



Brief Resolved Unexplained Event (BRUE) Emergency Department Clinical Practice Guideline (CPG)

Clinical Practice Guideline

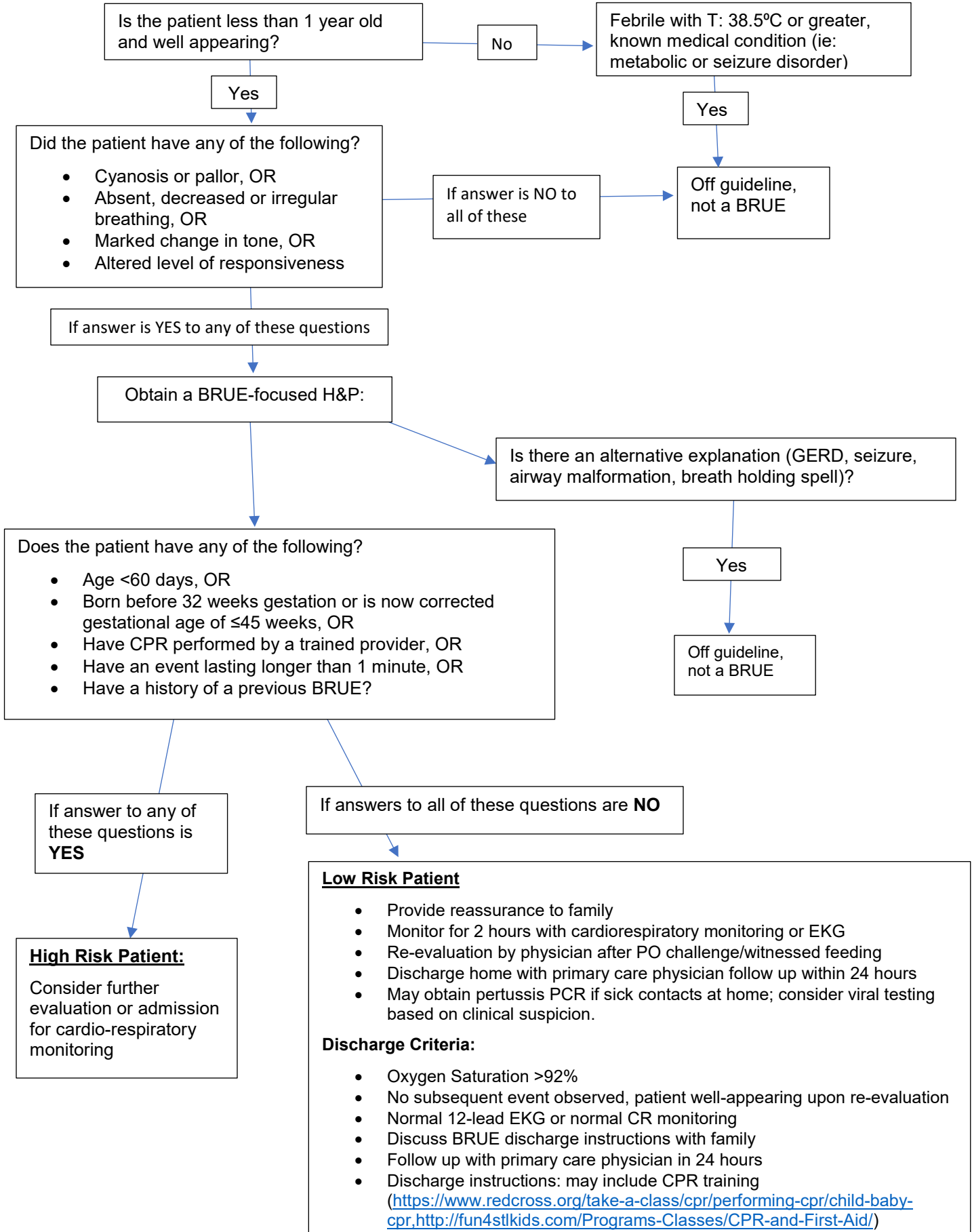
Approved by: Division of Pediatric Emergency Medicine

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Brief Resolved Unexplained Events (BRUE) Guidelines:

Objective: The purpose of the BRUE Clinical Practice Guideline is to standardize the approach to appropriate care of infants with these episodes. This algorithm was adapted from the American Academy of Pediatrics (AAP) Guideline to help distinguish between high risk patients, that require further evaluation, from low risk patients, who may be safely discharged from the Emergency Department (ED) with minimal evaluation.

