| Trust Policy | Worcestershire Acute Hospitals NHS Trust |
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# Tuberculosis (TB) in Hospital: Infection Prevention Policy

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| **Department / Service:** | Infection Prevention and Control |
| **Originator:** | Dr Thekli Gee (Consultant Microbiologist) |
| **Accountable Director:** | Ms Vicky Morris (Director of Infection Prevention and Control) |
| **Approved by:** | Trust Infection Prevention and Control Committee |
| **Date of approval:** | 16th December 2019 |
| **First Revision Due:** | 16th December 2022 |
| **Target Organisation(s)** | Worcestershire Acute Hospitals NHS Trust |
| **Target Departments** | All Clinical Departments |
| **Target staff categories** | All staff |

| **Policy Overview:** |
|---|
| Outline of infection prevention measures needed for managing TB cases in hospital. Also includes background information on TB, laboratory diagnosis, risk assessment to determine infectivity and likelihood of multi-drug resistance. Allocation of isolation facilities. |

## Key amendments to this guideline

| Date | Amendment | Approved by: |
|---|---|---|
| 28/09/2010 | Updated details regarding TB- spot tests (4.) and HIV testing (5.) | J Stockley |
| 09/10/2011 | Extension of policy expiring date for one year | H Gentry |
| 22/07/2013 | Updates information on TB epidemiology, use of IGRA tests, and key personnel changes in respiratory medicine | J Stockley |
| 23/11/2015 | Document extended for 12 months as per TMC paper approved on 22nd July 2015 | TMC |
| 25/11/16 | Further extension as per TMC paper approved on 22nd July 2015 | TMC |
| November 2017 | Document extended whilst under review | TLG |
| December 2017 | Document extended for 3 months as per TLG recommendation | TLG |
| January 2018 | Change wording of 'expiry date' on front page to the sentence added in at the request of the Coroner | |
| March 2018 | Document extended for 3 months as approved by TLG | TLG |
| June 2018 | Document extended for 3 months as per TLG recommendation | TLG |
| October 2018 | Document extended until end of November | Heather Gentry |
| April 2019 | Document extended for 6 months whilst review process takes place | TIPCC |
| December 2019 | Re write of policy. Approved for three years at TIPCC | TIPCC |

**Contents page:**

## Appendices



## Supporting Documents

| | |
|---|---|
| Supporting Document 1 | Equality Impact Assessment |
| Supporting Document 2 | Financial Risk Assessment |

# 1. Introduction

## 1.1. Tuberculosis (TB)

Tuberculosis (TB) is a chronic, progressive infection which most commonly affects the respiratory tract but can involve any organ of the body. Most cases of tuberculosis are caused by the bacterium *Mycobacterium tuberculosis* and a few by *Mycobacterium bovis* or *Mycobacterium africanum*. **It is a notifiable disease.**

TB can be transmitted from person-to-person via respiratory droplets therefore certain infection prevention procedures should be employed when caring for a patient with known or suspected TB and these are highlighted in this policy. Methods of detecting this infection using laboratory tests are also outlined as these will help to determine the degree of infectivity.

Most patients with tuberculosis can be treated at home. A few need hospital admission for severe illness, adverse effects of chemotherapy, compliance or social reasons (especially if drug-resistant TB is suspected or confirmed).

## 1.2. Multi-Drug Resistant Tuberculosis (MDR-TB)

MDR-TB is defined as *Mycobacterium tuberculosis* that is resistant to both rifampicin and isoniazid (two key antibiotics used to treat TB) with or without additional drug resistance. The incidence of multi-drug resistant TB in the UK is 1.7%, based on testing of laboratory isolates (1). Since it is unusual to have rifampicin resistance alone, if this is detected using a rapid molecular method then multi-drug resistance is inferred, whilst full sensitivity data are awaited.

Although MDR-TB is no more infectious than fully drug susceptible TB, the consequences of acquiring MDR-TB are much more serious. This is due to the greater difficulty and cost of treating it, with prolonged infectivity and the risk of much poorer outcomes.

This policy outlines how to make a risk assessment to identify patients suspected with MDR-TB and infection control measures that are appropriate for these patients.

## 1.3. Extensively Drug Resistant Tuberculosis (XDR-TB)

XDR-TB is defined as MDR-TB that is also extensively resistant to second line drugs (fluoroquinolones and either capreomycin, kanamycin or amikacin). These strains were first reported in Kwazulu-Natal, South Africa and have been associated with a higher mortality (2, 3). The first UK case of XDR-TB was detected in Glasgow in 2008.

## 1.4. Epidemiology

Tuberculosis affects one third of the world's population. Areas worst affected are where rates of poverty and HIV infection are highest. The UK is now considered to be a low

incidence country, but there is considerable regional variation in rates of TB with a higher incidence in urban areas.

Individuals at higher risk of infection include: those born in countries with a high incidence of TB (more than 40 per 100,000 population), children of those born in high incidence countries, contacts of known TB cases, HIV patients, alcohol dependent individuals and the homeless.

In 2018 the rate of TB in England was 8.3 per 100,000 population. London accounts for most cases reported, followed by the West Midlands (1,4).

