

ANNUAL TUBERCULOSIS REPORT

OREGON 2014

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Health
Authority
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TB Program

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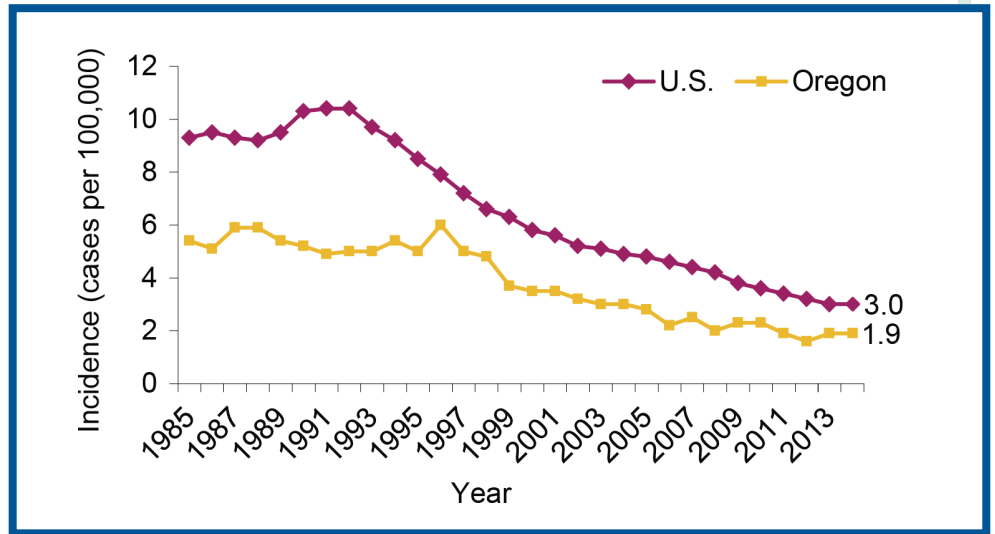
Tuberculosis incidence

Rates of tuberculosis (TB) disease have been dropping in Oregon and the United States.

Oregon's TB disease rate is lower than the U.S. rate. National rates continued at a low of 3.0 cases per 100,000 persons in 2014. Oregon's TB disease rate in 2014 was 1.9 cases per 100,000.

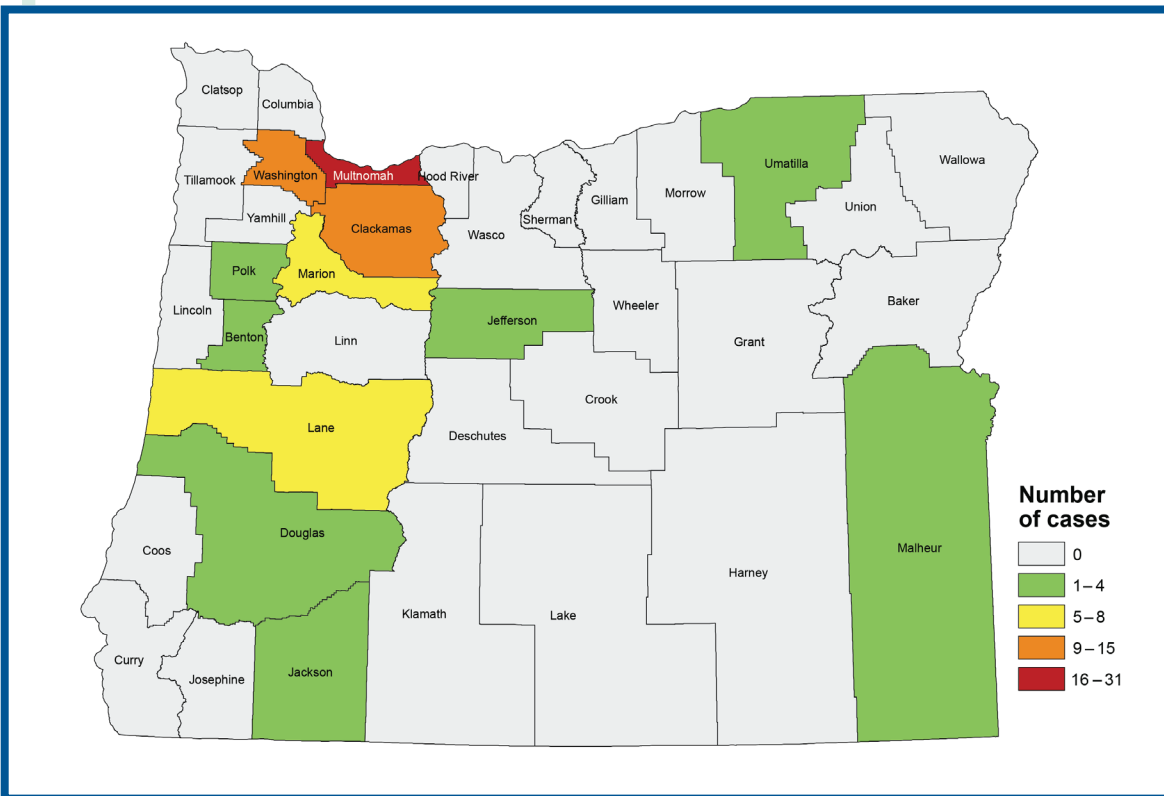
There were 77 TB disease cases in Oregon in 2014, compared to 73 cases in 2013, and 61 cases in 2012 (our lowest total to date).

