

EPIC4Kids Algorithm: For Children

Any Suspicion of TBI (Mechanism, GCS, Exam)

Automatically: 15 L/min O₂ NRB, IV Access
q3-5 min: Monitor O₂, BP, HR

Airway/Breathing

Circulation

Disability

O₂ sat <90 &/or hypoventilation
(despite NRB)

Hypotension** or other signs of shock

Evaluate
Mental
Status/GCS

No

Yes

No

Yes

-BLS airway
maneuvers
-BVM *

-Continue careful
Monitoring BP/HR
-Pay attention for
early signs of shock:
-Tachycardia
-Dropping SBP

-20ml/kg bolus NS
-Repeat until hypotension
resolves

Continue careful
monitoring of O₂
sat and airway

No

O₂ sat <90
despite BLS?

Yes

Consider ALS airway if experienced provider available:

- Place advanced airway:
 - Pre-oxygenate: BVM with 100% O₂ @ age-appropriate rate *
 - Check placement using ETCO₂ monitor/detector
- AVOID** even *MILD* hyperventilation with *Ventilation Rate Timer* and *Pressure-controlled Bag*:
 - Carefully keep rate @ age-appropriate rate *
 - **ETCO₂ available: Target ETCO₂ 40 mmHg (range: 35-45)**
 - Control Ventilatory volume:
 - Ventilator available: utilize *as soon as possible*
 - Tidal volume = 7 cc/kg
 - Ventilator *not* available: Continue Pressure-controlled BVM
- Monitor: O₂ sat and airway *every 3-5 minutes*:
 - If O₂ sat <90% despite above interventions, consider:
 - Tension pneumothorax & needle thoracostomy

* **Ventilation Rates:**

- Infants: (0-24 mo.):
-25 breaths/min (bpm)
- Children: (2-14 yrs):
-20 bpm
- Adolescents: (15-17 yrs):
-10 bpm (same as adults)

** **Identifying Hypotension in children**

- 0-9 yrs: 70 + (age x 2)
- ≥10 yrs: <90mmHg
- Rules of thumb:**
- Newborn: <70mmHg
- 5 year old: <80mmHg
- 10 and older: <90mmHg →
(Same as adults)

NOTE: NO ONE (not even Respiratory Therapists) can manually ventilate at the proper rate without ventilatory adjuncts (EVERYONE inadvertently hyperventilates unless meticulously preventing it):

- Ventilation Rate timers
- Pressure-controlled bags
- ETCO₂ monitoring with someone watching the level continuously
- Mechanical ventilator with careful ETCO₂ monitoring