NEDSS Base System (NBS) User Guide

https://hssi.tn.gov/auth/login

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Tracking infectious disease incidence and prevalence, is at the heart of the work of the Communicable and Environmental Diseases and Emergency Preparedness (CEDEP) Division. The reporting and tracking of cases of illness is essential to knowing who is involved and where the problems are occurring. Prompt notification of a communicable disease can allow public health officials to locate and treat exposed persons, identify and contain outbreaks, and interrupt disease transmission. The information obtained from disease reporting is also used to monitor disease trends, identify high risk groups, develop policy, and design prevention programs.

Surveillance is dependent on reporting and the assistance of personnel in local and regional health departments, physicians, infection control practitioners, and laboratory staff. Many committed health care professionals throughout Tennessee contribute to the ongoing reporting of diseases. The National Electronic Disease Surveillance System (NEDSS) is a secure online framework that allows healthcare professionals and government agencies to communicate about disease patterns and coordinate national response to outbreaks.

The NEDSS framework includes a set of specifications that includes software, hardware, databases and data format standards. The Centers for Disease Control and Prevention (CDC) is in charge of maintaining and expanding NEDSS at the center of the United States Public Health Information Network (PHIN). The CDC mandates that hospitals, clinics and state health agencies all adopt NEDSS standards so that the speed, accuracy, standardization and viability of data about diseases are improved.

NEDSS was created to integrate and replace existing CDC surveillance systems, including the National Electronic Telecommunications System for Surveillance (NETSS), HIV/AIDS reporting systems, vaccination programs, and tracking systems for tuberculosis and other infectious diseases. Historically, such systems have been isolated from one another due to differing data standards, legacy systems, patient privacy concerns and a lack of tools for information exchange.

Prior to the introduction of NEDSS, state health departments received most public health data by mail and then entered the data on the documents into computer databases. Such data transfer often occurred long after disease incidences were first reported. Many diseases were underreported, inadequately documented or inaccurately recorded.

NBS System Overview

Late in 2000, CDC contracted with CSC to lead development of a NEDSS-compatible Base System (NBS), to be offered to state health departments and eventually to other organizations. To address these issues, NEDSS designers created a Base System as a platform that state agencies and health care providers could use to integrate public health surveillance systems data and process in a secure environment.

This Base System is made up of five components:

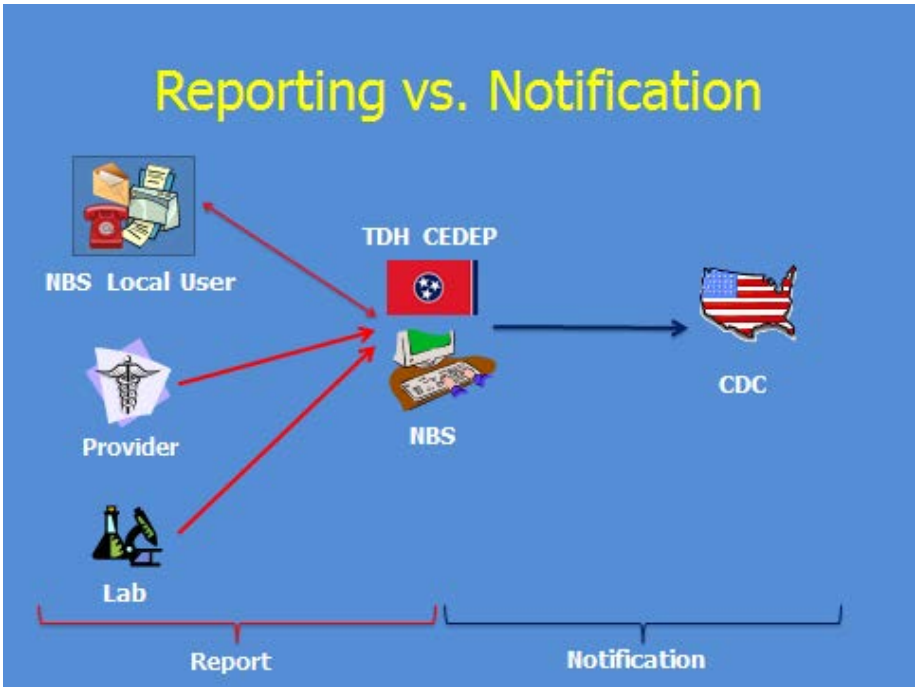
- Web-based modules that allow easy online entry and management of data sets, including demographic and disease data
- A Web application server called Silverstream that supports these Web-based modules
- An integrated database management system
- Messaging software that allows electronic data interchange between state agencies and the CDC or state laboratories
- Intranet-based authentication and authorization for security that is fully compliant with HIPAA regulations.

