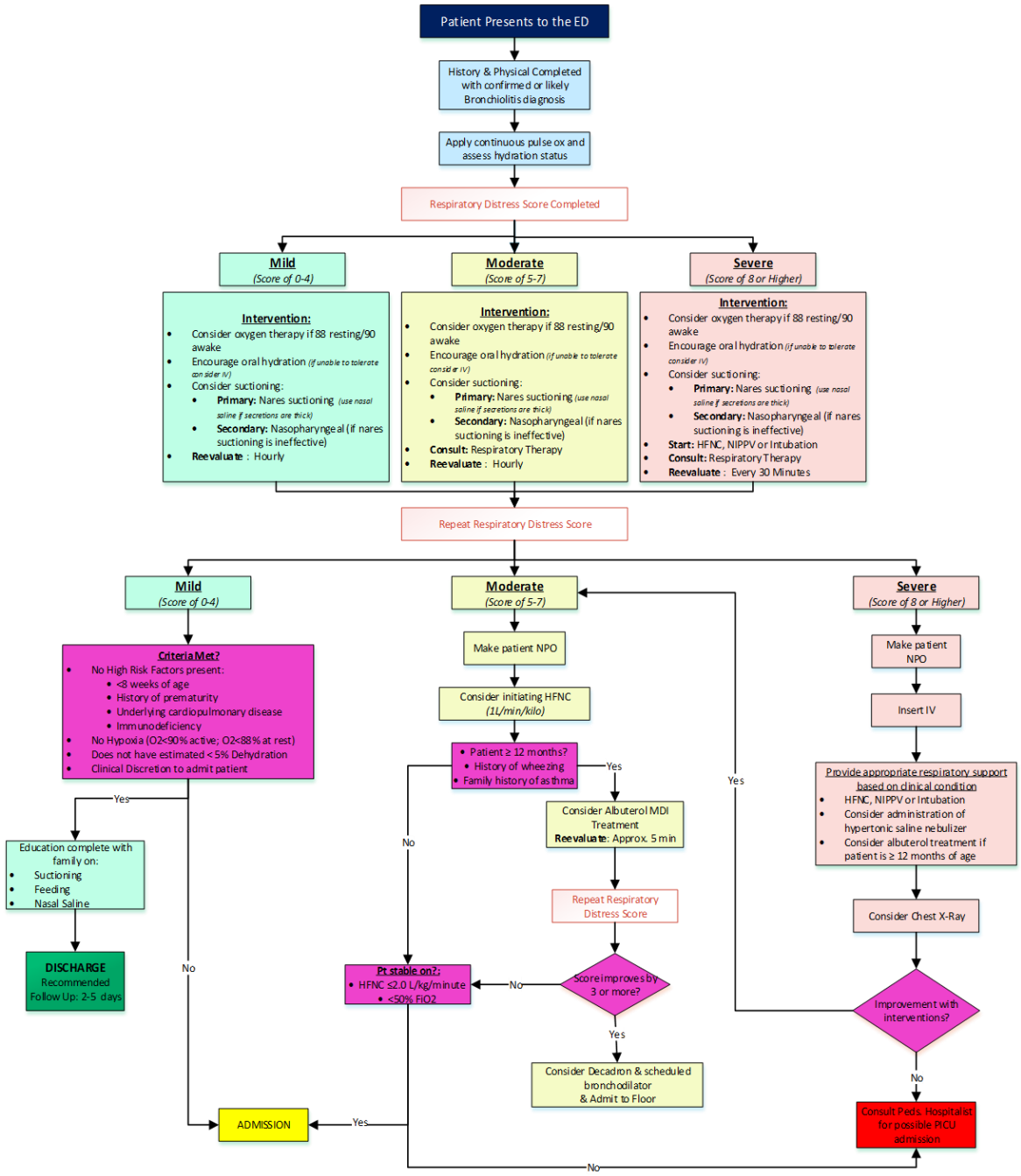
Clinical Standardization

LAKELAND PEDIATRIC BRONCHIOLITIS MANAGEMENT, EMERGENCY DEPARTMENT AND INPATIENT, PATHWAY

Updated: 12-1-2021

Clinical algorithm:



Clinical Pathway Summary

CLINICAL PATHWAY NAME: Pediatric Bronchiolitis Management

PATIENT POPULATION AND DIAGNOSIS: Patients under the age of 2 years old, diagnosed with bronchiolitis

POPULATION EXCULSIONS: Patients with immunodeficiencies, underlying respiratory diseases such as chronic lung disease, neuromuscular disease or hemodynamically significant congenital heart disease

APPLICABLE TO: All Spectrum Health Lakeland Locations

OTHER TEAM(S) IMPACTED: Emergency Department, Inpatient Pediatrics, Nursing, Respiratory Therapy, Family Medicine, Hospitalists

BRIEF DESCRIPTION: The goal of this pathway is to provide an evidence-based approach to the diagnosis and management of bronchiolitis in infants and children through 23 months of age. This pathway is intended for pediatricians, family medicine physicians, emergency medicine physicians, pediatric hospitalists, resident physicians, nurse practitioners and physician assistants who care for these children in the emergency department or inpatient setting.

OPTIMIZED EPIC ELEMENTS (if applicable): N/A

IMPLEMENTATION DATE: 12/1/2021

LAST REVISED: 12/1/2021

Clinical Pathways Clinical Approach

TREATMENT AND MANAGEMENT:

Brief Condition Definition: Bronchiolitis is a disorder commonly caused by a viral lower respiratory tract infection in infants. It is characterized by acute inflammation, edema and necrosis of epithelial cells lining small airways, along with increased mucus production. Signs and symptoms include rhinorrhea and cough which may progress to tachypnea, wheezing, rales, retractions and/or nasal flaring. Bronchiolitis can be caused by many viruses; the most common is respiratory syncytial virus (RSV). Bronchiolitis is the most common cause of hospitalization among infants during the first 12 months of life.

