

Contact Investigations: An Opportunity to Prevent Tuberculosis

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Learning Objectives

- ▶ List several examples of pulmonary impairment after TB treatment (PIAT).
- ▶ Discuss the societal costs of TB.
- ▶ Apply knowledge of PIAT and societal costs of TB in contact investigations.

Why do we do contact investigations?



Preventing and Controlling TB

Three priority strategies:

- Identify and treat all persons with TB disease
- Identify contacts to persons with infectious TB; evaluate and offer therapy
- Test high-risk groups for LTBI; offer therapy as appropriate

Purpose of CI from Zach Taylor 2002

- ▶ The purpose of the contact investigation is to identify contacts who
 - Have TB disease and treat them
 - Have LTBI and treat them
 - Are at high-risk for TB disease if infected and treat them*

Reframed Purpose as Prevention

- ▶ The purpose of the contact investigation is to *prevent* tuberculosis
 - By finding vulnerable people who have been exposed
 - By finding people who have had exposure of long duration
 - By treating tuberculosis infection (TBI) and TB disease

Why do we want to prevent TB?



Pulmonary Impairment after TB Treatment (PIAT)

- ▶ Cure of TB does not prevent pulmonary impairment
- ▶ Impairment can range from none to nearly 50%
- ▶ In a 2007 study, after controlling for risk, PTB patients were 5.4 times more likely to have abnormal pulmonary function tests than patients with TBI
- ▶ Pasipanodya, et. al. argue that PIAT is a mostly unrecognized cause of chronic lung disease worldwide

“.....for many persons with tuberculosis, microbiological cure is the *beginning*, not the end, of their illness.”

J.Pasipanodya, et. Al.

Potential Permanent Sequelae of TB

- ▶ Bronchovascular distortion
- ▶ Bronchiectasis
- ▶ Emphysematous changes
- ▶ Fibrotic bands

Societal Costs of TB

- ▶ Estimate societal costs: infrastructure, diagnostics, surveillance, in and out patient treatment, contact investigations, personal costs born by patient, and secondary transmission

Miller, et.al.

Average Cost of TB Case in Tarrant Count

\$376,255

\$133,000 for PIAT

\$176,000 for secondary transmission

Other costs include treatment, evaluation of and treatment of contacts, hospitalization etc.

Why do we do contact investigations?



To Prevent Tuberculosis

- By finding vulnerable people who have been exposed
- By finding people who have had exposure of long duration
- By treating tuberculosis infection (TBI) and TB disease
- By finding locations of transmission

Prevention of TB Makes Sense

- ▶ Significant health and social benefits
 - Most of the cost of TB occurs due to chronic morbidity after cure
 - TBI treatment has demonstrable lung health benefit to the patient
 - Use this knowledge to find people exposed and get them into treatment if infected

Research Articles about PIAT and Societal Costs

Pasipanodya JG, et. al. **Pulmonary impairment after tuberculosis and its contribution to TB Burden.** *BMC Public Health* 2010; 10:259.

Pasipanodya, JG. et.al. **Pulmonary Impairment after Tuberculosis.** *Chest* 2007; 131:6.

Miller, TL, et.al. **Personal and Societal Health Quality Lost to Tuberculosis.** *PloS One* 2009; 4(4): e5080.

Miller, TL, et.al. **The Society Cost of Tuberculosis: Tarrant County, Texas, 2002.** *Annal Epidemiol*, 2010; 20:1-7.

Thank you so much