

Quality & Performance Measures Reference Document

The following quality and performance measures are suggested to improve the quality of prehospital care in Southwest Ohio.

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Protocol(s)	Performance Measures
SB200 Clinical Practice Standards	<ul style="list-style-type: none"> • Abnormal vital signs should be addressed and reassessed • Response to therapy provided should be documented including pain scale reassessment if appropriate • Limit scene time for patients with time-critical illness or injury unless clinically indicated • Blood glucose level obtained when indicated • Patient decision-making capacity was determined and documented • Direct medical oversight was contacted as indicated by EMS agency protocol • Guardians contacted or efforts to contact the guardians for minor patients who are not or cannot be confirmed to be emancipated
	<p><i>EMS Compass® Measures</i></p> <ul style="list-style-type: none"> • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms • PEDS-01: Respiratory assessment. Documented evidence that a respiratory assessment was performed on pediatric patients • Hypoglycemia-01: Treatment administered for hypoglycemia. Measure of patients who received treatment to correct their hypoglycemia • Stroke-01: Suspected stroke receiving prehospital stroke assessment. To measure the percentage of suspected stroke patients who had a stroke assessment performed by EMS • Trauma-01: Pain assessment of injured patients. Recognizing that pain is undertreated in injured patients, it

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	is important to assess whether a patient is experiencing pain
SB211 Guideline for Assessment/Transport of Adult Trauma Patients	<ul style="list-style-type: none"> • Appropriate utilization of air medical services
C300 Ventricular Fibrillation/Tachycardia Adult w/o Pulse C301 Asystole – Pulseless Electrical Activity (PEA) P601 Pediatric Pulseless Cardiac Arrest (V-Fib, V-Tach) P602 Pediatric Pulseless Cardiac Arrest (Asystole, PEA)	<ul style="list-style-type: none"> • Time to scene • Time to patient • Time to first CPR • Time to first shock • Time of ROSC • Review of CPR Quality <ul style="list-style-type: none"> ○ Compression Fraction ○ Average and longest peri-shock pause ○ Rate and depth of compressions
C302 Bradycardia P603 Pediatric Bradycardia	<ul style="list-style-type: none"> • Blood sugar obtained. • Correct medication(s) and dose given for patient condition, age and weight • Correct application and use of cardiac pacing • Use of sedation or pain management with cardiac pacing
	<i>EMS Compass® Measures</i> <ul style="list-style-type: none"> • Hypoglycemia-01: Treatment administered for hypoglycemia. Measure of patients who received treatment to correct their hypoglycemia
C303 Wide Complex Tachycardia with Pulse (Unstable) C304 Wide Complex Tachycardia with Pulse (Stable) C305 Narrow Complex Tachycardia w/Pulse (Stable) C306 Narrow Complex Tachycardia w/Pulse (Unstable) P604 Pediatric Supraventricular Tachycardia (PSVT)	<ul style="list-style-type: none"> • Time to clinical improvement from patient contact • Blood sugar obtained • Correct medication(s) and dose given for patient condition, age and weight • Correct cardioversion joules delivered given patient weight and/or condition • Use of sedation for responsive patient

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	<p><i>EMS Compass® Measures</i></p> <ul style="list-style-type: none"> • Hypoglycemia-01: Treatment administered for hypoglycemia. Measure of patients who received treatment to correct their hypoglycemia
C307 Post-Return of Spontaneous Circulation Care	<ul style="list-style-type: none"> • Percent of ROSC patients transported to appropriate facility as defined by the EMS system
M400 Acute Coronary Syndrome	<ul style="list-style-type: none"> • The time of patient contact by to the time of 12-lead EKG acquisition within 10 minutes • The time from first diagnostic 12-lead EKG to STEMI notification. • Confirmation patient received Aspirin (taken Prior To EMS Arrival, given by EMS, or substantiated by other pertinent negatives) • The time of a STEMI patient’s ultimate arrival to a receiving hospital • *The time of EMS notification to the time of activation of a cardiac catheterization laboratory • *The time of arrival at the PCI center to the time of cardiac catheterization (door-to-balloon time) OR if patient not transported directly to PCI center, the time of arrival at receiving hospital to thrombolytics • *The time of prehospital 12-lead EKG acquisition to the time of cardiac catheterization (EKG-to-balloon time) <p>*NOTE: These measures can only be evaluated if EMS documentation can be combined with information provided by the receiving hospital</p>
M403 Asthma – COPD	<ul style="list-style-type: none"> • CPAP/BiPAP utilization • Time to administration of specified interventions in the protocol • Rate of administration of accepted therapy (whether or

