



# Just in Time - Bronchiolitis

Location: T7

Date: November 28th, 2022

**Scenario:**

**Objectives:**

- 1) Recognize signs of increased work of breathing in infant on high flow oxygen
- 2) Call for help and escalate urgency as needed (call for RT; staff assist to code blue if needed)
- 3) Troubleshoot High-flow circuit
- 4) Team functioning: assigning roles, closed loop communication, shared mental model

**Presenting history:**

Peter is an 18 month old toddler, ex-28 weeker, who was admitted to PICU with WOB in setting of RSV and URTI sx. He's day 4 of illness. He was intubated in a peripheral hospital and transferred to PICU. He was intubated for 24 hrs total and then extubated to high flow. He was not felt to be Ventolin-responsive. He was sent up to the ward while the CTU team was rounding and arrived 1 hour ago. He is on HF at 10L/min and 30% FiO2. No antibiotics. Ventolin is q4hr PRN.

**Initial vital signs:**

HR 170, RR 50, BP 98/55, T37.0, SpO2 85%  
Weight 10kg; No IV access

**Initial physical exam:**

Appears distressed and uncomfortable  
Resp. Airway patent but +secretions, sternal retractions, abdominal breathing, expiratory grunting. ++ crackly and wheezy, decreased at bases.  
CV: normal heart sounds. Tachycardic. Cap refill 2 seconds. Moist mucus membranes.

**Further information (if asked):**

The high flow was weaned this morning to just 1 L/kg from 2.5L/kg. His last Ventolin was in PICU at 0200. He has had no fever.

**Checklist:**

- Code leader identified
- Roles identified

**Properly assess:**

- Vital signs + weight
- Airway
- Breathing
- Circulation

**Expected interventions:**

- Nurse calls for help
  - Time \_\_\_\_\_
- Junior calls for help
  - Time \_\_\_\_\_
- RT is called
  - Time \_\_\_\_\_
- Monitors
- IV/IO access
- Stat labs (including gas)
- Stat CXR
- Reassess ABC/Vital signs
- Increase high flow FiO2s and flow
- Troubleshoot high flow
- Prep for bipap/intubation

Transfer: Discuss with PICU

**Time:**

- Scenario begins  
\_\_\_\_\_
- Call for help  
\_\_\_\_\_
- Crash cart arrives  
\_\_\_\_\_
- Oxygen/Call RT  
\_\_\_\_\_
- First responder  
\_\_\_\_\_
- Contact PICU  
\_\_\_\_\_

Past medical is notable for being an ex-28 weeker, intubated in NICU for 1 week and extubated to CPAP x 3 weeks. This is his first hospitalization since NICU. No previous wheeze or puffers. Intubation in PICU required just 1 attempt and there was no post-extubation stridor.

**Progression:**

Respiratory distress increases. Saturations will increase with application of increased FiO2 but remains high 80s (lots of mucus plugging and V/Q mismatch). There continues to be increased work of breathing which significantly worsens without increasing high flow rate. Ventolin +/- Atrovent do not tend to make a difference to air entry or wheeziness or goal saturations. The team must optimize high flow settings and supports and call for help: RT and PICU. They should prep for positive pressure and/or intubation as they await for the PICU team to arrive. They should call for labs including a blood gas and a CXR.

**After interventions:**

- FiO2 is increased e.g. by increasing high flow or by face mask O2
  - o sats increase to 88-92%, RR increases to 80-90s
- Ventolin +/- Atrovent
  - o no significant changes to work of breathing, air entry or O2 sats; HR increases with Ventolin to 190s.
- If oral airway inserted
  - o emesis, decreased O2 sats
- If BP cycled: Repeat BP 90/50
  - o increases to 95/55 if bolus is given
- If glucose is checked → Gluc 7.1

**Progression:**

Consider transfer to ICU for BiPAP/support.

**Debrief:**

**Team Functioning:** *E.g. speed of response, communication of team members, clarity of team leader, procedures carried out in a safe timely manner.*

**Space/equipment** : *E.g. ABC box/Code Blue cart appropriately stocked, space issues addressed, patient and staff safety maintained. Access to medications.*

**Concerns:** *E.g.: issues identified and addressed*

**Issues identified requiring follow-up and by whom:**

**Participants:**

- First responder \_\_\_\_\_
- Second responder \_\_\_\_\_
- Charge Nurse \_\_\_\_\_
- Respiratory therapist \_\_\_\_\_
- Senior resident \_\_\_\_\_
- Junior resident \_\_\_\_\_

- recorder \_\_\_\_\_
- Others \_\_\_\_\_

**Facilitators:**

Peds chief \_\_\_\_\_  
Nursing \_\_\_\_\_  
Simulation \_\_\_\_\_  
Others: \_\_\_\_\_

- Summary sheet completed