

## Pediatric Scenario – H1N1 Respiratory Failure, 6 y/o Little Steve Can't Breathe

### Objectives:

1. Recognize respiratory failure
2. Recognize shock
3. Send appropriate lab work
4. Manage respiratory failure with shock

**Scenario:** 6 y/o male with 1 day of cough, sore throat, fever and “not feeling well.” Yesterday had a fever 101, and so did not attend school. He has had decreased appetite, and has not been interested in drinking fluids. This afternoon, his mother noted that he has been struggling to breath, “gasping for air”, and so she brought him to the emergency room.

Past medical history notable for UTI at 2 months of age, occasional wheezing and cough treated with albuterol prn.

Medications: ibuprofen, acetaminophen, multivitamin with iron, albuterol prn.

Review of symptoms: mother reports fever, runny nose, cough, difficulty breathing, vomiting post cough

### Physical exam:

T 39.2, P 135, BP 84/47, RR 48, SaO2 82%

Wt: 20 kg

**General appearance:** lethargic, cyanotic with significant respiratory distress

**Respiratory:** Airway is patent, marked nasal flare with intercostal retractions. Breath sounds are coarse with poor entry to the bases. Rales throughout.

**Cardiovascular:** Skin is cool and mottled. There is a 2/6 mid-systolic murmur at the upper sternal margins. The extremities are cool distally with rapid but faint pulses. Cap refill is 4 seconds.

**Neurologic:** The child is sleepy but opens eyes and moves extremities in response to verbal stimulus.

Time	Scenario Progression	Anticipated Actions
0 – 5 Minutes	Assessment	<ul style="list-style-type: none"><li>• Assess ABCs</li><li>• Provide 100% oxygen via NRB – Sats improve to 86%</li><li>• Place on monitor</li><li>• Establish IV access – prefer 2 large bore PIV</li><li>• NS bolus 20 cc/kg – should be administered over 5-10 minutes</li><li>• Order labs: CBC with Diff, Lytes, Glucose, ABG, Blood cultures, viral respiratory panel, CXR</li><li>• Consider antibiotics</li></ul>

<p>5 – 10 Minutes</p>	<p>Progressive respiratory failure</p> <p>Lab results: Blood glucose – 132 mg/dl ABG – 7.20/62/59/19.8/-4.9</p>	<ul style="list-style-type: none"> <li>• Recognize deterioration of respiratory status</li> <li>• Prepare for RSI <ul style="list-style-type: none"> <li>○ Gather appropriate equipment</li> <li>○ Select drugs</li> <li>○ Check equipment</li> </ul> </li> <li>• Intubate and confirm placement <ul style="list-style-type: none"> <li>○ Auscultate</li> <li>○ End tidal CO2</li> <li>○ CXR</li> </ul> </li> <li>• Evaluate response - Improved SaO2</li> <li>• Secure ETT</li> </ul>
<p>10 – 14 Minutes</p>	<p>Continued hypotension</p> <p>Patient's BP improves to low normal range after 3<sup>rd</sup> bolus.</p>	<ul style="list-style-type: none"> <li>• Recognize no improvement with initial NS bolus</li> <li>• Repeat NS bolus x 2 rounds</li> <li>• Consider catecholamine support – Dopamine 5 mcg/kg/min</li> </ul>
<p>15 Minutes</p>	<p>Stabilization and arrange transfer</p> <p>Additional lab results CBC: WBC 6.5 (79% PMN, 11% lymphs, 12% eos), Hct 31, Plts 259</p> <p>Lytes: Na 141, K 4.3, Cl 109, Bicarb 19, BUN 5, Cr .4</p>	<ul style="list-style-type: none"> <li>• Arrange for transport to PICU</li> <li>• Follow up pending labs</li> <li>• Oseltamivir if not yet ordered</li> </ul>