Chart 1. TB incidence in the U.S. and Oregon, 1985–2014



Tuberculosis cases by county

Chart 2. TB cases by county, Oregon 2014



Most cases of TB disease in 2014 were in Multnomah, Washington and Clackamas counties.

During 2014, 77 cases of TB disease were reported in Oregon. The three counties with the most cases were Multnomah (27), Washington (17), and Clackamas (11). Overall, only 12 counties reported at least one TB case in 2014.

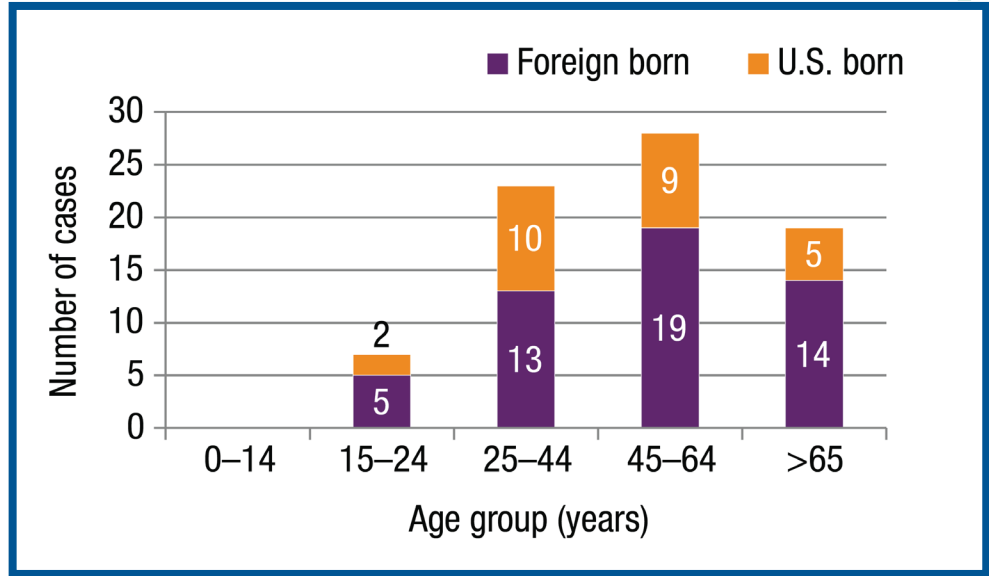
Tuberculosis by age group

In 2014, most TB disease cases were in adults age 25 or older. The largest number of cases was seen in those aged 45–64 years (28). The highest percentage of U.S.-born cases occurred in the 25–44 year old age group (U.S.-born, 43%).

The mean case age was 51 years (range: 17 to 94 years) and median case age was 49 years.

There were no pediatric cases (less than 15 years of age) reported in 2014.

