Guidelines for Source Case Investigation (SCI) for Latent Tuberculosis (TB) Infection
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E. Source Case Yields
Preface

The following Guidelines have been developed by the California Department of Public Health (CDPH), Center for Infectious Diseases, Tuberculosis Control Branch (TBCB), and the California TB Controllers Association (CTCA). These Guidelines provide statewide recommendations for tuberculosis (TB) control in California. If these Guidelines are altered for local use, then the logo should be removed and adaptations from this source document acknowledged.

No set of guidelines can cover all individual situations that can and will arise. When questions arise on individual situations not covered by these guidelines, consult with your local TB Controller or CDPH, TBCB.

Goals of Source Case Investigation

The goal of the source case (associate) investigation is to identify the source of infection for young children and other high-risk individuals who fall within the targeted populations:

- TB2 child less than 2 years of age
- TB2 converters in high risk setting

This guideline addresses source case investigation for persons with LTBI. For information about source case investigations for persons with TB Disease, see the CDPH/CTCA Guidelines for Contact Investigation.

CDPH / CTCA acknowledge that the decision to pursue source-case investigations for persons with LTBI should be based on local data, experience, and resources. If these investigations are being done, local TB control programs should monitor their yield in terms of new TB cases and infected persons identified. Local programs should also assess which investigations are most likely to be productive. It is acknowledged that while the yield of new TB cases identified may be low, source case investigation may be considered an important means of identifying and testing targeted high risk populations. Thus, source case investigations for patients with LTBI should be considered a CDC priority 3 (targeted testing) activity. In most cases, CDC priority 1 (identification and management of TB cases) and priority 2 (contact investigation) activities should be prioritized ahead of source case investigations for LTBI.

1 For definition of high risk settings please refer to the latest version of the CDPH/CTCA Guidelines for the Assessment of Tuberculosis Patient Infectiousness and Placement into High and Lower Risk Settings.
Objectives for Source Case Investigation

The four main objectives of source case investigation consist of:

- Determining which associates need to be evaluated and begin testing within 10 working days of receiving a referral.

- Completing evaluation of associates up to 4 years of age within 10 working days of receiving referral to identify individuals infected from a common source of exposure.

- Completing evaluation of adult high-risk associates (e.g. immunocompromised persons) within 10 working days of receiving referral to identify individuals infected from a common source of exposure.

- Completing evaluation of all other associates within 20 working days of receiving referral.
Glossary

SOURCE CASE (ASSOCIATE) INVESTIGATION (SCI) is the process of identifying the person who is the source case for the index patient and other associates infected by the source case.

SOURCE CASE is a person with infectious TB disease who may have transmitted M. tuberculosis to another person or persons.

INDEX PATIENT is the infected person for whom Source Case Investigation is initiated.

HIGH PRIORITY ASSOCIATE is an associate who is at high-risk of progression from TB infection to TB disease and/or is more likely to suffer morbidity or mortality from TB disease. A high-priority associate has one or more of the following characteristics:

- Is <4 four years of age.
- Is infected with HIV, or who is at risk for HIV infection.
- Has other medical conditions associated with increased risk of progression to active TB (See the latest version of the CDPH/CTCA Contact Investigation Guidelines for information on assigning priorities to contacts.
- Person who has prolonged, frequent, or intense contact with an index patient, i.e., carpool, roommate.

Since clinically active disease can occur in high risk associates very rapidly once infected, they must receive prompt medical evaluation.

MEDIUM PRIORITY ASSOCIATE is a person who has had significant contact with index patient but without the characteristics listed for high-priority associates, i.e. housemate, co-worker.

LOW PRIORITY ASSOCIATE is a person who has less prolonged, minimal contact with index person (i.e. sharing airspace).

TUBERCULIN SKIN TEST CONVERSION is defined as an increase of at least 10 mm of induration from < 10 mm to ≥ 10 mm within 24 months from a documented negative to a positive tuberculin skin test (i.e. from 4 mm to 14 mm).

