**Chest X-Ray Guide:**

Mnemonic: *PIPER N ABCDE*

|  |  |
| --- | --- |
| **P**atient Information | 1) Name and Demographics2) Clinical History3) Previous Imaging |
| **I**nspiration | Count the anterior ribs- Normally 6 anterior ribs above diaphragm, with 7th rib penetrating though diaphragm- >= 7 ribs above indicates hyperinflation |
| **P**enetration | Should just be able to outline thoracic vertebrae through cardiac shadow in a sufficiently penetrated X-Ray |
| **E**xposed Area | All 6 lung zones visible:1) Upper: apices to 2nd costal cartilage2) Middle: between 2nd and 4th costal cartilage3) Lower: between 4th and 6th costal cartilage |
| **R**otation | Medial ends of clavicles should be equidistant from midline spinous processes. |
| **N**G Tube Location | Tip should be visible in gas bubble of stomach if well-placed\* Also comment on presence of ETT |
| **A**irway | 1) Tracheal Deviation a) **Deviated Toward** (Collapse, fibrosis, tumors) b) **Deviated Away** (Effusion, pneumothorax, tumors)2) Tracheal Narrowing- uncommon; indicates malignancy |
| **B**reathing | 1) 6 Lung Zones (Normal, white, dark, too many lines)a) **White:** - Collapse (uniform opacity)- Effusion (uniform opacity)- Consolidation (localized patchy opacities w air bronchogram)- Pneumonectomyb) **Dark:** - COPD (hyperinflation, flat diaphragm, stretched heart)- Pneumothorax (radiolucent shrunken lung margins)c) **Too many lines**- Fibrotic lung (reticular nodular shadowing)\* Causes- idiopathic, allergic extrinsic alveolitis, drugs (methotrexate), connective tissue dx- Pulmonary edema (bilat. symmetrical opacity, cardiomegaly, pleural effusion)2) Hilar- Pulmonary vessels and lymph nodes (L higher than R)\* Bilateral hilar lymphadenopathy ddx: Sarcoidosis, Tuberculosis, Lymphoma |
| **C**irculation | 1) Note heart silhouette (aortic knuckle and L/R heart borders)- Swelling at borders indicate aortic/ventricular aneurysm- Loss of borders indicate adjacent lung lobe pathology2) Heart size- Heart/Thorax sixe > 0.5 indicates cardiomegaly (PA X-Ray optimal) |
| **D**iaphragm | 1) R higher than L2) Look for tenting (phrenic nerve palsy, fibrosis)3) White plaques (asbestosis)4) Costophrenic angle blunting (small pleural effusions)5) Gas bubbles/ free air beneath diaphragm  |
| **E**verything Else | 1) Soft tissues (swelling, surgical emphysema, breast shadows)2) Bones (#/ dislocation- clavicles, scapula, humerus, ribs)3) Medical implants (pacemakers, central lines) |