Department of Health Government of Nunavut	NURSING POLICY, PROCEDURE AND PROTOCOLS Community Health Nursing Program Standards and Protocols	
TITLE: **Bronchiolitis Management Protocol**	**SECTION:** 9: Treatment & Emergent Services	**POLICY NUMBER:** 09-018-00
EFFECTIVE DATE: January 11, 2018	**REVIEW DUE:** January 2020	**REPLACES NUMBER:**	**NUMBER OF PAGES:** 7 (including appendix)
APPLIES TO: Community Health Centres		

1. **BACKGROUND:**

Bronchiolitis is the most common reason for admission to hospital in the first year of life. It is a common reason for outpatient presentation in emergency rooms and nursing stations throughout Nunavut. The following medical directive has been adapted from the *J.A. Hildes Northern Medical Unit Guidelines for Northern Remote Practice: Bronchiolitis 1-24 months of age*.

The Department of Health *Bronchiolitis Management Protocol* is intended to (1) provide a standardized approach to community-based care in Nunavut; and (2) provide an authorizing mechanism for Community Health Nurses to communicate a medical diagnosis and initiate treatment for bronchiolitis. Guidelines do not replace clinical judgment; management decisions must be individualized.

CHNs are expected to practice within their own level of competence and seek guidance from their supervisor, physician or NP as needed. The CHN shall follow the usual consultation protocols and practices that are already in place for the community.

2. **MEDICAL DIRECTIVE:**

2.1 Community Health Nurses (CHN) may communicate a diagnosis of bronchiolitis when the following conditions in Table 1 are met:

Table 1: Inclusion Criteria for Diagnosis of Bronchiolitis

Presenting features for bronchiolitis include, but are not limited to the following:

- Less than 24 months of age
- Preceding upper respiratory illness
- Wheezes
- Cough
- +/- Fever

Practice Point: The patient *may* or *may not* present with signs of Respiratory Distress (which is not an inclusion criterion).
Respiratory Distress includes:

- Accessory muscle use, indrawing, nasal flaring
- Crepitations
- O_2 saturation <90%
- Elevated respiratory rate for age
- Colour change

2.2 CHNs may initiate treatment for bronchiolitis, without a direct physician or NP order, as outlined in this protocol when conditions of 2.1 have been met.

2.3 The physician or NP must be consulted when the conditions of this medical directive have not been met. See Contraindications section.

3. **RECIPIENT PATIENTS:**
   3.1 Children under the age of 24 months who present to the health centre and meet the criteria listed under Medical Directive statements 2.1.

4. **CONTRAINDICATIONS TO THIS MEDICAL DIRECTIVE:**
   The physician or NP must be consulted when any of the following conditions exist:
   4.1 The patient's history or physical exam findings do not match the criteria stated in 2.1 of this directive, or when there is diagnostic uncertainty.
   4.2 The patient exhibits signs of severe respiratory distress (Table 1). Urgent consult is required.
   4.3 The patient has a contraindication to the medication, as per the CPS or product monograph.

5. **AUTHORIZED IMPLEMENTERS:**
   5.1 Registered Nurses employed as Community Health Nurses.
   5.2 Sub-delegation is not permitted to an unregulated care provider or another health care provider not listed in this medical directive.

6. **PROTOCOL:**

   Refer to Table 2 for the Bronchiolitis Management Protocol
   (Consider printing off Table 2 – double sided - and posting in clinical areas for easy reference)

