
REPUBLIC OF GHANA

MINISTRY OF HEALTH

# STANDARD OPERATING PROCEDURES FOR TB AND AIRBORNE INFECTION PREVENTION AND CONTROL IN GHANA

**MAY 2010**

# Standard Operating Procedures for
# TB AND AIRBORNE INFECTION
## Prevention and Control in Ghana









MAY 2010

# Table of Contents


**Foreword** 7

**Acknowledgments** 8 - 9

**Acronyms and Abbreviations** 10 - 11

**1. Introduction** 13 - 15

**1.1.** Why - TB Infection Prevention and Control Is Important 13
**1.2.** What - Can Be Done 13
**1.3.** When - To Initiate Action 14
**1.4.** Who - Is Responsible 14
**1.5.** Where - To Initiate Action 15
**1.6.** How - To Use this Document and Have an Impact 15

**2. Organizing TB Infection Prevention and Control - A Team Approach** 16 - 21

**2.1.** Composition of health facility IPC team 16
**2.2.** Roles and responsibilities 16
**2.3.** A team approach: every person counts 17
**2.4.** Meeting frequency 18
**2.5.** Meeting agenda 18
**2.6.** How to conduct a health facility (re-) assessment 19
**2.7.** How to write a health facility infection prevention and control plan 20
**2.8.** How to monitor implementation progress 21

**3. TB Infection Prevention and Control - Uniform Implementation** **22 - 27**

**3.1.** Staff Awareness/Think TB 22
**3.2.** Patient Awareness 23
**3.3.** Triage of Patients 23
**3.4.** Separation and Patient Movement 24
**3.5.** Ventilation - Maximize Air Flow! 25
**3.6.** Procurement, Use and Maintenance of IPC Equipment and Supplies -if it is not maintained it is not effective 27

**4. Laboratory investigation** **28**

**4.1.** Collection of sputum sample in the health facilities 28

**5. Monitoring and Evaluation - What is Measured, gets Done** **29**

**5.1.** National Level 29
**5.2.** Regional/district Level 31
**5.3.** Health Facility Level 32

**6. Important definitions - Glossary of Terms** **33 - 35**

# Annexes - Practical Tools


| | | |
|---|---|---|
| i. | Health Facility-level Tb And Airborne Infection Prevention And Control Measures | 37 - 38 |
| ii. | Dissemination Strategy | 39 - 40 |
| iii. | TB and Airborne Infection Prevention And Control Facility Assessment Checklist | 41 - 46 |
| iv. | Minimum Equipment For Tb Infection Prevention And Control | 47 |
| v. | Template Of Health Facility Tb And Airborne Infection Prevention And Control Plan | 48 - 52 |
| vi. | TB And Airborne IPC Monitoring And Evaluation Tool For Clinical Sites | 53 - 55 |
| vii. | TB Infection Prevention And Control Staff Risk Assessment Log For Supervisors | 56 |
| viii. | TB Infection Prevention And Control Basic Training Components | 57 |
| ix. | Ventilation And Tb Infection Prevention And Control | 58 - 60 |
| x. | Triage Procedure In Relation To Tb And Airborne Infection And Prevention Control | 61 |
| xi. | TB Screening Questionnaire (for PLHIV) | 62 - 63 |

# Foreword

These Standard Operating Procedures (SOPs) are a set of simple pocket reference tools aimed at guiding health workers in all departments of health-care facilities to improve Tuberculosis (TB) and Airborne infection prevention control practices. The objective of these SOPs is to standardise and optimise TB and Airborne infection prevention and control practices in health-care facilities in Ghana. The SOPs are based on the 2009 Policy and Guidelines for Infection Prevention and Control for Ghana and the set of health facility-level infection prevention and control measures of the 2009 WHO Policy on TB Infection Control in Health-care Facilities, Congregate Settings and Households. Areas that were considered, but not included in the SOPs, are TB Infection Control in Households and Community settings, drug-resistant tuberculosis and Isoniazid prophylactic treatment. These areas may be reconsidered when reviewing the SOPs after one to two years.

**Dr. Benjamin Kunbuor**
Hon. Minister of Health

# Acknowledgments

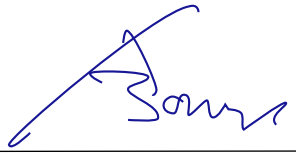
These SOPs and accompanying tools for improving TB infection prevention and control in Ghana are the result of collective efforts of many individuals working within and outside the country in support of the National Tuberculosis Control Programme (NTP).

The NTP wishes to thank Management Sciences for Health (MSH) through the United States Agency for International Development (USAID) funded Tuberculosis Control Assistance Programme (TBCAP) Project for providing technical assistance in the development of the SOPs. In particular, the NTP would like to acknowledge the following people who worked tirelessly to ensure that the SOPs and accompanying tools are produced: Rhehab Chimzizi (TB CAP TB Technical Advisor, Ghana), Pedro Suarez (MSH TB Director), Maria Pia Sanchez (MSH TB Infection Control Technical Advisor), William Holmes (MSH TB Infection Control Consultant), Max Meis (TB CAP Infection Control Programme Technical Advisor), Virginia Lipke (CDC Atlanta, Center for Global Health/Division of Global AIDS Infection Prevention and Control Practitioner) and Merid Girma (Architect) from Ethiopia.

The team was tremendously supported by Dr. Cynthia Bannerman, and Mrs. Gertrude Agbo of the Institutional Care Division of the Ghana Health Service and Hilda Smith, TB CAP Project Officer, Ghana and Claire Moodie, MSH, Boston(USA).

The SOPs were greatly enriched by participants of the consensus workshop held on 28th April, 2010 at the National TB Control Programme Conference Room, Accra, Ghana and the core group that met from 5-6 May, 2010 at Alisa Hotel, Accra. Their collective and individual contributions were important in finalising the SOPs.

Finally, the NTP acknowledges the role played by health workers and other stakeholders in Ghana who participated at various stages of preparations of the SOPs especially management and staff of Korle Bu Teaching Hospital, Ridge Hospital, Mamobi Poly Clinic, Koforidua Regional Hospital, Akwapim Mampong District Hospital and Abokobi Health Centre.



**Dr. Frank Bonsu**
Manager, TB Control Programme

# Acronyms and Abbreviations

| | |
|---|---|
| **ACH:** | Air Changes per Hour |
| **ACSM:** | Advocacy, Communication, Social Mobilisation |
| **AIDS:** | Acquired Immunodeficiency Syndrome |
| **ART:** | Antiretroviral Therapy |
| **CHW:** | Community Health Worker |
| **CPT:** | Cotrimoxazole Preventive Therapy |
| **DOTS:** | Directly Observed Treatment Short course |
| **HIV:** | Human Immunodeficiency Virus |
| **HW:** | Health Worker |
| **IEC:** | Information Education Communication |
| **IPC:** | Infection Prevention and Control |
| **IPT:** | Isoniazid Preventive Therapy |
| **ITC:** | Institutional Tuberculosis Coordinator |
| **MDR TB:** | Multidrug-resistant Tuberculosis |
| **M&E:** | Monitoring and Evaluation |

| | |
|---|---|
| **MSH:** | Management Science for Health |
| **NTP:** | National Tuberculosis Control Programme |
| **OPD:** | Out-patient Department |
| **PLHIV:** | People Living with HIV/AIDS |
| **PPE:** | Personal Protective Equipment |
| **RHU:** | Reproductive Health Unit |
| **SOPs:** | Standard Operating Procedures |
| **SS:** | Sputum Smear |
| **TB:** | Tuberculosis |
| **TB CAP:** | Tuberculosis Control Assistance Programme |
| **TORs:** | Terms of Reference |
| **USAID:** | United Agency for International Development |
| **WHO:** | World Health Organisation |

# 1. Introduction

## TB Infection Prevention and Control

### 1.1. Why - TB Infection Prevention and Control is Important

Despite the introduction of effective regimens for the treatment and cure of TB, the risk and danger is on the rise due to new and resistant strains of mycobacterium tuberculosis and co-infection with HIV. Essential components for reducing the risk of transmission rely on raising Awareness, affecting Attitude, and translating intentions into Action. This requires collaborative and coordinated efforts on the part of policy makers, health facility management teams, staff and individuals.

