![Washington State Department of Health logo]

EMS System Key Performance Indicator Data Quality Rules

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules • For data completion at point of entry and after review	CQI Rules • For performance monitoring
1. Critical Trauma Patient Management			
1.1 Percent of Step 1 and Step 2 trauma patients with an EMS scene time of less than 10 minutes. (arrival-to-departure of ambulance)	**Process measure // Available in WEMSIS** • Numerator includes all Step 1 and 2 Trauma Triage Criteria patients (excluding entrapped patients or staging issues) with an EMS scene time of less than 10 minutes. • Denominator includes all Step 1 and Step 2 Trauma Criteria patients, but excludes entrapped patients where tools were used, or time staging for scene safety	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eInjury.03 real value present **Require:** • eTimes.06 value present and logical • eTimes.09 value present and logical	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eInjury.03 real value present • eResponse.10 value is not "Extrication," "HazMat," "Safety-Crew/Staging," or "Triage/Multiple Patients" **Require:** • Difference between eTimes.09 and eTimes.06 less than 10 minutes
1.2 Percent of Step 1 and Step 2 trauma patients transported to a designated trauma center.	**Process measure // Available in WEMSIS** • Numerator includes number of all Step 1 or 2 trauma patients transported by EMS to a designated trauma center. • Denominator includes all Step 1 or 2 Trauma Triage criteria patients who are transported by EMS.	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eInjury.03 real value present **Require:** • eDisposition.01 and .02 real or N/A values present • eDisposition.23 real or N/A value present	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eInjury.03 real value present **Require:** • eDisposition.23 value "Trauma Center…"

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules	CQI Rules
2. Heart Failure Patient Management			
2.1 Percent of suspected heart failure patients who received CPAP or had the CPAP protocol documented.	**Process measure // Available in WEMSIS** • Numerator includes number of patients with suspected CHF who received CPAP or had the CPAP protocol documented. • Denominator includes number of patients with suspected congestive heart failure. • Assumes that CPAP is available in system.	**When:** • eSituation.11/.12 value "CHF/Heart Failure" (I50.9) • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" **Require:** • eProcedures.03 real or N/A value present	**When:** • eSituation.11/.12 value "CHF/Heart Failure" (I50.9) • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" **Require:** • eProcedures.03 value "CPAP" (47545007)
2.2 Percent of suspected heart failure patients who received nitroglycerine (NTG) or had NTG protocol documented.	**Process measure // Available in WEMSIS** • Numerator includes number of patients who received NTG or had documentation of NTG protocol documented.	**When:** • eSituation.11/.12 value "CHF/Heart Failure" (I50.9) • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…"	**When:** • eSituation.11/.12 value "CHF/Heart Failure" (I50.9) • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…"

		Validation or Closed Call Rules	CQI Rules
	• Denominator includes number of patients with suspected congestive heart failure.	• eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" nor "BLS-EMT" **Require:** • eMedications.03 real or N/A value present	• eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" nor "BLS-EMT" **Require:** • eMedications.03 or eHistory.06 value "Nitroglycerin" (4917)

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules	CQI Rules
3. Asthma Patient Management			
3.1 Percent of bronchospasm patients with respiratory distress, indicative of wheezing or known history of asthma or reactive airways disease, who received a beta-agonist or had the beta-agonist administration protocol documented by the first EMS crew able to provide such treatment.	• **Process measure // Available in WEMSIS** • Numerator includes number of patients with provider impression of bronchospasm and respiratory distress with documentation of beta-agonist protocol administration by EMS. • Denominator includes all patients with a provider impression of bronchospasm and respiratory distress.	**When:** • eSituation.11/.12 value "Bronchospasm, Acute" (J98.01) • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" **Require:** • eSituation.12 real or N/A value present [IF eSituation.11 value "Bronchospasm, Acute" (J98.01)] • eMedications.03 real or N/A value present [IF eSituation.09/.10/.11/.12 value "Wheezing" (R06.2) OR eHistory.08 value "Asthma, Status Asthmaticus" (J45.52) or "Asthma/Reactive Airways" (J45.90)]	**When:** • eSituation.11/.12 value "Bronchospasm, Acute" (J98.01) • eSituation.11/.12 value "Asthma with Exacerbation" (J45.901) OR eSituation.09/.10/.11/.12 value "Wheezing" (R06.2) OR eHistory.08 value "Asthma, Status Asthmaticus" (J45.52) or "Asthma/Reactive Airways" (J45.90) • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" **Require:** • eMedications.03 or eHistory.06 value "Albuterol" (435), "Epi 1:1,000" (328316), "Epinephrine, Racemic Hydrochloride" (314610), "Methylprednisolone" (6902), or "Promethazine" (8745)