Chart 3. Number of TB cases by age group and foreign born, Oregon 2014

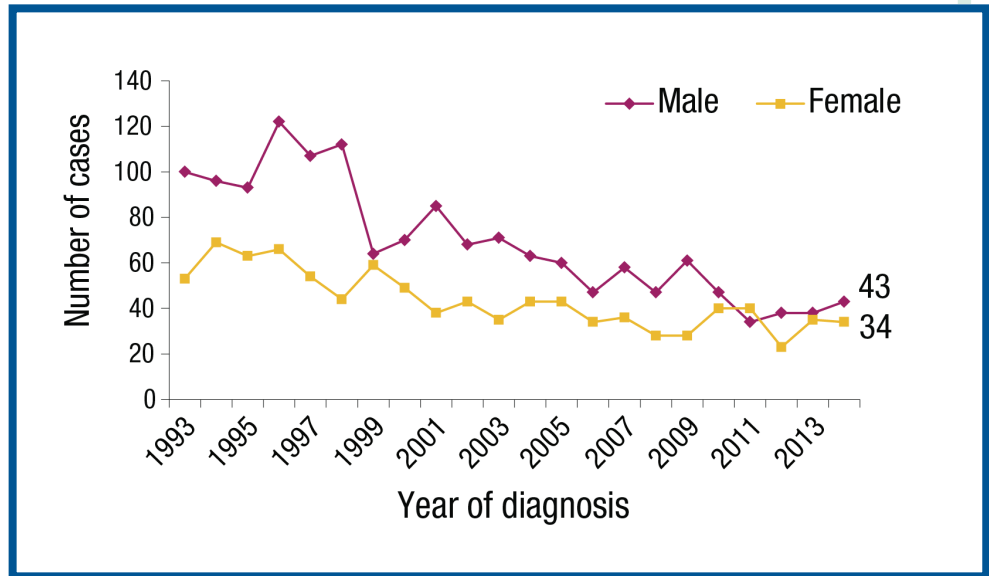


Tuberculosis by sex

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 2014, 56% of Oregon TB cases were in men (n=43, 2.2 cases/100,000 men). Women made up 44% of cases (n=34, 1.7 cases/100,000 women).

Chart 4. Number of TB cases by sex, Oregon 1993–2014



Men usually have higher TB disease rates than women.

Population estimates from Portland State University's Population Research Center:
www.pdx.edu/prc/population-reports-estimates

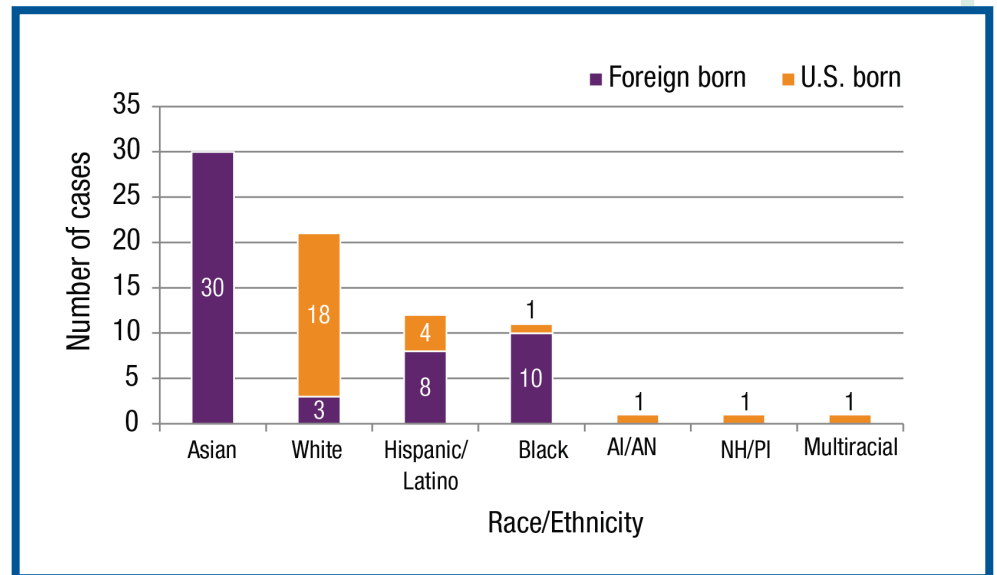
Tuberculosis by race/ethnicity

During 2014, 30 cases (39%) of TB disease occurred among people identifying as Asian. 21 cases were reported among nonHispanic whites (27%), and 11 cases identified as nonHispanic black (14%).

One case identified as American Indian/Alaska Native (AI/AN). One case identified as Pacific Islander (NH/PI=Native Hawaiian/Pacific Islander). One case identified as multiracial (AI/AN and white).

Hispanic or Latino ethnicity was reported for 12 cases (16%), regardless of race.