Annual TB rates per 100,000

| | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|
| **Worcestershire** | 3.5 | 3.3 | 2.7 | 4.2 |
| **West Midlands** | 12.2 | 12.4 | 11.3 | 10.5 |
| **England** | 10.5 | 10.2 | 9.2 | - |

**TB Rates in Worcestershire in 2018**

| | **Rate per 100 000 population** | |
|---|---|---|
| **Worcestershire** | Redditch & Bromsgrove: | 6.1 |
| | South Worcestershire | 4.6 |
| | Wyre Forest: | 0 |

## 2. Scope of this document

The purpose of these guidelines is to ensure that all staff caring for patients with known or suspected Tuberculosis are aware of the processes to follow in order to:

- Improve individual patient outcomes and recovery from this infection and its associated complications
- Reduce / eradicate opportunities for transmission to other patients / staff

**These guidelines should be read in conjunction with:**

a) Isolation and Bed Management Policy
b) Management of Healthcare Waste Policy

These guidelines are intended for use by all Medical, Nursing, Allied Health staff and Managers including all temporary, locum and contracted staff. Where appropriate it should be referred to by all volunteer staff.

## 3. Definitions

**MDR-TB**
*Mycobacterium tuberculosis* that is resistant to both rifampicin and isoniazid (two key antibiotics used to treat TB) (see 1.2)

**XDR-TB**
MDR-TB that is also extensively resistant to second line drugs (see 1.3)

**CCDC:**
Consultant in Communicable Disease Control. Usually a Public Health Consultant.

**PHE:**
Public Health England.

## 4. Responsibility and Duties

**Chief Executive**
The Chief Executive is ultimately accountable for infection prevention and control ensuring that effective arrangements are in place to reduce the spread of Tuberculosis and ensure that affected patients are managed appropriately to improve outcome, prevent cross-infection and reduce morbidity/mortality.

**Director of Infection Prevention and Control (DIPC)**
As set out in the Chief Medical Officer's document 'Winning Ways' (2003) and Health and Social Care Act (2008) the DIPC is accountable directly to the Chief Executive and Trust Board on all matters relating to the prevention and control of healthcare associated infections (HCAIs)

**Infection Prevention Team**
The Infection Prevention Team (IPT) is responsible for ensuring that this document reflects national guidance, clinical evidence and best practice, and that this is disseminated throughout the Trust. The IPT is responsible for co-ordinating the compliance monitoring of these procedures and ensuring that appropriate remedial actions are taken if compliance is inadequate.

**Clinical Leads and all Managers**
Clinical Leads and all Managers are responsible for ensuring that these guidelines are made available to all appropriate staff and that staff comply with them on a day- to-day basis.
Qualified staff are responsible for ensuring their practice, and that of any unqualified staff they manage, comply with these guidelines and that they receive adequate training and support.

## 5. Policy Detail

### 5.1. TB Laboratory Service

Specimens from patients with suspected or confirmed tuberculosis should be sent in sealed specimen bags. Clinical details should be clearly stated on the form so that appropriate tests can be performed in the laboratory. If multi-drug resistant TB is suspected please state this also.

Please see the pathology web pages for further information on microbiological sampling: http://www2.worcsacute.nhs.uk/healthprofessionals/pathology/our-pathology-services/microbiology/

And specimen collection for TB culture: http://www2.worcsacute.nhs.uk/healthprofessionals/pathology/pathology-tests-a-to-z/?entryid26=74683&char=T

#### 5.1.1. Specimens

Microscopy and culture for Mycobacteria may be performed on these specimens:

| Site of Infection | Specimens for microscopy & / or culture |
|---|---|
| Respiratory tract | Sputum (only when requested)<br>Bronchial alveolar lavage / washings (all)<br>Pleural Biopsy*<br>Pleural fluid (only when requested) |
| Lymph Node | Node or aspirate* |
| Bone / joint | Biopsy material*<br>Pus<br>Joint fluid |
| Gastrointestinal | Biopsy material*<br>Ascitic fluid (only when requested) |
| Disseminated / Miliary TB | Bronchial washings<br>Liver biopsy*<br>Bone marrow*<br>Citrated blood sample<br>Early morning urines (X3) |
| Central nervous system | CSF |
| Skin | Skin biopsy* |
| Pericardium | Pericardial fluid |
| Cold / liver abscess | Tissue sample* |
| Renal tract | Tissue sample*<br>Early morning urine (X3) |

*NOTE: Tissue specimens should not be placed in formalin if culture is required. However, for histological diagnosis of tuberculosis tissue specimens should be placed in formalin pots and sent to histopathology. Culture is not possible once the specimen is placed in formalin.

### 5.1.2. PCR for TB detection and rifampcin resistance

Molecular tests for *M. tuberculosis* complex and rifampicin resistance must be discussed with the duty microbiologist. They will be considered in the following circumstances:

1. From smear positive sputum if rapid confirmation of a TB diagnosis would alter the patient's care or before conducting a large contact-tracing initiative.

2. From other samples only after discussion with the duty microbiologist.

A negative PCR does not rule out TB, especially from specimens such as CSF or smear negative sputum. Treatment should be commenced on clinical grounds in these circumstances.

### 5.1.3. Clinical advice

**Microbiology:**
Clinical microbiology and infection prevention advice is available from the duty microbiologist during the day (9am-5pm) and out of hours the on-call microbiologist is available through switchboard for urgent queries.