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	<p>not certain edications/interventions were given)</p> <ul style="list-style-type: none"> • Change in vital signs (heart rate, blood pressure, temperature, respiratory rate, pulse oximeter, capnography values) • Time to administration of specified interventions in the protocol • Number of advanced airway attempts • Mortality
M404 Congestive Heart Failure	<ul style="list-style-type: none"> • Time to initiation of non-invasive positive pressure ventilation • Number of CPAP/BiPAP patients who require intubation • Time to clinical improvement • Assessment/auscultation of lung sounds before and after each intervention
M405 Nausea and Vomiting	<ul style="list-style-type: none"> • In patients with nausea and vomiting, appropriate medication(s) was/were administered (including proper dosage) and the patient's response to treatment is documented • Any event where complications occurred, such as a dystonic reaction, should have event and appropriate responsive interventions performed and documented <p>EMS Compass® Measure</p> <ul style="list-style-type: none"> • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms
M406 Hyper/Hypoglycemia P608 Pediatric Hypoglycemia and Hyperglycemia	<ul style="list-style-type: none"> • When in scope of practice, point of care blood glucose checked for all patients with symptoms of altered level of consciousness, seizure, stroke, hypoglycemia or hyperglycemia

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	<ul style="list-style-type: none"> • When hyperglycemia documented, appropriate volume replacement given while avoiding overzealous repletion before insulin therapy at receiving center • 12-lead EKG obtained • If patient released at scene, criteria documented for safe release • EMS Compass® Measures <ul style="list-style-type: none"> ○ PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms ○ Hypoglycemia-01: Treatment administered for hypoglycemia. Measure of patients who received treatment to correct their hypoglycemia
<p>M408 Restraint Protocol P618 Pediatric Restraint Protocol</p>	<ul style="list-style-type: none"> • Incidence of injuries to patient, EMS personnel, or others on scene • Incidence of injuries to patient, EMS personnel, or others during transport • Medical or physical complications (including sudden death) in patients • Advance informational communication of EMS protocols for the management of agitated and violent patients to others within the emergency care system and law enforcement • Initiation and engagement with EMS direct medical oversight • Initiation and duration of engagement with law enforcement •

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	<p><i>EMS Compass® Measure</i></p> <ul style="list-style-type: none"> ○ PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms
<p>M409 Allergic Reaction – Anaphylaxis P609 Pediatric Anaphylaxis / Allergic Reaction</p>	<ul style="list-style-type: none"> • Percentage of patients with anaphylaxis that receive epinephrine for anaphylaxis: <ul style="list-style-type: none"> ○ Via the IM route (vs. other routes) ○ Via the IM route in the anterolateral thigh (vs. other locations) • Percentage of patients with anaphylaxis who receive: <ul style="list-style-type: none"> ○ Epinephrine within 10 minutes of arrival ○ The appropriate weight-based dose of epinephrine • Percentage of patients that require airway management in the prehospital setting (and/or the emergency department)
	<p><i>EMS Compass® Measure</i></p> <ul style="list-style-type: none"> • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms
<p>M410 Seizure P610 Pediatric Seizure</p>	<ul style="list-style-type: none"> • Frequency of performing glucometry • Time to administration of anticonvulsant medication • Rate of respiratory failure • Rate of seizure recurrence

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M412 Hypothermia and Cold Emergencies	<ul style="list-style-type: none"> • Blood glucose level obtained. • Fluids given for hypotension • Attempts to reduce core temperature • All decompensations during EMS care reviewed • Patient core temperature and means of measurement (when available) • Presence of cardiac dysrhythmias • Documentation of associated trauma (when present) • Blood glucose level obtained
	<p><i>EMS Compass@Measures</i></p> <ul style="list-style-type: none"> • Hypoglycemia-01: Treatment administered for hypoglycemia. Measure of patients who received treatment to correct their hypoglycemia • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms • Trauma-01: Pain assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain • Trauma-02: Pain re-assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain
M414 Stroke	<ul style="list-style-type: none"> • Documentation of time “last seen normal” • Use of validated stroke score • Blood glucose level obtained • EMS scene time minimized (goal: less than 20 minutes) • Hospital stroke team pre-arrival alert or activation occurred as early as possible after positive stroke assessment finding

