Health Service Directive – Tuberculosis Control

Protocol for the Control of Tuberculosis

1. Purpose
This protocol describes the mandatory requirements for the control of Tuberculosis (TB) in Queensland.

2. Scope
This Protocol applies to all Hospital and Health Services (HHS’s).

3. Roles and Responsibilities for Control of Tuberculosis

3.1 Hospital and Health Service (HHS)
HHS’s will:

- ensure that all new cases of TB are notified to the Department of Health (Communicable Diseases Branch) as per the Public Health Act and Regulations 2005 and that post notification forms are completed as soon as possible and forwarded to CDB.
- provide data to support Queensland meeting the mandatory reporting requirements of the National Notifiable Diseases Surveillance System (NNDSS),
- ensure that TB patients are tested for co-infection with human immunodeficiency virus (HIV) with an appropriate pre-test and post-test discussion and subsequent management as per the Queensland Health guidelines for the treatment of TB in patients with HIV co-infection, as required,
- ensure all TB patients are assessed and followed up to the completion of therapy and have post treatment follow up for at least 2 years (or as long as clinically required) by a medical officer with appropriate specialist college or equivalent qualifications who is trained and experienced in TB management,
- ensure that all TB diagnostic services and treatment result in no out-of-pocket expenses to the patient /client.
3.1.1 Tuberculosis Control Units within Hospital and Health Services

Urgent Advice to the Department of Health

The Department of Health (Communicable Diseases Branch [CDB]) are to be informed as soon as possible (and within one business day) via the NDPC@health.qld.gov.au email account where any of the following apply:

- there is suspicion or confirmation of a case of multidrug-resistant TB (MDR-TB) or extensively drug-resistant TB (XDR-TB),
- there are more than 30 contacts of an index case,
- any cases of healthcare associated transmission of TB disease (index case or contacts),
- where transmission to contacts who are not close household or close other contacts has occurred,
- an institution or organisation is involved,
- where there is potential for heightened community interest,
- where a case spent greater than 8 hours on an aircraft,
- where there is potential for involvement or implication of another jurisdiction, country or other governmental department or non-governmental organisation, and
- TBCUs are to provide regular updates to CDB on progress with and outcomes of contact tracing efforts for those scenarios listed above.

Clinical information management

- All data required to provide effective case management and to meet surveillance requirements must be entered into a HHS approved electronic case management database.
- Where Tuberculosis and Related Diseases Information System (TARDIS) is available, case management clinicians and supporting administrative staff are required to maintain the patient health record in TARDIS.
- Surveillance data for TB submitted to CDB are stored in the Notifiable Conditions System (NOCS) for statewide reporting and provision of data to the NNDSS under the National Health Securities Act 2007.

TB control surveillance

TBCUs are required to submit TB surveillance data:

- as requested by the Department of Health (CDB),
- where a new TB case is the close household or close other contact of another TB case, and
- where a pattern of TB cases suggests a transmission cluster.
Enhanced surveillance data are required as soon as possible and within seven days of diagnosis for smear positive pulmonary cases and within 14 days for smear negative pulmonary cases and all extra pulmonary only cases. Ongoing case data is to be reported to CDB at 3 months and end of treatment.

Visa health assessments

TBCU's shall:

- Perform triaging and provide TB diagnostic and management services to all clients that fall within their geographical region who are referred to them as part of the health undertaking and health manifest processes.
- Provide TB diagnostic services to meet visa requirements, and where appropriate, recoup these costs from a third party such as a private health insurer. The HHS must ensure no out-of-pocket expenses to the client occurs.
- Provide a clinic attendance report via email to the Department of Immigration and Border Protection (DIBP), copying in CDB via cdu_tbadmin@health.qld.gov.au following clinical review of a referred patient.
- Ensure the timely notification of all ‘failures to present’ of Health Undertaking clients to the appropriate referring entity (DIBP or Bupa Medical Visa Services) via email and copying in CDB via cdu_tbadmin@health.qld.gov.au.

