

Latent TB Infection Investigations in VEDSS Training

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Learning Objectives

- Understand LTBI reporting in Virginia
- Understand the latent TB infection (LTBI) data variables captured though the Virginia Electronic Disease Surveillance System (VEDSS).
- Learn how to enter data, update, and manage LTBI investigations in VEDSS.



LTBI vs active TB

Someone with LTBI:

- Has no signs or symptoms
- Is not contagious
- Typically has a positive tuberculin skin test (TST) or interferon gamma release assay (IGRA)
- Has a normal chest x-ray

Someone with active TB disease typically:

- Has symptoms (cough 3+ weeks, weight loss, night sweats, fever, etc.)
- Feels sick
- May spread TB bacteria to others
- Has a positive TST or IGRA
- Has an abnormal chest x-ray and/or positive sputum smear/culture



Reporting Requirements

- LTBI became broadly reportable in Virginia in November of 2018 for:
 - Providers: anyone diagnosed with LTBI
 - Laboratories: positive tests for TB infection
- Providers can report through the <u>Confidential Morbidity Report Portal</u> or by faxing or emailing an <u>LTBI case report form</u> to the VDH TB Program (804-416-5178, <u>tuberculosis@vdh.virginia.gov</u>)
- Local health departments can submit reports in the same way, or can enter data directly into VEDSS.
 - LHDs can also work directly with the VDH TB Program if they prefer to submit a line list or report in some other way.
- Additional routine follow-up is not required at this time unless there is concern for active TB disease
- Follow-up may be recommended for children under the age of five with a new diagnosis of LTBI. https://www.vdh.virginia.gov/content/uploads/sites/175/2022/08/LTBI-Reporting-Form-Virginia_Central-Office.pdf



LTBI Case Classification

Latent TB Infection Case Classification

SUSPECTED

A case that meets one or more of the laboratory criteria (positive TST or IGRA)

AND

M. tuberculosis complex was not isolated from a clinical specimen, if a specimen was collected

CONFIRMED

A case that meets one of the laboratory criteria for TB infection (positive TST or IGRA)

AND

M. tuberculosis complex was not isolated from a clinical specimen, if a specimen was collected

AND

Meets the clinical criteria for TB infection (no signs or symptoms consistent with TB Disease and chest imaging not consistent with TB Disease)



Managing TB and LTBI Investigations in VEDSS

- TB and LTBI investigations both fall under the TB Program Area in VEDSS
- Please do not create tuberculosis investigations or enter or edit data in tuberculosis investigations if you have not completed RVCT training with the TB Program



Auto-created investigations from Electronic Lab Reports (ELRs)

- VEDSS workflow decision support (WDS) is currently used to assist with the process of incoming positive IGRA ELRs.
- New positive ELRs will either be associated with an existing investigation, or the system will create a new investigation with a suspect case status, and close it.
- WDS cannot currently add a state case number which is required to submit a notification, so the VDH TB Program routinely adds the state case number and submits the notification manually.



Technical Notes

- Active TB and Previous LTBI investigations
 - A new investigation for LTBI should only be created if the person does not have a previous LTBI or TB investigation.
 - If the person has an active TB investigation and has been counted as a TB case, there is no need to also create an LTBI investigation.
 - If they have an active TB investigation, and TB has been ruled out, the change condition function can be used to move information over to the LTBI investigation.
 - New labs should be associated with previous investigations if applicable.



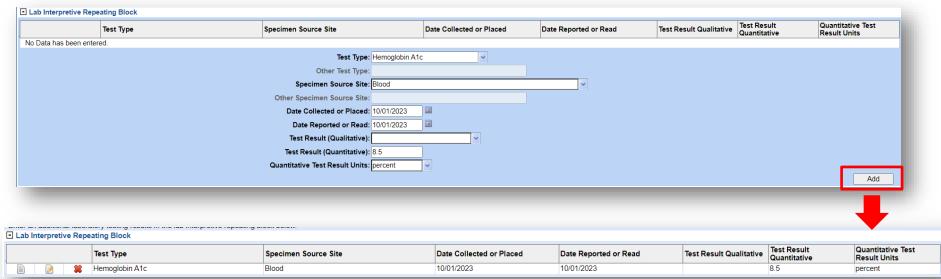
Data entry notes

- Partial dates:
 - o If the day is unknown, enter the first day of the know month as the date (e.g., 07/01/2022).
 - If the month and day are unknown, enter the first day of the know year as the date (e.g., 01/01/2022).



