Acute onset with fever, and purulent sputum and right thoracic pain.
Middle lobe pneumonia. Notice the superior edger of the opacity which is very well limited by the small fissura: Acute middle lobe pneumonia. Probable pneumococcic infection
Man, fever, purulent sputum chills, and right thoracic pain. Acute context. Crepitants rales localised in the posterior right part of the thorax.
Case N°2

CXR: alveolar syndrome of the inferior lobe. Silhouette sign with the posterior part of the right diaphragm on the lateral view. **Acute right inferior lobe pneumonia**
Man, acute fever with chills and purulent sputum. Right anterior thoracic pain

Middle lobe acute pneumonia (positive silhouette sign with cardiac edge). Improvement with amoxicillin treatment
Man, no past history of lung disease, fever and right thoracic paint with acute onset

CXR: right inferior pneumonia. Notice that right cardiac edge is visible (negative silhouette sign): the opacity is posterior in the right inferior lobe. Probable acute pneumococcal pneumonia.
Man, 22 years old, worsening condition increasing progressively for 3 months, cough and left hip joint paint
Case N°5

Right upper lobe pneumonia with retraction (ascension of the small fissura.)
Possible right hilar adenopathy. Infiltrate in the middle of the left lobe with cavitation. AFB positive in sputum: TB pneumonia. The association of a pneumonia with retractile sign and contro lateral infiltrate is very indicative of TB
Scan view of the previous case: pneumonia on the right side with bronchogram, and nodular and alveolar pictures on the left side.
Bone CXR of the previous case. Left hip joint destruction by TB
Dyspnea and cough. Worsening condition for 2 months,
No indication about sputum or HIV status.
Case N°6

The technical conditions are not good: too high penetration and not deep inspiration. On the right side: alveolar opacity which is systematised (contact with small fissura) and with aeric bronchogram: right superior lobe pneumonia. Beginning of retraction: the small fissura is ascended.

On the left side: pleural effusion and alveolar picture which is probably anterior (positive silhouette sign with the heart): pneumonia of the inferior part of the superior lobe. Association of bilateral pneumonia with retraction sign on the right side (which suggests a sub acute or chronic evolution) and left pleuresy is indicative of TB. HIV context? An other possible diagnosis is carcinomatous lymphangitis wth perihilar ditribution associated with malignant pleurisy. Bacterial context (sputum), HIV status, and perhaps bronchoscopy with bronchial biopsies will be nessecary for diagnosis.
Fever and cough for few weeks, worsening condition.
No information about sputum analysis
Alveolar opacity of the left lung, not well limited, with aeric bronchogram. Positive silhouette sign with the left edge of the heart: the opacity is anterior, in the left superior lobe. Possible cavity in the superior part of the alveolar opacity. TB pneumonia? Bacterial pneumonia is also possible but clinical context suggests a chronic or subacute evolution. Notice silhouette sign with aortic arch suggesting adenopathies. This a strong argument for TB.
Man, 30 years old, HIV+, asthenia and dyspnea. Worsening condition. No sputum available, because of extreme weakness.
Bilateral alveolar opacities: non homogenous, not well limited. Aeric bronchogramm. Notice the enlargement of superior mediastinum (red arrow) which suggests right latero tracheal adenopathies. The association of bilateral pneumonia with mediastinal adenopathies is indicative of TB in HIV context.
quick onset: high fever, acute thoracic paint, cough and sputum

Courtesy Dr van den Homberg- Tanzania
Typical alveolar opacity of the left inferior lobe:
Not homogenous, not well limited, with aeric bronchogram: it is an alveolar opacity. This opacity is posterior because negative silhouette sign with cardiac edge which is well visible.
Final diagnosis is right inferior lobe pneumonia. This Chest X ray strongly suggests acute pneumoccocic lobar pneumonia.
quick onset: high fever, left acute thoracic paint, cough and sputum

Typical alveolar opacity of the left inferior lobe:
Not homogenous, not well limited, with aeric bronchogram: it is an alveolar opacity. This opacity is posterior because negative silhouette sign with cardiac edge which is well visible.
Final diagnosis is left inferior lobe pneumonia. This Chest X ray in this clinical context strongly suggests acute pneumoccocic lobar pneumonia.
Man Hiv positive, worsening condition and non productive cough. AFB negative. No improvement after amoxicillin treatment
Middle lobe pneumonia (silhouette sign with heart right edge) + probable right hilar adenopathy, + right superior lobe infiltrate+ left inferior lobe alveolar process or infiltrate + hiv context = very probable TB
Case N°10

