

### Learning Objectives:

- ▶ Identify signs and symptoms of bronchiolitis
- ▶ Provide care for pediatric patients diagnosed with bronchiolitis
- ▶ Identify and respond to respiratory distress/deteriorating patient
- ▶ Identify resources available to support nursing care
- ▶ Identify resources available to teach patient and family/caregiver
- ▶ Develop awareness and understand team roles involved in patient care

**1 month old Jane was seen in ER 2 days ago for a cough, runny nose/congestion and difficulty breathing. Parents returned to ER today as the cough and runny nose continue, but now she is no longer feeding well, with only a few wet diapers and her breathing is faster and more difficult. She is admitted to the 7<sup>th</sup> Floor with the diagnosis of Bronchiolitis.**

1. What are signs and symptoms of bronchiolitis?
  - Increased WOB
    - Subcostal & intercostal indrawing
    - Trach tug
    - Nasal flaring
    - Abdo breathing
    - Head bobbing
    - grunting
  - Tachypnea
  - Nasal secretions (often thick)
  - Cough
  - Apnea (late sign)
  - Wheezing and/or crackles
  - Fever
  - Desaturations
  - Difficulty feeding
  - Inappropriate secretion of ADH (resulting in hyponatremia)
  
2. What is the goal of treatment for bronchiolitis?
  - Symptom management
    - i. Oxygen
    - ii. Clear and patent airways (suctioning)
  - Hydration / fluid management
    - iii. Difficulty maintaining adequate hydration due to fever, tachypnea, decreased oral intake and posttussive emesis

3. What are some nursing interventions for patients with bronchiolitis?
  - NS drops and nasal suction prior to feeds
  - NS nebs +/- Ventolin
  - Oxygen
  - Repositioning
  
4. The doctor orders a Floq swab. Why would this be ordered for Jane? How would you obtain it?
  - Test for common respiratory viruses like COVID, RSV and influenza. An extended panel can be ordered.
  - FLOQSwabs provide a good specimen for the VIRAP direct fluorescent antibody tests for respiratory viruses and for respiratory PCR assays, including *Mycoplasma pneumoniae*, *Bordetella pertussis* and the Respiratory PCR Panel.
  - Floqswab technique

The flog swab results come back positive for RSV.

5. What does this tell us?

- RSV is the most common cause of lower respiratory tract infection (LRTI) in children younger than one year
- Worst days are often 5 & 6 after symptoms start; resolves with 14-21 days
- Expect to have remaining cough for few weeks

Jane is starting to work harder to breathe and you notice her O2 saturations have decreased to 85% on RA. Her orders require her to maintain sats of 92%.

6. What are signs and symptoms of respiratory distress (mild, moderate and severe) in the pediatric patient?

**Mild Work of Breathing (WOB):** dyspnea; tachypnea; shortness of breath on exertion; no obvious increased work of breathing; able to speak in sentences; stridor without obvious airway obstruction; mild shortness of breath on exertion; frequent cough.

**Moderate WOB:** Increased work of breathing, restlessness, anxiety, or combativeness; tachypnea; hyperpnea; mild increased use of accessory muscles, retractions, flaring, speaking phrases or clipped sentences, stridor, but airway protected, prolonged expiratory phase.

**Severe:** Excessive work of breathing, cyanosis; lethargy, confusion, inability to recognize caregiver, decreased response to pain; single word or no speech; tachycardia or bradycardia; tachypnea or bradypnea; apnea irregular respirations; exaggerated retractions, nasal flaring, grunting; absent or decreased breath sounds; upper airway obstruction (dysphagia, drooling, muffled voice, labored respiration's and stridor); unprotected airway (weak to absent cough or gag reflex); poor muscle tone.

7. You try suctioning and repositioning Jane to no effect. You think she needs oxygen. Can you initiate oxygen without an order? How would you initiate it?

- RN can initiate/apply as needed (is an RN initiated activity)
- Start low flow nasal prongs of appropriate size, use least amount of O2 necessary to maintain SpO2 and titrate as needed
- Note max flow rates on ePOPS

Guidelines for Maximum flowrates by nasal cannula/prongs:	
less than 15 kg	up to 2 LPM
15-30 kg	up to 3 LPM
above 30 kg	up to 4 LPM

8. Jane's saturations remain at 90% on 2L of oxygen via NP. What is your next intervention?
- Apply face mask on 6L.
9. Who are some resources you could call?
- Resources
    - Respiratory Therapist (RT)
    - Clinical Resource Nurse (CRN)
    - Colleague (experienced RN)
    - Charge nurse/CNC
    - Physicians (CTU)
    - Critical Care Outreach Nurse (CCON)

**The RT comes to assess Jane and suction. Post suction, Jane starts to look better and is maintaining oxygen saturations of 94% on 2L O<sub>2</sub> via NP. Jane's respiratory rate and work of breathing remain elevated at RR = 64, Mild-Moderate WoB, SpO<sub>2</sub> = 95% on 1L LFNP. She is fussy and her Mother asks if she can feed Jane, as it has been "so long" since she last breastfed.**

10. Do you think it is appropriate to feed Jane? Why or why not?

Likely not due to wob and tachypnea. Increased risk of choking, emesis and aspiration.

11. How do we manage Jane's fluid status if she is not feeding orally?
- NG tube
  - IV fluids
  - Ins and outs (weighing diapers, etc.)

**Mom is exclusively breastfeeding Jane. She has been pumping in the hospital and storing her expressed human milk (EHM) in the fridge and freezer.**

**You receive an order to insert an NG and give EHM via bolus feeds q 3 hours. You refer to EHM information found on the T7 Teamsite as well as the Enteral Feeds procedure on SHOP**

12. Describe how you would prepare EHM for an enteral feed?

- Double check labelled product with fellow RN or parent
- Check time in fridge / freezer
- Follow guidelines for thawing
- New bag each feed or q4h if feed is continuous
- Check NG pH prior to initiation

**It is now day 7 of Jane's illness. She has no WOB, is feeding orally, and her oxygen saturations are 100% on 2L O2 via NP. During morning rounds, weaning of oxygen is highlighted as a goal for today.**

13. What are some considerations when weaning a patient off of supplemental oxygen?

- Wean up to 1 L/min, but never more than 50% every hour to maintain parameter SpO2
- Gradual
- Stay in room to assess

14. What are the goals for discharge for Jane?

- Maintaining O2 sats, especially while asleep
- No O2 needs for >12 hrs
- Oral feeds, satisfactory
- Wet diapers/adequate u/o
- Completion of necessary teaching

15. What might you teach Jane's family, prior to discharge regarding managing viral illnesses at home?

- How to bulb suction
- How to give small, more frequent feeds when breathing "calm"
- Signs to watch for; when to call/come back