CHAPTER 10: CONTACT INVESTIGATION

CHAPTER 10: CONTACT INVESTIGATION

10.1 Objectives

A TB contact investigation is a systematic process for identifying, assessing, and when indicated, treating or monitoring people who have been exposed to infectious TB disease. **Contact investigation is a very important TB prevention and control strategy, second only to the identification and treatment of people with active TB disease.**

Appropriate and timely contact investigations help to control and prevent TB by:

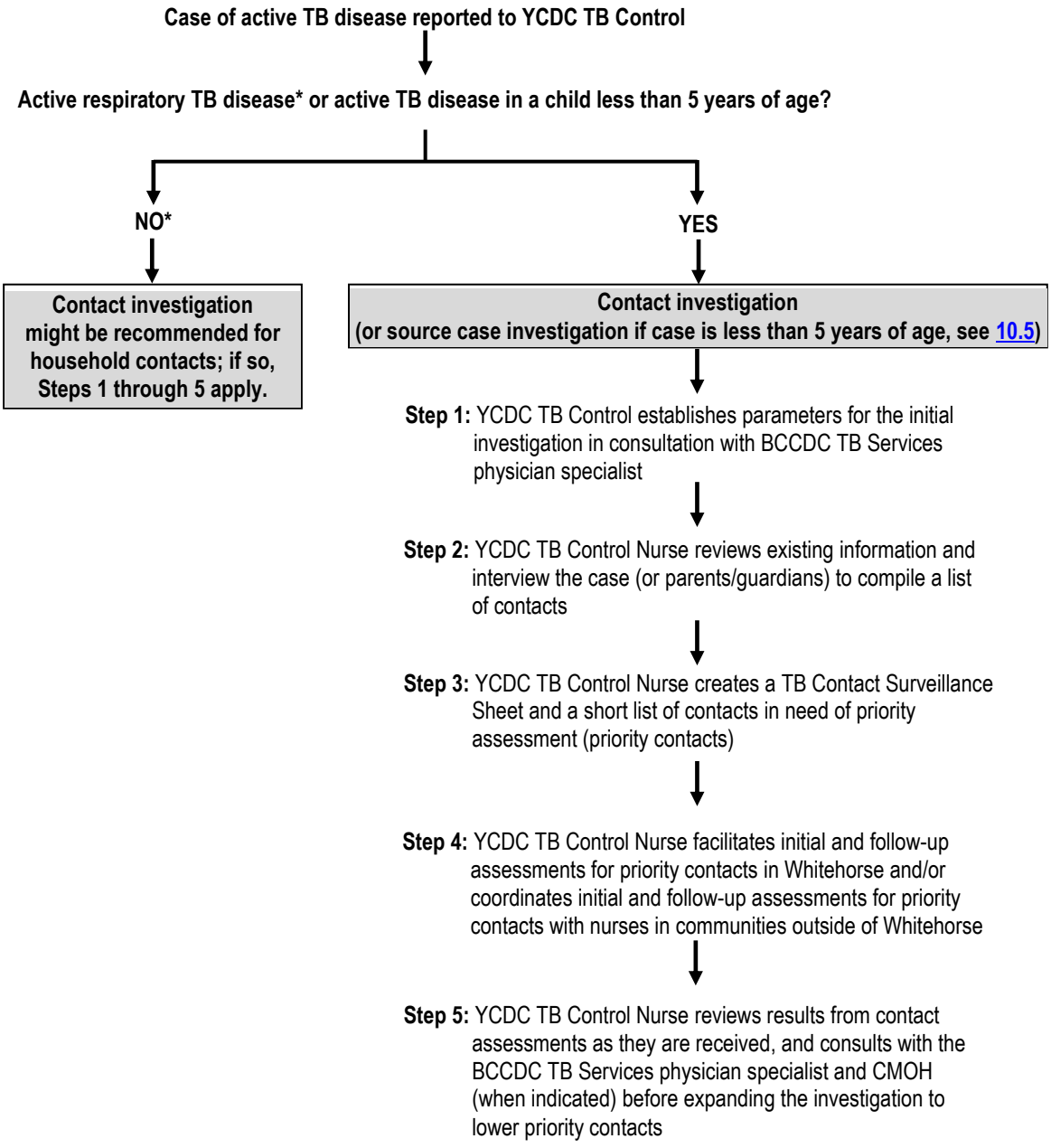
- Identifying additional cases of active TB disease.
- Protecting contacts at risk for developing active TB disease before tuberculin skin testing (TST) or interferon gamma release assays (IGRAs) can reliably detect whether they were infected.
- Identifying contacts that might benefit from treatment for latent TB infection (LTBI) to reduce their risk of developing active TB disease.

10.2 Contact Investigation Flowchart

TB contact investigations in Yukon are coordinated by YCDC TB Control, in consultation with the BCCDC TB Services physician specialist, and as necessary with the Chief Medical Health Officer (CMOH) (Figure 10-1).

For clients residing in Whitehorse, YCDC TB Control nurses provide direct client care services for contact investigation. Rural Yukon nurses and Kwanlin Dunn Health Centre nurses work in collaboration with YCDC TB Control nurses to provide direct client care services for contact investigations in their communities.

Figure 10-1, Contact investigation flowchart



* Chest x-rays and testing of respiratory specimens (e.g., sputum) for TB (i.e., AFB smear and mycobacterial culture – **NOT** routine culture and sensitivity [C&S]) should be included in the clinical evaluation of cases that present with non-respiratory TB disease to rule out concurrent active respiratory TB disease.

