

Quality ID #415: Emergency Medicine: Emergency Department Utilization of CT for Minor Blunt Head Trauma for Patients Aged 18 Years and Older

- National Quality Strategy Domain: Efficiency and Cost Reduction
- Meaningful Measure Area: Appropriate Use of Healthcare

2021 COLLECTION TYPE:

MIPS CLINICAL QUALITY MEASURES (CQMS)

MEASURE TYPE:

Efficiency – High Priority

DESCRIPTION:

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

INSTRUCTIONS:

This measure is to be submitted for **each denominator eligible visit** for patients aged 18 years and older who present to the emergency department with a minor blunt head trauma during the performance period. It is anticipated that Merit-based Incentive Payment System (MIPS) eligible clinicians who provide care in the emergency department will submit this measure.

Measure Submission Type:

Measure data may be submitted by individual MIPS eligible clinicians, groups, or third party intermediaries. The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions as allowed by the measure. The quality-data codes listed do not need to be submitted by MIPS eligible clinicians, groups, or third party intermediaries that utilize this modality for submissions; however, these codes may be submitted for third party intermediaries that utilize Medicare Part B claims data. For more information regarding Application Programming Interface (API), please refer to the Quality Payment Program (QPP) website.

DENOMINATOR:

All 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*

Definitions:

Minor Blunt Head Trauma – Includes only non-penetrating injuries.

DENOMINATOR NOTE: *This measure looks to determine if an emergency care provider ordered head CT services typically provided under CPT code 70450.

Denominator Criteria (Eligible Cases):

Patients aged ≥ 18 years on date of encounter

AND

Diagnosis for minor blunt head trauma (ICD-10-CM): S00.03XA, S00.33XA, S00.431A, S00.432A, S00.439A, S00.531A, S00.532A, S00.83XA, S00.93XA, S06.0X0A, S06.0X1A, S06.0X9A, S06.1X0A, S06.1X1A, S06.1X2A, S06.1X3A, S06.1X4A, S06.1X9A, S06.2X0A, S06.2X1A, S06.2X2A, S06.2X3A, S06.2X4A, S06.2X9A, S06.300A, S06.301A, S06.302A, S06.303A, S06.304A, S06.309A, S06.340A, S06.341A, S06.342A, S06.343A, S06.344A, S06.349A, S06.350A, S06.351A, S06.352A, S06.353A, S06.354A, S06.359A, S06.360A, S06.361A, S06.362A, S06.363A, S06.364A, S06.369A, S06.4X0A, S06.4X1A, S06.4X2A, S06.4X3A, S06.4X4A, S06.4X9A, S06.5X0A, S06.5X1A, S06.5X2A, S06.5X3A, S06.5X4A, S06.5X9A, S06.6X0A, S06.6X1A, S06.6X2A, S06.6X3A, S06.6X4A, S06.6X9A, S06.810A, S06.811A, S06.812A, S06.813A, S06.814A, S06.819A, S06.820A, S06.821A, S06.822A, S06.823A,

S06.824A, S06.829A, S06.890A, S06.891A, S06.892A, S06.893A, S06.894A, S06.899A, S06.9X0A, S06.9X1A, S06.9X2A, S06.9X3A, S06.9X4A, S06.9X9A, S09.11XA, S09.19XA, S09.8XXA

AND

Patient encounter during the performance period (CPT): 99281, 99282, 99283, 99284, 99285, 99291

AND

Patient presented with a minor blunt head trauma and had a head CT ordered for trauma by an emergency care provider: G9530

AND NOT

DENOMINATOR EXCLUSION:

Patient has documentation of ventricular shunt, brain tumor, multisystem trauma, or is currently taking an antiplatelet medication including: abciximab, anagrelide, cangrelor, cilostazol, clopidogrel, dipyridamole, eptifibatide, prasugrel, ticlopidine, ticagrelor, tirofiban, or vorapaxar: G9531

NUMERATOR:

Emergency department visits for patients who have an indication for a head CT

Definitions:

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

Patients with no loss of consciousness (LOC) AND no post-traumatic amnesia AND 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, betrixaban, bivalirudin, dabigatran, dalteparin, desirudin, edoxaban, enoxaparin, fondaparinux, heparin, rivaroxaban, warfarin
- Dangerous mechanism of injury (i.e., 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 LOC 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 [i.e., 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.*

Numerator Options:

Performance Met:

Patient with minor blunt head trauma had an appropriate indication(s) for a head CT (**G9529**)

OR

Performance Not Met:

Patient with minor blunt head trauma did not have an appropriate indication(s) for a head CT (**G9533**)

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. Further, as “radiation doses associated with commonly used CT examinations resemble doses received by individuals in whom an increased risk of cancer was documented,” the use of some CT scans is associated with a “nonnegligible” lifetime attributable risk of cancer. As over 1.3 million individuals are treated and released from the ED for mild traumatic brain injury annually, 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 STATEMENTS:

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)

