Pediatric Croup Guideline

Pedi Croup Criteria:
(6 mos - 6 yr)
Barky cough
Hoarse voice
Stridor
Increased WOB

Exclusion Criteria:
Known airway anomaly at any point
H/o intubation ≤1 yr prior

Not Routinely Recommended:
Viral testing
Imaging
Cool mist
Repeat doses dexamethasone, *unless re-presenting >48hrs s/p first dex dose*

Suspected Croup

Impending Respiratory Failure:
Altered Mental Status
Severe Respiratory Distress
Hypoxemia

→ PICU consult
-Rac epi ≤ q1hr
-Escalation of care (e.g. PPV, Heliox, etc.)

Severity Assessment

Mild
Occasional barky cough
No stridor **at rest**
Mild increase WOB

Moderate/Severe
Frequent barky cough
Stridor **at rest**
Significant increase WOB
Marked retractions

Dosing (Use ED Croup Order Set):
Dexamethasone (0.6 mg/kg PO; max dose 16 mg)
Racemic Epinephrine 2.25% nebulized 0.5 mL with 2.5 mL NS via **small volume nebulizer**
Avoid use with BAN or Aerogen nebulizers

Dexamethasone

Dexamethasone + Racemic Epinephrine

Recurrence of stridor **at rest**?

No → Observe for 2 hrs → Discharge home

Yes → Repeat Racemic Epinephrine

≥ 3 Racemic Epinephrine doses given?

If still requiring Rac epi<q2 **Consult PICU**

Consult to Pediatrics

Croup Discharge Criteria:
Lack of stridor at rest
Minimal to no WOB
Tolerate PO
No O2 requirement

Consider alternative diagnoses if no improvement with RE:

Foreign body aspiration
Tracheitis
Epiglottitis
Anaphylaxis
Airway anomaly
Deep neck space infection

References and Contact Information on Page 2
Last Edit: 06/08/2026

References

1. Hancock WC, Scott M, Winer JC. Predictors of Inpatient Racemic Epinephrine Use in Patients Admitted with Croup. *Hosp Pediatr.* 2023;13(3):258-264. doi:10.1542/hpeds.2022-006870.
2. Hester G, Barnes T, O'Neill J, Swanson G, McGuinn T, Nickel A. Rate of Airway Intervention for Croup at a Tertiary Children's Hospital 2015-2016. J Emerg Med. 2019 Sep;57(3):314-321. doi: 10.1016/j.jemermed.2019.06.005.
3. Asmundsson AS, Arms J, Kaila R, et al. Hospital Course of Croup After Emergency Department Management. *Hosp Pediatr.* 2019;9(5):326-332. doi:10.1542/hpeds.2018-0066.
4. Walsh PS, Zhang Y, Lipshaw MJ. Variation in Emergency Department Use of Racemic Epinephrine and Associated Outcomes for Croup. *Hosp Pediatr.* 2023;13(2):167-172. doi:10.1542/hpeds.2022-006905.
5. Tyler A, McLeod L, Beaty B, et al. Variation in inpatient croup management and outcomes. Pediatrics. 2017;139(4), doi:10.1542/peds.2016-3582.
6. McDaniel CE, Leyenaar J, Sullivan E, Desai S, Kessler L. Pediatric Conditions Requiring Minimal Intervention or Observation After Interfacility Transfer. J Hosp Med. 2021 Jul;16(7):412-415. doi: 10.12788/jhm.3656.
7. Tyler A, McLeod L, Beaty B, et al. Variation in inpatient croup management and outcomes. Pediatrics. 2017;139(4), doi:10.1542/peds.2016-3582.
8. Kocher KE, Arora R, Bassin BS, et al. Baseline performance of real-world clinical practice within a statewide emergency medicine quality network: the Michigan Emergency Department Improvement Collaborative. Ann Emerg Med. 2020;75(2):192-205. doi:10.1016/j.annemergmed.2019.04.033.
9. Gates A, Johnson DW, Klassen TP. Glucocorticoids for croup in children. JAMA Pediatr. 2019;173(6):595-596. doi:10.1001/jamapediatrics.2019.0834.
10. Garzon Mora N, Jaramillo AP, Briones Andriuoli R, et al. An overview of the effectiveness of corticoids in croup: A systematic literature review. Cureus. 2023;15(10). doi:10.7759/cureus.46317.
11. Donaldson D, Poleski D, Knipple E, Filips K, Reetz L, Pascual RG, Jackson RE. Intramuscular versus oral dexamethasone for the treatment of moderate-to-severe croup: a randomized, double-blind trial. Acad Emerg Med. 2003 Jan;10(1):16-21. doi: 10.1111/j.1553-2712.2003.tb01971.x.
12. Rittichier KK, Ledwith CA. Outpatient treatment of moderate croup with dexamethasone: intramuscular versus oral dosing. Pediatrics. 2000 Dec;106(6):1344-8. doi: 10.1542/peds.106.6.1344.
13. Tyler A, Bryan MA, Zhou C, et al. Variation in dexamethasone dosing and utilization outcomes for inpatient croup. Hosp Pediatr. 2022;12(1):22-29. doi:10.1542/hpeds.2021-005854.
14. D'Arienzo D, Nasser M, Gill PJ, Borkhoff CM, Parkin PC, Mahant S. Dexamethasone regime and clinical outcomes in children hospitalized with croup: A cohort study. J Hosp Med. 2024 Nov 1. doi: 10.1002/jhm.13542.

Adapted from Clinical Practice Guidelines for Croup from Children's Hospital of Philadelphia, Lurie Children's Hospital of Chicago, Texas Children's

Contact: Shannon Bennett shannon.bennett1@mainehealth.org, Danielle Doctor danielle.doctor@mainehealth.org, Rae Williams rachel.williams@mainehealth.org,

Last Edit: 06/08/2026