<table>
<thead>
<tr>
<th><strong>eMeasure Title</strong></th>
<th><strong>Emergency Medicine: Emergency Department Utilization of CT for Minor Blunt Head Trauma for Patients Aged 18 Years and Older</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>eMeasure Identifier (Measure Authoring Tool)</strong></td>
<td>3650 5.0</td>
</tr>
<tr>
<td><strong>NQF Number</strong></td>
<td>Not Applicable</td>
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<tr>
<td><strong>GUID</strong></td>
<td>3e137849-2962-4e3d-8ff0-c91efd6b3489</td>
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<tr>
<td><strong>Measurement Period</strong></td>
<td>January 1, 20XX through December 31, 20XX</td>
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<td><strong>Measure Steward</strong></td>
<td>American College of Emergency Physicians (ACEP)</td>
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<tr>
<td><strong>Measure Developer</strong></td>
<td>American College of Emergency Physicians (ACEP)</td>
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<tr>
<td><strong>Endorsed By</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Percentage of emergency department visits for patients aged 18 years and older who presented with a minor blunt head trauma who had a head CT for trauma ordered by an emergency care provider who have an indication for a head CT</td>
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<tr>
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<tr>
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**Measure Scoring**

<table>
<thead>
<tr>
<th>Measure Scoring</th>
<th>Measure Type</th>
<th>Stratification</th>
<th>Risk Adjustment</th>
<th>Rate Aggregation</th>
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<tbody>
<tr>
<td>Proportion</td>
<td>Process</td>
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**Rationale**

Though it is difficult to directly attribute the effects of smaller dosages of radiation, such as that received through computed tomography (CT), the dosage of radiation from CTs has increased in recent years, in part due to the increased speed of image acquisition. Additionally, there is evidence to suggest that the radiation doses from CTs are higher and more variable than generally quoted (Smith-Bindman et al., 2009). Further, as “radiation doses associated with commonly used CT examinations resemble doses received by individuals in whom an increased risk of cancer was documented” (Smith-Bindman et al., 2009), the use of some CT scans is associated with a “nonnegligible” lifetime attributable risk of cancer (Einstein, Henzlova, & Rajagopalan S, 2007; Budoff et al., 2006). As over 1.3 million individuals are treated and released from the ED for mild traumatic brain injury annually, (Melnick et al., 2012) it is critical that CT scans only be utilized when clinically appropriate. Through measurement of the share of CT scans that are performed inappropriately, a focus can be brought to quality improvement and increased application of clinical decision tools around this topic.

**Clinical Recommendation Statement**

The following evidence statements are quoted verbatim from the referenced clinical guidelines and other references:

A noncontrast head CT is indicated in head trauma patients with loss of consciousness or posttraumatic amnesia only if one or more of the following is present: headache, vomiting, age greater than 60 years, drug or alcohol intoxication, deficits in short-term memory, physical evidence of trauma above the clavicle, posttraumatic seizure, GCS score less than 15, focal neurologic deficit, or coagulopathy. (Level A recommendation) (ACEP, 2008).

A noncontrast head CT should be considered in head trauma patients with no loss of consciousness or posttraumatic amnesia if there is a focal neurologic deficit, vomiting, severe headache, age 65 years or greater, physical signs of a basilar skull fracture, GCS score less than 15, coagulopathy, or a dangerous mechanism of...
Injury. [Dangerous mechanism of injury includes ejection from a motor vehicle, a pedestrian struck, and a fall from a height of more than 3 feet or 5 stairs.] (Level B recommendation) (ACEP, 2008).

**Reference**


**Reference**


**Reference**


**Reference**


**Reference**


**Definition**

Denominator note: Minor blunt head trauma includes only non-penetrating injuries.

Indications for a head CT in patients presenting to the emergency department for minor blunt head trauma:

- Patients with any one of the following:
  - GCS score less than 15
  - Severe headache
  - Vomiting
  - Age 65 years and older
  - Physical signs of a basilar skull fracture (signs include haemotympanum, "raccoon" eyes, cerebrospinal fluid leakage from the ear or nose, Battle's sign)
  - Focal neurological deficit
  - Coagulopathy
  - Thrombocytopenia
  - Currently taking any of the following anticoagulant medications*:
    - apixaban, argatroban, bivalirudin, dabigatran, dalteparin, desirudin, edoxaban, enoxaparin, fondaparinux, heparin, lepirudin, rivaroxaban, tinzaparin, warfarin
  - Dangerous mechanism of injury (ie, ejection from a motor vehicle, a pedestrian struck, and a fall from a height of more than 3 feet or 5 stairs)

  OR

Patients with either loss of consciousness OR posttraumatic
amnesia AND any one of the following:
- GCS score less than 15
- Headache
- Age 60 years and older, and less than 65 years
- Drug/alcohol intoxication
- Short-term memory deficits
- Evidence of trauma above the clavicles (physical location, any trauma to the head or neck [ie, laceration, abrasion, bruising, ecchymosis, hematoma, swelling, fracture])
- Posttraumatic seizure

*The aforementioned list of medications/drug names is based on clinical guidelines and other evidence and may not be all-inclusive or current. Physicians and other health care professionals should refer to the FDA’s web site page entitled “Drug Safety Communications” for up-to-date drug recall and alert information when prescribing medications. As part of the measure maintenance process, the measure and specifications will be updated routinely to account for newly released and FDA approved pharmacologic agents.

Guidance

The data elements, "Diagnostic Study, Order: Head CT" and "Diagnostic Study, Order: CT of Torso", are intended to be limited to instances where they are ordered by an emergency care provider to satisfy the measure and specifications’ intent. This level of attribution at the data element level to a provider’s specialty is not able to be demonstrated in current eCQM standards and tools.

The level of analysis for this measure is every emergency department visit for minor blunt head trauma during the measurement period. This means that every emergency department visit for minor blunt head trauma should be counted as a measurable event for the measure calculation.

Transmission Format

TBD

Initial Population

All emergency department visits for patients aged 18 years and older who presented with a minor blunt head trauma

Denominator

Equals Initial Population who had a head CT for trauma ordered by an emergency care provider

Denominator Exclusions

Patients with any of the following:
- Ventricular shunt
- Brain tumor
- Multisystem Trauma
- Pregnancy
- Currently taking any of the following antiplatelet medications*:
  - abciximab, cangrelor, cilostazol, clopidogrel, eptifibatide, prasugrel, ticlopidine, ticagrelor, tirofiban, vorapaxar

*The aforementioned list of medications/drug names is based on clinical guidelines and other evidence and may not be all-inclusive or current. Physicians and other health care professionals should refer to the FDA’s web site page entitled “Drug Safety Communications” for up-to-date drug recall and alert information when prescribing medications. As part of the measure maintenance process, the measure and specifications will be updated routinely to account for newly released and FDA approved medications.
| **Numerator** | Pharmacologic agents. Emergency department visits for patients who have an indication for a head CT |
| **Numerator Exclusions** | Not Applicable |
| **Denominator Exceptions** | None |
| **Supplemental Data Elements** | For every patient evaluated by this measure also identify payer, race, ethnicity and sex. |