

COVER SHEET - CROUP PATHWAY

06/2010

Patients to **include** on pathway (Patients must be all of these):

- Patients 3 months to 6 years of age with moderate stridor and mild to moderate respiratory distress, but who are not toxic appearing and having no difficulties with their secretions
- Patients with URI symptoms
- Patients who can take PO fluids and medications

Patients to **exclude** from pathway (Patients with any of these):

- Patients under 3 months of age
- Patients having severe respiratory distress
- Patients having difficulty swallowing or handling their secretions
- Patients with altered mental status
- Patients with recurrent stridor
- Patients in which foreign-body aspiration is a significant consideration
- Patients with a significant chronic respiratory or neurological illness, or those with known or suspected immunodeficiency
- Patients with a history of recent prior intubation
- Patients with congenital anomalies of the lung or airway

Patients should be considered for removal from the pathway if:

(nursing staff should contact physician if any of the following apply)

- No significant improvement in clinical condition within 12 hours
- Significant clinical deterioration
- Diagnosis of Croup becomes uncertain

Criteria for admission (Patients with any of these):

- Respiratory distress that does not clear within 6 hours of dexamethasone administration
- Need for more than two racemic epinephrine treatments
- SpO₂ < 92% persistently

Criteria for discharge (Patients must have all of these):

- Minimal or no stridor at rest (stridor while crying is not an indication for ongoing hospitalization)
- No respiratory distress
- SpO₂ > 92%
- No racemic epinephrine during the previous 6 hours
- Safe home environment

Background information:

- Croup is usually caused by edema of the subglottic airway (just below the larynx).
- The most common causes are viral (often Parainfluenza virus, though many other viruses can also cause croup).
- The illness is predominantly in infants and young children because the subglottic region is particularly narrow in this age group (6 months - 3 years), so more likely to be symptomatic when edematous.
- In rare cases, croup can be caused by unexplained spasm of the laryngeal muscles (called spasmodic croup). In these cases, there is usually no infection, thus no viral symptoms. Spasmodic croup may occur at any age.
- Spasmodic croup can be worsened by anxiety, thus any patient with spasmodic croup should be cared for in a gentle and nonthreatening manner, avoiding all painful procedures or frightening interventions.
- For viral croup, steroids are the most effective form of treatment. Dexamethasone has been shown to reduce both the severity and duration of viral croup. A single dose of dexamethasone has been shown to avert the need for hospitalization in the majority of patients. Even for those who are hospitalized, single dose treatment is often effective. Occasionally, an additional 1-2 days of treatment with dexamethasone may be helpful.
- Dexamethasone has been shown equally effective when given orally as compared to IV or IM.
- Racemic epinephrine may give short-lived symptomatic relief (2-4 hours), but **does not alter the overall course of the illness**. Since racemic epinephrine may mask important symptoms thus interfering with clinical assessment, its use should be avoided unless the patient is in considerable distress. For the same reasons, racemic epinephrine should be discontinued at least 4-6 hours prior to discharge to ensure an accurate assessment.
- Antibiotics are not indicated in the treatment of croup.
- In the vast majority of cases, patients with croup can be managed as outpatients.

Goals:

- Ensure prompt and appropriate use of dexamethasone
- Reduce unnecessary use of antibiotics
- Reduce use of IV's
- Encourage use of PO instead of IM dexamethasone
- Reduce inappropriate reliance on pulse oximetry in patient assessment
- Reduce unnecessary use of racemic epinephrine in cases of only mild stridor

Epiglottitis and Croup: *Otolaryngologic Clinics of North America* Vol 41, Issue 3, June 2008

Oral dexamethasone is effective for mild croup in children - *Evidence-based Healthcare and Public Health* April 2005; 9(2); 167-168

Rowe, Brian H. 2008. "Corticosteroid treatment for acute croup" *Annals of Emergency Medicine* 40(3): 353-5

Bird, Elizabeth 2006. "Humidified air appears to be of no benefit in treating moderate croup", *Journal of Pediatrics* 149(1): 141

Interdisciplinary Patient/Family Learning Evaluation

Initial Patient/Family Learner Assessment

A learning evaluation is done with each initial teaching intervention for each learner. Teaching interventions should be documented in an ongoing manner with ongoing assessment and evaluation of readiness to learn, barriers to learning, and learning outcomes. Use your department or topic specific Interdisciplinary Patient/Family Education Documentation forms for ongoing patient/parent/family education documentation. Use this form for the initial assessment of a learner and keep this form with the ongoing patient/family education documentation forms.

