

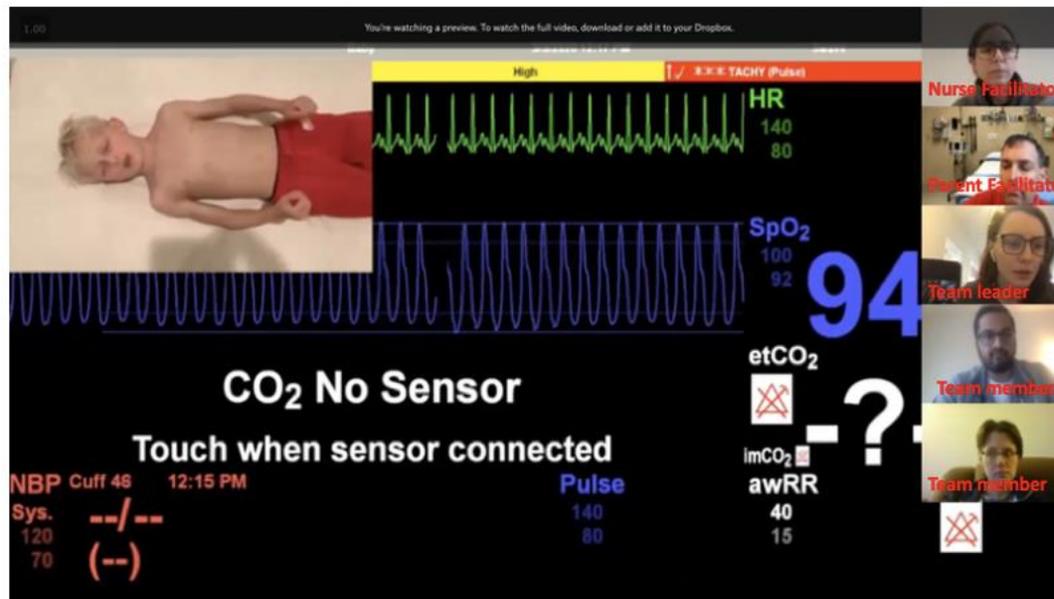
ACEP TeleSimBox: RESPIRATORY DISTRESS-INFANT
Resources: Table of Contents

- A.** How-To Guide
- B.** Prebrief Guide
- C.** Scenario Guide
- D.** Scenario Checklist
- E.** Debrief Guide
- F.** Debriefing Prompts & Resources
- G.** Survey