Magnified view of the right hilus: typical hilar adenopathy (overlap sign of the hilus). Association with pneumonic process in HIV context is highly suggestive of TB.
5 years old child, cough and dyspnea

It is a child chest X ray, antero posterior incidence. Not strict front view (assymetry of the clavicles).
Bilateral assymetric alveolar opacity, not well limited, non homogenous with aeric bronchogram. On the right side, the opacity is systematised, because limited by the small fissura (yellow arrow).
2 main diagnosis:
- bacterial (or viral ) bilateral pneumonia
- TB pneumonia, especially if contact with adult AFB+ in household (parents or caregivers) or in the community

Courtesy Dr van den Homberg- Tanzania
Fever, cough and hemoptoïc sputum for few weeks. Worsening condition and weigh loss.
1° Opacity of the right superior lobe. This opacity is alveolar: non homogenous, not well limited and systematised: the inferior edge is limited by the small fissura (yellow arrows). This opacity is also escavated.

2° on the left side, alveolar picture or infiltrate in the retroclavicular area. The bilateralility and the aspect of the lesions are indicative of TB. AFB in sputum should be positive and confirm the diagnosis because of the excavation in which bacilli are very numerous and in communication with airways.
Man 80 years old. Weight loss and asthenia, no sputum available.
No improvement with ceftriaxone treatment.

Bilateral non homogeneous alveolar opacities. Probable cavities in the left superior lobe. AFB positive in bronchial aspiration after bronchial endoscopy: **TB pneumonia**
Woman, 23 years old, coming from Mali. Cough and fever for few weeks. No improvement with amoxicillin.

CXR: right upper lobe pneumonia. Few AFB in sputum: **Tb pneumonia**
Case N°14

TDM view of the previous case
Fever and right thoracic paint. Quick onset with chills.

Chest X ray: alveolar syndroma of the right superior lobe, well systematised (above and in contact with the small fissura,( visible on the lateral view.)

The diagnosis is **acute lobar pneumonia**, probably in relation with pneumococcic infection
Man, cough, fever, weight loss for 3 months. No improvement with ceftriaxone.

Case N°16

Right hilar pneumonia and contralateral alveolar process (pulmonary localisation.) Possible right hilar enlargement: adenopathy? AFB positive = TB (cavity in the right upper lobe pneumonia)
Man 70 years old, chronic chonic exercise dyspnea, and past history of HTA. Acute and severe dyspnea, with non purulent sputum. Auscultation: crepitant bilateral rales.
Case N°17

Chest X ray: cardiomegaly (but chest X ray in supine position, be careful with false cardiomegaly). Alveolar and asymmetric alveolar opacities, with perihilar predominance. **Acute cardiogenic pulmonary oedema.** (Take notice that the alveolar pictures can be asymmetric in cardiogenic pulmonary oedema)
Case N°18

HIV context, with cutaneous more or less violet diffused lesions suggesting Kaposi illness.

Chest X ray: bilateral alvolar opacities in both lower zones. Probable pulmonary Kaposi pulmonary illness.
HIV context, with cutaneous less violet diffused lesions, suggesting Kaposi illness.
courtesy of Pr Diefenthal, Killimanjaro school of radiology. Tanzania)
Case N°19

Chest X-ray: technically not perfect (too high penetration, peripheric vessels not visible in the lung areas). Alveolar not well limited picture in the right inferior and middle lobe. Possible right hilar adenopathy. In this clinical context probable **pulmonary Kaposi pulmonary illness**.
Woman, 26 years old, left thoracic pain with fever and chills on productive cough. Quick onset of the symptoms. No past history of lung disease.
Chest X ray: technically perfect. Left alvolar opacity which erase cardiac silhouette on the left inferior arch, positive silhouette sign: the opacity is anterior, in the inferior part of the superior lobe (lingula segment). Clinical and radiological signs strongly suggests **acute infectious pneumonia**. Quick improvement with 3 g/ day of amoxicillin...
Man, worsening condition, weight loss, and dyspnea. No sputum available in this patient too tired to produce efficient cough for sputum production. HIV positive.
Case N°20

Chest X-ray: alveolar pictures in the left upper lobe and in the right perihilar area. Enlargement of the right hilus and of the superior mediastinum, suggesting adenopathies. The association of alveolar pictures with adenopathies in HIV context strongly suggests tuberculosis.

