

OREGON PUBLIC HEALTH DIVISION • DEPARTMENT OF HUMAN SERVICES

D/C ANNUAL TSTs IN HCWs AND LTC

The alphabet soup title of this article belies its clear message: **in most health care workers (HCWs) in Oregon, annual tuberculosis (TB) skin tests (TSTs) are no longer recommended.** Two-step testing at initial hire followed by repeat annual skin screening has been the cornerstone of detecting workplace exposure to *M. tuberculosis* (TB) for nearly two decades. Baseline two-step testing remains essential to sort out new infections in the event of a future workplace exposure, but since Oregon's TB incidence is so low, annual testing is not necessary.

The Centers for Disease Control and Prevention (CDC) originally published guidelines for preventing TB transmission in health care settings in 1994 as a response to an increase in TB disease, several TB outbreaks in health care facilities, and lapses in infection control practices. Since then, TB transmission in health care settings has declined, and in 2005 the CDC updated its "Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings."¹ In this *CD Summary* we review these recommendations as they pertain to Oregon. We also discuss screening for elderly residents of long term care facilities (LTC).

HEALTH CARE SETTINGS

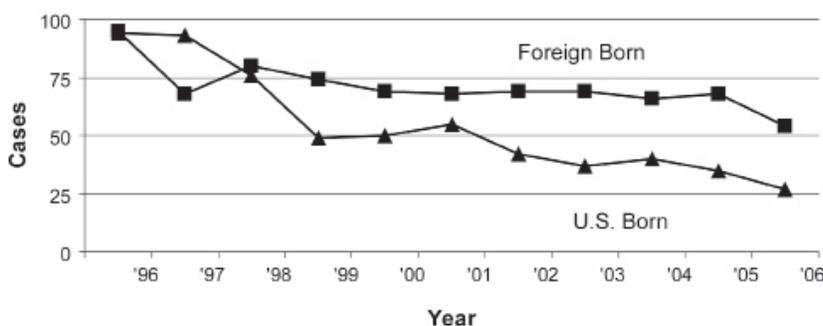
Step 1: Risk Assessment. The CDC document provides guidance on conducting an assessment of the risk of TB transmission in a given health care facility. This assessment should be official and documented, and conducted annually at a minimum. This risk assessment, which classifies the facility as low risk, medium risk, or as having potential for ongoing transmission, determines the appropriate screening regimen for health care workers. Large facilities, including hospitals, may want to conduct a separate risk assessment in those clinical areas where TB exposure is most likely.

Elements of a risk assessment include (but are not limited to): local incidence of TB, number of TB cases seen at the facility, number of beds (for hospitals), environmental controls in place (such as negative pressure rooms), etc. With Oregon's low TB incidence of 2.2 per 100,000 population (see figure), the majority of health care settings will meet the CDC criteria of "low risk" in which exposure to *M. tuberculosis* is unlikely.

The new QuantiFERON®TB Gold test has the advantage of having an objective, quantifiable marker for positivity. In contrast, interpreting TSTs is more difficult and subject to errors and biases in placement and reading. We provide the following cut points for interpreting positive TST results in health care workers screened at baseline:²

- **≥5 mm:** persons with known exposure to a case of TB disease, chest x-ray consistent with prior TB, HIV+,

Reported TB Cases in Oregon by Origin



Step 2: Health Care Worker Screening. The frequency of TB screening in health care workers is based on this risk classification. Low risk health care facilities should continue to conduct baseline TB screening upon hire (two-step TB skin test or a single blood assay for TB such as QuantiFERON®TB Gold test) but **annual TB screening is NOT necessary.** Repeat TB screening should occur only if the employee has a known exposure to someone with TB disease, or if based upon the assessment, the risk classification changes. See Table for a reminder on how to conduct a two-step skin test.

Completing a two-step TST		
Visit #1	Day 0	Place the 1st TST
Visit #2	48-72 hours later	Read the 1st TST
Visit #3	1-3 weeks after Visit 1	Place the 2nd TST
Visit #4	48-72 hours later	Read the 2nd TST

organ transplant, and other immunosuppressed conditions.