Data entry notes

- Repeating blocks:
 - When entering data in a repeating block, you must click "add" to save the data, otherwise you will get an error message when you try to save the investigation. You will then see the data displayed in the row.





Data entry notes

- Editing data in repeating blocks:
 - After you have added data to a repeating block, you can edit or delete it using these buttons:



Click to delete

- Saving data in VEDSS:
 - Click the "submit" button at the top or bottom of the page:

Click to edit





Two new conditions in codes in VEDSS

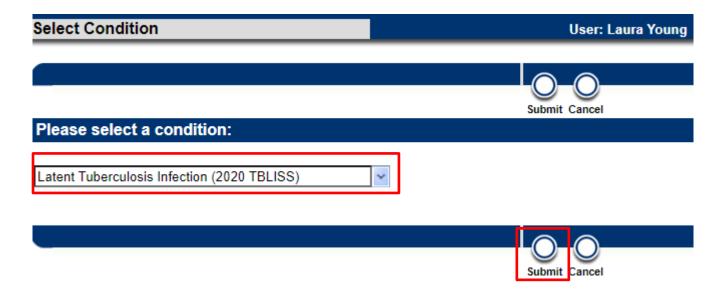
- Tuberculosis condition code and VEDSS paged used for 2009-2022 cases
- Latent TB infection condition code and VEDSS page used for LTBI for 2018-2023
- Tuberculosis (2020 RVCT) used for 2023 TB cases and forward
- Latent TB Infection (2020 TBLISS) condition codes used for 2024 LTBI cases and forward

| Start Date | Conditions | Case Status |
|------------|---|-------------|
| 09/01/2020 | Tuberculosis | Confirmed |
| 10/01/2021 | Latent TB infection | Not a Case |
| 10/01/2023 | Latent Tuberculosis Infection (2020 TBLISS) | Not a Case |
| 10/05/2023 | Tuberculosis (2020 RVCT) | Confirmed |

The "2020" pages combine TB and LTBI into one page, but two different condition codes are used and there is change functionality between them. Certain "tabs" apply to both conditions and distinct tabs apply to each as well.

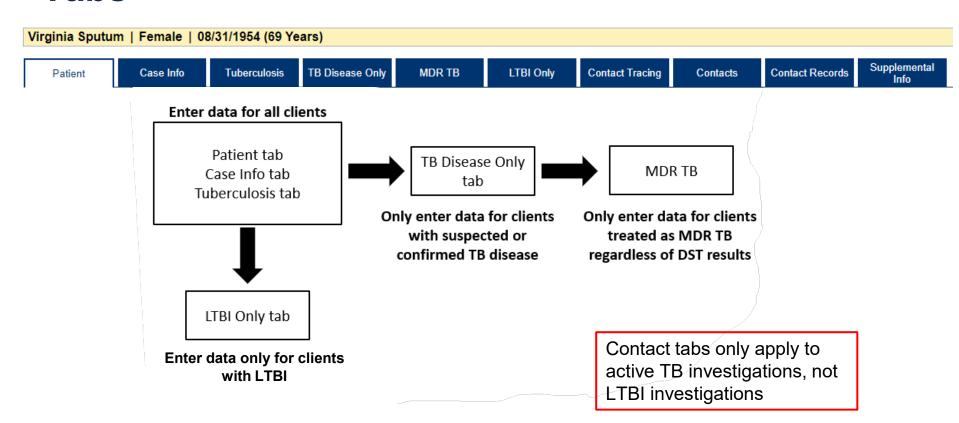


Creating a new LTBI investigation





Tabs





Patient Tab

Detailed Race American Indian and Alaska Native:

