Health Service Directive – Tuberculosis Management

Protocol for Tuberculosis Contact Tracing and Screening

1. Purpose

This protocol describes the mandatory steps to be taken in regards to Contact Tracing and Screening of Tuberculosis (TB) patients in Queensland.

2. Scope

This Protocol applies to all Hospital and Health Service (HHS) employees and organisations and individuals acting as an agent for HHS (including Visiting Medical Officers and other partners, contractors, consultants and volunteers).

3. Process for the Management of Contact Tracing and Screening

3.1 Legislative obligations

The Public Health Act 2005 – Chapters 3 and 8 contain a number of legislative requirements related to tuberculosis:

- Notifiable conditions
- Notifiable conditions register
- Contact tracing
- Public health emergencies

3.2 Contact Tracing

In accordance with Public Health Act 2005, Part 3, Division 1, contact tracing must be initiated if and when a contact tracing officer reasonably suspects that a person;

- Has a notifiable condition; or
- Has been in contact with someone who has, or may have a notifiable condition

The Public Health Act 2005 contains a number of provisions relating to contact tracing including:
Section 80: the Chief Executive can authorise the disclosure of confidential information for a number of reasons including contact tracing.

Section 89: Contact tracing officers from Queensland Public Health System have numerous functions including identifying persons who may have contracted or transmitted TB and providing those persons who have contracted TB with information to prevent or minimise the transmission of TB.

Section 99: can be enforced to require a TB-positive person to provide the names and contact details of persons who may have transmitted TB and persons to whom the index case may have transmitted the infection.

Section 108: allows disclosure of confidential information (authorised by the Chief Executive) by a relevant person to protect the health of another person.

Section 109: allows disclosure (again authorised by the Chief Executive) if such is deemed to be in the public interest.

### 3.3 Appointment as Contact Tracing Officer

All staff who are required to undertake contact tracing must apply to be a Contact Tracing Officer (see Environmental Health Training Program and Contact Tracing Officer Application for Appointment at [http://qheps.health.qld.gov.au/ehpom/training/index.htm](http://qheps.health.qld.gov.au/ehpom/training/index.htm)).

After successful completion of this training, the individual will be deemed eligible for appointment as a Contact Tracing Officer.

A TB contact tracing officer register will be maintained by Centre for Healthcare Related Infection Surveillance and Prevention & Tuberculosis Control (CHRISP & TB).

### 3.4 Training requirements for Contact Tracing Officers (TB Control)

#### 3.4.1 Environmental Health Training program

The Environmental Health Training Program (Module 10C) provides participants with an understanding of surveillance for notifiable conditions, contact tracing provisions and techniques which can be used in performing the contact tracing of the Act.

#### 3.4.2 BCG (Bacille Calmette-Guerin) Vaccination & Tuberculin Skin Testing (TST) Accreditation

Contact Tracing Officers (Tuberculosis Control) additionally require accreditation in administering the Tuberculin Skin Test (TST) and Bacille Calmette-Guerin (BCG) vaccination.

Registered nurses appointed as contact tracing officers must complete the BCG & TST e-learning theoretical training package provided by CHRISP & TB which is comprised of online learning modules, mini-exams and educational videos.
After successful completion of the online theoretical component of the training each nurse must arrange a time with CHRISP & TB to facilitate completion of the practical component whereby video conferencing may be used to determine if a nurse meets the clinical requirements of administering TST and BCGs.

After successful accreditation, reaccreditation is required every two years unless individuals undertake a sufficient number of TSTs and BCGs to remain clinically competent for a period of five years.

Each Tuberculosis Control Unit (TBCU) must keep an in-house accreditation register and notify CHRISP & TB of new nursing staff requiring accreditation.

The accredited nurse’s name will be added to the Queensland Health TST & BCG accreditation register.

All staff undertaking contact screening must be accredited in TST. Where contact screening involves the assistance of personnel not employed within a TBCU, accreditation for TST alone is required.

### 3.4.3 Other requirements

Contact tracing officers are required to have expert interviewing skills to enable the collection of optimal yet sensitive information with regards to obtaining details of possible contacts.

### 3.5 Prioritisation according to Risk of Transmission

Contact tracing identifies the risk of transmission of infection of TB and evaluates the presence of infection and disease in all contacts of notified TB cases. Contact tracing enables the identification and screening of subjects as appropriate who may have been exposed to an infectious TB patient (as well as identify potential sources in those cases that may have resulted from recently acquired infections).

