National Pediatric Nighttime Curriculum
Summary of Interpretation of Chest X-rays

It is important to have a comprehensive approach to reading chest x-rays.

System to Evaluate Chest Radiographs: "Top to Bottom"

- Airway: Evaluate Trachea (is it centrally located) and thoracic inlet
- Lungs: Look at expansion, inspiratory effort (can you count @11 ribs), look for opacities, consolidation, fissures, fluids, air bronchograms, compare the right and left lung
- Heart and Large Vessels: Evaluate heart size, shape, location of vessels and prominence of vessels
- Diaphragm: Look at elevation bilaterally or free air
- Bones: Look for fractures, density of bone, deformities
- Upper Abdomen: Air in stomach, size of liver

Mnemonic to Evaluate Chest Radiographs: " ABCDEFGH"

A: Airway
B: Bone
C: Cardiac Silhouette
D: Diaphragm
E: Empty Space or Effusion
F: Fields (Lungs)
G: Gastric Bubble
H: Hilar area/Hardware

Interpretation of chest x-rays can aid in making a diagnosis.

- Pneumonia and its complications
  - Bacterial pneumonia – lobar consolidation
  - Viral pneumonia – likely bilateral, more diffuse, interstitial disease
  - Atypical pneumonia - interstitial disease, but the infiltrates may be more discrete and patchy
  - Pleural Effusion - appears as white density within lung field; a lateral decubitus film may also be done to assess the volume and if the fluid is mobile or loculated
  - Empyema - Appears as solid white consolidate that blunts the costophrenic angle
- Atelectasis - Volume loss with displacement of fissures; white out of lobe or lung
- Pneumothorax - occurs when there is air in the pleural space; on chest x-ray the lung is removed from borders of the pleural cavity particularly in the apex on a PA film

Things to Consider

- Pneumonia is a clinical diagnosis and chest x-rays should be used to aide in the diagnosis and to identify complications.
- When a pleural effusion is suspected, an ultrasound can help determine the location, quantity, and quality of the fluid.