10.3 Principles

10.3.1 Indications

TB bacteria are almost always transmitted by breathing in infectious droplet nuclei that were expelled (sent into the air) by people with active respiratory TB disease (see 4.4). Contact investigations are typically indicated for cases with infectious TB disease. Contact investigations might be recommended for some cases with forms of active TB disease that are not infectious, such as TB of the lymph node or spine, after concurrent respiratory TB disease has been ruled out (e.g., with chest x-rays and sputum testing for TB).

When a young child is found to have active TB disease (infectious or non-infectious forms), a search for the case from which s/he became infected with TB bacteria is usually done. This process is known as a 'source case investigation', or 'reverse contact tracing'. For information on source case investigations, refer to 10.5.

10.3.2 Priorities

Prioritizing contacts consists of 2 layers of identification: time spent with the source *and* identifying priority patients within these time frame groups.

Initial contact investigation efforts and resources should focus on high priority contacts:

- Symptomatic contacts
- Contacts most likely to have been infected
- Contacts most likely to develop active TB disease if infected

Contacts most likely to have been infected are those with significant exposure to the case such as:

- Household contacts, defined as people that regularly sleep in the same household as the infectious case on an ongoing basis (i.e., three or more times in a week). This can include extended family members, room-mates, boarders, "couch surfers", and room-mates in homeless shelters or other congregate settings. See Current TB Contact, Type 1 definition on TB Screening Program form.

- People exposed (without wearing fit-tested and seal-checked disposable N95 particulate respirators, see 11.1.2) during

bronchoscopy, sputum induction, autopsy, or other aerosolizing procedures.

- People that had prolonged, intense, or frequent exposure to the case. This might include:
    - People that carpooled with the case several times a week while the case was infectious;
    - People that frequently spent time with the case in small, enclosed spaces with little natural ventilation or recirculated air.

Contact investigations for highly infectious cases (e.g., sputum smear-positive laryngeal or cavitary pulmonary TB) might include contacts with less exposure (see 10.3.3).

Contacts most likely to develop active TB disease if they are infected include children less than 5 years of age and those with compromised immune systems, such as contacts undergoing treatment with TNF alpha inhibitors and/or other immune suppressive drugs/therapies such as current chemotherapy or systemic corticosteroids (equivalent of ≥ 15 mg/day of prednisone for 1 month or more), and contacts with:

- HIV infection
- End-stage renal disease
- Organ transplant (related to immune suppressive therapy)

Every effort should be made to ensure initial assessments of symptomatic contacts and contacts most likely to have been infected and/or to develop active TB disease are underway within 1 week of their being identified as contacts[1].

Investigations are usually expanded to medium priority contacts with less exposure and less risk if evidence of transmission is found among contacts at higher risk. Medium priority contacts are close non-household including those at school and work. See Current TB Contact, Type 2 definition on TB Screening Program form.

10.3.3 Approach

Section 10.4 describes the overall approach in Yukon for assessing TB contacts. The majority of immune competent TB contacts aged 5 years

and older can be assessed/tested according to the *Contact Assessment Flowchart* in Figure 10-2. Alternate assessment/testing pathways are required for symptomatic contacts (see 10.4.1), and immune-compromised contacts and contacts less than 5 years of age (see 10.4.2).

For respiratory TB cases with smear-positive sputum and/or cavitary disease, the initial investigation should include both high-priority and medium-priority contacts. If there is evidence of transmission within these two groups, consideration should be given to expanding the investigation to include casual contacts.

For cases with laryngeal TB, the initial investigation should include high-priority contacts and medium-priority contacts, and might also include casual contacts such as social/recreational groups from the outset.

For sputum smear-negative respiratory TB cases, household members should always be assessed in the initial contact investigation, along with any other high-priority contacts. The investigation should be expanded to include medium-priority contacts only if there is evidence of transmission.

There are some circumstances where individualized approaches to contact investigations or contact assessments might be used by YCDC TB Control, in consultation with the BCCDC TB Services physician specialist and the CMOH. Examples include contact investigations that involve:

- Multiple cases
- Communities/populations experiencing an unusual number of cases
- Homeless and under-housed people and those with alcohol or drug addictions
- Correctional facilities
- Health care institutions

10.3.4 Methodology

Contacts with no prior history of TB infection typically undergo two rounds of assessments: one soon after they are identified (the initial round) and a second round once 8 weeks have passed since the date of their last exposure to the infectious case (the ‘date of last contact’). For contacts exposed to more than one infectious case, the timing of the reassessment is determined using the date of their **most recent** exposure.

Contacts with pre-existing TB infection (e.g., those with prior TB disease or prior positive TST or IGRA) typically undergo assessment for TB signs/symptoms and have chest x-rays taken (see 10.4.2.2 for immune-compromised contacts and see 10.4.3.2 for immune-competent contacts). Reassessments are done as recommended by the BCCDC TB Services physician.

10.3.5 Use of IGRA in Contact Investigations

IGRA testing is not used as a standard first line test for contacts, nor is it always used as a confirmatory test in contacts with a prior or current positive TST. IGRA testing might be recommended by YCDC TB Control in consultation with the BCCDC TB Services physician specialist in some situations, for example with contacts at high risk for development of active TB disease AND risk factors for having a falsely negative TST (e.g., contacts on dialysis). If IGRA testing is recommended for a contact, a single test is usually done 8 weeks after the date of last contact.