7. TABLE 2: BRONCHIOLITIS MANAGEMENT PROTOCOL:

PREVENTION		Opportunistically assess for risk factors and provide support and counseling ▪ Hand hygiene ▪ Inquire about infant or child tobacco exposure; counsel caregivers about tobacco exposure and smoking cessation ▪ Encourage exclusive breastfeeding for at least 6 months to decrease morbidity of respiratory infections RSV prophylaxis program is administered through the office of the Chief Medical Officer of Health. Consult the Regional Communicable Disease Coordinator.
ASSESSMENT		▪ Complete a detailed patient assessment. At minimum, obtain: a history of presenting illness, medical/social history, allergy status, medications, birthing history, immunization status and comprehensive physical exam. ▪ Consult physician if ≥ 1 risk factor for severe disease: Age < 12 weeks, history of prematurity, underlying cardiopulmonary disease or immunodeficiency. ▪ Clinical Scoring Sheet to be used to document respiratory status
DIAGNOSIS		▪ Diagnosis and assessment of severity is based on history and physical exam. Radiographic or lab studies (chest x-ray, culture, blood gas and viral PCR nasopharyngeal swab) should not be routinely obtained.
SURVEILLANCE		▪ For the purposes of Public Health surveillance only: when cases of bronchiolitis first appear in the community, up to five nasopharyngeal swabs from children of different ages over a time span of a few days should be obtained.
AIRWAY AND OXYGEN		▪ Maintain patent airway (positioning, suctioning, and mucous clearance) ▪ Continuous pulse oximetry may be considered ▪ Initiate supplemental O_2 via nasal prongs or mask (avoid "blow by" method) when O_2 sats are consistently <90%. NOTE: Use clinical judgement as different O_2 saturation thresholds may be appropriate for infants with chronic co-morbidities.
MEDICATIONS	**RACEMIC EPINEPHRINE**	A trial of nebulized racemic epinephrine may be administered. Racemic Epinephrine 2.25% 0.5 mL nebules for inhalation For infants < 5 kg: 0.25 mL by inhalation Q30min X2 doses For infants > 5 kg: 0.5 mL by inhalation Q30min X2 doses (add 0.9% NaCl for a total volume of 3 mL for nebulizer treatment)
		Reassess patient, including vital signs. Use Scoring Sheet for pre & post assessment. **Repeat epinephrine ONLY** if adequate clinical response is demonstrated after 1st dose (Decrease of ≥3 in pre/post scores). Consult MD
	SALBUTAMOL	Salbutamol is not routinely administered. A single dose may be administered where there is diagnostic uncertainty between bronchiolitis and asthma, a history of recurrent wheezing episodes, and family history of allergy, asthma, or eczema
		Salbutamol MDI (by spacer and face mask) doses suggested by weight: < 6 kg = 2 puffs 6 – 18 kg = 4 puffs 19 – 25 kg = 6 puffs > 25 kg = 8 puffs **Salbutamol nebule doses suggested by weight**: 3 – 6 kg = 0.625 mg 6 – 12 kg = 1.25 mg 12 – 20 kg = 2.5 mg > 20 kg = 5 mg
		Use Scoring Sheet for pre & post assessment. Repeat salbutamol **ONLY** if adequate clinical response is demonstrated (Decrease of ≥3 in pre/post scores). Consult MD
	ANTIBIOTICS	Antibacterial and antiviral medication should NOT be administered unless there is strong suspicion of a concurrent bacterial infection
	STEROID THERAPY	Systemic corticosteroids should NOT be administered. Some studies have shown benefit, but the risks are largely unknown.
	NEBULIZE 3% SALINE	Nebulized hypertonic saline should NOT be administered in the health centre.

