Tuberculosis (TB) Procedure

(IPC Manual)
CONTENTS

Section                                    | Page No |
-------------------------------------------|---------|
1. INTRODUCTION                             | 3       |
2. PROCEDURE                                | 4       |
2.1 Diagnosis                               | 4       |
2.2 Patient Management                      | 5       |
2.2.1 Inpatient Isolation                   | 5       |
2.2.2 Non pulmonary TB or smear negative pulmonary TB | 6       |
2.2.3 Non Inpatient Isolation               | 6       |
2.2.4 Patient Facial Protection             | 6       |
2.2.5 Staff Facial Protection               | 6       |
2.2.6 Last Offices                          | 7       |
2.2.7 Visitors                              | 7       |
2.2.8 Contract Tracing                      | 7       |
2.2.9 Outbreak Management                   | 7       |
3. DEFINITIONS/EXPLANATION OF TERMS USED    | 8       |
4. RESPONSIBILITIES, ACCOUNTABILITIES AND DUTIES | 8       |
4.1 Refer to the home page, section 4, of the Infection Prevention and Control Policy | 8       |
4.2 RDaSH Community TB Nurse Specialist      | 8       |
5. LINKS TO ASSOCIATED POLICIES/DOCUMENTS   | 9       |
6. REFERENCES/FURTHER READING               | 9       |
1. **INTRODUCTION**

Tuberculosis (TB) is a disease caused by Mycobacterium (M) Tuberculosis, M. Bovis, M. Africanum, or M. Microti, which together form Mycobacterium Tuberculosis complex. There are two forms of tuberculosis:

1) TB affecting the lungs; and
2) TB causing infection elsewhere in the body, including the glands, bones and nervous system.

Typical symptoms of TB may include extreme tiredness/fatigue, loss of appetite/weight, night sweating and fever. Additional symptoms for pulmonary TB include increasing breathlessness and a persistent productive cough lasting more than 3 weeks, which may be blood stained. Additional symptoms of extrapulmonary TB vary but may include persistently swollen glands, abdominal pain, pain and loss of movement in an affected bone or joint, confusion, persistent headache and seizures.

Person to person transmission of TB predominantly occurs by inhalation of infected airborne particles (airborne route). In some cases after infection the bacteria can remain latent in the body for a long time, even lifelong, causing no symptoms of disease. People with latent TB infection (LTBI) are not infectious; however under favourable conditions i.e. immunocompromised, the bacteria can start multiplying (reactivate) and cause clinical disease.

The incubation period is normally 2 to 10 weeks after infection; however, immunocompromised patients may have a shorter incubation period, while those with LTBI may never develop TB disease.

Individuals are infectious whilst symptomatic and for 2-4 weeks after antibiotic treatment commences, and/or while viable bacilli are discharged in sputum.

Susceptible individuals include:

- those in close contact with a person with infectious TB disease
- those who have immigrated from areas of the world with high rates of TB
- children younger than 5 years of age who have a positive TB test

Susceptible groups include:

- homeless persons
- substance misusers, including alcoholism
- those with human immunodeficiency virus (HIV) infection
- those who work or reside with people who are at high risk of contracting TB.

The vaccine Bacillus Calmette-Guérin (BCG) is recommended for certain at
risk groups.

2. PROCEDURE

2.1 Diagnosis

If an individual in the community presents with signs and symptoms of TB advise them to contact their General Practitioner (GP) at the earliest opportunity. If an inpatient the medic responsible for their care must be informed.

If a patient with suspected/confirmed TB is being transferred into services please contact the TB Nurse Specialist/service for your locality:

Doncaster – 01302 379564 or mobile: 07775591231 or 07890273229
Rotherham – 01709 423253 or mobile: 07818061525
North Lincolnshire – 01724 387817

The guidance in this procedure is relevant to all RDaSH staff and the Doncaster locality Specialist Community TB Nursing Team. There may be some local variations which are applicable to the Specialist TB Nursing Teams in North Lincolnshire and Rotherham.

