Department of Public Health
CITY OF PHILADELPHIA

Healthcare-associated Infections/Antimicrobial Resistance (HAI/AR) Program

Tuberculosis

Background

Mycobacterium tuberculosis (M. tuberculosis) is transmitted by inhalation of infectious aerosols produced by persons with pulmonary or laryngeal TB disease (TBD) during coughing, laughing, shouting, singing or sneezing. *M. tuberculosis* bacteria can travel from room to room or throughout a building via air currents.

Health care personnel can be exposed to TB during day-to-day healthcare activities, patient interactions, and during interactions with TBD patients when proper infection control procedures are not followed.

Infection prevention and control (IPC) recommendations

All health-care settings need an IPC program designed to ensure prompt detection, airborne precautions, and treatment of persons who have suspected or confirmed TBD. The TB IPC program should be based on a three-level hierarchy of control measures that include:

Administrative controls:

Administrative controls are the first and most important level of hierarchy in a TB IPC program. Administrative controls include:

- Conducting a facility TB risk assessment and instituting a written TB infection-control plan
- Ensuring the timely availability of recommended laboratory processing, testing, and reporting of results to the ordering physician
- Ensuring proper cleaning and sterilization or disinfection of potentially contaminated equipment
- Training and educating health-care workers (HCWs) regarding TB
- Screening and evaluating HCWs who are at risk for TBD or who might be exposed to *M. tuberculosis*
- Using appropriate signage advising respiratory hygiene and cough etiquette
- Coordinating efforts with the local or state health department

Environmental controls:

Environmental controls aim to prevent the spread of TB and reduce the concentration of infectious droplet nuclei. There are two types of environmental controls:

- Primary environmental controls may include:
  - Local exhaust ventilation which dilutes and removes contaminated air by using general ventilation.
- Secondary environmental controls may involve:
  - Modifying the airflow to prevent contamination of air in areas adjacent to the source and clean the air by using high efficiency particulate air (HEPA) filtration, or ultraviolet germicidal irradiation.
  - Negative pressure rooms, if available.

Respiratory protective equipment:

Due to the risk of airborne *M. tuberculosis* in designated areas, respiratory protective equipment should be used in situations that pose a high risk for exposure.

- Use NIOSH certified fit tested particulate filter respirators for protection against airborne *M. tuberculosis.*
  - Note: If respirators are used in a health-care setting, the Occupational Safety and Health Administration (OSHA) requires the development, implementation, administration, and periodic reevaluation of the facility's respiratory protection program.

Additional Resources:

CDC Publications and Resources:

Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel: Recommendations from the National Tuberculosis Controllers Association and CDC, 2019 – Updated CDC Recommendations for TB Screenings of Healthcare Personnel

Infection Control in Health-Care Settings Fact Sheet

Tuberculosis (TB) risk assessment worksheet

PDPH Resources and Reporting Forms:

Adult TB Report Form

PDPH N95 Respirator Fit Test Training

PADOH TB Manual