

## Pulmonary Tuberculosis Policy

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Relevant Regulations and Standards	



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## 1 Introduction & Scope

This policy aims to give guidance to all healthcare workers for the safe management of patients with active pulmonary TB thereby reducing the risk of transmission to other patients and staff within a hospital setting.

Tuberculosis (TB) is caused by a bacterium called *Mycobacterium tuberculosis* ('*M. tuberculosis*' or '*M. Tb*'). It is contracted by inhaling the bacterium in droplets that are coughed or sneezed out by someone with infectious tuberculosis, particularly those with bacteria which can be seen on simple microscope examination of the sputum who are termed 'smear positive'.

The risk of becoming infected depends principally on how long and how intense the exposure to the bacterium is. The risk is greatest in those with **prolonged** close household exposure to a person with infectious TB; thus health care workers giving transient care are not exposed to significant risk.

In a small number of cases a defensive barrier is built round the infection but the TB bacteria are not killed and lie dormant, this is called latent tuberculosis and is not considered infectious, as is extra pulmonary TB, i.e. that which is found in other parts of the body. (NICE 2006)

## 2 Policy Statement

### 2.1 Notification

**All** forms of TB are notifiable under the Public Health (Control of Disease) Act 1984. It is the responsibility of the clinician who makes the diagnosis (or presumptive diagnosis) to notify the Consultant in Communicable Disease Control (CCDC) (Tel. 01904-567675) both verbally and via the notification form available on Horizon following the Infection Prevention icon → documents.

The TB specialist nurse team **must** also be informed of all suspected/proven cases immediately (Tel. 01904-601622/3/4; fax. 01904 601638)

Close contacts of sputum smear positive cases that are under the age of 2 years may require prophylactic treatment. Inform Consultant Paediatrician.

## 2.2 Responsibility for patient management

All patients with pulmonary TB should be under the care of a Respiratory Physician and have access to specialist TB nurses (or Consultant Paediatrician if under 16 years).

## 2.3 Suspicion of Multi-Drug Resistant Tuberculosis (MDR-TB)

Multi-drug resistant *Mycobacterium tuberculosis* is resistant to isoniazid and rifampicin, with or without resistance to other anti-tuberculous drugs (DOH, 1998), while it remains at a low level in the United Kingdom (HPA, 2007), it should be considered if there is;

- A previous history of drug treatment for TB or previous treatment failure.
- Contact with an individual with known MDR-TB.
- Failure of clinical response while on treatment.
- Prolonged sputum smear or culture positive while on treatment (smear positive at 4 months or culture positive at 5 months).
- A patient who is HIV positive.
- TB that has possibly been acquired from a country with a known high rate of MDR-TB.
- Residence in London.
- Age profile, with the highest rates between ages 25 and 44.

**In any patient with suspected or confirmed TB, an urgent risk assessment should be made as to likelihood of infection with MDR-TB. This should include discussion with a Respiratory Physician or Medical Microbiologist (including out of hours).**

**The patient with suspected or confirmed MDR-TB must be nursed in a negative pressure facility, (not available in York) therefore will need urgent transfer to Leeds Teaching Hospitals NHS Trust upon instruction by the Respiratory Physician in charge of the patients care in collaboration with the Consultant in Communicable Disease Control (CCDC) and the Health Protection Unit (HPU).**

## 2.4 Control of TB in Hospital

- When a patient is admitted with known or suspected TB, it is essential that the Infection Prevention Team (IPT) and Specialist TB Nurses are informed to allow a full risk assessment to be undertaken.
- If a patient has smear positive pulmonary TB while on the open ward, the risk of transmission to other patients is small (BTS, 2000). If this occurs the IPT must be informed and a risk assessment by the clinicians and microbiology consultants.
  - Patients who are defined as being at significant risk following exposure are generally those in the same bay as a patient coughing with smear positive pulmonary TB for more than 8 hours (NICE, 2006). Such patients should have the contact documented in their notes. It is the responsibility of the Consultant to inform the patient and the GP, there should be a risk assessment in conjunction with the HPU re further action required.
- All patients with suspected pulmonary TB must have a chest x-ray.
- Sputum samples should ideally be sent on 3 consecutive days, for microscopy, culture and sensitivity. The first sample should be sent as soon as TB is suspected. If possible the samples should be sent prior to starting anti-TB treatment; however this should not delay treatment starting. Samples should be obtained at least within 7 days of starting treatment and specify testing for TB. The samples must be labelled 'danger of infection'.
- In cases where the patient is unable to produce samples, a clinical assessment must be made in conjunction with the Respiratory Physicians and the consultant microbiologist, **cough induced**



sputum samples may only be taken in negative pressure rooms, therefore **cannot** be performed at York Hospital. This will determine the risk to other patients and staff and the need for respiratory/ isolation precautions.

