BOTTOM LINE RECOMMENDATIONS:

Croup

- Croup is the most common cause of upper airway obstruction in children. The typical age of presentation is between 6 months and 5 years with a peak around 2 years of age. Consider other causes of upper airway obstruction such as bacterial tracheitis, epiglottitis, and retropharyngeal abscess in children who present with severe symptoms with a transient or lack of response to croup treatment.
- Presence of acute onset barky cough strongly suggests croup.
- X-rays are rarely necessary to confirm the diagnosis of croup.
- Because croup symptoms are triggered by a viral infection, antibiotics are **not** effective.
- Oral dexamethasone **(1 dose of 0.15 to 0.6 mg/kg, max dose 12 mg)** should be given to **ALL** children who present to the emergency department with croup.

AT INITIAL ASSESSMENT, CHILDREN WITH:

- **MILD** croup (no inspiratory stridor at rest or indrawing) can be safely discharged home after dose of dexamethasone without any further observation.
- **MODERATE** croup (inspiratory stridor at rest and mild to moderate indrawing) should be observed after dose of dexamethasone until both stridor at rest and indrawing resolve (usually a few hours).
- **SEVERE** croup [stridor (often biphasic), severe chest wall indrawing, agitation] should be treated with **5 mL of 1 mg/mL (1:1,000) epinephrine via nebulization and oral dexamethasone.**
- More than one dose of nebulized epinephrine may be required in the treatment of severe croup.

If children are treated with epinephrine, they should be observed for a minimum of **2 hours** before being discharged from medical care.

CRITERIA FOR SAFE DISCHARGE HOME

- Absence of inspiratory stridor at rest and respiratory distress (suprasternal, intercostal and chest wall indrawing).
- Croup resources to share with parents can be accessed at https://trekk.ca/patientsandfamilies.

CRITERIA FOR HOSPITAL ADMISSION

- Persistence of stridor at rest and respiratory distress (defined above) **4 hours or more after treatment with dexamethasone** and repeated doses of nebulized epinephrine.

CRITERIA FOR TRANSFER TO CHILDREN'S HOSPITAL INTENSIVE CARE

- Persistent severe croup [stridor (often biphasic), severe chest wall indrawing, agitation] despite treatment with two doses of nebulized epinephrine and oral dexamethasone within first two hours of assessment and treatment.

The purpose of this document is to provide healthcare professionals with key facts and recommendations for the diagnosis and treatment of croup in children. This summary was produced by the croup content advisor for the TREKK Network, Dr. David Johnson of the Alberta Children's Hospital Research Institute, and uses the best available knowledge at the time of publication. However, healthcare professionals should continue to use their own judgment and take into consideration context, resources and other relevant factors. The TREKK Network is not liable for any damages, claims, liabilities, costs or obligations arising from the use of this document including loss or damages arising from any claims made by a third party. The TREKK Network also assumes no responsibility or liability for changes made to this document without its consent. This summary is based on:

1) Alberta Medical Association. Diagnosis and Management of Croup, Summary of the Alberta Clinical Practice Guideline, Update 2014. (Accessed online December 1 2016).

2) Bjornson et al. The Cochrane Library and the Treatment of Croup in Children: An Overview of Reviews. Evidence-based Child Health 2012; 5:1555-65

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