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules	CQI Rules
4. Seizure Patient Management			
4.1 Percent of still seizing (upon EMS arrival) and post-seizure patients who received a blood glucose (BG) check.	• **Process measure // Available in WEMSIS** • Numerator includes all patients with provider impression of seizure or post-seizure (postictal) who receive a blood glucose (BG) check. • Denominator includes all patients with provider impression of on-going seizure activity or post-seizure status.	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Seizure…" (G40.3, R56.9, R56.0, or G40.901) **Require:** • eVitals.18 real, N/A, or PN value present	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Seizure…" (G40.3, R56.9, R56.0, or G40.901) **Require:** • eVitals.18 real or PN value present or eProcedures.03 value "Blood Glucose Measurement" (166888009)

| 4.2 Percent of still-seizing (upon EMS arrival) or recurrent seizure patients treated with benzodiazepines by EMS. | • **Process measure // Available in WEMSIS**
• Numerator includes number of patients with provider impression of on-going (or repeat) seizure activity with documentation of administration of benzodiazepine administration by EMS protocol.
• Denominator includes all patients still seizing upon EMS arrival and patients with recurrent seizures. | **When:**
• eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…"
• eResponse.05 value "911 Response (Scene)"
• eResponse.15 value "ALS-Paramedic"
• eSituation.11/.12 value "Seizure, Status Seizure" (G40.901)
Require:
• eMedications.03 real or N/A value present | **When:**
• eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…"
• eResponse.05 value "911 Response (Scene)"
• eResponse.15 value "ALS-Paramedic"
• eSituation.11/.12 value "Seizure, Status Seizure" (G40.901)
Require:
• eMedications.03 or eHistory.06 value "Diazepam" (3322), "Lorazepam" (6470), or "Midazolam" (6960) |

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules	CQI Rules
5. Acute Coronary Syndrome/Chest Pain Patient Management			
5.1 Percent of patients more than or equal to 35 years old with suspected cardiac chest pain, discomfort or other ACS symptoms who received aspirin (ASA) from EMS or had the aspirin protocol documented.	• **Process measure // Available in WEMSIS** • Numerator **includes** patients who took own non-enteric ASA prior to arrival (PTA) of EMS, ASA given by EMS; and includes patients with contraindications to ASA noted (i.e. allergies) • Denominator includes patients with suspected ACS/ cardiac chest pain or discomfort.	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" **Require:** • ePatient.15 and .16 real or N/A values present OR ePatient.17 real or N/A value present • eMedications.03 real or N/A value present (IF Patient is ≥ 35 Years)	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" • ePatient.15 value ≥ 35 and ePatient.16 value "Years" OR difference between present date and ePatient.17 ≥ 35 Years **Require:** • eMedications.03 or eHistory.06 value "Aspirin" (1191)
5.2 Percent of patients more than or equal to 35 years old with suspected cardiac chest pain/discomfort or other ACS symptoms with 12-Lead ECG acquired by EMS.	• **Process measure // Available in WEMSIS** • Numerator includes number of suspected ACS pts who receive a 12-lead ECG by EMS • Denominator includes all suspected ACS patients with and without acquisition of 12-lead ECG.	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" **Require:** • ePatient.15 and .16 real or N/A values present OR ePatient.17 real or N/A value present • eProcedures.03 real or N/A value present (IF Patient is ≥ 35 Years)	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eResponse.15 value is not "BLS-First Responder/EMR" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" • ePatient.15 value ≥ 35 and ePatient.16 value "Years" OR difference between present date and ePatient.17 ≥ 35 Years **Require:** • eProcedures.03 value "12 Lead ECG" (268400002) or eVitals.04 value "12 Lead…"

