Overview of the WHO policy on TB Infection Control and practical aspects and implementation tools for effective IC measures in Health facilities

Dr. M. Angélica Salomão
Medical Officer DOTS Expansion & Regional TB Infection Control Focal Point
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- Risk for TB infection
- Summary

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March 2011
Background information

- **TB Infection Control** is a combination of measures aimed at minimizing the risk of TB transmission within populations.

- ...**TB Infection Control measures should complement general infection control efforts and airborne infection control efforts.**
Background information

- The association of TB and HIV and the emergency of multidrug-resistant TB (MDR TB) and extensively drug-resistant TB (XDR TB) are major reasons for the growing importance of TB Infection Control.

- MDR TB poses a special threat to PLWHIV.
Distribution of MDR & XDR-TB cases in the African Region, 2009
### TB HIV estimation (2009)
Global TB report 2010

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<thead>
<tr>
<th></th>
<th>Global</th>
<th>AFRO</th>
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<tbody>
<tr>
<td><strong>TB Cases</strong></td>
<td>9.4 million</td>
<td>2.82 million (30%)</td>
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<tr>
<td><strong>HIV/TB Cases</strong></td>
<td>1.0–1.2 million</td>
<td>0.8–0.96 million (80%)</td>
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<tr>
<td><strong>HIV-associated TB</strong></td>
<td>12% (11%-13%)</td>
<td>37% (35%-39%) 57% in ESA</td>
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WHO policy on TB Infection Control
Scope of the WHO TB IC policy

- The TB infection Control policy provides guidance on how to reduce the risk of TB transmission in health care facilities, congregate settings and households and how to prioritize TB infection control measures.

- Prioritization of TB IC measures
  - Burden of TB, HIV and MDR TB

- Framework for national managerial activities
  - National coordination
Scope of the WHO TB IC policy

- Complementation to general Infection Control efforts
  - Standard precautions
  - Core interventions in TB, HIV and Health Systems
  - Airborne infection control efforts

- Safe work environment for health workers

- Awareness raising activities
  - Behaviour and social change
  - Community involvement
  - Stigma
National & sub national TB IC activities

- Coordinating body and comprehensive plan
- Health facility design and appropriate use
- Surveillance of TB disease among health workers, and assessment at all levels of the system including congregating settings
- TB Infection Control ACSM, including engagement of civil society
- M & E
- OR
TB IC activities at health facility level – managerial

Local coordinating body and facility plan

- Resources
- Policies and procedures
- Use of facilities
- **On site surveillance of TB disease among health workers (HCW)**
- ACSM
- M & E
- Research
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TB IC activities at health facility level – I C measures

1. Administrative Controls (Policies and practices to reduce risk of exposure, infection and disease)
   - Triage/separation/cough etiquette/signage
   - Provision of services & TB investigation
   - Package of prevention & care for HCW
     - HIV prevention, ART, and IPT for HIV + HW
   - Training
### Administrative Controls

**Steps for Patient Management to Prevent Transmission of TB in HIV Care Settings**

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Description</th>
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<tr>
<td>1</td>
<td>Screen</td>
<td>Early recognition of patients with suspected or confirmed TB disease is the first step in the protocol. It can be achieved by assigning a staff member to screen patients for prolonged duration of cough immediately after they arrive at the facility. Patients with cough of more than two weeks duration, or who report being under investigation or treatment for TB*, should not be allowed to wait in the line with other patients to enter, register, or get a card. Instead, they should be managed as outlined below.</td>
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<td>2</td>
<td>Educate</td>
<td>Instructing the above mentioned persons identified through screening in cough hygiene. This includes instructing them to cover their noses and mouths when coughing or sneezing, and when possible providing face masks or tissues to assist them in covering their mouths.</td>
</tr>
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<td>3</td>
<td>Separate</td>
<td>Patients who are identified as TB suspects or cases by the screening questions must be separated from other patients and requested to wait in a separate well-ventilated waiting area, and provided with a surgical mask or tissues to cover their mouths and noses while waiting.</td>
</tr>
<tr>
<td>4</td>
<td>Provide HIV Services</td>
<td>Triageing symptomatic patients to the front of the line for the services they are seeking (e.g., voluntary HIV counseling and testing, medication refills), to quickly provide care and reduce the amount of time that others are exposed to them is recommended. In an integrated service delivery setting, if possible, the patient should receive the HIV services they are accessing before the TB investigation.</td>
</tr>
<tr>
<td>5</td>
<td>Investigate for TB or Refer</td>
<td>TB diagnostic tests should be done on site or, if not available onsite, the facility should have an established link with a TB diagnostic center to which symptomatic patients can be referred. Also, each facility should have a linkage with a TB treatment center to which those who are diagnosed with TB can be referred.</td>
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TB IC activities at health facility level – I C measures 2

2. Environmental Controls (measures to reduce the concentration of droplet nuclei in the air)
   - Ventilation systems
   - Ultra violet germicidal irradiation (UVGI)

3. Personal protective equipment (PPE)
   - Particulate respirators (certified N95 (or greater) or Certified FFP2 (or greater)
Environmental Controls
Natural & mechanical Ventilation

- **Natural**: Fresh dilution air enters and leaves a room or other area through openings such as windows or doors, deliberately secured open to maintain air flow.

- **Mechanical**: Fresh air enters and leaves a room or other area through openings such as windows or doors by use of equipment that increases the effectiveness of natural ventilation.
Environmental Controls
Natural Ventilation

- Design
- Operation
- Maintenance
- Sustainability
Environmental Controls
Controlled natural ventilation

- Propelled fans
  - Ceiling fans
  - Small fans that sit over a surface
  - Fans that stand on the floor
  - Fans mounted on a window or opening
Environmental Controls

Controlled natural ventilation

- Exhaust fans
  - With ceiling grille
  - With a duct that leads to
    1. Discharge on an outside wall
    2. Discharge on the roof
Environmental Controls
Natural ventilation practices

Direction of Natural Ventilation or Correct Working Locations

Door

Window

Patient

HCW

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Environmental Controls

Natural ventilation practices

Direction of Natural Ventilation or Correct Working Locations

Good!!!
Environmental Controls
Natural ventilation practices

Direction of Natural Ventilation or Incorrect Working Locations

Wind

Patient

Bad!!!

HCW

Wind
Environmental Controls

Natural ventilation practices

Direction of Natural Ventilation or Correct Working Locations

Good Compromise!
Risk factors for TB infection

- Concentration of infectious droplet nuclei
- Duration of exposure
- Proximity to source
Risk of Infection Among Contacts as a Function of the Proximity of Contact
Early identification of TB vs. The slow road to TB diagnosis

Infection of healthy patient

Patient visits clinic: no diagnosis made

First smear: AFB negative

Patient visits pharmacy

Blood appears in sputum; infant daughter infected with TB

Too weak to work

Threshold for visibility of AFB by smear microscopy

Patient returns to clinic

AFB+: TB diagnosis made

Number of TB bacilli per millilitre (ml) of sputum

First month  Second month  Third month  Fourth month  Fifth month

Patient feels unwell

Night cough begins

Cough worsens: patient returns to clinic

Blood appears in sputum; infant daughter infected with TB

Too weak to work

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In summary

- **Implement the Three I’s:**
  - Check for TB – ICF
    - If SS+ or C+ → TREAT
    - If SS- or C- ↓
  - Give IPT
  - Put in place TB IC measures

- **Ensure early access to ART**

- **Put in place the new TB and IPT guidelines**
References


THANK YOU