Low risk criteria: Infants greater than 60 days of age, infants born after 32 weeks gestation or greater than 45 weeks corrected gestational age, CPR was not performed by trained provider, event lasted less than 1 minute, and if this was the first event.

Higher risk criteria: Infants less than 60 days of age, infant born before 32 weeks gestation or less than 45 weeks corrected gestational age, CPR was performed by trained provider, event lasted longer than 1 minute, and this was a subsequent event.

Target Users: Providers at SSM Health Cardinal Glennon Children's Hospital Emergency Department, inpatient medicine, primary care providers, and clinicians caring for infants in other EDs and urgent care centers.

Background:

Infants presenting to a pediatric emergency department with a BRUE is very common. These episodes are typically transient in description but frightening to the caregiver. Although many infants may be asymptomatic upon presentation to the ED, it is important to differentiate between infants that have hemodynamic instability in comparison to the infant with alternative diagnoses, including breath-holding spells or episodes of gastroesophageal reflux. Based on a systematic review of 37 studies by Tieder in 2013, data was pooled in an attempt to risk stratify patients. Risk factors obtained from history and physical examination findings showed that screening tests for infectious, gastroesophageal reflux and seizures had low yield in patients without supporting historical or physical examination findings. Although this review prompts further research, it emphasized the importance of history and physical examination findings in this patient population in place of unnecessary testing.

Per Dr. Joel Tieder (lead author of new AAP guidelines), the previous term Acute Life-Threatening Event (ALTE), from the 1980s, was used to describe events that were thought to be precursors of sudden infant death syndrome (SIDS). Unfortunately, the term ALTE was poorly defined and led to thousands of prolonged hospitalizations and testing of children. As a result, the AAP convened and the BRUE guidelines were published in an attempt to offer a more streamlined approach to cases; previous ALTE guidelines were based solely on the descriptions provided by the caregiver whereas now, the BRUE guidelines are based on more objective data to allow the pediatrician/clinician to manage a suspected BRUE based on both the history provided and the physical examination findings. The AAP guideline was published in May 2016 with three main goals of: 1) changing the previous term to describe these events from ALTE to BRUE; 2) providing an approach to clinicians to risk-stratify patients that may have a repeat episode or those with an underlying disorder; and 3) providing clinicians with a clarified definition of an episode as well as specific recommendations on follow-up and management. Strong recommendations for low risk patients include education regarding BRUEs and CPR training. Recommendations that are strongly discouraged in low risk patients include obtaining lab-work (CBC, BMP, blood culture, CSF studies), imaging/EEG studies, home cardiorespiratory monitoring or the initiation of anti-epileptic medications or acid suppression therapy. The main etiologies of BRUEs include digestive, neurologic, respiratory and infectious. Based on these guidelines, the goal is to risk stratify patients in need of further testing and admission compared to patients that would benefit from a shorter observation period in the emergency department, followed by close primary care follow up.

Resources:

- Brief Resolved Unexplained Events (Formerly Apparent Life-Threatening Events) and Evaluation of Lower-Risk Infants. Joel S. Tieder, Joshua L. Bonkowsky, et al. Pediatrics Apr 2016, e20160590; DOI: 10.1542/peds.2016-0590
- Management of Apparent Life-Threatening Events in Infants: A Systematic Review. Tieder, Joel S. et al. The Journal of Pediatrics, Volume 163 , Issue 1, 94 - 99.e6.
- Corwin, Michael. Acute events in infancy including brief resolved unexplained event. UpToDate. 2016.

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