A	ACEP TeleSimBox	How-To Guide
<p>This session will provide teams of learners the opportunity to engage in the first 5-10 minutes of acute care provided to an infant in respiratory distress in a telesimulated environment. Ideally this session involves two facilitators: a "lead" to serve in the roll of a lead facilitator (also serves as a scripted parent) and an "assistant" (also serves as an embedded nurse).</p> <p>This one hour session consists of three parts:</p> <ol style="list-style-type: none"> 1) Prebrief: prior to starting, you, as the facilitator will welcome the students, introduce the format, provide expectations and goals (5 minutes) 2) Simulation: you will share your desktop and play a video on a browser (EMS patch and monitor that changes over time independent of learner interventions). The lead will serve in the role of a parent and respond to participants questions/ask questions per the script below. The assistant will be introduced as an experienced nurse who participants can ask to do tasks and/or ask for physical exam findings (15-20 minutes) 3) Debrief: at the end of the simulation the facilitator(s) use the debrief script (30-40 minutes) 		
<p>LEARNING OBJECTIVES</p> <p>After this session, med student participants will be able to:</p> <ul style="list-style-type: none"> • Team-centered care <ul style="list-style-type: none"> ◦ Verbally assemble the necessary staff, equipment and resources to care for a pediatric patient in the ED ◦ Demonstrate effective teamwork and communication (i.e. designate leader/roles, directed orders, closed-loop communication, sharing mental model) • Family-centered care <ul style="list-style-type: none"> ◦ Obtain an appropriate history from the family member (SAMPLE) ◦ Address family concerns, update on care (translate medical aspects of care in plain language) • Medical knowledge <ul style="list-style-type: none"> ◦ Assess need for escalation of care ◦ Synthesize multiple pieces of raw data into a shared mental model ◦ Verbalize the initial interventions (airway, breathing, circulation) for a patient in respiratory distress ◦ List which historical information and physical exam components are most important ◦ Compare and contrast different interventions to improve the condition of patients in respiratory failure ◦ Describe the diagnostic workup (labs, imaging) for a patient with respiratory distress ◦ Formulate a differential for a patient with bronchiolitis-like presentation 		
<p>WHAT'S NEEDED FOR THE TELESIM?</p> <ul style="list-style-type: none"> • Internet and secured Zoom platform or other secured telecommunication program • This booklet of resource documents (A-G) • Display: preferable for lead facilitator to be on desktop/laptop (consider dual monitor set-up) with a stable internet connection • Participants and the assistant debriefer can join from desktop/laptop/tablet/phone 		
<p>BEST WAY TO USE THESE RESOURCES?</p> <p>BEFORE conducting this session please</p> <ol style="list-style-type: none"> 1) Review this document 2) Watch the recorded sample telesimulations to get a sense of how one is run: https://www.dropbox.com/s/c28flcv4wbhurdv/zoom_0.mp4?dl=0 3) If you have additional questions/concerns, a one-on-one tutorial can be arranged with the project team (Elizabeth Sanseau: sanseave@email.chop.edu) 		
<p>HOW MANY PARTICIPANTS SHOULD BE INVOLVED? -- 2-3 participants is optimal</p> <ul style="list-style-type: none"> • The facilitator should assign the participants to the following roles: (1) team leader (2) airway/survey/bedside +/- (3) family liaison • Have participants rename themselves based on their role in the telecommunication device being used • If there are more than 3 participants these individuals should be assigned active observation roles +/- provided the checklist 		
<p>HOW MANY FACILITATORS WILL I NEED? -- 2 co-facilitators is optimal</p> <ul style="list-style-type: none"> • Lead (black font in scenario): prebriefs, plays telesim video from shared screen, controls monitor on video (pauses/fast forwards/rewinds), tracks time and stops at 20mins running time, embedded parent, debriefs • Assistant (red font in scenario guide): embedded experienced nurse who, when prompted, relays the physical exam, responds to intervention requests, provides historical data, and if necessary makes suggestions of what to do next if the team is failing to meet objectives. If team is struggling he/she can provide coaching or advise that they "pause scenario" to huddle/plan next steps 		

YOUR SCREEN SHOULD RESEMBLE THIS: active participants and facilitators in gallery view

(Note: specific case may be different)



Please use this script to introduce your team to the simulation. You may adapt it as it becomes more familiar.

OVERVIEW

The goal of this session is to practice the initial management of a sick pediatric patient as a telesimulated experience. This is an opportunity for you to practice family-centered care, teamwork and communication and apply your medical knowledge in a supportive environment. Being telesimulation, you will not have a real patient/mannikin nor have tangible equipment and resources.

TIME COURSE

The session will last about an hour total: 20 minutes for the drill and 40 minutes in a group reflection and discussion, called a debrief. During the debrief we will discuss opportunities for improvement such as teamwork skills, communication with the family, and medical knowledge.

ORIENT TO ZOOM

You should all be able to hear me ok?

Best to use gallery view to see all participants.

Chat box function can be used for participant who's role it is to communicate with the parent chats with the facilitator, gets historical information, and reports back to the group.

Timeout at any point if you are confused about the technology - we will pause and regroup before restarting the sim.

If you are not an active simulation participant, please mute and hide your video screen. Appreciate hearing observers feedback during debrief (assign one to teamwork/communication, family communication, clinical/medical knowledge).