NEDSS informs public health officials of patient visits for specific diseases and monitors lab results to detect increased frequency of certain conditions. Because electronic data is transmitted automatically, epidemiological investigations are initiated much more quickly. Reporting time for communicable diseases has shrunk from around 24 days to 3 days, with a 300% increase in the number of laboratory reports to public health.

With NEDSS's improved communications, reliable information and automatic data exchange, public health departments and other stakeholders have timely and accurate insight into the state of the nation's health, delivering a better, healthier life for all Americans. This overview shows why we use NBS, how the benefits outweigh the drawbacks and how end users can interact with the system in various ways to conduct their health related analysis and business functions quickly, securely and successfully.

Tennessee Department of Health staff can enter data into the NBS system manually, creating investigations and patient records for a multitude of diseases and conditions. Lab reports and other

health documents can also be imported electronically into the system. These, in turn, are reviewed by supervisor-level personnel, and then NBS notifies the CDC of the investigation if the disease is "notifiable". What's the difference between reportable diseases (State Health Department has to know) and notifiable diseases (CDC has to know)?



In the United States, requirements for reporting diseases are mandated by state laws or regulations, and the list of reportable diseases in each state differs. The diseases and events listed on the Tennessee Department of Health Reportable Diseases and Events are declared to be communicable and/or dangerous to the public and are to be reported to the local health department by all hospitals, physicians, laboratories, and other persons knowing of or suspecting a case in accordance with the provision of the statutes and regulations governing the control of communicable diseases in Tennessee (T.C.A. §68 Rule 1200-14-01-.02).

State of Tennessee regional and local health departments are the foundation of this reporting; the PH-1600 form is used to report a case that is on the Tennessee Department of Health Reportable Diseases and Events list. In addition, case definitions assist providers in determining whether or not a case is reportable.

Epidemiologists can analyze data through NBS; there are pre-made reports ready to run as well as a tool which allows investigators/researchers to create basic reports of their own within the system. NBS also

has the capability to export data extracts for much more detailed analysis using other programs like SAS or SPSS. Usual NBS tasks include logging into the system, searching for patients, adding patients or paper lab reports for patients in the system, checking work queues, creating investigations on diseases, associating lab reports with investigations, changing jurisdiction on investigations, merging records and running reports on patients, lab reports or investigations.

Common NBS Terms include:

- **Event** – all types of surveillance information associated with a patient; this term includes observations (lab reports), investigations, vaccinations, and sometimes treatments.
- **Observation** – refers to types of surveillance information most likely to trigger an investigation, specifically lab reports or morbidity reports.
- **Investigation** – in NBS, refers to the "bucket" containing all surveillance information relating to the public health investigation
- **Notification** – a message sent to CDC indicating a case of a Nationally Notifiable Disease

NBS benefits include:

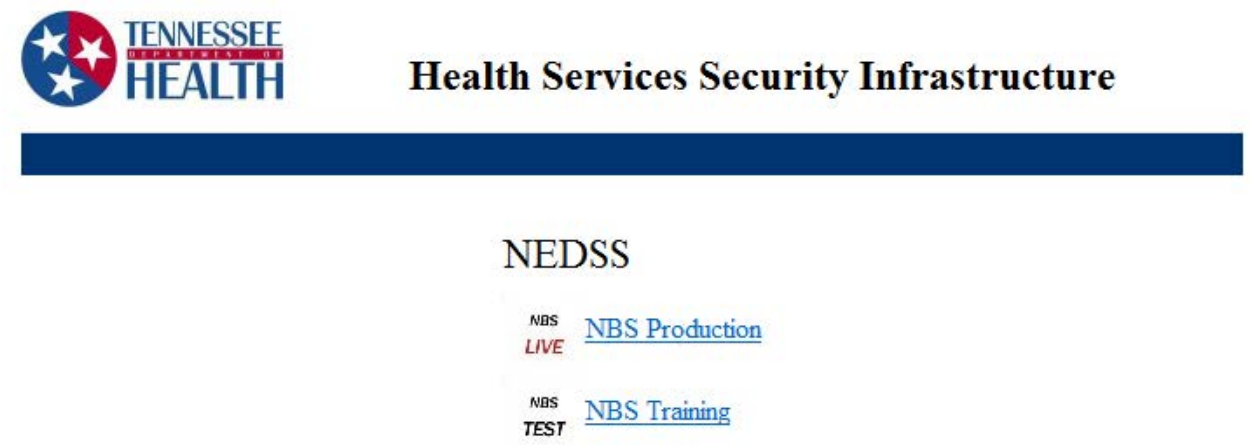
- Having a secure database which can store case, investigation, and laboratory information;
- Needing less hard-copy data storage needed by regions, metros, and programs;
- Being useful for basic epidemiologic analyses, business process, work-flow, and program-specific work-burden analyses, and report generation, and
- Allowing data to be used at the local or state level by epidemiologists, data analysts, investigation staff, clinical staff, and program managers.