**Infection Prevention Team:**
The infection prevention nurses are available from 9am – 4pm Monday to Friday for infection prevention advice 01905 733092

**TB nursing team:**
The TB Specialist nursing team are available on 01562 512316 from 9am – 5pm Monday to Friday for infection prevention advice.

**TB lead Chest Physicians:**
Cases of suspected pulmonary TB should be discussed with the TB lead chest physicians: Dr Sarah Deacon for the Worcester Royal Hospital and Dr Ranjit Singh for The Alexandra Hospital.

**Infectious Disease Physicians:**
Cases of suspected extra-pulmonary TB should be discussed with the Infectious Diseases team: Dr Mark Roberts or Dr Mirella Ling.
Email referrals to wah-tr.idreferrals@nhs.net

## 5.2. Management of Suspected Tuberculosis

**Undertake a risk assessment for TB (as per figure 1. and Appendix E)**

**Cough for more than 3 weeks – Consider TB!**
Especially if from high incidence country or ethnic group, immunocompromised, chronic alcohol dependence, or social deprivation.

**HIV & unexplained chest infiltrates – Consider TB!**

*****ISOLATE ON SUSPICION OF INFECTION. DO NOT WAIT FOR MICROBIOLOGY RESULTS*****

Patients with suspected TB should be risk assessed, and preferably admitted to a side-room whilst this assessment is made. The risk assessment should include:

- the likelihood of infectiousness
- the likelihood of MDR-TB.

**Cases of suspected pulmonary TB should be referred to the TB Lead Physician (Dr Sarah Deacon for the Worcester Royal Hospital and Dr Ranjit Singh for the Alexandra Hospital).**

**Cases of suspected extra-pulmonary TB should be referred to the Infectious Diseases team (Dr Mark Roberts or Dr Mirella Ling).**
**Email referrals to** wah-tr.idreferrals@nhs.net

### 5.2.1. How Infectious?

Infectious TB is active tuberculous disease that presents a risk of transmission of infection to others. For most practical purposes, this means **sputum-smear positive pulmonary tuberculosis** in which acid-fast bacilli (AFB) are present on direct microscopy of sputum (also known as **open pulmonary TB**).

**Sputum microscopy results available**

If acid-fast bacilli (AFB) are present on direct microscopy of the patient's sputum the patient has infectious TB and should be isolated appropriately.
Please see section 5.3.

NB: Patients whose bronchial washings are positive on direct microscopy should be managed as infectious TB if:

- their sputum is smear positive also,
- they are on a ward with immunocompromised patients or
- they are known or suspected as having MDR-TB

**Sputum microscopy results not available**

If the sputum microscopy result is not yet available the likelihood of infectiousness should be based on epidemiology, clinical & radiological findings, and the presence of coughing.

**Degree of infectivity after treatment**

A patient with infectious TB may be considered non-infectious after 2 weeks of treatment assuming that they are compliant and responding to treatment (except patients with MDR-TB).

NB: Patients with suspected or confirmed TB should **not** be nursed in the same area as immuno-compromised patients (i.e. Laurel 3, Silver oncology).

### 5.2.2. Likelihood of Multi-Drug Resistant Tuberculosis (MDR-TB)

An assessment to determine the risk of the patient being infected with a multi-drug resistant strain of *M. tuberculosis* must be made by the admitting clinical team for each new diagnosis of TB, as these patients will be treated differently.

**Risk Factors for Multi-Drug resistant TB**

Assess the likelihood of a patient having MDR-TB based on the risk factors listed below (in order of greatest to least importance) and on the geographical distribution of drug resistance within the UK (5,6,7).

Major Risk Factors

- A history of prior TB drug treatment or treatment failure
- Contact with a known case of drug-resistant TB
- Birth in a foreign country, particularly those with a high-incidence of MDR-TB (see appendix A).
- Any patient with suspected or confirmed TB who shows no improvement after 5-7 days of monitored treatment with standard quadruple anti-tuberculous therapy.

Minor Risk Factors

- HIV infection
- Residence in London
- Age profile, with highest rates between ages 25 and 44
- Male gender

**If MDR-TB suspected**

If based on this risk assessment, MDR-TB is suspected:

1. Inform the Infection Prevention Team.

2. The patient should be isolated in a **monitored negative pressure ventilated side room** (see isolation and bed management policy). If none are available, the patient must be transferred to a hospital that has these facilities.

3. Refer the patient to a chest physician as soon as possible. Several second or third line agents will be used to treat these patients.

4. Inform the duty microbiologist so that rapid testing for rifampicin resistance can be arranged where appropriate.

5. Health care workers should wear personal protective equipment including FFP3 masks whilst caring for the patient. (See section 5.5 for further details).

6. Visitors should wear FFP3 masks when visiting the patient.

### 5.3. Isolation of Suspected and Confirmed Tuberculosis Cases

**Please also see TB Quick Action Guide – appendix E**

People with TB at any site of disease should not be admitted to hospital for diagnostic tests or for care unless there is a clear clinical or socio-economic need e.g. homelessness. Infectious TB patients who require admission must be isolated as outlined below to prevent secondary cases in hospital.

Please see the Trust Isolation and Bed Management policy also.