ORIENT TO SIM

I will provide the prebrief, debrief and control the video.

As the video runs, I will play the role of the parent - if you have any questions for me you must ask.

Co-facilitator is the embedded experienced nurse participant. The nurse will be your eyes and ears - ask for exam, vital signs, weight, temperature, monitors, access, labs, specific airway and any interventions including giving medications.

This goes best if you practice your closed-loop communication skills and continuously re-survey patient.

Consider this a good opportunity to continuously step back and reassess the patient with your team in addition to thinking OUTLOUD.

I will assign the roles prior to starting the video.

When I start the video, you will hear a EMS haste call followed by a 2 minute countdown clock.

Use this time to assemble your team and anticipate equipment, personnel and interventions you want ready.

If you need a TIMEOUT for discussion with your team or with the family member just ask and I will use the pause and restart button to allow for this space.

ESTABLISH SAFE LEARNING SPACE

The "**Basic Assumption***" of simulation is that everyone is here to do their best so we can learn as a team how to take care of sick pediatric patients confidently.

Fiction contract: I/We know that not everyone is comfortable with telesimulation, resuscitation drills, or with care of sick pediatric patients. I/We know it can also be intimidating to be on display in a situation that may be uncomfortable. Here, you are not being graded on your performance; instead we will focus on how to work as a team. Treating it as a real situation will help everyone get the most out of the session. If at ANY TIME you are confused - either with the medical scenario or with a technology glitch - please call a "Timeout" and we will stop and regroup. (**adapted from the Center for Medical Simulation, Boston*)

C	ACEP TeleSimBox		Scenario Guide
TIME	Facilitator statements and *actions*	Vital Signs/labs	Expected actions by team
START	<p>STATE: I will assign you each of you roles, including team lead, bedside survey and airway provider and parent liaison. You will hear a brief EMS patch and then see a two minute countdown clock as you prepare for the arrival of the patient.</p> <p>You will now hear an overview of the case and the EMS patch.</p> <p>*PLAY VIDEO*: https://www.youtube.com/watch?v=3_eb7sCIRRO#action=share</p>		
PLAY AUDIO RECORDING BRIEF	<p>The recorded narrator on video will state the following: "Welcome to the ACEP TeleSimBox intervention. In today's session you will work with others who are present online with you to take care of a simulated pediatric patient. A facilitator is also with you online and will help guide you through this intervention. To start the case you will hear an EMS dispatch call followed by a 2 minute countdown clock. During that 2 minute countdown we ask that you do your best to discuss what you would do and communicate with the nurse like you would in real life. This would include preparing resources, assigning team members, and asking for equipment and medications. Upon arrival of the patient you will have a nurse that will be available to provide physical exam and other findings as well as a parent to interact with. We ask that you do your best to take care of the patient throughout the case and participate in an active debrief after the simulation. I will now provide the EMS patch: 'EMS this is ALS Unit 1. We're coming in lights and sirens, we have an infant patient approximately 6 months old. Sats are currently in the mid-80s, intermittently can get up to 90 with BVM. The patient is in severe respiratory distress, tachypneic to the 70s, pulse ox going up and down between 80-85, heart rate is in the 170s, we're working on getting a blood pressure now. We'll be there in approximately 2 minutes. See you soon.'</p>	<p>MONITOR WITH 2 MINUTE COUNT DOWN, THEN PATIENT APPEARS</p>	<ul style="list-style-type: none"> ○ Team assembles + assigns roles ○ Asks for equipment: monitors, temperature, oxygen, bag valve mask, deep suction catheter, access (IV/IO), Broselow tape/app ○ Calls for help
2 MINUTE PREP ENDS	<p>The recorded narrator on the video states: "Hi guys, we're arriving now. The patient has continued to have desaturations that respond to BVM, however when not bagging the sats seem to drop."</p> <p>ASSISTANT STATES: "Patient has arrived."</p>	<p>VIDEO OF PATIENT</p> <p>BLANK MONITORS</p>	<ul style="list-style-type: none"> ○ Team confirms patient is on monitors, pulse oximetry, BP cuff, temperature
+ 3:31 min	<p>ASSISTANT STATES: "Patient appears to be struggling to breath with subcostal retractions and nasal flaring. SpO2 80% on room air. Diffuse crackles are heard on lung exam"</p>	<p>HR 187 BP 73/41 (52) RR 84 Sat 86%</p>	<ul style="list-style-type: none"> ○ Team assesses patency/clearance of airway, attempts repositioning and suction ○ Team notes hypoxia

