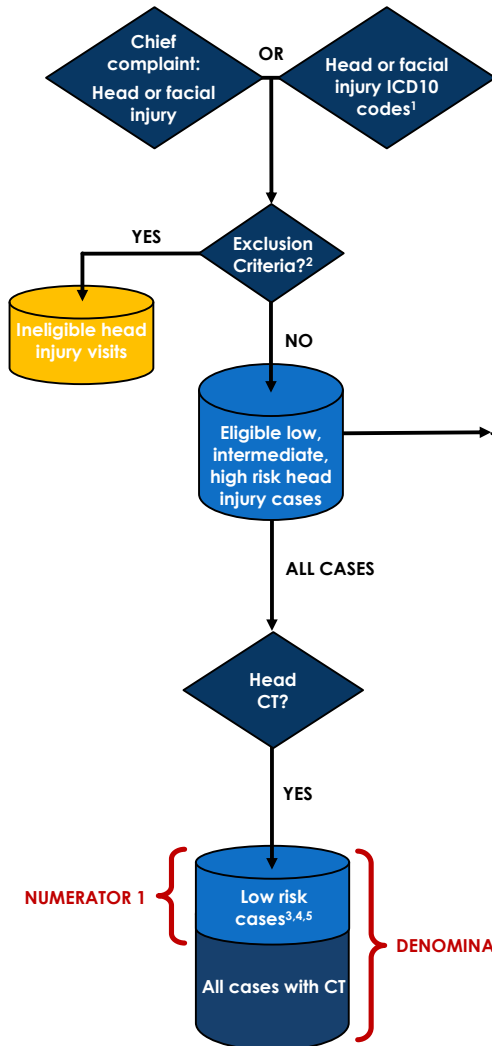


MEDIC
Pediatric Head Injury Measure Specification Flow Diagram
Ages 2-17 years old (children)

Version 1.0



Reference: Kuppermann N, et al. Identification of children at very low risk of clinically-important brain injuries after head trauma: a prospective cohort study. *Lancet* 2009;374:1160-1170.

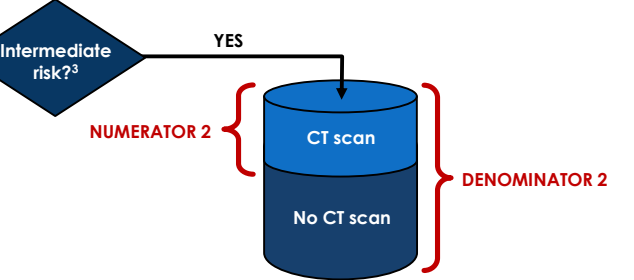


¹ Any ICD10 code for head or facial injury (> 400 codes; e.g., concussion, abrasion, contusion, laceration, fracture, etc.)

² Denominator exclusions:

- GCS < 14*
- Injury > 24 hours
- Penetrating injury
- Trauma team activation case
- Pregnancy
- History of bleeding disorder
- Suspected presentation of non-accidental trauma (abuse)
- History of VP shunt
- History of brain mass/tumor
- On anticoagulant or antiplatelet medications
- History of cognitive deficits (e.g., developmental delay)

* Includes GCS < 14 documented at any point in ED visit. For ED visits with missing GCS data, the following are used as proxies for depressed GCS: documentation of altered mental status since the inciting injury, patient "not acting normally" according to parent or caregiver, worsening neurologic symptoms in the ED, or evidence of intoxication



³ Head CT intermediate risk criteria for verbal child (age 2-17):*

- Loss of consciousness
- Vomiting
- Severe headache
- Severe mechanism of injury[^]

* This criteria is the verbatim PECARN rule, but the intermediate risk population is defined after the high risk appropriateness criteria are applied (GCS < 15, palpable skull fracture, altered mental status) and contained in box 4.

[^] Includes: fall from height > 5 feet; motor vehicle crash with ejection, fatality, or rollover; pedestrian or bicyclist without helmet struck by a motorized vehicle; head struck by a high-impact object.

⁴ Head CT high risk criteria for verbal child (age 2-17):*

- GCS = 14[^]
- Signs of basilar skull fracture
- Altered mental status[@]

* This criteria is the verbatim PECARN rule and defines the high risk population.

[^] For ED visits with missing GCS data, the following are used as proxies for depressed GCS: documentation of altered mental status since the inciting injury, patient "not acting normally" according to parent or caregiver, worsening neurologic symptoms in the ED, or evidence of intoxication.

[@] Agitation, somnolence, slow response, repetitive questioning.

⁵ Head CT low risk criteria for verbal child (age 2-17):

- Any case that does not meet intermediate or high risk criteria

Head CT Overuse Measure:
 Quality initiative measure reported as: % overuse CT scans

$$\% \text{ overuse} = \frac{\text{low risk case CTs}}{\text{total CTs}}$$

Denominator 1 = ED visits of all eligible minor head injury patients receiving head CT (CPT 70450)
 Numerator 1 = ED visits of eligible minor head injury patients with low risk criteria receiving head CT (CPT 70450)

Intermediate Risk Utilization Measure:
 Quality initiative measure reported as: % intermediate risk group with CT scans

$$\% \text{ with CT scans} = \frac{\text{number with CTs}}{\text{number intermediate risk group}}$$

Denominator 2 = ED visits of eligible minor head injury patients with intermediate risk criteria
 Numerator 2 = ED visits of intermediate risk group receiving head CT (CPT 70450)