Improving Tuberculosis Infection Control

Planning workshop to accelerate the implementation of HIV/TB collaborative activities in selected African countries
Addis Ababa, Nov 13-14, 2008

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Outline

• Introduction
• What is (TB) Infection control (IC)?
• How can we decrease the risk of IC?
• Who is responsible for IC? Where?
• Methods of IC?
• Concluding remarks
A need for infection control ...
What is infection control?
Prevention of TB transmission

Patient to:
HCWs
Patients
Visitors

Visitor to:
HCWs
Patients
Visitors

HCW to:
HCWs
Patients
Visitors

Planning workshop to accelerate HIV/TB collab-activities, Addis, 13-14/11/08
Who is responsible for infection control? Where?

- Health facility management **at facility level**
- Health care providers (Health Care workers) **at facility, community and household levels**
- Patients **at facility, community and home/household levels**
- Visitors **at facility, community and home/household levels**
Methods of Infection Control

- **Patient Management & Administrative controls** to reduce risk of exposure, infection, and disease through policy and practice
  (applicable to HCWs, Patients, visitors & health facility)
- **Environmental controls** to reduce concentration of infectious bacteria in on surfaces, in the air, in specimens, and in equipment
  (applicable to HCWs, Patients, visitors & health facility)
- **Respiratory protection** to protect personnel who must work in environments with droplets (large and small)
  (applicable to HCWs, Patients & visitors)
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
<th>Description</th>
</tr>
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<tbody>
<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 in covering their mouths.</td>
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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>
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<td>4</td>
<td>Provide HIV Services</td>
<td>Triaging 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>
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<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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Administrative Controls 1

- Prevention of droplet nuclei containing *M. tuberculosis* from being generated
- Prevention of TB exposure to staff and patients and
- Implementation of rapid and recommended diagnostic investigation and appropriate treatment for patients and staff suspected or known to have TB
Administrative Controls 2

• Infection control plan (including TB):
• Administrative support for procedures in the plan, including quality assurance;
• Staff training
• Education of patients and increasing community awareness
• Coordination and communication between TB and HIV programs
Administrative measures

- Sputum collection outside
- Separation and restricted movement of infectious patients, especially from those with HIV infection
- Staff issues
  - responsible person for infection control
  - staff training
  - periodic staff testing
Environmental control methods

- Ventilation
- Ultra Violet Germicidal Irradiation (UVGI)
- Filters
- Room air cleaners
- Negative pressure single isolation
Respiratory Protection

• Respirators can protect health workers
• Frequently, they are unavailable in resource-limited settings
• Respirator use is encouraged in high risk areas of hospitals and referral centers (e.g., bronchoscopy and MDR-TB)
• A CDC/NIOSH-certified N95 (or greater) or CEN-certified FFP2 (or greater) respirator should be used
• Use of a face mask does not protect health care workers, other staff, patients, or visitors against inhalation of TB
Respirator vs. Face Mask

- **Respirator** has only tiny pores which block droplet nuclei and relies on an air tight seal around the entire edge.

- **Face mask** has large pores and lacks air tight seal around edges.
Safety in the lab

• Biosafety level 2 as minimum for MDR-TB
  • Adequate ventilation
  • Negative pressure
  • Essential safety equipment
  • Good laboratory practice (Universal Precautions, Standard Operating Procedures)

• Biosafety Cabinets
  • Aerosol producing procedures
  • Huge maintenance problem
Tips for IC at home

- Avoid overcrowding
- Open windows to increase ventilation
- Allow a lot of sunshine inside the house
- Cough control (Covering of mouth; don’t cough directly at someone)
- Avoid indiscriminate spitting; spit in covered container containing disinfectant; then dispose into latrine
- Dispose sharps (needle & syringes) by burying & or burning after use, dispose
- Take medications as prescribed religiously
Conclusion

• TB infection control is mandatory especially in OPD settings where integrated services are provided, at home and congregate settings like prisons and police cells

• Policy modification necessary for effective IC:
  - Three I’s to be the responsibility of HIV services
  - All HIV Positive TB cases must be transferred to TB clinics for their HIV services, including ART

• Use combination of methods for effectiveness

• Commence control measures immediately

• Create abundant awareness amongst all stakeholders (Policy makers, HCWs, patients & public; etc)
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THANK YOU