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	<p><i>EMS Compass® Measures</i></p> <ul style="list-style-type: none"> • Stroke-01: Suspected stroke receiving prehospital stroke assessment. To measure the percentage of suspected stroke patients who had a stroke assessment performed by EMS • Stroke-08: Emergency Department Diagnosed Stroke Identified by Prehospital Stroke Assessment. Measures the percentage of emergency department diagnosed stroke patients who had a positive stroke assessment by EMS • NOTE: This measure can only be evaluated if EMS documentation can be combined with information provided by the receiving hospital
S501 Head or Spinal Trauma	<ul style="list-style-type: none"> • No oxygen desaturation <i>less than 90%</i> • No hypotension: <ul style="list-style-type: none"> ○ Adults: <i>less than 90 mmHg</i> ○ Pediatrics: <ul style="list-style-type: none"> ▪ <i>less than 1 month: less than 60 mmHg</i> ▪ <i>1-12 months: less than 70 mmHg</i> ▪ <i>1-10 yo: less than 70 + 2x age in years</i> • No EtCO2 lower than 35 for mild head injury, 30 if severe head injury with signs of herniation • Appropriate triage to trauma center

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	<p><i>EMS Compass® Measures</i></p> <ul style="list-style-type: none"> • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms • Trauma-01: Pain assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain • Trauma-02: Pain re-assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain • Trauma-04: Trauma patients transported to trauma center. Trauma patients meeting Step 1 or 2* or 3** of the CDC Guidelines for Field Triage of Injured Patients are transported to a trauma center <p>* Any value documented in NEMESIS eInjury.03 - Trauma Center Criteria</p> <ul style="list-style-type: none"> • ** 8 of 14 values under eInjury.04 - Vehicular, Pedestrian, or Other Injury Risk Factor match Step 3, the remaining 6 value options match Step 4
S502 Major Burns (Thermal or Electrical)	<ul style="list-style-type: none"> • Patient transported to most appropriate hospital, preferably a burn center • Pain scale documented and pain appropriately managed • Airway assessment and management appropriately documented

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	<p><i>EMS Compass@ Measures</i></p> <ul style="list-style-type: none"> • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms • Trauma-01: Pain assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain • Trauma-02: Pain re-assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain • Trauma-04: Trauma patients transported to trauma center. Trauma patients meeting Step 1 or 2* or 3** of the CDC Guidelines for Field Triage of Injured Patients are transported to a trauma center <p>* Any value documented in NEMSIS eInjury.03 - Trauma Center Criteria ** 8 of 14 values under eInjury.04 - Vehicular, Pedestrian, or Other Injury Risk Factor match Step 3, the remaining 6 value options match Step 4</p>
S503 Imminent Delivery (Child Birth)	<ul style="list-style-type: none"> • Recognition of complications • Documentation of APGAR scores • Maternal reassessment
S505 Pre-Hospital Pain Management P612 Pediatric Pain Management	<ul style="list-style-type: none"> • The clinical efficacy of prehospital analgesia in terms of adequacy of dosing parameters <p><i>EMS Compass@ Measures</i></p> <ul style="list-style-type: none"> • PEDS-03: Documentation of estimated weight in kilograms. Frequency that weight or length-based estimate are documented in kilograms • Trauma-01: Pain assessment of injured patients. Recognizing that pain is undertreated in injured patients, it

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	<p>is important to assess whether a patient is experiencing pain</p> <ul style="list-style-type: none"> • Trauma-02: Pain re-assessment of injured patients. Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain
<p>P600 Pediatric Newborn Resuscitation</p>	<ul style="list-style-type: none"> • Prehospital on-scene time • Call time for additional resources • Arrival time of additional unit • Time to initiation of interventions • Use of oxygen during resuscitation • Presence of advanced life support (ALS) versus basic life support (BLS) providers • ROSC and/or normalization of heart rate • Length of stay in neonatal intensive care unit • Length of stay in newborn nursery • Length of stay in hospital • Knowledge retention of prehospital providers • Number of advanced airway attempts • Mortality
<p>P616 Pediatric Submersion Injury</p>	<ul style="list-style-type: none"> • Recognition and appropriate care of pulmonary/respiratory complaints • Cervical spine management when appropriate • Adherence to Cardiac Arrest guideline