3.2 Tuberculosis Expert Advisory Group

The Tuberculosis Expert Advisory Group (TEAG) exists to provide expert advice on the management of complex TB cases to ensure that such cases are peer reviewed and best practice principles are being followed in all instances.

HHSs are required to alert TEAG via the NDPC@health.qld.gov.au email account where there is a new case of rifampicin resistance (includes MDR-TB & XDR-TB) or a new case of TB-HIV co-infection.

HHSs are encouraged to refer clinical cases where there is:

- complex drug intolerance or other drug resistance
- complex co-morbidities
- where evidence is lacking to guide clinical practice
- failure of sputum cultures to convert to negative following two months of therapy.

For further information refer to the TEAG terms of reference available at www.health.qld.gov.au.

4. Case management

All patients diagnosed with active TB are to be commenced on treatment.

- Smear positive pulmonary TB patients should commence treatment as soon as possible, waiting no longer than three days for treatment to commence.
- Smear negative, culture positive and extra-pulmonary TB cases should commence treatment within seven days.
Where deviation from these timelines are made, the reasons should be clearly documented e.g. drug resistance suspected.

Each TB patient, regardless of public or private status, must have an allocated case nurse from a TBCU. This role is to provide a supportive partnership and advocacy role between the patient and treating medical officer to deliver quality, timely and client focussed consultancy.

4.1 Aboriginal and Torres Strait Islander peoples

When caring for patients who identify as being of Aboriginal and Torres Strait Islander origin consideration must be given to engaging the services of an Aboriginal and Torres Strait Islander Health Worker, Aboriginal and Torres Strait Islander Health Practitioner or Indigenous Liaison Officer.

TBCU’s must ensure that their TB health service is culturally considerate and welcoming to Aboriginal & Torres Strait Islander peoples. Queensland Health resources for health care providers treating patients who identify as being of Aboriginal or Torres Strait Islander origin can be found at https://www.health.qld.gov.au/atsihealth/cultural_capability.asp.

4.2 Culturally and linguistically diverse groups

When caring for patients who identify as culturally and linguistically diverse, consideration must be given to providing culturally appropriate care. Queensland Health resources for health care providers treating patients from culturally diverse backgrounds can be found at https://www.health.qld.gov.au/multicultural/default.asp.

4.3 Principles of treatment

Key principles of treatment include:

- The design of a treatment regimen should include the results of Xpert MTB/RIF testing for rifampicin resistance (RR) and/or phenotypic TB drug susceptibility testing (DST).
- Active TB must never be treated with a single drug and a single drug should never be added to a failing TB treatment regimen.
- Clinicians must identify and manage barriers to successful adherent treatment including ensuring diagnosis and treatment is cost free to the patient and ensuring directly observed therapy (DOT) or other aids to adherence as indicated.
- TB diagnostic services and treatment may be charged to a third party i.e. private health insurer however the HHS must ensure there will be no out-of-pocket expenses to the client.

The treating physician must monitor infectiousness and microbiological results for drug sensitivities. Quality mycobacteriological assessment is the only reliable index of effective TB treatment at the:

- Initial phase—sputum smear negativity is used to confirm limited infectiousness (TBCUs must determine when the patient is non-infectious and able to return to work, study, transfer out of country, etc.),
- Continuation phase—sputum culture negativity confirms early effective bactericidal effect in pulmonary TB and can be compared to benchmarks established in international randomised controlled trials of treatment,
End of treatment—culture negativity confirms bacteriological cure (best assessment for smear positive pulmonary TB not managed with full supervision of drug doses).

All TB clinicians must keep accurate records of the drug regimen used including agent, doses, duration and any changes which are made. Such records need to be made readily available to other clinicians, including the TEAG as required for patient management.