*The goal of the SOPS is to provide practical approaches for reducing the risk and increasing the safety for staff, patients and visitors of the health facility*

### 1.2. What - Can Be Done

Risk of transmission of TB is related to the degree of exposure (vulnerability)—which can be decreased by limiting the length of the exposure, as well as separating those at highest risk. Awareness from the individual of systems and procedures that diminish the concentration of exposure also diminish the risk of transmission and so increase safety for all. Administrative Control Measures (first

priority), Environmental Control Measures (second priority) and Personal Protection Equipment can all contribute to minimizing TB transmission.

Focusing on methods that allow for early identification and management of TB suspects, providing good ventilation in common/contact areas, and identifying systems-procedures that emphasize the importance of protecting staff, patients and visitors from TB and other respiratory infections all contribute to a safer health facility.

## 1.3. When-To Initiate Action

Right now! Although some interventions require a high degree of planning and resources (like new construction), many things can be done easily with little or no financial cost which will result in high impact safety measures to protect staff, patients and visitors. The focus of this document is to assist staff to recognize and promote strategies and actions that can be instituted in the near term to provide them with added safety.

## 1.4. Who - Is Responsible

All of us! While certain measures will be taken at national, regional, district and health facility management levels, everyone can contribute to making a safer place for our community and ourselves. The SOPs are intended to raise awareness and focus attention at those activities that can be initiated by and for staff in order to provide a safe environment.

## 1.5. Where - To Initiate Action

All levels of the health facility! Focus areas for high risk of exposure include enclosed spaces where TB suspects and/or particularly vulnerable patients for example people living with HIV ( PLHIV) may interact: waiting areas, consultation rooms, laboratory, antiretroviral therapy (ART) clinic, DOTS clinic, and radiology unit. Beginning at the entrance of the health facility, simple measures can be instituted to promote staff, patient and visitor safety. A program to increase awareness, focus attitude, and translate them into effective action to decrease the risk of TB transmission (as well as other respiratory diseases) benefits all members of the health facility.

## 1.6. How - To Use this Document and Have an Impact

Review the changes that can be made at your workplace to improve safety!

The TB and Airborne Infection Control SOPs recognize that TB, as well as other communicable respiratory diseases, are principally transmitted in the air. By decreasing the chance and amount of exposure, safety is improved. Based upon the requirements for promoting Standards of Care as outlined in the "The Policy and Guidelines for Infection Prevention and Control in Health Care Facilities" (Ministry of Health, June 2009), the SOPS promote practical approaches to optimize techniques for promoting TB and Airborne Infection Prevention and Control. Implementations of the SOPs are meant to be undertaken as a prioritized, sequential, gradual process to help bring a uniform set of procedures to the health facilities in Ghana.

# 2. Organizing TB Infection Prevention & Control – A Team Approach

*TB and Airborne infection prevention and control should be part of the day to day activities conducted in a health facility. Every person counts on the entire team caring for patients such as the Health Service administrator, the Infection Prevention and Control (IPC) coordinator or Quality Assurance coordinator, the admission clerk, clinicians and nurses, laboratory staff as well as the patients and visitors of health facilities.*

## 2.1. Composition of health facility IPC team

Each health facility shall have an IPC committee as prescribed by the Infection Prevention and Control Policy and Guidelines in Health Facilities. The IPC committee shall ensure the implementation of IPC policies and strategies in the health facility.

The IPC team consisting of the IPC Nurse and the IPC Coordinator serves as a working group of the IPC committee and sees to the day-to-day IPC activities in the health facility.

The IPC team shall work closely with the Institutional TB Coordinator (ITC) to address TB and Airborne IPC issues.

## 2.2. Roles and responsibilities

Facility-based IPC programmes shall be integrated with other relevant programmes such as Quality Assurance, Environmental and Occupational Health, TB programme Control, Comprehensive HIV/AIDS Control, and other Communicable Disease Control programmes.

As part of the roles and responsibilities identified in the Infection Prevention and Control Policy and Guidelines in Health Facilities, specific focus for TB and Airborne Infection Prevention and Control should be to:

- Write TB and Airborne IPC plan and integrate it into an existing general IPC plan for the health facility.
- Monitor, supervise, and evaluate IPC activities.
- Ensure the maintenance of IPC equipment - specifically fans, biosafety cabinets and respirators.
- Liaise with in-service training coordinators on regular training programme(s) in IPC at the health facility - conduct ongoing in-service training on airborne infection prevention and control with specific reference to TB.
- Perform any other functions related to IPC including airborne infection prevention and control issues related to renovation and design of buildings with the assistance of experts.

## 2.3. A Team approach: Every person counts

- EVERY health worker should be sensitized to the SOPs for TB and Airborne IPC and collaborate with relevant others for effective implementation of strategies.
- EVERY health worker should be involved in discussing ways to improve TB and Airborne IPC procedures in the health facility.

## 2.4. Meeting frequency

- The IPC team will meet weekly while the IPC committee will meet less frequently but at least once in a quarter.

## 2.5. Meeting agenda

- As a minimum the terms of reference (TORs) of the IPC team should include:
  - Ensuring availability of consumables / minimum equipment for IPC.
  - Identification of specific topics to be presented to management for action
  - Preparation of facility plan, reports and recommendations for IPC
  - Monitoring for the implementation of planned activities
  - Collection and compilation of monitoring indicators
  - Submit monthly reports to management team and staff
  - Promotion and coordination of in-service training/ education

- The TORs of the IPC committee should include:
  - Review of progress reports and IPC specific work plan activities
  - Review of monitoring indicators
  - Review of policies and procedures
  - Review procurement and maintenance plans
  - Review budgets for IPC

## 2.6. How to conduct a health facility (re-) assessment

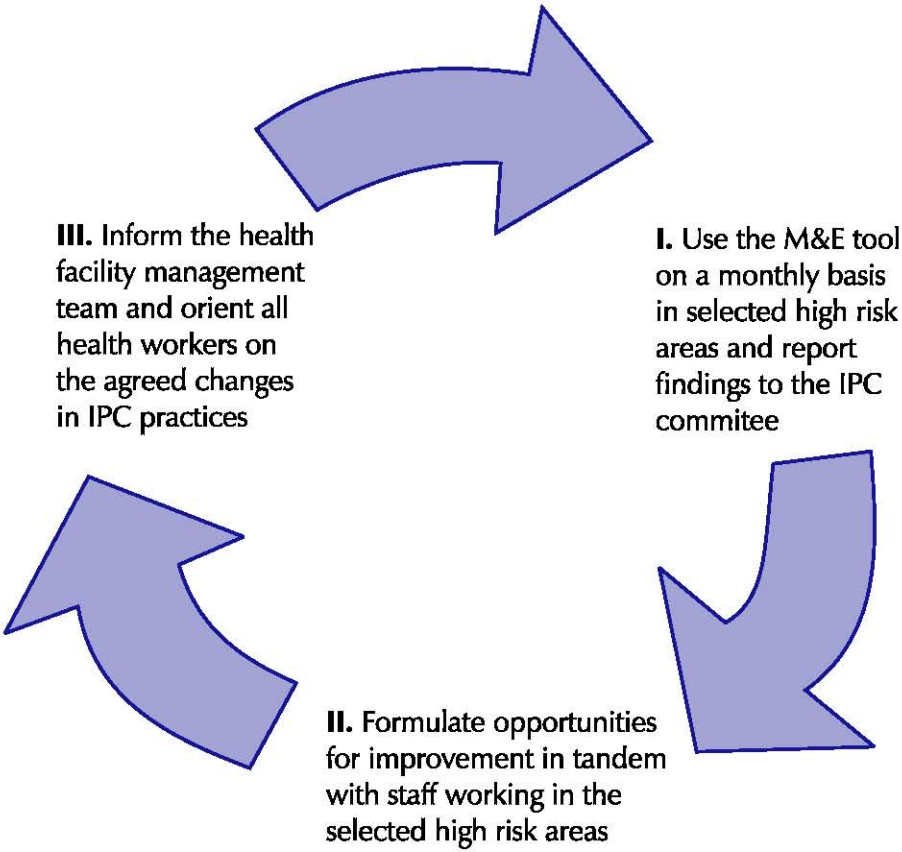
- Use the health facility assessment checklist for TB and Airborne IPC.
- Conduct a baseline assessment of the entire health facility.
- The IPC team will take the lead and will involve key staff members of the health facility Units.
- Check your health facility work plan whether planned IPC activities are included.
- Check the previous assessment report, if applicable.
- Follow the path of a hypothetical patient with possible TB from the entry - point into your health facility.
- Ask staff what they would do with this patient and check applicable registers, logs, files etc.
- Ask staff if they need specific training on TB and Airborne IPC.
- Assess/re-assess and plan implementable managerial, administrative, environmental and protective IPC measures that have quick impact and are cost effective, at least once a year.

