V3 Performance Measures

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Introduction

The National EMS Quality Alliance (NEMSQA) maintains a set of EMS performance measures, including measures that were originally developed by the EMS Compass initiative, to support measurement and improvement in the quality of EMS care at the local, regional, state, and national levels. Some NEMSQA performance measures are based on NEMSIS data elements that are available in the national EMS database ("national" elements). The NEMSIS TAC is implementing those performance measures one-by-one and making them available nationally for analysis via two tools:

- V3 Public Performance Measure Dashboard (for the public)
- V3 Public Performance Measure Web Service (for software developers)

Each currently-available performance measure is documented here. The NEMSIS TAC was careful to implement the performance measures exactly as defined by NEMSQA, even if NEMSIS TAC staff perceived weaknesses or limitations in the definitions. As each performance measure is released, it will be added to this page.

In all measures, the numerator criteria implicitly include the denominator criteria. In other words, the numerator can only select records that are selected in the denominator. The number of records contributing to the numerator can never be larger than the number of records contributing to the denominator.

Some measures that were originally developed by EMS Compass were re-specified (modified) by NEMSQA after they were initially implemented by the NEMSIS TAC. Details about re-specifications are noted below.

Hypoglycemia

Hypoglycemia-01 Treatment Administered for Hypoglycemia

<table>
<thead>
<tr>
<th>ID</th>
<th>Hypoglycemia-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Title</td>
<td>Treatment Administered for Hypoglycemia</td>
</tr>
<tr>
<td>NEMSQA Package</td>
<td>E.-NEMSQA-EMS-Compass-2.0-Hypoglycemia-01.pdf</td>
</tr>
<tr>
<td>Description</td>
<td>Percentage of EMS responses originating from a 911 request for patients who receive treatment to correct their hypoglycemia.</td>
</tr>
<tr>
<td>Numerator Statement</td>
<td>EMS responses originating from a 911 request for patients receiving treatment to correct their hypoglycemia during the EMS response.</td>
</tr>
<tr>
<td>Denominator Statement</td>
<td>All EMS responses originating from a 911 request for patients with hypoglycemia and a GCS of &lt;15 or an AVPU of &lt;A or patients with a primary or secondary impression of altered mental status and a blood glucose level of &lt;60.</td>
</tr>
<tr>
<td>Denominator Exclusions</td>
<td>Patients less than 24 hours of age.</td>
</tr>
</tbody>
</table>
The NEMSQA measure uses eVitals.23 Total Glasgow Coma Score, which is not in the national database. The NEMSIS TAC modified the denominator to use the sum of eVitals.19 Glasgow Coma Score-Eye, eVitals.20 Glasgow Coma Score-Verbal, and eVitals.21 Glasgow Coma Score-Motor.