4.4 Directly observed therapy

Specific high risk patients must be placed on Directly Observed Therapy (DOT). These include patients with:

- Any form of rifampicin resistance including MDR-TB & XDR-TB
- Patients on three times per week therapy,
- Any patient who has demonstrated they are incapable, unreliable or unwilling to take medication unsupervised.

DOT should be strongly considered for smear positive cavitary disease and anyone with a history of previous TB treatment. The decision for DOT should be made in consultation with the treating doctor, the TBCU case nurse and the HHS, as required.

For three times per week therapy, one or two defaults from attendance for the DOT dose(s) amounts to a loss of efficacy disproportionate to the number of dosages missed. Even a single failure from attendance must be followed up to investigate the reason for non-adherence and identify where other community support services may be of benefit.

4.5 Patient movement

Each newly notified TB patient must be interviewed about possible movements within Queensland, interstate or outside the country. Alternative contact details for these patients must be sought to ensure the patient is contactable if the need arises. When the TB treatment consent process occurs, the patient must be informed by the TB clinician about the need to contact the TBCU/peripheral unit prior to any travel so that appropriate arrangements can be made.

If a patient with active TB is transferred out of Queensland, the Post Notification Form 2 must be utilised to immediately communicate the transfer outcome to CDB. The case management team must forward all relevant clinical information to the TBCU in the state or country to which the patient has moved. If the patient is considered infectious, the CDB will alert the governing body of the relevant jurisdiction. An exemption to CDB alerting the governing body applies to the Treaty areas of the Torres Strait Islands and Papua New Guinea where an established process of coordination is already in place.

If a patient with active infectious or non-infectious TB leaves the state or country without giving notice to the treating doctor or TBCU/peripheral unit, government and non-government agencies may be used to assist with tracing the patient. Duty of care requires that alerts are provided to settings where infection may have occurred (for example, airlines, conference venues, etc.) and procedures are put in place to trace the patient. It is the responsibility of the case management team to notify the CDB as soon as possible (and within one business day) if this occurs to ensure appropriate follow up action is taken.

When all normal liaison and correspondence regarding compliance with management and/or treatment of TB fail, a public health order may be given as a last resort. This must be undertaken in
consultation with the CDB by an authorised person. See the Public Health Act 2005 for further information.

5. Contact Management

Contact tracing for sputum smear positive pulmonary cases must begin within one working day of receipt of notification and within three working days for all other cases. Where delays are unavoidable, contact tracing should begin within seven and 14 days respectively.

Contact management is to be undertaken by TBCU's in accordance with endorsed National and/or State Guidelines.

5.1 Contact Tracing

As per the CDNA National Guidelines for the Public Health Management of TB the aims of contact tracing are to:

- identify the source case,
- identify further cases of TB among those in contact with the disease,
- identify people who may have been infected following contact with a person found to have active TB, and
- counsel people found to have LTBI infection and refer them for assessment.

Staff who undertake contact tracing activities for TB must be appointed as a contact tracing officer (CTO).

Anyone seeking to be appointed as a CTO must complete the Application for Appointment form. Eligible applicants meeting the requirements of the Public Health Act 2005 will be assessed and subsequently appointed by the delegate of the chief executive if appropriate. Eligibility is based on completion of the assessment package and endorsement of the supervisor. Upon issuing the identification card, the individual's name will be added to the CTO register, maintained by the Department of Health’s Health Protection Unit.

Where the treating medical officer/s are not designated contact tracing officers, but have expertise in TB medicine, they must consult with the case management team within a TBCU to determine the infectivity of a TB case and assist as required with contact tracing.

While performing the interview as part of contact tracing, the CTO must:

- review the case to determine infectiousness as per appendix 1,
- assess environmental and behavioural factors which may modify the likelihood of transmission,
- promptly identify persons who have had significant close or prolonged contact with the person diagnosed with, or under suspicion of having TB,
- obtain a list of close household and close other contacts and invite them for screening within seven days or as soon as practical after this. Where deviations from these timelines are made, the reasons should be clearly documented.
- complete a Nursing interview with patient diagnosed with active TB form, enter data into the TBCU's database and attach to the patient file of the index case, and
attend to ‘concentric screening’ according to a risk assessment where large numbers of contacts are involved.

