SUNY DOWNSTATE Medical Center
HEALTH SCIENCE CENTER AT BROOKLYN · STATE UNIVERSITY OF NEW YORK
College of Nursing

AN EBP TO REDUCE UNNECESSARY CT SCANS IN CHILDREN WITH HEAD INJURIES
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PROBLEM

❖ Traumatic brain injury (TBI) is a leading cause of death & disability in children [1]

❖ Most common causes of injury: falls & motor vehicle accidents

❖ Bimodal age distribution: including children ages 0-3 & ages 15-18 [2]

❖ Estimated one million children undergo unnecessary CT scans every year in the USA [1]

BACKGROUND

❖ Computerized tomography (CT) is used to assess TBI severity & guide treatment in the first 24 hours post-injury

❖ CT is not recommended for all head traumas [2]

❖ CT delivers doses of ionizing radiation 100-500 times higher than conventional radiography [3]

❖ Ionizing radiation is linked to impaired neurodevelopmental outcomes and increases the risk of malignancy [4]

PURPOSE

❖ To reduce unnecessary use of CT scans for assessing pediatric head injuries by using an evidence-based decision tree developed by PECARN

INTERVENTION

❖ **Staff education** info sheet regarding widely accepted (NIH, AAP, ABIM, ACEP) PECARN Head CT Rule

❖ **In-service** education classes

❖ **Posters** in the ED
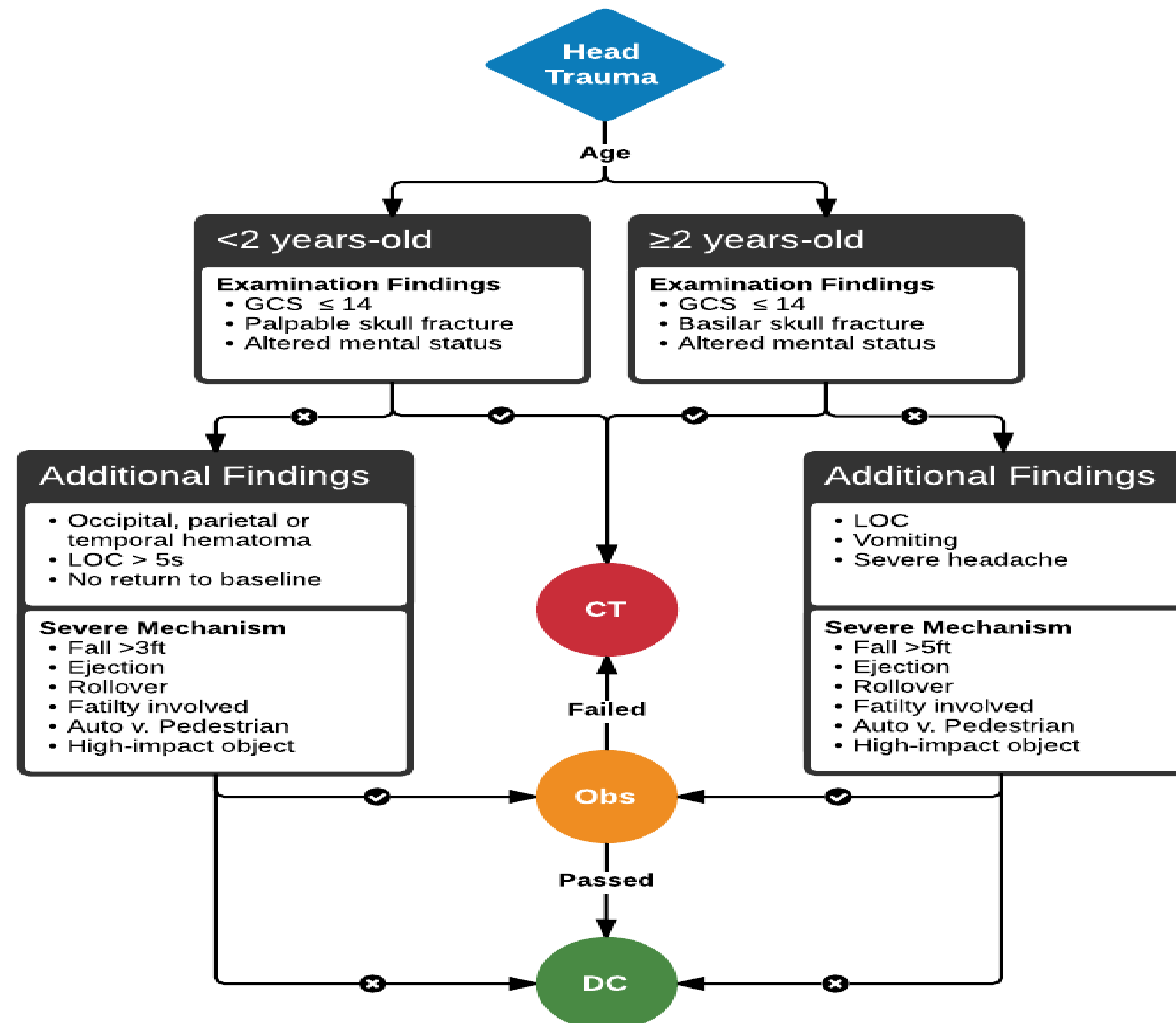
METHOD

❖ **Design:** descriptive, comparative

❖ **Convenience sample:** HC providers caring for children with closed head traumas in the ED

❖ **Setting:** ED in large urban medical center

❖ **Evaluation**: pre & post test of reported practices & attitudes regarding tool

IMPLICATIONS

❖ **If successful:** PECARN Head CT Rule will be routinely used and thus reduce costs & radiation exposure

❖ **If not successful**: Additional education & interventions may be needed

REFERENCES

[1] Kuppermann et al., 2009

[2] Dewan, Mummareddy, Wellons & Bonfield, 2016

[3] Miglioretti, Johnson, & Williams, 2013

[4] Lockie, Dalton, Oakley, & Babl, 2013