		When:	When:
5.3 Percent of patients more than or equal to 35 years old with suspected cardiac chest pain/discomfort or other ACS symptoms who received a 12- Lead ECG less than10 minutes from time of arrival on scene by first 12-lead ECG-equipped EMS unit.	• **Process measure // Available in WEMSIS** • Numerator includes suspected ACS patients who receive 12-lead ECG less than 10 minutes of 1st 12-lead ECG-equipped EMS unit arrival on scene. • Denominator includes all suspected ACS patients with and without acquisition of 12-lead ECG.	• eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" **Require:** • ePatient.15 and .16 real or N/A values present OR ePatient.17 real or N/A value present • eTimes.06 value present and logical (IF Patient is ≥ 35 Years) • eProcedures.03 or eVitals.04 real or N/A value present (IF Patient is ≥ 35 Years) • eProcedures.01 and .02 values present and logical [IF Patient ≥ 35 Years and eProcedures.03 value "12 Lead ECG" (268400002) with no PN] • eVitals.01 and .02 values present and logical (IF Patient ≥ 35 Years and eVitals.04 value "12 Lead")	• eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" • ePatient.15 value ≥ 35 and ePatient.16 value "Years" OR difference between present date and ePatient.17 ≥ 35 Years **Require:** • eProcedure.03 value "12 Lead ECG" (268400002) or eVitals.04 value "12 Lead" • Difference between eProcedures.01 and eTimes.06 less than 10 minutes [IF eProcedures.03 value "12 Lead ECG" (268400002) with no PN AND eProcedures.02 value "No"] • Difference between eVitals.01 and eTimes.06 less than 10 minutes (IF eVitals.04 value "12 Lead" AND eVitals.02 value "No")
5.4 Percent of patients more than or equal to 35 years old with suspected cardiac chest pain/discomfort, or other ACS symptoms with an EMS scene time (arrival- to-departure of ambulance) less than 20 minutes.	• **Process measure // Available in WEMSIS** • Numerator includes number of ACS patients with an EMS scene time (ambulance arrival until departure from scene) less than 20 minutes. • Denominator includes all patients with suspected chest pain, discomfort or ACS.	• eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" **Require:** • ePatient.15 and .16 real or N/A values present OR ePatient.17 real or N/A value present • eTimes.06 and .09 values present and logical (IF Patient is ≥ 35 Years)	• eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "ACS/Chest Pain" (I24.9), "STEMI…" (I21.0, I21.1, or I21.2) OR eVitals.03 value "STEMI…" • ePatient.15 value ≥ 35 and ePatient.16 value "Years" OR difference between present date and ePatient.17 ≥ 35 Years **Require:** • Difference between eTimes.09 and eTimes.06 less than 20 minutes
5.5 Percent of suspected STEMI patients in which a Code STEMI alert is activated prior to hospital arrival.	• **Process measure // Available in WEMSIS** • Numerator is number of patients identified by EMS with STEMI with a Code STEMI alert activated prior to hospital arrival. • Denominator is total number of patients identified by EMS as having STEMI.	• eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "STEMI..." (I21.0, I21.1, or I21.2) or eVitals.03 value "STEMI…" **Require:** • eDisposition.24 real or N/A value present	• eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "STEMI..." (I21.0, I21.1, or I21.2) or eVitals.03 value "STEMI…" **Require:** • eDisposition.24 value "Yes-STEMI"
5.6 Percent of patients identified as STEMI by EMS who are taken to a designated cardiac receiving center.	• **Process measure // Available in WEMSIS**	• eDisposition.12 value "Patient Treated, Transported by this EMS Unit"	• eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)"