NBS drawbacks are limited to:

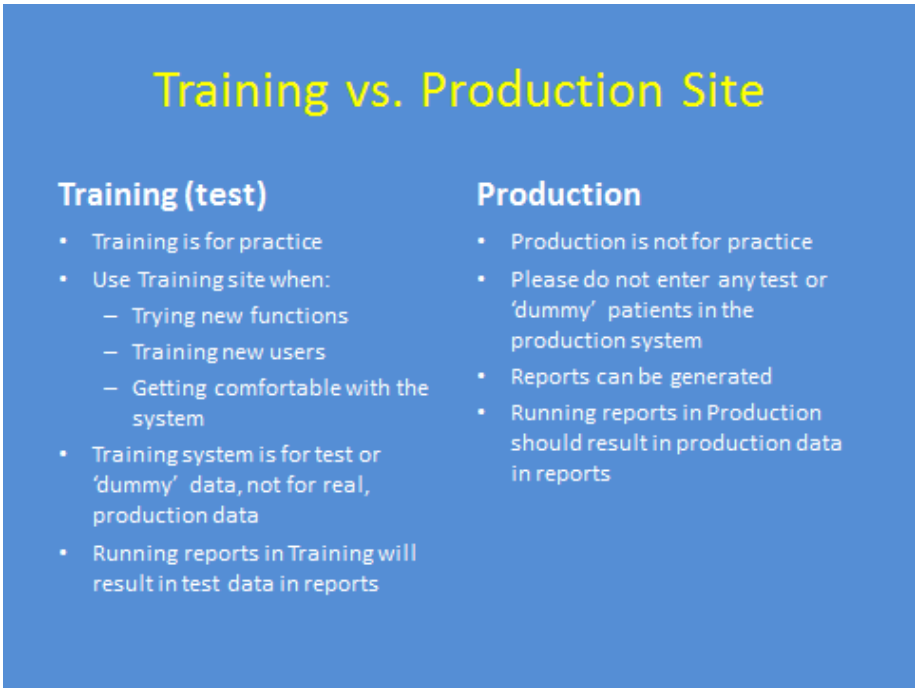
- Being an intimidating system to learn at first, with a learning curve;
- Requiring some local-user, program-level oversight for maintaining data quality;
- Lacking flexibility in user interface changes, and
- Having a complex procedure for advanced analysis and reporting due to its relational database design. This requires the skills of a database administrator for NBS.

The end user sees a web page as a user interface for the State of Tennessee NBS system. This enables any user with an internet connection on a PC, a user account set up by the NBS systems administrator,

and a copy of Microsoft Internet Explorer to access the NBS system. When logging in, the NBS user can choose one of two environments: NBS Training or NBS Production.



There are some important differences in the two environments in NBS.



The Surveillance Systems and Informatics Program (SSIP) of the Communicable and Environmental Disease Services and Emergency Preparedness (CEDEP) division of the Tennessee Department of Health maintains the NBS system, trains personnel in how to use it, troubleshoots issues and helps users develop the reports or data extracts they need in order to complete surveillance activities within the State of Tennessee.