IGRA testing is currently available in Yukon Territory only in consultation with YCDC TB Control. All referrals for IGRA will be facilitated by the TB nurses at YCDC. Ultimately, final decisions related to IGRA testing eligibility rest with the Clinical Manager at YCDC. When considering eligibility, YCDC may take into consideration recommendations from BCCDC TB Services, YCDC TB Control, Yukon's CMOH, references such as the *Canadian Tuberculosis Committee Recommendations on Interferon Gamma Release Assays for the Diagnosis of Latent Tuberculosis Infection-2010 Update,* and available funding.

Whitehorse General Hospital laboratory will only accept samples sent for IGRA testing that are authorized by YCDC. Refer to Appendix D for additional information on access to IGRA.

10.4 Assessment of All Contacts

The assessment of all TB contacts should begin with:

- An evaluation for signs and symptoms of TB disease **AND**
- Inquiries about risk factors for development of active TB disease

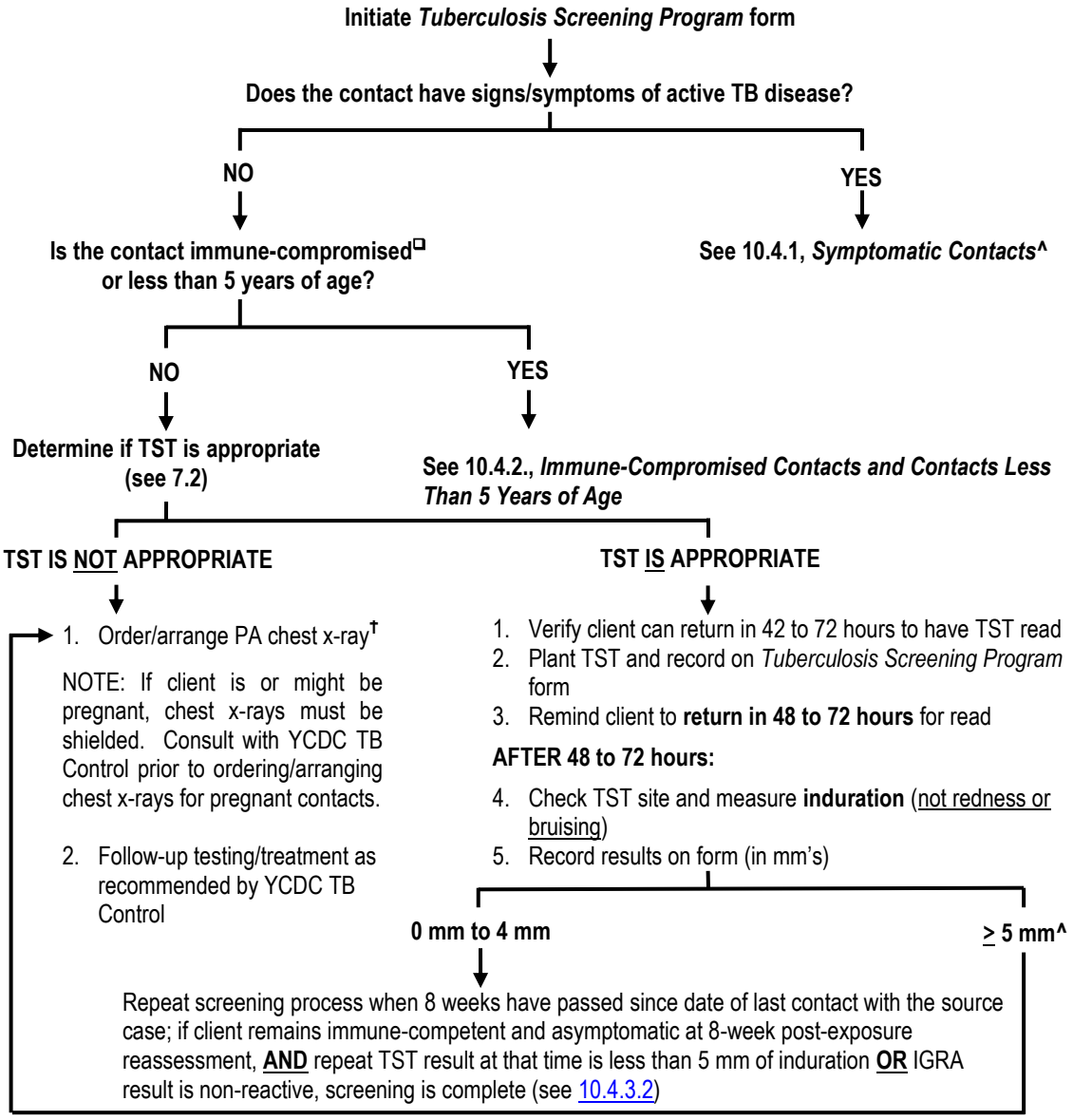
NOTE: Co-infection with HIV significantly increases the risk for progression to active TB disease. HIV testing should be routinely

offered to all contacts at high risk of HIV infection unless documented HIV-positive.

Findings should be used to determine next steps (see Figure 10-2). For symptomatic contacts, refer to 10.4.1. For immune-compromised contacts and contacts less than 5 years of age, refer to 10.4.2. For all other contacts, refer to 10.4.3.

NOTE: In general, pregnant contacts and contacts to cases with drug-resistant TB disease should be managed in the same way as other contacts. Refer to 10.4.4 for information on pregnant contacts and 10.4.5 for information on contacts to drug-resistant TB disease.

Figure 10-2, Contact assessment flowchart



† A chest x-ray taken within the prior 3 months can be used if there has been no change in symptoms within this time. If there have been new/worsening symptoms, the chest x-ray should be repeated and both PA and lateral views should be done.