		eResponse.05 value "911 Response (Scene)"	eSituation.11/.12 value "STEMI..." (I21.0, I21.1, or I21.2) or eVitals.03 value "STEMI…"
	• Numerator includes number of patients identified as STEMI by EMS taken to designated cardiac receiving centers. • Denominator includes number of all patients identified as STEMI.	• eSituation.11/.12 value "STEMI..." (I21.0, I21.1, or I21.2) or eVitals.03 value "STEMI…" **Require:** • eDisposition.23 real or N/A value present	**Require:** • eDisposition.23 value "Cardiac…"

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules	CQI Rules
6. Stroke/TIA Patient Management			
6.1 Percent of suspected CVA/TIA patients who have a FAST exam (i.e. neuro screening) completed and documented **or** documentation of why an exam could not be completed.	• **Process measure // Available in WEMSIS** • Numerator includes suspected stroke/TIA patients (primary or secondary impression) with FAST exam performed and results documented, or documentation why FAST exam not possible. (i.e. unresponsive patient) • Denominator includes all patients with primary or secondary impression of CVA/TIA.	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eVitals.30 real or N/A value present OR eVitals.29 PN value present	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eVitals.30 value "FAST Exam," eExam.19 value "Unresponsive," or eVitals.29 PN value present
6.2 Percent of suspected CVA/TIA patients receiving a blood glucose (BG) check.	• **Process measure // Available in WEMSIS** • Numerator includes number of suspected CVA/TIA patients who received a BG check. • Denominator includes all patients with suspected CVA/TIA.	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eVitals.18 real, N/A, or PN value present	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eVitals.18 real or PN value present or eProcedures.03 value "Blood Glucose Measurement" (166888009)
6.3 Percent of patients with suspected CVA/TIA, with an EMS scene time (arrival-to-departure of ambulance) less than 20 minutes.	• **Process measure // Available in WEMSIS** • Numerator is percent of suspected CVA/TIA patients with an EMS scene time less than 20 mins. • Denominator is all patients with suspected CVA/TIA.	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eTimes.06 value present and logical • eTimes.09 value present and logical	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • Difference between Times.09 and eTimes.06 less than 20 minutes
6.4 Percent of suspected CVA/TIA patients with Time Last Normal less than 6 hours to hospital arrival, in which a Code	• **Process measure // Available in WEMSIS** • Numerator is number of suspected CVA/TIA patients with Time Last Normal less	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)"	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9)

Stroke alert is activated prior to hospital arrival.	than 6 hours with a Code Stroke alert activated prior to hospital arrival. • Denominator is number of suspected CVA/TIA patients with Time Last Normal less than 6 hours.	• eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eSituation.18 value present • eTimes.11 real or N/A value present • eDisposition.24 real or N/A value present	• Difference between eTimes.11 and eSituation.18 is less than 6 hours **Require:** • eDisposition.24 value "Yes-Stroke"
6.5 Percent of patients with suspected CV/TIA taken to a designated stroke center.	• **Process measure // Available in WEMSIS** • Numerator includes number of suspected CVA/TIA patients taken to a designated stroke center. • Denominator includes number of all suspected CVA/TIA patients.	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eDisposition.23 real or N/A value present	**When:** • eDisposition.12 value "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eDisposition.23 value "Stroke Center"
6.6 Percent of suspected CVA/TIA patients who have a FAST exam score who have a LAMS Stroke Scale Assessment completed and documented or documentation of why an assessment could not be completed	• **Process measure // Available in WEMSIS** • Numerator includes number of transported patients creating a provider impression of CVA/TIA whose FAST exam was positive, who received a LAMS Stroke Scale Assessment from EMS and documented or documentation of why an assessment could not be completed • Denominator includes number of transported patients creating a provider impression of CVA/TIA and whose FAST exam score was positive	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) **Require:** • eVitals.30 real or N/A value present, eExam.19 value "Unresponsive," or eVitals.29 PN value present • eVitals.29 real, N/A, or PN value present • itVitals.055 real, N/A, or PN value present (IF eVitals.29 value "Positive" and eVitals.30 value "FAST Exam")	**When:** • eDisposition.12 value "Patient Evaluated…," "Patient Refused Evaluation/Care…," or "Patient Treated…" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Stroke" (I63.9) or "TIA" (G45.9) • eVitals.29 value "Positive" • eVitals.30 value "FAST Exam" **Require:** • itVitals.055 real or PN value present

