# Tuberculosis Infection Prevention and Control Policy

<table>
<thead>
<tr>
<th>Author(s) &amp; Designation</th>
<th>Suzanne Golding-Ellis, Head of Patient Safety and Infection Control</th>
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</thead>
<tbody>
<tr>
<td>Lead Clinician <em>if appropriate</em></td>
<td>Rob Nicholls, Deputy Director of Quality, Nursing and Therapies</td>
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<tr>
<td>In consultation with</td>
<td>North Somerset Community Partnership Infection Prevention Control Forum</td>
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<tr>
<td>To be read in association with</td>
<td>Isolation Policy, Linen Policy, Hand Hygiene Policy, Transportation of Specimens Policy</td>
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<td>Ratified by</td>
<td>COIC</td>
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<td>Review date</td>
<td>March 2017</td>
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<tr>
<td>This policy supports compliance with the CQC essential standards outcome(s):</td>
<td>Outcome 8</td>
</tr>
<tr>
<td>NHSLA Risk Management Standard(s):</td>
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If you require this document in a different format, please contact the Governance team on 01275 546831
1. **Introduction**

Tuberculosis (TB) is an infectious disease caused by the bacterium Mycobacterium tuberculosis.

TB most commonly affects the lungs (Pulmonary TB) but can affect any part of the body. If an individual becomes infected, the disease develops slowly and it may take months for symptoms to appear. In some cases the infection remains dormant – latent tuberculosis - for years and may only become active in later life.

TB can usually only be spread by someone who has active Pulmonary TB. Those with TB in their organs other than their lungs are rarely infectious to others.

TB is curable with a combination of specific antibiotics but treatment must continue for a period of at least six months. Multi-drug resistant TB (MDRTB) requires prolonged treatment of up the 24 months.

TB is a notifiable disease with important public health and management implications which may include isolation and contact tracing.

Usually treatment for TB does not necessitate hospital admission.

2. **Symptoms and Diagnosis**

**Signs and symptoms of infection**

- Onset usually insidious
- Malaise and weight lose
- Hacking, productive cough
- Blood streaked sputum
- Haemoptysis
- Low grade fever
- Night sweats
- Asymptomatic

Pulmonary TB may be suspected from clinical symptoms, chest x-ray or microscopy of sputum.
3. Specimens and Diagnosis

An initial diagnosis can be made by examining the sputum through a microscope. Three early morning sputum specimens on consecutive days should be sent to the Microbiology laboratory for sputum smear examination for Acid Fast bacilli (AFBs) and culture. Further sputum specimens are not required to be sent.

Specimens should be labelled as biohazard and double bagged. If TB is strongly suspected the laboratory should be telephoned to request urgent testing.

Tissue samples can be taken by biopsy and chest x-rays taken to aid diagnosis.

If the sputum smear is AFB positive the affected individual is termed smear positive. Smear positive sputum will be sent to the reference laboratory for molecular testing.

Culture of the TB bacillus from the individual’s sputum will take several weeks. The culture will be sent to the reference laboratory to confirm the mycobacterial strain and perform susceptibility testing.

Skin testing is a useful aid to diagnosis as it can establish whether the person has been previously vaccinated or been in contact with TB. (Interpretation of Mantoux test, Appendix 1)

4. Route of Spread

A person with Pulmonary TB is usually only infectious if their sputum specimen is smear positive for AFBs. This is known as Open pulmonary TB

Transmission occurs through coughing of infectious droplets, and usually requires prolonged close contact with an infectious person.

If the sputum specimen is smear negative for AFBs or the TB is in other parts of the body than the lungs this is known as Closed TB and is unlikely to spread from person to person.

Patient Centred Care - Treatment and care should take into account patients needs and preferences. People with or at risk of contracting TB, should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. If patients do not have the capacity to make decisions, healthcare professionals should follow the North Somerset Community Partnership policy on consent or the Department of Health advice (available from www.dh.gov.uk/consent) and the code of practice that accompanies the Mental Capacity Act (summary available from www.publicguardian.gov.uk).

Good communication between healthcare professionals and patients is essential. It should be supported by evidence based written information tailored to the patients needs. Treatment and care, and the information patients are given about it, should be culturally appropriate. It should also be accessible to people with additional needs.
such as physical, sensory or learning disabilities and to people who do not speak or read English.

If the patient agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

Families and carers should also be given the information and support they need.