The case management nurse must then discuss findings of the interview and contact tracing with a senior TBCU clinician to plan the screening management. Using the flowchart in appendix 1, the senior TBCU clinician is to determine if extended screening is deemed necessary.

5.2 Contact Screening

TBCUs are responsible for the management of contact screening for individuals resident within their region. Where contact screening involves a health care facility, close cooperation is required between the relevant infection control service and the TBCU.

Where a contact resides in a different region to the index case, the originating TBCU will forward information to the relevant TBCU who will undertake screening and forward results to the originating TBCU. Where a TBCU does not have resources to manage a large screening processes, the TBCU should immediately notify the HHS executive to seek additional resources.

Where contact screening is required for persons in other State or Territory jurisdictions or countries the CDB is to be informed and provided with sufficient case data to notify the relevant jurisdiction/country. CDB will coordinate all interjurisdictional arrangements.

For each case of contact screening investigation, the flowchart described in appendix 1 must be followed. The case management team must also determine if secondary transmission has occurred, identify clustering and review epidemiological data.

All TBCUs are responsible for all post-screening follow up and appropriate treatment.

The case management nurse must ensure that accurate, up to date electronic records are kept of identified contacts and their individual screening outcomes. Such records must be made readily available, if requested, to the Department of Health (CDB).

Where available, TARDIS is to be used for contact screening activities.

5.2.1 Non-Attendance of Contact Screening

If contacts do not attend a screening appointment, a senior TBCU clinician (nursing or medical) must be notified to document and ensure follow-up action.

5.3 Airline Contact Tracing

Generally, contact tracing among airline passengers is only necessary if the index case was, or was thought to be, smear positive at the time of the flight, and where the total flight time was greater than eight hours. Screening must be offered to passengers and airline staff who may have been seated within 2 rows of the index case. Refer to appendix 2 for further guidance.

6. Bacille Calmette-Guerin Vaccination & Tuberculin Skin Testing

Tuberculin Skin Testing (TST) and administration of Bacille Calmette-Guerin (BCG) vaccine must only be undertaken by appropriately trained staff with the relevant authority to administer a schedule 4 drug as per the Health (Drugs & Poisons) Regulation 1996.
The BCG & TST e-learning theoretical training package has been developed by CDB and is comprised of online learning modules and mini-exams. After successful completion of the online theoretical component, the healthcare worker (HCW) should arrange a time with a TBCU to facilitate completion of the practical component before they are deemed to be competent. This training is a requirement to administer BCG or TST. Once competent, the HCW must undergo reassessment at defined periods, as determined by the relevant TBCU in partnership with the HHSs, to remain clinically competent to perform TSTs and BCGs. Leading TB clinicians may need to assess each other for competency.

7. Laboratory diagnosis

TB must be confirmed microbiologically by the detection of *Mycobacterium tuberculosis* (*Mtb*) by acid fast microscopy and culture of appropriate clinical specimens.

The Queensland Mycobacterium Reference Laboratory (Pathology Queensland) is the reference laboratory for all HHSs.

The use of rapid methods, such as Xpert MTB/RIF is encouraged to promote early detection of TB and rifampicin resistance. Xpert testing can be performed on smear negative sputa where rifampicin resistance is suspected or rapid confirmation of *Mtb* is of clinical or public health benefit. The assay can be used on selected tissues and CSF samples on special request.

8. Employee and student risk assessment and screening

All new employees including agency nurses who will be working in clinical areas and students undergoing clinical placement in a Queensland Health facility must be assessed for their risk of TB using the Queensland Health risk assessment and screening form. This risk assessment tool identifies those healthcare workers who require further assessment and medical testing for the presence of latent or active TB.