## 2.7. How to write a health facility infection prevention and control plan

- Use the template for the IPC plan.
- Incorporate implementable activities into the general IPC plan.
- Include TB IPC training activities.
- Develop the budget.
- Determine who is responsible for the implementation of outlined activities.

## 2.8. How to monitor implementation progress of outlined activities

*The IPC team is responsible for monitoring TB and Airborne IPC practices*




*The management team is responsible for instituting a corporate culture with short chains of command and maximum support for innovative ideas from staff*

# 3. TB Infection Prevention and Control – Uniform Implementation

*One of the corner stones of TB Infection Prevention and Control remains early diagnosis and quick initiation of proper treatment regimen for people with TB.*

## 3.1. Staff Awareness/Think TB

- Be aware of your risk for TB in all areas of the health facility especially in small enclosed areas with little air movement and high concentration of patients.
- Know that PLHIV have higher risk of contracting TB.
- Know your HIV and TB status. Be alert to signs and symptoms of TB and seek care promptly if you think you are infected. Talk to your IPC person or immediate supervisor if you are concerned and take advantage of all free healthcare testing offered by your facility. Get screened at least annually.
- Use posters within all staff rooms/break-rooms and desktop teaching aids to reinforce best daily practice measures for staff.
- Use your own attitude and behaviour to set the example to others. Part of every workers responsibility is to model and educate others as to best healthcare practices.
- Participate in all educational opportunities and refresher courses to maintain and increase your knowledge.
- Be familiar with your health facility TB and Airborne IPC plan. Know who your IPC coordinator is.

## 3.2. Patient Awareness

- Place large notices at the entryways at eye level, stating that patients must immediately inform staff of any respiratory illness or if they believe they might have TB.

- Place signs and posters at the exterior entrances explaining that your health facility uses Cough Etiquette, designated waiting areas for respiratory illnesses, and that emergency cases will be prioritized over others in the queue.

- Have someone from the facility (this does not require a nurse) make this announcement periodically throughout the day for those with limited reading ability or have recently arrived.

- Use IEC materials such as posters and videos at your site in high volume waiting areas to increase awareness.

## 3.3. Triage of Patients

- Have a system, including person in place to promptly identify TB suspects AS they enter the health facility waiting rooms/areas and BEFORE they have joined the queue or have had a seat with other patients. Screening can be done by non-nursing personnel.

- Instruct ALL persons in Respiratory Hygiene and Cough Etiquette and have them use their handkerchief or offer a tissue if available.

- Instruct them to put used tissues in waste bin.

- Show them where they can wash their hands after using the tissues.

## 3.4. Separation and Patient Movement

- Direct TB suspects immediately to a nearby designated waiting area away from other patients until they can be safely seen. Explain why they are being selected for special care. Do not delay removal of the patient for vital signs as this can be done later and do not allow the patient to remain in the general waiting queue.

- Instruct the suspected patient to keep their nose and mouth covered when coughing while in the designated area and while being escorted to the clinician for evaluation, and all other sites such as X-ray, Laboratory, Endoscopy, etc.

- If there is no safe designated area, the patient must cover nose and mouth or wear a surgical mask while in the queue. The facility should provide tissue (as well as basket and hand washing facility after the tissue has been used) or surgical mask whenever possible. This is important for all respiratory illnesses including suspected TB, and should be included in the health facility's policy.

- PROMPTLY RE-INSTRUCT non-adherent patients that they must cover their nose and mouth when coughing at all times.

- TB suspects should be isolated away from known immune compromised patients until test results confirm their diagnosis as being negative. Patients with the same diagnosis can be cohorted together.

- For in-patient transport, TB suspects should again cover their nose and mouth when coughing. (See: "Policy and Guidelines for Infection Prevention and Control for Ghana),"

- Visitors should follow the information signs as to where and how to visit isolated patients.

- Discuss maximizing patient flow patterns.

## 3.5. Ventilation – Maximize Air Flow!

- Open doors/windows/grills on walls facing each other (use mosquito wire mesh as needed) to ensure maximum cross ventilation in at-risk areas at all times (during and after working hours)

- Provide covered outdoor waiting areas with low or perforated walls allowing cross-ventilation, enough protection from rain whenever possible to decrease patient density and maximize air flow. (Figure 1)

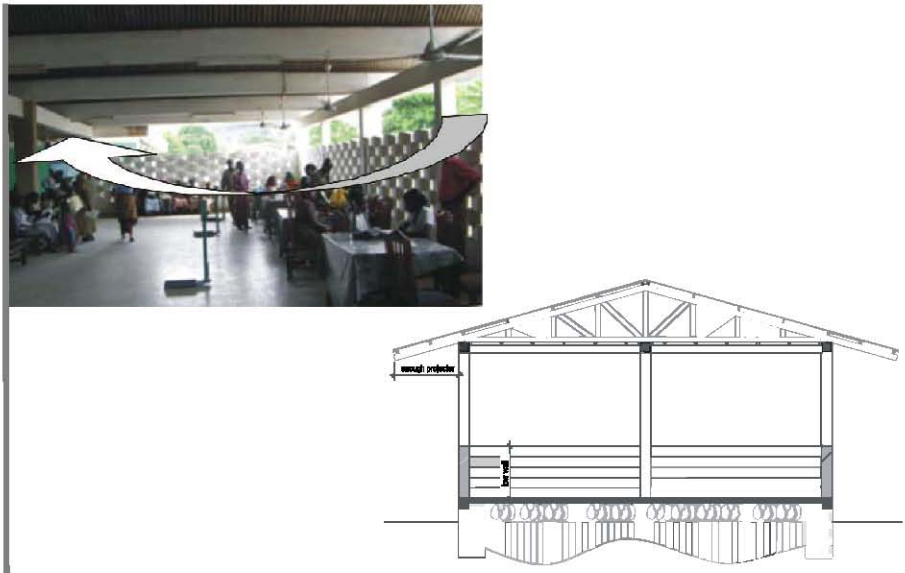


***Figure 1:** Open waiting area with cross ventilation*

- Place furniture such that staff-patient interactions occur with air flow passing between patient and staff, rather from patient to staff. (Figure 2)