Respiratory Therapy	▪ Perform nasal suctioning when clinically indicated. It should be superficial and reasonably frequent. In infants ≤ 3 months of age, it should be done regularly prior to feeds and nebulization when there is something to suction. ▪ Avoid chest physiotherapy and cool mist therapy
Monitoring	▪ Bronchiolitis scoring tools are not validated for determining disease severity, but are helpful for monitoring treatment effectiveness and communicating with consultants (see Appendix A: *Bronchiolitis Clinical Scoring Sheet*) ▪ Repeat clinical assessment frequently (using the bronchiolitis scoring sheet) this is the most important aspect of monitoring for deteriorating respiratory status ▪ Assess and maintain adequate hydration. Hold feeds and discuss alternate hydration management with MD when respiratory rate > 60 breaths/min when calm, or when there are other clinical concerns about increased work of breathing impacting ability to safely feed.
Discharge	Consider discharge home when: ▪ The patient is on oral feedings sufficient to prevent dehydration ▪ Respiratory status is improving ▪ Tachypnea and increased work of breathing are normal, mild or moderate ▪ Oxygen saturation is >92% on room air ▪ Caregiver coping well at home and reliable follow up can be arranged.
Family Education	▪ Nature of illness and expected clinical course of bronchiolitis ▪ To return to health centre if signs of worsening clinical status are observed. Such as increasing respiratory rate and/or work of breathing; inability to maintain adequate hydration; worsening general appearance. ▪ Importance of handwashing; eliminating exposure to environmental smoking; limiting exposure to contagious settings and siblings ▪ Advise that bottle propping and supine consumption of liquids in infants with respiratory infections may increase the risk of aspiration.
Follow up	Book follow up every 1-2 days until adequate clinical improvement is observed. Increase frequency depending on clinical status and the caregiver's ability to cope.
Consultation	Consult the Physician: ▪ Signs of moderate to severe respiratory distress is observed ▪ Patients with ≥1 risk factors for severe disease (Age < 12 weeks; history of prematurity; underlying cardiopulmonary disease or immunodeficiency) ▪ CHN is unsure how to proceed with care, has diagnostic uncertainty or unsure if conditions of this medical directive have been met
Consider medivac for admission	In consultation with the physician, consider a medivac when: ▪ Signs of severe respiratory distress ▪ Concerns of impending respiratory failure ▪ Supplemental O_2 required to keep sats > 90-92% despite treatment ▪ Infant has ≥1 high risk factors for severe disease ▪ Evidence of dehydration or history of poor fluid intake ▪ Cyanosis or history of recurrent apnea ▪ Caregivers unable to cope at home
Documentation	▪ Document the details of each patient encounter according to RNANT/NU documentation standards and Department of Health policies. ▪ The Bronchiolitis score sheet is to be used to document the initial and subsequent patient assessments- reference this sheet in the Progress Notes.

8. **RELATED POLICIES, PROTOCOLS AND LEGISLATION:**

Appendix A: Bronchiolitis Clinical Scoring Sheet
Community Health Nursing Policy 06-008-00: Documentation Standards
Community Health Nursing Policy 06-009-00: Documentation Format
Community Health Nursing Policy 05-009-00: Transferred Functions
Community Health Nursing Policy 05-009-00: Competency for Transferred Functions
Compendium of Pharmaceuticals and Specialties (CPS)
FNIHB *Pediatric Clinical Practice Guidelines for Nurses in Primary Care*: Chapter 10 Respiratory System
Nunavut Formulary

9. **REFERENCES:**

First Nations and Inuit Health Branch. (2001). *Pediatric Clinical Practice Guidelines for Nurses in Primary Care*. Ottawa, ON.

Government of Nunavut (2010). *Community Health Nursing Standards, Policies, and Guidelines*.

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Ralston, S., Hill, V., Martinez, M. (2010). Nebulized hypertonic saline without adjunctive bronchodilators for children with bronchiolitis. *Pediatrics*, 126: e520-e525.

Friedman, J., Rieder, M., Walton, J., Canadian Paediatric Society Acute Care Committee, Drug Therapy and Hazardous Substances Committee (2014). Bronchiolitis: Recommendations for diagnosis, monitoring and management of children one to 24 months of age. *Paediatric Child Health* 19(9): 485-91.

J.A. Northern Medical Unit, University of Manitoba (2014). Guidelines for Northern Remote Practice: Bronchiolitis 1-24 months of age.