INTERFERON GAMMA RELEASE ASSAY (IGRA) CONVERSION is a documented change from a negative IGRA result to a positive IGRA within 24 months.
Procedures For the Source Case Investigation

I. Collecting and Evaluating Initial Index Patient’s Information

Prior to the initial interview, review the report on the index patient and obtain the following information from the patient’s medical provider, if not provided:

A. Index patient identifiers
   1. full name and any aliases
   2. dates of birth (including those for aliases)
   3. locating information (address, telephone number, next of kin, emergency contacts)

B. Index patient TB history
   1. dates and results in millimeters of the most recent tuberculin skin test findings or results of an IGRA
   2. dates and results in millimeters of prior tuberculin skin test findings or results of an IGRA
   3. chest x-ray results
   4. list of medications, dosages and start/stop dates
   5. other medical conditions
   6. BCG date(s)

C. Index patient social history
   1. country of origin and length of time in the U.S.
   2. history of travel to endemic areas
   3. social affiliations (i.e. church, sports, family)
   4. immigration/ visa status (i.e. H4, dependents of workers)

D. Any information available on associates and settings in which the index patient may have acquired TB. (See section II: Conducting the Initial Interview.)

2 Source Case Investigation should be conducted as a general rule without regard to BCG status. Staff should consult with TB Controller before making exceptions. Exceptions may include:
   • Individual from country with low incidence of TB
   • BCG received within the 12 months preceding Tuberculin Skin Test
II. Conducting the Initial Interview (See Appendix A: Source Case Investigation Worksheet for Interviewing Index Patient for samples of interview questions.)

A. Identify Setting and Person/Proxy for Interview

1. If index patient is a child, the interview should be conducted with the parent or guardian in the home (any place where the index patient dwells and conducts day-to-day living activities e.g. house, apartment, shelter).

2. If index patient is an adult, interview may take place at a congregate living site such as a prison, nursing home or substance abuse treatment center

3. Interviewing the index patient at home is essential to SCI because it may:
   a. Reveal information that the index person or guardians may not initially provide about associates (e.g. pictures of children or relatives in the household) and risk factors for associates (e.g. diabetes, immunosuppression).
   b. Provide an opportunity to identify and resolve discrepancies between index patient’s or guardian’s answers to interview questions and observations about associates and their risk factors.

B. Obtain information about associates

1. Names, demographic information, locating information and relationship to the index person for each associate named.

2. Date of birth or age

3. TB medical information (e.g. presence of symptoms and onset date, history of testing, infection or disease, treatment) and facility where medical evaluation was performed

4. Presence of TB risk factors (e.g. HIV infection, risk factors for HIV infection or other medical risk factors linked to increased risk of progression to disease)

5. Duration and frequency of time associate spent with index person, physical proximity and the settings in which contact occurred

C. Obtain information regarding settings in which index person may have acquired TB infection.

1. If index patient is a child, settings may include:
   a. Residence (e.g. congregate setting, cohabitants, temporary/permanent)
   b. School (e.g. site, time spent, absences)
   c. Time spent visiting high-risk settings for TB (e.g. jails, nursing homes, substance abuse treatment facilities)
d. social/recreational activities and frequency and number of other people present (e.g. babysitting, home visits, church)

e. travel to endemic countries

2. If index patient is an adult, settings may also include:
   a. work (e.g. site, full/part-time schedule, absences)
   b. time spent working in or visiting high-risk settings where individuals are at greater risk for TB (e.g. jails, nursing homes, substance abuse treatment facilities, dialysis centers)
   c. social/recreational activities and frequency and number of other people present (e.g. sports, nightclubs, church)

3. Assess environmental conditions for settings in which TB may have been acquired
   a. room size (large vs. small)
   b. ventilation (doors, windows)
   c. crowding/concentration of persons present

III. Assigning Priorities to Associates

A. Establish an associate list using the same overall approach as a standard Contact Investigation beginning with the highest priority associates.

B. Prioritize associates for screening in the following order:
   1. Persons with TB symptoms (arrange immediate clinical evaluation)
   2. Children < four years of age
   3. Adult high-risk associates (e.g. immunocompromised persons)
   4. Persons in high-risk settings
   5. Other close associates

Note: Concurrent screening of associates can be done if necessary.