Chart 5. Number of TB cases by race/ethnicity, Oregon 2014



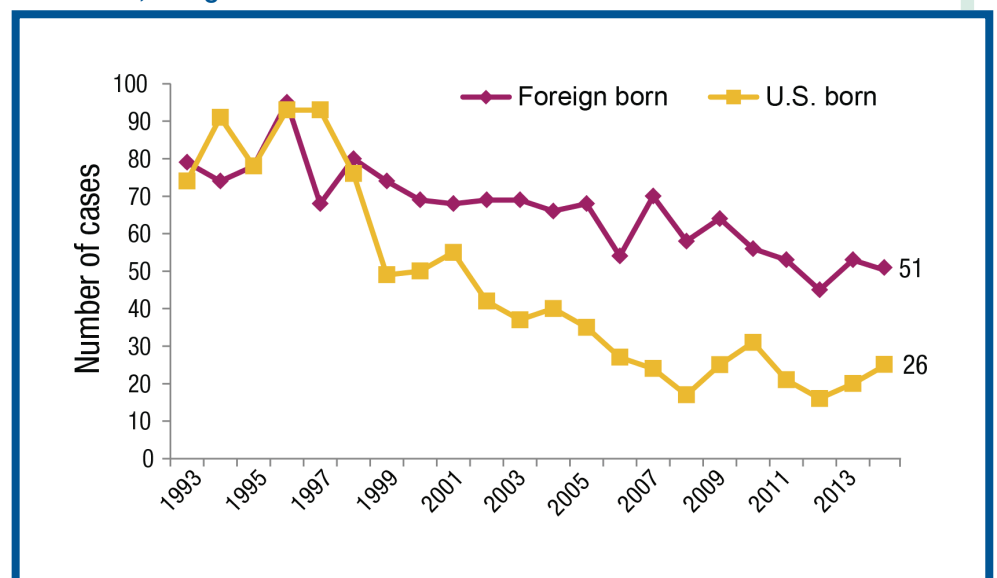
The percentage of foreign-born cases varied by race/ethnicity. Most nonHispanic white, AI/AN, and NH/PI cases were born in the United States. Most, but not all, of the remaining cases in other race/ethnicity groupings were born outside of the United States.

TB cases by place of origin

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 2014, 51 cases (66%) were among foreign-born persons.

Chart 6. Number of TB cases in foreign-born and U.S.-born residents, Oregon 1993–2014



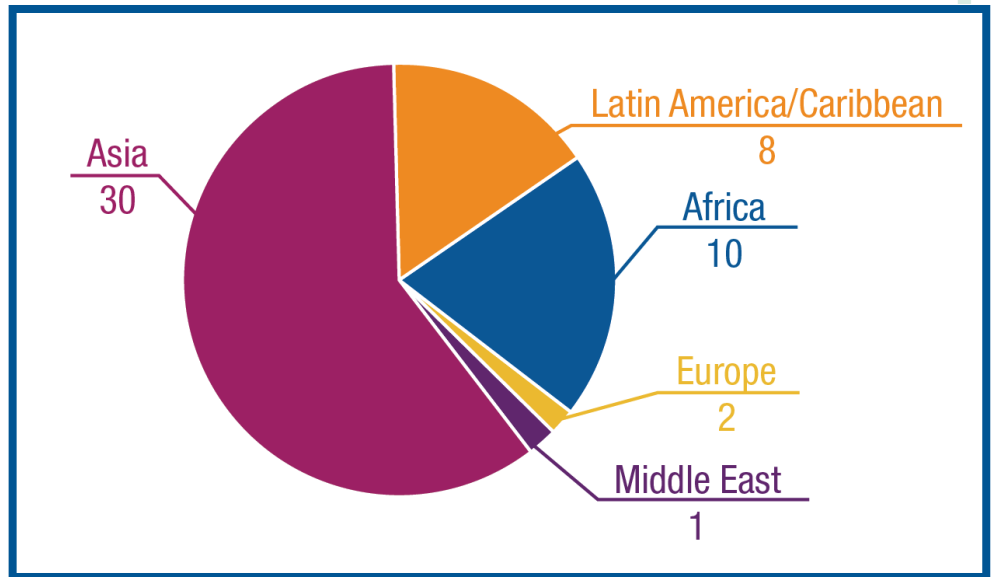
In 2014, 66% of Oregon's TB cases were among foreign-born persons.

Tuberculosis by region of birth

In 2014, 66% of Oregon's TB disease cases were reported as foreign born (51).