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure • Descriptions of numerator and denominator	Validation or Closed Call Rules	CQI Rules
7. Cardiac Arrest Patient Management			
7.1 Percent of non-traumatic cardiac arrest patients who received bystander CPR.	• **Process measure // Available in WEMSIS** • Numerator includes all non-traumatic cardiac arrest patients, who receive bystander CPR—including dispatch-assisted CPR. • Denominator includes all non-traumatic cardiac arrest patients with attempted resuscitation.	**When:** • eDisposition.12 value "Patient Treated, Transferred Care to Another EMS Unit" or "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Cardiac Arrest (I46.9)" or eArrest.01 value "Yes, Prior to EMS Arrival" **Require:** • eArrest.02 real or N/A value present • eArrest.03 real or N/A value present	**When:** • eDisposition.12 value "Patient Treated, Transferred Care to Another EMS Unit" or "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Cardiac Arrest (I46.9)" or eArrest.01 value "Yes, Prior to EMS Arrival" • eArrest.02 real value except "Trauma" • eArrest.03 real value except "Not Attempted…" **Require:** • eArrest.06 real value except "First Responder"

Clinical Group/ Key Performance Indicators (KPIs)	Definition of Measure • Process vs. Outcome Measure	Validation or Closed Call Rules	CQI Rules
		• eArrest.05 real or N/A value • eArrest.06 value (IF eArrest.05 value "Yes")	
7.2 Percent of patients (in cardiac arrest before EMS arrival) in an initially "shockable" rhythm, who received first defibrillation in less than 8 minutes, from time the 911 call was received at Fire/EMS dispatch	• **Process measure // Available in WEMSIS** • Numerator includes all patients, with non-traumatic cardiac arrest before EMS arrival, who received a first defibrillation in less than 8 minutes, from time the 911 call was received at Fire/EMS dispatch. • Denominator includes all patients with non-traumatic cardiac arrest before EMS arrival, in an initially shockable rhythm (i.e. VF, pulseless VT).	**When:** • eDisposition.12 value "Patient Treated, Transferred Care to Another EMS Unit" or "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Cardiac Arrest" (I46.9) or eArrest.01 value "Yes, Prior to EMS Arrival" **Require:** • eArrest.02 real or N/A value present • eScene.01 real value present • eTimes.01/.02 value present and logical • eProcedure.03 real or N/A value • eProcedures.01 and .02 values present and logical [IF eProcedures.03 value "Defibrillation (AED)" (450661000124102) or "Defibrillation (Manual)" (426220008) with no PN]	**When:** • eDisposition.12 value "Patient Treated, Transferred Care to Another EMS Unit" or "Patient Treated, Transported by this EMS Unit" • eResponse.05 value "911 Response (Scene)" • eSituation.11/.12 value "Cardiac Arrest" (I46.9) or eArrest.01 value "Yes, Prior to EMS Arrival" • eArrest.02 real value except "Trauma" • eScene.01 value "Yes" • eProcedures.03 value "Defibrillation (AED)" (450661000124102) or "Defibrillation (Manual)" (426220008) with no PN • eProcedures.02 value "No" **Require:** • Difference between eProcedures.01 and eTimes.01/.02 less than 8 minutes
7.3 Percent of patients (in cardiac arrest before EMS arrival) with a witnessed collapse and found in an initially "shockable" rhythm, with survival to discharge from the acute care hospital.	• **Outcome measure // Data NOT in WEMSIS** • Numerator includes all patients, with cardiac arrest before EMS arrival, of suspected cardiac etiology, in an initially shockable rhythm who are discharged alive from an acute care hospital to home or a rehab/SNF. • Denominator includes all patients (with cardiac arrest PTA of EMS and of suspected cardiac etiology) with an initially shockable rhythm. • Follows Utstein Template Model.	**When:** • eSituation.11/.12 value "Cardiac Arrest (I46.9)" or eArrest.01 value "Yes, Prior to EMS Arrival" • eProcedures.03 value "Defibrillation (AED)" (450661000124102) or "Defibrillation (Manual)" (426220008) with no PN **Require:** • eArrest.02 real or N/A value present • eArrest.04 real or N/A value present	**When:** • eSituation.11/.12 value "Cardiac Arrest (I46.9)" or eArrest.01 value "Yes, Prior to EMS Arrival" • eArrest.02 value "Cardiac (Presumed)" • eArrest.04 value "Witnessed…" • eProcedures.03 value "Defibrillation (AED)" (450661000124102) or "Defibrillation (Manual)" (426220008) with no PN **Require:** • eOutcome.02 real value except "Deceased/Expired…"
7.4 Percent of overall cardiac arrest patients with survival to discharge from hospital.	• **Outcome measure // Data NOT in WEMSIS** • Numerator includes all non-traumatic patients in cardiac arrest, discharged alive from a hospital to home, or a rehab/ SNF. • Denominator includes all patients in cardiac arrest, of suspected cardiac etiology, with attempted resuscitation by providers.	**When:** • eSituation.11/.12 value "Cardiac Arrest (I46.9)" or eArrest.01 value "Yes, Prior to EMS Arrival" **Require:** • eArrest.02 real or N/A value present • eArrest.03 real or N/A value present	**When:** • eSituation.11/.12 value "Cardiac Arrest (I46.9)" or eArrest.01 value "Yes, Prior to EMS Arrival" • eArrest.02 value "Cardiac (Presumed)" • eArrest.03 real value except "Not Attempted…" **Require:** • eOutcome.02 real value except "Deceased/Expired…"
Clinical Group/ Key Performance Indicators (KPIs)	**Definition of Measure** • Process vs. Outcome Measure	**Validation or Closed Call Rules**	**CQI Rules**