5. Infection Control Precautions

In addition to standard infection control precautions, the following isolation precautions should be instigated.

It would be highly unlikely that a patient with suspected TB would be admitted to Clevedon Hospital. Only if there were a clear clinical socioeconomic need, such as homelessness, people with TB at any site of disease should not be admitted to hospital for diagnostic tests or care (NICE Clinical guideline).

Patients with TB can be treated at home. It is not necessary to isolate an infectious person on treatment from other household members. Fumigation of houses is not necessary. Disposal of waste can be done through the normal waste streams. Further advice can be sought from the infection control nurse or the Health Protection Agency.

**Patient education** The patient should receive education to ensure they cover their nose and mouth with a disposable tissue whenever they cough and sneeze. Tissues should be disposed of in a clinical waste bag.

Ask inpatients with smear-positive respiratory TB to wear a surgical mask whenever they leave their room until they have had two weeks drug treatment, and explain why.

**Transfer to other departments** If the patient is being transferred to another department in the hospital e.g. radiology, they should wear a surgical mask.

**Masks** Particulate Filter Respirator masks FFP3 should be worn for circumstances when direct exposure to respiratory secretions is unavoidable. These include cough inducing procedures, bronchoscopy, and prolonged care of a patient. Staff using the masks should have received and passed Fit Testing training. A poster displaying instructions on how to fit the mask should be displayed on the door.

**Hand Hygiene** In addition to washing hands as detailed in the hand hygiene policy, hands should be washed or alcohol gel used immediately after leaving the isolation area.

**Equipment** Only essential equipment should be taken into the isolation room. Where possible disposable equipment or equipment dedicated for the use of the isolated patient should be used. If the use of common equipment is unavoidable it must be cleaned with detergent wipes before being used on another patient. Crockery and
cutlery does **not** need to be dedicated for the use of the isolated patient, but must go through the dishwasher before being used for another patient.

**Linen** Used linen should be sealed in a pink alginate laundry bag and then placed in a plastic red laundry bag.

**Specimens** Respiratory secretions sent to the laboratory must be identified as a biohazard risk on the request form.

**Visitors** should be limited to those who have already been in close contact with the patient before the diagnosis (e.g. household members). Visitors who have not been in close contact with the patient prior to admission should wear FFP3 masks if in regular or prolonged contact with the patient.

**Staff** should be kept to a reasonable minimum without compromising patient care.

**Cleaning** - The isolation room should be cleaned daily and housekeepers should wear an FFP3 mask. Once the patient has been discharged from hospital the room should be deep cleaned and curtains changed. Masks are not required for terminal deep cleans.

**Last Offices** A body bag must be used and TB status entered on the Confirmation of Death Form.

### 6. Termination of Isolation Precautions

Termination of isolation precautions should be decided by the Consultant physician in conjunction with the Infection Prevention and Control team. Isolation precautions can be discontinued when:

- A diagnosis of open TB has been excluded by three consecutive sputum samples being smear negative for AFBs
- **Or**
  - When a patient diagnosed with open TB has completed two weeks of compliant multidrug therapy. Isolation may occasionally continue for longer depending on clinical response to treatment

Patients may be discharged on treatment into the community prior to the completion of two weeks therapy, under the supervision of the Respiratory Nurse Specialist. Contact should be restricted to those who have been exposed to the patient from immediately prior to the diagnosis of TB until two weeks of therapy have been completed.
7. **Multidrug Resistant Tuberculosis (MDR-TB)**

MDR-TB is tuberculosis that is resistant to two or more main line anti-tuberculosis drugs. The implication is serious both for the individual and for public health because of the limited number of alternative anti-tuberculosis drugs available for treatment.

**Factors to consider for increased risk of MDRTB**

- Previous drug treatment for tuberculosis
- Contact with known case of MDR-TB
- Birth, travel or residence in an area with a high prevalence of drug resistance, e.g. countries in Asia, Africa, Latin America and Southern and Eastern Europe.
- HIV infected
- Failure to respond to a standard treatment regimen
- Prolonged sputum smear or culture positive while on treatment

If MDR-TB is suspected the patient must be under the care of a Consultant Respiratory physician. The Consultant Medical Microbiologist and Infection Control Team should be informed. The Respiratory Consultant will arrange for Patients to be transferred immediately to a hospital with a specialised Infectious Disease Unit experienced in the management of complex drug resistant cases.