C. Reprioritize associates based on information obtained in associate interviews.

D. Refer associates who live outside the jurisdiction to the local health department in their jurisdiction of residence. Obtain locating information, associate risk factors and information on the duration and frequency of exposure to the index patient and make referrals as indicated. (See IX. Interjurisdictional Issues)
IV. Interviewing Associates

A. Address the following points in interview with associate: (For suggested questions for interviewing, see Appendix B: Source Case Investigation Worksheet for Interviewing Associates).

1. Establish trust and rapport, confirm associate’s identity, explain confidentiality, and nature of visit.

2. Obtain personal information: home and work addresses and telephone numbers, date of birth, aliases and dates of birth, nicknames, place of birth, and date of arrival in U.S.

3. Obtain a TB history: prior TB exposures, dates and results of prior TB testing, history of treatment for disease or infection, BCG history, travel to areas at risk for TB, contact with high-risk persons or settings. Whenever possible, collect copies of prior test results.

4. Obtain a medical history: recent hospitalizations, chronic medical conditions (e.g. HIV status, diabetes, cancer or other immunosuppressive conditions), current medications and medication allergies. (See p. 22 CDHS/CTCA Contact Investigation Guidelines, Appendix 3: Factors Associated with Increased Risk of HIV Infection.)

5. Perform a TB symptom screen: type, severity and onset and duration of each symptom. Arrange for immediate evaluation of symptomatic associates.

   NOTE: Use respiratory precautions where indicated.

6. Ask the associate to identify other potential associates who may need screening and, when appropriate, interview the associate about the index person to verify information and/or obtain new information. It is important to protect the index patient’s confidentiality. (See V. Protecting Index Patient’s Confidentiality When Speaking to Associates)

7. Assess the associate for psychosocial factors and barriers that may influence potential adherence with screening throughout the course of the interview. Use problem solving techniques and enablers as needed.

8. Identify healthcare resources and make appropriate referrals (e.g. clinics, social services, drug treatment, HIV testing)

9. If a source case is identified, proceed as you would in a Contact Investigation. Provide information to the jurisdiction where the associate resides on the period of infectiousness and drug susceptibilities if the associate is considered to have been exposed.
V. Protecting Index Patient Confidentiality When Speaking to Associates

Source Case Investigation usually can and should be accomplished without jeopardizing index patient’s confidentiality.

A. Confidentiality problems may occur when staff:

1. Inadvertently reveal clues about the index patient.
2. Provide information about index patient to motivate associates to follow-up.
3. Are unable to appropriately and assertively respond to uncooperative associates.
4. Incorrectly assume that index patient (or guardian) has informed others about his or her TB status.

B. Staff should use the following strategies to protect index patient confidentiality.

1. Use gender-neutral language even when it is bad grammar.
   
   **Example:** “Somebody was diagnosed with TB infection, and they were concerned about you.” Instead of, “A baby girl was diagnosed with TB infection and her parents were concerned about you.”

2. Do not be persuaded to violate confidentiality if associates indicate that they have not been around anyone with TB infection.

3. Do not mention the index patient’s medical provider, place, dates of diagnosis, or hospitalization.

4. Do not mention the environment where contact occurred.
   
   **Example:** “You have been around somebody who has TB infection”. Instead of, “You have been around somebody at the day care center who has TB infection”.

5. Do not specify dates of association with the index patient.

6. When following-up on inter-jurisdictional referrals, do not mention which county or state initiated the referral.

C. In some situations, revealing index patient information may be appropriate:

1. Each jurisdiction needs to take each situation individually and determine whether the breach in confidentiality will ultimately serve and protect the public health.
   
   **Example:** To disclose to a preschool when evaluation of high priority associates fails to yield the source case.

2. TB Controller or Designee should be consulted when considering whether to reveal the identity of the index patient.
D. Follow standard procedures to complete TB screening of all associates. (See CDPH/CTCA Contact Investigation Guidelines)

VI. Re-interviews

A. Assigned staff are unlikely to obtain complete associate information in only one interview because the index patient or guardian may:

1. Not yet have developed trust with staff
2. Not be able to immediately recall his/her associates
3. Be anxious about his/her diagnosis or other issues
4. Be worried about protecting confidentiality of information (See V: Protecting Index Person Confidentiality above)

B. The index patient or guardian must be re-interviewed one or more times to ensure that accurate and complete associate information is elicited. It may also be helpful to have a different person perform the follow-up interview. Re-interviews may be conducted in the clinic.