#### 5.3.1. Levels of Isolation Required

Three levels of isolation are available:

**Monitored negative pressure rooms**
These rooms are under negative pressure in relation to the ward. There are negative pressure rooms on Avon 3 or Laurel 2. They should have air pressure measured as defined by NHS Estates (8). Rooms with specialist ventilation must have doors and windows closed to be effective.

***PLEASE NOTE**: A switchable ventilated rooms is available on ITU but this **MUST BE SWITCHED TO NEGATIVE PRESSURE** not positive.*

**Single en-suite rooms**
These rooms are not in negative pressure but are vented to the outside of the building. Most wards have these rooms.
*Patients with TB should **NOT** be admitted to rooms on the haematology/oncology ward.*

**Beds on general ward areas**
These are beds on a ward with standard ventilation.

#### 5.3.2. Allocation of Isolation Facilities

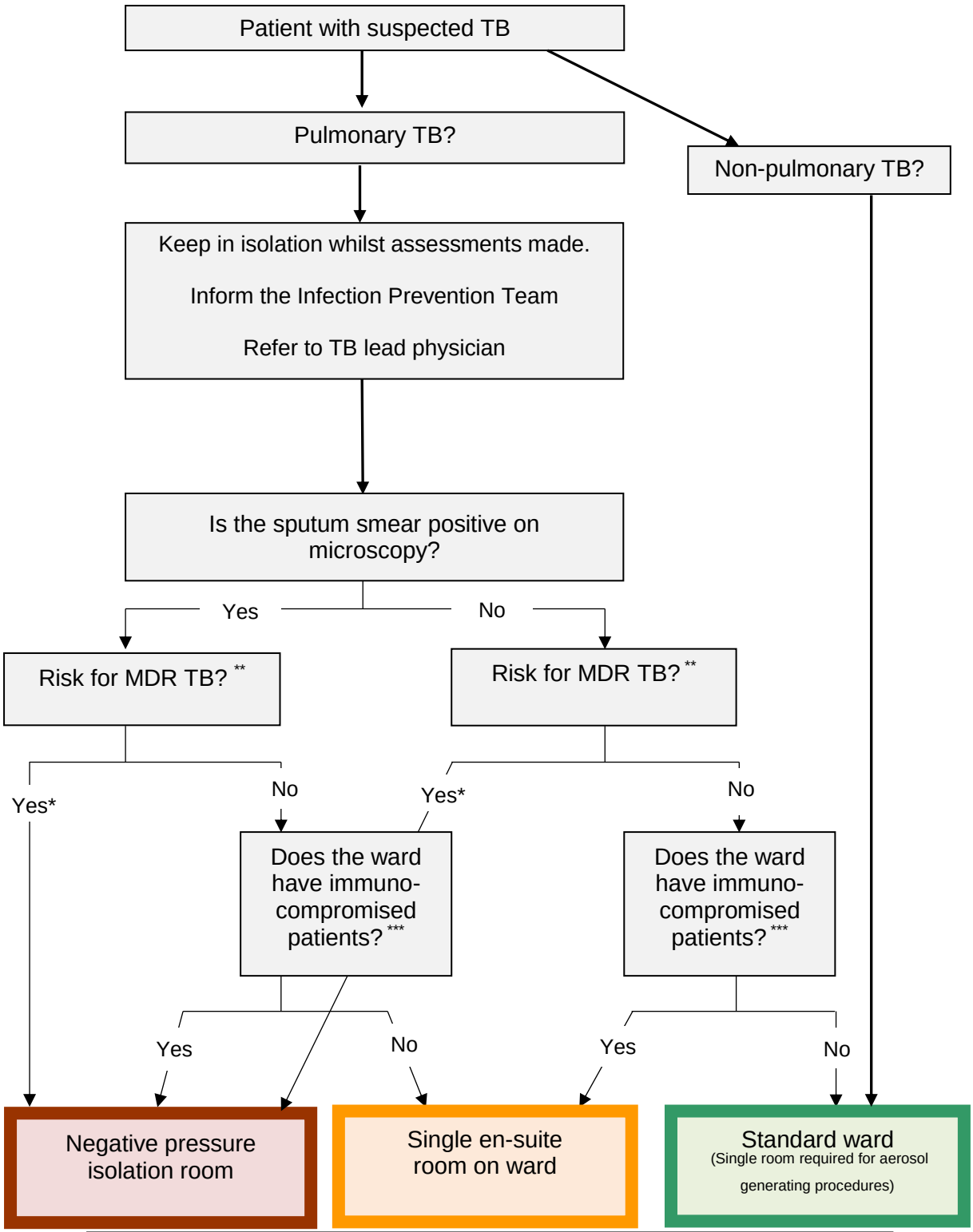
Following a risk assessment to determine infectivity and the risk of MDR-TB (see sections 5.2.1 and 5.2.2), patients are allocated the appropriate level of isolation. This is summarised in figure 1.

- Patients with suspected or known infectious MDR-TB who are admitted to hospital should be admitted to a negative pressure room. If none are available, the patient must be transferred to a hospital that has these facilities.

- Patients with suspected or known respiratory TB should be separated from immunocompromised patients, either by admission to a single room on a separate ward or in a negative pressure room on the same ward (as a last resort).

