

## **Pulmonary Tuberculosis (TB) Infection Prevention and Control Policy**

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### **Purpose**

This policy is intended to be used in conjunction with clinical guidelines for patients with pulmonary tuberculosis and provide staff with information related to infection prevention and control requirements when caring for these patients.

### **Policy**

This policy focuses on infection prevention and control measures to be implemented in organisational healthcare facilities when caring for patients with pulmonary tuberculosis.

Pulmonary Tuberculosis is a **NOTIFIABLE** disease in New Zealand and immediate notification to the local Medical Officer of Health is required. Notification of TB encompasses all Mycobacterium species within *M. tuberculosis* complex, therefore including *M. bovis* and other species (see *Guidelines for Tuberculosis in New Zealand, 2019*).

### **Applicability**

All staff at Te Whatu Ora Health New Zealand Waitaha Canterbury and Te Tai o Poutini West Coast.

### **Legislative Requirements and National Standards**

Our organisation is obliged to comply with the Health and Disability Services (Safety) Act 2001. The Infection Prevention and Control Service is mandated to ensure our organisation complies with Ngā Paerewa Health and Disability Services Standard (NZS 8134:2021) - Outcome 5.5 Taiao Environment under Te Kaupare Pokenga Me Te Kaitiakitanga Patu Huakita (Infection Prevention and Antimicrobial Stewardship) and the Health Act (1956) (version as at 1 July 2022).

### **Roles and Responsibilities**

#### **Executive Management Team**

The role of the Executive Management Team is to ensure that there are resources in place to enable surveillance and care of patients with pulmonary tuberculosis (TB) that meets local and national requirements. They are responsible for ensuring effective, adequate and appropriate resources are available for the implementation of this policy.

#### **Microbiology Department at Canterbury Health Laboratories**

The role of the microbiology laboratory is to ensure appropriate tests are available to identify pulmonary tuberculosis. They are responsible for ensuring any acutely positive results are communicated promptly to clinical teams, infection prevention and control team, the Medical Officer of Health and national surveillance laboratories.

#### **Infection Prevention and Control Advisory Committee**

The role of Infection Prevention and Control Advisory Committee is to provide strategic guidance and direction for Te Whatu Ora Waitaha and Te Tai o Poutini on surveillance and IPC measures to prevent infection transmission for patients with TB.

### **Infection Prevention and Control Operational Team**

The role of the Infection Prevention and Control Operational Team is to provide advice to staff regarding IPC measures to prevent infection transmission for patients with TB. They are responsible for:

- Reviewing the electronic surveillance system (ICNet) daily to identify any positive isolates
- Notifying clinical staff of positive acid-fast bacilli (AFB) cases and advising on appropriate containment measures and infection prevention and control precautions.
- Identifying potential exposure of other patients to an active TB case and assisting with patient data collection for contact tracing purposes
- Liaising with Te Mana Ora Community and Public Health (CPH) and Te Whatu Ora Waitaha and Te Tai o Poutini Occupational Health teams in relation to contact tracing processes.

### **Te Mana Ora Community and Public Health, National Public Health Service**

Communicable Disease Nurses are responsible for contacting patients discharged from healthcare facilities and families of confirmed cases where an exposure risk has been identified. Where applicable, the details of the patient are forwarded by the IPC Service.

### **Occupational Health Service**

The role of the Te Whatu Ora Waitaha and Te Tai o Poutini Occupational Health Services is to follow-up staff who meet the definition for workplace exposure to a TB case.

Where there has been unprotected exposure to patients with active tuberculosis before diagnosis is made (>8 hours cumulative exposure), appropriate follow-up for staff will be provided by the Occupational Health Service. Staff who meet this criterion will have their names forwarded by their Charge Nurse Manager.

### **Ward Managers / Co-ordinators / Nursing Staff**

The role of ward managers / co-ordinators / nursing staff is to apply infection prevention and control policies, guidelines and procedures for TB to ensure patient and staff safety and minimise risk of infection transmission. They are responsible for:

- Ensuring any suspected/positive case is assessed on admission or upon transfer
- Ensuring patients are managed in the appropriate physical setting i.e. negative pressure room with anteroom and ensuite or single room with anteroom and ensuite.
- Ensuring patients are placed in appropriate transmission-based precautions i.e. airborne precautions
- Ensuring staff are familiar with the recommended infection prevention and control precautions including use of N95/P2 mask and mask fit testing/checking requirements
- Maintaining the required precautions until clinical and microbiological clearance is obtained.

### **Consultants and other Medical Staff**

The role of consultants and other medical staff is to apply infection prevention and control policies, guidelines and procedures for TB to ensure patient/staff safety and minimise risk of transmission. They are responsible for:

- Accessing and following up on any microbiology results for their patients
- Co-reporting any new cases to the local Medical Officer of Health via the NOTIFIABLE Disease electronic reporting process
- Ensuring infection prevention and control precautions for TB are carried out as detailed in Te Whatu Ora Waitaha and Te Tai o Poutini policies
- Liaising with other departments as applicable in the effective treatment regime for patients.

### Other Clinical Staff and Employees

The role of other clinical staff and employees is to apply infection prevention and control policies, procedures and guidelines for TB to ensure patient safety and minimise risk of transmission. They are responsible for:

- Following guidance of Ward / Unit and Nursing / Medical staff when dealing with patients in transmission-based precautions for TB
- Asking for guidance and clarification for any areas of concern or uncertainty.