Once a suspected/confirmed case of active TB has been notified, the treating officer/s must make a clinical judgement based on the radiological and bacteriological findings to determine the estimated risk of transmission and initiate contact tracing as a priority if deemed necessary.

Where the treating officer/s are not specialised TB doctors, they must liaise with the case management team within a TBCU to determine the infectivity of a TB case. The treating clinicians, when appropriate, must undertake contact tracing when case managing TB patients.

TB case management teams within TBCUs oversee and facilitate Contact Tracing and Contact Screening efforts. In the event that a TB case is identified in one jurisdiction but the Contact Screening is required in another, TBCUs are to negotiate regarding resources and responsibilities.

CHRISP & TB are to be notified of Contact Screening where:
• there are >30 contacts,
• where an institution or organisation is involved
• where there is the potential for media or political interest, and/or
• where additional resources are required and an internal escalation request has been initiated.

The case management team must also determine if secondary transmission has occurred, identify clustering and review epidemiological data.

3.5.1 Sputum Smear Positive Patients with Pulmonary Tuberculosis

• Unless already aware, the treating doctor must be contacted by the TBCU clinical nurse consultant (CNC) or nurse within 1 working day of receiving notification of a smear positive result
• The nurse case manager must conduct contact tracing by interviewing the Index Case as soon as possible after receiving the sputum AFB (acid fast bacilli) results or where there is suspicion of TB diagnosis (1-7 days maximum for smear positive index cases; 14 days maximum for smear negative index cases)
• Contact screening should occur as soon as possible thereafter
• In order to prevent cross transmission, it is recommended that all patients requiring inpatient care who are sputum smear positive for AFB be managed with airborne transmission isolation precautions, unless TB has been excluded on microbiological grounds. Assessment of infectiousness including relaxation of transmission based precautions should be discussed with the designated clinician from the TBCU
• Ensure all cases of pulmonary TB which are smear positive at the time of diagnosis are discussed with a clinician from the designated TBCU prior to hospital discharge and/or return to the workplace, or place of study.

Upon the initial interview by TBCU nurse with the Index Case, the nurse must:

• review all cases on an individualised assessment of infectiousness, environmental factors and behavioural factors in consultation with relevant clinical staff as these may modify infectiousness,
• promptly determine persons who have had significant close or prolonged contact with the person diagnosed with / or suspicion of tuberculosis,
• obtain a list of close household and close other contacts and invite them for screening within 7 days,
• complete a nursing interview and TB Contacts Tracing form, enter it into the TBCU’s database and attached to the patient file of the Index Case,
• complete a Contact Tracing Management form for all Index Cases, 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 Nursing Interview and contact tracing with CNC to plan the screening management.

The Nurse Unit Manager (NUM), nurse-in-charge or CNC of the TBCU must then determine if extended screening is deemed necessary using the Case Infectivity Flowchart. The NUM, nurse-in-charge or CNC needs to be consulted for medium, low and negligible degrees of infectivity so as to determine the extent of screening required. A person with a high degree of infectivity will require Contact Tracing within 7 days.

All information must be treated with professional confidentiality and discretion as per the Health Records and Information Privacy Act 2002. The name of the Index Case must never be divulged to contacts or anyone outside of the Queensland TB Program (QTBP) without the consent of the patient unless in accordance with the Public Health Act 2005.

3.5.2 Sputum Smear Negative Patients with Pulmonary Tuberculosis

Contact should be made with the Index Case within 14 days of advice of microbiological diagnosis of Mycobacterium tuberculosis complex or Mycobacterium bovis to conduct contact tracing and obtain list of close household and close other contacts in settings where smear microscopy is negative for AFB.

High Risk Group

The high risk group are generally contacts with frequent and prolonged exposure to the index case such as people living in the same household, close relatives and friends, and close work colleagues who share the same environment.

Medium Risk Group

The medium risk group may include those with frequent but less intense contact with the index case such as other close relatives, friends, colleagues, classmates and neighbours who are not considered to be part of the high risk group.

Low Risk Group

The low risk group includes other contacts at school or in the workplace who are not already included in the high and medium risk groups. Contact tracing in the low risk group should only occur if it is evident that transmission has occurred in the high and medium risk groups.

3.6 Post-Screening

All contacts shall be advised of their screening results and of the recommended follow-up.