			<ul style="list-style-type: none"> ○ Requests intervention for breathing status (HFNC) ○ Asks RN for access (IV/IO)
+ 4:35 min	<p>ASSISTANT STATES: "The patient's oxygen saturation is improving, but still has subcostal retractions and nasal flaring. Rectal temp of 36.5degC. Would you like to make any changes in his breathing treatment?"</p> <p>LEAD/PARENT STATES HISTORY (as prompted):</p> <p><i>Signs/Symptoms:</i> 6-month-old with 3 days of cough and congestion; He was napping when mom noted loud breathing. Shortly after, he woke up, 1 episode of emesis with increased work of breathing with subcostal retractions. Has not fed well in the past 3 days. No recent known fevers.</p> <p><i>Allergies/Medications:</i> None/none</p> <p><i>Past medical history:</i> Uneventful birth at 38 weeks gestation. History of eczema. Family history remarkable for asthma in his father and 7 year old sister. Vaccinations are up to date.</p> <p><i>Last meal:</i> Formula (Similac Advance) attempted bottle 4 hours ago with little success</p> <p><i>Events:</i> Preceding URI symptoms, +sick contacts at home and at daycare</p>	<p>HR 185 BP 73/41 (52) RR 81 Sat 88% T 36.5</p>	<ul style="list-style-type: none"> ○ Team verbalizes illness state: patient in respiratory distress ○ Request HFNC start or increase ○ Discuss obtaining chest x ray
+ 6:47 min	<p>ASSISTANT STATES: "The child is pale appearing with dry mucous, membranes, sunken eyes, poor skin turgor. Capillary refill time (CRT) 3 seconds."</p>	<p>HR 176-178 BP 77/45 (56) RR 68-71 Sat 90-91% T 36.5</p> <p>CRT 3 secs</p>	<ul style="list-style-type: none"> ○ Team notes history, physical exam and hypovolemic state ○ Estimate weight from Broselow ○ Request of 10-20mL/kg bolus of NS ○ Asks nurse for STAT POC glucose
+ 7:51 min	<p>ASSISTANT STATES: "Patient's glucose is 52"</p> <p><u>If CXR is requested:</u> "CXR is pending"</p>	<p>HR 172-175 BP 80/48 (59) RR 67 Sat 89-93% T 36.5</p> <p>Glucose 52</p>	<ul style="list-style-type: none"> ○ Give D10 5ml/kg ○ Start on mIVF with dextrose
+ 9:13 min	<p>ASSISTANT STATES: "The patient seems to like the HFNC - is pinking up and breathing more comfortably. NS bolus in, CRT now 2 seconds. Patient is a bit more alert. I'll work on getting a repeat glucose once that D10 bolus is in."</p>	<p>HR 164-168 BP 80/48 (59) RR 64 Sat 92-94% T 36.5</p> <p>CRT 2 secs</p>	<ul style="list-style-type: none"> ○ Reevaluate ABCDs ○ Request follow up glucose level ○ State differential and further workup plan