NBS Acronyms and Definitions

- **CDC** – Centers for Disease Control and Prevention (headquartered in Atlanta, GA and author of NBS)
- **CEDEP** – Communicable and Environmental Diseases and Emergency Preparedness section of the Tennessee Department of Health
- **CSTE** – Council of State and Territorial Epidemiologists
- **Data Management** – The process of collecting, organizing, storing, and analyzing data so that it is accessible and can be used as a form of information
- **De-duplication** – Process that runs nearly daily to resolve duplicate patient records in NBS
- **De-identified Data** – Health information that has been stripped of elements that could identify the subject including name, address, telephone number, and social security number
- **EHR** – Electronic Health Record
- **ELR** – Electronic Laboratory Results Reporting
- **ETL** – Extract, Translate, and Load (ETL) is a process in NBS occurring 3 times per week where data from the operational data store is moved to the reporting database.
- **HIPAA** – Health Insurance Portability and Accountability Act of 1996
- **Incidence** – The number of new cases of a condition in a population at risk during a given time period.
- **Morbidity** – An illness or abnormal condition or quality; the state of being diseased.
- **NBS** – **N**EDSS **B**ase **S**ystem is the CDC supplied NEDSS solution currently used by multiple states, including TN (WV, AL, KY, AR, VA, SC)
- **NEDSS** – **N**ational **E**lectronic **D**isease **S**urveillance **S**ystem is an initiative that promotes the use of data & information systems standards for disease surveillance
- **Notifiable** – The CDC and CSTE designate certain conditions as Nationally Notifiable. CDC requests that states notify them when an instance of these diseases/conditions occurs.
- **Prevalence** – The number of total cases of a condition in a population at a certain time.
- **Reportable** – Each state defines certain conditions as State Reportable. Cases of these diseases/conditions are reported from hospitals, laboratories, and healthcare providers.

Internet Explorer Configuration for NBS Users

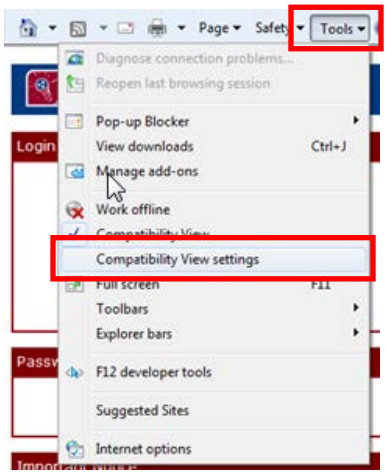
You will need to modify your Internet Explorer (IE) browser settings to work properly with NBS. Please do not use any other browser other than IE with NBS.

The primary version of IE that is supported by state IT is IE9, and the instructions below show screen shots from IE9. However, the steps in IE10 and IE11 for these configuration changes are identical to those of IE9.

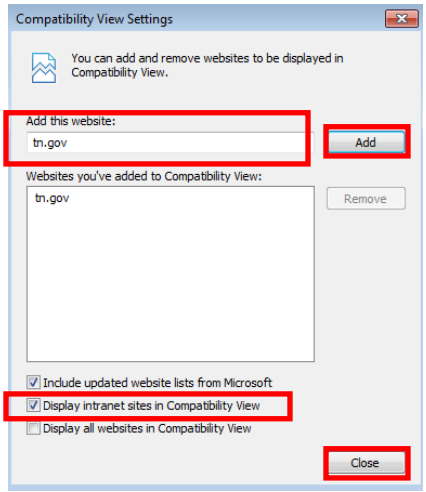
There are 3 settings that need to be adjusted in Internet Explorer:

A) Configure the Compatibility View settings.
B) Turn off the pop up blocker.
C) Manage Temporary Internet Files.

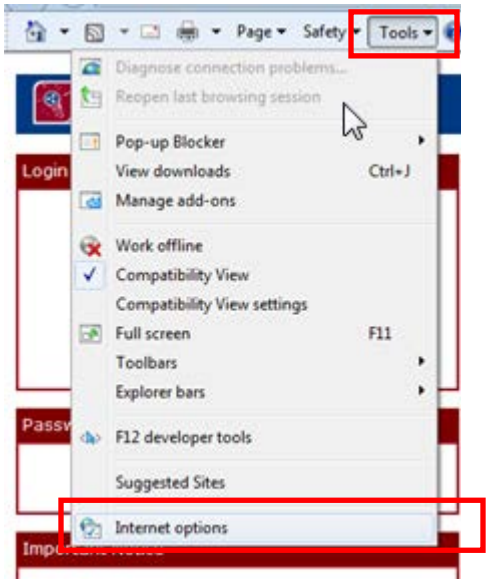
A) Configure Compatibility View - Click on 'Tools', then click 'Compatibility View Settings'.