It is likely that the TB Specialist Nursing Team will already be aware of the individual. Specialist advice will be given by the specialist nurse/chest physician on an individual basis, in accordance with current NICE guidelines.

TB is a notifiable disease under the Public Health (Infectious Diseases) Regulations (2010). Notification is the statutory responsibility of the clinician making the diagnosis.

Diagnosis should be confirmed microscopically by smear and culture wherever possible. All isolates are immediately referred by the microbiology department to the TB reference laboratory for identification and sensitivity tests. This can take up to eight weeks.

The Community TB Nursing Service will inform if appropriate:

- The patients clinician/GP
- The Consultant in Communicable Disease Control (CCDC)
- The Infection Prevention and Control Team (IPCT)
- Occupational Health Provider (if a member of staff)

All suspected cases of multi-drug resistant tuberculosis (MDR TB) or extensively drug resistant tuberculosis (XDR TB) must be discussed with a Consultant Chest Physician and/or Consultant Microbiologist as a matter of urgency.
Factors to consider for increased risk of MDR TB or XDR TB:

- Previous drug treatment for TB
- Contact with case of known MDR-TB or XDR-TB
- Failure of clinical response on treatment
- Residence in London
- Age profile, with highest rates between 25 and 45
- Prolonged sputum smear or culture positive while on treatment (smear positive at 4 months or culture positive at 5 months)
- HIV

It is good practice to offer HIV testing to all patients both undergoing investigations for TB and those who are confirmed to have TB.

2.2 Patient Management


2.2.1 Inpatient Isolation

**Suspected/confirmed smear positive pulmonary or laryngeal TB** – isolation MUST be undertaken in an ensuite single room and the door must be kept closed, until at least 2 weeks of treatment has been completed. Patients may be discharged before the treatment course is completed.

If no ensuite rooms are available then a commode must be dedicated for the sole use of the patient and kept inside the room.

Patients with suspected/confirmed smear positive pulmonary or laryngeal TB, whatever the sputum status, MUST NOT be admitted into a ward bay with immunocompromised patients e.g. HIV, transplant or oncology patients, unless cleared as non-infectious by the physician in charge in consultation with the TB nurse specialist.

Assessment of health and safety concerns such as falls, self-harm and mental health status must be considered and if isolation will be challenging, consideration must be given to the possibility of nursing the patient in a one to one capacity. This will also need to be discussed with the chest physician or TB nurse specialist, due to associated risks of cross infection.

If the patient is thought to possibly have MDR TB or XDR TB then the
decision to transfer to a negative pressure facility should be made on an individual basis by the chest physician. This may require transferring the patient to another organisation that has these facilities.

If a patient deemed to be infectious, is discharged or transferred to another organisation, all services involved with the transfer must be fully informed and all documentation completed accordingly.

In cases of suspected or confirmed MDR-TB or XDR-TB sputum induction must be avoided. In order to reduce the amount of infected respiratory droplet matter the patient should be instructed to always cough into a tissue or cover their mouth fully if a tissue is not available.

2.2.2 Non pulmonary TB or smear negative pulmonary TB - it is not necessary for isolation precautions to be in place, though a single room is desirable if available.

If aerosol generating procedures such as abscess or wound irrigation are required then this would then necessitate isolation in a single room.

2.2.3 Non Inpatient Isolation

Patients will be encouraged to remain at home until they have completed at least two weeks of TB treatment or until deemed non-infectious by the Specialist Community TB Nursing Team. Each case should be judged individually and advice sought from the relevant Community TB Nursing Service.

2.2.4 Patient Facial Protection

A patient who is deemed to be infectious or has not received/completed 2 weeks of TB treatment must wear a surgical face mask, in order to reduce spread of infectious aerosol materials if attending another department/hospital for investigations that cannot be deferred. The receiving departments should be informed in advance and the visit arranged for the end of a session. The patient should be transferred when the department is ready to see them to minimise time spent in the department.

In cases of suspected or confirmed MDR TB or XDR TB then the patient must wear a FFP 3 face mask if leaving the isolation room for any reason.