	• Descriptions of numerator and denominator		
8. Advanced Airway Management			
8.1 Percent of patients intubated with "first pass" success.	• **Process measure // Available in WEMSIS** • Numerator includes number of patients successfully intubated with ET tube on first attempt. See definition of "attempt" in notes section. • Denominator includes number of patients intubated successfully, regardless of number of attempts.	**When:** • eProcedures.03 value for Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) with no PN **Require:** • eProcedures.06 real value present • eProcedures.01 real value present	**When:** • eProcedures.03 value Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) with no PN **Require:** • eProcedures.06 value "Yes" • eProcedures.05 value "1" or one eProcedures.01 timestamp for the associated intubation procedure
8.2 Overall percent of patients who are successfully intubated with an ET tube.	• **Process measure // Available in WEMSIS** • Numerator includes number of patients who were successfully intubated with an ET tube, regardless of number of attempts. • Denominator includes total number of patients who received ET intubation attempts, whether successful or not.	**When:** • eProcedures.03 value for Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) with no PN **Require:** • eProcedures.06 real value present	**When:** • eProcedures.03 value Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) with no PN **Require:** • eProcedures.06 value "Yes"
8.3 Overall percent of patients with successful placement of a supraglottic (SGA) airway.	• **Process measure // Available in WEMSIS** • Numerator includes number of patients with successful placement of a SGA, regardless of number of attempts. • Denominator includes total number of patients with attempts to place a SGA.	**When:** • eProcedures.03 value "Supraglottic Airway, Double Lumen" (427753009) or "Supraglottic Airway, Single Lumen" (450611000124100) with no PN **Require:** • eProcedures.06 real value present	**When:** • eProcedures.03 value "Supraglottic Airway, Double Lumen" (427753009) or "Supraglottic Airway, Single Lumen" (450611000124100) with no PN **Require:** • eProcedures.06 value "Yes"
8.4 Overall percentage of patients who are successfully intubated or who have a supraglottic airway (SGA) successfully placed.	• **Process measure // Available in WEMSIS** • Numerator includes number of patients successfully intubated OR who had a supra-glottic airway successfully placed. • Denominator includes total number of patients who received ET intubation attempts and/or SGA airway placement attempts.	**When:** • eProcedures.03 value for Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) or for SGA "Supraglottic Airway, Double Lumen" (427753009) or "Supraglottic Airway, Single Lumen" (450611000124100) with no PN **Require:**	**When:** • eProcedures.03 value for Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) or for SGA "Supraglottic Airway, Double Lumen" (427753009) or "Supraglottic Airway, Single Lumen" (450611000124100) with no PN **Require:** • eProcedures.06 value "Yes"