- The majority of foreign-born 2014 cases were from Asia (59%, n=30). Cases born in Asia included six each from India, the Philippines and Vietnam, three from China, two each from Bhutan, Cambodia and Thailand, and one each from Indonesia, Laos and South Korea.
- Ten cases in 2014 were from Africa (20%). Cases born in Africa came from Ethiopia (3), Somalia (3) and Congo, Cote d'Ivoire, Ghana and Kenya (one case each).
- There were eight cases from Latin America (17%). Seven were from Mexico and one was from Honduras. Overall, there were fewer cases from Latin American than seen in recent years.
- Two cases were from Europe (Romania and Serbia), and one case was from Saudi Arabia.

Chart 7. Percentage of foreign-born cases by region of birth, Oregon 2014



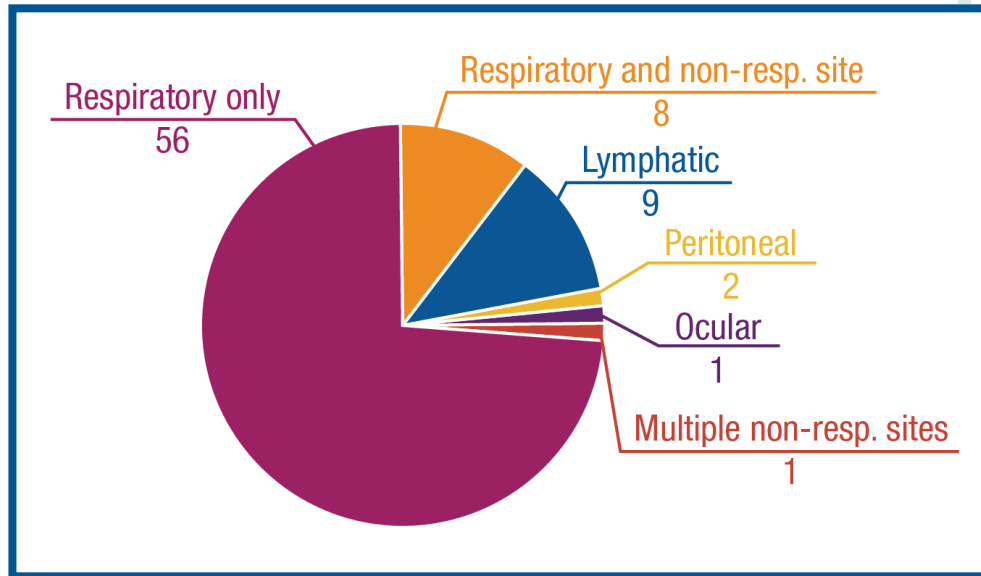
The most prevalent risk factor among Oregon's TB disease cases is foreign birth.

Tuberculosis cases by major site of disease

In 2014, 56 (73%) of Oregon's 77 TB disease cases had TB in a respiratory site only (any combination of pulmonary, pleural or laryngeal disease). Another eight cases (10%) had both respiratory and nonrespiratory sites of disease. There were nine lymphatic cases (12%) and four cases with TB in other sites.

Among the 64 cases with any type of respiratory involvement, 35 were sputum-smear positive. Sputum-smear positivity and cavitation on a chest x-ray are strong indicators of infectiousness; 20 cases had chest x-rays read as cavitory.