- Patients with non-pulmonary TB may be nursed on a general ward. An exception to this is when performing aerosol-generating procedures such as abscess irrigation.

**Figure 1: Flow chart demonstrating risk assessment of patients with Tuberculosis and allocation of isolation facilities.**




* Contact duty microbiologist to discuss and refer to chest physician

** See section 5.2.2 for risk assessment

*** Avoid wards with immunocompromised patients

### 5.3.3. Length of Isolation Precautions

**Patients without MDR-TB**
Smear positive TB patients without risk factors for MDR TB should be cared for in an appropriate single en suite isolation room until:

- they have completed 2 weeks of the standard anti-tuberculous drug regimen with full adherence to treatment and demonstrated a clinical response

OR

- they are discharged from hospital

Criteria for cessation of segregation from immunocompromised patients:

- a minimum of two weeks of appropriate treatment as above

AND

- a minimum of three negative sputum smears on microscopy on separate occasions over a 14-day period (if originally smear positive).

AND EITHER

- complete resolution of cough

OR

- definitive clinical improvement e.g. remaining apyrexial for a week.

**Patients with suspected MDR-TB**
Patients with suspected MDR-TB should be cared for in a negative pressure isolation room until:

- the patient is found not to have MDR-TB when results become available

OR

- the patient is no longer considered to be infectious. This is usually when cultures are negative. **The TB physician in charge of the patient and the Infection Prevention Team will determine this.**

**Transfer of patients during isolation period**
When leaving their isolation room (e.g. to have a chest x-ray), patients with smear-positive TB or MDR-TB should wear a standard surgical facemask until returned to isolation (NOT a valved FFP3 mask as these are designed to protect the wearer not vice versa).

If a patient is transferred to another ward or department (e.g. radiology, theatres etc) the unit must be informed of the patient's condition prior to transfer so that appropriate precautions can be undertaken.

### 5.3.4. Patients Requiring Ventilation/General Intensive Care Unit

These patients must be isolated in the NEGATIVE PRESSURE isolation room available on the ITU. If this is a switchable room; please ensure it is **SWITCHED TO NEGATIVE PRESSURE not positive.**

A closed ventilation system must be used. Use of an oscillator should be avoided as this is not a closed system and use of such a system would place neighbouring patients and staff at risk of infection.

Bronchoscopies should only be performed in a negatively ventilated room after appropriate advice from the Infection Prevention Team and TB physician.

#### 5.3.5. Other Infection Control Issues During Isolation Period

##### 5.3.5.1. Crockery

Separate crockery is not necessary and is to be treated the same as all other crockery i.e. washed in the dishwasher or returned to the catering department for washing.

##### 5.3.5.2. Coughing

If the patient is coughing, the patient should be encouraged to cover their mouth and cough into a disposable tissue. **See section 5.5 for Healthcare Worker protection when patient coughing.**

##### 5.3.5.3. Waste

All body fluids, including sputum, must be disposed of as clinical waste for incineration. Fluid such as pleural fluid should be sealed in a yellow bin. Sputum pots and tissues must be disposed of as clinical waste in yellow bags. A clinical waste bag should be available for the patient to dispose of such items directly.

Please see Trust Management of Healthcare Waste Policy for further information.

##### 5.3.5.4. Bodies

If a patient with suspected or confirmed TB dies. The body must be placed in a body bag. The mortuary staff should be informed via the telephone and on the 'Deceased Patient Details Tag' regarding the patient's infection so that appropriate infection control precautions can be taken in the mortuary.

### 5.4. Bronchoscopy and Other Aerosol Generating Procedures (AGPs)

For all patients with known or suspected TB, nebuliser treatment or aerosol generating procedures e.g. bronchoscopy, sputum induction should be carried out in an appropriately engineered negatively ventilated area (6,7). Staff should wear appropriate personal protective equipment (see section 5.5). FFP 3 masks should be available in bronchoscopy.

NB: sputum induction is generally not advised due to the infection risk. Bronchoscopy is preferable.

### 5.5. Healthcare Workers Protection

#### 5.5.1. Personal Protective Equipment (PPE)

Masks, gloves and aprons are not needed for routine care of patients with TB unless:

- The patient is coughing uncontrollably, nebuliser treatment is required or aerosol-inducing procedures are being performed e.g. bronchoscopy, sputum induction, irrigation of tuberculous abscess.

- Sputum contaminated items are being handled
- MDR-TB is suspected or confirmed.

Staff and Visitors should wear FFP 3 masks meeting the standards of the Health and Safety Executive (9) during contact with a patient with suspected or known MDR TB (6,7). These masks should be formally fit tested for staff before use and a certificate should be provided. It is the responsibility of the Nurse in Charge of the ward to ensure that visitors are wearing their masks correctly. **See section 5.6 - Visitors.**

**PLEASE NOTE**: Valved FFP3 masks should **NOT** to be worn by patients with TB. Standard surgical masks are available for patients when leaving their isolation rooms.

### 5.5.2. Occupational Health/Staff Vaccination

Healthcare workers who have contact with infectious patients or their specimens should have the following before employment is commenced:

1. A pre employment screen (questionnaire & interview)
2. BCG vaccination.
3. Information regarding symptoms of TB

Only staff who have evidence of some immunity on skin testing or who have had a BCG vaccination should care for patients with tuberculosis. Immunocompromised staff should not work in these areas.

