CLINICAL PATHWAY:
Croup

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: ≥6 months old with suspected croup
(Symptoms include: sudden onset barky cough, inspiratory stridor, respiratory distress, hoarse voice, fever)
Exclusion Criteria: <6 months old, toxic appearance, symptoms suggestive of alternative diagnosis[1], neuromuscular disorder, hypotonia, known upper airway abnormality

Initial Assessment:
- Assess respiratory status:
  - Stridor at rest versus with activity, work of breathing, drooling, cyanosis, air entry
- Assess hydration status
- Assess mental status, level of distress/anxiety

Standing Nursing Order:
- RN may administer **Dexamethasone** 0.6 mg/kg PO/IM x1 dose (max 16 mg) prior to provider assessment

Mild
No stridor or mild stridor at rest, no increased work of breathing, no oxygen requirement

Dexamethasone 0.6 mg/kg PO/IM x1 dose (max 16mg) if not already given

Discharge Criteria
No stridor or mild stridor at rest, little or no increased work of breathing, no hypoxia, maintaining oral hydration

Moderate/Severe
Stridor at rest PLUS ≥1 criteria: increased work of breathing, hypoxia, agitation, fatigue, difficulty speaking

- **Dexamethasone** 0.6 mg/kg PO/IM (max 16mg) if not already given AND
- **Nebulized Racemic Epinephrine** 2.25% solution, 0.5 mL in 3 mL NS
  - May administer 2nd or 3rd dose of Nebulized Racemic Epinephrine if no improvement after 1st
- Supplemental O2 if hypoxic

Improvement?
- Yes → Observe for at least 2 hours to ensure does not worsen
  - If stable → Discharge Criteria
  - If worsens → Admission Criteria
- No → Admission Criteria

Admission Criteria:
- Requires IVFs to maintain hydration AND/OR
- ≥ 3 doses of racemic epinephrine OR ≥ 2 doses of racemic epinephrine and ongoing increased work of breathing or previous history of severe croup requiring inpatient interventions
  - Admit to PHM **OR**
  - Admit to PICU if signs of impending respiratory failure[2] and treat off pathway **OR**
  - Consider alternative diagnosis[1]

Admission to PHM:
- Nebulized Racemic Epinephrine q2hr PRN stridor at rest, increased WOB
- Continuous SpO2 monitoring
- Supplemental oxygen if unable to maintain SpO2 >90% (preferably humidified)
- IVF if unable to tolerate sufficient PO

Requires >1 dose of racemic epinephrine after admission?
- Yes → ***Requires provider assessment.***
  Consider:
  - Alternative diagnosis[1]
  - MET activation
  - Blood gas
  - ENT consult
- No → Discharge Criteria

Discharge Criteria:
Minimal stridor at rest, minimal or no WOB, maintaining hydration without need for IVF, able to speak and eat without difficulty, minimum of 4 hours since last racemic epinephrine treatment, no supplemental oxygen for >4 hours, caregiver education complete, responsible caregiver able to care for child as an outpatient, PCP follow up appointment made

Medications:
Consider administration of 2nd dose of dexamethasone prior to discharge

Discharge Instructions:
Return to ED if increased WOB, stridor at rest, drooling, cyanosis, lethargy, signs of dehydration

[1]**Consider alternative diagnoses:**
- Bacterial tracheitis
- Epiglottitis (especially if under-immunized)
- Retropharyngeal abscess
- Foreign body aspiration or upper airway injury
- Anaphylaxis
- Congenital abnormality

[2]**Signs of impending respiratory failure:**
- poor aeration
- stridor decreased or absent
- severe stridor
- listless/decreased LOC
- hypoxemia/ cyanosis

The following tests and treatments are NOT routinely indicated if the suspicion for a diagnosis of croup is strong:
- Viral testing
- Chest or lateral neck x-rays
- Antibiotics
- Albuterol
- Prednisolone (Dexamethasone preferred)
- Inhaled corticosteroids
- Cool mist humidification

CONTACTS: CHRISTINA GIUDICE, APRN | ERIC HOPPA, MD | ILANA WAYNIK, MD

LAST UPDATED: 03.20.25

Connecticut Children's

©2019 Connecticut Children's Medical Center. All rights reserved.