- Patients should be nursed in a single room with the door closed. Display the Respiratory Precautions door notice and follow guidance on personal protective equipment PPE use, cleaning and waste disposal.
- Effective hand hygiene in accordance with the 5 moments (WHO guidelines)
- Health Care Workers (HCW) do not need to wear masks for general care, **however**; FFP2 masks are to be worn for aerosolizing generating procedures (AGP):

**The following are classified as AGP by the World Health Organization (reviewed 2009):**

- Intubation and related procedures, e.g. manual ventilation
- Respiratory and airway suctioning (including tracheostomy care and open suctioning with invasive ventilation)
- Cardiopulmonary resuscitation
- Bronchoscopy
- Collection of lower respiratory tract specimens (e.g. bronchial and tracheal aspirates)
- Post mortem procedures

The following procedures are **not** classified as AGP:

- Mechanical ventilation or respiratory therapy treatment unless an AGP is being performed on an open system
- Closed suctioning with invasive ventilation
- Non-invasive positive pressure ventilation (BiPAP)
- Bi-level positive airway pressure (BPAP)
- Nasopharyngeal aspiration
- Nebulisation (but only if this procedure can be performed in an area physically separate from other patients)

Chest physiotherapy is not considered an AGP but a surgical mask should be worn by the patient if tolerated and Health Care Workers

should wear PPE as recommended for routine care during the procedure.

**On suspicion of MDR-TB HCW must wear (correctly fitted) FFP3 for all care.**

- Gloves and apron to be worn for contact with bodily fluids including sputum and during aerosolizing procedures. Eye protection should be considered if there is a risk of splashing into the eyes i.e. during suction.
- All linen must be placed in a water soluble bag, and then into a red outer bag.
- All waste to be disposed of in clinical waste.
- If the patient has a productive cough, encourage him/her to cough into tissues/sputum pots, which are then disposed of in clinical waste.
- When transferring the patient between departments he/she must wear a surgical mask **if** they have a productive cough.
- The patient can come out of isolation when there is a negative result **or** if a positive result, has completed 14 days of chemotherapy on a fully sensitive organism.
- Adults with non-pulmonary TB can be nursed on the general ward, although aerosol generating procedures such as abscess drainage or wound irrigation may necessitate patient isolation (BTS, 2000).

## 2.5 Visiting

- Visitors should be excluded from all other areas of the ward and go directly to the patients' side room until the source of the patient's infection has been established.
- Only those visitors, including children, who have already been in close contact with the patient before diagnosis, should be allowed to visit the patient whilst they are considered infectious.

- The use of masks for visitors who have been in recent contact with the patient is not necessary.

## 2.6 Staff Exposure and Immunity

- All staff should have their immunity to TB checked by Occupational Health as soon as possible after starting work (NICE, 2006). Clinical Directors, via delegation to line managers are responsible for ensuring that all members of staff attend. BCG immunisation will be given to those with no demonstrable immunity in accordance with current guidelines. Any staff with no demonstrable immunity or where immunity is not known should not knowingly care for patients with pulmonary TB.
- It is uncommon for staff to acquire pulmonary TB from patients. If staff develop symptoms that are suspicious of pulmonary TB, they should report to Occupational Health immediately.

## 3 Equality Impact Assessment

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at an unreasonable or unfair disadvantage over others.

## 4 Accountability

All healthcare professionals are responsible and accountable to the Chief Executive for the correct implementation of this policy. Medical staff are professionally accountable through the General Medical Council, and nurses are professionally accountable to the Nursing and Midwifery Council.

***The Trust expects all health care professionals involved in the performance of isolation practice and techniques to be familiar with current policies and legislation, and to ensure they attend the relevant training courses, and be able to demonstrate a satisfactory level of competence measured by formal assessment.***

## 5 Consultation, Assurance and Approval Process

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## **5.1 Consultation Process**

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are placed at an unreasonable or unfair disadvantage over others.

In the development of this policy, the Trust has considered its impact with regard to equalities legislation.

## **5.2 Quality Assurance Process**

Following consultation with stakeholders and relevant consultative committees, this policy has been reviewed by the Trust's Quality Assurance group to ensure it meets the NHSLA standards for the production of procedural documents.

## **5.3 Approval Process**

Following completion of the Quality Assurance Process, this policy and any subsequent revisions will require the approval of the Hospital Infection Prevention Committee.

## **6 Review and Revision Arrangements**

The review of the document will be undertaken with the collaboration of all parties involved in 2 years or earlier if there are changes in recommended practice or legislation.