All healthcare workers are advised to report to occupational health if they have a cough that lasts for more than three weeks or other symptoms that may be consistent with TB such as weight loss or night sweats. Any healthcare worker with suspected TB should avoid work until TB is excluded or appropriate therapy given.

Annual reminders of TB symptoms should be provided to all healthcare workers within the Trust.

Further information may be obtained from the occupational health department.

### 5.5.3. Post Mortems/Mortuary Staff

If a post mortem is required mortuary staff must be informed if the patient is suspected or confirmed to have TB so that appropriate precautions can be taken. These include use of FFP 3 masks, gowns, double gloves, eye protection and the autopsy should be performed in an appropriately ventilated area. For further information please consult the mortuary policies.

If tuberculosis is identified on post mortem the CCDC should be notified by the pathologist making the diagnosis or by the Consultant who had been in charge of the patients care. This is to enable contact tracing of close contacts if necessary.

## 5.6. Visitors

Visitors should be limited to those who have had recent contact with the patient prior to their illness (i.e. household contacts). These visitors will have already been exposed to TB and will be screened by the TB nursing team. This restriction should continue until isolation is no longer necessary (see section 5.3.3).

In cases of MDR-TB advice should be sought from the TB physician or consultant microbiologist. Visitors to these patients should wear FFP 3 masks during contact with the patient. They should be made aware of the risks associated with visiting.

Paediatric patients:
Visitors to a child admitted to hospital with suspected or confirmed TB should be screened as part of contact tracing and kept separate from other patients until they have been excluded as a source of infection (6,7).

Children or immunocompromised people should not visit a patient with infectious TB.

### 5.7. Contact Tracing

#### 5.7.1. Community

The TB Specialist Nurses will undertake contact tracing in the community. They should therefore be informed of a case as soon as a new diagnosis is made.

**Telephone:** Ext: 53137 **or** Direct Dial: 01562 512316

For cases in community hospitals (Worcestershire Health and Care NHS Trust) the Community Infection Prevention and Control Team should be informed also.

**Telephone:** 01386 502552.

#### 5.7.2. Hospital

##### 5.7.2.1. Hospital Patients

Following diagnosis of TB in a hospital setting (e.g. inpatient or healthcare worker) the clinical team or occupational health department respectively must inform the Infection Prevention Team so that a risk assessment of exposure to others may be undertaken. This risk assessment should take into account:

- Degree of infectivity of the index case
- Length of time before the infectious patient was isolated
- If other patients are unusually susceptible to infection
- The proximity of the contact.

The Infection Prevention Team should call an incident meeting if the index case is a healthcare worker or if there are a large number of patients potentially exposed. The following should attend the meeting:

- TB Nurse Specialists,
- TB Physician
- Infection Prevention Team
- Consultant Microbiologist / Infection Control Doctor
- Director of Infection Prevention & Control (DIPC)
- Public Health England representative,
- Medical and Nursing representatives for the area in which the incident took place,

- Hospital managers (Medical & Nursing Director or representative)
- Communications manager
- Occupational health nurse or manager
- Secretarial and IT support.

Patients should be regarded as 'at risk' of infection if they spent more than eight hours in the same bay as an inpatient with sputum smear-positive TB who had a cough. If immunocompromised patients were present on the ward they should be placed as "at-risk" also.

The exposed patient's GP and consultant should be informed so that appropriate follow up can take place should the patient present with symptoms consistent with TB in the future. The exposure should be documented in the patient's notes. Please see appendices B and C for sample letters to the patient and their GP/consultant respectively.

Inpatients who had prolonged close exposure to an index case with infectious TB should be managed like a household contact with screening tests for TB, as guided by Public Health England.

#### 5.7.2.2. Healthcare Workers

Casual contact of healthcare workers (HCW) with a case of infectious TB is not considered to be high risk.

The following staff groups will be managed as close contacts of a case of tuberculosis.

HCW who have undertaken:

- mouth-to-mouth resuscitation without appropriate protection
- prolonged care of a high dependency patient
- repeated chest physiotherapy on a patient with undiagnosed respiratory tuberculosis.
- Immunocompromised staff

The occupational health department will undertake contact tracing of exposed health care workers. Please contact occupational health for further guidance.

### 5.8. Notification of Suspected or Confirmed Cases

Please also see TB Quick action guide – appendix E.

#### 5.8.1. Statutory Notification

All forms of tuberculosis must be notified under the Public Health Act 1984. The doctor making the diagnosis (suspected or confirmed) is legally responsible for this.

Notifications may be made in two ways:

1. In writing:

   Standard notification forms are available from the Public Health England website (https://www.gov.uk/government/publications/notifiable-diseases-form-for-registered-medical-practitioners) which should be completed and sent to the local PHE Health protection team.

   Address: West Midlands West HPT
   Public Health England
   2nd Floor, Kidderminster Library
   Market Street
   Kidderminster
   Worcestershire
   DY10 1AB

2. By telephone:

   Telephone 0344 225 3560 (option 2)

PLEASE NOTE:
This clinical notification is separate to the laboratory notification system therefore it is the responsibility of the patient's team to submit these.