<p>+ 10:32 min</p>	<p>The recorded narrator on video will state the following: "Hi team, I'm from the PICU. Can you please give me a status update on what's going on with this patient. I heard they're going to be coming up to us. Please give sign out."</p> <p>LEAD STATES: "The critical care transport team has arrived. Please give handoff."</p>	<p>HR 165 BP 80/48 (59) RR 64 Sat 92% T 36.5</p>	<ul style="list-style-type: none"> ○ Hands off patient to PICU team ○ Updates family
<p>END</p>	<p>STATE: This will end the drill. The patient has been handed off to another team. Thank you for participating. We will now move to the debriefing.</p>		

D		ACEP TeleSimBox	Scenario Checklist		
TASK		Done correctly	Not done correctly	Not done	
Team-centered care	Verbally assemble the necessary staff, equipment and resources to care for an ill pediatric patient in the ED				
	Demonstrate effective teamwork and communication (i.e. designate leader/roles, directed orders, closed-loop communication, sharing mental model)				
Family-centered care	Obtain an appropriate history from the family member (SAMPLE)				
	Address family concerns, update on care (translate medical aspects of care in plain language)				
Medical knowledge	Verbalize the initial management of an acutely ill pediatric patient (airway, breathing, circulation)				
	Verbalize the first line diagnostic tests of a patient in respiratory distress				
	Verbalize the first line therapeutic intervention of a patient in respiratory distress				
	Demonstrate hand off of care at end of case				

A debrief is used by teams to celebrate areas of great performance and discover opportunities for improvement. If you are not familiar with how to run a debrief session, the following is a recommended framework to help you run one effectively. The purpose is to encourage team members to share their knowledge of the events, and help create understanding toward improvement. This should not be a blame session: follow the basic assumption that “everyone present is here to do their best”. There are many ways to lead a debrief session and you are welcome to adapt this format.

With 2 facilitators, consider breaking up the debrief between the facilitator lead and the assistant as you see fit.

- Consider having the facilitator lead set expectations, elicit reactions, then close out with summary & application at the end.
- Consider having the facilitator assistant lead the debrief discussion on the description and analysis aspects of the case, as they bring a unique perspective as the embedded nurse participant in the telesim scenario.

If observers were present, elicit their feedback on team-centered care, family-centered care, and medical knowledge during the debrief analysis.

Setting expectations FACILITATOR LEAD	Create a safe context for learning. Explain the goal of debrief: <i>“Let’s spend 15-20 minutes to debrief the scenario. The goal is to discuss lessons learned from the case so we can improve how we work together and care for sick pediatric patient in the ED. This is not a blaming session. Everyone’s participation is welcome. There are four parts to the discussion.”</i>
1) Reactions (1-2 minutes) FACILITATOR LEAD	Solicit reactions and emotions: this should allow participants to blow off steam but not launch into the medicine right away: <i>“First, how did that feel?”</i>
2) Description (1-2 minutes) FACILITATOR LEAD	Clarify facts and medicine: develop shared understanding of what happened: <i>“Next, can someone share a short summary of the case?”</i> Ask if everyone agrees or if there are any other perspectives.
3a) Analysis (7 minutes) ASSISTANT	Explore performance domains: <ul style="list-style-type: none"> ● Solicit feedback for improvement from the group ● Concentrate on learner experiences of the scenario ● Use open-ended questions to start the discussion ● DO highlight strengths of the team and individuals ● *Ask observers (if present) for their feedback* <i>“Now let’s talk about specific areas that went well and opportunities for improvement.”.</i>
3b) Reinforce learning (2 minutes) ASSISTANT	Provide focused feedback and observations. State how you thought the team did <ul style="list-style-type: none"> ● Identifying priorities in the care of this patient? ● Managing the care of this patient?
ELICIT ANY OUTSTANDING ISSUES/CONCERNS FROM THE GROUP	
3) Summary & Application (2 minutes)	Identify take home points & WRAP UP: <i>“That was a useful discussion. Please share a take away from our discussion that you hope to apply when you care for a seizing pediatric patient in the ED.”</i>

