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (number and units)	8 minutes 30 seconds	

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Sampling	Yes
Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	90 th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

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AMBULANCE RESPONSE TIME BY AMBULANCE ZONE (NON-EMERGENCY)

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-2	
PERFORMANCE MEASURE NAME	Ambulance response time by ambulance zone (non-emergency)	
Description	What is the 90 th percentile value of the ambulance response time for the Ground Ambulance Transport Zone as defined by the EMS Plan?	
Type of Measure	Process	
Reporting Value and Units	Time (minutes and seconds)	
Continuous Variable Statement (population)	Time (in minutes and seconds) from time ambulance is en route to arrival at the scene for non-emergency (Code 2) responses to patients by BLS, LALS, or ALS ambulances. The 90 th percentile time interval from "unit en route date/time" (E05_05) in an emergency to EMS "unit arrived on scene date/time" (E05_06), for a given period of time	
Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> All events in a particular ambulance zone; E02_04 "type of service requested" has value 30 "911 response (scene)"; E02_05 "Primary role of the unit" value is 75 "transport"; E02_20 "response mode to scene" is 395 "no lights and sirens"; Values for E05_05 "unit en route date/time" and E05_06 "unit arrived on scene date/time" are present and logical. 	<ul style="list-style-type: none"> Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) Primary role of unit (E02_05) Type of Service Requested (E02_04) Response Mode to Scene (E02_20) Unit En Route Date/Time (E05_05) Unit Arrived on Scene Date/Time (E05_06)
Exclusion Criteria	Criteria	Data Elements
	None	
Indicator Formula Numeric Expression	The formula is the 90 th Percentile of the given numbers or distribution in their ascending order.	
Example of Final Reporting Value (number and units)	8 minutes 30 seconds	
Sampling	Yes	

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Aggregation	Yes
Blinded	Yes
Minimum Data Values	30
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.
Suggested Display Format & Frequency	Process control or run chart by month
Suggested Statistical Measures	90 th Percentile Measurement. Aggregate measure of central tendency and quantile (fractile) measurement to determine the span of frequency distributions.
Trending Analysis	Yes
Benchmark Analysis	(TBD)

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TRANSPORT OF PATIENTS TO HOSPITAL

MEASURE SET	Response and Transport	
SET MEASURE ID #	RST-3	
PERFORMANCE MEASURE NAME	Transport of patients to hospital	
Description	What is the percentage of EMS Patients transported by ground ambulance to a General Acute Care Hospital with a Basic Permit for emergency services?	
Type of Measure	Process	
Reporting Value and Units	(%) Percentage	
Denominator Statement (population)	All 911 incidents which requested or required a response by at least one EMS unit, and the unit arrived at scene	
Denominator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> All unique EMS incidents in a particular ambulance zone; E02_04 "type of service requested" has value 30 "911 response (scene)"; E02_05 "Primary role of the unit" value is 75 "transport"; E02_20 "response mode to scene" is 3905 "lights and sirens"; Values for E05_05 "unit en route date/time" and E05_06 "unit arrived on scene date/time" are present and logical. 	<ul style="list-style-type: none"> Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) Incident Number (E02_02) Primary role of unit (E02_05) Type of Service Requested (E02_04) Response Mode to Scene (E02_20) Unit En Route Date/Time (E05_05) Unit Arrived on Scene Date/Time (E05_06)
Exclusion Criteria	Criteria	Data Elements
	None	
Numerator Statement (sub-population)	All patients who received transport to a General Acute Care Hospital, with a Basic Permit, by BLS, LALS, or ALS Ambulances	
Numerator Inclusion Criteria	Criteria	Data Elements
	<ul style="list-style-type: none"> All unique EMS incidents in a particular ambulance zone; E02_04 "type of service requested" has value 30 "911 response (scene)"; E02_05 "Primary role of the unit" value is 75 "transport"; 	<ul style="list-style-type: none"> Ambulance Zone (Ground Ambulance Transport EOA area as defined by EMS plan) Incident Number (E02_02) Primary role of unit (E02_05) Type of Service Requested (E02_04)

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	<ul style="list-style-type: none"> E02_20 “response mode to scene” is 3905 “lights and sirens”; Values for E05_05 “unit en route date/time” and E05_06 “unit arrived on scene date/time” are present and logical; E20_17 has a value of 5050 “hospital” 	<ul style="list-style-type: none"> Response Mode to Scene (E02_20) Unit En Route Date/Time (E05_05) Unit Arrived on Scene Date/Time (E05_06) Patient Destination (E20_17)
Exclusion Criteria	Criteria	Data Elements
	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 and units)	90%	
Sampling	Yes	
Aggregation	Yes	
Blinded	Yes	
Minimum Data Values	30	
Data Collection Approach	<input type="checkbox"/> Retrospective data sources for required data elements include administrative data and pre-hospital care records. <input type="checkbox"/> Variation may exist in the assignment of coding; therefore, coding practices may require evaluation to ensure consistency.	
Suggested Display Format & Frequency	Process control or run chart by month	
Suggested Statistical Measures	Mean (x); Mode (m)	
Trending Analysis	Yes	
Benchmark Analysis	(TBD)	

California EMS System Core Quality Measures

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