### 5.8.2. TB Nurse Specialists

Liaison with the TB Specialist Nurses is necessary so that contact tracing and arrangements for discharge can be made. Please inform the TB Service prior to discharge from hospital:

Telephone: Ext: 53137 **or** Direct Dial: 01562 512316

Address: TB Specialist Nursing team,
Kidderminster Treatment Centre
Cardiac Rehab
C Block
Bewdley Rd
Kidderminster
Worcestershire
DY11 6RJ

## 5.9. Discharge Policy

Before discharge from hospital the TB nurse specialists must be informed (see section 5.8.2) so that arrangements for the supervision and administration of all anti-tuberculosis therapy can be made if necessary.

If the patient is of no fixed abode (homeless), early referral to the hospital homeless liaison person must be made when the patient is admitted, and a discharge-planning meeting must be put in place prior to patient discharge.

A copy of the discharge letter must be sent to the TB specialist nurses detailing the patient's medication and date of follow up appointment.

Isolation rooms must be terminally cleaned in accordance with the Trust Isolation and Bed Management Policy and Cleaning Policy.

#### 5.9.1. Patients with MDR-TB

Before the decision is made to discharge a patient with suspected or confirmed MDR-TB from hospital, secure arrangements for the supervision and administration of all anti-TB therapy should have been agreed with the patient and carers (6,7).

The decision to discharge a patient with suspected or known MDR-TB must be discussed with the Infection Prevention and Control Team, the duty microbiologist, the local TB team and the Consultant in Communicable Disease Control (6,7).

## 6. Implementation

### 6.1 Plan for implementation

| Action | Person responsible | Timescale |
|---|---|---|
| Launch to Matrons at Senior Nurses Meeting, Ward Sisters and Infection Prevention Link Nurses at their relevant meetings for wider dissemination to ward and departmental nursing staff | Lead/Senior IP Nurse | |
| Launch to all clinical staff through Trust Brief | Lead/Senior IP Nurse/Consultant Microbiologist | |
| Launch to all medical colleagues via Clinical Directors and presentation at relevant speciality audit meetings if requested | Deputy Director Infection Prevention and Control/Consultant Microbiologist | |

### 6.2 Dissemination

| Disseminated to | Timescale |
|---|---|
| Instruction to all clinical staff of revised policy via weekly Trust Brief. | |
| Ward and departmental based clinical staff via Infection Prevention Link Nurses | |
| Updated protocol to be made available via Key Documents intranet site | |

### 6.3 Training and awareness

It is a mandatory requirement that all new Trust employees must attend a Trust corporate induction programme, which includes infection prevention and control (IPC) training. It is

the responsibility of the line manager to ensure that IPC issues are covered in all local inductions and that this is documented.

It is a mandatory requirement that all clinical and non-clinical staff update their IPC training annually, either by attendance at a formal session, or using and completing online or e-learning resources. It is the line manager's responsibility to ensure that this occurs.

Different modalities are available to facilitate compliance with mandatory training requirements. These include attendance at formal lectures, ad hoc teaching, and access to online training. Records of staff training are kept centrally on the ESR database, and locally by Directorates as required.

## 7. Monitoring and compliance

Compliance with this policy will be assessed as and when cases arise, by the Infection Prevention Team, and will form part of any Root Cause Analysis and incident / outbreak report.

| Page/ Section of Key Document | Key control: | Checks to be carried out to confirm compliance with the Policy: | How often the check will be carried out: | Responsible for carrying out the check: | Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)* | Frequency of reporting: |
|---|---|---|---|---|---|---|
| | **WHAT?** | **HOW?** | **WHEN?** | **WHO?** | **WHERE?** | **WHEN?** |
| 5.2 | Management of suspected TB cases: Once decision to admit, patient has been discussed with Consultant ID Physician/Consultant TB Physician, Consultant Medical Microbiologist (CMM), Infection Prevention (IP) Nurse BEFORE moving the patient. | Check patient medical records, CMM clinical record and ICNet system | As part of the post case review | Incident report author | TIPCC through incident report, by exception where non-compliance indicated | On a case by case basis |
| 5.3 | Isolation of patients with suspected/confirmed pulmonary tuberculosis (TB) | Audit of A&E records, patient medical records and OASIS for ADT status change | As part of ongoing patient management review | A&E/Ward Sister and IP Nurse reviewing patient | Exception report to Lead IP Nurse – this would then be reported to either outbreak committee if relevant or TIPCC | On a case by case basis |
| 5.3 – 5.6 | Compliance with protocols for e.g. PPE use, equipment, linen and waste management, hand hygiene practices, cleaning of isolation facility protocols visitor control, handling of the deceased. | Observation of practices by any: IP Nurse, CMMs, Consultant ID Physician, Matron and Ward Sister | Within 12 - 24 hours of admission and repeated daily, if concerns identified or during clinical review visit. | IP Nurse, Ward Sister, Matron, CMMs, Consultant ID Physician | Immediate feedback to clinical team (medical, nursing and therapies). TIPCC through incident report, where non-compliance noted. | On a case by case basis |