## **7 Dissemination and Implementation**

### **7.1 Dissemination**

This policy is available in alternative formats, such as Braille or large font, on request to the author of the policy.

The Policy will be disseminated through the Consultants; Matrons; and Ward Managers by e-mails and meetings.

### **7.2 Implementation of Policies**

Once approved previous electronic versions of this document will be archived accordingly on the Trust's electronic portal Horizon. The current version of the document will be published on the above site. Information related to the latest version of the document will be available from

Infection Prevention Department and Trust wide information i.e. team brief. This policy will be made available to service users and the public, on request, and in the format requested.

## **8 Document Control including Archiving Arrangements**

### **8.1 Register/Library of Policies**

This policy will be stored on the Trust's electronic portal, Horizon, on the policies and procedures site and will be stored both in an alphabetical list as well as being accessible through the portal's search facility.

### **8.2 Archiving Arrangements**

On review of this policy, archived copies of previous versions will be automatically held on the version history section of each policy document on Horizon. It is the responsibility of the Publisher(s) to ensure that version history is maintained on Horizon.

### **8.3 Process for Retrieving Archived Policies**

To retrieve a former version of this policy from Horizon, the Compliance Unit should be contacted.

## **9 Monitoring Compliance With and the Effectiveness of Policies**

This policy will be monitored for compliance with the minimum requirements outlined below. Where the minimum requirements for the policy are prescribed by the NHSLA Risk Management Standards, the Criterion number must be quoted.

### **9.1 Process for Monitoring Compliance and Effectiveness**

In order to fully monitor compliance with this policy and to ensure that the minimum requirements are met, the policy will be monitored as follows:

<b>Minimum Requirements</b>	<b>Monitoring</b>
a. <b>Standard and respiratory precautions maintained at all times</b>	<b>Compliance with Infection Prevention (IPT) care plan.</b>
b. <b>Effective hand hygiene</b>	<b>Monthly hand hygiene and bare</b>



<http://www.hpa.org.uk/Publications/InfectiousDiseases/Tuberculosis/0711TuberculosisAnnualreport2007/>

<http://www.brit-thoracic.org.uk/tuberculosis/tuberculosis-guidelines.aspx>

<http://www.nice.org.uk/CG033>

[http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH\\_4985677](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4985677)

[http://www.who.int/gpsc/tools/Five\\_moments/en/index.html](http://www.who.int/gpsc/tools/Five_moments/en/index.html)