Initial Learner Evaluation (assess one or multiple learners)			
1. _____ Date _____ (Pt./Primary care giver)	2. _____ Date _____ learner	3. _____ Date _____ learner	4. _____ Date _____ learner
Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____	Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____	Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____	Prior Knowledge of Plan of Care or care needs: <input type="checkbox"/> Comprehensive <input type="checkbox"/> Good <input type="checkbox"/> Limited <input type="checkbox"/> None <input type="checkbox"/> Other _____
Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads	Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads	Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads	Primary Language: check <input type="checkbox"/> English <input type="checkbox"/> Spanish <input type="checkbox"/> Hmong Other _____ <input type="checkbox"/> Writes <input type="checkbox"/> Reads
Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted	Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted	Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted	Readiness to learn: check <input type="checkbox"/> Asking pertinent questions <input type="checkbox"/> Actively Listening <input type="checkbox"/> Unreceptive <input type="checkbox"/> No interest demonstrated <input type="checkbox"/> Distracted
Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other	Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other	Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other	Barriers to learning: check <input type="checkbox"/> No barriers <input type="checkbox"/> Low literacy or Edu level <input type="checkbox"/> Cultural <input type="checkbox"/> Language <input type="checkbox"/> Visual, hearing, speaking <input type="checkbox"/> Religious, spiritual <input type="checkbox"/> Cognitive <input type="checkbox"/> Emotional <input type="checkbox"/> Motivation <input type="checkbox"/> Pain or fatigue <input type="checkbox"/> Other _____ Accommodation: <input type="checkbox"/> Interpreter <input type="checkbox"/> Audio <input type="checkbox"/> Visuals <input type="checkbox"/> Handouts <input type="checkbox"/> Explanations <input type="checkbox"/> Demonstrations <input type="checkbox"/> Other
Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____	Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____	Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____	Learning Preferences: <input type="checkbox"/> Demonstration <input type="checkbox"/> Written handouts <input type="checkbox"/> Verbal or audio <input type="checkbox"/> Video or TV <input type="checkbox"/> Hands on <input type="checkbox"/> Other _____
Signature _____ Date _____	Signature _____ Date _____	Signature _____ Date _____	Signature _____ Date _____
Signature _____ Date _____	Signature _____ Date _____	Signature _____ Date _____	Signature _____ Date _____

Patient Label



pathway



Patient/Family Learner Assessment

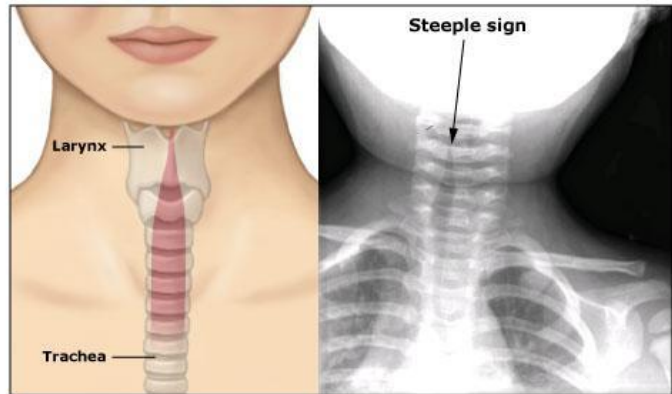


What is Croup?

Croup is an illness that can make a child's airway swell. It is usually caused by a virus.

How will I know if my child has Croup?

- Your child may cough in a way that sounds like a seal barking or a musical instrument
- Some children make a "whistling" or "crowing". This is called stridor.
- If your child has shortness of breath, tells you he is having a hard time breathing or is breathing faster than usual.



Some other things you might notice are:

- **Nasal flaring.** This is when the openings of the nose are wide with breathing.
- **Retractions.** This is when the skin sinks between the ribs as a child breathes in.
- Having a hard time swallowing and drooling more than usual, or choking
- Muscle pain in the chest
- Being tired and not wanting to play
- Fever (100-102 degrees Fahrenheit)

How did my child get croup?

