PEDIATRIC CROUP MANAGEMENT ALGORITHM

Minimize unnecessary interventions, including examination of the throat, as distress can worsen respiratory compromise. Keep child with caregiver (e.g., on their lap) to reduce anxiety and support comfort. Children often assume positions that help relieve airway obstruction — these should not be altered. Assessment and management should be child-centered, tailor strategies to support children with neurodiversity.

Diagnosis of croup is based on clinical assessment. X-rays and blood tests are not routinely indicated. Consider alternative diagnosis (e.g., tracheitis, epiglottitis, abscess, foreign body) if the child has significant drooling or does not improve with treatment. Chest/soft tissue lateral neck x-ray may be useful to evaluate alternative causes of upper airway obstruction but should only be done **once the child is stabilized.**

MILD

- Occasional barking cough
- No stridor at rest
- Minimal to no indrawing at rest

Administer **dexamethasone** 0.6 mg/kg/dose (max 16 mg/dose) PO (preferred), IM/IV if necessary

Consider analgesic/ antipyretic PRN

May discharge home without further observation

Tip: To improve palatability, mix **dexamethasone** with a small amount of drink or flavored syrup or, provide sips of juice or a popsicle after

MODERATE

- Frequent barking cough
- Intermittent inspiratory stridor at rest
- Mild to moderate indrawing at rest
- No agitation
- No oxygen desaturation

RRT consult (if available)

Administer **dexamethasone** 0.6 mg/kg/dose (max 16 mg/dose) PO (preferred), IM/IV if necessary

Consider administration of one dose of nebulized **epinephrine** 5 mg [1 mg/mL solution]. If persistent stridor/respiratory distress post **epinephrine**, treat as SEVERE

Consider analgesic/antipyretic PRN

Observe for a minimum of 2-4 hours

SEVERE

- Frequent barking cough
- Stridor (often biphasic)
- Severe chest wall indrawing
- Agitation or lethargy

RRT consult (if available)

Administer **STAT nebulized epinephrine** 5 mg [1 mg/mL solution], repeat dose **PRN**

Administer **dexamethasone** 0.6 mg/kg/dose (max 16 mg/dose) PO (preferred), IM/IV if necessary

Consider analgesic/antipyretic PRN

Observe for a minimum 2-4 hours

IMPENDING RESPIRATORY FAILURE

- Oxygen desaturation
- Lethargy or decreased level of consciousness
- Marked decreased air entry
- Cyanosis
- Stridor may be quiet or decreased
- Work of breathing (may be decreased indicating fatigue)

RRT consult (if available)

Administer **STAT nebulized epinephrine** 5 mg [1 mg/mL solution] repeat dose Q15 min **PRN**

Administer **dexamethasone** 0.6 mg/kg/dose (max 16 mg/dose) via most available and least invasive route (PO/IM/IV)

Prepare for potential intubation

DISCHARGE CONSIDERATIONS:

- ✓ No stridor at rest
- ✓ No respiratory distress
- ✓ Observed 2-4 hours post **epinephrine**(if given)
- ✓ Caregiver education on expected course of illness, signs of respiratory distress, when to seek medical help. Caregiver able to recognize distress and return for medical care if necessary
- ✓ Provide health authority or CPS patient handout

CONSIDER ADMISSION/TRANSFER TO HLOC:

- If repeated doses of **epinephrine** were required
- Moderate to severe respiratory distress at rest 4 hours post steroid administration
- Stridor at rest greater than 4 hours post steroid administration
- Unable to maintain oral hydration
- Social or logistical barriers to return for medical care if necessary
- Recurrent ED visits within 24 hours
- Suspicion of alternate diagnosis

SPECIALIST SUPPORT:

- Consult local pediatrician on call or, if rural/remote, contact CHARLiE and HLOC via PTN
- Early consultation with PICU via PTN for all patients with:
  - impending respiratory failure
  - failure to improve following initial management
  - anticipated transfer to HLOC

- Consult local pediatrician or intensivist on call
- Rapidly engage with available local expertise for airway support: anesthesia, ENT
- Consult PICU via PTN

Refer to Provincial Pediatric Virtual Support Pathways for support contacts or scan QR code

List of Abbreviations

CPS: Canadian Pediatric Society
ED: Emergency Department
ENT: Ear/Nose/Throat Physician
HLOC: Higher Level of Care
IM: Intramuscular
IV: Intravenous
MRP: Most Responsible Practitioner
PICU: Pediatric Intensive Care Unit
PTN: Patient Transfer Network
PO: By mouth
PRN: As needed
RRT: Registered Respiratory Therapist

Adapted from: Translating Emergency Knowledge for Kids (TREKK). (Aug,2023). Croup Bottom Line Recommendations; Canadian Pediatric Society (June,2023) Croup Position Statement: Acute management of croup in the emergency department; UpToDate (April 2025) Croup: Management; Interior Health ED Croup Initial Management Order (Aug 2024).Royal Children's Hospital Melbourne (2024).Clinical Practice Guidelines. Croup. Children's Health Queensland Hospital and Health Service (2023), Croup-Emergency management in children

For full recommendation refer to PHSA SHOP # C-05-01-63111 Effective July 2025