		• eProcedures.06 real value present	
8.5 Percent of patients and patients with SGAs with documentation of continuous wave-form ETCO2.	• **Process measure // Available in WEMSIS** • Numerator includes number of patients with an ET tube or with a supraglottic airway placed who also had documentation of continuous wave-form ETCO2. • Denominator includes total number of patients with ET tube or SGA placed.	**When:** • eProcedures.03 value for Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) or for SGA "Supraglottic Airway, Double Lumen" (427753009) or "Supraglottic Airway, Single Lumen" (450611000124100) with no PN • eResponse.15 value is <u>not</u> "BLS-First Responder/EMR", "BLS-EMT", nor "ALS-AEMT" **Require:** • eProcedures.06 real value present • Second eProcedures.03 real or N/A value present or eAirway.04 real or N/A value present	**When:** • eProcedures.03 value for Intubation "Orotracheal-Direct" (78121007), "Orotracheal-Video (Indirect)" (673005), "Orotracheal-RSI" (241689008), "Bougie Device" (450601000124103), "Existing Tracheostomy Stoma" (232685002), "Nasotracheal" (232679009), "Reassessment" (225718003), "Retrograde" (397892004), or "Using Exchange Catheter" (397874007) or for SGA "Supraglottic Airway, Double Lumen" (427753009) or "Supraglottic Airway, Single Lumen" (450611000124100) with no PN • eProcedures.06 value "Yes" • eResponse.15 value is not "BLS-First Responder/EMR", "BLS-EMT", nor "ALS-AEMT" **Require:** • eProcedures.03 value "ETCO2 Waveform/Digital Capnography" (425543005) or eAirway.04 value "Waveform ETCO2"

Definitions:

ACS—Acute Coronary Syndrome—cardiac-related list of signs and symptoms, such as chest pain, respiratory distress, nausea, etc. ***Ambulance***—a private, third service, or fire-based BLS or ALS transport unit ***BG***—blood glucose level ***CA Core Measure***—system of EMS performance measures implemented by CA State EMS in 2013 ***CPAP***—Continuous Positive Air Pressure ***E2B***—EMS to Balloon Time for STEMI patients ***ETI***—endotracheal intubation ***NHTSA***—Nat'l Hwy Traffic Safety Admin—EMS Performance Measures Project completed in cooperation with National Association of EMS State Officials ***PSAP***—public safety answering point. Law enforcement dispatch center, typically answers 911 call, then transfers if fire/EMS to a fire dispatch center. Can lead to dispatch delays and it is difficult to obtain data from some PSAPs	***PTA***—prior to arrival (of EMS) ***Patients***—patients ***ROSC***—Return of Spontaneous Circulation ***STEMI***—ST elevation Myocardial Infarction—particular type of heart attack—definitive treatment available in cardiac catheterization labs ***Utstein***—internationally recognized system for benchmarking cardiac arrest survival ***WACARES***—WA Cardiac Arrest Registry for Enhanced Survival. Grant funded through CDC focusing on CPR patient survival. Many EMS systems from around U.S. reporting data ***WEMSIS***—Washington EMS Information System