



Notes:

- A first time, non-febrile seizure in any age and for any duration is considered a neurological emergency and should be transported to a CCERC.
- Not all pediatric seizures will present with tonic-clonic activity. Assess for and treat subclinical seizure activity:
 - Abnormal vital signs: hypoventilation (elevated EtCO₂, shallow or slow respirations for age), tachycardia, hypoxia.
 - Gaze deviation: both eyes with a fixed gaze, may be straightforward or to one-side, with inability to track.
 - Clenched jaw
 - Focal twitching
 - Lip smacking
 - No response to tactile or verbal stimuli

Base Hospital Contact Required

BLS Interventions

- Refer to OCEMS General BLS Standing Orders SO-BLS.
- Turn to side, protect airway, and suction when possible.

ALS Interventions

- Assess Pediatric Assessment Triangle (PAT)
 - General appearance: tone, interactiveness, consolability, look / gaze, speech / cry
 - Work of breathing: retractions, nasal flaring, abnormal airway sounds, positioning
 - Circulation to skin: pallor, mottling, cyanosis
- When BLS airway management cannot maintain adequate ventilation or oxygenation and criteria met, consider:
 - Supraglottic airway insertion for ≥ 50 kg (PR-135)
 - Endotracheal intubation for > 36 kg (PR-030)
- Apply capnography (EtCO₂) as tolerated.
 - Maintain EtCO₂ between 35 and 45 mmHg
 - If EtCO₂ > 50 : ensure proper positioning for adequate ventilation and suction as needed.
 - If no improvement, initiate BVM.
- Obtain the patient's estimated weight utilizing an appropriate length-based resuscitation tape or age-based system.



- For ongoing seizures or recurrent intermittent seizure activity without return of consciousness:
 - ▶ **Midazolam 0.2 mg / kg IM** (maximum dose 10 mg).
 - If unable to administer IM or if IV / IO present, administer:
 - ▶ **Midazolam 0.1 mg / kg IN / IV / IO** (maximum dose 5 mg).
 - May repeat IN/IV/IO dose once after 3 minutes.
 - If initial dose is given IM, all subsequent doses must come from the Base Hospital Physician.
- Initiate cardiac monitor as needed. Interpret, monitor, and document rhythm.
- Obtain blood glucose and document finding.
- If blood glucose < 60, administer one of the following:
 - ▶ **Glucagon 0.5 mg IM** - once
 - ▶ **10% Dextrose 5 mL / kg IV / IO** (maximum dose 250 mL)
- Consider IV / IO access. If hypotensive (refer to Vital Sign table below), administer:
 - ▶ **Normal Saline 20 mL / kg IV / IO** (maximum dose 250 mL).
 - For continued hypotension, may repeat the same dose twice for total of three boluses.
- Assess GCS. Use pediatric GCS for patients aged ≤ 2 years (Refer to B-002).
- Determine if patient meets pediatric stroke criteria (refer to OCEMS P-115).

Transport Consideration

- **Base Hospital Contact required** (CCERC preferred) for all transported and non-transported pediatric seizures.
- ALS escort to CCERC for patients meeting status epilepticus or other neurological emergencies not associated with trauma (i.e. pediatric stroke).
- ALS escort to nearest open ERC (or as directed by Base Hospital).

Additional Considerations

- Avoid use of oral glucose as material placed in mouth may be aspirated if recurrent seizure occurs.
- Post-ictal patients with a low GCS (<9) need careful airway monitoring.
- Simple Febrile Seizures:
 - Ages 6 months to 5 years with fever and seizure activity that typically present as generalized tonic-clonic seizure.
 - These seizures are due to a sudden rise in body temperature that disrupts normal brain activity.
 - A febrile seizure becomes a neurological emergency if the seizure meets the status epilepticus definition. These patients should be directed to a CCERC.
- Status Epilepticus:



- A seizure lasting more than 5 minutes or more than one seizure without full recovery of consciousness between them. This is a neurological emergency.
- Petit Mal Seizures / Absence Seizures:
 - Brief, sudden lapse in consciousness.
 - May have associated eye fluttering / blinking or other non-purposeful movement.
- Potential Causes:
 - Neurologic: epilepsy, brain tumor, hemorrhagic or ischemic stroke, head trauma, aneurysms, and non-accidental trauma.
 - Other: hypoglycemia, electrolyte abnormalities, toxic ingestion, infection.

Pediatric Vital Signs by Age

Age	Pulse	Systolic Blood Pressure	Respiratory Rate
Neonate (0-30 days)	100-180	> 60	30-60
Infant (31 days - < 1 yr)	100-160	> 60	30-60
Toddler (1 yr - < 3 yrs)	90-150	> 70	24-40
Pre-school (3 yrs - < 5 yrs)	80-140	> 75	22-34
School Aged (5 yrs - < 10 yrs)	70-120	> 80	18-30
Teen (≥ 10 yrs)	60-100	> 90	12-16

Base Hospital

- If initial dose of Midazolam given IM, all subsequent doses must come from a Base Physician.
- Patients exhibiting status epilepticus or other neurological emergencies not associated with trauma (i.e. stroke) should be directed to a CCERC.

Cross References:

SO-BLS General BLS Standing Orders

BLS Procedure B-002 Glasgow Coma Scale (Score)

P-015 General Injury and Trauma - Pediatric

P-065 Altered Mental Status - Pediatric

P-115 Suspected Acute Stroke or Intracranial Hemorrhage - Pediatric

SO-FR-004 Oropharyngeal Airway (OPA)

SO-FR-005 Nasopharyngeal Airway (NPA)

ALS Procedure PR-030 Endotracheal Intubation (including EtCO₂)

ALS Procedure PR-135 Supraglottic Airway Device Placement – Adult/Adolescent

Policy 310.31 Trauma Triage Algorithm