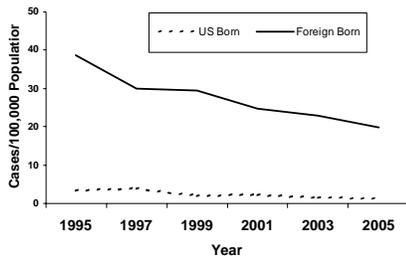


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WELCOME TO OREGON! WHEN WAS YOUR LAST TB TEST?

Tuberculosis (TB) waned in Oregon during the past decade. While rates declined in both the US- and foreign-born, rates among the foreign-born remain substantially higher than among the US born. (Figure 1).

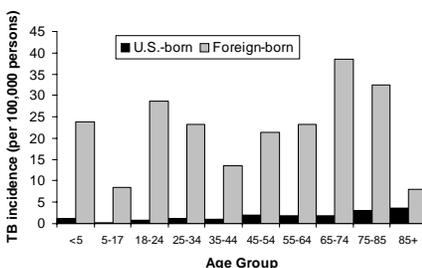
Figure 1. TB Cases by Origin 1995-2005



In this issue of the *CD Summary*, we review the epidemiology of TB in Oregon and examine missed opportunities to prevent the disease among foreign-born persons. **TB IN OREGON**

During 2001–2004, 445 cases of TB occurred among Oregon residents, an overall annual rate of 3.6/100,000 population. Incidence among foreign-born persons was 20.9/100,000, compared to 1.6/100,000 among the US-born, and 61% of all cases occurred among foreign-born persons. By age, incidence among foreign-born

Figure 2. Age-group specific incidence of TB among US and foreign-born persons - Oregon, 2001–2004.



persons peaked among those aged 18–24 years and 65–84 years (Figure 2). The largest number of foreign-born patients hailed from Asia and Latin America, while the highest incidence occurred among Africans (156/100,000), followed by Asians (44/100,000).

TB AMONG FOREIGN-BORN IN THE PORTLAND AREA

To find out what in the name of 肺结核, *kifua kikuu*, and *tuberculosis* might be going on, we reviewed all cases among foreign-born persons during 2001–2004 occurring in the Portland metro area (Multnomah, Clackamas, Washington counties). Although these three counties are home to only 42% of the state’s residents, they accounted for 56% of TB cases during this period; 75% of these were foreign-born.

In the metro area, Asians (50%) and Latin Americans (28%) continued to account for the majority of foreign-born cases. The most common countries of origin were Mexico (22%), Vietnam (18%), and the Philippines (13%). Time in the US also varied by continent: African patients had been in the US a median of 1 year before diagnosis, while those from Latin America and Eastern Europe had been here a median of 4 years, and those from Asia 9 years.

MISSED OPPORTUNITIES

For our examination of TB in foreign-born in the Portland area, we defined a preventable case as:

1) Recurrent disease in a patient

- with failure to complete a full course of anti-tuberculosis therapy in the past;
- 2) Failure to complete preventive therapy in a patient with a positive TB skin test;
- 3) Failure of a medical provider to prescribe preventive therapy to a person with a positive skin test and a known TB risk factor; or
- 4) Failure to receive a tuberculin skin test despite indications.¹

Of 188 foreign-born cases diagnosed in the Portland metro area during 2001–2004, 126 (67%) were preventable (Table 1). Of the cases

Table 1. Foreign-born Persons with TB by Preventability — Portland, 2001–2004

Preventability	No. (%)
Preventable	126 (67)
Incomplete therapy for past TB	2 (1)
Incomplete therapy for past LTBI	12 (9)
Preventive therapy not prescribed for +TST	23 (18)
Not skin tested despite indications	89 (70)
Not Preventable	62 (33)
Complete therapy for past TB	3 (5)
Complete therapy for past LTBI	5 (8)
Screened overseas, TB diagnosed at U.S. follow-up	9 (15)
No indication for skin testing	38 (61)
Previous skin test, result unknown	7 (11)

Abbreviations: TB, tuberculosis; LTBI, latent tuberculosis infection; +TST, positive tuberculin skin test.

deemed preventable, 89 (70%) had never been tested for latent TB (LTBI) by skin test despite one or more indications (Table 2, verso), including 14 patients with HIV, 13 with diabetes and 4 with renal disease. Fully 61 (69%) of these reported having seen a physician within the year preceding their TB diagnosis.

TB CONTROL IN FOREIGN-BORN PERSONS

Currently, legal immigrants and refugees coming to the US must undergo a chest radiograph before



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Table 2. Missed Opportunities for Skin Testing Among Foreign-born TB Patients — Portland, 2001–2004 (N=89)

Indication	No. (%) [*]
Arrival within 5 years	61 (69)
Exposure to person with active TB	22 (25)
Medical risk factor	29 (36)

Abbreviation: TB, tuberculosis.

^{*}Column total > 100% due to patients with multiple indications.

immigration, and sputum testing when the X-ray is abnormal. If active disease is detected, treatment must be initiated before departure from their country of origin. No test or treatment for LTBI is required. Immigrants and refugees with evidence of old or inactive disease and those with active disease under treatment receive paperwork known as “A” or “B” waivers that require them to visit their local health department shortly after arrival for evaluation or for supervised completion of therapy. No scrutiny for tuberculosis is required of those deemed free of old or active TB disease in their country of origin. This system is imperfect. Some cases of active disease are missed during screening in their home locale, and others do not present themselves for timely public health evaluation upon arrival. However, screening is completely lacking among other categories of immigrants, such as undocumented immigrants, those with temporary work vi-

sas, and visitors.

LATENT TB—EXTREME MAKEOVER

Diagnosis of LTBI can seem like an arcane anachronism, employing the over-100-year-old tuberculin skin test (TST) and varying thresholds for positivity. Treatment—typically 6–9 months of isoniazid—is often not completed. Some improvements have appeared on the near horizon. A blood assay for diagnosis of both active and latent tuberculosis, QuantiFERON Gold®, is being validated for use in the Oregon State Public Health Laboratory and may soon become available elsewhere in Oregon. QuantiFERON Gold® is an FDA-approved and CDC-recommended blood assay for interferon stimulated by *Mycobacterium tuberculosis*-specific antigens.² The new test requires but a single venipuncture and has comparable sensitivity and greater specificity than TST.

Shorter LTBI treatment regimens utilizing less frequent dosing might increase the numbers of people with LTBI who initiate and complete treatment and might ultimately make directly observed prophylactic treatment feasible among those at high-risk such as recently-arrived foreign-born persons. One such regimen currently being studied in Phase III trials is weekly INH and rifampine for 12 weeks.^{3,4}

SUMMARY

TB rates continue to decline among the US-born population in Oregon, but incidence remains high among the foreign-born. Many foreign-born who develop active TB experience missed opportunities to diagnose and/or treat LTBI. Remember that foreign-born persons who have immigrated from high TB prevalence countries, and others with certain common medical conditions such as diabetes, HIV, and renal failure, need to be tested for LTBI. When LTBI is diagnosed, treatment should be completed unless contraindicated, regardless of the patient’s age. Your local health department can provide advice and assistance with testing or treating for LTBI.

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