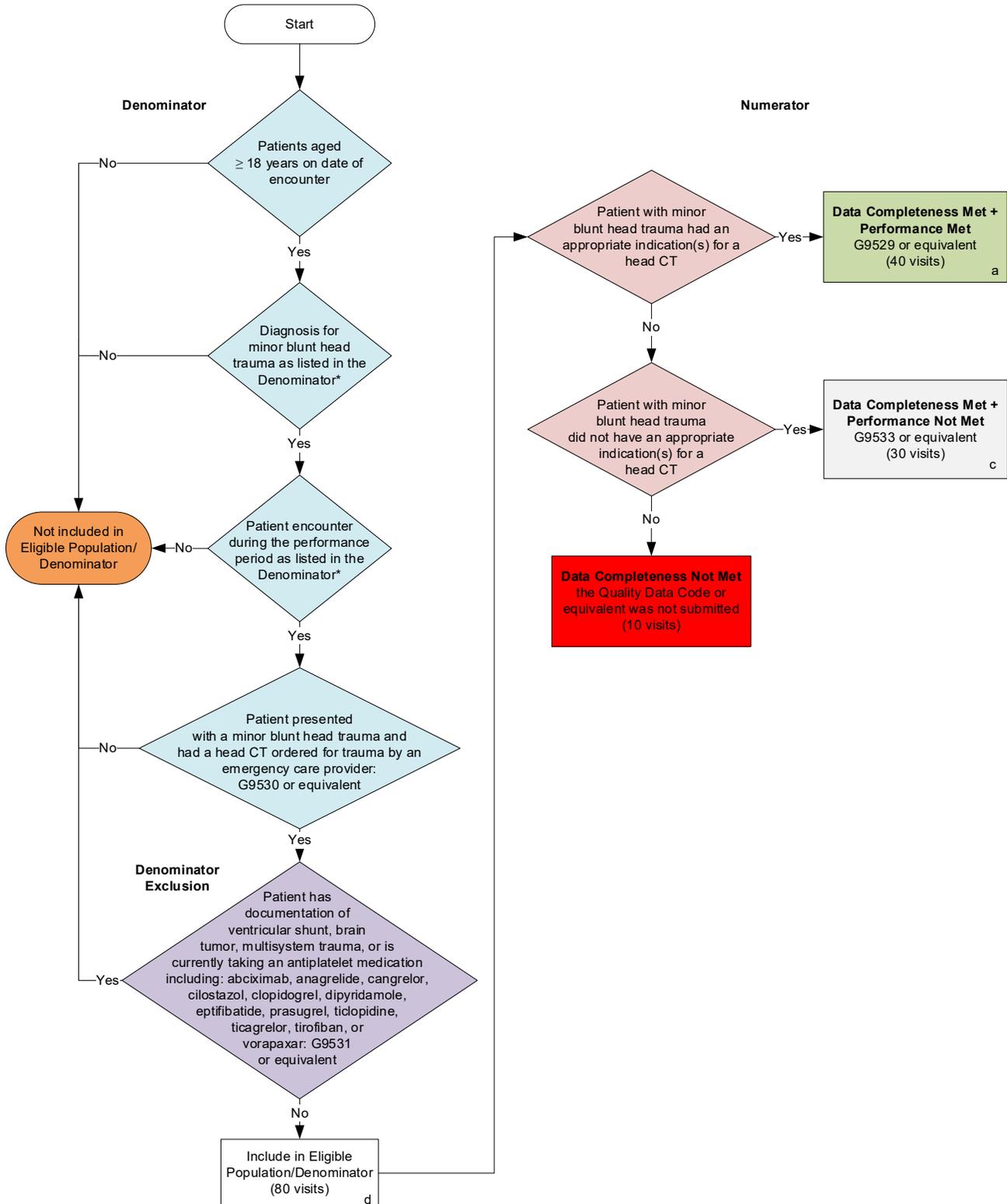
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**2021 Clinical Quality Measure Flow for Quality ID #415:
Emergency Medicine: Emergency Department Utilization of CT for Minor Blunt Head Trauma for
Patients Aged 18 Years and Older**

Disclaimer: Refer to the measure specification for specific coding and instructions to submit this measure.



SAMPLE CALCULATIONS

Data Completeness

$$\frac{\text{Performance Met (a=40 visits)} + \text{Performance Not Met (c=30 visits)}}{\text{Eligible Population / Denominator (d=80 visits)}} = \frac{70 \text{ visits}}{80 \text{ visits}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=40 visits)}}{\text{Data Completeness Numerator (70 visits)}} = \frac{40 \text{ visits}}{70 \text{ visits}} = 57.14\%$$

*See the posted measure specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Visit

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**2021 Clinical Quality Measure Flow Narrative for Quality ID #415:
Emergency Medicine: Emergency Department Utilization of CT for Minor Blunt Head Trauma for
Patients Aged 18 Years and Older**

Disclaimer: Refer to the measure specification for specific coding and instructions to submit this measure.