**Pediatric Respiratory**

**Pediatrics-01 Pediatric Respiratory Assessment**

<table>
<thead>
<tr>
<th>ID</th>
<th>Pediatrics-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Title</td>
<td>Pediatric Respiratory Assessment</td>
</tr>
<tr>
<td>NEMSQA Package</td>
<td>F.-NEMSQA-EMS-Compass-2.0-Pediatrics-01.pdf</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Description</td>
<td>Percentage of EMS responses originating from a 911 request for patients less than 18 years old with primary or secondary impression of respiratory distress who had a respiratory assessment.</td>
</tr>
<tr>
<td>Numerator Statement</td>
<td>EMS responses originating from 911 requests for patients who received both a SPO2 and respiratory rate measurement during the EMS response.</td>
</tr>
<tr>
<td>Denominator Statement</td>
<td>EMS responses originating from 911 requests for patients &lt;18 years of age with a primary or secondary impression of respiratory distress.</td>
</tr>
<tr>
<td>Denominator Exclusions</td>
<td>None</td>
</tr>
<tr>
<td>Numerator Pseudocode</td>
<td>eVitals.12 Pulse Oximetry is not null and eVitals.14 Respiratory Rate is not null</td>
</tr>
</tbody>
</table>
| Denominator Pseudocode | {  
| | (  
| |   ePatient.15 Age is less than 18  
| | and ePatient.16 Age Units is 2516009 ("Years")  
| | )  
| | or  
| | (  
| |   ePatient.15 Age is not null  
| | and ePatient.16 Age Units is in {  
| |     2516001 ("Days"),  
| |     2516003 ("Hours"),  
| |     2516005 ("Minutes"),  
| |     2516007 ("Months")  
| |   }  
| | )  
| | and  
| | eSituation.11 Provider's Primary Impression matches /"I50.9|J00|J05|J18.9|J20.9|J44.1|J45.901|J80|J81|J93.9|J96|J98.01|R05|R06|R09.2|T17.9/  
| | ("Heart failure, unspecified",  
| | "Acute nasopharyngitis...",  
| | "Acute obstructive laryngitis and epiglottitis...",  
| | "Pneumonia, unspecified organism",  
| | "Acute bronchitis, unspecified",  
| | "Chronic obstructive pulmonary disease with (acute) exacerbation",  
| | "Unspecified asthma with (acute) exacerbation",  
| | "Acute respiratory distress syndrome",  
| | "Pulmonary edema...",  
| | "Pneumothorax, unspecified",  
| | "Respiratory failure, unspecified",  
| | "Acute bronchospasm",  
| | "Respiratory disorder, unspecified",  
| | "Cough",  
| | "Abnormalities of breathing",  
| | "Respiratory arrest",  
| | "Foreign body in respiratory tract, part unspecified")  
| | or  
| | eSituation.12 Provider's Secondary Impressions matches /"I50.9|J00|J05|J18.9|J20.9|J44.1|J45.901|J80|J81|J93.9|J96|J98.01|R05|R06|R09.2|T17.9/  
| | ("Heart failure, unspecified",  
| | "Acute nasopharyngitis...",  
| | "Acute obstructive laryngitis and epiglottitis...",  
| | "Pneumonia, unspecified organism",  
| | "Acute bronchitis, unspecified",  
| | "Chronic obstructive pulmonary disease with (acute) exacerbation",  
| | "Unspecified asthma with (acute) exacerbation",  
| | "Acute respiratory distress syndrome",  
| | "Pulmonary edema...",  
| | "Pneumothorax, unspecified",  
| | "Respiratory failure, unspecified",  
| | "Acute bronchospasm",  
| | "Respiratory disorder, unspecified",  
| | "Cough",  
| | "Abnormalities of breathing",  
| | "Respiratory arrest", or  
| | "Foreign body in respiratory tract, part unspecified")  
| | )  
| | and eResponse.05 Type of Service Requested is 2205001 ("911 Response (Scene)") |
Seizure

Seizure-01 Blood Glucose Evaluation

<table>
<thead>
<tr>
<th>ID</th>
<th>Seizure-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Title</td>
<td>Blood Glucose Evaluation</td>
</tr>
<tr>
<td>NEMSQA Package</td>
<td>None (see note)</td>
</tr>
<tr>
<td>Description</td>
<td>Measure of seizure patients who received an evaluation of their blood glucose</td>
</tr>
<tr>
<td>Numerator Statement</td>
<td>Patients receiving a blood sugar evaluation</td>
</tr>
<tr>
<td>Denominator Statement</td>
<td>Patients with ongoing status seizure activity (also known as status epilepticus, defined as seizing for 5 minutes or more or two or more status seizures in a 5-minute period without regaining consciousness) originating from a 911 request</td>
</tr>
<tr>
<td>Exclusions</td>
<td>None</td>
</tr>
<tr>
<td>Numerator Pseudocode</td>
<td>eVitals.18 Blood Glucose Level is not null</td>
</tr>
<tr>
<td>Denominator Pseudocode</td>
<td>(eSituation.11 Provider's Primary Impression is G40.901 (&quot;Epilepsy, unspecified, not intractable, with status epilepticus&quot;) or eSituation.12 Provider's Secondary Impressions is G40.901 (&quot;Epilepsy, unspecified, not intractable, with status epilepticus&quot;) and eResponse.05 Type of Service Requested is 2205001 (&quot;911 Response (Scene)&quot;)</td>
</tr>
</tbody>
</table>

Note: This EMS Compass measure was retired by NEMSQA, but the NEMSIS TAC continues to make it available.