The TBCU is responsible for:

- assessment of the results of TST result and/or chest x-ray (CXR) if attended,
- decision and documentation of the recommended follow-up/further action in each individual case,
- forwarding to secretarial support officer for input into database, and
• updating the patient health record one month after registration for updating of information.

Upon completion of the initial round of screening, a summary report of the results must be reviewed by the Clinical team. The case manager must review the contact screening list, at least monthly with the NUM or CNC, to analyse screening results and to identify those who did not respond.

Upon completion of the screening exercise, the summary report of results must be attached to the index cases' patient health record.

3.7 Contacts Requiring Clinical Examination

All contacts who require a clinical examination as a consequence of contact screening require the:

• creation of a patient Health Record,
• provision of an appointment with a Medical Officer who must be advised of the screening outcomes, disease transmission and infection rate found during a screening exercise, and
• database entry of contact details and the treatment ordered or follow-up advocated.

Any Medical Officers who are attending to recipients of contact screening are to liaise with a TB clinician. The medical officer is a MO of the TBCU or delegate who may be an employee of a different public, or private health facility as agreed prior to commencement of the screening activity.

3.8 Non-Attendance of Contact Screening

If contacts did not attend a screening appointment, contact forms must be forwarded to the TBCU CNC for recording of follow-up action.

3.9 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 >8 hours. Screening must be offered to passengers and airline staff who may have been seated within 2 rows of the index case.

Refer Appendix 4: Contact Tracing of Airline Passengers

3.10 Risks and Precautions

Risk escalation of a contact screening deemed to have a potentially significant number of contacts involved is required by complying with the procedures and guidelines of the Health Protection Incident Management Framework.

4. **Supporting and related documents**

**Authorising Health Service Directive**
- Health Service Directive – Tuberculosis Management

**Legislation**
- *Public Health Act 2005*
- *Health Records and Information Privacy Act 2002*

**Queensland Department of Health – Statewide Clinical Pathways**
- Appendix 1: Contact Tracing Based on Index Case Infectivity
- Appendix 2: Close Household & Close Other Screening for Smear Positive Index Case
- Appendix 3: Close Household & Close Other Screening for Smear Negative Index Case
- Appendix 4: Contact Tracing of Airline Passengers

**Queensland Department of Health Forms**
- TB Contact Tracing Interview
- Contact Screening Management form

**Queensland Department of Health**
- Environmental Health Training Program – [Module 10](#)
- Contact Tracing Officer [Application for Appointment](#)

5. **Definition of Terms**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition / Explanation / Details</th>
<th>Source</th>
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<tbody>
<tr>
<td>Close Household Contacts</td>
<td>For smear positive TB patients a general guide to define significant contact is to assess all individuals sharing the same environment with an index case for approximately 8 hours or more, or by having regular direct social contact related to work or social interaction</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>AFB</td>
<td>Acid-fast Bacillus</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>BCG</td>
<td>bacille Calmette-Guerin</td>
<td>WHO</td>
</tr>
<tr>
<td>CNC</td>
<td>Clinical Nurse Consultant</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>Contact Screening</td>
<td>Involves clinical activity such as performing TSTs or chest x-rays (when applicable) on close and close other contacts of a TB index case</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>Contact Tracing</td>
<td>Involves conducting a nursing interview with the TB index case to determine who their close and close other contacts are</td>
<td></td>
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6. Approval and Implementation

Protocol Custodian:
Director
Centre for Healthcare Related Infection Surveillance and Prevention
& Tuberculosis Control
Communicable Diseases Unit
Chief Health Officer Branch

Approving Officer:
Dr Michael Cleary
Deputy Director-General
Health Service and Clinical Innovation

Approval date:
01/07/2013

Effective from:
01/07/2013

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<thead>
<tr>
<th>Term</th>
<th>Definition / Explanation / Details</th>
<th>Source</th>
</tr>
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<tbody>
<tr>
<td>CXR</td>
<td>Chest x-ray</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>DoH</td>
<td>Department of Health</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>DOT</td>
<td>Directly Observed Therapy</td>
<td>WHO</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>TB</td>
<td>Tuberculosis</td>
<td>WHO</td>
</tr>
<tr>
<td>TBCU</td>
<td>Tuberculosis Control Unit. These include the regional tuberculosis control units located in Cairns, Rockhampton, Toowomba and Townsville, as well as Metro South Clinical Tuberculosis Service.</td>
<td>Queensland Health</td>
</tr>
<tr>
<td>TST</td>
<td>Tuberculin Skin Test</td>
<td>WHO</td>
</tr>
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Appendix 1