^ Report any contacts found to have active TB disease or a new positive TST or reactive IGRA to YCDC TB Control immediately.

❑ Immune-compromised contacts are those with: HIV infection; end-stage renal disease; organ transplant (related to immune suppressive therapy); and/or treatment with TNF alpha inhibitors and/or other immune suppressive drugs/therapies such as current chemotherapy or systemic corticosteroids (equivalent of ≥15 mg/day of prednisone for 1 month or more). **Consult with YCDC TB Control if a client's immune status is unclear.**

10.4.1 Symptomatic Contacts

Known exposure to an infectious TB case or association with a case that was likely infected with TB bacteria recently (e.g., a young child with active TB disease) heightens the possibility of active TB disease in a symptomatic contact. Management of symptomatic contacts is described in Figure 10-3.

10.4.1.1 Airborne Precautions

Airborne precautions are generally advisable for contacts with respiratory symptoms and/or chest x-ray findings suggestive of active TB disease (see 11.3). **Consult with YCDC TB Control if there is any question whether a contact might require airborne precautions.**

'Airborne precautions' means that:

- The client should be masked using a surgical mask (also known as a procedure mask, see 11.1.1).
- In settings where an airborne infection isolation room (AIIR) is not available, the client should be encouraged to remain outside, or in a room with an open window (weather permitting), or moved to an area away from other people, and preferably to a room with a closing door for the remainder of his/her time at that facility.
- Providers sharing air with the client and/or others entering the potentially contaminated airspace should wear disposable N95 respirators (N95's) for which they have been fit-tested and which have been seal-checked prior to entering the area. **An N95 is worn by the provider even when the client is wearing a surgical/procedure mask.** Clients do not need to mask while in an AIIR but providers and others who enter the room should wear fit-tested and seal-checked N95's (see 11.1.2).

When airborne precautions are initiated, they should be maintained until active TB disease has either been ruled out or determined unlikely.

When referring symptomatic contacts for diagnostic services (e.g., chest x-rays, blood work) or for transport to another facility, receiving and transferring providers/programs must be advised that airborne precautions are necessary. **Consult YCDC TB Control for assistance as required.**

10.4.1.2 Testing

Symptomatic contacts should be referred for an evaluation for active TB disease. To support this evaluation, nurses should:

- **Collect three, sputum specimens for TB testing** (i.e., AFB smear and mycobacterial culture – **NOT** routine C&S)**. Testing of clinical specimens for TB is the most important component of follow-up for symptomatic contacts.** Collect one specimen **during the clinic visit** and request client submit two additional specimens as soon as possible. Ideally, additional specimens should be collected once per day, in the morning. Multiple specimens collected on the same day but at least 1 hour apart are also acceptable (refer to 11.1.3 and Appendix E for information on collection and submission of specimens for TB testing).

  YCDC TB Control should be consulted on the management of symptomatic contacts unable to spontaneously produce sputum; sputum induction might be recommended.

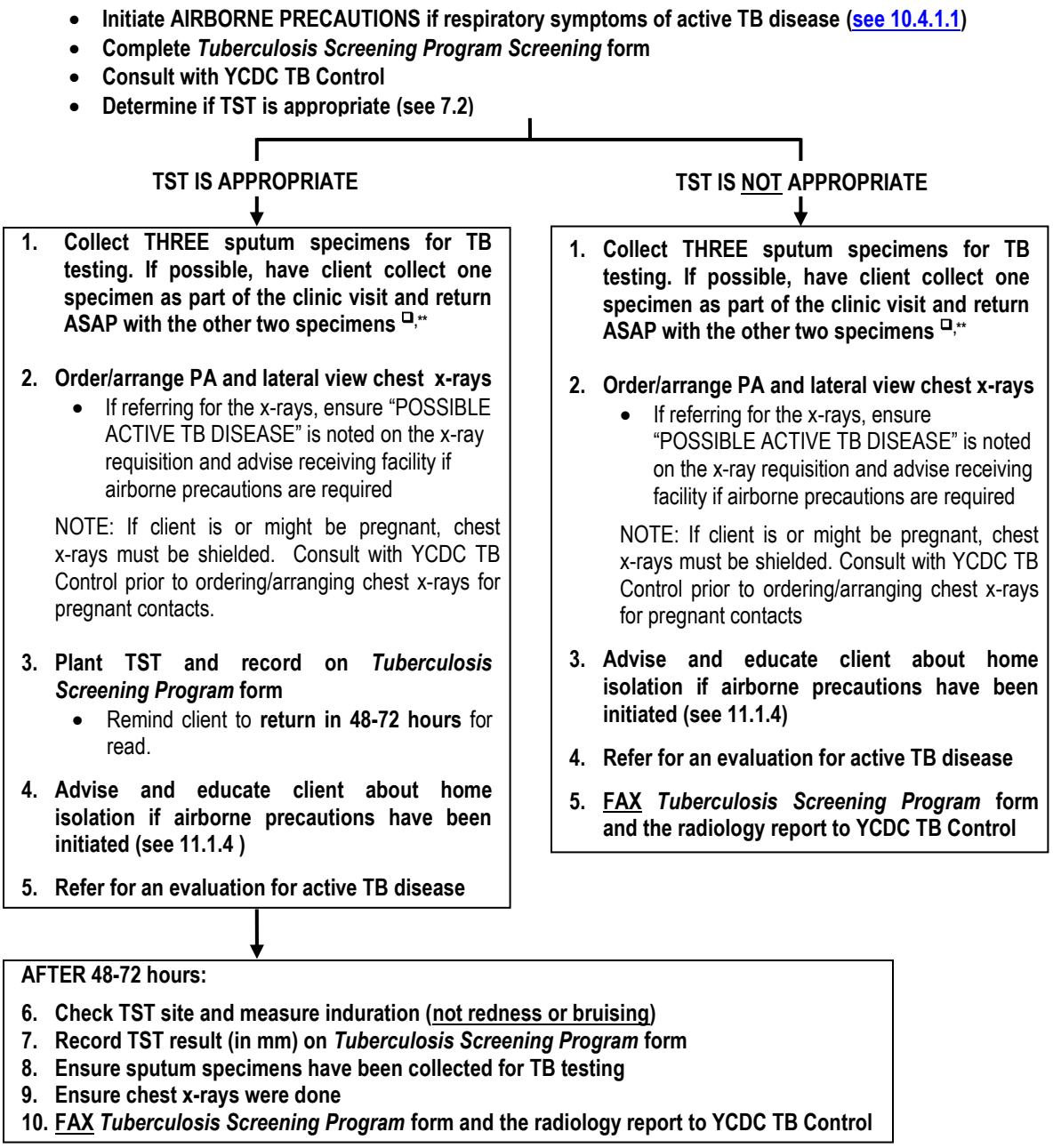
- **Order/arrange posterior-anterior (PA) and lateral view chest x-rays** (if not already done). If the client is or might be **pregnant**, chest x-rays must be shielded. Consult with YCDC TB Control prior to ordering/arranging chest x-rays for pregnant contacts.

