The statistics are amazing. According to the Centers for Disease Control and Prevention (CDC), approximately one-third of the world’s population, almost two billion people, is infected with tuberculosis (TB). There are about eight million new cases annually, and approximately three million people die every year throughout the world from TB.

We've been extremely lucky in the United States. The number of cases has steadily declined in the past 10 years, and it's estimated that there are about 15,000 cases of active tuberculosis every year. Georgia had 439 new cases in 2004, which puts us sixth in the nation for TB prevalence.

In 1994, the CDC published Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Facilities in part to a resurgence of TB disease in the U.S. in the mid-1980s and early 1990s. In December 2005, the CDC re-issued these guidelines to acknowledge the diminished risk for health care associated transmission of TB. The CDC's aim is to maintain the momentum and expertise needed to avert another TB resurgence.

The interesting thing about TB is that the disease tends to be prevalent in certain high risk groups: Homeless people; prisoners; people who live in nursing home facilities; immigrants from areas with a high rate of TB, such as Southeast Asia, Africa, Eastern Europe, Latin America, or Russia (including children adopted from these areas); and HIV/AIDS patients. If you work in a dental facility that works on high risk patients on a regular basis, you may have a higher risk of exposure to tuberculosis and your facility would have additional requirements, policies, and procedures under the new guidelines. However, an average, low risk dental office has no greater risk of exposure than anywhere else in the general population. In this context, let's examine what low-risk dental offices need to know about TB and infection control issues.

### Signs and Symptoms of TB

Here are the basics about TB. Tuberculosis is caused by a bacteria that is passed when an infected person coughs or talks and the droplets spray in the air. When other people breathe these droplets into their lungs, a few different things can happen. With some people, the bacteria are immediately killed by the immune system and an infection is never established. Some may develop active tuberculosis. For others, the bacteria start to grow in the lungs and the body's immune response contains the bacteria so the infection doesn't spread. This is called a dormant tuberculosis infection. The infection is still active. If you did a skin test on this person you would see a positive result, but the person is not infectious. Studies have shown that latent tuberculosis infections develop into active tuberculosis less than 10 percent of the time, so unless patients are at high risk of developing active tuberculosis because of a compromised immune system, they are usually monitored, not treated. If patients later start to develop symptoms, they would then be assessed and treated, as necessary.

Make sure that any patient with a latent infection is carefully evaluated at every visit to ensure that the infection is still dormant. Otherwise, just make sure the symptoms for active tuberculosis are part of the questions you ask when you update people's medical history. Symptoms of an active TB infection are: A persistent productive cough for more than three weeks, bloody phlegm, hoarseness, night sweats, fatigue, fever, anorexia, sometimes chest pain, and unexplained weight loss.

The new CDC guidelines are designed to prevent health care workers from acquiring or transmitting the disease while in the workplace. Fortunately, in a general dental environment, where you rarely are exposed to patients who are likely to be infected, you don't have to do anything extensive. You don't need a respiratory protection program or a specialized room with reverse airflow, you don't have to put a bunch of complicated policies in place, and you don't need to buy an expensive compliance kit. The good thing about dentistry is that, although it is possible that coughing could be stimulated and particles could be dispersed, most dental procedures are not likely to generate infectious droplets. However, since we do share air with patients, there is always a possibility that infection could be transmitted.

### How the Average Dental Office Should Apply the New TB Guidelines

Here's what's required for the average, low risk dental facility:

- Perform a risk assessment on an annual basis. You can call the local health department to see how common TB is in your area, determine whether your office has had a tuberculosis case in the past five years, and use the CDC's "Risk Assessment« forms to document your findings (the link is http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm?s_cid=rr5417aCe#AppendixB).
- Modify medical history forms so that tuberculosis symptoms are discussed whenever a patient's medical history is updated.
- Set up an annual training program to ensure that employees understand tuberculosis disease transmission and can recognize symptoms.
- Establish a written protocol for referring patients with suspected TB disease to a facility that can evaluate and treat them properly.

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- Report all suspected cases of TB to the local county health department.

- All new employees should be tested at the time of initial employment for TB infection. There are two possible tests that can be used: A traditional skin test, plus a follow-up test two to three months later; or a new, more accurate blood test that has fewer false positives and is more convenient (QFT Gold was approved by the FDA in May and produces results in as little as 24 hours). If the new employee has a positive reaction, he or she must have a single chest x-ray to rule out active infection; otherwise, there is no further screening required unless there's an exposure incident.

Regardless of your facility's level of risk, if you encounter a patient with possible symptoms of active TB, the most important goal is to get the potentially infected patient out of your office as quickly as possible. Put the patient in a separate area away from other patients and employees while evaluating him or her for possible infectiousness. Put the patient in a mask and make sure he or she observes correct "cough etiquette," including turning the head away from other people and coughing into a tissue or cloth. Postpone any non-urgent dental care, and refer any urgent care to a facility with the correct level of respiratory protection, which includes reverse airflow, well-fitting respirators for all personnel, and correct administrative controls and procedures. Once the patient has been cleared by a medical doctor, he or she can return for treatment at your office.

That's really all that's needed for a low-risk dental environment. As always, the best way to protect yourself is to arm yourself with information. Hopefully, by raising awareness of tuberculosis disease, employees can recognize potential hazards and handle the situation properly and efficiently so it never becomes a problem.

Laney Kay, D, has taught OSHA and infection control related topics since 1989, when she began working at her husband's dental practice in Marietta. She has written many articles on this subject and taught courses on infection control at the ADA, Hinman, Southwest Dental Conference, Yankee Dental Congress, and Pacific Northwest Dental Conference meetings; and at local meetings and in individual offices all over the Southeast.

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