C. If a source case is found, stop source case investigation and proceed with contact investigation.

VII. Expansion of the Investigation to Identify the Source

A. Analyze results of initial interviewing and testing to see if source is identified.

1. Determine if all individuals identified as associates have been evaluated.
2. Determine if any of the associates with symptoms suggestive of TB have been evaluated as a TB suspect and ruled out.
3. Classify the associates by groups (home, work/school, leisure). Depending on the number of associates, it may be appropriate to stratify them based on country of origin, race/ethnicity, age, or risk factors.
4. Identify high priority positives, identify common settings and activities, and expand testing where indicated.
5. Calculate the percentage of associates with positive TST/IGRA results. (See Appendix D: Tool for Source Case Investigation Summary Report)

B. If initial interviewing and testing fail to identify a source in the high priority contacts, determine if the travel and social history provides a possible explanation for latent TB infection in a child up to 2 years of age or a recent converter.

History to include:

1. Country of origin and length of time in U.S.
2. History of travel to endemic area outside the U.S. (in relation to a prior negative TST/IGRA)

3. History of visitors from endemic area.

4. Association with persons or groups at high risk for TB (e.g., persons with HIV infection, homeless, incarcerated).

C. For index patients who are children: if above steps in VII. B. fail to provide a likely source, expand the epidemiological investigation to the next priority level of associates to identify the source case.

1. If child is in group setting (e.g., preschool, day care, church nursery), contact center director and request information on TB screening requirements for staff/volunteers who have regular contact with child (without identifying child by name). Also, determine TB screening requirements for children attending the center.

2. Request review of TB test results of all staff and volunteers (and children if testing is required) in facility. Inquire if anyone has demonstrated symptoms of respiratory illness.

3. If facility staff/volunteers have not been tested within three months of child having positive TB test, evaluate need for on-site testing. If testing appears to be indicated, follow these steps:
   a. If LHD resources allow, set-up onsite TB testing clinic for staff and volunteers within 20 days.
   b. If LHD resources are insufficient for onsite clinic, refer to Local Health Department clinic. If staff/volunteers prefer to see their own health care provider, provide TB/IGRA report form to be submitted to TB control within 20 days.
   c. Obtain line listing to monitor completion of testing.
   d. Evaluate need to test children due to the possibility of exposure to a common source.

4. Determine if there are any documented converters or TST/IGRA reactors.

5. Ensure a chest x-ray is done on associates who have positive TST/IGRA and/or are symptomatic.

D. For index patients who are adults: if above steps in VII. B. fail to provide a likely source, investigation may be expanded to the next priority level to identify the source case.

1. Perform assessment in group setting (e.g. worksite, long term care facility, institution)

2. Perform a symptom review of all associates
E. If testing in high priority group yields an infection rate greater than the expected positivity rate for the community and no source is found, expand to the next priority group. If rate is less than expected positivity rate, conclude Source Case Investigation.

F. If a significant number of documented converters (based on local experiences) are identified, consideration should be given to:
   1. Whether to expand the investigation to the next priority level of associates.
   2. Repeat testing in 8-10 weeks for individuals who are high priority associates. This may yield additional information that may help identify the source. It may also determine whether to expand investigation to include the lower priority associates.

VIII. Summarizing and Concluding Source Case Investigation

When all associates identified as appropriate for testing have been evaluated, the source case investigation is concluded. It is important to summarize the investigation and ensure that all associates start on treatment of latent TB infection according to established local guidelines. (See CDPH/CTCA Guidelines for Targeted Testing and Treatment of Latent TB Infection in California)

The source case summary should be documented in a concise manner and include, but not be limited to the following:

A. Index Patient Demographics
B. Summary results of evaluations in each setting in which the index patient may have been exposed to TB including home, work/school, and leisure.
C. Epidemiological results of the entire investigation should be documented in a Summary Report
D. See Appendix D: Tool for SCI Summary Report for suggested format and indices.