Approved By: Colleen Stockley	Date: Jan 10/18
Colleen Stockley, Deputy Minister – Department of Health	
Approved By:	Date: January 12, 2018
Jennifer Berry, Chief Nursing Officer	
Approved By:	Date:
Dr. William MacDonald, Medical Chief of Staff, on behalf of the Medical Advisory Committee	

Allergies:
☐ NKA
☐ Unobtainable
☐ _____

Patient Name: _____
(Last Name) (First Name)
DOB: _____ (DD/MM/YY) Age: _____
Gender: M / F / U NU MRN#: _____

Appendix 1: Bronchiolitis Clinical Scoring Sheet

- Score infant at rest pre-therapy and 30 to 60 minutes post-therapy
- Therapy considered effective if there is a decrease of ≥ 3 points from pre- to post-therapy score

Points:		0	1	2	3
General Appearance		Active and alert	Irritable but responds to comfort, interested in feeds	Unsettled, no interest in toys/environment	Unresponsive to environment, focused on breathing
Respiratory Rate	< 6 mos	< 40	40-55	56-70	> 70
	> 6 mos	< 30	30-45	46-60	> 60
Retractions[1]		None	Mild	Moderate	Severe
Breath Sound Intensity (Air Entry)[2]		Good air entry	Slightly decreased	Decreased	Barely audible/absent
Adventitious Sounds*		Clear	Intermittent wheezes/crackles	Widespread wheezes/crackles	Widespread wheezes /crackles and/or grunting/ stridor

*No adventitious sounds in the absence of breath sounds should be scored as 3

[1]Retractions:

- *Mild:* Subcostal indrawing only (see Fig 1)
- *Moderate:* Retractions in subcostal region **and** one of the following: nasal flaring (see Fig 2), substernal, subclavicular or intercostal indrawing (see Fig 3), or tracheal tug (see Fig 4)
- *Severe:* Retractions in more than two anatomic regions

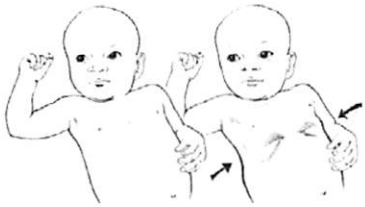

Fig 1: Subcostal Indrawing

Fig 2: Nasal Flaring

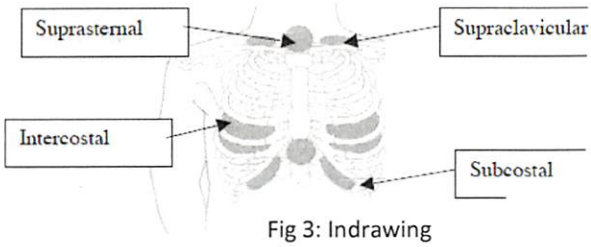

Fig 3: Indrawing

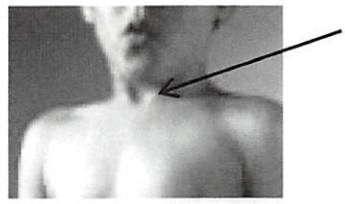

Fig 4: Tracheal Tug

[2]Breath Sound Intensity (Air Entry):

- *Slightly decreased:* Air entry decreased in a single lobe or generalized mild decrease in the intensity of vesicular breath sounds.
- *Decreased:* Air entry decreased in two or more lobes and/or only bronchial breath sounds audible and/or inspiratory breath sounds < expiratory breath sounds.

Nunavut

Allergies:
☐ NKA
☐ Unobtainable
☐ ______________________

Bronchiolitis Clinical Scoring Sheet

Patient Name: ______________________________
(Last Name) (First Name)
DOB: ____________ (DD/MM/YY) Age: ________
Gender: M / F / U NU MRN#: ______________

Medications:
E = Racemic Epinephrine
S = Salbutamol

Date (y/m/d)	Time (00:00)	Pre Rx	Post Rx	Med (E, S)	O_2 (L/min) or RA	SpO_2	HR	General Appearance	Respiratory Rate	Retractions	Breath Sounds (Air Entry)	Adventitious Sounds	Total Score	Score Difference	Initials
		✓													
			✓												
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