- **Do a TST** (if appropriate, see 7.2).

  Due to the potential for false-negative TSTs in people at time of TB diagnosis and in very young children (prior to reaching 6 months of age), a negative TST in a symptomatic contact **does not rule out** infection with TB

bacteria. However, a **positive** TST in a contact with TB signs or symptoms can be clinically significant. Therefore, unless contraindicated, testing for infection with TB bacteria is generally recommended.

Figure 10-3, Management of symptomatic contacts



❑ Collect three separate specimens, at least 1 hour apart, with one specimen collected in the morning, prior to eating or drinking. Specimens may also be collected 8 hours apart or daily for 3 days (See 11.1.3 and Appendix E)
** Consult YCDC TB Control on the management of contacts unable to spontaneously produce sputum.

10.4.2 Immune-Compromised Contacts and Contacts Less than 5 Years of Age

Immune-compromised contacts and contacts less than 5 years of age are at very high risk for developing active TB disease within weeks of becoming infected with TB bacteria. Immune-compromised contacts include:

- Those with HIV infection
- Those with end-stage renal disease
- Organ transplant recipients (related to immune suppressing therapy)
- Those on treatment with TNH alpha inhibitors, active chemotherapy and/or other significant immune suppressing drugs/therapies, such as systemic corticosteroids (equivalent of ≥15 mg/day of prednisone for 1 month or more).

Immune-compromised contacts and contacts less than 5 years of age are more vulnerable to severe and often fatal forms of TB disease such as disseminated TB or TB meningitis. They can also have unusual presentations of active TB disease, which can contribute to delays in diagnosis. For these reasons, more comprehensive testing is needed to diagnose or rule out active TB disease, and treatment to protect contacts against active TB disease (primary prevention therapy) is usually recommended once active TB disease has been ruled out. Management of immune-compromised contacts and contacts less than 5 years of age is described in Figure 10-4.

10.4.2.1 Initial Assessment

After an evaluation for TB signs/symptoms has been done, immune-compromised contacts and contacts less than 5 years of age should have an evaluation to rule out active TB disease that includes:

- **PA AND lateral view chest x-rays**

  Chest x-rays taken within the prior 3 months can be used if there has been no change in symptoms within this time. If there have been new/worsening symptoms, the chest x-rays should be repeated. If client is or might be **pregnant**, chest x-rays must be shielded. Consult with

YCDC TB Control prior to ordering/arranging chest x-rays for pregnant contacts.

- **TST if appropriate (see 7.2)**

  Negative TST results in immune-compromised contacts and contacts less than 6 months of age might not be reliable. A negative TST in this context does **NOT** rule out active TB. However, **positive** TST or **reactive** IGRA results can be clinically significant. Therefore, unless contraindicated, testing for infection with TB bacteria is generally recommended.

- **Any other clinical investigations suggested by the clinical findings**

Three sputum specimens for TB testing (i.e., AFB smear and mycobacterial culture, **NOT** routine culture and sensitivity [C&S]) should be collected from HIV-infected contacts with TST results of ≥ 5mm of induration (or reactive IGRAs). **YCDC TB Control should be consulted on the management of contacts unable to spontaneously produce sputum; sputum induction might be recommended.**

10.4.2.2 Contacts with Documented Prior Positive TST or Reactive IGRA Results and/or Previously Treated for Active TB Disease or LTBI

Prior infection with TB bacteria might not confer immunity against re-infection in immune-compromised contacts and contacts less than 5 years of age. Contacts with documented prior positive TSTs or reactive IGRA results and/or previously treated for active TB disease or LTBI that are immune-compromised or less than 5 years of age should be managed as described in 10.4.2.1, even if they have completed treatment for LTBI or active TB in the past.

Retreatment of LTBI is uncommon but might be recommended by the BCCDC TB Services physician specialist in some situations after active TB disease has been ruled out.