Detailed Race Asian: Vietnamese

Key Data if

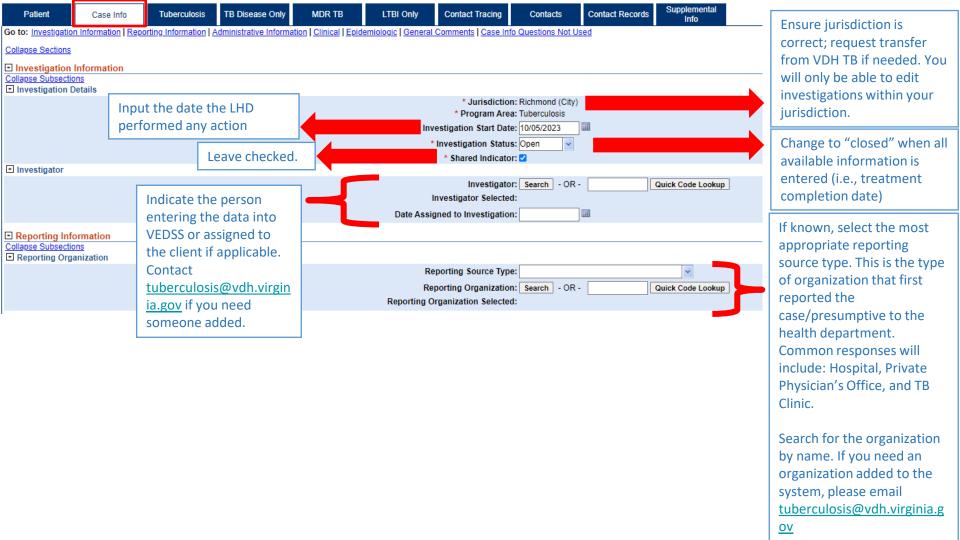
available:

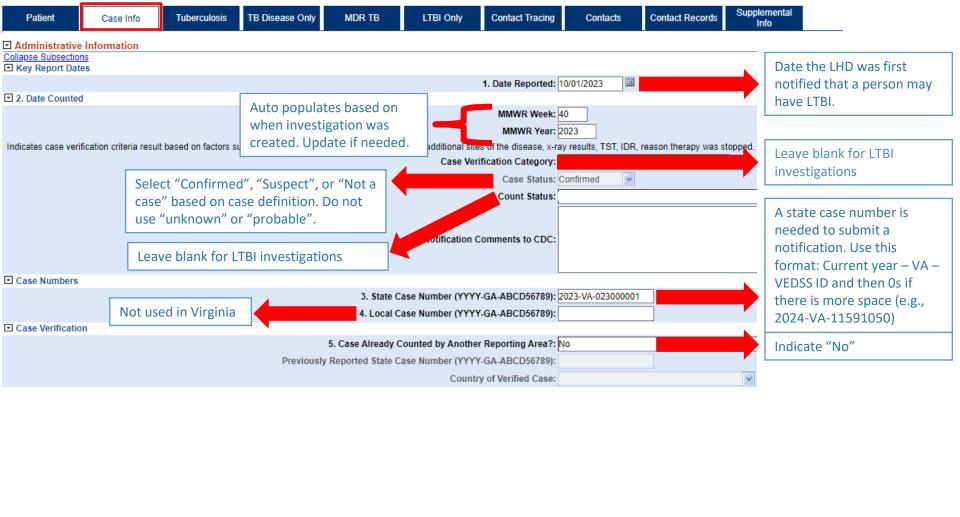
- Patient last name
- Patient first Name
- Patient DOB
- **Current Sex**
- Sex at Birth
- Street Address
- City
- State
- Zip
- County
- Race
- Ethnicity





