Annex A.3 Review of Tuberculosis Infection Control

### Review of Tuberculosis Infection Control

# Why is there concern about TB infection control in HIV care facilities?

TB is the most common opportunistic infection and a leading cause of death in persons with HIV-infection Persons with undiagnosed, untreated, and potentially infectious (contagious) TB are often seen in HIV care settings

Health care workers and other staff at HIV care facilities are at particularly high risk of infection with TB because of frequent exposure to persons with infectious TB disease in the workplace

Persons who work in HIV care settings need to know about TB, how it is transmitted, and how infection control procedures in the workplace can protect them TB is caused by an organism called *Mycobacterium tuberculosis* 

## TB is spread from person to person through the air

<u>Transmission</u> is the spread of an organism, such as *M. tuberculosis*, from one person to another Not everyone who is exposed to an infectious TB patient becomes infected Infection begins when TB organisms in the droplet nuclei reach the small air sacs of the lung called alveoli

#### The lungs and the alveoli.



TB infection means that tubercle bacilli are in the body but the immune system is keeping them under control People who have TB infection but not TB disease are NOT infectious

#### Infectiousness of People Known to Have or Suspected of Having TB Disease\*

Factors Associated with Infectiousness	Factors Associated with Noninfectiousness
TB of the lungs or larynx	Most extrapulmonary TB
Cavity in the lung	No cavity in the lung
Cough or cough-inducing procedures	No cough or cough-inducing procedures
Patient not covering mouth when coughing	Patient covering mouth when coughing
Acid-fast bacilli on sputum smear	No acid-fast bacilli on sputum smear
Not receiving adequate treatment	Receiving adequate treatment for 2-3 weeks

TB disease develops when the immune system cannot keep the tubercle bacilli under control and the bacilli begin to multiply rapidly TB disease can develop very soon after infection or many years after infection Some conditions appear to increase the risk that TB infection will progress to disease People who are infected with both *M. tuberculosis* and HIV are much more likely to develop TB disease than people who are infected only with *M. tuberculosis* 

### Pulmonary TB occurs in the lungs

## Extrapulmonary TB occurs in places other than the lungs

Miliary TB occurs when tubercle bacilli enter the bloodstream and are carried to all parts of the body, where they grow and cause disease in multiple sites Common symptoms of TB disease are persistent cough, bloody sputum, weight loss or loss of appetite, fever, or night sweats What factors affect the infectiousness of a TB patient?

The infectiousness of a TB patient is directly related to the number of tubercle bacilli that he or she expels into the air Usually, only people with pulmonary or laryngeal TB are infectious

#### Patients who have a cavity in the lung may be expelling tubercle bacilli if they are coughing

Patients expel more tubercle bacilli if they have a cough that produces a lot of sputum Patients who do not cover their mouths when they cough are more likely to expel tubercle bacilli The presence of tubercle bacilli on a sputum smear indicates that the patient may be expelling tubercle bacilli Patients who have not been receiving adequate treatment are much more likely to be infectious than patients who have been receiving adequate treatment

### Young children with TB disease are usually not infectious

Infectiousness appears to decline very rapidly after adequate treatment is started, but how quickly it declines varies from patient to patient

#### **TB Infection Control**

#### About 30% of people who spend a lot of time with someone who has infectious TB disease become infected with *M. tuberculosis*

TB is most likely to be transmitted when health care workers and patients come in contact with clients or patients who have unsuspected TB disease, who are not receiving adequate treatment, and who have not been isolated from others

The main goal of an infection control program is to detect TB disease early and to promptly isolate and treat people who have TB disease and prevent others from getting TB

There are two main ways to reduce the risk of TB transmission in the outpatient facility. These are: - work practice and administrative control measures and - environmental control measures

Work practice and administrative controls mean establishing and following guidelines for

- •Promptly detecting patients who may have infectious TB disease
- •Placing these patients in an area away from other patients
- •Instructing them in cough hygiene
- •Making sure they get a diagnostic evaluation, and then treatment if they have TB disease

Patients who have signs or symptoms of TB disease should be placed in an area away from other patients, promptly seen for whatever purpose they came to the facility and then referred for a diagnostic evaluation

In hospitals and other inpatient settings, patients known to have TB disease or suspected of having TB disease ideally should be placed in a special TB isolation room right away

This is frequently not possible, so rapid collection and evaluation of sputum specimens with microscopy, and prompt initiation of treatment for those diagnosed with TB, are priorities In the outpatient facility, each client should be asked about symptoms and history of TB when he or she enters the facility.

Adults and any children with the ability to cough forcefully should be asked: "Do you have a cough?" If client answers yes, ask "For how long have you been coughing?" An adult who has coughed for 2 weeks or more is a "TB suspect" for pulmonary TB.

To determine whether a client may be under evaluation or a diagnosed case of TB, who may still be infectious, ask **"Are you being evaluated or treated** for TB?" If the answer to either is yes, the client is classified as a TB suspect or case.

### TB suspects and cases should be

- •Given face masks or tissues
- Instructed in cough hygiene
- •Directed to a separate waiting area
- •Receive whatever services they are accessing quickly (ahead of the queue)
- •Referred to a TB diagnostic and treatment facility

### Cough hygiene refers to the following measures:

- Covering the nose and mouth when coughing or sneezing
  - Clients should be given tissues, face masks or scraps of cloth to assist in covering the mouth and nose
- The tissues, cloths or masks should be used to contain respiratory secretions; they should be disposed of in nearby notouch waste receptacles after use

When tissues, cloths or masks are not available, clients should be instructed to lift their arm up and cover their mouth and nose with the inner surface of the arm and forearm. This is to keep germs away from the hands. TB cannot be spread by the hands, but other respiratory germs such as influenza can.

Environmental controls are the second line of defense for preventing the spread of TB in out-patient HIV care facilities. The main environmental control is natural and mechanical ventilation.

#### Health care workers who may be exposed to TB should be included in a TB screening program

## Describe the infection control procedures at this facility