10.4.2.3 Primary Prevention Therapy

Once active TB disease has been ruled out, primary prevention therapy might be recommended for immune-compromised contacts and contacts less than 5 years of age (Figure 10-4).

Decisions on which TB medications to use for primary prevention therapy is guided by the (known or presumed) drug-susceptibility profile of the source case, and considerations such as medication allergies and potential for side effects and/or drug-drug interactions with concurrent medications.

Contacts taking primary prevention therapy should be managed as described in Chapter 8, or as directed by YCDC TB Control.

Immune-Compromised Contacts

A full course of LTBI treatment (e.g., 9 months of isoniazid and vitamin B6) might be recommended for immune-compromised contacts once active TB disease has been ruled out.

Contacts Less than 5 Years of Age

Primary prevention therapy typically continues until testing (TST or IGRA) can confirm whether the child was infected with TB bacteria. For most children, this will be when 8 weeks have passed since their date of last contact. Primary prevention therapy in contacts less than 6 months of age continues until they reach 6 months of age **AND** 8 weeks have passed since their date of last contact.

10.4.2.4 Contacts that Decline or Cannot Take Primary Prevention Therapy

Contacts (or parents/guardians) that decline primary prevention therapy should be:

- Educated on the signs/symptoms of active TB disease
- Advised to seek evaluation promptly to rule out active TB disease should any develop
- Reminded about when to return for the next post-exposure reassessment

Routine follow-up (surveillance) of immune-suppressed contacts that decline a full course of primary prevention therapy will most often include TB signs/symptoms reviews and chest x-rays at 6, 12 and 24 months after their date of last contact.

Where primary health care provider information is available, YCDC TB Control will notify providers when primary prevention therapy is recommended but not taken.

10.4.2.5 8-Week Post-Exposure Reassessment

In general, immune-compromised contacts and contacts less than 5 years of age whose initial TST was negative (i.e., less than 5 mm of induration) should be recalled for assessment and a repeat TST once 8 weeks have passed since their date of last contact.

The post-exposure reassessment/testing may be delayed for contacts whose TST (or IGRA) results might still be unreliable, **provided they are taking (and adherent to) primary prevention therapy**. Examples include contacts less than 6 months of age and contacts with HIV infection undergoing immune reconstitution with antiretroviral therapy (ART).

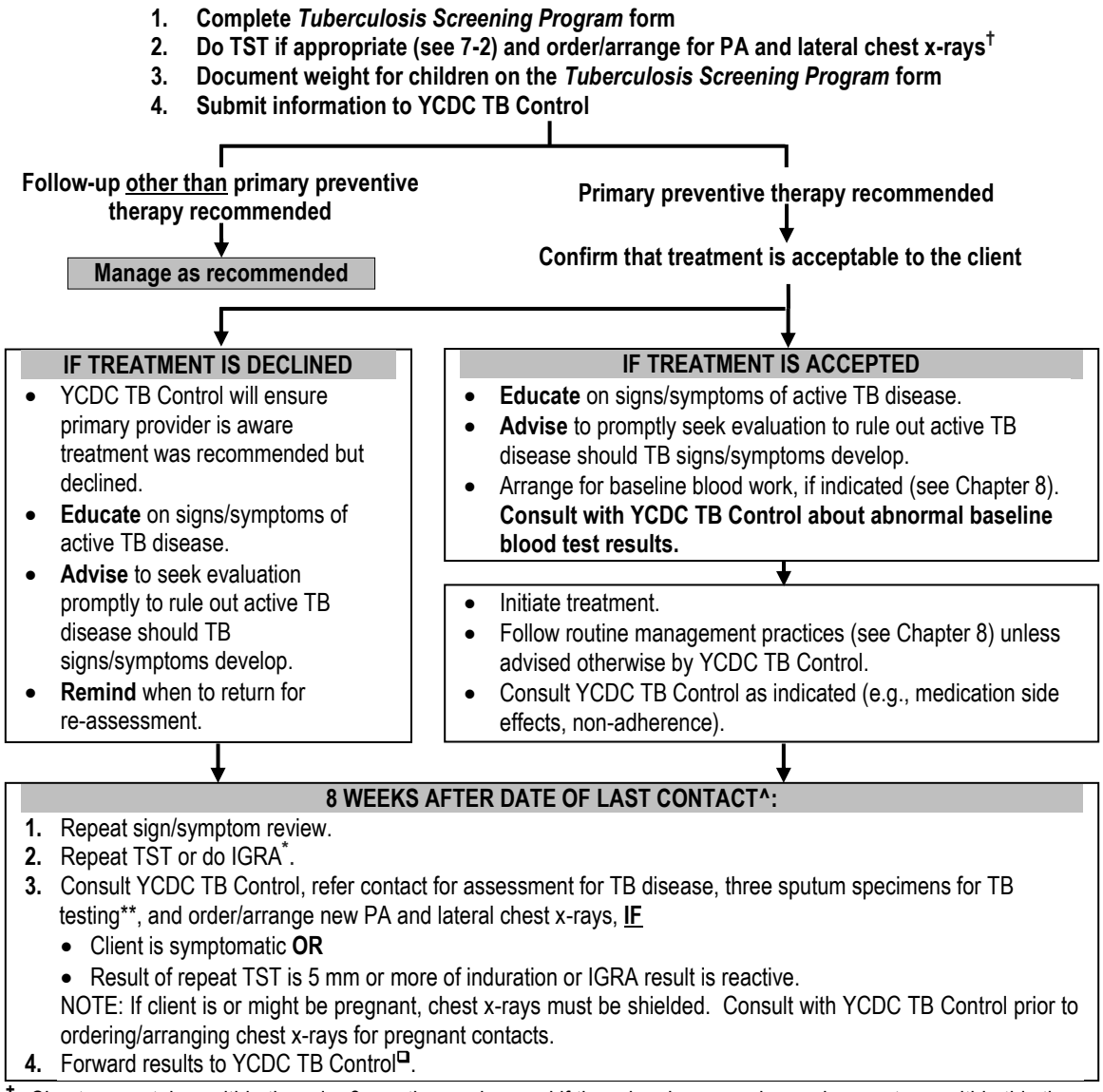
YCDC TB Control should be consulted immediately on immune-compromised contacts and contacts less than 5 years of age that present with TB signs or symptoms or are that are found to have TST results of ≥ 5mm induration (or reactive IGRA) at the time of reassessment. Such contacts should be referred for an evaluation for active TB disease (see 10.4.1.2).

