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During 2013, 73 cases of TB disease were reported in Oregon. The three counties with the most cases were Multnomah (31), Marion (15) and Washington (8). Overall, 14 counties reported at least one TB case in 2013.
Historically, TB disease rates are higher among men than women. Reasons for this may include differences in access to care, underlying susceptibility to TB or distribution of TB risk factors, such as homelessness and substance abuse.

In 2013, 52% of Oregon TB cases were men (n=38, 1.96 cases/100,000 men). Women made up 48% of cases (n=35, 1.77 cases/100,000 women).

In 2013, most TB disease cases were in adults age 25 or older. Cases were split nearly evenly between those aged 25–44 (n=19), 45–64 (n=20) and older than 65 (n=20).

The mean case age was 46 years (range: 6 months to 94 years) and median case age was also 46 years.

There were five cases of pediatric TB disease reported in 2013: one in a foreign-born child and four in U.S.-born children (all four from one family).
In Oregon, the number of U.S.-born cases generally has dropped over time. Since 2008, the percentage of TB cases among foreign-born persons has ranged from 64% to 77%. In 2013, 53 cases (73%) were among foreign-born persons. In 2013, 73% of Oregon’s TB cases were among foreign-born persons.
In 2013, 73% of Oregon’s TB disease cases were reported as foreign born (n=53).

- 47% (25) of foreign-born cases were from Asia. Cases born in Asia included seven from the Philippines, five from Vietnam, two each from China, India, South Korea, Laos and Myanmar, and one each from Indonesia, Nepal and Thailand.

- Cases included 12 from Mexico, and one each from Cuba, Guatemala, Haiti, Honduras and Peru.

- Six cases were from Africa (11%). Cases born in Africa came from Ethiopia (4), Angola (1) and Somalia (1).

- One case was from the Pacific Islands (Micronesia).

### Tuberculosis by region of birth

**Chart 7.** Percentage of foreign-born cases by region of birth, Oregon 2012

<table>
<thead>
<tr>
<th>Region</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>25</td>
</tr>
<tr>
<td>Latin America/Caribbean</td>
<td>17</td>
</tr>
<tr>
<td>Africa</td>
<td>6</td>
</tr>
<tr>
<td>Europe</td>
<td>4</td>
</tr>
<tr>
<td>Pacific Islands</td>
<td>1</td>
</tr>
</tbody>
</table>

In 2013, 53 (73%) of Oregon’s 73 TB disease cases had TB in a respiratory site only (any combination of pulmonary, pleural or laryngeal disease). Another six cases (8%) had both respiratory and nonrespiratory sites of disease. There were eight lymphatic cases (11%) and six cases with TB in other sites.

Among the 59 cases with any type of respiratory involvement, 24 were sputum-smear positive. Sputum-smear positivity and cavitation on a chest X-ray are strong indicators of infectiousness; eight cases had chest X-rays read as cavitary.

### Risk factors and tuberculosis disease

**Chart 8.** Reported major site of disease, Oregon 2013

- Respiratory only: 53 cases
- Respiratory and non-resp. site: 6 cases
- Lymphatic: 8 cases
- Skin: 2 cases
- Bone/joint: 1 case
- Genitourinary: 1 case
- Peritoneal: 1 case
- Ocular: 1 case
Isoniazid (INH) drug resistance levels in Oregon TB disease cases have ranged from 4% to 12% over time. In 2013, 3.6% of cases with susceptibility results were resistant to INH (2 of 55 cases with drug susceptibility testing results*). The U.S. average is higher, at 9.2% (2013 data**).

Since 1993, only 18 cases of multi-drug resistant TB disease (MDR TB, or TB that is resistant to at least both INH and rifampin) have been reported in Oregon. 16 (89%) of the MDR cases were among foreign-born persons. The MDR TB rate in the U.S. was 1.3% in 2013**, similar to Oregon’s rate. One MDR case was reported in Oregon in 2013 (1.8%).

In 2013, the most common risk factor among Oregon’s TB disease cases remained foreign-born status, found in 73% of all cases (53). Eight cases reported diabetes as a medical risk factor (11%). Five cases had a previous diagnosis of TB, and five reported non-IV drug use in the year prior to diagnosis (7%). Four were health care workers and two were migrant workers. Three reported excess alcohol use in the year prior to diagnosis and two reported homelessness. Two were diagnosed in a long-term care facility and two were diagnosed in a correctional facility. One case had HIV as medical risk factor and one reported IV drug use in the year prior to diagnosis. Risks are not mutually exclusive; cases can have multiple risks listed.
In 2011, 89% of eligible cases completed treatment within one year (57 of 64 cases). In 2012, 96% of eligible cases completed treatment within one year.

Patients who died before starting or during treatment, and patients who moved out of the country were excluded from the calculation. Patients with resistance to rifampin, meningeal TB (regardless of age), TB in bone or the skeletal system, TB in the central nervous system and children under the age of 15 with disseminated TB (defined as miliary and/or positive blood culture), were also excluded due to expected longer duration of treatment.

HIV status was known for 64 of the 73 (88%) TB disease cases reported in Oregon in 2013. One case (1.6%) was HIV positive, which is below the national rate for TB/HIV coinfection (7% in 2013*).

Two cases refused testing, six cases were not offered tests (including four pediatric cases) and one case was lost to follow-up before being located and has a test status of unknown.

V...
Directly observed therapy, or DOT, is the standard of care in Oregon for treatment of TB. The use of DOT for treatment of TB disease has generally increased since 1993, rising from 16% to 89% in 2011. In 2012, there were fewer overall cases and the percentage of cases on DOT decreased.

In 2012, 80% (48) of all cases starting therapy (60) received full DOT, and another 15% (9) received a combination of both DOT and self-administered therapy. Three cases (5%) were on self-administered therapy alone.
Technical notes:

The data presented in this report come from Oregon’s Tuberculosis Information Management System (TIMS, data through 2008) and the Oregon Public Health Epi User System (Orpheus, data collected starting in 2009). Data are as of October 2013.

Percentages may not sum to 100 due to rounding.

Age is calculated based on date case is reported to the local health department.

Surveillance case definition for Oregon:

1. Laboratory case definition
   a. Isolation of *M. tuberculosis* complex from a culture of a clinical specimen, using an FDA-approved test
   or
   b. Demonstration of *M. tuberculosis* from a clinical specimen using FDA-approved nucleic acid amplification test (NAAT). (A positive test means that the probe detected ribosomal RNA of the *M. tuberculosis* complex in the clinical specimen.)
      i. Gen-Probe MTD (Mycobacterium Direct Test) of respiratory specimen
      ii. Amplicor Mycobacterium Tuberculosis Test of respiratory specimen

2. Clinical case definition*
   a. Full diagnostic evaluation
      i. Tuberculin skin test (TST) or interferon gamma release assay (IGRA) test
      ii. Chest X-ray/imaging
      iii. Clinical specimens for culture/NAAT
      iv. Risk factor evaluation: host factors (e.g., documented immunosuppression) and environmental factors (e.g., contact to an active case, born in a country with endemic TB, travel to endemic country)

   and

   b. Lab test indicative of infection
      i. Positive TST and/or
      ii. Positive IGRA or
      iii. Negative TST or IGRA with reason for not positive (immunosuppression)

   and

   c. Signs or symptoms compatible with TB disease

   and

   d. Improvement of signs or symptoms after treatment with two or more anti-TB drugs

* Factors including pretest risk, other potential diagnoses, opportunity to improve on TB treatment and site of disease (pulmonary vs. extrapulmonary) may also considered in the decision to count a clinical case.