It spreads like the common cold. It is usually spread from person to person when children or parents who are sick do not wash their hands after touching their nose or mouth or after taking care of their sick baby.

How can I stop the spread of croup?

- **WASH YOUR HANDS** often during the day.
- It is best to keep your child away from others who are sick (kissing can spread respiratory germs)
- Do not share drinks, food or utensils.

How is croup treated?

Treatment depends on how sick your child is. Most cases of croup can be taken care of at home, but some have to be treated at the hospital.

What can I do at home?

- One of the first things you can do to help is to add moisture to the air. You can do this by turning on a hot shower enough to "steam-up" the bathroom. You can use a cool-mist humidifier and a steamy bathroom for as long as your child has croup.



Amazing People. Incredible Care.

- Your child may need to take medicines to reduce swelling. These can be taken by mouth or given in the form of an injection. Sometimes breathing treatments help reduce the swelling in the airway.
- Antibiotics are usually **not** given because croup is often caused by a virus. Antibiotics do not help viruses.
- Encourage your child to drink plenty of fluids and get lots of rest.
- Raise the head of the bed if possible, so your child is not lying flat. This may make it easier for him to breathe. **DO NOT** use pillows for infants.
- When you feed your infant, hold him upright. After feeding, place him on his side. You may try feeding small amounts more often.
- Have your child burp often.
- **Do not smoke:** Tobacco smoke makes coughing worse. Children who have respiratory infections are more likely to have trouble breathing if they are around tobacco smoke. Do not let anyone smoke around your child or inside of your home or car.
- You can give your child Acetaminophen (Tylenol) every 4 to 6 hours or Ibuprofen (PediaProfen) every 6 to 8 hours if your child has a fever. **Do not give aspirin.**
- If your child is 2 months old or younger and has a fever over 100.4, call the doctor before giving your child any medicine.

Call your doctor, if you believe that none of these things are helping.

When should I call my doctor?

If your child:

- starts coughing/barking/stridor more often
- has nasal flaring. This is when the openings of the nose open wide and move with breathing
- has retractions
- has a hard time swallowing, drools more than usual, or starts choking
- starts breathing faster
- is pale or has blue tinged skin
- does not drink as much as usual
- starts acting very sick
- is less active than usual or you have a hard time waking him up
- becomes very irritable or anxious, complains that he is in pain or you are unable to calm him or her
- is 2 months old or younger and has a fever of 100.4 degrees Fahrenheit.

If you cannot reach your child's doctor, and your child has any of the symptoms described above take your child to the Emergency Department closest to you.

CALL 911, if your child

- Makes a grunting noise when breathing
- Passes out
- Turns blue or gray in color
- Stops breathing

Start CPR if needed.

Discharge Sheet

For Hospital Use Only

Dictation: 1-800-411-1001 (#963)

Discharge sheet FAXed to PCP

initial/date

D/S Job #: _____

Follow-up appointment SCHEDULED with PCP

initial/date

PATIENT'S NAME: _____ DISCHARGE DATE: _____

Dx: 1) Croup 2) Respiratory Distress 3) _____

Hospital Course

- Patient was admitted for acute onset of stridor
- Symptoms and exam were consistent with a viral etiology
- Patient was treated with dexamethasone (single dose) and racemic epinephrine as needed
- Stridor improved and the patient was discharged

Complications during hospitalization: _____

DISCHARGE CONDITION: _____ DISCHARGE WEIGHT: _____

Instruction to Patient

Activity: Quiet activity at home until all symptoms are gone. If child develops noisy breathing again, run humidifier or vaporizer at home.

Diet: Regular for age.

Medications: See Medication Reconciliation Form

Additional instructions: Contact primary doctor or emergency room if child has trouble breathing.

Reference: Patient Education Sheet

Signed: _____ M.D. _____

Signature of Parent or Guardian

Attending Physician

Attending Resident

Primary Care Physician

City

Croup

0083



pathway 6/2010

Children's
Hospital
Central California 

Patient Label

Discharge Instructions