The initiation of **airborne precautions** is generally advisable for contacts with respiratory symptoms and/or chest x-ray findings suggestive of active TB disease (refer to 10.4.1.1). **Consult with YCDC TB Control if there is any question whether a contact might require airborne precautions. For acute care settings, please refer to internal policies/procedures, and/or consult with the infection control practitioner.** [22]

Contacts whose final post exposure reassessment does not reveal evidence of active TB disease or LTBI can generally be

discharged from follow-up unless they have been recommended for a full course of presumptive LTBI treatment. As there are a number of factors that can influence the reliability of negative TST and non-reactive IGRA results, these clients (or the parents/guardians of young children) should be reminded about TB signs/symptoms and the need to promptly seek evaluation to rule out active TB disease should any occur in the future.

Figure 10-4, Management of immune-compromised contacts and contacts less than 5 years of age



† Chest x-rays taken within the prior 3 months can be used if there has been no change in symptoms within this time. If new/worsening symptoms, chest x-rays should be repeated and both PA and lateral views should be done.

^ Consult YCDC TB Control on timing of reassessment and repeat TST in contacts less than 6 months of age and contacts with HIV infection undergoing immune reconstitution with antiretroviral therapy (ART).

* If TST was used in the initial round, it should also be used for the reassessment. Use of IGRA for contacts is determined by YCDC TB Control in consultation with BCCDC TB Services physician specialist.

** Consult YCDC TB Control on the management of contacts unable to spontaneously produce sputum.

❑ Treatment for infant contacts will continue until the child reaches 6 months of age and demonstrates a reliably negative post-exposure TST or non-reactive IGRA. Primary preventive therapy for immune-compromised contacts might continue until a full course of therapy for LTBI has been completed.

10.4.3 Immune-Competent Contacts 5 Years of Age and Older

The management of asymptomatic and immune-competent contacts 5 years of age and older is described in the *Contact Assessment Flowchart* (Figure 10-2).

10.4.3.1 Initial Assessment

Contacts should be assessed for signs and symptoms of TB disease. Symptomatic contacts should be managed as described in 10.4.1.

Asymptomatic and immune-competent contacts 5 years of age and older should be given a TST, if appropriate (see 7.2). If the TST result is 5 mm or more (induration) or if TST is not appropriate, a PA chest x-ray should be taken. A lateral view chest x-ray may be requested at discretion of the health care provider.

Chest x-rays taken within the prior 3 months can be used if there has been no change in symptoms within this time. If there have been new/worsening symptoms, the chest x-rays should be repeated and both PA and lateral views should be done. If client is or might be **pregnant**, chest x-rays must be shielded. Consult with YCDC TB Control prior to ordering/arranging chest x-rays for pregnant contacts.

If chest x-ray findings suggest active TB disease, YCDC TB Control should be consulted immediately. Airborne precautions should be initiated (refer to 10.4.1.1) and the contact should be referred for an evaluation for active TB disease (see 10.4.1.2).

Contacts found to have active TB disease or LTBI should be managed accordingly (refer to Chapter 9 for treatment of active TB disease and Chapter 8 for treatment of LTBI).

10.4.3.2 Contacts with Documented Prior Positive TST or Reactive IGRA Results and/or Previously Treated for Active TB Disease or LTBI

Immune-competent contacts with documented prior positive TSTs or reactive IGRA results and/or previously treated for active TB disease or LTBI should be assessed for TB signs/symptoms and risk factors for development of TB disease.

Symptomatic contacts should be managed as described in 10.4.1. Immune compromised contacts should be managed according to 10.4.2. All other contacts should have a PA chest x-ray taken. A lateral view chest x-ray may be requested at discretion of the health care provider.

Chest x-rays taken within the prior 3 months can be used if there has been no change in symptoms within this time. If there have been new/worsening symptoms, the chest x-ray should be repeated and both PA and lateral views should be done. If client is or might be **pregnant**, chest x-rays must be shielded. Consult with YCDC TB Control prior to ordering/arranging chest x-rays for pregnant contacts.

YCDC TB Control should be consulted immediately when chest x-ray findings suggest active TB disease. Airborne precautions should be initiated when active respiratory TB disease is suspected (see 10.4.1.1) and the contact should be referred for evaluation for active TB disease (see 10.4.1.2).

LTBI treatment might be recommended for contacts that have NOT already completed treatment, once active TB disease has been ruled out.[2] An IGRA might be recommended by YCDC TB Control for clients with prior positive TSTs **AND** risk factors for development of active TB disease to confirm whether LTBI treatment should be considered.