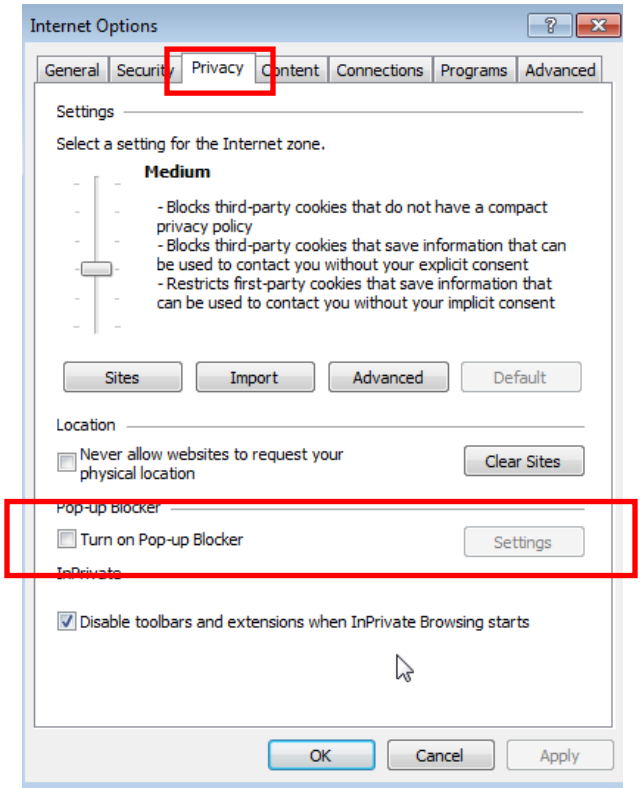
Type **tn.gov** into the small box and then click on 'Add' so that **tn.gov** appears in the larger box. Make sure the box 'Display intranet sites in Compatibility View' is checked, then click 'Close'.



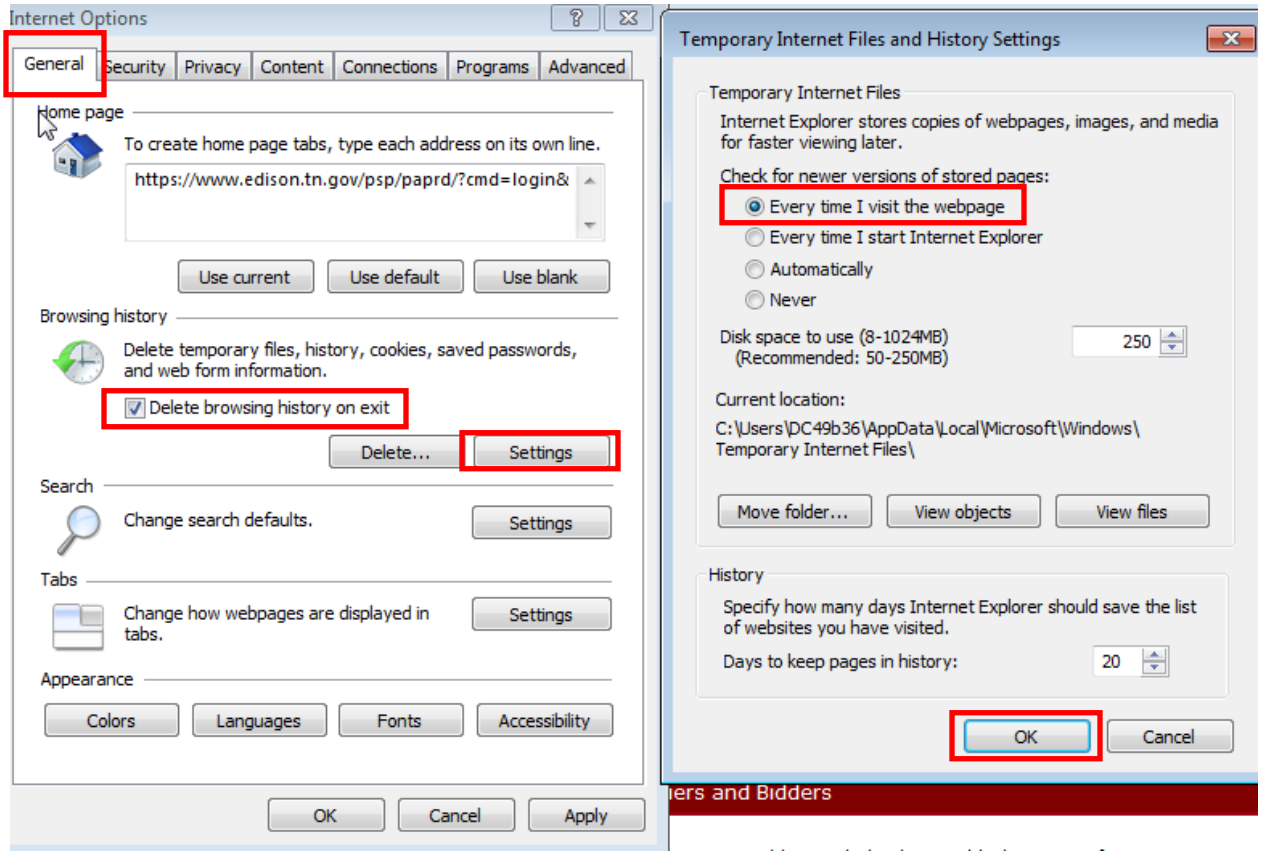
B) Turn off pop up blocker - Click on 'Tools' then click on 'Internet Options'.