2.2.5 Staff Facial Protection

Surgical face masks must be worn by staff during prolonged contact with infectious patients. Examples of which include assisting with personal hygiene care and carrying out complicated wound dressings.

It is not necessary for staff to wear a surgical face mask as a matter of
routine e.g. when serving meal/drinks, carrying out a simple dressing, taking patient’s physical observations, intravenous cannulation, undertaking injections/phlebotomy and transferring patients between departments.

In cases of suspected or confirmed MDR-TB or XDR-TB FFP3 face masks must be worn by every individual entering the room, and by the patient if leaving the isolation room until deemed non-infectious by the treating Physician. Fit testing must be undertaken to ascertain the correct sizing of these masks.

A FFP3 mask must also be worn during all aerosol generating procedures e.g. chest physiotherapy

2.2.6 Last Offices

Deceased patients with TB represent a risk to mortuary staff and should therefore be placed in a body bag. The same precautions should be followed during last offices as were followed when the patient was alive.

2.2.7 Visitors

It is advisable that these are kept to a minimum but those who have already been in close contact with the patient may visit without restriction; this includes children.

Immuno-compromised individuals should be advised against visiting whilst the patient is infectious.

2.2.8 Contact Tracing

Contact tracing and follow up is an integral part of the routine management of patients with tuberculosis, and follows NICE Guidance (NG33 January 2016). Contact tracing and follow up is the responsibility of the Community TB Nurse Specialist, who will work closely with the Consultant in Communicable Disease Control (CCDC), clinician and IPC nurse specialists.

In general, other patients in the same hospital bay (rather than the whole ward) should be regarded as at risk if the TB patient was deemed to be infectious, was coughing and was present in the bay for more than 8 hours before isolation. These patients will be offered TB contact screening to be facilitated by the Community TB Nursing Service.

2.2.9 Outbreak Management

Most linked cases of tuberculosis occur in close contacts and family members. These cases are dealt with by the normal contact tracing process.
Two or more cases which are associated with a grouping other than the family circle may be considered an outbreak. Examples would be two or more cases occurring in a school, an elderly persons home, or hospital. In these cases, screening of the wider community would need to be considered.

The investigation of a suspected outbreak of TB will be convened and led by Public Health England.

3. DEFINITIONS

Multi-drug resistant tuberculosis (MDR TB) - is caused by an organism that is resistant to at least isoniazid and rifampin, the two most potent TB drugs that are used in all cases for treatment.

Primary resistance can occur in people who have contracted TB from someone who is already infected with a drug resistant strain, without ever having a prior treatment history. Resistance can also develop due to inadequate drug treatment being prescribed and as a result of non-compliance with treatment, including patient drug errors.

Extensively drug resistant tuberculosis (XDR TB) - is a rare type of MDR TB that is resistant to isoniazid and rifampin, plus any fluoroquinolone and at least one of three injectable second-line drugs (i.e. amikacin, kanamycin, or capreomycin).

4. RESPONSIBILITIES, ACCOUNTABILITIES AND DUTIES

4.1 Refer to the home page, section 4, of the Infection Prevention and Control Policy

4.2 RDaSH Community TB Nurse Specialist

Main duties include:

- Supporting patients and their families following the diagnosis of TB
- Supporting patients to safely and successfully complete the full course of prescribed anti TB medications
- Undertaking a risk assessment, following a diagnosis of TB and identifying those individuals/groups who require TB contact screening
- Undertaking contact screening and referring those with a positive result to secondary care.
- Providing expert professional advice and education on the prevention and control of TB to other professionals, multi-disciplinary groups, patients and carers
- Leading in the investigation where an outbreak of TB has been declared
- Advising on control measures to prevent the spread of TB
- Working closely with Public Health England and the relevant CCDC to provide information on the incidence of infectious TB cases
- Undertaking new entrant TB screening as per NICE Guidance and Public Health recommendations

5. LINKS TO ASSOCIATED POLICIES/DOCUMENTS

Infection Prevention and Control Manual | RDaSH NHS Foundation Trust

6 REFERENCES/FURTHER READING

www.nice.org.uk/guidance/ng33