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Routine Chest X-rays and Tuberculosis

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Chest x-rays should **not be done** for the following purposes:

Routine periodic follow-up of tuberculosis (TB) patients who have completed therapy.
Unless the patient has an unusual risk of relapsing, routine post therapy follow-up only needs to consist of counseling about what to do if symptoms of TB recur. Chest x-rays are likely to be of use only if symptoms develop. Persons with an unusual risk of relapsing from TB, e.g. those treated for multidrug-resistant TB (MDR-TB) or those for whom drug toxicity prevented completion of a standard course of therapy, should have routine follow-up clinical examination. Some experts would include a routine chest x-ray as part of this; others would not.

Annual monitoring of persons with latent tuberculosis infection (LTBI) regardless of whether they take preventive therapy, to see if they are developing tuberculosis.
A person with LTBI may develop TB at any time. They are likely to be symptomatic when they do, and the TB may progress rapidly. Routine chest x-rays in the absence of symptoms will only be able to pick up the occasional case of asymptomatic TB. Routine chest x-rays also may provide a false and potentially fatal sense of security between x-rays in the person who is being examined and therefore are not usually recommended. One exception to this general approach are contacts to cases of MDR-TB who have LTBI and are not treated. These individuals should be evaluated with a chest x-ray and symptom review every 3 to 6 months for at least two years. The recommendation against routine chest x-rays includes asymptomatic healthcare workers that have a history of LTBI (treated or untreated) assuming they have documentation of a negative chest x-ray at the time of diagnosis, unless recommended by a physician.

As part of an annual physical examination to rule out TB.
The same rationale applies as for persons with LTBI. While review for symptoms of TB should be part of any annual physical examination performed for any purpose, chest x-rays are only necessary to rule out TB if a person has symptoms or a new LTBI (e.g. newly positive tuberculin skin test or interferon gamma release assay.)

The routine use of chest x-rays **are** recommended in the following situations:

End of therapy for persons with pulmonary TB disease
A chest x-ray upon completing a course of therapy for pulmonary TB disease is important to establish a baseline for further comparison in the event that the individual should develop symptoms suggestive of TB.

In the initial evaluation of someone with LTBI before considering preventive therapy, even if they do not have symptoms.
The consequence of development of INH resistance in a person with active tuberculosis who is given only INH is great enough to justify routine use of chest x-rays to rule out active TB before beginning preventive therapy.

In the evaluation of some asymptomatic close contacts to a case of TB who test negative for LTBI.
These include situations when contact testing is done promptly, results from testing of other contacts suggest that there is high probability of infection, and the contact has a condition which may prevent early symptoms from being noticed (e.g. HIV-infection) or may be unlikely to give an accurate symptom history (e.g. a child or adolescent).

To screen for TB disease in situations where there is either a group with a high prevalence of active TB for whom initial testing for LTBI is likely be impractical or inaccurate or where the consequences of an undiagnosed case of TB are particularly severe.
Such situations may include some jails, homeless shelters, refugee populations, prisons, residential facilities for HIV-infected persons, and long-term care facilities.

References

1. Centers for Disease Control and Prevention. Treatment of Tuberculosis, American Thoracic Society, CDC, and Infectious Disease Society of America. MMWR 2003;52(RR-11): 1–88.

2. CDC. Controlling Tuberculosis in the United States: recommendations from the American Thoracic Society, CDC, and the Infectious Diseases Society of America. MMWR Recomm Rep. 2005; 54(RR-12): 1–81.

3. CDC. Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings, 2005. MMWR Recomm Rep. 2005; 54(RR-17): 1–141.