Click on the 'Privacy' tab, and make sure the 'Turn On Pop-Up Blocker' button is NOT checked (you can restore this setting later, if desired). Proceed to step **C)**.



C) Manage Temporary Internet Files - (if the 'Internet Options' menu is not showing, click on 'Tools' then 'Internet Options') Within the 'Internet Options' menu, click on the 'General' tab, and make sure the 'Delete browsing history on exit' box is checked. Next, click on the 'Settings' button under 'Browsing History' (middle of the page). When the next menu box appears, under 'Temporary Internet Files', place the dot in the selection 'Every time I visit the webpage'. Click 'OK' and the click 'OK' again on the 'Internet Options' menu.



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If you have any questions about these instructions, you can email us at CEDS.Informatics@tn.gov. You can also phone the TDH CEDEP SSIP group at (615) 532-6655.

NBS Procedures

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CEDEP Procedures: Receiving Paper Case Reports

The following set of procedures documents the steps that need to be followed when you receive a paper case report of a reportable disease from a healthcare provider.

1. Paper case report (PH-1600 form) is received from a healthcare provider
2. Check to make sure the disease/event is reportable
3. Search for the patient in NBS

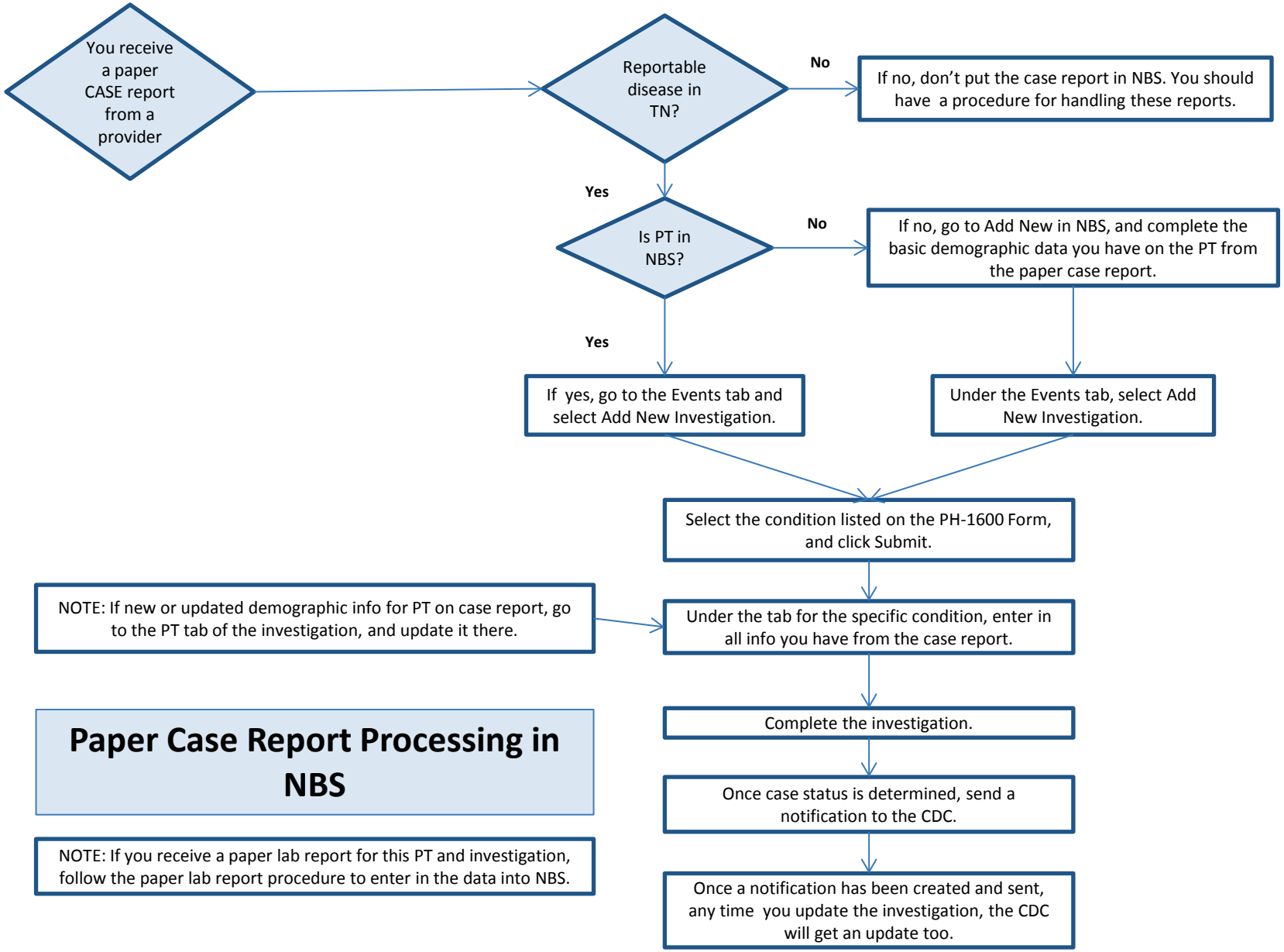
A. If a lab has been received for this case prior to receiving the case report:

1. If a lab is already in NBS, an investigation should have been created. If not, create the investigation.
2. Enter/update any information you have from the case report in the investigation (including provider information)

B. If a lab has not been received for this case prior to receiving the case report:

1. If the patient is not in the system, 'Add New' and complete all the 'Basic Demographic Data' that you have
2. Under the 'Events' tab, select 'Add New' Investigation