In fact, a lot of AFB will be found in bronchial aspiration by bronchial fibroscopy in this patient. This case is typical of patient with severe TB who are so tired that they are not able to produce sputum available for AFB research. Always inquire of the clinical context if there is a contradiction between a chest X-ray highly suggestive of TB and a negative AFB result in sputum (salivary sputum, or no sputum at all)
Man, HIV+, severe dyspnea, increasing progressively for 2 weeks. Nearly normal auscultation, SaO₂ 86%.

Case N°21

Chest Xray: **diffused interstitial and alveolar picture in HIV context.** The most probable diagnosis is **pneumocystosis.** Cotrimoxazole and corticosteroid treatment must be prescribed without delay, with oxygenotherapy.
Man, thirty years old, HIV positive, cough and fever for more than one month, worsening condition with dyspnea. No sputum available. No improvement with amoxicillin.
Case N°22

Chest X ray: alveolar opacity of the left upper lobe, with left hilar enlargement and filling of the aorto pulmonary space = probable adenopathies. On the right side, alveolar opacity of the middle lobe and probable adenopathies of the right latero tracheal area and left aorto pulmonary space (yellow and red arrows).

HIV context + subacute context + bilateral pneumonia + mediastinum adenopathies = probable TB even if AFB is negative.
HIV context. Fever cough and purulent sputum, with acute onset. Improvement with amoxicillin.
Case N°23

Chest X ray: bifocal pneumonia: right inferior lobe (with probable partial atelectasis) and left sup. lobe.
Quick improvement with amoxicillin. Probable pneumococcal infection.
Bifocal bacterial non TB infection are not rare in case of PLHIV.
If subacute context and no improvement with antibiotic (amoxicillin or ceftriaxone), one should consider diagnostic of TB pneumonia (see slide n°24) particularly if mediastinum enlargement is associated (which is not present on this slide), suggesting adenopathies.
Woman, 26 years old, high fever, cough and left thoracic pain with quick onset. No past history of lung disease.
Case N°24

Chest X ray: slight opacity of the left inferior part of the lung, probably posterior (negative silhouette sign with cardiac edge), not well limited. **Inferior lobar pneumonia**. Improvement with amoxicillin.

The lateral view confirm the diagnosis of left inferior lobe pneumonia. Notice the silhouette sign with left diaphragm, which has disappeared. Right diaphragm is only visible.
Man, 34 years old, HIV positive, cough, fever and worsening condition.
Chest X ray: alveolar pneumonia of the right superior lobe with beginning of retraction and disseminated nodules in the left lung, upper lung predominant. Typical aspect of **tuberculous lobar pneumonia associated with controlateral infiltrate**. AFB positive in sputum.
35 ans HIV positive AFB+ in sputum
Typical aspect of TB with VIH +: association of right pneumonia, with enlargement of latero tracheal nodes: TB adenopathies. AFB positive.
Woman, HIV positive, worsening condition and severe dyspnea
no sputum available CD4< 100, *

Case N°27

Courtesy Dr Peo Setha Cambodia
Case N°27

Chest X ray: (not technically correct: too light penetration, no detail visible through the cardiac silhouette) Diffuse alveolar opacity with a basal predominance, possible enlargement of mediastinum, suggesting adenopathies. TB in AIDS context? The diagnosis of pneumocystosis could be also considered. If AFB negative, bronchoscopy and broncho alveolar lavage should be required for diagnosis.
Case N°28

Woman, HIV positive, worsening condition, no sputum available. CD4< 100.

**AFB positive at the bronchial aspiration**
Chest X ray, alveolar diffused opacities, upper lobes predominant. Notice the beginning of retraction of the diaphragm and hili, suggesting a subacute process. **Tuberculous bilateral severe Pneumonia**
Woman, context of HIV positive, worsening condition and probable severe immunosuppression. Cough and fever.
*AFB positive in sputum: TB*

Chest X ray: alveolar opacity of the inferior part of the right lung (middle and inferior lobe and also probably part of the superior lobe, associated with bilateral nodules. No cavity, as usual in case of immunopdepression.

In an other clinical context (tobacco use, no infectious context), this picture could also suggests right tumor mass with diffuse metatastatic micronodules.
HIV context with severe dyspnea, non productive cough and worsening condition.

No sputum available because too weak patient for producing efficient sputum.

No improvement after amoxicillin treatment.
Chest X ray: bilateral alveolar picture with systematised picture in the external part of the middle lobe. Enlargement of the middle mediastinum suggesting adenopathies. Notice the disappearance of the aortic arch suggesting positive silhouette sign with adenopathies… In this context **Tuberculosis is highly probable**: association of alveolar picture with adenopathies in HIV context.