Chart 8. Reported major site of disease, Oregon 2014

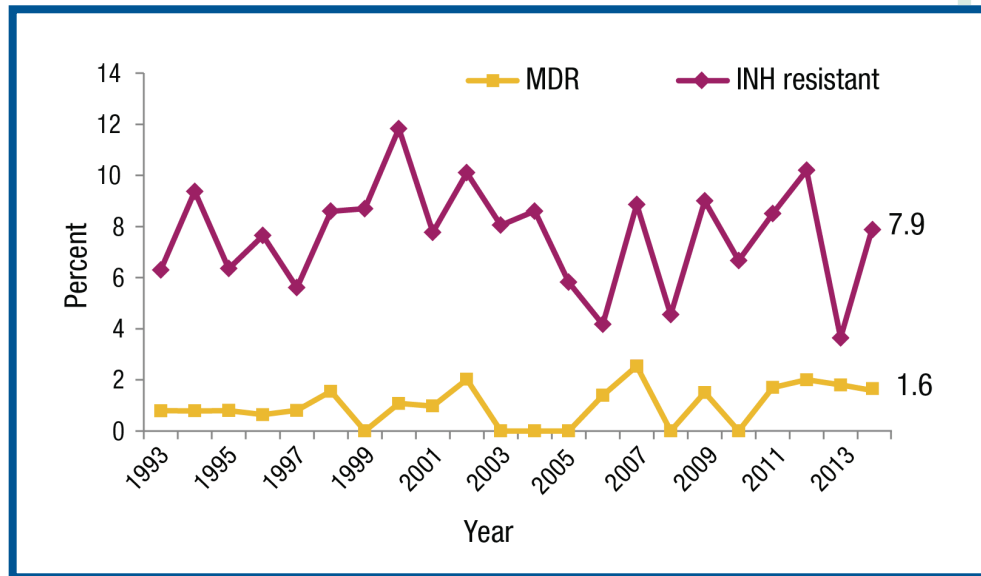


Drug resistance and TB

Isoniazid (INH) drug resistance levels in Oregon TB disease cases have ranged from 4% to 12% over time. In 2014, 7.9% of cases with susceptibility results were resistant to INH (5 of 63 cases with drug susceptibility testing results*). The U.S. average in 2013 was 9.2%.**

Since 1993, only 19 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. Seventeen (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 2014 (1.6%).

Chart 9. INH drug resistance and MDR levels, Oregon 1993–2013



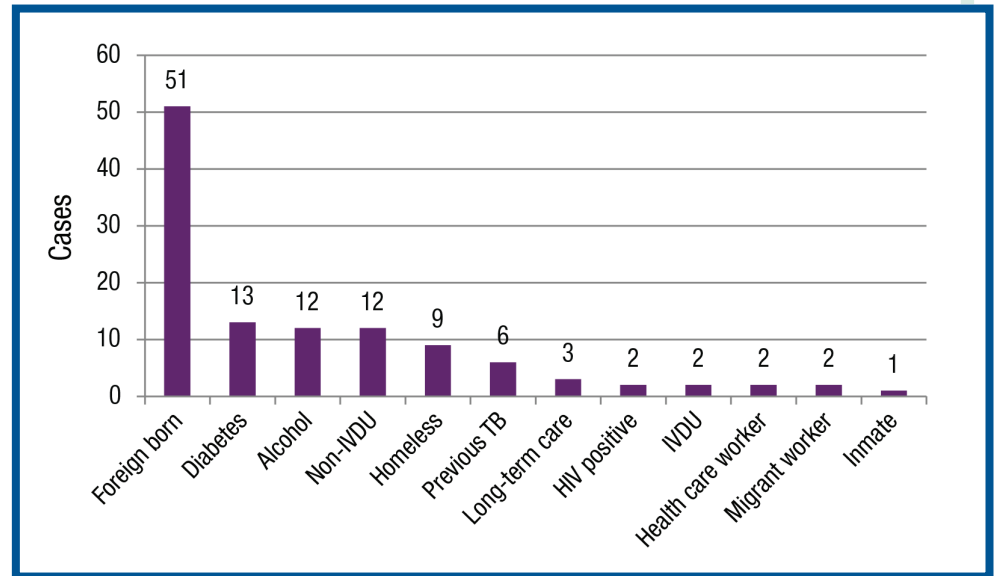
*INH and MDR resistance numbers are not mutually exclusive.

**www.cdc.gov/tb/statistics/reports/2013/table50.htm

Risk factors and tuberculosis disease

In 2014, the most common risk factor among Oregon's TB disease cases remained foreign-born status, found in 66% of all cases (51). Thirteen cases reported diabetes as a medical risk factor (17%). Twelve reported excess alcohol use and 12 reported non-IV drug use in the year prior to diagnosis. Nine reported homelessness and six had a previous diagnosis of TB. Three were diagnosed in a long-term care facility and two had HIV as medical risk factor. Two reported IV drug use in the year prior to diagnosis. Two were health care workers, and two were migrant workers. One was diagnosed in a correctional facility. Risks are not mutually exclusive; cases can have multiple risks listed.

Chart 10. Risk factors for TB disease, Oregon 2014



The most prevalent risk factor among Oregon's TB disease cases is foreign birth.