ED Management of Bronchiolitis

Emergency department (ED) management of bronchiolitis involves identification and diagnosis of this clinical condition, assessment of severity of illness, use of supportive interventions (e.g. nasal suctioning, ventilatory support, oxygen therapy, fluid resuscitation), determination of appropriate disposition and appropriate counseling of parents/caretakers. In most cases, the patient will be initially seen and evaluated by a nurse and vital signs will be obtained. A physician and/or APP will then evaluate the patient; once clinical bronchiolitis is determined to be the likely diagnosis, a Respiratory Distress Score (RDS) should be determined. The initial RDS may be determined by the physician/APP or by a respiratory therapist (RT). Interventions, such as but not limited to, nasal or nasopharyngeal suctioning, patient repositioning and/or oxygen therapy, should be considered and performed. After initial interventions are performed, the patient's follow-up RDS should direct the decision to provide additional respiratory support and patient disposition. In all cases, the patient's hydration status should also be assessed and appropriate interventions, based on the patient's clinical condition, should be used. For discharged patients, counseling should be provided to parents/caregivers that addresses home care and indications for emergency department return. For both admitted and discharged patients, routine use of

bronchodilators, steroids and antibiotics is not recommended, but may be appropriate in limited cases. Similarly, routinely obtaining chest radiographs and viral studies (e.g. RSV testing) are typically not necessary.

Mild Disease (RDS 0-4)

Patients with RDS 0-4 before or after intervention are considered to have mild bronchiolitis and will likely be safe for discharge home. Prior to discharge, routine counseling about nasal suctioning, feeding tactics and emergency department return indications should be addressed. Certain high-risk criteria (patient age <12 weeks, history of prematurity, cardiopulmonary disease, immunodeficiency or sickle cell) should be considered as potential indications for hospitalization. Additionally, patients that are hypoxic and/or dehydrated likely also require admission. In these cases, admission to the pediatric hospitalist service would be appropriate.

Moderate Disease (RDS 5-7)

After suctioning is performed and other routine interventions are provided, patients with moderate disease should likely be started on high flow nasal cannula (HFNC). The physician/APP should contact the RT to initiate this therapy. RT typically initiates flow with at least 1.5 L/kg/min; if a different flow setting is desired the physician/APP should communicate with the RT. If the patient is considered improved and stable on <2 L/kg/min and <50% FiO2, hospitalist admission is likely appropriate. If there is concern about the patient's appropriateness for general floor admission, a request for hospitalist evaluation in the emergency department is appropriate. In some cases, the hospitalist may also choose to evaluate the patient in the emergency department to determine stability prior to admission. If the patient is determined to be unstable for a general pediatric bed, the ED physician/APP should contact the PICU for admission.

For patients with moderate disease admitted to the hospitalist service, routine insertion of an IV is unnecessary as enteral hydration/nutrition is preferred. A separate enteral feeding guideline has been created and should be referenced to determine whether a patient may continue with oral feeding or if a nasogastric feeding tube should be inserted. For patients being admitted to the intensive care unit, an IV is preferred and the patient should remain NPO.

Severe Disease (RDS >8)

For patients with severe disease, respiratory support will be required. Clinician decision about whether to trial HFNC or proceed to non-invasive positive pressure ventilation or intubation should be tailored to the patient's clinical condition. All patients with severe disease will require admission to the intensive care unit. Patients should remain NPO and IV/IO access should be obtained. For select patients, a trial of bronchodilator therapy may be considered. Additionally, a chest radiograph may also be obtained based on ED physician discretion or may be requested by the intensivist. Routine chest radiographs for intubated patients are appropriate.

Treatments

Routine use of bronchodilators, steroids and antibiotics for clinical bronchiolitis are not recommended. In select cases (prior history of wheezing episodes, history of atopy, strong family history of asthma) a trial of albuterol may be appropriate. Antibiotics should only be used for clear cases of bacterial infection.

Testing

Routine chest radiographs are not indicated for clinical bronchiolitis, although they may be warranted in select clinical situations. Routine viral testing often does not affect clinical course or treatment; testing for select pathogens (COVID, influenza) may be considered depending on the time of year and potential implications on treatment and co-horting.

Pathway Information

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EXPERT IMPROVEMENT TEAM (EIT): Pediatric Bronchiolitis Clinical Pathway

CLINICAL PRACTICE COUNCIL (CPC): *Women & Children's Clinical Practice Council*

CPC APPROVAL DATE: 12/1/2021

References

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2. Babl FE, Franklin D, Schlapbach LJ, Oakley E, Dalziel S, Whitty JA, Neutze J, Furyk J, Craig S, Fraser JF, Jones M, Schibler A; Paediatric Research in Emergency Departments International Collaborative and Pediatric Critical Care Research Group. Enteral hydration in high-flow therapy for infants with bronchiolitis: Secondary analysis of a randomised trial. J Paediatr Child Health. 2020 Jun;56(6):950-955. doi: 10.1111/jpc.14799. Epub 2020 Feb 11. PMID: 32043304.

3. Cappon, J.. (2017, October 18). Emergency Department Bronchiolitis Care Guideline. Children's Hospital of Orange County. https://www.choc.org/chocdocs/care-guidelines/