



National EMS Quality Alliance

Trauma-01 Measure Package

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Trauma-01: Pain Assessment of Injured Patients

EMS has a role in assisting with pain management and it is important that pain is assessed and documented. There is evidence of variability in how often pain is assessed and treated by EM professionals. The intent of this measure is to determine if pain is assessed (and documented) for injured patients who are transported by EMS.

The most substantive change made to the denominator during the re-specification process was the change from EMS responses to EMS **transports**. This change was made to ensure the accurate population of patients is being measured. During the measure testing phase, when documented pain scale scores were measured for EMS responses, the measure scores were significantly lower than anticipated. However, when the inclusion criteria were changed to transports, the scores were more in line with expectations. The rationale behind this change is many injured patients involved in motor vehicle crashes refuse transport or care by EMS. Since these patients are still part of the inclusion criteria for EMS responses for injured patients, the measure score was being driven down. The change to transports will allow the EMS community to better understand their individual and agency performance for this measure. Additionally, the TEP decided to limit the denominator to patients with a **GCS of 15** or an **A on the AVPU scale**, to ensure only patients who are fully alert and conscious are being included in the denominator.

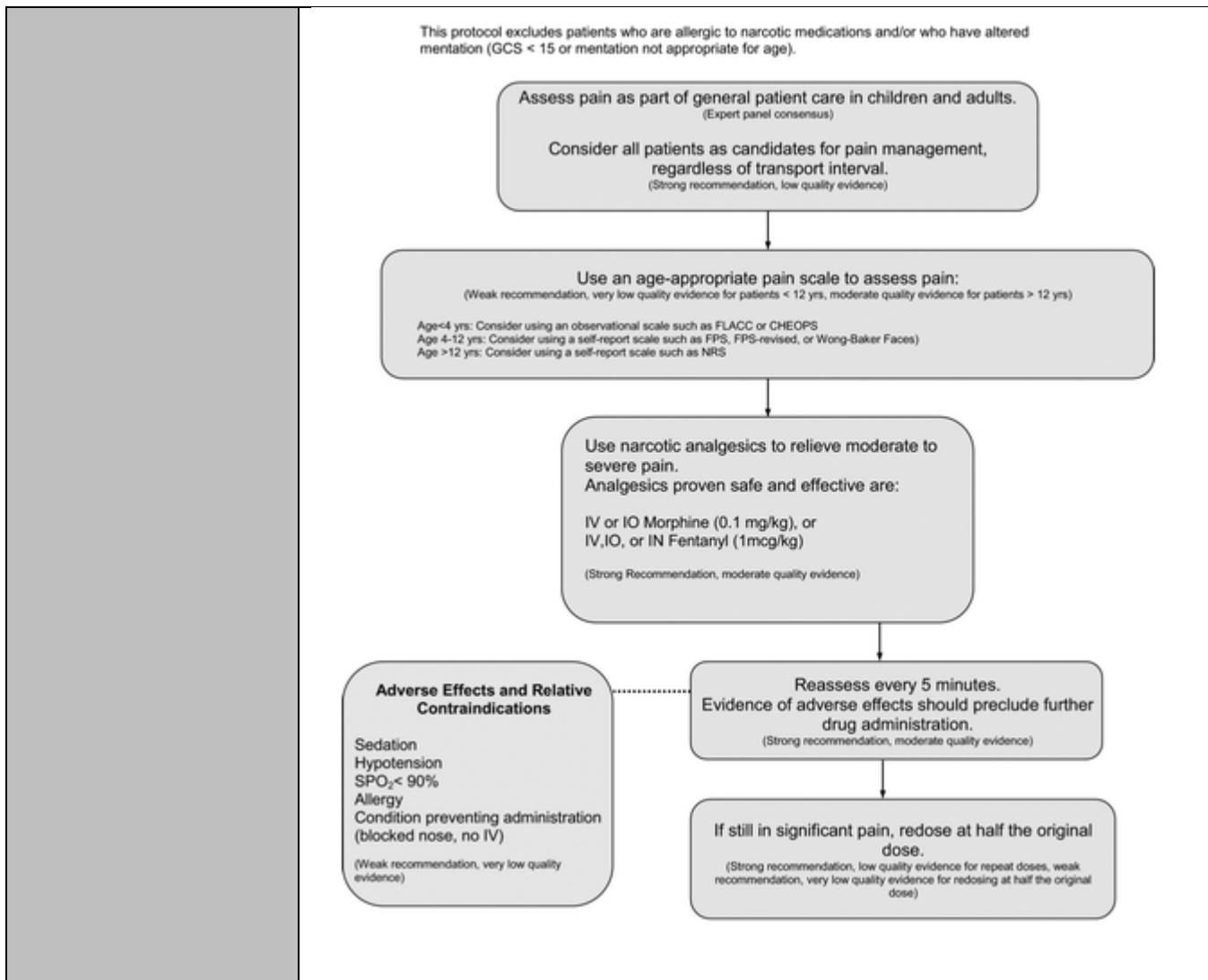
The numerator for Trauma-01 includes patients with any pain scale value documented during the EMS encounter. This numerator mirrors that of the original EMS Compass candidate measure of Trauma-01.