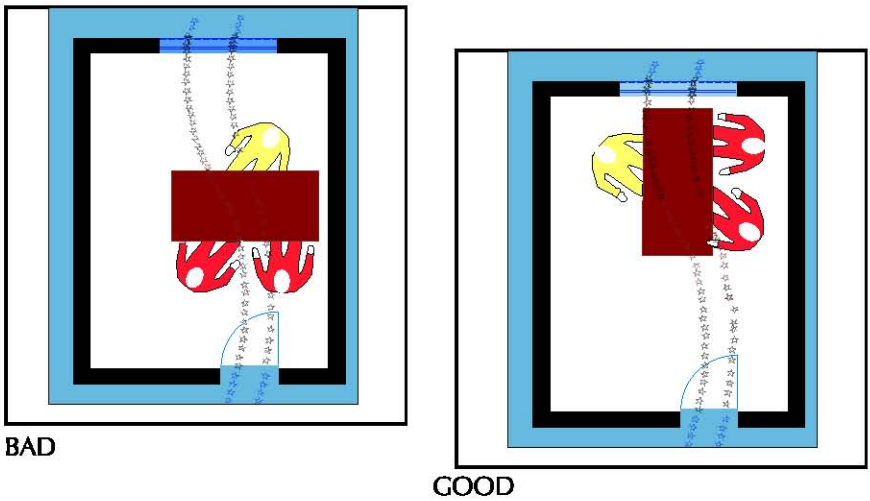



***Figure 2:** Furniture layout*

- Use ceiling and exhaust fans to promote maximum air mixing and safe air flow in areas with poor natural cross ventilation.

- Natural cross ventilation provides a dependable and safe working environment. For those areas where air conditioning is required, also provide for open windows and/or grills to allow for adequate air exchange.

- Recognize and report (to the IPC Committee) the need for unobstructed air flow as it pertains to renovations or arrangement of patient care areas.

- The IPC Committee MUST make inputs into all the renovation and new constructions in the respective health facilities to ensure the maximum use of ventilation and air flow.

## 3.6. Procurement, Use and Maintenance of IPC Equipment and Supplies – if it is not maintained it is not effective

- Define maintenance and procurement schedules and budgets within the IPC work plan and integrate with health facility Procurement and Maintenance Plans.

- Identify the responsible staff member and their supervisor for (preventive) maintenance and repair of all IPC equipment (including sinks and fans!) required for all areas of the health facility.

- Check that all room fans are working and clean. To check exhaust fans that have a grille, hold a tissue or a piece of paper against the grille. If the fan is working, the tissue or the paper should be pulled against the grille.

- Keep fans running as much as possible when the space is occupied.

- Keep a maintenance log; keep records of all upkeep activities and failures.

- Ensure that natural ventilation and low maintenance-high impact interventions have been optimized BEFORE consideration of installing sophisticated air purifying systems (HEPA filters, UVGI fittings) because of their high cost, maintenance requirements, and need of reliable power and surveillance. Any consideration for using these sophisticate/high maintenance systems require a formal work plan that addresses cost, repair/maintenance system, and monitoring.

# 4. Laboratory investigation

*Sputum examination is a key to the diagnosis of TB. The cornerstones of TB Infection Prevention and Control includes early diagnosis, and so it is essential that laboratory results are reported as rapidly as possible to the health worker and that the health worker then rapidly follows up with the patient.*

## 4.1 Collection of sputum sample in the health facilities

- Patient sputum collection should occur in private, outdoor areas with specimens being placed through a specimen window/or outside table rather than carried into the laboratory.

- If TB testing is not available at the Health Facility, instruct the patient how to produce a sputum sample and supervise the sputum collection. The TB control officer, public health nurse, or other designated worker identified by the health facility should submit the samples to a nearby diagnostic centre, AND be responsible for ensuring that results are reported and patient follow-up care is initiated.

# 5. Monitoring and Evaluation
## - What is Measured, gets Done

*Monitoring and evaluation of TB infection prevention and control activities will be integrated into the NTP/NACP monitoring and evaluation and supervision plan. Monitoring will be conducted at all levels, starting at the health facility level, district, regional and national level. At the health facility, district and regional level, monitoring will be done quarterly and annually at the national level.*

## 5.1 National Level

| Indicator | Source | Frequency | Monitoring tool |
|---|---|---|---|
| Proportion of health facilities with written TB and Airborne IPC plan | Health facility plan | Annual | Supervision checklist/written report |
| Proportion of health facilities that have trained staff (at least 3 members of staff) on IPC which includes topics relevant to TB and Airborne IPC | Updated Staff training register | Annual | Supervision checklist/written report |
| Proportion of health facilities with a person in charge of IPC | Health facility plan | Annual | Supervision checklist/written report |

| Indicator | Source | Frequency | Monitoring tool |
|---|---|---|---|
| Proportion of health facilities that have conducted a self-assessment or have been assessed on IPC practices including TB and Airborne IPC in the previous year | Assessment report | Annual | Supervision checklist/written report |
| Proportion of health facilities annually reporting TB disease incidence rates among health workers | Updated Staff register | Annual | Supervision checklist/written report |

## 5.2 Regional/District level

| Indicator | Source | Frequency | Monitoring tool |
|---|---|---|---|
| Proportion of health facilities with written TB and Airborne IPC plan | Health facility plan | Quarterly | Supervision reports |
| Proportion of health facilities that have trained staff (at least 3 members of staff) on TB and Airborne IPC | Updated Staff training register | Quarterly | Supervision reports |
| Proportion of health facilities witha person in charge of IPC | Health facility plan | Quarterly | Supervision reports |
| Proportion of health facilities that have conducted a self-assessment or have been assessed on IPC practices including TB and Airborne IPC in the previous year | Assessment report | Quarterly | Supervision reports |
| Proportion of health workers (regardless of job position) diagnosed with TB (all forms) in the last quarter | Updated Staff register | Quarterly | Supervision reports |

## 5.3. Health facility level

| Indicator | Source | Frequency | Monitoring tool |
|---|---|---|---|
| Presence of written Health facility plan including TB andAirborne IPC activities (Y/N) | Health facility plan | Quarterly | Quarterly report |
| Monitoring and evaluation on monthly basis of at least 1 department / area in the health facility (Y/N) | Monitoring reports | Quarterly | Quarterly report |
| Number of staff that are trained on TB and Airborne IPC | Updated Staff training register | Quarterly | Quarterly report |
| Presence of a person in charge of IPC (Y/N) | Written Health facility plan | Quarterly | Quarterly report |
| Presence of a (self-) assessment report on TB and Airborne IPC practice that was done not longer than 1 year ago (Y/N) | Assessment report | Quarterly | Quarterly report |
| Proportion of health workers diagnosed with TB (all forms) in the last month | Updated Staff register | Quarterly | Quarterly report |

# 6. Important Definitions – Glossary of Terms

### Administrative controls

Administrative controls are a vital part of sound infection control practices, which require people with TB symptoms to be promptly identified, separated and treated. Administrative controls should be implemented as a first priority because they have been shown to significantly reduce transmission of TB in health-care facilities. They prevent the generation of infectious particles and reduce exposure to infectious patients.

### Airborne precautions

Precautions that apply to patients or suspects with airborne infections, and that are used in addition to standard precautions. These precautions are generic for all airborne infections but they also contribute to reduce the spread of TB.

### Environmental controls

Environmental controls include methods to reduce the concentration of infectious respiratory aerosols (i.e. droplet nuclei) in the air, and methods to control the direction of infectious air. The choice of environmental controls is intimately related to building design, construction, renovation and use, which in turn must be tailored to local climatic and socioeconomic conditions.

### Health workers

Health workers are all people, in public and in private services, in the health sector and other sectors, whose main activities are aimed at enhancing health of the human population.

They include the health service providers – for example doctors, nurses, pharmacists, laboratory technicians – and the health management and support workers for example patient attendants, financial officers, cooks, drivers and cleaners.