AFB is negative because the patient is no able to produce sputum. The diagnosis could be probably confirmed by gastric lavage or bronchial aspiration.
Acute dyspnea non purulent sputum and no fever. Auscultation: bilateral crepitant rales.

Chest X ray: antero- posterior incidence. Bilateral alveolar pictures (notice he areric bronchogram on the left side). Clinical and radiological findings strongly suggest pulmonary cardiogenic oedema, even if the alveolar pictures are not symmetric.
Woman 22 years old. Acute respiratory failure just after abdominal surgery (gastric bypass).

Chest x ray: alveolar syndrome in the inferior lobe.
Final diagnosis: **inhalation pneumonia**.
Case N°32

Scan view of the previous case
Man, 66 years old. Admission for acute dyspnea. No fever, no cough.
Past history of arterial hypertension.
The patient has stopped treatment for 2 years. Bilateral crepitant rales
Case N°33

Chest X ray: bilateral alveolar syndrome with enlargement of cardiac silhouette (but chest x ray in supine position, not perfect quality, and emphasizing enlargement of mediastinum).
Cardiogenic acute pulmonary oedema. Quick improvement with diuretic and anti arterial hypertension treatment
17 years old boy, cough and worsening condition.

Numerous AFB in sputum. HIV negative.

CXR: TB excavated pneumonia of the left upper lobe. Notice Tb controlateral infiltrate in the right upper lobe. The association of 2 lesions of different seniority, is very typical of TB.
Man 46 years old, cough and exercise dyspnea, tachycardia, and past history of anterior thoracic pain. ECG: myocardial ischemic signs. Auscultation: crepitant rales.

CXR: cardiomegaly with left ventricle enlargement. Encysted pleural effusion in the minor fissura. Enlargement of pulmonary arteries and alveolar diffuse pictures, with perihilar predominance: 

**Acute left cardiac failure, with alveolar oedema, in cardiac ischemic context.**
Same patient after treatment: diuretic TNT and CEI. Notice the cardiac and left ventricle enlargement and the 2 right scissura well visible on the lateral view.
Case N°36

Woman, 30 years old, fever, weight loss and cough. Antibiotic treatment with amoxicillin, then macrolid. No improvement.
Chest X ray: alveolar consolidation of the right inferior lobe
Previous patient. Hospitalisation for hemoptysis, 6 weeks later. AFB positive+++.

Chest X ray: **TB excavated pneumonia**. Notice the small associated infiltrate above the excavated pneumonia AFB positive in sputum.
Man, 40 years old, fever and chills, cough and left thoracic pain, acute context.

CXR: disappearance of the left diaphragm on the front view with blure of the inferior left cardiac edge: positive silhouette sign with left diaphragm and heart.

In this clinical context: probable infectious pneumonia of the left inferior lobe.
Case N°38

Heavy smoker. Fever cough and hemoptisy with acute onset

CXR suggesting acute pneumonia of the right upper lobe.
Previous case after antibiotic treatment
Bronchoscopy of the previous case: Bronchial cancer of the upper right bronchus with initial presentation by pneumonia. Carefull with infectious pneumonia in case of patient with past history of smoking.;It can reveal cancer
Woman, 18 years old, cough chills and asthenia. No improvement with amoxicillin.

Probable TB with right inferior lobe pneumonia and associated pleural effusion. Notice bulky hilar associated adenopathies. Notice the bad quality of the CXR: blurred outlines due to bad skills in film X ray processing (to long time exposure?)
Woman, heavy smoker, cough and weight loss. Right thoracic pain. No improvement after several antibiotic treatment. AFB negative in sputum.

Bronchial carcinoma, bronchiolo alveolar type. Sometimes bronchial cancer radiological presentation can be alveolar syndrome, especially in bronchiolo-alveolar type.
Case N°40

Scan view of the previous case
Woman, 55 years old, smoker since 20 years old. Progressive dyspnea since 2 months with hypoxemia, needing high flow oxygenotherapy. AFB negative no fever, no improvement with antibiotherapy.

Case N°41

Chest Xray: bilateral alveolar opacities, no retraction, no cavities. It could be TB, but repeated AFB negative (usually positive in TB pneumonia) or acute infectious disease, but no improvement with 2 antibiotic treatment (amoxicillin then macrolide). Bronchial biopsies by endoscopy: **bronchial cancer** (bronchiolo alveolar type)
TDM view of the previous case