Pediatric Respiratory Distress/CHF/Pulmonary Edema

For congenital heart disease

History
- Congestive heart failure
- Past medical history
- Medications
- Cardiac history and surgeries

Signs and Symptoms
- Hypotension/shock
- Accessory muscle use
- Mottling
- Bilateral rales/crackles
- Anxiety
- Orthopnea
- Jugular vein distension
- Pink, frothy sputum
- Peripheral edema
- Diaphoresis
- Hypertensive
- Wheezing

Differential
- Congenital heart disease
- Myocarditis
- Myocardial infarction
- Congestive heart failure
- Asthma
- Anaphylaxis
- Aspiration
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pericardial tamponade
- Toxic exposure

Airway patent?
Ventilation adequate?
Oxygenation adequate?

Yes
Cardiac monitor
Consider, 12-Lead ECG
Establish IV/IO
Consider, EtCO₂ monitoring
Assess symptom severity

MILD
Cyanosis, accessory muscle use, < 2 word sentences, or decreased LOC
Apply Oxygen to maintain SpO₂ > 92% or known baseline
Improving?

No
Respiratory Arrest/Respiratory Failure
Notify receiving facility. Consider Base Hospital for medical direction

SEVERE
Consider, CPAP
Consider,
Albuterol or Albuterol MDI with spacer or Levalbuterol
Use length-based tape; refer to dosing guide For age dependent hypotension, Dopamine
Use length-based tape; refer to dosing guide
Respiratory Arrest/Respiratory Failure

CARDIOGENIC SHOCK
Hypotension/Poor perfusion

Pediatric Shock

Effective April 2023

Pediatric Respiratory Distress Treatment Protocols
Pearls

- For patients with a cardiac history, consult the Base Hospital prior to administering albuterol/levalbuterol. A cardiac child can present with non-pulmonary wheezing.
- For undifferentiated patients, a trial of albuterol/levalbuterol can be considered.
- Hypotension is age dependent. This is not always reliable and should be interpreted in context with the patient’s typical BP, if known. Shock may be present with a seemingly normal blood pressure initially. Hypotension is defined as:
  - Neonate: < 60mmHg or weak pulses
  - Infant: < 70mmHg or weak pulses
  - 1-10 years: < 70mmHg + (age in years x2)
  - Over 10 years: < 90mmHg
- Congenital heart disease varies by age:
  - < 1 month: Tetralogy of Fallot, transposition of the great arteries, and coarctation of the aorta
  - 2-6 months: Ventricular septal defects (VSD), atrioseptal defects (ASD)
  - Any age: Myocarditis, pericarditis, SVT, and heart blocks
- Treatment of congestive heart failure/pulmonary edema may vary depending on the underlying cause and may include the following with consultation of the Base Hospital:
  - Fentanyl
  - Nitroglycerin