### Infection prevention and control assessment

An assessment of the implementation of managerial activities (including risk assessment), administrative controls, environmental controls, and respiratory protective equipment in a setting, in the context of local epidemiological, climatic and socioeconomic conditions .

### Infection prevention and control measures

These include the set of managerial activities, administrative controls, environmental controls and personal protective equipment for TB infection control.

### Natural ventilation

Ventilation created by the use of external natural forces such as wind and temperature. Control of airflow direction cannot be achieved by simple natural ventilation and is dependent upon sufficient wind speed or direction, or temperature differential.

### Personal protective equipment (PPE)

Personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, which should be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, biological hazards, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

### Respirator
Special type of closely-fitted mask with the capacity to filter particles to protect from inhaling infectious droplet nuclei. The N95 respirator has filter efficiency level of 95% or greater against particulate aerosols free of oil when tested against 0.3 μm particles. The "N" denotes that the mask is not resistant to oil; the "95" refers to 95% filter efficiency. The FFP2 respirator has a filter efficiency level of 94% or greater against 0.4 μm particles and is tested against both an oil and a non-oil aerosol.

### Separation
Placing patients infected or colonized with the same known pathogen in a designated unit (one that has the same space and staff), to which patients without the pathogens are not admitted.

### Surgical or face mask
Cloth or paper face mask that prevents the spread of micro-organisms from the wearer to others by capturing the large wet particles near the source (mouth); it may not provide protection from inhaling infectious droplet nuclei, such as M. tuberculosis

### TB suspect
A person presenting with cough of two weeks or more and other symptoms suggestive of TB such as fever, weight loss, night sweat.

### Triage (in relation to TB)
A system for identifying TB suspects based on cough, used in fast-tracked TB diagnosis and further separation when necessary.

# Annexes – Practical Tools

## I. HEALTH FACILITY-LEVEL TB AND AIRBORNE INFECTION PREVENTION AND CONTROL MEASURES

Set of measures for Health facility-level TB and Airborne Infection Prevention and Control[1]. The measures listed below are specific to health facilities.

### 1. Implement the set of Health facility-level managerial activities:

- Identify and strengthen health facility coordinating bodies (e.g. Infection prevention and control, quality assurance team etc.) for TB and Airborne Infection Prevention and Control.
- Develop health facility infection prevention and control plan (including human resources, policies and procedures to ensure proper implementation of the controls listed below).
- Evaluate the use of available spaces and consider renovation of existing facilities or construction of new ones to optimize implementation of TB and airborne controls.
- Conduct on-site surveillance of TB disease among health workers (using the TB IPC staff risk assessment log).
- Assess the health facility using the TB and Airborne IPC assessment checklist.

[1] *Adapted from the 2009 WHO Policy on Health-Care Facilities, Congregate Settings and Households*

- Address health promotion for health workers, patients, relatives and visitors.

- Monitor and evaluate the set of TB and Airborne IPC measures.

- Participate in operational research efforts.

**2. Administrative controls**

- Reduce diagnostic delays (active case search), use rapid diagnostic tests, reduce the turnaround time for sputum testing (preferably use front loaded microscopy)[2] and culture, and promptly initiate treatment.

- Promptly identify people with cough symptoms (triage), separate infectious patients, control the spread of pathogens (cough etiquette and respiratory hygiene) and minimize time patients spend in health facilities.

- Provide a package of prevention and care interventions for health workers, including HIV prevention, antiretroviral therapy (ART), and other preventive therapy such as Co-trimoxazole preventive therapy (CPT) for known HIV-positive health workers.

**3. Environmental controls**

- Optimize natural – cross – ventilation using open windows, grilles and doors – preferably in opposite walls – ,install and maintain electrical fans to ensure that air mixing is taking place in high risk areas, and monitor the direction of air flow to minimize the risk to health workers.

**4. Personal protective equipment**

- Use surgical face masks and respirators (N95 or FFP2) as appropriate.

[2] *Front loaded microscopy is defined as both sputum samples collected the same day and results are also collected the same day.*

## II. DISSEMINATION STRATEGY

**Across levels**

| Level | Mode of dissemination |
|---|---|
| National | Use existing system +print and electronic media advocacy |
| Regional | Use the existing system +print and electronic media advocacy |
| District | Use the existing system +print and electronic media advocacy |
| Facility | See below |

**Facility level dissemination strategy**

- In service training
- Management briefing
- Ward meetings
- Infection control/Quality assurance meeting
- Special meetings e.g. Continuous Professional Development, workshops etc.
- Health talks
- Patient health education eg. Patient area health talk, audiovisuals, posters etc.

**Materials**

- Posters
- Leaflets/flyers
- Audio visuals
- Pocket size SOPs
- Memos

| Approach |
| --- |
| • Well targeted messages to audience |
| • Use appropriate language for the target audience |
| • The message should be based on need assessment for the purpose of prioritization and emphasis |
| • Certification for workshops attended |

## III. TB AND AIRBORNE INFECTION PREVENTION AND CONTROL HEALTH FACILITY ASSESSMENT CHECKLIST[3]

| | |
|---|---|
| • Name of the health facility: | |
| • Address: | |
| • Tel No: | |
| • Number of staff at the health facility | |
| • Name of IPC focal person for this health facility. | |
| • Services provided in this health facility<br>* Please tick with √ | TB services<br>VCT/ ART services<br>Integrated TB-HIV services |

### TB Infection Prevention and Control measures implemented in this health facility:

| Managerial | Yes | No | Issues to be assessed and guide for comments |
|---|---|---|---|
| 1. Is there an IPC committee or IPC focal person in place? | | | • Composition of the IPC committee?<br>• Functionality of the committee (minutes)<br>• Frequency of meetings<br>• Submission of reports to health facility management team<br>• Is there coordination between TB and HIV units?<br>• Staff awareness of the policy and SOPs |

[3] *Adapted from the WHO TB IC facility assessment checklist*

| Managerial | Yes | No | Issues to be assessed and guide for comments |
|---|---|---|---|
| **2.** Is proper implementation of the TB and Airborne IPC measures ensured?<br>• IPC Policy and SOPs<br>• Health facility plan which includes (TB and Airborne) IPC activities | | | • Assess availability of Policy, SOPs for (TB and Airborne) IPC and written implementation plan and budget |
| **3.** Is training of staff planned and conducted?<br>• Training on general IPC<br>• Training on TB IPC | | | • Number and percentage trained general IPC<br>• Number and percentage of staff trained in TB and Airborne IPC?<br>• Was training based on training needs assessment?<br>• Has the facility have an IPC trainer |
| **4.** Has a TB and Airborne IPC assessment been done? | | | • Is there a plan for improvement of the health facility?<br>• If so is there an assessment report an plan to improve available space (renovation and/or re-location) to optimize implementation of TB and Airborne IPC?<br>• Was an expert/architect involved in the development of the plan?<br>• Has patient flow been analyzed in order to minimize transmission and possible exposure especially of high risk people?<br>• Were they able to implement all the activities planned last year? |

| Managerial | Yes | No | Issues to be assessed and guide for comments |
|---|---|---|---|
| **5.** Is "on-site" surveillance on TB disease among health workers and monitoring and evaluation being conducted? | | | "• on-site" surveillance systematically / regularly performed?<br>• Who is responsible for IPC surveillance?<br>• Are data / reports available?<br>• Is the IPC monitoring and evaluation tool being used? Indicators |
| **6.** Is health education (IEC) on TB and Airborne IPC ensured for health workers, patients, and visitors? | | | • How is it performed?<br>• Who is responsible?<br>• What does it include?<br>• Are materials available for IEC?<br>• Provide examples of materials |
| **7.** Does the health facility participate in operational research? | | | • Are there any operational research activities on IPC (planned, on-going or completed)?<br>• Are research findings available?<br>• Have findings been disseminated? |