Note: If the intent is to capture all seizures with status epilepticus, the code G40.901 in the denominator is overly restrictive and should be replaced with the pattern G40...[1,3]. However, the measure is implemented as defined by EMS Compass.

Seizure-02 Patient with Status Epilepticus Receiving Intervention

<table>
<thead>
<tr>
<th>ID</th>
<th>Seizure-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Title</td>
<td>Patient with Status Epilepticus Receiving Intervention</td>
</tr>
<tr>
<td>NEMSQA Package</td>
<td>I.-NEMSQA-EMS-Compass-2.0-Seizure-02.pdf</td>
</tr>
<tr>
<td>Description</td>
<td>Percentage of EMS responses originating from a 911 request for patients with status epilepticus who received benzodiazepine aimed at terminating their status seizure during the EMS response.</td>
</tr>
<tr>
<td>Numerator Statement</td>
<td>EMS responses originating from a 911 request for patients who received benzodiazepine aimed at terminating their status seizure during the EMS response. Benzodiazepines may include: Diazepam, Lorazepam, Midazolam.</td>
</tr>
<tr>
<td>Denominator Statement</td>
<td>All EMS responses originating from a 911 request for patients with a primary or secondary impression of status epilepticus.</td>
</tr>
<tr>
<td>Exclusions</td>
<td>None</td>
</tr>
</tbody>
</table>
| Numerator Pseudocode | eMedications.03 Medication Given is in 
  
  `{ 
  3322 ("Diazepam"),
  6960 ("Midazolam"),
  203128 ("Midazolam Hydrochloride"),
  6470 ("Lorazepam")
  }`
Stroke

Stroke-01 Suspected Stroke Receiving Prehospital Stroke Assessment

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure Title</th>
<th>NEMSQA Package</th>
<th>Description</th>
<th>Numerator Statement</th>
<th>Denominator Statement</th>
<th>Denominator Exclusions</th>
<th>Numerator Pseudocode</th>
<th>Denominator Pseudocode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Suspected Stroke Receiving Prehospital Stroke Assessment</td>
<td>J.-NEMSQA-EMS-Compass-2.0-Stroke-01.pdf</td>
<td>To measure the percentage of suspected stroke patients who had a stroke assessment performed by EMS</td>
<td>Number of suspected stroke patients who had a stroke assessment performed (CPSS, LAMS, etc.)</td>
<td>Patients with a provider impression of stroke originating from a 911 request</td>
<td>None</td>
<td>evVitals.29 Stroke Scale Score is not null</td>
<td>(eSituation.11 Provider's Primary Impression matches /^G40...[1,3]/ (&quot;Epilepsy, ..., with status epilepticus&quot;) or eSituation.12 Provider's Secondary Impressions matches /^G40...[1,3]/ (&quot;Epilepsy, ..., with status epilepticus&quot;) and eResponse.05 Type of Service Requested is 2205001 (<em>911 Response (Scene)</em>))</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>or evVitals.30 Stroke Scale Type is not null</td>
<td>(eSituation.11 Provider's Primary Impression matches /^(I60)</td>
</tr>
</tbody>
</table>

Note: The NEMSQA measure uses evVitals.23 Total Glasgow Coma Score, which is not in the national database. The NEMSIS TAC modified the denominator to use the sum of evVitals.19 Glasgow Coma Score-Eye, evVitals.20 Glasgow Coma Score-Verbal, evVitals.21 Glasgow Coma Score-Motor, and evVitals.26 Level of responsiveness (AVPU) is 3326007 (*Unresponsive*).