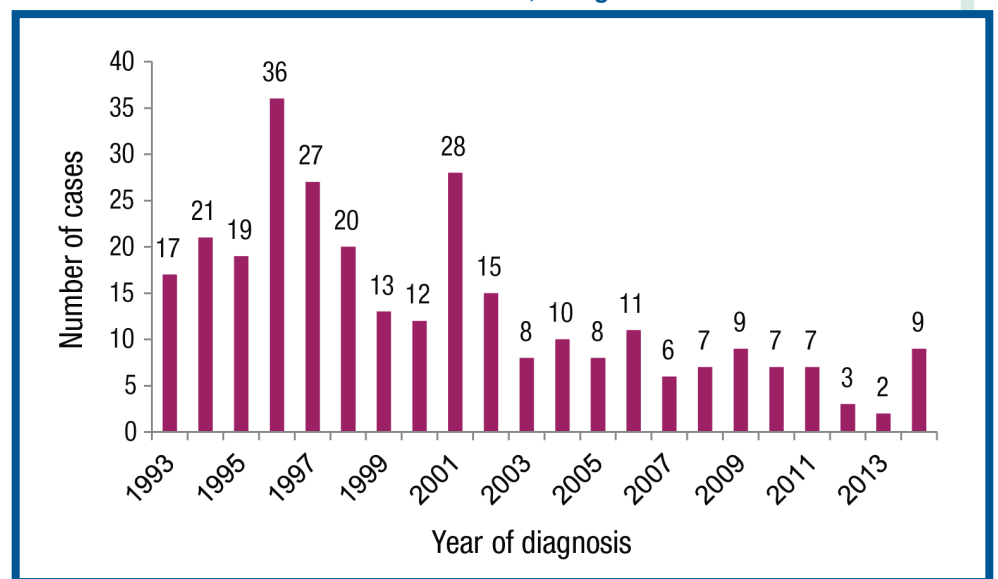
Tuberculosis in the homeless

The number of Oregon TB disease cases among the homeless has declined over time, but in 2014 nine cases (12%) reported homelessness in the year prior to diagnosis.

A spike in the number of homeless cases occurred in 2001, due to a homeless shelter outbreak in Lane County; 18 of the 28 homeless cases that year were from Lane County.

Cases with the 2001 Lane County outbreak strain continue to arise sporadically. The most recent case with this genotype was diagnosed in 2012.

Chart 11. Number of homeless cases, Oregon 1993–2014

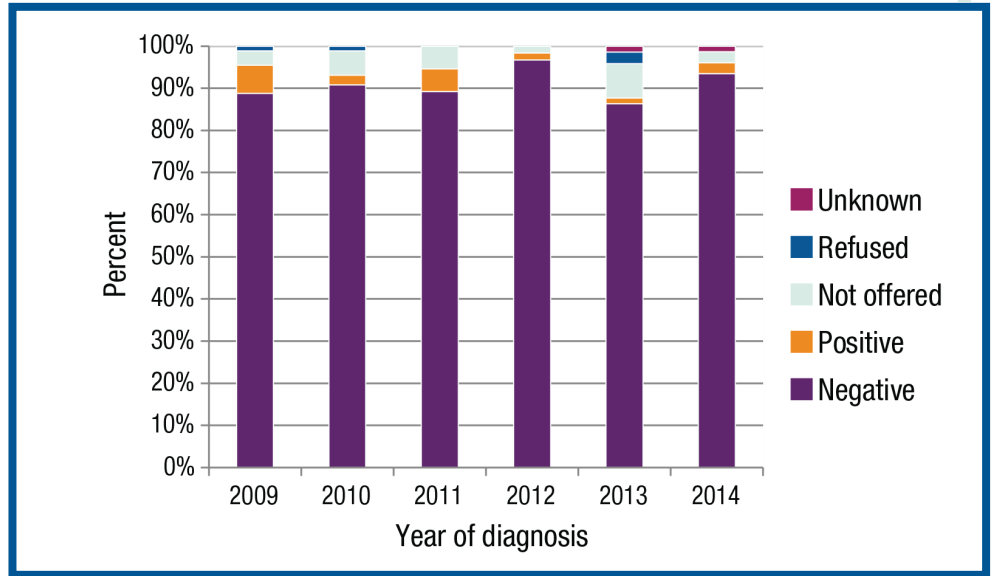


HIV and tuberculosis

HIV status was known for 74 of the 77 (96%) TB disease cases reported in Oregon in 2014. Two cases (2.7%) were HIV positive, which is below the national rate for TB/HIV coinfection (7% in 2013*).

Two cases were not offered tests and one case had a test status of unknown.