Employees must be risk assessed prior to or soon after commencement. HHSs must have an arrangement in place with tertiary institutions to ensure that before accepting a clinical student for placement, the student has undergone this assessment.

Employees/students who are from or have travelled to high risk TB countries (see [www.health.qld.gov.au](http://www.health.qld.gov.au)) for three months or longer are at the greatest risk for developing TB. It is the responsibility of each HHS to securely and retrievably store records of risk assessments and referrals for Queensland Health employees. Instances occur where latent TB acquired outside of Australia does not manifest clinically until months or years later. Other employees/students may be at increased risk for TB through acquisition in the work environment, for example caring for patients with TB or working in a TB laboratory.

For further guidance on risk assessment and referral pathways refer to:

- **Risk assessment tool:** [Screening & Assessment of Healthcare Workers & Students](#)
- **Factsheet:** [Tuberculosis Information for Health Care Workers & Students prior to Clinical Placement](#)

BCG vaccination is not routinely recommended for any employees or students.
9. Supporting and related documents

Authorising Health Service Directive

- Health Service Directive – Tuberculosis Control

Legislation

- Financial Accountability Act 2009
- Health (Drugs & Poisons) Regulation 1996
- Hospital and Health Boards Act 2011
- National Health Securities Act 2007
- Public Health Act 2005
- Right to Information Act 2009
- Work Health and Safety Act 2011

National TB Advisory Committee publications

- Essential components of a TB control programme in Australia
- CDNA National Guidelines for the Public Health Management of TB
- Infection control guideline

Queensland Department of Health

- Environmental Health Training Program – Module 10
- Contact Tracing Officer – Application for Appointment
- Adverse Event Following Immunisation Reporting Form
- Form PHA s70 Notifiable Conditions Report Form (1) for Queensland clinicians (Clinical and Provisional diagnoses)
- Tuberculosis Return (Qld) Post notification information (Form 1)
- Tuberculosis (TB) Post notification Form 2

Queensland Department of Health – flowcharts

- Appendix 1: Contact tracing based on index case infectivity
- Appendix 2: Contact tracing of airline passengers
# 10. Definition of Terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition / Explanation / Details</th>
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<tbody>
<tr>
<td>Authorised person</td>
<td>Means a person appointed as an authorised person under section 377 of the Public Health Act 2005</td>
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<tr>
<td>BCG</td>
<td>Bacille Calmette-Guerin</td>
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<td>Case Management Team</td>
<td>Consists of the treating clinician, case manager nurse, case management medical officer, and others as required</td>
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<tr>
<td>Case Manager Nurse</td>
<td>A senior nurse with appropriate knowledge and expertise who supports and advocates for a patient during their treatment regimen</td>
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<tr>
<td>CNC</td>
<td>Clinical Nurse Consultant</td>
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<tr>
<td>CN</td>
<td>Clinical Nurse</td>
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| Clinical and related areas | This category includes all healthcare workers who have contact with patients including:  
  • medical practitioners  
  • nursing staff  
  • Indigenous Health Workers  
  • allied health practitioners  
  • dental staff (including assistants)  
  • clinical pharmacy staff  
  • maintenance personnel who service clinical equipment (including plumbers)  
  • sterilising services staff  
  • mortuary staff and technicians  
  • specimen collection staff  
  • operational staff in other categories who have contact with patients  
  • cleaning staff and waste-management personnel  
  • porterage and patient assistance staff  
  • security staff  
  • laundry staff  
  • home care workers  
  • laboratory staff  
  • ward catering staff  
  • administration staff in patient care areas  
  • religious service providers                                                                                      |
| Contact Screening      | Testing of close contacts for latent TB infection, or active TB disease. This is performed as soon as possible after Contact tracing has occurred                                                                                     |
| Contact Tracing        | Determining, as per the Public Health Act 2005, who the TB index case’s close contacts are, via a structured interview                                                                                                                |
| DIBP                   | Department of Immigration & Border Protection                                                                                                                                                                                           |
| Enhanced Surveillance Data | Data contained within TB Post Notification Form 1. Ongoing case data contained in Form 2                                                                                       |
| Health Care Worker     | Includes nursing, medical, paramedical and allied health professionals                                                                                                                                                                 |
| Health Manifests       | A manifest provided by DIBP to manage refugees who require screening                                                                                                                                                                 |
| Health Undertaking     | An agreement that is made between the Australian Government and an immigrant/visa holder to ensure that visa holders with a history or an increased risk of tuberculosis do not develop active TB while in Australia |
Queensland Health: Protocol for the Control of Tuberculosis