Contact Tracing Based on Index Case Infectivity Statewide Clinical Pathway

Site of Disease

Suspected Pulmonary

Suspected extra-pulmonary

AFB sputum smear positive +/- CXR cavitation
OR Evidence of transmission
HIGH DEGREE OF INFECTIVITY
Initiate Contact Tracing within 7 days of receiving result

AFB sputum smear negative and culture positive / Nucleic Acid Detection positive / PCR positive (no cavity)
OR Bronch washing smear positive (no cavity)
MEDIUM DEGREE OF INFECTIVITY
Initiate Contact Tracing within 14 days of receiving result (extent of screening to be determined in consultation with TBCU CNC)

AFB sputum smear and culture negative and clinically likely to be TB disease
LOW DEGREE OF INFECTIVITY
Consult CNC

AFB smear positive and clinically unlikely to be TB disease (eg. history of MAC)
NEGLIGIBLE DEGREE OF INFECTIVITY
Initiate Contact Tracing <14 days with Close Household & Close Other Contacts

1. Evaluate contact screening results for evidence of infection and/or disease
2. Inform CNC if screening is extended to include medium risk contacts
3. Notify CHRISP & TB if numbers of contact numbers are >30
Close Household & Close Other Screening for Smear Positive Index Case Statewide Clinical Pathway

- **Symptomatic?**
  - Yes → **TST & CXR**
  - No → **Previous TST ≥10mm?**
    - Yes → **Collect sputum x 3 for AFB**
    - No → **TST**
      - **Contact aged <5 years?**
        - Yes → **Repeat CXR in 6 months**
        - No → **Contact aged <5 years?**
          - Yes → **Perform CXR & Medical Assessment**
          - No → **TST result 0-4mm?**
            - Yes → **Break of contact TST at 3 months**
            - No → **TST conversion?**
              - Yes → **Perform CXR & Medical Assessment within 2 weeks**
              - No → **Discharge**
      - **TST result 0-9mm?**
        - Yes → **Normal?**
          - Yes → **Medical Assessment within 2 weeks**
          - No → **Repeat CXR in 6 months**
        - No → **Normal?**
          - Yes → **Medical Assessment within 2 weeks**
          - No → **Medical Assessment within 2 weeks**
    - No → **Normal?**
      - Yes → **Medical Assessment within 2 weeks**
      - No → **Medical Assessment within 2 weeks**

- **TST result <4mm?**
  - Yes → **Perform CXR & Medical Assessment within 2 weeks**
  - No → **Offer BCG vaccination if appropriate**

- **Previous TST ≥10mm?**
  - Yes → **Medical Assessment within 2 weeks**
  - No → **Medical Assessment within 2 weeks**
Appendix 3

Close Household & Close Other Screening for Smear Negative Index Case

Close Household Screening where Index Case is Smear Negative / Culture Positive or extrapulmonary TB.
(Disregard BCG history and scar)

- Symptomatic?
  - Yes: TST & CXR
    - TST result ≥10mm?
      - Yes: Refer to MO
      - No: Discharge
  - No: TST
    - Previous TST ≥10mm?
      - Yes: CXR
        - Normal?
          - Yes: Discharge
          - No: Discharge
      - No: TST
        - Contact aged ≥5 years?
          - Yes: TST result ≥10mm?
            - Yes: Refer to MO
            - No: Discharge
          - No: TST result ≥5 mm?
            - Yes: Discharge
            - No: CXR & Medical Assessment within 4 weeks
As TB is a notifiable disease, it is mandatory that contact tracing be undertaken (Public Health Act 2005)

**Contact Tracing of Airline Passengers Statewide Clinical Pathway**

- Assess infectivity / smear results
- Obtain details of aircraft carrier, flight number, origin and destination of flight, dates of travel

- Yes
  - Contact National Incidence Room with above detail to obtain passenger cards
  - Receive passenger cards for contact tracing efforts
  - See Close household & Close Other for Smear Positive Index Case Screening Clinical Pathway

- No
  - Passenger cards received from National Incidence Room via Communicable Diseases Unit

1. Notify National incidence Room
2. Copy to CDU if request was sent via them

# In the event that the contact falls outside your jurisdiction, please forward the contact list to the relevant TB Control Unit