Case Info Tab









Tuberculosis Tab



Tuberculosis Tab

- This tab has many items that will not be available for an LTBI investigation, complete what you are able to.
- Key items related to the LTBI case classification:
 - Results of a test for infection, either TST or IGRA
 - Results of a chest x-ray (needed to meet "confirmed" case classification)
- Helpful information for surveillance if available:
 - Country of birth
 - HIV Status
 - Initial reason evaluated for TB
 - Other risk factors (diabetes, homelessness, substance use, history of time in correctional facility
 - Occupational information

Case Info

Tuberculosis

TB Disease Only

MDR TB

LTBI Only

Contact Tracing

Contacts

Contact Records

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■ 11. Nativity

11a. Country of Birth: AFGHANISTAN

If country of birth is NOT United States, regardless of citizenship, indicate the date when the patient first arrived in the US.

Date of First US Arrival: 10/12/2021

11b. Eligible for US Citizenship or Nationality at Birth?:

Complete Countries for Birth for Primary Guardians(s) for pediatric cases only (less than 15 years old).

Countries of Birth for Primary Guardians:

■ 12. Country of Usual Residence

12a. Country of Usual Residence:

12b. If NOT US Reporting Area, Has Patient Been in US for 90 Days or More?:

■ TB Diagnosis

13 Status at TR Diagnosis:

14. Initial Reason Evaluated for TB Screening

Other 14. Initial Reason Evaluated for TB:

Was this a TB classified individual: Yes

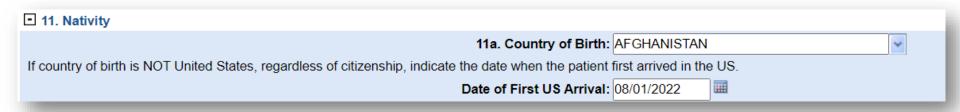
If yes, B0, B1, B2 or B3?: B2

Leave items blank or indicate "unknown" if no information available



Nativity

- Country of Birth
 - Provide the actual country (or U.S. territory) of birth regardless of whether they were U.S.
 citizens at birth. If born in the United States, select "United States".
- Date of First U.S. Arrival
 - If born outside of the United States, enter the known or best estimated date of when the patient first arrived in the United States.





Updated

Nativity (continued)

- 11c. Countries of birth for primary guardians
 - Complete only for patients less than 15 years old.





Initial reason evaluated for TB

Contact investigation

Includes source case investigations

| 14. Initial Reason Evaluated for TB: | ~ |
|--------------------------------------|---|
| 14. Initial Reason Evaluated for TB: | |

Screening

- Any type of planned screening for TB disease or LTBI in a specific population, other than through a contact investigations.
 - Includes targeted or prioritized testing, intake in correctional setting, class B notifications, administrative screening for employment, etc.

TB symptoms

- Signs and symptoms consistent with TB
- Select only if patient as signs and symptoms at time of diagnostic evaluation and neither contact investigation or screening apply to the case. Select when TB symptoms are the reason that the patient came to the attention of the medical community.

Other

- Incidental chest radiograph, incidental lab results, unexpected clinical finding when TB was not being considered, etc.
- Room to provide detail if other selected

Unknown

Other Risk Factor Specify:

19. Current Smoking Status at Diagnostic Evaluation: Former smoker 20. Lived outside of US for More than 2 Months: Yes

Contacts



 Risk Factors Collapse Subsections ■ 15. Occupation and Industry 15a. Has the patient ever worked as one of the following? (select all that apply): None of the Above ■ 15b. Industry and Occupation Information **Current Occupation** Current Occupation Standardized Elementary school teacher **Current Occupation Standardized: Current Occupation: Current Industry Standardized:** Current Industry: More information about standardized occupation and industry codes is available here 16. Other Risk Factors Diabetic At Diagnostic Evaluation: No Homeless in the Past 12 Months: No Homeless Ever: No Resident of Correctional Facility at Diagnostic Evaluation: No 17. If Resident of Correctional Facility at Diagnostic Evaluation, Type of Facility: Other 17. If Resident of Correctional Facility at Diagnostic Evaluation, Type of Facility: Resident of Correctional Facility Ever: No Resident of Long Term Care Facility at Diagnostic Evaluation: No 18. If Resident of Long Term Care Facility at Diagnostic Evaluation, Type of Facility: Other 18. If Resident of Long Term Care Facility at Diagnostic Evaluation, Type of Facility: Injecting Drug Use in the Past 12 Months: No Noninjecting Drug Use in the Past 12 Months: No Heavy Alcohol Use in the Past 12 Months: No TNF Antagonist Therapy: No Post Organ Transplantation: No End Stage Renal Disease: No Viral Hepatitis (B or C Only): No Other Immunocompromise (other than HIV or AIDS): No Other Risk Factor: No

Leave items blank or indicate "unknown" if no information available



Current occupation and industry

Has the patient **ever** worked as one of the following?

- Healthcare worker "healthcare personnel" paid or unpaid persons working in a healthcare setting.
- Correctional facility employee person working in a correctional facility. If they have worked as HCP within corrections, select both options.
- Migrant/seasonal worker person who is required to be absent from a permanent place of residence for the uprose of seeking employment, or who may vary their employment for the purpose of remaining employed while maintaining a permanent place of residence.
- None of the above
- Unknown select only when it cannot be confirmed or denied that the person ever worked in any of the above fields.



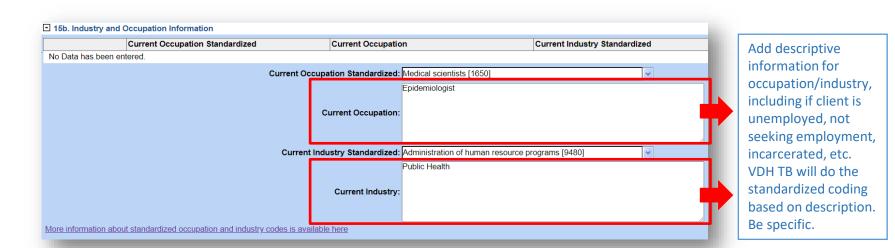


Current occupation and industry (continued)

Tuberculosis

What is the patient's current occupation and industry?

- Current Occupation the type of job the patient has ben doing most recently, whether paid or unpaid.
- Current Industry the kind of business or industry the patient works in.





Other risk factors

- Diabetic at diagnostic evaluation The patient had diabetes when TB diagnostic evaluation was performed.
 - Existing DM diagnosis, whether receiving treatment or not or
 - Hemoglobin A1c ≥ 6.5% or
 - Fasting plasma glucose ≥ 126 mg/dL or
 - 2-hour plasma glucose ≥ 200 mg/dL during an oral glucose tolerance test or
 - In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random please glucose ≥ 200 mg/dL
- Homeless in the past 12 months patient has experienced homelessness in the
 12 months preceding TB diagnosis evaluation
- Homeless ever patient has ever experienced homelessness

Someone experiencing homelessness may:

- Have no fixed, regular, and adequate nighttime residence
- A nighttime residence that is an operated shelter designed to provide temporary living, an institution that provides temporary residences for individuals intended to be institutionalized, a public or private place not designated for, or ordinarily used as, a regular sleeping accommodation for humans
- · Be in unstable housing situations, such as couch surfing



Other risk factors (continued)

- Resident of a correctional facility at diagnostic evaluation The patient
 was incarcerated or detained in a jail, prison, or other detention center when
 TB diagnostic evaluation was performed or initiated.
- Resident of a correctional facility ever patient has ever been incarcerated or detained in a jail, prison, or other detention center in their lifetime.
- Resident of long-term care facility at time of diagnostic evaluation –
 patient was a resident of a long-term care facility when TB diagnostic
 evaluation was performed or initiated.
- Injecting drug use in the past 12 months Patient used injection drugs in the past 12 months not prescribed by a healthcare provider; involves the use of hypodermic needles and syringes and may be intravenous, subcutaneous, or intramuscular.