IX. Interjurisdictional Issues

For additional information, see CDPH/CTCA Interjurisdictional Continuity of Care Policy Statement.

A. Responsibilities of Sending Jurisdiction (Jurisdiction with index patient)
   1. Obtain complete locating information for out-of-jurisdiction associates and, if available, information on risk factors.
   2. Complete a National TB Controllers Association “Interjurisdictional TB Notification ”(ITN) form (this can be found at http://tbcontrollers.org) for all associates who reside out-of-jurisdiction, and fax to jurisdiction in which they are located. Receiving jurisdiction will determine whether follow-up is necessary. Request “Return Deposition” on referral form.
a. Use associate screening results forwarded by the receiving jurisdiction to assist with the assessment whether to expand the investigation.

b. If receiving jurisdiction is unable to locate associate, the sending jurisdiction may need to do further investigation.

3. Contact LHD to verify receipt of referral form.

4. Notify receiving jurisdiction when TB disease is identified in local associate. Send results of susceptibility testing. Receiving jurisdiction should evaluate associates as potential contacts.

B. Responsibilities of Receiving Jurisdiction (Jurisdiction in which associates are located)

1. Notify sending jurisdiction of the outcome of investigation whether source is or is not located.

2. Contact sending jurisdiction if there are gaps in information gathered through Source Case Investigation.

3. Notify sending jurisdiction if new information about index person comes to light (e.g. visitor from endemic country.)

C. Both sending and receiving jurisdictions should use reasonable judgment and diligence in informing and working cooperatively with one another, providing updated information when it is received or requested.

References


**Suggested Readings**

Appendix A: Source Case Investigation Worksheet for Interviewing Index Person

Date: __________ Interviewer: __________________________ Language: ________________

Index Person: ________________________________________________ DOB: ___/____/____
If index person is a child, the interview should be conducted with the parent or guardian.

Person Interviewed: ☐ Index Person ☐ Parent/Guardian Name __________________________
(Please check one)

If parent or guardian

Address: __________________________________________ Phone: ________________

Country of Origin: __________________________ Mo/Yr arrived in U.S. ________________

School/Childcare: ________________________________________________________________

Group Settings/Activities: __________________________________________________________________________

BCG date: ___/____/___ Prior TST/IGRA date/results: ___/____/___

Current date/results: ___/____/___ X-ray Date/Results: ___/____/___

Meds: __________________________ Dosage: ________ Start date: ___/____/___

For each associate identified, determine the relationship of the person to the index person,
the amount of time spent together and the settings and environmental conditions in which
time was spent.

1. How long have you lived at this address? ________
   (If at current address less than one year, repeat questions two through four for each address.)

2. How many people live here? _________

3. How many people lived with you in the house before who do not live here now? _________

4. What is your relationship to them and how much time do they /did they spend with
   you or your child?

   __________________________________________________________

5. Has your child lived with anyone else besides you in the last year? ______________

6. Is your child in daycare? ______

   Who besides you cares for or baby-sits your child? ______________ How often? ______

7. How many relatives do you have in this area? _____ How often do you see them? _____

8. Do you have a boyfriend/girlfriend/ex-spouse? ______

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TB Control Program. Find them on CTCA.org in your Directory of TB Control Programs.
How much time does your child spend with them? ___________

9. Who visits you more than two to three times per week? ___________________________

10. Who does your child visit more than two to three times a week? __________________

11. Who do you eat your meals with? ____________________________________________

12. Where does your child go/what does your child do after school and on weekends?
   Is he/she involved in any sports, clubs, group activities etc? _______________________
   How long does s/he spend in each activity? _______________________________________

13. Who else spends at least six to eight hours a week with your child? _________________

14. Have you/your child traveled outside of the United States in the last year? __________
   Where? _______ When? _______ For how long? ____________________________

15. When was the last time your child went on vacation or out of town? _________________
   Where did you stay? ____________ Who did you visit? ____________________________

16. Who has come for a visit and stayed overnight during this past year or visited for
    several days? _______________________________________________________________

