59 yr female

- Arrived from Pakistan in 2015 to stay with family, grandchildren
- Diabetic on pills. Hemoglobin A1C 11%
- April 2016 diagnosed with pneumonia
- Primary physician gives Rocephin shots
- After one week, coughed up bloody sputum, sent to Emergency Room
May 2016 Emergency Room

• Checked for pulmonary embolism
• CT scan “cavitary mass RUL”
• Airborne Isolation
• Diagnosed with smear positive, pulmonary TB quickly
May 2016 CT scan
TB treatment started May 19, 2016

- Drug-susceptible
- Improved steadily
- July sputum AFB culture negative
9 year grandson

- Born in Michigan
- Healthy
- June 1, 2016 PPD 0 mm induration
- August 30 PPD 24 mm induration, blistered
- No fevers, cough, weight loss
9 year grandson

- Physical exam normal
- Sputum AFB negative
- Sputum TB PCR negative
- Started on Isoniazid, rifampin, pyrazinamide for active primary TB. Based on grandmother’s susceptibility results
- Kept out of school one week as a precaution
Case 2
27 year female

- Born USA, healthy
- Worked Peace Corps in Malawi for two years, as healthcare advisor
- No medical problems in Malawi
- Returned to USA May 2016
- Exit examination for Peace Corps: PPD 8 mm induration (interpreted as negative)
July 2016

- Spontaneous redness and pain L eye
- No injury
- No contact lens
- Ophthalmologist diagnosed uveitis
- Referred to University of Michigan Eye Clinic
- Corticosteroid eye drops prescribed
- Quantiferon Gold *positive*
- Negative tests for lupus, sarcoidosis, syphilis
July 2016

- Chest X-ray normal.
- Examination shows residual erythema L eye, normal vision. Normal extra-ocular movement.
- No lymph node enlargement
- HIV negative
- Sent to Infectious Disease clinic for opinion
- What do you think?
MALAWI population 17 million

- TB incidence 288 cases per 100,000 population
- 54% of TB cases are HIV+
- MDR-TB rate 0.4% of new TB cases
Diagnosis?

- Latent TB, with autoimmune uveitis
- Active TB of eye
- Other
## LTBI vs. TB Disease

<table>
<thead>
<tr>
<th>Latent TB Infection (LTBI)</th>
<th>TB Disease (in the lungs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inactive</strong>, contained tubercle bacilli in the body</td>
<td><strong>Active</strong>, multiplying tubercle bacilli in the body</td>
</tr>
<tr>
<td>TST or blood test results usually positive</td>
<td>TST or blood test results usually positive</td>
</tr>
<tr>
<td>Chest x-ray usually <strong>normal</strong></td>
<td>Chest x-ray usually <strong>abnormal</strong></td>
</tr>
<tr>
<td>Sputum smears and cultures negative</td>
<td>Sputum smears and cultures may be <strong>positive</strong></td>
</tr>
<tr>
<td>No symptoms</td>
<td><strong>Symptoms</strong> such as cough, fever, weight loss</td>
</tr>
<tr>
<td>Not infectious</td>
<td><strong>Often infectious</strong> before treatment</td>
</tr>
<tr>
<td>Not a case of TB</td>
<td><strong>A case</strong> of TB</td>
</tr>
</tbody>
</table>
Treatment?

- Latent TB regimen:
  - INH x 9 months
  - INH & rifapentine weekly x 12 doses
  - Rifampin x 4 months

- Active TB regimen:
  - INH & rifampin & pyrazinamide & ethambutol
Answer

• TB of eye

• PPD of 8 mm should have been interpreted as *positive*, due to recent exposure in Malawi

• Not contagious, localized to eye

• Treat with full TB regimen for 6 months, using directly-observed-therapy (DOT)