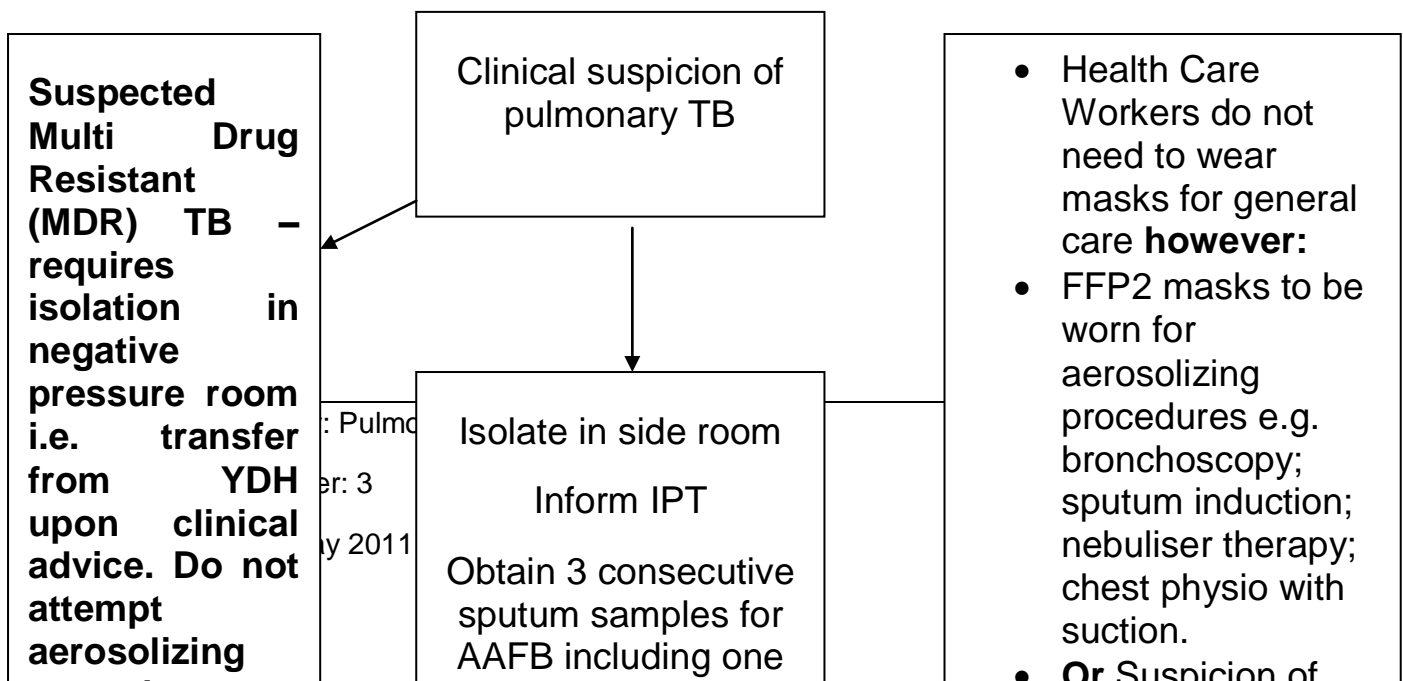
### 13 Appendices

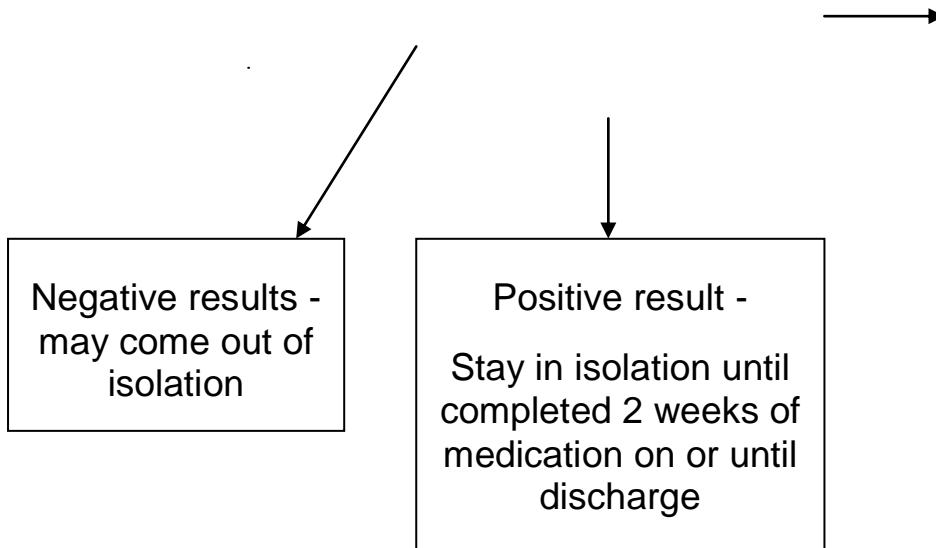
Appendix i) TB flow chart

Appendix ii) Respiratory door notice

## Pulmonary Tuberculosis Nursing Management Flow Chart

Appendix i





- **Always display respiratory isolation door notice and follow the instructions for Hand Hygiene, PPE, disposal of waste and laundry.**
- **Pulmonary TB is a notifiable disease – Doctors must inform Health Protection Agency/complete notification form; send to Proper Officer, Environmental Health, as per notification form.**



# Infection Prevention



- Doors to the side room / segregated area must be kept closed.

- Effective hand hygiene before and after patient contact

- Hands **not** visibly soiled - **alcohol gel**.
- Hands visibly soiled or nursing patients with enteric illness - wash with **soap and water**.

- Eye protection

- Should always be used during aerosolising procedures.

- Disposable masks

- Health Care Workers do not need to wear masks for general care **however**:
- FFP2 masks to be worn for aerosolising procedures e.g. bronchoscopy; sputum induction; nebuliser therapy; chest physio with suction.
- Or suspicion of MDR TB, **must** wear FFP3 masks.

(Departments receiving emergency admissions i.e. ED/AMU/ASU & specialist respiratory wards should hold a stock of FFP2 masks; FFP3 masks are available from Stores or Bed Managers out of hours)

- Gloves, apron and gowns

- **Gloves** are not required for routine care.
- **Aprons** to be worn if there is a risk of contamination from blood or bodily fluids.
- **Fluid repellent gowns** should be worn if there is a risk of extensive soiling, for aerosolising procedures and for activities that require holding the patient close e.g. in paediatric settings.

- **Waste** Dispose of in room as clinical waste.

- **Linen** Dispose of as contaminated/infected linen, by placing in water-soluble bag, and then placed in an outer red plastic bag.

- **Documentation** Keep outside room

- **Environmental cleaning**

With micro-fibre and neutral detergent.  
Communal equipment - Clinell Wipes

**Please clean this room last**

**Please refer to patients care plan for further details or contact the Infection Prevention Team, ext 5860 bleep 809**