17. How many other relatives have you spent time with in the last year that you have not
    already named? ______

18. When was the last family gathering or reunion?

19. Do you know/have you known anyone who’s been told they have tuberculosis? ______

20. Do you know anyone who’s been coughing a lot, losing a lot of weight? ______________

21. Do you know anyone who has a lot of health problems? ______
    Anyone with cancer, HIV, diabetes (or other TB medical risk factors)?____

22. Do you know anyone who’s been in the hospital, in a nursing home, in jail,
    homeless, etc.? ______ Has your child been to visit anyone in these settings? _______

23. Who are the five people your child is around the most? ____________________________
    ___________________________________________________________________________
Appendix B: Source Case Investigation Worksheet for Interviewing Associates

Date: ___/____/_____  Index Person: ___________________________________________  DOB: ___/____/____

Interviewer: ___________________________________________  Language: ______________________

Person Interviewed:  □ Associate  □ Parent/Guardian
(Please check one)

Name: ___________________________________________  Relationship to Index Person__________

If parent or guardian

Address: ___________________________________________  Phone: ________________

1. How have you been feeling? __________________ Have you had a cough, weight loss, sweating very heavily at night, chest pain or shortness of breath? ______________________
   If symptomatic, arrange for immediate evaluation and use respiratory precautions.

2. Have you ever been told that you had TB? _____ Have you ever been told you have been exposed to TB? _____ When? _____ Where? ________________ By whom? ___________

3. Have you ever had a test for TB? _____ When? _____ Where? ________________
   What were the results? ______________________

   What were the results? ______________________

5. Have you ever been treated for TB before? _____ When? _____ Where? ________________
   What medication(s) were you given? ________________ How long did you take them? _____

6. Do you have any problems with your health? _____
   Do you have any problems with your lungs? ______
   How often do you go to the doctor? ____ For what reasons? ________________

7. Do you take any medication? ______________________

8. Have you gone to the hospital for any reason in the last year? ______________________

9. Have you ever had a test for HIV? _____  Do you engage in behaviors that put you at risk for HIV? (e.g. IV drug use, multiple sex partners) ______________________

10. Have you been around anyone who’s been coughing a lot or losing a lot of weight? _____

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### Appendix C: Evaluation Process

<table>
<thead>
<tr>
<th>Evaluation Step</th>
<th>Who/when/where Indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview&lt;sup&gt;3&lt;/sup&gt;</td>
<td>All associates</td>
</tr>
<tr>
<td>Symptom review</td>
<td>All associates</td>
</tr>
<tr>
<td>TST placed and read and/or IGRA completed</td>
<td>If no documented prior history of positive TST/IGRA or TB disease</td>
</tr>
<tr>
<td>Chest radiograph and medical evaluation (as indicated)</td>
<td>If TB symptoms are present, or If TST/IGRA is positive, or If history of active TB and no documented CXR in the past 6 months, or If history of positive TST/IGRA and no documented CXR, or If history of positive TST/IGRA, medical risk factors that increase the risk of progression, and no or incomplete treatment for LTBI.</td>
</tr>
<tr>
<td>AFB smear and culture (x 3) and other diagnostic tests&lt;sup&gt;4&lt;/sup&gt; required for TB work-up.</td>
<td>If pulmonary disease is suspected</td>
</tr>
<tr>
<td>Other diagnostic tests</td>
<td>If non-pulmonary disease is suspected</td>
</tr>
</tbody>
</table>

<sup>3</sup> If non-pulmonary or laryngeal TB is suspected, other diagnostic tests may be indicated.

<sup>4</sup> According to ATS/CDC, CDHS/CTCA and local guidelines
Appendix D: Tool for SCI Summary Report

In addition to the suggestions made above in, Summarizing and Concluding Source Case Investigation, the SCI Summary Support should contain the following summary statistics and summary indices.