Trauma Pain

Trauma-01 Pain Assessment of Injured Patients

<table>
<thead>
<tr>
<th>ID</th>
<th>Measure Title</th>
<th>ID</th>
<th>Measure Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Trauma-01</td>
<td>Pain Assessment of Injured Patients</td>
</tr>
</tbody>
</table>
Recognizing that pain is undertreated in injured patients, it is important to assess whether a patient is experiencing pain.

**Numerator Statement**
Patients with pain scale value present

**Denominator Statement**
Patients with injury originating from a 911 request

**Denominator Exclusions**
None

**Numerator Pseudocode**
\[
eVitals.27 \text{ Pain Scale Score } \text{ is not null}
\]

**Denominator Pseudocode**
\[
eSituation.02 \text{ Possible Injury } \text{ is 9922005 ("Yes") and}
\sum (eVitals.19 \text{ Glasgow Coma Score-Eye}, eVitals.20 \text{ Glasgow Coma Score-Verbal},
eVitals.21 \text{ Glasgow Coma Score-Motor}) \text{ is equal to 15 or}
eVitals.26 \text{ Level of responsiveness (AVPU) } \text{ is 3326001 ("Alert") and}
eResponse.05 \text{ Type of Service Requested } \text{ is 2205001 ("911 Response (Scene)") and}
eDisposition.12 \text{ Incident/Patient Disposition } \text{ is 4212033 ("Patient Treated, Transported by this EMS Unit")}
\]

Note: The NEMSQA measure uses eVitals.23 Total Glasgow Coma Score, which is not in the national database. The NEMSIS TAC modified the denominator to use the sum of eVitals.19 Glasgow Coma Score-Eye, eVitals.20 Glasgow Coma Score-Verbal, and eVitals.21 Glasgow Coma Score-Motor.

### Vehicle Operations Safety

#### Safety-01 Use of Lights and Sirens During Response to Scene

**ID**
Safety-01

**Measure Title**
Use of Lights and Sirens During Response to Scene

**NEMSQA Package**
K.-NEMSQA-EMS-Compass-2.0-Safety-01.pdf

**Description**
EMS responses originating from a 911 request during which lights and sirens were not used.

**Numerator Statement**
eResponse.24 Additional Response Mode Descriptors \text{ is 2224019 ("No Lights or Sirens")}

**Denominator Statement**
eResponse.05 Type of Service Requested \text{ is 2205001 ("911 Response (Scene)")}

#### Safety-02 Use of Lights and Sirens During Transport

**ID**
Safety-02

**Measure Title**
Use of Lights and Sirens During Transport

**NEMSQA Package**
O.-NEMSQA-EMS-Compass-2.0-Safety-02.pdf

**Description**
Percentage of EMS transports originating from 911 requests in which lights and sirens were not used during patient transport.

**Numerator Statement**
EMS transports originating from a 911 request during which lights and sirens were not used.

**Denominator Statement**
All EMS transports originating from a 911 request.
### Denominator Exclusions
None

### Numerator Pseudocode
- **eDisposition.18 Additional Transport Mode Descriptors** is 4218015 ("No Lights or Sirens")

### Denominator Pseudocode
- **eResponse.05 Type of Service Requested** is 2205001 ("911 Response (Scene)"
- **eDisposition.12 Incident/Patient Disposition** is 4212033 ("Patient Treated, Transported by this EMS Unit")

The disposition code in the denominator excludes some patient transport dispositions, such as "Patient Dead at Scene-Resuscitation Attempted (With Transport)." However, the NEMSIS TAC implemented the measure as defined by NEMSQA.

### Contact Info
Any questions, comments, concerns, or suggestions regarding this or other reports made available by the NEMSIS TAC, please contact us or leave a comment below!

Contact information is also available on our website.

<table>
<thead>
<tr>
<th>Kevin White, BS</th>
<th>Atim Effiong, MPH</th>
<th>Laurel Baeder, BA, MStat</th>
</tr>
</thead>
<tbody>
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<td>University of Utah School of Medicine NEMSIS Technical Assistance Center</td>
<td>University of Utah School of Medicine NEMSIS Technical Assistance Center</td>
</tr>
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</tr>
</tbody>
</table>