| Administratively | Yes | No | Issues to be assessed and guide for comments |
|---|---|---|---|
| **1.** Which of the following recommended controls are practiced?<br>• Triage,<br>• Separation,<br>• Cough etiquette,<br>Expedient service delivery (prompt services for "coughers") | | | • Is there systematic screening for cough of all patients?<br>• Are patients with cough separated early from other patients? Is there a system established to prioritize patients with a cough such as creating an "express lane" to minimize the stay of these patients.<br>• Is there IEC regarding cough etiquette on site?<br>• How is IEC conducted and how frequently?<br>• Are surgical masks/paper tissues provided for coughing patients?<br>• How is the provision of the items organized?<br>• At which points are the items used? |
| **2.** Is screening for TB of staff conducted? | | | • Periodic and/or symptomatic TB screening of staff?<br>• If periodic, how often?<br>• Describe how screening is done?<br>• How many staff / what proportion have been screened? |
| **3.** Does the health facility offer a package of prevention for health workers, including HIV prevention, Antiretroviral therapy (ART), and other preventive therapy for HIV positive health workers? e.g. CPT | | | • HIV testing offered to health workers?<br>• If necessary, is preventive treatment offered?<br>• Can HIV + staff opt out from work in a high risk area? |

| Managerial | Yes | No | Issues to be assessed and guide for comments |
|---|---|---|---|
| **1.** Is natural and/or mechanical ventilation optimized, especially in<br>• waiting areas<br>• examination rooms<br>• sputum collection area<br>• patient wards | | | • What type of ventilation system is in place?<br>• Is sputum collection conducted outdoors?<br>• Sketch windows, doors, fans, cross ventilation, direction of airflow<br>• State of windows? ( intact, easy to open, size etc)<br>• Check direction of air flow (with smoke tube, incense or mosquito coil)<br>• Check logs to evaluate compliance with preventive maintenance schedules for fans and all other ventilation equipment |
| **2.** Are there covered outdoor waiting areas? | | | • For which services are covered outdoor waiting areas available?<br>• Are there small enclosed waiting areas where patients suspected of TB or diagnosed with TB interact with other (immunecompromised) patients?<br>• Are there open spaces that could be used for a waiting area? |

| Personal Protection | Yes | No | Issues to be assessed and guide for comments |
|---|---|---|---|
| **1.** Are face masks /N95 or FFP2 respirators (where applicable) available for staff? | | | • Are face masks and N95 or FFP 2 respirators (where applicable) supplied to health workers?<br>• Has there been a stock out of respirators in the past year?<br>• Are face masks and respirators used appropriately? |
| **2.** Fit testing and/or fit check for respirators | | | • Observe staff fit respirators<br>• Are staff supervised on appropriate use? |

**Specific activities of the assessment:**

1. Make a flowchart of the patient flow through the facility
2. Visit the OPD and TB wards and check airflow at various sites
3. Sketch of the facility: Include main room, hallway, windows, doors, etc

# IV. MINIMUM EQUIPMENT FOR TB AND AIRBORNE INFECTION PREVENTION AND CONTROL

| | Clinical Area | Laboratory |
|---|---|---|
| **Personal Protective Equipment** | Surgical Masks<br>Respirators (where appropriate)<br>Gloves<br>Overcoats/ Apron | Surgical Masks<br>Respirators (for lab facilities doing culture)<br>Gloves<br>Lab coats |
| **Environmental Measures** | Well-ventilated area. E.g.<br>• Open windows and doors<br>• working fans<br>• extractor fans ( where available)<br>• hand dryers (electric)<br>• disposal papers, single use hand towels<br>• plain soap<br>• soap dispensers<br>• antiseptic<br>• antiseptic dispensers<br>• alcohol sanitizers<br>• disinfectants<br>• hygienic sink<br>• eronica buckets<br>• colour-coded pedal control dustbins<br>• biohazard bin liners | Bio safety cabinets(for lab facilities doing culture), Well-ventilated area.<br>E.g. Open windows and doors, working fans, extractors (where available), hand dryers(electric), disposable papers, single use hand towels, plain soap, soap dispensers, antiseptic, antiseptic dispensers, alcohol sanitizers, disinfectants, hygienic sink, veronica buckets, boilers, autoclaves, colour-coded pedal control dustbins, biohazard bin liners |

# V. TEMPLATE OF HEALTH FACILITY TB AND AIRBORNE INFECTION PREVENTION AND CONTROL PLAN[4]

| | |
|---|---|
| **Name of health facility/clinic:** | **Administrator of health facility/clinic:** |
| **Plan adopted or modified by on (date):**<br><br>**This plan includes the following sections:**<br>• The IPC Committee / IPC team<br>• An overview of the health facility's IPC strategy<br>• IPC in specified spaces of the health facility | **Tick if applicable**<br>• IPC in Reception area<br>• IPC in waiting and consultation areas<br>• IPC in patient wards<br>• IPC in laboratories<br>• IPC ART Clinic<br>• IPC in X-ray rooms<br>• IPC in specified other spaces |

| | Name of Committee Member | Position/Designation | Responsibility |
|---|---|---|---|
| 1 | | | Chair |
| 2 | | | Secretary (minute taker) |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |

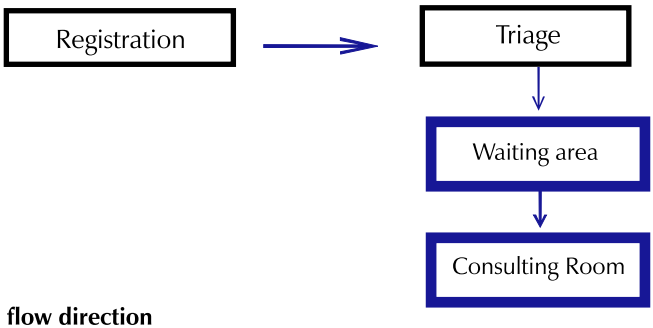
[4] *Source: RHRU, HIV Management Cluster, South Africa*

| | Main Task | Person responsible | Time Line/frequency | Budget |
|---|---|---|---|---|
| 1 | Baseline assessment and ongoing monitoring of TB and airborne infection prevention and control | | | |
| 2 | Ongoing in-service TB infection prevention and control training | | | |
| 3 | Review of staff risk for TB and screening of staff | | | |
| 4 | Maintenance of TB infection prevention and control equipment | | | |
| 5 | Ensuring constant supply of tissues, /surgical masks /other appropriate protective equipment and waste disposal bins | | | |
| 6 | Daily opening of health facility windows/doors and operation of ventilation systems e.g. fans | | | |

## Patient flow and air flow description

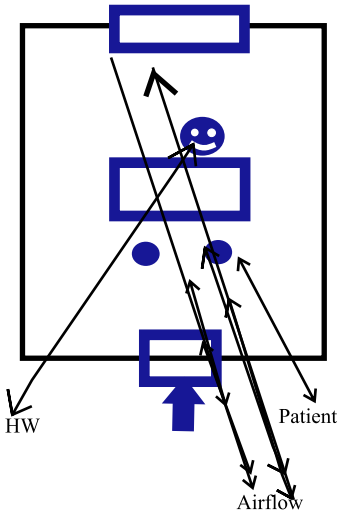
**Management of patients within this health facility will proceed as follows, in order to reduce generation of infectious TB particles** (Draw a flowchart showing the flow of patients through the health facility, indicating how and where triage of patients for cough will be done, where waiting areas will be and where sputum collection will be done – Draw the direction of air flow and the positions of the health worker and the patient)

Patient Flow Chart:

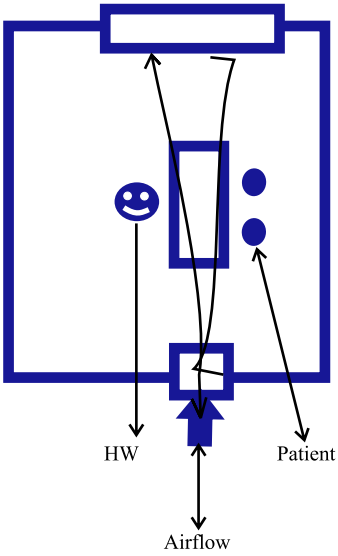



**Air flow direction**

**BAD**




**GOOD**



## TB and Airborne infection prevention and control at health facility

| Reception area: | | |
|---|---|---|
| | **Implement the following TB infection prevention and control practices at the health facility's reception** | **Person Responsible** |
| 1 | Display Posters about TB and Airborne infection prevention and control | |
| 2 | Explain the queuing system to all clients | |
| 3 | Ask all clients if they are coughing | |
| 4 | Advise clients who cough to cover nose and mouth with a handkerchief, tissues or a face mask | |
| 5 | Give tissue or face mask to clients who cough | |
| 6 | Ask clients who cough to dispose of tissues or face mask using bins provided | |
| 7 | Direct clients who cough to a special waiting area | |

| Waiting areas and adjacent consulting rooms: | | |
|---|---|---|
| | **Implement the following TB infection prevention and control practices at the health facility's waiting areas and consulting rooms** | **Person Responsible** |
| 1 | Display Posters about TB and Airborne infection prevention and control | |
| 2 | Ensure that staff periodically scans the queue for coughing clients | |
| 3 | Ensure that coughing clients will be seen first | |
| 4 | Ensure that sputum collection is done in a very well ventilated area (preferably outdoors) | |
| 5 | Establish direction of air flow in each consultation room and mark with a sign. Health workers should sit with the clean air moving from behind them towards the client | |
| 6 | Provide face masks/respirators (where appropriate) and other protective equipment in consultation rooms for health worker | |
| 7 | Display tissues and face masks in a prominent position in the waiting area | |
| 8 | Place bins or appropriate receptacles for disposal of tissues/face masks in a prominent position in the waiting area | |
| 9 | Open windows or doors wide to ensure maximum air flow | |
| 10 | Ensure appropriate arrangement of nurse/doctor and patient in consultation room according to airflow direction | |
| 11 | Locate fans in appropriate place ensuring they are operational, mixing the room air and providing correct direction of air flow | |

# VI. TB AND AIRBORNE IPC MONITORING AND EVALUATION TOOL FOR CLINICAL SITES[5]

**Name of IPC Officer**.....

Patient Population:.....

HIV ☐ Maternity ☐ General OPD ☐ General Ward ☐

TB ☐ Pediatrics ☐ ER ☐

| Date | |
|---|---|
| Assessor | |

Clinical area being assessed: _____ _____

Type of Site: In-Patient ☐ Out-Patient ☐

| TB/Airborne Infection Control M&E Tool for Clinical Sites | | |
|---|---|---|
| | **Managerial** | **Scoring** |
| 1 | An IPC Committee or Person is designated for this site. | **Y or N** |
| 2 | A written IPC plan or check list is available for this site. | **Y or N** |
| 3 | TB and Airborne IPC training for all staff has been done. | **Y or N** |
| 4 | Facility design and patient flow have been assessed (best use of space & ventilation). | **Y or N** |
| 5 | **Monitoring and evaluation of TB and Airborne IPC data forms are reviewed routinely.** | **Y or N** |
| 6 | **A tracking system for all TB suspects, referrals, and their sputum smear results is in place.** | **Y or N** |
| 7 | A register is kept of all TB patients reported to the National TB Program. | **Y or N** |

[5] *Adapted from CDC*

| TB/Airborne Infection Control M&E Tool for Clinical Sites | | |
|---|---|---|
| | **Administrative** | **Scoring** |
| 8 | All patients with TB disease are managed on DOT as per the national guidelines. | **Y or N** |
| 9 | IEC on TB and Airborne IPC targeted at patients, relatives and visitors is available for all and offered by the staff. | **Y or N** |
| 10 | Operational research to improve TB and Airborne IPC measures is conducted at this site. | **Y or N** |
| 11 | **Patients are routinely asked about cough upon entering the health facility.** | **Y or N** |
| 12 | Patients that are coughing are separated from others and "fast tracked" to caregiver. | **Y or N** |
| 13 | A designated health personnel gives cough etiquette guidance and assists with triage. | |
| 14 | Illustration for cough etiquette is present in the health facility. | **Y or N** |
| 15 | Sputum samples are collected in a designated area and away from others. | **Y or N** |
| 16 | **Health workers that assist during sputum collection take precautions.** | **Y or N** |
| 17 | **a.** Processing of sputum samples is expedited to lab.<br>**b.** There is a tracking mechanism to monitor turn-around time of lab results. | **Y or N** |
| 18 | There is a tracking mechanism to monitor turn-around time of patient within the health facility. | **Y or N** |

| TB/Airborne Infection Control M&E Tool for Clinical Sites | | |
|---|---|---|
| | **Environmental Controls** | **Scoring** |
| 19 | A log is kept of all staff who are diagnosed with TB disease. | **Y or N** |
| 20 | Staff receive an evaluation for TB at least once a year | |
| 21 | Staff are offered an HIV test annually and assessed or offered ART if HIV positive. | **Y or N** |
| 22 | HIV-infected staff are reassigned if requested. | **Y or N** |
| 23 | Natural and/or mechanical airflow is monitored daily by staff (especially in waiting rooms, sputum collection room if available, and at least one consulting room). | **Y or N** |
| 24 | Regular maintenance for directional and extractor fans is conducted. | **Y or N** |
| 25 | Signage is in place to keep doors and windows open when feasible. | **Y or N** |
| 26 | Patients are not crowded in hallways or waiting areas. | **Y or N** |

| TB/Airborne Infection Control M&E Tool for Clinical Sites | | |
|---|---|---|
| | **PPE (Personal Protective Equipment)** | **Scoring** |
| 27 | N-95 or FFP2 respirators are readily available for staff. (where appropriate) | **Y or N** |
| 28 | Staff have been trained on proper fit of respirators. | **Y or N** |
| 29 | Supplies are available to coughing patients (tissues, cloths, face masks, trash bins, etc). | **Y or N** |
| 30 | Staff are provided continuing education opportunities on TB IPC | **Y or N** |

■ *Use the back side of form for additional comments, room design, patient flow, etc. You may also use the back to identify the facility's Strengths/ Weaknesses and your solutions or recommendations for improvement*

# VII. TB AND AIRBORNE INFECTION PREVENTION AND CONTROL STAFF RISK ASSESSMENT LOG FOR SUPERVISORS[6]

| Name of staff member (or personnel number) | Category of worker | Department / Unit | Date of assessment | Does staff member have symptoms of TB (Y/N) e.g. 2 weeks cough, weight loss, night sweat fever | Staff member requested referral for further investigation (Y/N) | Does staff member knows his/ her HIV status (Y/N) |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

[6] *Source: RHU/HIV Management Cluster, South Africa*

## VIII. TB INFECTION PREVENTION AND CONTROL BASIC TRAINING COMPONENTS

Infection Prevention and Control will only work if the staff understand why it is important and what their role is, therefore in addition to standard precautions, all health workers should receive on-going training (at least yearly) on:

- The basics of TB and Airborne infections transmission
- Signs and symptoms of TB and Airborne infections
- Use of the TB screening questionnaire for PLHIV
- The increased risk of TB in HIV positive patients and other at-risk groups e.g. diabetics
- The importance of TB and Airborne infection prevention and control, the health facility IPC plan and what role they play
- Which areas and/or procedures pose the greatest risk; examples of high risk areas are emergency rooms, TB laboratory, sputum collection booths, small enclosed crowded waiting areas, and examples of high risk procedures are cough induction, intubation, bronchoscopy and aerosol producing laboratory techniques
- Specific TB and Airborne IPC practices that reduce transmission; examples are triage, separation, prompt service for coughing patients and education on cough etiquette, cross ventilation

# IX. VENTILATION AND TB INFECTION PREVENTION AND CONTROL[7]

## *Why is ventilation important in the implementation of TB Infection Control?*

*Tuberculosis is spread by airborne route. Infectious particles (droplet nuclei) are suspended in the air and infection with TB is acquired by inhalation of infectious particles. Breathing clean air (air free of TB particles) will not lead to TB Infection; therefore keeping air clean is critically important. This can be achieved by ensuring good ventilation*

### What is ventilation?

Ventilation refers to the removal of old, stale or 'diseased' air and replacing it with new, fresh or 'clean' air. This has the effect of removing infectious particles, and diluting those that remain, so that the chances of inhaling infectious particles are kept to the minimum. Ventilation can also control the direction of air flow so that air flows from less contaminated to more contaminated areas.