<table>
<thead>
<tr>
<th>HHS</th>
<th>Hospital and Health Service</th>
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<tbody>
<tr>
<td>MDR-TB</td>
<td>Multi Drug-Resistant Tuberculosis</td>
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<td>No out of pocket expenses</td>
<td>There will be no costs directly charged to the patient, however costs can be indirectly recovered from a third party (such as a health insurer), with the service provider arranging this, and ensuring that no costs are passed onto the patient.</td>
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<tr>
<td>RR</td>
<td>Rifampicin resistant</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<tr>
<td>TEAG</td>
<td>Tuberculosis Expert Advisory Group</td>
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<tr>
<td>TBCU</td>
<td>TB Control Unit</td>
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<tr>
<td>TST</td>
<td>Tuberculin Skin Test</td>
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<tr>
<td>XDR-TB</td>
<td>Extensively Drug-Resistant Tuberculosis</td>
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11. Approval and Implementation

Protocol Custodian
Dr Jeannette Young
Chief Health Officer and
Deputy Director-General Prevention Division

Approving Officer:
Mr Michael Walsh
Director-General, Department of Health

Approval date: 11 November 2015
Effective from: 11 November 2015

Version Control

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<td>Three new documents</td>
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Appendix 1 – Contact tracing based on index case infectivity

Suspected pulmonary TB

- AFB sputum smear positive, Xpert TB positive* &/or CXR cavitation OR branch washing / BAL smear positive OR evidence of transmission OR laryngeal TB
- HIGH DEGREE OF INFECTIOUSNESS

- Initiate contact tracing within 1 day (where delays are unavoidable, maximum 7 days) of receiving result
- Invite identified contacts for screening within 7 days or as soon as practical.

Suspected extra-pulmonary TB

- TB excluded
- NEGLIGIBLE DEGREE OF INFECTIOUSNESS

- Initiate contact tracing within 3 days (where delays are unavoidable, maximum 14 days) of receiving result (extent of screening to be determined in consultation with senior TBCU clinician)
- Invite identified contacts for screening.

1. Evaluate contact screening results for evidence of infection and/or disease
   2. Inform senior TBCU clinician if screening is extended to include medium risk contacts
   3. Notify CDB if:
      - There is suspicion or confirmation of a case of MDR-TB or XDR-TB
      - There are more than 30 contacts of an index case
      - Any cases of healthcare associated transmission of TB disease
      - Where transmission to contacts who are not close household or close other contacts has occurred
      - An institution or organisation is involved
      - Where a case spent greater than 8 hours on an aircraft
      - Where there is potential for heightened community interest
      - Where there is potential for involvement or implication of another jurisdiction, country or other governmental department or non-governmental organisation

If TB is excluded in nearly all smear positive samples in which Xpert does not detect TB DNA. In rare instances the Xpert result may be a false negative & other clinical features should always be considered.
Appendix 2 - Contact tracing of airline passengers

- Assess infectivity / smear results
- Obtain details of aircraft carrier, flight number, origin and destination of flight, dates of travel
- TBCUs to notify CDB
- CDB to notify NIR

Index case identified by TBCU?

CDB receives passenger cards from National Incident Room (NIR)

CDB disseminates passenger cards to relevant TBCU to conduct contact screening

TBCU to send summary of contact screening activities to CDB who will notify NIR