1. Overview
   a. Chest x-ray interpretation is an important skill frequently needed in primary and acute care settings to treat pulmonary problems.
   b. Equally important to attaining competency in pattern recognition is understanding radiographic densities and developing a systematic approach to x-ray evaluation.

2. Goal of the learning module
   a. Identify bone, fluid and air density levels
   b. State the differences between AP, PA and lateral views.
   c. Demonstrate a systematic approach to chest x-ray evaluation
   d. Evaluate normal chest x-ray and identify corresponding anatomy
   e. Recognize common chest x-ray anomalies: CHF, pneumonia, pneumothorax

3. References:

4. Required Reading / Review
   - [Panopto on Chest X-ray by Dr. Patti Daly](#)
   - [How To Interpret Clinical Chest X-Ray In Under 5 Minutes](#)
   - [How to Read a Chest X-ray – A Step By Step Approach](#)

5. Required Procedure Competencies
   - Identify patient and technique:
     o R or L, PA, lateral, AP
     o penetration
     o prior images available.
   - Anatomy
     o Airway  Is trachea shifted? Follow to carina ET tube 2-5 cm from carina
     o Bone  Count 10 ribs? Clavicles aligned? Fractures? (lateral spinal fractures)
     o Cardiac Larger than ½ diameter and vessels
     o Diaphragm look under above (R higher due to liver) Stomach bubble on L
     o E Lungs are there lines, tubes? Where are markings

<table>
<thead>
<tr>
<th>Skill/Learning Demonstrated</th>
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<tbody>
<tr>
<td>1 Identify x-ray densities</td>
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<tr>
<td>2 Identify normal chest x-ray corresponding anatomy</td>
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<td>3 Differentiate abnormal x-rays: CHF, pneumonia, pneumothorax</td>
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