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Health Advisory

Practice Update for TB Screening of Health Care Workers

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BACKGROUND

The Department of Public Health has investigated several exposures of patients in Riverside County in 2013 from health care workers (HCWs) with active tuberculosis. These exposures can put patients and the public at risk of developing the disease, in addition to imposing major strain to the affected facility and the public health system.

Although HCWs with active TB generate the most concern, HCWs with *latent* TB infection (LTBI) are also of worry because they retain some likelihood of conversion to active disease. Even for HCWs with low risk of progression, they are more likely to transmit TB to their patients and co-workers because of their prolonged and frequent close contact should they become active.

HCWs with TB may not necessarily be seen by their occupational medicine provider, particularly if the diagnosis was made outside the work environment, and privacy policies may prevent supervisory staff from enquiring. Proper detection relies upon providers having an appropriate index of suspicion and following reporting requirements. This document seeks to update community and specialty medical providers with their responsibilities and recommended best practices when determining the TB status of a patient who is also a health care worker.

REPORTING REQUIREMENTS AND CLEARANCE LIMITATIONS

Under the statutes of the Health and Safety Code and corresponding regulations under the California Code of Regulations and orders of the Riverside County Public Health Officer, the following conditions related to TB *must* be reported to the Department of Public Health using a Confidential Morbidity Form (CMR):

- A patient that converts from a negative test (either a TB skin test [TST] or interferon-gamma release assay test [IGRA]) to positive within the last two years;
- A patient who is suspected to have active TB, either on the basis of radiology, pending AFB cultures (even if the AFB *smears* are negative), or clinical findings;
- A patient who has a positive culture for TB or any member of the *M. tuberculosis* complex; or,

- A child three years or younger with a positive skin test or IGRA (a child with a positive result is considered a sentinel event).

HCWs who have or are suspected to have active tuberculosis must have Public Health clearance *in addition to* clearance by occupational health or their primary care provider before returning to work. These patients cannot be cleared without public health approval, even if their AFB smears are negative.

In California, a positive skin test is greater than or equal to 10mm of induration for most adults. However, for those exposed to an active TB case, HIV+ individuals regardless of CD4 count or exposure history, and children 0-3 years of age, a positive skin test is greater than or equal to 5mm of induration. The TST is a *quantitative* test and mm of induration should be recorded.

IGRAs CANNOT CONFIRM TB SKIN TESTS

Interferon-gamma release assay tests (IGRAs), such as QuantiFERON-TB®, can be valuable tests in avoiding false positive TB skin tests (TST) induced by BCG immunization. IGRAs have a much lower false-positive rate and crossreact only with a minority of *Mycobacteria* species, none of which are common. For patients who may have received BCG immunization in their countries of origin, IGRA may be the preferred test if available. The CDC guidelines permit usage of the IGRA interchangeably with the TST in most situations, and the California Health and Safety Code now permits use of the IGRA for workplace testing of HCWs.

However, the sensitivity of IGRAs is roughly equivalent with the TST, meaning their *false-negative* rates are similar, and a patient that tests positive on an IGRA may not necessarily test positive on a TST, and vice versa. Because the sensitivity is less than 100%, it is not possible to discern which test is "correct." For this reason, **IGRAs such as QuantiFERON-TB® cannot be used to determine if a skin test was falsely positive.** The CDC recommends that **if the patient received a skin test and the skin test was positive, it should be treated as evidence of infection *regardless* of the BCG status of the patient.** The provider should choose the *one* test that is available and appropriate.

PATIENTS SHOULD BE REMINDED OF BCG LOSS OF IMMUNITY

Many patients hold the misconception that BCG grants near-complete, lasting immunity to tuberculosis, and therefore their positive skin test is due to BCG, not to TB infection. However, most clinical studies demonstrate marked loss of immunity over time, and even for patients immunized in adulthood, the protection is at best incomplete. Furthermore, the majority of BCG cross-reactivity with the TB skin test wanes with time as well. Patients and HCWs should be educated that their positive skin test is likely real and true, even if they received BCG in their country of origin (especially countries where TB is endemic), and should be treated appropriately.

HCWs ARE HIGH PRIORITY FOR TREATMENT OF LATENT TB INFECTION

Lifelong, the risk of progression from latent TB infection (LTBI) to active disease varies between five and ten percent, and becomes higher with immunocompromise (HIV+, certain medications such as long-term steroids, chemotherapy and TNF-alpha inhibitors), smoking and diabetes. Any patient who is

determined to have latent TB infection, regardless of occupation or medical history, is a candidate for treatment. The recommended treatment regimen is nine months of isoniazid (INH) plus 50mg pyridoxine daily, though six months is acceptable for HIV negative adults. Most adults should receive 5mg/kg to a maximum of 300mg INH daily. Other regimens are possible; please consult the Department of Public Health.

HCWs are high priority for identification and treatment of LTBI, regardless of their health history. An even lower threshold for treatment should exist for HCWs who are immunocompromised or are starting treatment regimens that may make them immunocompromised. Even for HCWs without predisposing medical history, their conversion to active disease makes them more likely to transmit TB to their patients and co-workers because of their prolonged and frequent close contact. If you are seeing an HCW for clearance with LTBI and they have never been offered treatment, please do so. If you do not feel qualified to initiate treatment, consultation with the Department of Public Health is available.

The Department of Public Health is available for consultation should you have questions regarding an HCW's TB status. Our medical and nursing staff can assist you with evaluation, referral and treatment recommendations. For more information and to request a consultation, please call 951 358 5107.

We thank you for your efforts to help control this serious disease in our HCWs and patients.

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