Once active TB disease has been ruled out, ongoing follow-up is not required unless there are symptoms or concerns. Individualized follow-up recommendations will be provided by YCDC TB Control for contacts with health issues that might put them at risk for immune compromise (e.g., contacts with chronic illnesses such as diabetes).

10.4.3.3 8-Week Post-Exposure Reassessment

8-week post exposure reassessments are not necessary for contacts with a history of prior TB disease or pre-existing LTBI, or those found to have active TB disease or LTBI during their initial assessments.

For all other contacts, if TST was appropriate and results were less than 5 mm of induration during the initial assessment, a reassessment and repeat TST is usually done once 8 weeks have passed since the last date of exposure.

Reassessments should begin with a review for TB signs/symptoms and inquiries about any changes to their health (e.g., new risk factors for developing TB disease). Symptomatic contacts should be managed according to 10.4.1. Immune compromised contacts should be managed according to 10.4.2.

Contacts whose repeat TST is ≥ 5mm or whose IGRA is reactive should have a PA chest x-ray taken. A lateral view chest x-ray may be requested at discretion of the health care provider. Chest x-rays taken within the prior 3 months can be used if there has been no change in symptoms within this time. If there have been new/worsening symptoms, the chest x-rays should be repeated and both PA and lateral views should be done. If client is or might be **pregnant**, chest x-rays must be shielded. Consult with YCDC TB Control prior to ordering/arranging chest x-rays for pregnant contacts.

YCDC TB Control should be consulted immediately when chest x-ray findings suggest active TB disease. Airborne precautions should be initiated when active respiratory TB disease is suspected (see 10.4.1.1) and the contact should be referred for evaluation for active TB disease (see 10.4.1.2).

Contacts whose 8-week post exposure reassessment does not reveal active TB disease or LTBI can generally be discharged from follow-up. As there are a number of factors that can influence the reliability of negative TST and non-reactive IGRA results, clients should be reminded about TB signs/symptoms and the need to promptly seek evaluation to rule out active TB disease should TB signs/symptoms occur in the future.

10.4.3.4 Contacts that Decline or Cannot Take LTBI Treatment

Contacts that decline or cannot take LTBI treatment should be educated on:

- TB signs/symptoms
- Their risk for development of active TB disease
- The need to seek evaluation for active TB disease promptly should TB signs/symptoms occur at any time in future
- The importance of re-evaluating treatment to prevent TB should their health or immune function become compromised

Contacts that decline LTBI treatment initially should be counselled to reconsider treatment if there is an opportunity to do so.

Contacts with untreated LTBI should be followed with a signs/symptoms assessment and chest x-ray for 2 years from their date of last contact. Reevaluations are usually done at 6, 12, and 24 months.

10.4.4 Pregnant Contacts

The assessment of pregnant contacts should begin with an evaluation for signs and symptoms of TB disease and inquiries about risk factors for development of active TB disease. Next steps should be determined by these findings. Symptomatic contacts should be managed according to 10.4.1. Immune compromised contacts should be managed according to 10.4.2. Pregnant contacts **without** signs/symptoms or immune compromise should be managed as described in 10.4.3. Note that pregnancy is **NOT** a contraindication to tuberculin skin testing (see 7.2.1).

YCDC TB Control should be consulted prior to ordering/arranging chest x-rays for pregnant contacts; submission of sputum specimens for TB testing might be recommended in place of shielded x-rays in some situations.

Pregnancy might influence recommendations on treatment and monitoring during treatment in contacts with LTBI or active TB disease. For more information on use of TB medications during pregnancy, refer to Chapter 8 and Chapter 9.

10.4.5 Contacts to Cases with Drug-Resistant TB Disease (DR-TB)

In general, contacts to cases with DR-TB should be managed in the same way as other contacts. The assessment should begin with an evaluation for signs and symptoms of TB disease and inquiries about risk factors for development of active TB disease. Next steps should be determined by these findings. Symptomatic contacts should be managed as described in 10.4.1. Immune compromised contacts should be managed according to 10.4.2. Contacts 5 years of age and older without signs/symptoms or immune compromise should be managed as described in 10.4.3 or as recommended by YCDC TB Control.

Treatment regimens for contacts to DR-TB are informed by the confirmed or presumed drug susceptibility pattern of the source case. LTBI treatment for immune-competent contacts 5 years of age or older can usually wait until the source case drug susceptibilities are confirmed.

Infected close contacts to infectious multi-drug resistant (MDR-TB) source cases should be followed with a signs/symptoms assessment and chest x-ray for 2 years from their date of last contact, **regardless of whether treatment for LTBI was completed**. Reevaluations are usually done at 6, 12, and 24 months.

10.5 Source Case Investigation

A source case investigation is a process for identifying the person from whom someone that was recently infected with TB bacteria acquired the infection (the source of the TB bacteria). Source case investigations are usually only done when a child under 5 years of age is diagnosed with active TB disease. Most source cases are found among adolescent or adult household contacts or caregivers (e.g., babysitters, daycare workers).

The source case investigation process is very similar to a contact investigation. Because the investigation is being done to find someone with active TB disease, chest x-rays and sputum specimen testing for TB might be part of the initial assessment of people who are included in the investigation.

REFERENCES

1. Rae E, Rivest P. Contact follow-up and outbreak management in tuberculosis control. In: Menzies D. ed. *Canadian Tuberculosis Standards* (7th edition). Canada: Canadian Lung Association, 2014;293-320.
2. Centres for Disease Control and Prevention. Guidelines for the investigation of contacts of persons with infectious tuberculosis. *Morb Mort Weekly Rep* 2005:54(RR15):1-37.