Other risk factors (continued)

- Noninjecting drug use in the past 12 months The patient was incarcerated or detained in a jail, prison, or other detention center when TB diagnostic evaluation was performed or initiated. Per CDC, marijuana should always be recorded as noninjecting drug use, regardless of whether marijuana is legal for medicinal or recreational use. Also includes the misuse of licensed or prescription drugs.
- Heavy alcohol use in the past 12 months The National Institute on Alcohol Abuse and Alcoholism defines heavy alcohol use as binge drinking on 5 or more days in the month preceding diagnosis. Binge drinking is defined as a pattern of drinking that brings blood alcohol concentration levels to 0.08 g/dL. This typically occurs after four drinks for women and five drinks for men in about 2 hours.
- TNF-α antagonist therapy Patient recently received, or was receiving, tumor necrosis factor-alpha antagonist therapy when TB diagnostic evaluation was performed or initiated (e.g., Remicade, Humira)
- Post organ transplantation Patient has ever received a solid organ transplant (e.g., kidney, heart).



Other risk factors (continued)

- End-stage renal disease Patient has end-stage renal disease when TB diagnostic evaluation was performed or initiated (e.g., patient on dialysis).
- Viral hepatitis (B or C only) Patient has ever had a diagnosis of hepatitis
 B or C (acute or chronic)
- Other immunocompromise (other than HIV/AIDS) Patient is immunocompromised because of either a medical condition (e.g., leukemia, Hodgkin's lymphoma, carcinoma of the head or neck), or immunosuppressive therapy, such as prolonged use of high-doses of corticosteroids.
- Other (specify) Additional risk factors may be captured here and specified in free text.



Patient



- Leave items blank or indicate "unknown" if no information available
- Important to enter result of test for infection if available (TST or IGRA)
- Enter HIV status if known





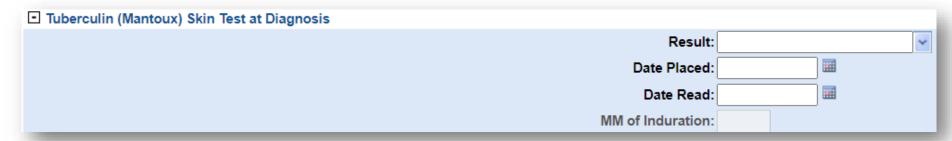
HIV status

| ☐ HIV Status | | | |
|--------------|------------------|----------|---|
| | HIV Status: | | ~ |
| | Collection Date: | = | |
| | Date Reported: | = | |

- Patient self-report of HIV status is not acceptable.
- HIV serology results must be documented.
- A positive test can be from any date
- A negative test result must be less than a year before the TB diagnostic evaluation
- Indicate as appropriate if test was not offered or if the client (or family) refused testing.



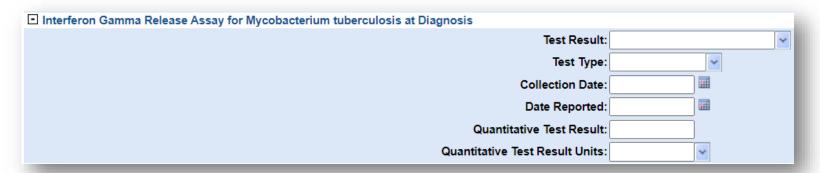
Tuberculin skin test



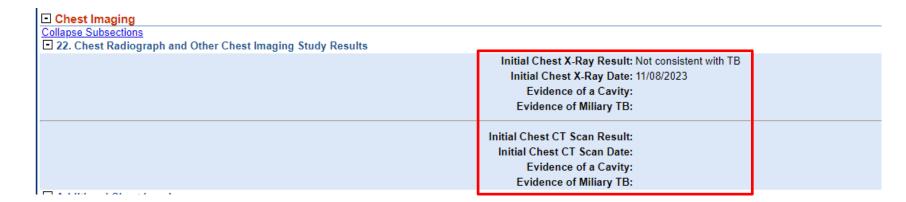
- A documented prior positive is acceptable, but not patient self report alone.
- Include induration.