- **≥10 mm:** recent immigrants from endemic countries (within past 5 years), persons with clinical conditions that place them at high risk, residents and employees of high risk congregate settings, mycobacteriology laboratory personnel.
- **≥15 mm:** U.S.-born persons without TB risk factors.

Step 3: Follow-up of Positive Tests. Facilities conducting TB screening of health care workers should have a system in place for follow-up evaluation of persons with positive test results. Those health care workers with positive results should have a chest x-ray to differentiate TB disease from latent tuberculosis infection. An abnormal chest x-ray needs further evaluation as a suspected case of TB disease. Once TB disease has been ruled out, the health care worker should be consid-



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ered for treatment of latent TB infection (LTBI), usually with 9 months of isoniazid (INH) to prevent potential progression to TB disease. Local public health departments do not have the resources to do the follow-up evaluations (i.e. chest x-rays) and treatment for all health care workers with positive TB screening tests. Therefore, institutions should work with employees and their private providers to ensure that follow-up evaluation and treatment take place. Of course, suspected cases of TB disease are reportable by law to the local health department, and treatment and follow-up services are available.

LONG TERM CARE FACILITIES

Questions abound regarding TB screening among elderly residents of long term care (LTC) facilities. By long-term care, we mean “skilled nursing,” not assisted living or residential living.

People ≥ 65 years of age are nearly twice as likely as the general population to develop TB disease, with an annual incidence of 7.7/100,000 population.³ Having lived through an era during which TB was more common, the elderly are more likely to have been exposed to someone with TB disease and to have subsequently developed latent TB infection (LTBI). They are also more likely to have chronic diseases such as diabetes and renal failure, which are risk factors for progression to TB disease. Finally, the congregate nature of long term care facilities serves to amplify the risk of exposure to an active TB case.

Despite this increased risk, Oregon has had few TB cases and no outbreaks in LTCs in recent years. Screening upon intake with a symptom check and two-step TST or single QFT-g assay remains an excellent strategy for TB control among elderly residents of long-term care facilities. As in other congregate settings, TST reactions ≥ 10 mm should be considered positive (unless the patient has other risk factors which place them in the ≥ 5 mm category) and need to be evaluated to rule out TB disease. In particular, cough for longer than 2 weeks in conjunction with fever, unexplained weight loss, night sweats, or hemoptysis should prompt medical evaluation.

Although each LTC facility should determine their own policies, in general, residents with documented negative TST results transferred from other Oregon facilities do not require a repeat TST upon admission. Transferred residents with a documented history of positive TST and negative chest ray within the past six months should be given a symptom screen upon admission.

As with staff, unless there is evidence of exposure to an active case of TB disease, repeat annual screening of elderly residents is not considered necessary. LTC staff should be alert to changes in symptoms of TST+ residents to detect those that have progressed to active disease. As always, suspected cases of TB disease should be reported to the local health department within one working day.

OREGON NUMBERS

In 2005–2006, a total of 8 health care workers in Oregon were diagnosed with TB disease. It is important to note that exposure in the workplace was not implicated in any of these cases; all 8 occurred in foreign-born persons whose exposure likely occurred prior to their arrival in Oregon. During the same 2 year time period, 6 cases of TB disease were reported in residents of long-term care facilities. In addition, no outbreaks were reported in either setting.

SUMMARY

Annual TB screening for most health care workers in Oregon is not recommended. Individual facilities should complete annual risk assessments which, in turn, will guide the frequency of employee TB screening. After baseline TST screening upon admission to a long term care facility, annual TSTs are not needed although elderly residents who are TST+ should have annual symptom check. Baseline two-step TB testing continues to be an effective strategy in both these settings.

REFERENCES:

1. Centers for Disease Control and Prevention, (CDC) Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings. MMWR 2005; 54 (No. RR17).
2. CDC. “Targeted Tuberculin Testing and Treatment of Latent Tuberculosis Infection.” MMWR 2000;49 (No.RR6).
3. CDC. Reported Tuberculosis in the United States, 2005. Atlanta, GA: U.S. Department of Health and Human Services, CDC, September 2006.