



## Medical Direction and Practices Board

### WHITE PAPER

## Apparent Life Threatening Event (ALTE)

### **BACKGROUND**

ALTE stands for “Apparent Life-Threatening Event”. It is defined as an episode that is frightening to the observer, that is characterized by some combination of apnea, color change, marked change in muscle tone, choking or gagging.<sup>1</sup> The incidence of ALTE is not well established, but can be up to and exceeding 2.5 per 1000 live births.<sup>2</sup>

### **Why do we now have a protocol for ALTE?**

ALTEs may account for up to 7.5% of pediatric EMS calls in the infant age group (1-12 months), but can span any age group from newborn (0-30d) to toddlers (up to 3 years old). Mean age is 3 months with 55% being males.<sup>3</sup> The NIH definition above, does not commit to any age range. It is important, as providers, that we recognize an ALTE.

### **What if the parent/caregiver does not want the patient transported?**

An ALTE is an important diagnosis not to miss. The infant will often be “well-appearing” upon your initial evaluation. However, there can still be serious underlying pathology that needs immediate evaluation and medical treatment. In one study, 83% of patients with an ALTE were in no acute distress upon EMS arrival and 35% had significant pathology.<sup>3</sup> These patients require transport to the hospital for more definitive evaluation due to the potential for significant underlying pathology. If you are having trouble gaining consent for transport, please contact OLMC for assistance.

### **It’s probably just reflux, right?**

The potential causes of ALTEs are great and range from underlying cardiac abnormalities to non-accidental trauma. These conditions cannot be adequately assessed in the field. The hospital work-up for an ALTE often results in admission and a battery of testing without a definitive diagnosis in many of the cases.

Up to 50% of cases will have a defined cause of the ALTE:<sup>4</sup>

- a. 50% gastrointestinal
- b. 30% neurologic
- c. 20% respiratory
- d. 5% cardiovascular
- e. 2-5% Metabolic/endocrine
- f. Non-accidental trauma
- g. Drugs and toxins

### How can I help? What information should I gather?

Your role is a critical one in the care of these patients. There is important data that you can gather on scene and during transport and this should be relayed to the hospital providers. For example:

- **Subjective:** time and duration of the event; was the infant awake or asleep; time of last feeding; sources of nutrition; reason caregiver was alerted to event, color change; tone change; resuscitative measures taken prior to your arrival; recent illness; change in behavior or activity; sleeping conditions. **Past medical history:** similar episodes; home monitor; GERD; neonatal course. **Medication:** prescriptions; OTC meds; herbs; supplements; alternative meds. **Family history:** SIDS or other infant deaths; ALTE; seizures; significant illnesses in children. **Social History:** caretakers, smoking, medications in the home.<sup>5</sup>
- **Objective:** What you observe in the household i.e. sleeping conditions for the patient, state of the house, and caregiver dynamics. Look for cues of non-accidental trauma. Report the condition of the patient upon your initial evaluation and any changes en route. Document vital signs and glucose level and place the patient on the cardiac monitor. Note any evidence of infection, murmur, breathing abnormalities, etc.<sup>5</sup>

### What is the prognosis?

- Morbidity and mortality vary according to underlying diagnosis (0-6%).
- The recurrence rate of an ALTE varies from 0-24%.
- Long-term outcomes for infants with an unexplained ALTE are unpredictable.
- ALTEs with a severe event that requires resuscitation, recurrence, or diagnosis of seizure disorder hold up to a > 25% risk of death.<sup>6</sup>

**\*\*\*You may be the best advocate for these patients. Please transport them to definitive medical care.\*\*\***

1. National Institutes of Health. Consensus Development Conference on Infantile Apnea and Home Monitoring. *Pediatrics*. 1987; 79: 292-299.
2. Kiechl-Kohlendorfer U et al. Epidemiology of apparent life threatening events. *Arch Dis Child*. 2005; 90(3): 297-300.
3. Stratton S et al. Apparent Life-Threatening Events in Infants: High Risk in the Out-of-Hospital Environment. *Ann Emerg Med* 2004; 43(6): 711-16.
4. Hall K et al. Evaluation and management of apparent life-threatening events in children. *Am Fam Physician*. 2005; 71(12): 2301-8.
5. DePiero A. Apparent Life-Threatening Events: An Evidence-Based Approach. *Pediatric EM Practice*. 2006; 3(7): 1-20.
6. [https://www.pediatriccareonline.org/pco/ub/view/Point-of-Care-Quick-Reference/397132/all/Apparent\\_Life\\_Threatening\\_Event](https://www.pediatriccareonline.org/pco/ub/view/Point-of-Care-Quick-Reference/397132/all/Apparent_Life_Threatening_Event)