Assessment and treatment of pain in the prehospital environment is an opportunity for EMS to impact an outcome that is highly valued by patients (relief of pain). Published evidence demonstrates that there is wide variability and opportunities for improvement in this area. EMS systems or agencies can use this measure to assess how they are performing and identify areas for quality improvement efforts.

Trauma-01: Injured Patients Assessed for Pain

Measure Score Interpretation: For this measure, a higher score indicates better quality.

Measure Description	
Percentage of EMS responses originating from a 911 request for patients with injury who were assessed for pain.	
Measure Components	
Numerator Statement	EMS responses originating from a 911 request for patients with any pain scale value documented during the EMS encounter.
Denominator Statement	All EMS responses originating from a 911 request for patients with injury and a Glasgow Coma Score (GCS) of 15 or an Alert Verbal Painful Unresponsiveness (AVPU) of A.
Denominator Exclusions	None
Denominator Exceptions	None
Supporting Guidance & Other Evidence	The following evidence statements are quoted verbatim from the referenced treatment protocol: Evidence-Based Guideline for Prehospital Analgesia in Trauma: ⁱ



Measure Importance

Rationale

Pain is a common symptom in prehospital care. In a study conducted in 2007, it was found that among the patients who indicated they were in pain, 64% reported they were in intense to severe pain.ⁱⁱ