Prior to transfer and in addition to the precautions already detailed in this policy the following infection control precautions must be adhered to.

- Patients would not be nursed at CCH with MDRTB as they would be nursed within a local Acute Trust.
- Termination of isolation precautions may only be decided by the supervising physician in conjunction with the Infection Prevention and Control team.

The decision to discharge the patient from hospital must be discussed with the Infection Prevention and Control Team and the Consultant for Communicable Disease Control (CCDC). Before discharge from hospital, arrangements for the supervision and administration of all anti-tuberculosis therapy should have been made and agreed with the patient and carers.

8. **Contact Tracing**

**Patients** If an individual on an open ward is diagnosed as having open tuberculosis the risk of other patients being infected is likely to be small. Details of patients who have had contact with an infectious pulmonary TB case prior to the instigation of isolation precautions will have their details recorded by the Infection Control Team (ICT). Decisions about the appropriate action will be made by the ICT in collaboration with the WAHT Respiratory Nurse Specialist in accordance with the NICE clinical guideline117: 'Tuberculosis – Clinical diagnosis and management of tuberculosis, and measures for its prevention and control.' March 2006 (partial update 2011)
Staff involved in the care of a patient with open TB prior to the instigation of infection control precautions will be followed up in accordance with the current Occupational Health process for the control and prevention of tuberculosis. Details of staff that have had contact with an infectious pulmonary TB case prior to the instigation of isolation precautions will have their details recorded by the Infection Control Team (ICT). Decisions about the appropriate action will be made by the ICT in collaboration with the Occupational Health Department and the WAHT Respiratory Nurse Specialist (available via the switchboard 01934 636363).

Family Close contacts – family and close contacts will be followed up by the WAHT Respiratory Nurse Specialist, or referred to the nearest TB clinic if out of area.

Cases in schools- Following diagnosis of TB in a school pupil or member of staff, the consultant in communicable disease should be prepared to explain the prevention and control procedures to staff, parents and the press. Advice on managing these incidents and their public relations is available from the Public Health England (0300 3038162).

If a school pupil is diagnosed with sputum-smear-positive TB, the rest of his or her class, or the rest of the year group who share classes, should be assessed as part of contact tracing.

If a teacher has sputum-smear-positive TB, the pupils in his or her classes during the preceding 3 months should be assessed as part of contact tracing.

Clinicians conducting contact tracing in a school should consider extending it to include children and teachers involved in extracurricular activities, and non-teaching staff, on the basis of:

- The degree of infectivity of the index case
- The length of time the index case was in contact with others
- Whether contacts are unusually susceptible to infection
- The proximity of contact

9. Notification

It is a statutory requirement in England, Wales and Northern Ireland for the diagnosing physician to notify all clinically identified TB cases to the Consultant for Communicable Disease Control (CCDC) via the appropriate notification certificate. A decision to commence treatment indicates a level of suspicion which should trigger notification for all forms of tuberculosis. The notification should indicate the sputum smear status of the patient.

A notification and data collection form should be completed by Medical Staff and will be entered by the Respiratory Clinical Specialist Nurse onto the ETS system (Enhanced Tuberculosis surveillance).

For patients living in North Somerset and Bristol, Public Health England should be notified on Telephone 0300 3038162.
Microbiology must notify Public Health England of the diagnostic results.

**Staff training**
All staff must receive training in infection control as part of their induction programme within six weeks of starting in their role. Infection control mandatory update is provided using a blended approach (either e-learning or face to face sessions) annually as part of the training matrix.

**Audits**
As part of the overarching Quality and Governance audit plan infection control audits are completed. The results of the audits are fed back to the Infection Prevention Control Forum and reported via the Control of Infection Annual report.

10. **References**

Department of Health Interdepartmental Working Group on Tuberculosis (1996)
*The prevention and Control of Tuberculosis in the UK: Recommendations for the Prevention and Control of Tuberculosis at Local Level*. London: HMSO

Department of Health Interdepartmental Working Group on Tuberculosis (1998)


NHS National Institute for Health and Clinical Excellence (2011)
*Tuberculosis – Clinical diagnosis and management of tuberculosis, and measures for its prevention and control*. NICE clinical guideline 117, London: Royal College of Physicians

HPA (Health Protection Agency) Enhanced Surveillance of Tuberculosis (2011)
Weston Area Health Trust Tuberculosis Infection Prevention and Control policy