<p>Goal: At the end of the simulation, our team will be prepared to care for an infant with respiratory distress.</p>	<p>How did your team prepare for the arrival of an ill infant? Crisis & Crew Resource Management: Assign roles, designate team leader, share mental model and practice closed loop communication.</p>
<p>Skill: Perform a systematic primary assessment/reassessment of an infant in respiratory distress</p>	<p>How does your team perform a systematic assessment of an ill pediatric patient? PAT Pediatric Assessment Triangle Appearance TICLS: tone, interactivity, consolability, look/gaze, speech/cry Work of breathing: Important to undress to visualize WOB Circulation/capillary refill: Where and how is this assessed in the pediatric patient? Airway Breathing Circulation Caveats: Consider pediatric anatomical differences - ABC vs CAB (in adult patient) SAMPLE mnemonic: signs/symptoms, allergies, medications, last meal, events preceding</p>
<p>Skill: Demonstrate a step-wise approach to intervention in an infant with respiratory distress</p>	<p>Explain your stepwise approach to intervention after the primary assessment. Focus on the vital signs your clinical exam findings (mental and hydration status, respiratory, cardiovascular exams). Suction, increase oxygen and positive pressure supplementation, consider early trial of high flow nasal cannula (escalate further PRN). After any intervention, remember to reassess the patient to note any positive/negative changes based on your intervention. What medications will help this patient? The medications to treat respiratory distress will depend on your working diagnosis. In classic bronchiolitis, no medications are indicated. Treatment is supportive: breathing, hydration, antipyretics PRN. In setting of fever (T >38C, 100.4F), antipyretics are indicated (note: avoid non-steroidal anti-inflammatory medication, ie: Motrin, in children <6 months of age due to theoretical nephrotoxic risk). If clinical presentation and workup indicates bacterial pneumonia, influenza, pertussis, or other etiology, treat accordingly. Note on bronchodilators: Studies have NOT demonstrated a consistent benefit for albuterol treatment in infants with typical bronchiolitis. May consider an albuterol trial with features suggestive of possible asthma (recurrent wheezing, age >12 mos, prior albuterol and/or inhaled corticosteroid use).</p>
<p>Skill: Identify signs of dehydration and hypoglycemia</p>	<p>How do you identify signs of dehydration in an infant? Dehydration will often present as tachycardia, sunken eyes, lack of tears, sunken fontanelle, fatigue, dry mucous membranes, and pale or mottled skin with prolonged capillary refill >3 seconds on exam. History red flags for dehydration include: poor eating, vomiting, decreased urine output. Describe the value of obtaining a POC glucose and intervention associated with it? With a history of poor feeding and decreased urine output in an infant, think about checking a basic chemistry panel to assess dehydration status and electrolyte abnormalities. Laboratory studies often take some time to return, but POC glucose (point of care) is easily accessible and can result within seconds. Treat dehydration with NS fluids and hypoglycemia with a dextrose-containing bolus. Hypoglycemia can present with hemodynamic instability, seizures, fatigue, or tremors, but can be managed with administering a D10 bolus (starting with 5ml/kg) and then following glucose levels closely.</p>
<p>Skill: Describe the desired diagnostic work up and when to obtain it through the scenario</p>	<p>When should you obtain imaging and laboratory studies? If the clinical course suggests classic bronchiolitis, imaging and viral testing are not routinely recommended. If there is indication of super infection (ie: prolonged fever, local epidemiology indicates significant flu activity) or if the patient is toxic/severely ill in appearance, consider obtaining x-ray and labs: CBC w/ differential, Chemistry, Blood gas + lactate, Respiratory viral panel, blood cultures, and can also consider inflammatory markers (ESR, CRP, procalcitonin). If there is paroxysmal or prolonged cough, apnea, or known pertussis exposure, consider pertussis testing.</p>
<p>Knowledge: Identify features of respiratory distress in an infant</p>	<p>What features and vital signs would you expect to see in an infant with respiratory distress due to bronchiolitis? Clinical features: fatigue, increased work of breathing (head bobbing, nasal flaring, grunting, retractions-suprasternal, intercostal and subcostal), color change (cyanotic), oral/nasal secretions.</p>

	<p>Vital signs: +/- fever (Temperature >100.4), tachypnea (RR >50 in a 6 month old), variable heart rate (typically tachycardic until severe respiratory depression leading to bradycardia), SpO2<90% on RA.</p>
<p>Knowledge: Describe at least three causes of respiratory distress in an infant</p>	<p>Use a systems approach to discuss the etiologies of respiratory distress in an infant. Here is a non-exhaustive differential diagnosis: CNS: Fever, seizure, pain Lung: Foreign body aspiration, obstruction (upper airway vs lower airway), airway anomalies, bronchopulmonary dysplasia/chronic lung disease, asthma/reactive airway disease, pneumothorax Heart: Congenital heart disease, heart failure GI: Competitive abdomen (due to obstruction, constipation), gastroesophageal reflux disease (GERD) Infectious: Viral bronchiolitis, viral/bacterial/mycobacterial pneumonia, croup, pleural effusion, empyema, abscess, sepsis</p>
<p>Knowledge: List and discuss indications for escalation of care in an infant with respiratory distress</p>	<p>When should you escalate oxygen support and how? Discuss step-wise approach to assessing clinical changes and determining if regular nasal cannula is not adequate: Blow by O2, suction → NC → HFNC → positive pressure (Bi/CPAP) → intubation In certain cases, escalation to intubation may result quicker than in other cases given clinical appearance. How do you decide disposition for this patient: discharge, general wards admission, ICU admission? Stable for discharge if: <ul style="list-style-type: none"> - Work of breathing improved, tachypnea improved - Patient is able to maintain their oxygen saturations above 90% without oxygen supplement (or per their baseline if they are known to have underlying lung/heart disease) while sleeping and napping - Tolerating oral intake, enough to maintain hydration at home General wards admission if: <ul style="list-style-type: none"> - Requiring oxygen supplementation (regular or high flow nasal cannula) to maintain SpO2>90% - Continues to have increased work of breathing and tachypnea while requiring continuous monitoring - Requiring frequent deep suction given increase in oral/nasal secretions - Intolerance of oral intake and requiring IVF to maintain hydration ICU admission if: <ul style="list-style-type: none"> - Oxygen support escalated to positive pressure or even intubation- BiPAP/CPAP or intubation + mechanical ventilation - Hemodynamic instability Of note, each hospital system may differ slightly in their guidelines about general wards vs ICU admission.</p>
<p>Attitudes: Utilize team communication skills</p>	<p>How is a shared mental model helpful to the team? Was there closed-loop communication between team members?</p>
<p>Attitudes: Discuss the importance of family centered care/interactions</p>	<p>How does the team manage the reactions of family members while you are caring for a seriously ill child? A large body of literature supports family presence. This does not lead to increased malpractice. A social worker or other provider should be assigned to stay with the family through this difficult time.</p>

Free Online Open Access Medical Education Resources

BRONCHIOLITIS

OVERVIEW

- <https://www.uofmhealth.org/health-library/ug1890spec>
- <https://www.hopkinsmedicine.org/health/conditions-and-diseases/bronchiolitis>
- <https://www.msmanuals.com/professional/pediatrics/respiratory-disorders-in-young-children/bronchiolitis>
- <https://coreem.net/core/bronchiolitis/>

VIDEOS & PODCASTS

- <https://emergencymedicinescases.com/episode-59-bronchiolitis/>
- <https://www.pemcincinnati.com/podcasts/?p=334>
- <https://pemplaybook.org/podcast/bronchiolitis/>

ALGORITHMS

- https://trekk.ca/resources?utf8=%E2%9C%93&tag_id=D001988&external_resource_type=Quick_glance
- <https://www.chop.edu/clinical-pathway/bronchiolitis-emergent-evaluation-clinical-pathway>
- <https://www.aliem.com/pv-card-algorithm-acute-bronchiolitis-management/>
- <https://www.sickkids.ca/clinical-practice-guidelines/clinical-practice-guidelines/Export/CLINH18/Main%20Document.pdf>

BRONCHIOLITIS

LOWER RESPIRATORY TRACT INFECTION

Most often viral (Respiratory Syncytial Virus, Influenza, Rhinovirus, Human Metapneumovirus) causes obstruction of bronchioles due to mucus plugging and ventilation-perfusion mismatch. This illness is typically self-limiting, worse on day 3-4, treatment is supportive.

EPIDEMIOLOGY



Most common in children less than 2 years old



Outbreaks from winter to spring with peak in January-February



1.4 MILLION ED visits per year



150000 admissions per year



SIGNS AND SYMPTOMS

Fever and fussiness

Congestion

Decreased intake/output

Post tussive emesis

APNEA



Characteristic cough

Respiratory distress +
Increased respiratory rate

- nasal flaring
- retractions
- grunting

Lung exam :
crackles + wheezes

DO

- Suction promptly
- Provide Oxygen by facemask or
- High Flow Humidified Nasal Cannula
- Treat shock if present
- Give antipyretics
- Give PO/IV/NG fluids as indicated

DON'T ROUTINELY

- Order viral testing or CXR
- Treat with systemic corticosteroids
- Treat with bronchodilators
- Give oral or IV antibiotics unless concomitant bacterial infection or high suspicion of SBI
- Give O2 if work of breathing is stable and saturations >90%

RISK FACTORS FOR SEVERE DISEASE



Premature or age <12 weeks



Cardiac or pulmonary disease



Immune deficiency



Neuromuscular disease



CONSIDER ADMISSION

- O2 sat < 90%
- Increased work of breathing
- Poor perfusion
- High risk patients

Follow institutional treatment guide if available.

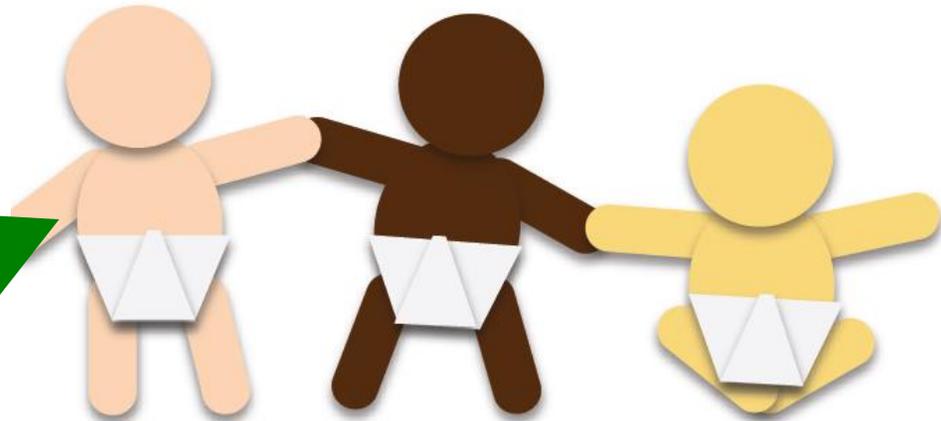
We want to hear how this went for you and thank you for your feedback.

Please go online and click on either PARTICIPANT or FACILITATOR survey: <https://www.acepsim.com/> OR

Use **QR code**: Take out your mobile device, open camera, get QR code in front of camera, a link should pop up, click on that link.



The ACEP TELE SimBox team acknowledges that these materials are not perfect. Please send us feedback on how we can improve. Thank you and - most importantly - happy telesimming!



Posted: May 2020

Authors: Vishal Naik, MD; Zobiya Momin, MD, Manu Madhok, MD, Marc Auerbach, MD, Maybelle Kou, MD, Elizabeth Sanseau, MD