Chart 12. TB cases by HIV status, Oregon 2009–2014



*www.cdc.gov/tb/statistics/reports/2013/table11.htm

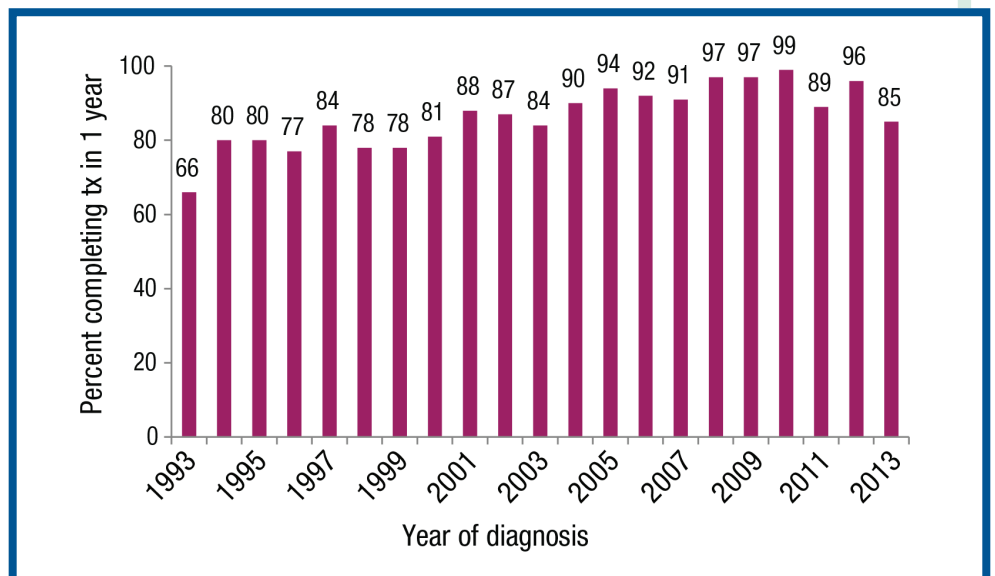
Completion of TB treatment

In 2013, 85% of eligible cases completed treatment within one year.

Treatment data for 2014 are not yet finalized.

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.

Chart 13. Percent completion of treatment with in one year for eligible cases*, Oregon 1993–2013



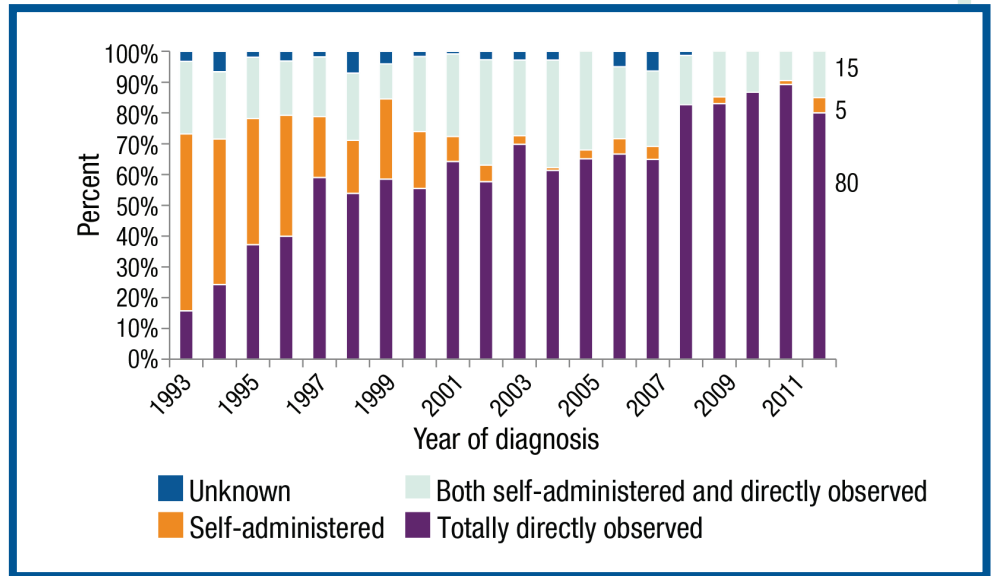
*Patients included in the chart above are patients for whom less than one year of treatment was clinically indicated.

Delivery of TB therapy

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.

Chart 14. Mode of TB therapy, Oregon 1993–2012



[*www.cdc.gov/tb/statistics/reports/2013/table11.htm](http://www.cdc.gov/tb/statistics/reports/2013/table11.htm)

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 2014.

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 be considered in the decision to count a clinical case.

For more information on tuberculosis in Oregon, please visit our website at: www.healthoregon.org/tb

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