Summary statistics:
The following statistics summarize what was accomplished in the source case investigation. However, they are not descriptive with regard to program performance.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Number of identified associates appropriate for evaluation</td>
</tr>
<tr>
<td>B</td>
<td>Number of associates evaluated</td>
</tr>
<tr>
<td>C</td>
<td>Number of TST positive associate</td>
</tr>
<tr>
<td>D</td>
<td>Number of new TB cases identified</td>
</tr>
<tr>
<td>E</td>
<td>Number of documented converters</td>
</tr>
<tr>
<td>F</td>
<td>Number of associates appropriate7 for treatment of LTBI</td>
</tr>
<tr>
<td>G</td>
<td>Number of associates who started on treatment of LTBI</td>
</tr>
<tr>
<td>H</td>
<td>Number of associates who completed treatment of LTBI</td>
</tr>
</tbody>
</table>

Indices

<table>
<thead>
<tr>
<th>Index</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination Index</td>
<td>Number of associates evaluated divided by Number of identified associates appropriate for evaluation.</td>
</tr>
<tr>
<td>Conversion Index</td>
<td>Number of current documented converters tested divided by Number of associates evaluated</td>
</tr>
<tr>
<td>Infection Index</td>
<td>Total number of TST positive associates (current &amp; prior positives) divided by Number of associates evaluated</td>
</tr>
<tr>
<td>Disease Index</td>
<td>Number of new TB cases found divided by Number of associates evaluated</td>
</tr>
<tr>
<td>Initiation of Treatment of LTBI Index</td>
<td>Number of associates started on treatment of LTBI divided by Number of associates appropriate for treatment of LTBI</td>
</tr>
<tr>
<td>Completion of Treatment of LTBI Index</td>
<td>Number of associates who completed treatment of LTBI divided by Number of associates who started treatment of LTBI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula (see variables above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B/A x 100 = ______%</td>
</tr>
<tr>
<td>E/B x 100 = ______%</td>
</tr>
<tr>
<td>C/B x 100 = ______%</td>
</tr>
<tr>
<td>D/B x 100 = ______%</td>
</tr>
<tr>
<td>G/E x 100 = ______%</td>
</tr>
<tr>
<td>H/G x 100 = ______%</td>
</tr>
</tbody>
</table>
**Appendix E: Source Case Yields**

The following table indicates the number of source cases identified for 1) reactor/converters and 2) children with TB disease from selected references. When available, the case rate of TB of the local health jurisdiction is included.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Number of Source Cases</th>
<th>Number of Associates Evaluated</th>
<th>Number of Source Cases Identified</th>
<th>Prevalence of TB in local jurisdiction</th>
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</thead>
<tbody>
<tr>
<td>Reactor/Converter</td>
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<tr>
<td>Driver, et al.</td>
<td>207</td>
<td>980</td>
<td>2.9/100</td>
<td>&gt;21/100,000</td>
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<tr>
<td>Sullam, et al.</td>
<td>297</td>
<td>831</td>
<td>1.81/100</td>
<td>case rate for SF in 1982-1983</td>
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<tr>
<td>Soren, et al.</td>
<td>187</td>
<td>659</td>
<td>0/100</td>
<td></td>
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<tr>
<td>Mase et al.,</td>
<td>91</td>
<td>≈360</td>
<td>0/100</td>
<td>12.2/100,000</td>
</tr>
<tr>
<td>Moonan, et al.</td>
<td>38</td>
<td>259</td>
<td>3.1/100</td>
<td>6.9/100,000</td>
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<td>TB disease</td>
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<tr>
<td>Sun et al.</td>
<td>122</td>
<td>66 (59%)</td>
<td>N/A</td>
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<tr>
<td>Watchi et al.</td>
<td>34</td>
<td>196</td>
<td>4 (12%)</td>
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<tr>
<td>Yeo et al.</td>
<td>39</td>
<td>481</td>
<td>4 (10%)</td>
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<tr>
<td>Driver et al</td>
<td>47</td>
<td></td>
<td>10 (21%)</td>
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<tr>
<td>Mase et al.,</td>
<td>2</td>
<td></td>
<td>1 (50%)</td>
<td>12.2/100,000</td>
</tr>
<tr>
<td>Lobato et al.</td>
<td>111</td>
<td>801</td>
<td>14 (13%)</td>
<td>9.6/100,000</td>
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</tbody>
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