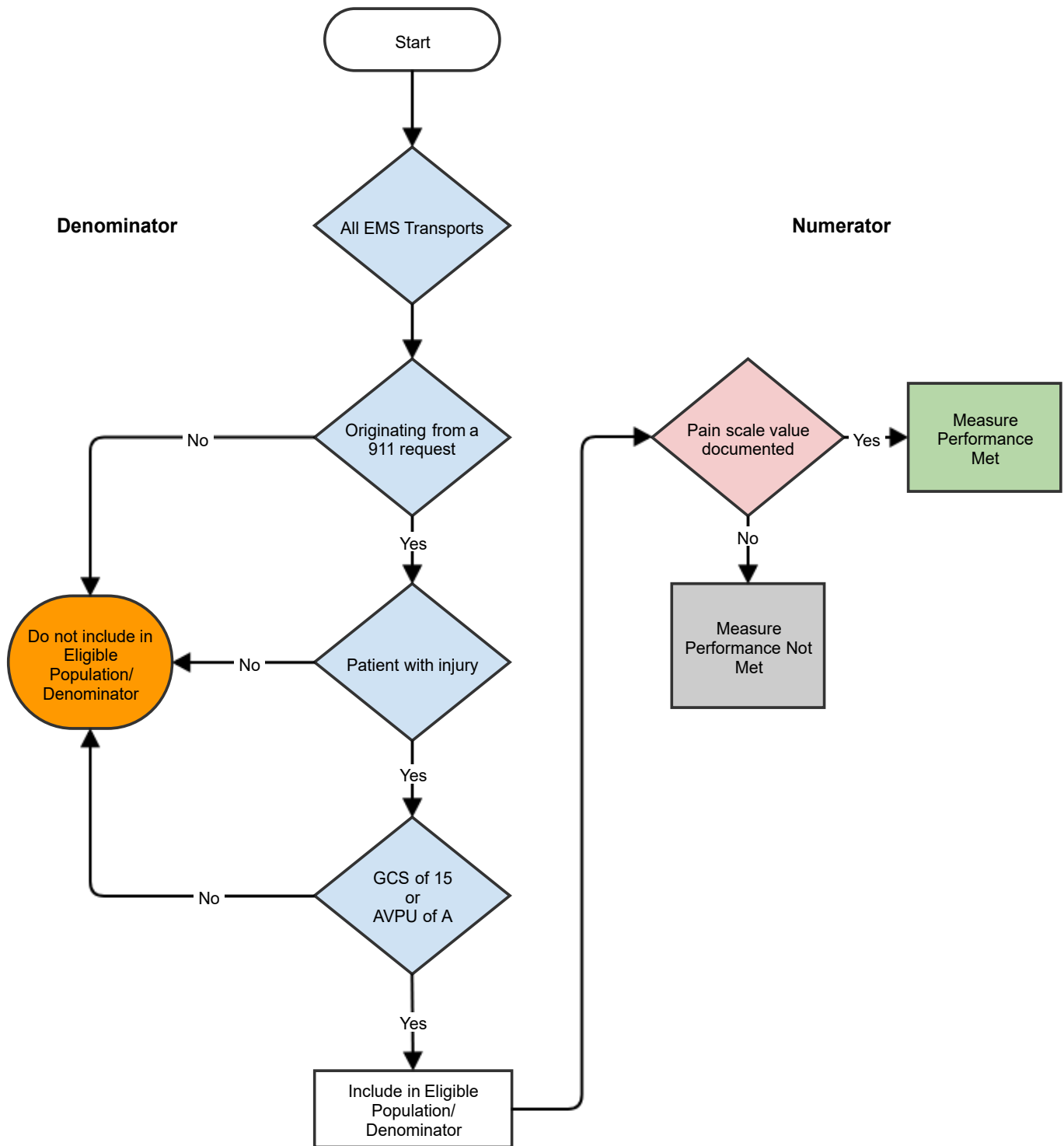
Due to the complexities of pain, one-dimensional scales where the patient can self-report intensity are recommended. However, providers must take young children and infants, who cannot adequately self-report into consideration.ⁱⁱⁱ

Pain control benefits patients in ways that go beyond making them comfortable. Proper identification and treatment of pain can prevent long-term consequences in very young children. As well, uncontrolled pain can also cause side effects such as elevations in heart rate and blood pressure that may be misinterpreted as other clinical conditions or may have consequences on existing disease processes.^{iv}

Opportunity for Improvement	<p>In a review of NEMSIS research data from 2012-2014, it was found that of the 69,564,130 patients who were transported for trauma conditions such as fracture, burn and/or penetrating injury, only 29.5% of them had “pain” as a documented symptom in their EMS record.^v</p> <p>While prehospital providers document that they conducted a pain assessment on pediatric patients, the presence or absence of pain remains undocumented 20% of the time.^{iv}</p>
Measure Designation	
Measure purpose	<ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Quality Improvement • <input type="checkbox"/> Accountability • <input type="checkbox"/> MOC
Type of measure	<ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Process • <input type="checkbox"/> Outcome • <input type="checkbox"/> Structure • <input type="checkbox"/> Efficiency
National Quality Strategy/Priority/CMS Measure Domain	<ul style="list-style-type: none"> • <input type="checkbox"/> Clinical Process-Effectiveness • <input type="checkbox"/> Patient Safety • <input checked="" type="checkbox"/> Patient Experience • <input type="checkbox"/> Care Coordination • <input type="checkbox"/> Efficiency: Overuse • <input type="checkbox"/> Efficiency: Cost • <input type="checkbox"/> Population & Community Health
CMS Meaningful Measure Domain	<ul style="list-style-type: none"> • <input type="checkbox"/> Medication Management • <input type="checkbox"/> Admissions and Readmissions to Hospitals • <input type="checkbox"/> Transfer of Health Information and Interoperability • <input type="checkbox"/> Preventative Care • <input type="checkbox"/> Management of Chronic Conditions • <input type="checkbox"/> Prevention, Treatment, and Management of Mental Health • <input type="checkbox"/> Prevention and Treatment of Opioid and Substance • <input type="checkbox"/> Risk Adjusted Mortality • <input type="checkbox"/> Equity of Care • <input type="checkbox"/> Community Engagement • <input type="checkbox"/> Appropriate Use of Healthcare • <input type="checkbox"/> Patient-focused Episode of Care • <input type="checkbox"/> Risk-Adjusted Total Cost of Care • <input type="checkbox"/> Healthcare-associated infections • <input type="checkbox"/> Preventable Healthcare Harm • <input type="checkbox"/> Care is Personalized and Aligned with Patient’s Goals • <input type="checkbox"/> End of Life Care according to Preferences • <input checked="" type="checkbox"/> Patient’s Experience of Care