11. **Appendices**
# Appendix 1 Interpretation of the Mantoux Test

<table>
<thead>
<tr>
<th>Diameter of induration</th>
<th>Positivity</th>
<th>Interpretation</th>
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<tbody>
<tr>
<td>Less than 6mm</td>
<td>Negative – no significant hypersensitivity to tuberculin protein</td>
<td>Previously unvaccinated individuals may be given BCG provided there are no contra-indications</td>
</tr>
<tr>
<td>6mm or greater but less than 15mm</td>
<td>Positive – hypersensitive to tuberculin protein</td>
<td>Should not be given BCG* May be due to previous TB infection or BCG or exposure to non-tuberculous mycobacterium</td>
</tr>
<tr>
<td>15mm and above</td>
<td>Strongly positive – strongly hypersensitive to tuberculin protein</td>
<td>Suggests tuberculosis infection or disease. Should be referred for further investigation and supervision (which may include preventative chemotherapy)</td>
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* When Mantoux tests are being performed as part of an immunisation programme, no further action is required for people with a reaction in this range. In other contexts (E.g. new immigrant screening, contact-tracing programmes), where the subject has not previously been vaccinated with BCG, and taking account of the precise size of the reaction and the circumstances of the case, referral to a chest clinic may be indicated. From - Department of Health (2006) 'The Green Book', *Immunisation against infectious disease*, 3rd edition, London: TSO (The Stationary Office).
Appendix 2  
Equality Impact Assessment

<table>
<thead>
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<tr>
<td><strong>Section 1: Initial Assessment</strong></td>
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<table>
<thead>
<tr>
<th>Policy Author</th>
<th>Date of Assessment</th>
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<tr>
<td>Suzanne Golding-Ellis</td>
<td>March 2015</td>
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<tr>
<th>Title of Policy</th>
<th>Is this a new or existing policy?</th>
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<tbody>
<tr>
<td>Tuberculosis Infection Prevention and Control Policy</td>
<td>Existing</td>
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1. **Briefly describe the aims, objectives and purpose of the Policy / Guidance Document:**

   To provide clear guidance for the management and control of Tuberculosis and to provide staff with the information that they require to reduce the risks of transmission within health care settings, and ensure prompt recognition of those patients who are at risk of infection with suspected or confirmed pulmonary TB

2. **Who is intended to benefit from the proposed process and in what way?**

   Patients and Staff

3. **Who are the main stakeholders in relation to this Policy/Guidance?**

   Patients and Staff

4. **Are there concerns that the Policy/Guidance does, or could have, a differential impact due to any of the equality areas?**

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
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<tbody>
<tr>
<td>Disability</td>
<td>N</td>
</tr>
<tr>
<td>Gender reassignment</td>
<td>N</td>
</tr>
<tr>
<td>Marriage and Civil Partnership</td>
<td>N</td>
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<tr>
<td>Pregnancy and Maternity</td>
<td>N</td>
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<tr>
<td>Race</td>
<td>N</td>
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<tr>
<td>Religion or Belief</td>
<td>N</td>
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<tr>
<td>Sex</td>
<td>N</td>
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5. What existing evidence (either presumed or otherwise) do you have for this?

Not applicable

6. Based on the answers given in questions 4 & 5 is there potential for an adverse Impact in this policy/guidance?

No

7. Can this adverse impact be justified?

Not applicable

If you have not identified adverse impact or you can justify the adverse impact, finish here.

If you have identified adverse impact that cannot be justified, please continue to Section 2

### Section 2: Full Impact Assessment

8. What experts/relevant groups have you approached to explore their views on the issues? Please list the relevant group/experts, how they were consulted and when.

<table>
<thead>
<tr>
<th>Relevant groups/experts</th>
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<tbody>
<tr>
<td>How were the views of these groups obtained?</td>
</tr>
<tr>
<td>Date contacted</td>
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9. Please explain in detail the views of these groups/experts on the issues involved:

10. Taking into account the views of the groups/experts and the available evidence, what are the risks associated with the policy, weighed against the benefits of the policy if it were to stay as it is:

| Risks | Benefits |
If you have found that the risks outweigh the benefits you need to review the policy further and put together an implementation plan which clearly sets out any actions you have identified as a result of undertaking the EIA. These may include actions that need to be carried out before the EIA can be completed or longer-term actions that will be carried out as part of the policy or development.

11. Monitoring arrangements and scheduled date to review the policy and Equality Impact Assessment:

Review Date