### Use of Transmission-based Precautions in Hospital

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Infectious patients should be admitted to hospital and transmission-based precautions implemented if they are:

- sufficiently unwell as to require admission to hospital
- unable to comply with the community infection control precautions

If there is a suspicion of pulmonary tuberculosis on admission/initial assessment, the patient should be given a surgical mask to wear (as minimum or N95 mask if tolerated) and a negative pressure isolation room sought as soon as possible.

### Respiratory Precautions

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- Respiratory Precautions (Enhanced) must be used to care for patients with suspected or confirmed infectious pulmonary tuberculosis in addition to Standard Precautions.
- A negative pressure room with an anteroom and an ensuite bathroom should be used. This room will have negative air pressure in relation to the surrounding areas (with a pressure differential of 10-15 pascals) and appropriate discharge of air outside or high-efficiency filtration of room air before it is circulated to other parts of the hospital.
- When a negative pressure room is unavailable, a single room with anteroom and ensuite may be used for suspected patients after consultation with the IPC team or the Respiratory Medical team.
- **A patient with suspected or proven drug resistant pulmonary TB especially Multi-Drug resistant TB should always be isolated in a negative pressure room.**
- All staff who enter the patient's room should wear N95 mask.
- Staff must make sure that they undertake fit-checking to ensure the N95 mask forms a tight seal around nose/mouth before entering isolation room.
- Children may not be infectious, however, advice should be sought from the Infectious Diseases/paediatric expert in TB regarding isolation needs on a case-by-case basis according to clinical judgement.
- N95 masks should also be offered to visitors (including household contacts)
- Where a combination of both respiratory and protective isolation (AI/PE) may be required for an immunocompromised patient, discussion with the Clinical Team/IPC Service is recommended to ascertain risks related to various ventilation requirements e.g. a single ensuite room and use of a portable air filtration unit may be considered.

### Aerosol generating procedures

- Aerosol generating procedures such as induced sputum's and bronchoscopy must be carried out using Respiratory Precautions (Enhanced) in a room with negative air pressure even when tuberculosis is only remotely possible as a diagnosis.
- N95 masks must be worn by all staff undertaking or present in the room during these procedures.

**Precautions for patient movement and transfer outside of isolation room**

- Patients must wear a surgical mask when leaving the isolation room e.g. for investigations in other parts of the hospital and be instructed to keep this on at all times while out of the isolation room.

**Criteria for ending isolation**

The default position for a patient with a smear-positive pulmonary TB is to isolate for at least two weeks for a patient who is tolerating treatment but it is at the discretion of the Respiratory/Specialist Medical Team.

Factors for consideration include:

- The patient has stopped coughing
- The patient is infected with a fully sensitive strain of Mycobacterium tuberculosis
- The patient is responding well to treatment and there is no treatment interruption
- Low smear score on sputum
- Compliance with requests to wear masks outside of room

Many patients will have ceased to produce sputum after 2 weeks of treatment and are unlikely to be infectious. If spontaneous sputum specimens cannot be obtained, supervising nursing staff must be sure the patient is no longer coughing before the decision is made to end isolation.

Patients with evidence of cavitary disease, vigorous cough or ongoing smear positive scores may require longer isolation.

**For suspected/confirmed multi-resistant pulmonary TB, further discussion with IPC/Infection Management Service (IMS) should occur prior to ending isolation.**

**NB:** These are not discharge criteria as many patients may be able to continue isolation at home following medical review.

**Note on IPC precautions for Extra-pulmonary tuberculosis**

- Patients with tuberculosis infection of a wound, cysts, perineum or any other non-pulmonary site do not require isolation or Respiratory Precautions (Enhanced).
- Where care of a TB infected wound may generate aerosols e.g. irrigation of the wound bed, N95 masks and gloves are required.
- N95 masks should be worn when emptying peritoneal bag fluid from a patient diagnosed with peritoneal TB.

**Key Performance Indicator**

- Regular assessment of staff knowledge and compliance for management of patients during ward rounds and notification of results
- Review of staff exposure cases with Occupational Health in regard to any increase in exposure events
- Policy review in line with current literature on a 3-yearly basis

## Supporting material

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### Controlled documents

- Respiratory Precautions (Enhanced) Poster - Ref 2410073
- Discharge Cleaning and Disinfection Guide - Ref 2408588
- Transmission-based Precautions (Isolation) Policy - Ref 2400389

### References

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- Epidemic Preparedness Act 2006 (3 November 2021).  
<https://legislation.govt.nz/act/public/2006/0085/latest/DLM404459.html>
- Health (Infectious and Notifiable Diseases) Regulations 2016.  
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- Health Act 1956 (as at 1 July 2022).  
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<https://www.health.govt.nz/publication/guidance-infectious-disease-management-under-health-act-1956>
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- Ministry of Health. (2022). Schedule of notifiable diseases (updated June 2022).  
<https://www.health.govt.nz/our-work/diseases-and-conditions/notifiable-diseases>
- Te Whatu Ora Health New Zealand. (2022). Communicable Disease Control Manual.  
<https://www.tewhatauora.govt.nz/publications/communicable-disease-control-manual/>