	<ul style="list-style-type: none"> • <input type="checkbox"/> Patient Reported Functional Outcomes
Level of measurement	<ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Individual EMS Professional • <input checked="" type="checkbox"/> EMS Agency
Care setting	<ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Pre-Hospital Care
Data source	<ul style="list-style-type: none"> • <input checked="" type="checkbox"/> Electronic Patient Care Record (eCPR) data • <input type="checkbox"/> Administrative Data/Claims (inpatient, outpatient or multiple-source claims) • <input checked="" type="checkbox"/> Paper medical record/Chart abstracted • <input checked="" type="checkbox"/> Registry

Clinical Quality Measure Flow for Trauma-01 Injured Patients Assessed for Pain



NEMESIS Pseudocode: Trauma-01: Injured Patients Assessed for Pain

Measure Score Interpretation: For this measure, a higher score indicates better quality.

Measure Components	
Numerator Pseudocode	eVitals.27 Pain Scale Score is not null
Denominator Pseudocode	<p>eSituation.02 Possible Injury is 9922005 ("Yes")</p> <p>and</p> <p>(</p> <p>eVitals.23 Total Glasgow Coma Score is equal to 15</p> <p>or</p> <p>eVitals.26 Level of responsiveness (AVPU) is 3326001 ("Alert")</p> <p>)</p> <p>and</p> <p>(</p> <p>eResponse.05 Type of Service Requested is 2205001 ("911 Response (Scene)")</p> <p>and</p> <p>eDisposition.12 Incident/Patient Disposition is 4212033 ("Patient Treated, Transported by this EMS Unit")</p> <p>)</p>

ⁱ Gausche-Hill, M., Brown, K.M., Oliver, Z.J., Sasson, C., Dayan, P.S., Eschmann, N.M., Weik, T.S., Lawner, B.J., Shani, R., Flack-Ytter, Y., Wright, J.L., Todd, K., Lang, E.S. (2014) An Evidence-based Guideline for Prehospital Analgesia in Trauma, *Prehospital Emergency Care*, 18:sup1, 25-34.

ⁱⁱ Galinski, M., Ruscev, M., Gonzalez, G., Kavas, J., Ameer, L., Biens, D., Lapostolle, F. & Adnet, F (2010) Prevalence and Management of Acute Pain in Prehospital Emergency Medicine, *Prehospital Emergency Care*, 14:3, 334-339.

ⁱⁱⁱ National Association of EMS Physicians. (2003). *Prehospital Pain Management* (Position Paper). Overland Park, KS: Alonso-Serra, H.M., Wesley, K.

^{iv} Izsak, E., Moore, J.L., Stringfellow, K., Oswanski, M.F., Lindstrom, D.A., & Stombaugh, H.A., (2008) Prehospital Pain Assessment in Pediatric Trauma, *Prehospital Emergency Care*, 12:2, 182-186.

^v Hewes, H.A., Dai, M., Mann, N.C., Baca, T, & Taillac, P. (2018) Prehospital Pain Management: Disparity By Age and Race, *Prehospital Emergency Care*, 22:2, 189-197.