Interferon gamma release assay



- A documented prior positive is acceptable, but not patient self report alone.
- Indicate if the IGRA performed was a QFT or a T-Spot.



MDR TB

LTBI Only

Contact Tracing

- Leave items blank or indicate "unknown" if no information available
- Important to enter result of imaging if known

Tuberculosis

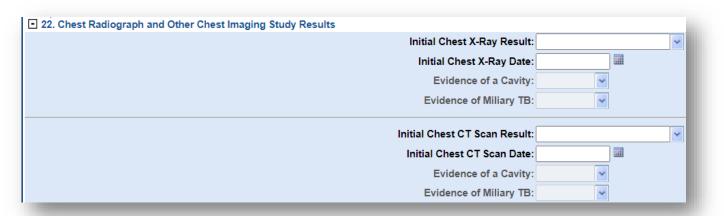
Case Info

TB Disease Only



Chest radiograph or other imaging results

- Imaging for someone diagnosed with LTBI should not be consistent with active TB disease.
- Consistent with TB includes hilar adenopathy, effusion, infiltrates, cavity, scarring consistent with TB.





LTBI Only Tab



Collapse Subsections

LTBI Treatment and Outcome

- Leave items blank or indicate
 "unknown" if no information available
- Important to enter treatment information if known

Was LTBI Treatment Offered: Yes

25. LTBI Therapy Started?: Yes

Treatment Start Date: 11/15/2023

Specify Initial LTBI Regimen: Isoniazid/Rifapentine (3 months; 3HP)

Other Specify Initial LTBI Regimen:

Treating Provider Type: Health Department

Other Treating Provider Type: Why LTBI Treatment Not Started:

Other Why LTBI Treatment Not Started:

26. Date Therapy Stopped: 01/15/2024

27. Treatment Administration (LTBI): Directly Observed Therapy (DOT)

28. Reason LTBI Therapy Stopped: Completed Treatment

Other 28. Reason LTBI Therapy Stopped:

NTSS State Case Number should be entered as 4 digit report year+ 2 letter state abbreviation + 9 digit alphanumeric number

NTSS state case number (YYYY-GA-ABCD56789):

Severe Adverse Event (select all that apply):

PLEASE IMMEDIATELY REPORT ALL ADVERSE EVENTS RESULTING IN HOSPITALIZATION OR DEATH TO CDC AT LTBIDRUGEVENTS@CDC.GOV

Client Initially Worked Up as a Presumptive TB Case but Active Disease Ruled Out: No



Collapse Subsections

LTBI Treatment and Outcome

- Leave items blank or indicate
 "unknown" if no information available
- Important to enter treatment information if known

Was LTBI Treatment Offered: Yes

25. LTBI Therapy Started?: Yes

Treatment Start Date: 11/15/2023

Specify Initial LTBI Regimen: Isoniazid/Rifapentine (3 months; 3HP)

Other Specify Initial LTBI Regimen:

Treating Provider Type: Health Department

Other Treating Provider Type: Why LTBI Treatment Not Started:

Other Why LTBI Treatment Not Started:

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NTSS State Case Number should be entered as 4 digit report year+ 2 letter state abbreviation + 9 digit alphanumeric number

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Severe Adverse Event (select all that apply):

PLEASE IMMEDIATELY REPORT ALL ADVERSE EVENTS RESULTING IN HOSPITALIZATION OR DEATH TO CDC AT LTBIDRUGEVENTS@CDC.GOV

Client Initially Worked Up as a Presumptive TB Case but Active Disease Ruled Out: No



Was LTBI treatment offered?



Indicate if treatment was offered, whether or not the client started treatment



LTBI therapy started

25. LTBI Therapy Started?: Yes

Indicate if the client started treatment for LTBI



Treatment start date and regimen



- Indicate the first date the client took medication for LTBI, if known, and the regimen they were on.
 - Regimen options include:
 - Isoniazid (6 months; 6H)
 - Isoniazid (9 months; 9H)
 - Isoniazid/Rifapentine (3 months; 3HP)
 - Other (can specify) use this for isoniazid/rifampin (3 months; 3HR)
 - Rifampin (4 months; 4R)
 - RIPE/HRZE (2 months) for clients treated with full TB regimen for 8 weeks but then TB was ruled out at that point



Treating Provider Type



- Indicate the type of provider prescribing LTBI treatment
 - Options include:
 - Federally Qualified Health Center (FQHC)
 - Health Department
 - Other (can specify)
 - Private Provider
 - Urgent Care (e.g., Patient First, CVS Minute Clinic, etc.)

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Why LTBI treatment not started



- If the client didn't start treatment, indicate a reason, if known
 - Options include:
 - Drug shortage
 - History of previous treatment for TB or LTBI
 - Lost to follow up
 - Other
 - Patient refused
 - Provider decision
 - Treatment medically contraindicated
 - Treatment not offered based on local clinic guidelines
 - Unknown

LTBI Only



Treatment completion information

- If known, indicate the date therapy stopped
- Select all that apply for treatment administration
 - 3HP usually involves DOT or EDOT
 - 4R and others usually selfadministered
- Select a reason therapy was stopped:
 - Completed treatment
 - Developed active TB disease
 - Lost to follow up
 - O Not LTBI (clinician decision)
 - Other
 - Patient Choice
 - Pregnancy
 - Severe adverse event
 - Unknown





Supplemental Info Tab

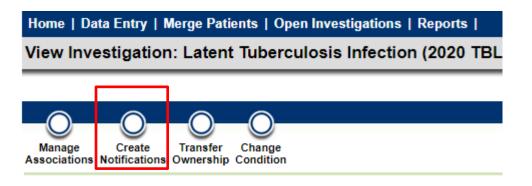
Shows associated labs, morbidity reports, uploaded documents, etc.

| Patient | Case Info | Tuberculosis | TB Disease Only | MDR TB | LTBI Only | Contact Tracing | Contacts | Contact Records | Supplemental Info | | |
|---------------------------------|----------------------|------------------------|-----------------|-----------|-----------|-----------------------------|------------|-----------------|----------------------|------|---------|
| Go to: Association | s Notes and Attach | ments <u>History</u> | | | _ | | | | | | |
| Collapse Sections | | | | | | | | | | | |
| ■ Associations | | | | | | | | | | | |
| Collapse Subsection | | | | | | | | | | | |
| ■ Associated La | b Reports | | | | | | | | 1- | | P |
| Date Received | | | | | | Date Collected Test Results | | | | | |
| Nothing found to di | | | | | | | | | | | |
| ■ Associated Mo | rbidity Reports | | | | | | | | | | |
| Date Received | | | | Condition | | Re | eport Date | | | Туре | Obse |
| Nothing found to di | | | | | | | | | | | |
| ■ Associated Tree | atments | | | | | | | | | | |
| Date | | | Treatment | | | | | Treatr | nent ID | | |
| Nothing found to di | | | | | | | | | | | |
| ■ Associated Va | ccinations | | | | | | | | | | |
| Date Administere | d | | | | Vaccine A | Administered | | | | | Vaccir |
| Nothing found to di | splay. | | | | | | | | | | |
| ■ Notes And Att | | | | | | | | | | | |
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| Date Added | | | | | Added E | Ву | | | | Note | |
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| Date Added | | | | Added By | | | | File Name | | | Descrip |
| Nothing found to | display. | | | | | | | | | | |
| , | | | | | | | | | | | |



Submit a notification

 If your investigation meets the confirmed or suspect case status, you may submit a notification by hitting the "Create notification" button.





Questions?

- Contact Laura Young
 - <u>laura.r.young@vdh.virginia.gov</u>
 - 0 804-836-6059
- You can also always email <u>tuberculosis@vdh.virginia.gov</u>