### What is 'air mixing'?

Air mixing refers to the mixing of existing air within the environment so that infectious particles are evenly mixed within an environment and pockets of air with high concentrations of infectious particles are evenly distributed. This will mean that all infectious particles have an equal chance of being removed or diluted by ventilation. Air mixing is essential if ventilation is to be effective. If air is not mixed properly, ventilation may not remove enough infectious particles.

[7] *References: CDC and RHU/HIV Management Cluster, South Africa*

### How can I mix the air?

Air can be mixed by using fans (Standing fans or extraction fans) or by opening windows and taking advantage of wind or natural flow patterns of air within the environment.

### What is 'directional air flow' and how can I use this to keep health workers safe?

Air should flow from low concentration of infectious particles, towards a high concentration. The health worker should always be 'upwind' of the patient – i.e. clean air should flow from behind the health worker towards the patient

### How can I measure ventilation rates?

Ventilation rates are measured by 'air changes per hour' (ACH). This is calculated by dividing room ventilation rate ($m^3$/hr) by the room volume (size, in $m^3$). Ventilation rate for naturally ventilated spaces are difficult to calculate. However one can 'feel' if air is moving within the environment, and confirm this using the smoke test. Air conditioners usually have fixed or variable settings which can be read on the unit. An air-conditioning technical specialist can assist.

### How does natural ventilation compare with mechanical ventilation (air-conditioning)?

Natural ventilation is almost always more effective than mechanical ventilation. A study in Peru showed that natural ventilation achieved more than 17-40 air change per hour (ACH), while well functioning air conditioning in isolation rooms achieved 12 ACH.

**What are recommended ventilation rates for health care facilities?**

The CDC recommends 12 air changes per hour (ACH) for respiratory isolation rooms and areas where suspected TB Patients are managed. In Ghana, we do not have resources for respiratory isolation rooms. When considering TB Infection Prevention and Control issues, all persons attending health facilities should be asked for cough > 2 weeks.

**If I cannot open my windows, or if mechanical ventilation is used in my health facility, how can I ensure that ventilation rates are adequate?**

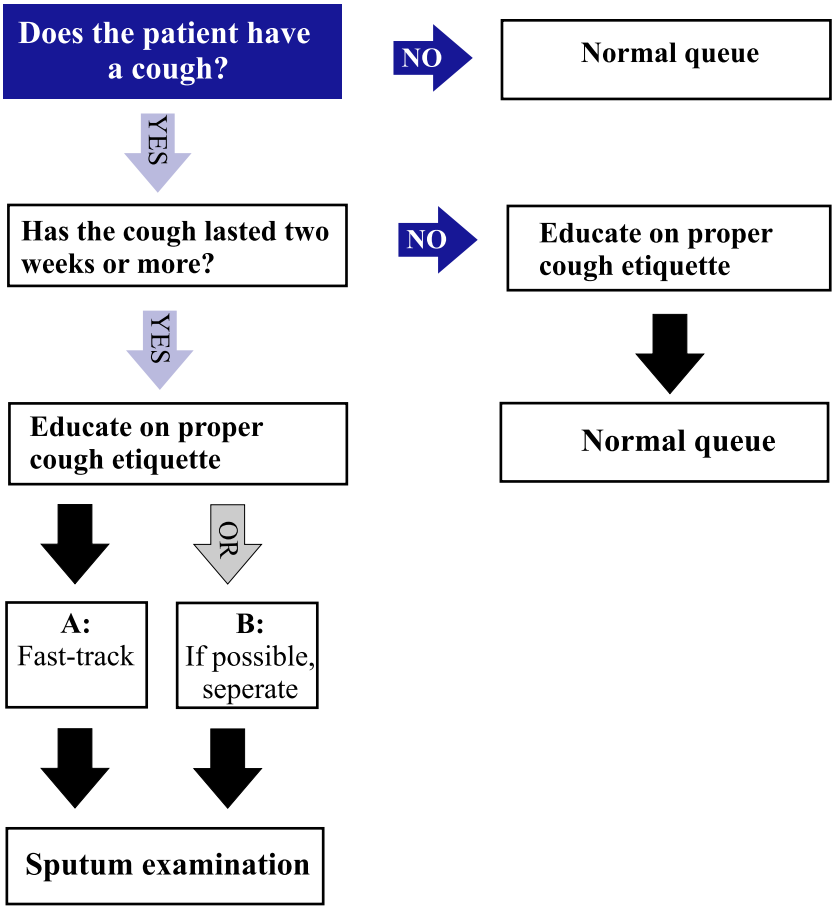
Maintain air conditioning units regularly, according to a schedule. Ensure that air mixing is taking place in high risk areas, for example in waiting areas and emergency rooms. Keep the direction of air flow correct to minimize risk to health workers, especially in the consulting rooms

**Did you know?**

*Air mixing is essential if ventilation is to be effective*

## X. TRIAGE PROCEDURE IN RELATION TO TB AND AIRBORNE INFECTION PREVENTION AND CONTROL

Triage personnel should screen every patient entering the health facility for cough.




The triage procedure emphasizes the importance of cough etiquette, expedited services or separation and sputum examination based on cough! Other tools and examinations may be used e.g. the TB screening questionnaire for PLHIV.

## XI. TB SCREENING QUESTIONNAIRE (FOR PLHIV)[8]

**Name** .....

AGE: ..... SEX: ..... Date:

### SYMPTOM SCREEN

Do you have any of the following symptoms?
(Please circle grade for response)

| | No | Yes |
|---|---|---|
| **Do you have a Cough in the last 24 hours?** | 0 | 2 |
| Coughing up blood | 0 | 2 |
| Sputum production | 0 | 2 |
| Loss of weight in last 3 months | 0 | 1 |
| Drenching night sweats | 0 | 1 |
| Fever | 0 | 1 |
| Chest pain | 0 | 1 |
| **Total Score: (max 10)** | | |

| **If Client has:** | **Interpretation** |
|---|---|
| Cough for 24 hours or more plus 1 other symptom listed above | **Suspect** |
| Score of 3 or more on symptom screen | **Suspect** |

**CONCLUSION** (Circle) **SUSPECT** **NON-SUSPECT**

[8] *TB Screening Tool for People Living with HIV*

## REQUEST SPUTUM SMEAR MICROSCOPY FOR ALL SUSPECT

**RESULTS (Circle final diagnosis)**

**SPUTUM 1:**

Date…….. POS NEG REF NPC DBC ILL

**SPUTUM 2:**

Date……..…. POS NEG REF NPC DBC

| KEY |
|---|
| **POS:** positive smear result |
| **REF:** refused to provide a sputum |
| **NEG:** negative smear result |
| **DBC:** died before sputum collection |
| **NPC:** non productive cough |
| **ILL:** too ill to provide sputum |


USAID
FROM THE AMERICAN PEOPLE

TB|CTA
The Tuberculosis Coalition
for Technical Assistance