| Page/ Section of Key Document | Key control: | Checks to be carried out to confirm compliance with the Policy: | How often the check will be carried out: | Responsible for carrying out the check: | Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)* | Frequency of reporting: |
|---|---|---|---|---|---|---|
| | **WHAT?** | **HOW?** | **WHEN?** | **WHO?** | **WHERE?** | **WHEN?** |
| 5.8 | Notification of suspected or confirmed cases of TB | Audit of patient medical records and evidence of the completion of Statutory Notification Forms (as per the Public Health Act 1984). | As part of ongoing patient management review | Diagnosing clinician/CMMs | Immediate feedback to clinical team (medical). TIPCC through incident report where non-compliance noted. | On a case by case basis |
| 5.9 | Notification of the intent to discharge a patient with confirmed tuberculosis | Audit of patient medical records and evidence of referral to the TB Nurse Specialists | As part of ongoing patient management review | IP Nurse, Ward Sister, Matron, CMMs, Consultant ID Physician | Immediate feedback to clinical team (medical and nursing). TIPCC through incident report, where non-compliance noted. | On a case by case basis |

## 8. Policy Review

To be reviewed every 3 years or when a new version of the NICE Guidance is published.

## 9. References

1. Public Health England Annual Report. Tuberculosis in England. 2019 report. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/821334/Tuberculosis_in_England-annual_report_2019.pdf

2. Gandhi NR et al. (2006) Extensively drug-resistant tuberculosis as a cause of death in patients co-infected with tuberculosis and HIV in rural South Africa. Lancet 368:1575-80.

3. Raviglione M.C. & Smith I.M. (2007). XDR Tuberculosis – Implications for Global Public Health. New England Journal of Medicine 356;7

4. West Midlands Quarterly and Annual TB report. Public Health England.

5. Control and prevention of tuberculosis in the United Kingdom: code of Practice 2000. Joint Tuberculosis Committee of the British Thoracic Society. Thorax 2000; 55:887-907

6. Tuberculosis: Clinical diagnosis and management of tuberculosis, and measures of its prevention and control. NICE guidance 2006. www.nice.org.uk

7. Tuberculosis. NICE guideline. Published: 13 January 2016 www.nice.org.uk/guidance/ng33

8. NHS Estates. Isolation facilities in acute settings: In patient accommodation: options for choice. HBN4 supplement1. 2005. London, TSO. Health Building Notes.

9. Respiratory Protective Equipment at Work: A practical guide. HSG53. ISBN 0-7176-2904-X. (www.hsebooks.com)

## 10. Background

### 10.1 Equality requirements

There is recognition that some ethnic groups and geographical populations are at greater risk of acquisition of tuberculosis.

Further information available in the findings of the equality impact assessment (Supporting Document 1)

### 10.2 Financial risk assessment

There are no financial risks associated with this policy.

Further information available in the findings of the financial risk assessment (Supporting Document 2)

### 10.3 Consultation

**Contribution List**

**Key individuals involved in developing the document**

| Name | Designation |
|---|---|
| Lara Bailey | Senior Infection Prevention Nurse |

This key document has been circulated to the following individuals for consultation;

| Designation |
|---|
| All Trust Consultant Microbiologists |
| Infectious Diseases Physicians |
| TB Lead Chest Physicians |
| All Members of the Infection Prevention Team |
| All Members of the TB Nursing Team |
| All Members of the Occupational Health Team |
| Mortuary/Pathology Manager |
| Microbiology Laboratory Manager |
| Matron for TB Service |
| Public Health England Representatives |
| Paediatric TB Lead |

**Circulated to the chair(s) of the following committee's / groups for comments;**

| Name | Committee |
|---|---|
| Ms Vicky Morris | Trust Infection Prevention and Control Committee (TIPCC) |

### 10.4 Approval Process

The final draft will be checked to ensure it complies with the correct format and that all supporting documentation has been completed.

The policy will be submitted to TIPCC for approval before document code and version number are confirmed and the policy is released for placement on the Trust intranet.

**Supporting Document 1 - Equality Impact Assessment Tool**

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

| | | Yes/No | Comments |
|---|---|---|---|
| **1.** | **Does the policy / guidance affect one group less or more favourably than another on the basis of:** | | |
| | Age | No | |
| | Disability | No | |
| | Gender reassignment | No | |
| | Marriage and civil partnership | No | |
| | Pregnancy and maternity | No | |
| | Race | Yes | Recognition that some ethnic groups and geographical populations are at greater risk of the acquisition of tuberculosis |
| | Religion or belief | No | |
| | Sex | No | |
| | Sexual orientation | No | |
| **2.** | **Is there any evidence that some groups are affected differently?** | Yes | As above |
| **3.** | **If you have identified potential discrimination, are any exceptions valid, legal and / or justifiable?** | Yes | |
| **4.** | **Is the impact of the policy / guidance likely to be negative?** | No | |
| **5.** | **If so can the impact be avoided?** | NA | |
| **6.** | **What alternatives are there to achieving the policy / guidance without the impact?** | NA | |
| **7.** | **Can we reduce the impact by taking different action?** | NA | |

## Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

| | Title of document: | Yes/No |
|---|---|---|
| **1.** | Does the implementation of this document require any additional Capital resources | No |
| **2.** | Does the implementation of this document require additional revenue | No |
| **3.** | Does the implementation of this document require additional manpower | No |
| **4.** | Does the implementation of this document release any manpower costs through a change in practice | No |
| **5.** | Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff | No |
| | Other comments: | |

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval