

TB Contact Investigations

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Contact Investigations....Why?

- To find and treat additional TB disease cases
 - 1% of contacts have TB disease
- To find and treat persons with LTBI to avert future cases
 - 20-30% of all contacts have LTBI
- On average, **10 contacts** are identified for each person with infectious TB in the U.S.

Source: CDC

What might happen if we stop doing Contact Investigations?

- 59 potentially infectious cases in 2014
 - 59 cases x 10 contacts each = 590 contacts
- If 1% have TB disease, we could have had ~6 additional cases!
- If 30% of contacts have LTBI, we could have had 177 new LTBI!
- Each of these cases would have contacts, and so on and so on...

Contact Investigations are a
fundamental and extremely
important strategy for the
prevention and control of
TB!

Who is responsible?

“The TB Case Manager is responsible for assuring that a contact investigation is conducted and that all contacts are appropriately evaluated and treated within recommended timeframes”

- TB Program Manual, Quality Assurance Protocol

What does that mean?

- Includes **ALL** steps of a contact investigation, including...
 - Field Investigation
 - Evaluation & treatment of all contacts
 - Reporting of contacts & outcomes to ISDH
- Responsibility for **ALL** contacts
 - Within your county
 - In another county
 - In another state

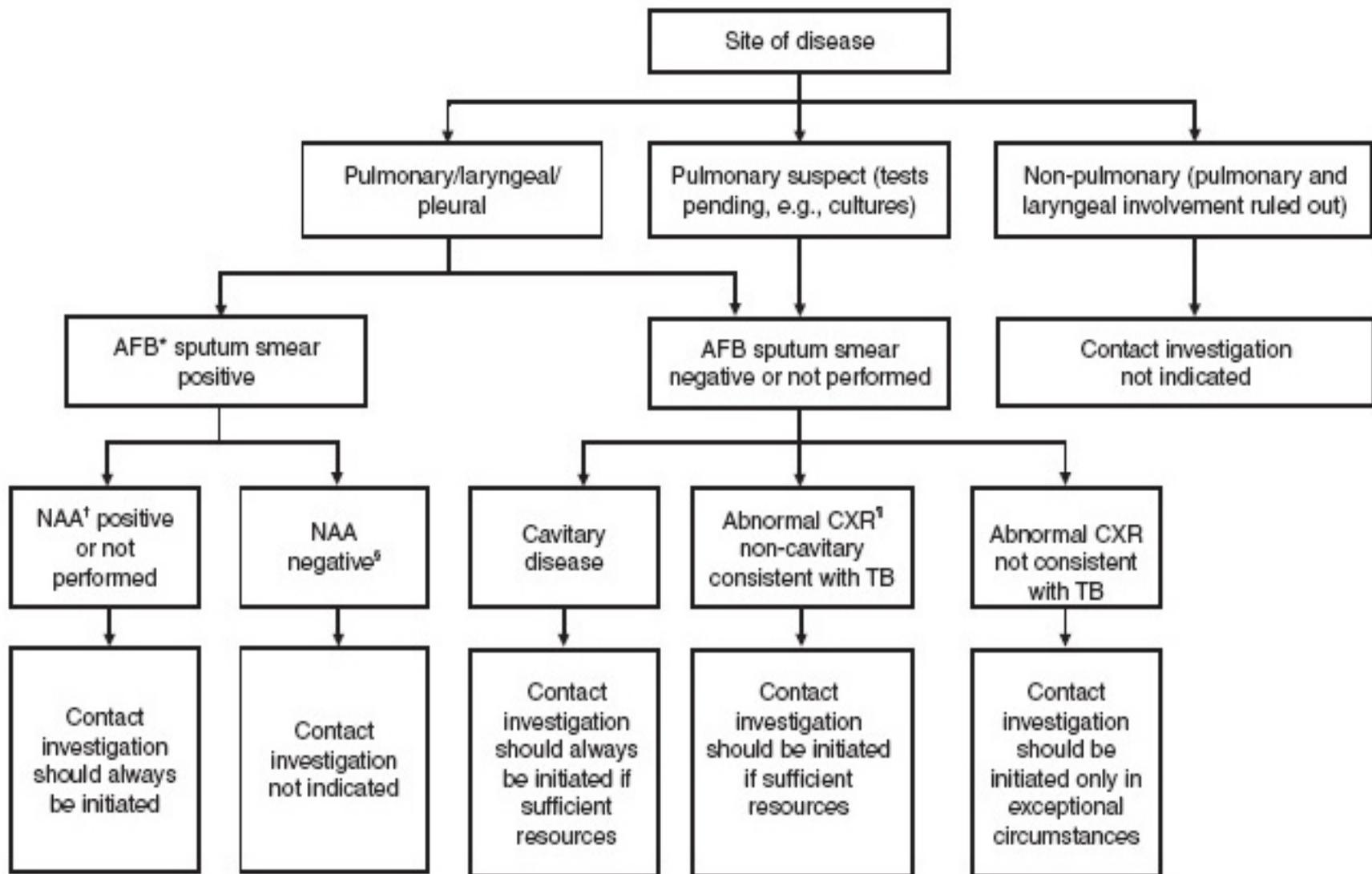
Deciding to Initiate a Contact Investigation

Factors to Consider in Index Case

- Site of Disease
- Sputum Smear & Culture Results
- Radiographic findings
- Age
- HIV Status
- Social Characteristics

Index Case Characteristics with Increased Risk of TB Transmission

- Pulmonary, laryngeal, or pleural TB
- AFB positive sputum smear
- Cavitation on chest radiograph
- Adolescent or adult patient
- Frequent coughing, sneezing, singing
- Close social network



What would you do?

- 34 year-old man with cavitary CXR and sputum smear+, NAA positive?
 - YES!
- 56 year-old man with abnormal CXR, C/W TB, sputum smear +, NAA negative?
 - No!
- 49 year-old woman with normal CXR, no sputum collected, extrapulmonary culture + ?
 - No!

What Would You Do? Part 2!

- 5 year-old boy, no sputum collected?
 - No, Source Case Investigation!
- 27 year-old female, CXR w/ pleural effusion, no sputum collected?
 - Yes, pleural site of disease!
- 35 year-old male, abnormal CXR consistent with TB, sputum smear negative?
 - Yes, if resources available!

Basic Steps to a CI

1. Pre-Interview Preparation
2. Index Patient Interviews
3. Field Investigation
4. Risk Assessment for TB Transmission
5. Prioritization of Contacts
6. Evaluation of Contacts
7. Treatment & Follow-Up of Contacts
8. Decision Regarding Expansion of Testing
9. Evaluation of Contact Investigation Activities

Contact Investigation Step #1

PRE-INTERVIEW PREPARATION

Pre-Interview Preparation

- Gather information about the index case
 - History of TB exposure, disease, and/or treatment
 - Site of disease & symptoms
 - Test results (CXR, Sputum smears & cultures, NAA, HIV)
 - Medical risk factors
 - Identifying demographic information

Determining the Infectious Period

- Used to identify contacts and determine testing timelines
- Necessary to estimate
- Start Date & End Date

Start of Infectious Period

- 3 months prior to symptom onset or 1st positive finding consistent with TB disease
- Ex. Patient reported symptoms starting on January 17, 2015
 - 3 months prior = October 17, 2014
- Ex 2. Patient with no symptoms had abnormal CXR on May 5th 2015
 - 3 months prior = February 5th 2015

End of Infectious Period

- Important for isolation status & evaluation of household contacts
- Must meet all three criteria
 - Effective treatment for ≥ 2 weeks
 - Diminished Symptoms
 - Bacteriologic response (Ex. Sputum Smear Status)

Contact Investigation Step #2

INDEX PATIENT INTERVIEWS

General Principles

- Establish trust and rapport with patient
- Discuss confidentiality and privacy
- Conduct in patient's primary language or with an interpreter
- Done in person
- At hospital, TB clinic, patient's home, or other place that accommodates patient's privacy

When?

- First interview (in-person!) within 1 day of notification
 - 3 days for sputum smear - case
- Re-interview 1 to 2 weeks after the first interview
- Additional interviews dependent on amount of information and patient relationship

First Interview

- Confirm known information, including infectiousness timeline
- Records sites of possible transmission
- Record dates/frequency of places of contact
- Gather list of known contacts

Possible Questions to Ask

- Who lives with you?
- Does anyone come & stay periodically? (kids, friends, family)
- Does anyone else come in your house regularly? (housekeepers, babysitters, neighbors)
- Where do you work/go to school?
- What is your work organization like?
- Do you have any other jobs?
- How do you get to work/school?
- Do you go to church?
- What do you do for fun?
- Do you go out to eat? Where?
- Are you in any clubs/organizations?
- What did you do for the holidays?
- Have you traveled anywhere for vacation? For work?
- Do you go to a gym?
- Do you have family that lives in the area?

Identify The Contacts!

- Judy, 53 year old woman, Smear +, symptomatic for one month
 - 5 contacts!
- Michael, 65 year old man, Smear +, symptomatic for two months
 - 5 contacts!
- Amanda, 27 year old woman, Smear +, symptomatic for three months
 - 8 contacts!

Follow-Up Interview

- Confirm information obtained during first visit
- Follow-up on any new information or questions
- Obtain “remembered” information

Proxy Interviews

- Used if patient cannot be interviewed or if additional information is needed that cannot be obtained from patient
- People familiar with patient's habits, behaviors, practices
- Consider patient confidentiality

Contact Investigation Step #3

FIELD INVESTIGATION

General Principals

- ***Essential & Important*** step to contact investigation
- Done even if patient has already been interviewed
- Should be initiated within **5** days after investigation starts
- Lack of site visits has contributed to TB outbreaks!

Parts of a Field Investigation

- Observe environmental characteristics
- Identify additional contacts
- Look for evidence of other contacts
- Educate the contacts
- Interview & skin test contacts
- Refer contacts who have TB symptoms

Observing Environmental Characteristics

- Visit each location mentioned during interview (home, workplace, school, social settings)
- Observe & note room size, crowding, ventilation, etc.
- Visit the location when the patient would have been there
 - Don't go to the Friday-night hang out spot on Monday morning

Estimating Room Size

1 = Vehicle or car

2 = Size of a bedroom

3 = Size of a house

4 = Size larger than a house

Finding Other Contacts

- Talk to contacts about who else might have been around
 - Maintain patient confidentiality!
- Look for evidence of possible other contacts
 - Pictures
 - Toys in house but not children listed
 - Girls clothing in a bachelor pad

Things to Remember

- Follow infection control precautions
- Display identification with photo
- Work in pairs for enhanced safety, if warranted
- Tell someone where you are going and when you will be back

Contact Investigation Step #4

RISK ASSESSMENT FOR TB TRANSMISSION

Risk Assessment for TB Transmission

- Review of all factors collected
 - Infectiousness of patient (sputum smear status, behaviors, etc.)
 - Characteristics of locations of exposure
 - Frequency & duration of time spent with contacts
- Set “levels” for exposure
 - Ex. 120 hours/month of exposure for pulmonary TB w/o lung cavities

Contact Investigation Step #5

PRIORITIZATION OF CONTACTS

Prioritization of Contacts

- Priorities based on likelihood of infection
- Allows resources to be allocated most effectively
- Based upon several factors
 - Characteristics of index patient & contact
 - Age
 - Immune status & other medical conditions
 - Exposure

Prioritization of Contacts, Cont.

- Three mutually exclusive groups: High, Medium, Low
- High & medium groups are target of initial evaluations
- Important to maintain list of low contacts in case expansion is needed

Contacts to Smear + or Cavitory Cases

- High-Priority Contacts
 - Household Contacts
 - Contacts <5 years of age
 - Contacts with HIV or other medical risk factor
 - Contacts exposed during medical procedure (bronchoscopy, sputum induction, autopsy)
 - Contacts in congregate setting
 - Contacts exceeding exposure limits previously set

Contacts to Smear + or Cavitory Cases

- Medium-Priority Contacts
 - Contacts 5-15 years old
 - Contacts exceeding exposure limits previously set
- Low-Priority Contacts
 - All other contacts not in High or Medium priority groups

Contacts to Smear - Cases

- High-Priority Contacts
 - Contacts <5 years of age
 - Contacts with HIV or other medical risk factor
 - Contacts exposed during medical procedure (bronchoscopy, sputum induction, autopsy)
- Medium-Priority Contacts
 - *Household Contacts*
 - *Contacts in congregate setting*
 - *Contacts exceeding exposure limits previously set*

Contacts to Smear - Cases

- Low-Priority Contacts
 - All other contacts not in High or Medium priority groups

Contact Investigation Step #6

EVALUATION OF CONTACTS

Evaluation of Contacts Timeline

- Initial assessment within **7** days of contact being identified
 - Gathering information
 - Face-to-face assessment of health
 - Have 14 days for medium-priority contacts
- Medical evaluation should be completed within **5** days from initial encounter
 - Within 10 days for Smear- CIs or medium-priority contacts

Initial Assessment Information

- Contact information
- Demographic information
- Previous history of TB/LTBI & treatment
 - Verbal or documented TST results
- Current symptoms of TB disease
- *Medical conditions (HIV, Diabetes, Etc.)*
- *Type, duration & intensity of exposure*

***May need to reevaluate prioritization
after initial assessment***

***If a contact reports
TB symptoms,
immediately move
to full evaluation
for TB disease***

Previous Positives

- Documentation of previous positive TST or IGRA must be provided
 - If no documentation, have contact tested & followed as normal
- Documented previous positive reactors must still have symptom screening to be evaluated
- If no prior LTBI treatment, offer treatment
 - Must have a CXR to begin treatment

TST vs. IGRA

- Testing modality dependent on your population and may vary
- Use the same test for 2nd testing as you did the first
 - IGRAs may be used after +TST if it will convince need for treatment
- If any test is positive, consider positive and evaluate accordingly
 - Discordant result guidelines forthcoming

Interpretation of Tests

- Any TST ≥ 5 mm is positive for a contact investigation
 - Refer for CXR & medical evaluation
- Re-test contacts with initial negative result 8-10 weeks after last exposure date
 - Tests must be at least 1 week apart
 - Use the same test method

Evaluation of Immunosuppressed & Children < 5 Years of Age

- Always assigned as High-Priority
- Test with TST or IGRA, as applicable
- Need full medical evaluation, including chest radiograph, to be fully evaluated
- Consider window prophylaxis

Window Prophylaxis

- Prophylactic treatment for presumed TB infection after initial negative tests
- Recommended for
 - HIV infected contacts
 - Contacts with other immunosuppression
 - Children <5 years of age
- Treatment may be discontinued after 2nd negative test >8 weeks post-exposure
 - May give full course of LTBI for HIV+ & other immunosuppressed contacts

Conversion

- Second test is positive after an initial negative result
- Evidence of recent transmission
- Important evidence to consider for contact investigation expansion
- Contact is referred for CXR and follow-up the same as initial reactors

What would you do?

- Mary Ann, 25 year-old contact, date of last exposure 7/4/15
 - TST placed 7/9/2015, 0 mm
 - Get second test after 8/29/15
- Thomas, 35 year-old contact, date of last exposure 8/15/15
 - TST placed 8/17/15, 7 mm
 - Refer for CXR

What would you do?, Cont.

- Eldon, 4 year old boy, date of last exposure 8/21/15
 - TST placed 8/23/15, 0 mm
 - Obtain CXR & full medical evaluation
 - Begin window prophylaxis, re-test after 10/16/15
 - If second TST is negative, discontinue treatment

Contact Investigation Step #7

TREATMENT & FOLLOW- UP OF CONTACTS

Treatment & Follow-Up of Contacts

- If contact has positive test, normal CXR and no signs or symptoms, recommend treatment for LTBI
- Several different treatment options
- Document therapy elected, start date, and end date
 - If therapy is stopped sooner than planned, document why (death, lost to follow-up, adverse reaction, etc.)

“Difficult” Contacts

- Before closing a contact as lost or unable to locate, must try multiple times
 - Three separate attempts
 - One attempt is a home/field visit
- If contact refuses testing or treatment, educate contact on importance or try making a compromise
 - Bring the testing/treatment to them
- Document ***all*** attempts or refusals

Contact Investigation Step #8

DECISION REGARDING EXPANSION OF TESTING

When to Expand Testing

- Ongoing assessment of the extent of recent transmission
- Driven by the data collected during the contact investigation
- Do ***not*** expand to low-priority contacts unless objectives for high and medium-priority contacts are being met

Consider Expansion If...

- Unexpectedly large rate of TB infection or disease in high-priority contacts
 - >10% or twice the rate in similar population
- Second-generation transmission
- TB disease in any low-priority contacts
- Infection in contacts <5 years old
- Contacts that convert from negative to positive

Special Circumstances to Notify ISDH

- Expanded contact investigations
- Contact investigations in special settings
 - Schools
 - Congregate settings
 - Large-scale employment settings
- Cases <18 years of age
- Any case/investigation with possible media attention

Who to Contact

- Your regional nurse
- Kelly White, TB Epidemiologist
 - (317) 233-7548
 - KeRichardson1@isdh.in.gov

TB Outbreak Scenarios

- An increase has occurred above the expected number of TB cases
- During a contact investigation, two or more contacts are identified as having active TB, regardless of their priority
- Any two or more cases occurring ≤ 1 year of each other are discovered to be epidemiologically linked, and the linkage is established outside of a contact investigation
- Three or more genotypically linked cases within a year that are either
 - Determined to be an uncommon genotype strain constituting ongoing transmission
 - New genotype cluster for the state of Indiana

TB Outbreak Response

- LHD leads the investigation
- Conference call with ISDH within 24 hours
 - Confirm outbreak
 - Confirm treatment plan
 - Assess additional needs
- Establish and follow outbreak plan

Contact Investigation Step #9

EVALUATION OF CONTACT INVESTIGATION ACTIVITIES

Why Collect Data?

- Manage care & follow-up of index patient & contacts
- Epidemiologic analysis of an investigation in progress as well as overall results of prior investigations
- Program evaluation via performance indicators that reflect performance objectives

2020 Indiana Contact Investigation Targets

- Smear+ patients who have contacts elicited: 95%
- Contacts to smear+ patients who are fully evaluated: 85%
- Contacts to smear+ patients diagnosed with LTBI who start treatment: 95%
- Contacts to smear+ patients diagnosed with LTBI who complete treatment: 75%

2014 Preliminary Contact Investigation Data

- 97.4% of smear+ cases had contacts elicited
- 67.7% of contacts to smear+ cases were fully evaluated
- 96.9% of contacts to smear+ cases with LTBI began treatment
- 81.9% of contacts to smear+ cases with LTBI completed treatment

Contact Investigation Reporting

- All contact investigations are reported through TB SWIMSS
- At least three times, no later than:
 - 3 weeks after the case is reported to you
 - After 1st round of testing
 - 12 weeks after the case was reported to you
 - After 2nd round of testing
 - 12 months after the case was reported to you
 - After all contacts with LTBI have completed treatment

Required Information

- Overall information about investigation on Contact Investigation Summary Report
- Specific information about each contact identified
 - Demographic & contact information
 - Exposure (Type, Date)
 - Testing (TST, IGRA, CXR)
 - Treatment
 - Final outcome



Demographics

Profile ID: 3585
 Date Of Birth: 10/13/1954
 County: Hendricks
 Race: White

INEDSS Patient ID: 487192
 Gender: M
 City:
 Ethnicity: Not Hispanic or Latino

Patient Name: duck, Donald
 Address:
 Age: 60

Login Status : Kelly Richardson - HQ -TBEP

Case Management | **Contact Investigation**

Notes | Case Management

- Add Report Of TB
- Add LTBI
- Add Case Completion Report
- Add Manual Lab
- Med Request
- Print TB Summary

Report of TB List

Date Reported	Reported By	Release Date
10/9/2012	sburkholder	
6/5/2013	weberw	
6/5/2013	weberw	
6/7/2013	weberw	
6/7/2013	weberw	
6/10/2013	weberw	
6/10/2013	weberw	01/11/2013
6/10/2013	weberw	
6/12/2013	weberw	

LTBI List

Date Reported	Reported By	Date LHD Notified
6/7/2013	weberw	01/01/0001
6/10/2013	weberw	01/01/0001

Electronic Lab List

Data Not Available

Demographics

Profile ID: 3585	INEDSS Patient ID: 487192	Patient Name: duck, Donald
Date of Birth: 10/13/1954	Gender: M	Address:
County: Hendricks	City:	Age: 60
Race: White	Ethnicity: Not Hispanic or Latino	

Case Management | **Contact Investigation**

History | Contact

Contact Investigation Summary Report

SWIMSS-TB ID : 101 INEDSS ID :

Preliminary Report Date	<input type="text" value="06/03/2013"/>	Case Manager *	<input type="text" value="Kelly Richardson"/>
Final Report Date	<input type="text"/>	Infectious End Date	<input type="text" value="06/01/2013"/>
Infectious Start Date	<input type="text" value="01/01/2013"/>		

Potential Sites/Dates of Exposure *

Index Case

Count Date : State Case Number :

Sputum Smear Positive
 Sputum Smear Negative but Culture Positive
 Other

Investigation

Are there any contacts for this investigation: Yes No

If no contacts, why not?

Priority for Investigation	High/Medium Risk		Low Risk	
	Preliminary Report	Final Report	Preliminary Report	Final Report
Number of contacts Identified	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Number Evaluated	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
TB Disease	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Previous Positive TST or IGRA (QFT-G, etc)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
New Latent Infection (>=5mm TST or IGRA positive)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Started Treatment - New LTBI	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Completed Treatment - New LTBI	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Do you need help with this contact investigation?

Comments :

Case Management **Contact Investigation**
 History **Contact**

Contact Investigation Summary Report

SWIMSS-TB ID : 101 INEDSS ID :

Preliminary Report Date: 06/03/2013
 Final Report Date:
 Infectious Start Date: 01/01/2013

Case Manager *: Kelly Richardson
 Infectious End Date: 06/01/2013

Update Cancel Print CI Letter Print Contact CI Form

Potential Sites/Dates of Exposure *

Household, Work at Disney Studios, Church at St. Mick's Cathedral

Index Case

Count Date : State Case Number :

Sputum Smear Positive Sputum Smear Negative but Culture Positive Other

Investigation

Are there any contacts for this investigation: Yes No

If no contacts, why not?

Priority for Investigation	High/Medium Risk		Low Risk	
	Preliminary Report	Final Report	Preliminary Report	Final Report
Number of contacts Identified	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Number Evaluated	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
TB Disease	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Previous Positive TST or IGRA(QFT-G,etc)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
New Latent Infection(>=5mm TST or IGRA positive)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Started Treatment - New LTBI	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Completed Treatment - New LTBI	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Preliminary Report Date: 06/03/2013
 Final Report Date:
 Infectious Start Date: 01/01/2013
 Case Manager *: Kelly Richardson
 Infectious End Date: 06/01/2013

Potential Sites/Dates of Exposure *
 Household, Work at Disney Studios, Church at St. Mick's Cathedral

Index Case
 Count Date : State Case Number :
 Sputum Smear Positive Sputum Smear Negative but Culture Positive Other

Investigation

Are there any contacts for this investigation: Yes No If no contacts, why not?

Priority for Investigation	High/Medium Risk		Low Risk	
	Preliminary Report	Final Report	Preliminary Report	Final Report
Number of contacts Identified	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Number Evaluated	<input type="text" value="1"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
TB Disease	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Previous Positive TST or IGRA(QFT-G,etc)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
New Latent Infection(>=5mm TST or IGRA positive)	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Started Treatment - New LTBI	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Completed Treatment - New LTBI	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Do you need help with this contact investigation?
 Comments :

County: **Hendricks** City: **Age: 60**
 Race: **White** Ethnicity: **Not Hispanic or Latino**

Case Management
Contact Investigation

[History](#)
Contact

Contact Investigation Case Submit Cancel

SWIMSS-TB ID : 101 INEDSS ID :

Investigation

First Name * Last Name * Middle Name
 DOB * Sex Male Female Address
 State * County City
 Zip

Priority * High Medium Low Date of Last Exposure *
 Signs and Symptoms: None Cough Night Sweats Weight Loss Fatigue Other
 Other Symptoms:

Previous Positive TST/IGRA Yes Date: Exposure: Household Workplace Social Congregate Other
 Other Exposure:

1st TST (mm) Date: 2nd TST (mm) Date:

1st IGRA (GFT-G) Pos Neg Date: 2nd IGRA (GFT-G) Pos Neg Date:

CXR Normal Abnormal/NonCavitary Abnormal/Cavitary Abnormal/Not consistent w/TB Date:
 TX INH Rifampin PZA Ethambutol Other
 Start Date: End Date:

Outcome Outcome Date: Submit Cancel

ID	First Name	Last Name	Date Of Birth	County	First Test	Second Test	First IGRA	Second IGRA	CXR	TX Start Date	Outcome
323	judy	bloom	08/05/2012	ADAMS	8				Abnormal/NonCavitary	06/05/2013	Edit

Contact Investigation Case

SWIMSS-TB ID :101 INEDSS ID :

Submit

Cancel

Investigation

First Name *

Last Name *

Middle Name

DOB *

Sex

Male Female

Address

State *

County

City

Zip

Priority * High Medium Low

Date of Last Exposure

Signs and Symptoms

None Cough
 Night Sweats Weight Loss
 Fatigue Other

Other Symptoms:

Previous Positive TST/IGRA

Yes

Date:

Exposure

Household
 Workplace Social
 Congregate Other

Other Exposure:

1st TST (mm)

Select value ▾

Date:

2nd TST (mm)

Select value ▾

Date:

1st IGRA (GFT-G)

Pos Neg

Date:

2nd IGRA (GFT-G)

Pos Neg

Date:

CXR

Normal
 Abnormal/NonCavitary
 Abnormal/Cavitary
 Abnormal/Not consistent w/TB

Date:

TX

INH Rifampin
 PZA Ethambutol
 Other

Other TX:

Start Date:

End Date:

Outcome

-Select- ▾

Outcome Date:

Submit

Cancel

Contact Investigation Case

SWIMSS-TB ID : 101 INEDSS ID : Contact ProfileID :

[History](#) [Update](#) [Cancel](#) [Create Profile](#) [Print CI Case](#)

Investigation

First Name *	<input type="text" value="judy"/>	Last Name *	<input type="text" value="bloom"/>	Middle Name	<input type="text"/>
DOB *	<input type="text" value="08/05/2012"/>	Sex	<input type="radio"/> Male <input checked="" type="radio"/> Female	Address	<input type="text" value="123 Sesame Street"/>
State *	<input type="text" value="Indiana"/>	County	<input type="text" value="ADAMS"/>	City	<input type="text" value="DECATUR"/>
Zip	<input type="text"/>				

Priority *:	<input checked="" type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low	Date of Last Exposure	<input type="text" value="*: 06/03/2013"/>	Signs and Symptoms	<input checked="" type="checkbox"/> None <input type="checkbox"/> Cough
					<input type="checkbox"/> Night Sweats <input type="checkbox"/> Weight Loss
					<input type="checkbox"/> Fatigue <input type="checkbox"/> Other
					Other Symptoms: <input type="text"/>

Previous Positive TST/IGRA	<input type="checkbox"/> Yes	Date:	<input type="text"/>	Exposure:	<input checked="" type="radio"/> Household <input type="radio"/> Workplace <input type="radio"/> Social <input type="radio"/> Congregate <input type="radio"/> Other	Other Exposure:	<input type="text"/>
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1st TST (mm)	<input type="text" value="8"/>	Date:	<input type="text" value="06/04/2013"/>	2nd TST (mm)	<input type="text" value="Select value"/>	Date:	<input type="text"/>
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1st IGRA (GFT-G)	<input type="radio"/> Pos <input type="radio"/> Neg	Date:	<input type="text"/>	2nd IGRA (GFT-G)	<input type="radio"/> Pos <input type="radio"/> Neg	Date:	<input type="text"/>
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CXR	<input checked="" type="radio"/> Normal <input type="radio"/> Abnormal/NonCavitary <input type="radio"/> Abnormal/Cavitary <input type="radio"/> Abnormal/Not consistent w/ TB	Date:	<input type="text" value="06/04/2013"/>	TX	<input checked="" type="checkbox"/> INH <input type="checkbox"/> Rifampin <input type="checkbox"/> PZA <input type="checkbox"/> Ethambutol <input type="checkbox"/> Other	Other TX:	<input type="text"/>
				Start Date:	<input type="text" value="06/05/2013"/>	End Date:	<input type="text"/>

Outcome	<input type="text" value="-Select-"/>	Outcome Date:	<input type="text"/>
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[Update](#) [Cancel](#)

Contact Investigation Case

SWIMSS-TB ID :101 INEDSS ID : Contact ProfileID :

History

Update

Cancel

Create Profile

Print CI Case

Investigation

First Name *	<input type="text" value="judy"/>	Last Name *	<input type="text" value="bloom"/>	Middle Name	<input type="text"/>
DOB *	<input type="text" value="08/05/2012"/>	Sex	<input type="radio"/> Male <input checked="" type="radio"/> Female	Address	<input type="text" value="123 Sesame Street"/>
State *	<input type="text" value="Indiana"/>	County	<input type="text" value="ADAMS"/>	City	<input type="text" value="DECATUR"/>
Zip	<input type="text"/>				

Priority *: High Medium Low

Date of Last Exposure
*:

Signs and Symptoms

<input checked="" type="checkbox"/> None	<input type="checkbox"/> Cough
<input type="checkbox"/> Night Sweats	<input type="checkbox"/> Weight Loss
<input type="checkbox"/> Fatigue	<input type="checkbox"/> Other

Other Symptoms:

Previous Positive TST/IGRA Yes Date:

Exposure: Household Workplace Social Congregate Other
Other Exposure:

1st TST (mm) Date: 2nd TST (mm) Date:

1st IGRA (GFT-G) Date: 2nd IGRA (GFT-G) Pos Neg Date:

CXR Date:

TX INH Rifampin PZA Ethambutol Other
Other TX:

Start Date: End Date:

Outcome Outcome Date:

Update

Cancel

Contact Investigation Case

SWIMSS-TB ID : 101 INEDSS ID : Contact ProfileID :

[History](#) [Update](#) [Cancel](#) [Create Profile](#) [Print CI Case](#)

Investigation

First Name *	<input type="text" value="judy"/>	Last Name *	<input type="text" value="bloom"/>	Middle Name	<input type="text"/>
DOB *	<input type="text" value="08/05/2012"/>	Sex	<input type="radio"/> Male <input checked="" type="radio"/> Female	Address	<input type="text" value="123 Sesame Street"/>
State *	<input type="text" value="Indiana"/>	County	<input type="text" value="ADAMS"/>	City	<input type="text" value="DECATUR"/>
Zip	<input type="text"/>				

Priority *:	<input checked="" type="radio"/> High <input type="radio"/> Medium <input type="radio"/> Low	Date of Last Exposure *	<input type="text" value="06/03/2013"/>	Signs and Symptoms	<input checked="" type="checkbox"/> None <input type="checkbox"/> Cough
					<input type="checkbox"/> Night Sweats <input type="checkbox"/> Weight Loss
					<input type="checkbox"/> Fatigue <input type="checkbox"/> Other
					Other Symptoms: <input type="text"/>

Previous Positive TST/IGRA	<input type="checkbox"/> Yes	Date:	<input type="text"/>	Exposure:	<input checked="" type="radio"/> Household <input type="radio"/> Workplace	Other Exposure:	<input type="text"/>
					<input type="radio"/> Social <input type="radio"/> Congregate <input type="radio"/> Other		

1st TST (mm)	<input type="text" value="8"/>	Date:	<input type="text" value="06/04/2013"/>	2nd TST (mm)	<input type="text" value="Select value"/>	Date:	<input type="text"/>
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1st IGRA (GFT-G)	<input type="radio"/> Pos <input type="radio"/> Neg	Date:	<input type="text"/>	2nd IGRA (GFT-G)	<input type="radio"/> Pos <input type="radio"/> Neg	Date:	<input type="text"/>
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CXR	<input checked="" type="radio"/> Normal <input type="radio"/> Abnormal/NonCavitary <input type="radio"/> Abnormal/Cavitary <input type="radio"/> Abnormal/Not consistent w/ TB	Date:	<input type="text" value="06/04/2013"/>	TX	<input checked="" type="checkbox"/> INH <input type="checkbox"/> Rifampin <input type="checkbox"/> PZA <input type="checkbox"/> Ethambutol <input type="checkbox"/> Other	Other TX:	<input type="text"/>
				Start Date:	<input type="text" value="06/05/2013"/>	End Date:	<input type="text" value="03/05/2014"/>

Outcome	<input type="text" value="Treatment Complete"/>	Outcome Date:	<input type="text" value="03/05/2014"/>
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[Update](#) [Cancel](#)

SWIMSS Outcome Variable

Outcome	When to Use
Evaluation Not Complete	Contact does not get testing >8 weeks beyond exposure or+ reactor does not complete CXR or other evaluation
No Treatment Required	Contact has a negative test >8 weeks beyond exposure or is a verified previous positive
Active TB Developed	Contact develops active TB
Treatment Complete	Contact w/ LTBI completes treatment
Death	Contact died before completing tx
Moved	Contact moved before completing tx
Lost	Contact lost before completing tx
Stopped	Contact chose to stop tx
Adverse Effect	Tx stopped due to adverse effect
Refused	Contact refused treatment
Provider Decision	Provider decided to stop tx/not treat

First Name * Last Name * Middle Name
 DOB * Sex Male Female Address
 State * County City
 Zip

Priority * High Medium Low Date of Last Exposure *
 Signs and Symptoms: None Cough Night Sweats Weight Loss Fatigue Other
 Other Symptoms:

Previous Positive TST/IGRA Yes Date: Exposure: Household Workplace Social Congregate Other
 Other Exposure:

1st TST (mm) Date: 2nd TST (mm) Date:
 1st IGRA (GFT-G) Pos Neg Date: 2nd IGRA (GFT-G) Pos Neg Date:

CXR: Normal Abnormal/NonCavitary Abnormal/Cavitary Abnormal/Not consistent w/TB
 Date: TX: INH Rifampin PZA Ethambutol Other
 Other TX:
 Start Date: End Date:

Outcome Outcome Date:

ID	First Name	Last Name	Date Of Birth	County	First Test	Second Test	First IGRA	Second IGRA	CXR	TX Start Date	Outcome
323	judy	bloom	08/05/2012	ADAMS	8				Normal	06/05/201	Treatment Complete Edit

SWIMSS CI Tips

- Remember to exit CI module and re-enter for “Contact” link to appear
- Add “Final Report Date” when you have closed all the contacts out & have finished the CI
- Don’t add old test results/CXR/treatment in variables
- If there is a duplicate, notify Kelly
- Select “Outcomes” based on guidance
- “Outcome Date” is the date the outcome was decided, not the date entered

What about everything else?

- Look for future updates to TB SWIMSS to expand and improve the contact investigation module!
 - Expanded exposure information including locations & relation to index case
 - Medical history/risk factors of contacts
 - Comments field for each contact

Case Study

JIM JONES CONTACT INVESTIGATION

Where do we start?

- Pre-Interview Preparation
 - No prior history of TB
 - Pulmonary, HX of cough, fever, fatigue, weight loss since 8/18/15
 - Smear +, Cavitory, PCR Positive , DOT started 10/19/15
 - Infectious Period: 5/18/15 until ?

The Interview

- Lives alone in a small apartment
- His girlfriend, Tonya, spends the night several times a week & brings her 2 year old, Sam
- Another girlfriend, Kelly, has stayed over about 10 times in the past 2 months
- Currently Unemployed
- Worked night shift at convenience store with Bob & Tom in last two months
 - Overlapped 1-2 hours per night
 - Once or twice a week

The Interview, Cont.

- He also slept at Kelly's house last month, where her mother, Madeline, also lives
 - Spent several days there
- He hang's out at his friend's apartments nearby or stays at his own apt
- He often goes to the local bar, Puzzles, with his friends Reggie & Melvin
 - Every Friday night

Field Investigation

- Where?
 - Jim's house
 - Convenience Store
 - Kelly's house
 - Puzzles (the bar)
- What?
 - Note room size, ventilation, etc.
 - Look for evidence of other contacts
 - Educate & test contacts, if possible

Field Investigation, Cont.

- Jim's House
 - No evidence of other contacts
- Convenience Store
 - Large, open room, size of a house
- Kelly's House
 - Large house
 - No evidence of other contacts
 - Mother's room in separate suite
- Puzzles
 - Sat on semi- outdoor patio
 - Saw third man, Steve, sitting with other contacts on Friday night

Risk Assessment

- Sputum smear+, 3+
- Exposure locations
 - 2 houses
 - 1 larger workplace
 - 1 semi-outdoor bar
- Levels of exposure
 - High: Household contacts
 - Medium: Workplace, social at bar

Prioritization of Contacts

Contact Name	Exposure	Priority
Tonya	Household	High
Sam	Household	High
Kelly	Household	High
Bob	Workplace	Medium
Tom	Workplace	Medium
Madeline	Social	Medium
Reggie	Social	Medium
Melvin	Social	Medium
Steve	Social	Medium
Waitress at Puzzles	Social	Low
Other Friends	Social	Low

Evaluation of Contacts

Contact Name	Priority	1 st Round Testing
Tonya	High	Positive
Sam	High	Negative
Kelly	High	Positive
Bob	Medium	Negative
Tom	Medium	Negative
Madeline	Medium	Negative
Reggie	Medium	Negative
Melvin	Medium	Negative
Steve	Medium	Negative

Evaluation of Contacts, Cont.

- All three CXRs come back clear
 - Start Tonya & Kelly on LTBI treatment
 - Start Sam on window prophylaxis
- 2nd round testing for all negatives
 - All 2nd tests come back negative, including Sam's
 - Discontinue window prophylaxis

Should you expand?

- What is positivity rate among high risk?
 - 2 positives/3 high priority contacts = 66.7%!
- BUT:
 - No second generation transmission
 - No infection in contacts <5 years old
 - No conversion
 - No positives among medium risk contacts
- Probably OK not to expand

QUESTIONS?