1. Start with Denominator
2. Check *Patients aged greater than or equal to 18 years on date of encounter*.
 - a. If *Patients aged greater than or equal to 18 years on date of encounter* equals No, do not include in *Eligible Population/Denominator*. Stop processing.
 - b. If *Patients aged greater than or equal to 18 years on date of encounter* equals Yes, proceed to check *Diagnosis for minor blunt head trauma as listed in the Denominator**.
3. Check *Diagnosis for minor blunt head trauma as listed in the Denominator**.
 - a. If *Diagnosis for minor blunt head trauma as listed in the Denominator** equals No, do not include in *Eligible Population/Denominator*. Stop processing.
 - b. If *Diagnosis for minor blunt head trauma as listed in the Denominator** equals Yes, proceed to check *Patient encounter during the performance period as listed in the Denominator**.
4. Check *Patient encounter during the performance period as listed in the Denominator**.
 - a. If *Patient encounter during the performance period as listed in the Denominator** equals No, do not include in *Eligible Population/Denominator*. Stop processing.
 - b. If *Patient encounter during the performance period as listed in the Denominator** equals Yes, proceed to check *Patient presented with a minor blunt head trauma and had a head CT ordered for trauma by an emergency care provider*.
5. Check *Patient presented with a minor blunt head trauma and had a head CT ordered for trauma by an emergency care provider*.
 - a. If *Patient presented with a minor blunt head trauma and had a head CT ordered for trauma by an emergency care provider* equals No, do not include in *Eligible Population/Denominator*. Stop processing.
 - b. If *Patient presented with a minor blunt head trauma and had a head CT ordered for trauma by an emergency care provider* equals Yes, proceed to check *Patient has documentation of ventricular shunt, brain tumor, multisystem trauma, or is currently taking an antiplatelet medication including: abciximab, anagrelide, cangrelor, cilostazol, clopidogrel, dipyridamole, eptifibatide, prasugrel, ticlopidine, ticagrelor, tirofiban, or vorapaxar*.
6. Check *Patient has documentation of ventricular shunt, brain tumor, multisystem trauma, or is currently taking an antiplatelet medication including: abciximab, anagrelide, cangrelor, cilostazol, clopidogrel, dipyridamole, eptifibatide, prasugrel, ticlopidine, ticagrelor, tirofiban, or vorapaxar*.
 - a. If *Patient has documentation of ventricular shunt, brain tumor, multisystem trauma, or is currently taking an antiplatelet medication including: abciximab, anagrelide, cangrelor, cilostazol, clopidogrel, dipyridamole, eptifibatide, prasugrel, ticlopidine, ticagrelor, tirofiban, or vorapaxar* equals Yes, do not include in *Eligible Population/Denominator*. Stop processing.

- b. If *Patient has documentation of ventricular shunt, brain tumor, multisystem trauma, or is currently taking an antiplatelet medication including: abciximab, anagrelide, cangrelor, cilostazol, clopidogrel, dipyridamole, eptifibatide, prasugrel, ticlopidine, ticagrelor, tirofiban, or vorapaxar* equals No, include in *Eligible Population/Denominator*.
7. Denominator Population:
 - a. Denominator Population is all Eligible Visits in the Denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 80 visits in the Sample Calculation.
8. Start Numerator
9. Check *Patient with minor blunt head trauma had an appropriate indication(s) for a head CT*:
 - a. If *Patient with minor blunt head trauma had an appropriate indication(s) for a head CT* equals Yes, include in *Data Completeness Met and Performance Met*.
 - *Data Completeness Met and Performance Met* letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 40 visits in the Sample Calculation.
 - b. If *Patient with minor blunt head trauma had an appropriate indication(s) for a head CT* equals No, proceed to check *Patient with minor blunt head trauma did not have an appropriate indication(s) for a head CT*.
10. Check *Patient with minor blunt head trauma did not have an appropriate indication(s) for a head CT*:
 - a. If *Patient with minor blunt head trauma did not have an appropriate indication(s) for a head CT* equals Yes, include in *Data Completeness Met and Performance Not Met*.
 - *Data Completeness Met and Performance Not Met* letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 30 visits in the Sample Calculation.
 - b. If *Patient with minor blunt head trauma did not have an appropriate indication(s) for a head CT* equals No, proceed to check *Data Completeness Not Met*.
11. Check *Data Completeness Not Met*:
 - a. If *Data Completeness Not Met*, the Quality Data Code or equivalent was not submitted. 10 visits have been subtracted from the Data Completeness Numerator in the Sample Calculation.

Sample Calculations

Data Completeness equals Performance Met (a equals 40 visits) plus Performance Not Met (c equals 30 visits) divided by Eligible Population/Denominator (d equals 80 visits). All equals 70 visits divided by 80 visits. All equals 87.50 percent.

Performance Rate equals Performance Met (a equals 40 visits) divided by Data Completeness Numerator (70 visits). All equals 40 visits divided by 70 visits. All equals 57.14 percent.

*See the posted measure specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Visit

The measure diagrams were developed by CMS as a supplemental resource to be used in conjunction with the measure specifications. They should not be used alone or as a substitution for the measure specification.