



From Routine to Risk-Based: Tuberculosis Testing Wisconsin Tuberculosis Program November 2012

In 2005, CDC published updated guidelines for prevention of tuberculosis (TB) transmission in healthcare settings. In this document, they defined a process for moving from the traditional yearly TB testing for all healthcare personnel, to a protocol for testing based upon the risk of encountering TB at work. Although this protocol is almost seven years old, many healthcare facilities are just beginning to update their protocols.

This brief overview will lay out the WI TB Program (TBP) recommendations for risk-based testing and correlate those recommendations with the legal requirements within Wisconsin. County-specific TB statistics are available at <http://www.dhs.wisconsin.gov/tb/index.htm> . If you have questions about applying risk-based testing, please call the TB Program at 608-261-6319.

What is risk-based testing?

It must be based on:

- Risk at work
- Personal and home risk factors
- Risk at activities other than home and work
- Tuberculosis incidence at home, work, and outside activities

All of these must be put together to determine testing frequency.



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An example:

General County, WI has not had a case of active TB in 10 years. The County Nursing Home has been doing TB skin testing yearly during all of those years, with an occasional positive test found in a new hire. No conversions have been found in employees.

Three new employees have positive skin tests upon hire. Two are immigrants from a country where TB is endemic, and one is US-born, but to parents from Mexico; she travels frequently to Mexico to visit relatives.

Three longtime staff members at General County Nursing Home are members of a church with medical missions in Haiti, Africa, and India. These staff members collect funds and supplies, and then visit one of the mission sites annually for a three week stay. During those stays, they assist at medical clinics.

How would we assess the risk for TB at the County Nursing Home? What testing should be done for each employee?

1. **Work risk:** very very **low** due to the lack of TB in General County.

Recommendation: test only upon hire and in the event of known exposure (no serial or annual testing needed).

2. **Personal and home risk: Medium to high**

While the new employees have the same very very low risk of exposure to TB at work, they have very different personal risks. The two from an endemic country may well have latent TB infection; the one born to Mexican parents, who travels frequently to Mexico, may have latent TB infection, and may have frequent exposure to persons with TB disease.

Recommendation:

- Use a blood test rather than a skin test, as it is more specific for infection with TB, and does not react to BCG vaccine with a positive test result.
- At hire, for all with positive blood tests, have a medical evaluation and chest X-ray (PA and lateral), AND be sure that the physician or nurse practitioner evaluates the person for extrapulmonary TB (more frequent in those with childhood infection, and foreign-born).
- At least yearly, based on annual risk assessment for the facility, do a signs and symptom screen, and educate employees on the need to let General County Nursing Home know of any known exposures, AND on the immediate availability of testing again if they have any of signs and symptoms. Be sure to reassure your employees that people are not fired because of disease symptoms or examinations; many people (especially immigrants) are afraid that they will lose their job if symptoms or exposures are reported.
- Repeat the blood test (if previously negative) if any signs and symptoms or exposures are reported, and have a medical evaluation and CXR done for those with signs and



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symptoms. If the test was previously positive, then move directly to the medical evaluation and CXR if any signs and symptoms are reported.

- Recommend treatment for latent disease if the blood test is positive (treatment is free through your local public health department).

3. Risk at activities other than home and work:

Risk for the mission-involved staff: HIGH due to exposure to persons with TB disease. TB is endemic in all of these areas, and the staff members are assured of exposure working in medical clinics, as well as during other activities, such as visiting markets and travel.

Recommendation:

Staff should be tested immediately before travel, and then 10 – 12 weeks after their return. If symptoms develop earlier, they may be tested earlier. If they do not travel for a year, then they fit into the low risk category, and should receive the annual symptom screen, education on TB signs and symptoms, the need to let General County Nursing Home know of any known exposures, and the availability of testing and treatment if needed.

Other employees may not have any of these risks; for those who travel only as tourists to traditional tourist venues, and who otherwise live in General County, their risk is very low. Their **recommendation** is:

- Blood test at hire
- Yearly symptom screen, education as to signs and symptoms of TB, the need to let General County Nursing Home know of any known exposures, and the availability of testing and treatment if needed.

Overall testing protocol

So how to put this all together into a comprehensive program for all employees?

1. Everybody is tested upon hire (two-step if using TST; blood test recommended).
2. Everybody does a symptom screen and risk assessment upon hire.
3. Everybody has a yearly symptom screen, update on TB signs and symptoms, what to do if those symptoms occur, and how to notify employer of contact with a person with TB disease.
4. Those with a positive test should be offered treatment for latent infection, once active disease has been ruled out.
5. Those at high risk are tested before (if possible) and after exposure to known TB.