3. Select the condition that is listed on the PH-1600 form, and 'Submit'
4. The patient demographic information will auto-populate in the 'Patient' tab
5. Under the tab specific for the condition, enter all the information that is included in the case report
6. As the investigation is being completed, all the information collected should be entered into NBS
7. The *MMWR* week and year auto-populates with the week/year corresponding to the date the investigation is created in NBS. (For more information on *MMWR* week, go to the *MMWR* Section of this guide.)
8. Update information gathered regarding the patient demographics in the 'Patient' tab in the investigation
    a. NOTE: updating patient demographics in the patient's *file* will not update this information in lab reports or investigations, therefore all patient information should be updated in the specific investigation.
9. When a case status has been determined (Probable, Suspect, Confirmed, or Not a Case), a notification should be created by selecting 'Create Notification'
    a. NOTE: notifications should be created for ALL cases of reportable diseases/events, even for 'Not a Case.'
10. Once a notification is sent, any changes made to the investigation (e.g. case status) of the patient will automatically update in the notification
11. When a laboratory report is received that corresponds to this previously created investigation, follow the steps for 'Associating Observations'
12. When the investigation is complete, the status should be changed to 'closed' in NBS

NOTE: For most conditions, it is common practice to create the investigation from a lab report as the lab report would prompt the start of the investigation. There are some conditions, especially those with clinical case definitions, where an investigation would be started before the receipt of a lab report (TB, varicella deaths, pregnancy associated influenza deaths, pediatric influenza deaths, etc.).



Paper Case Report Processing in NBS

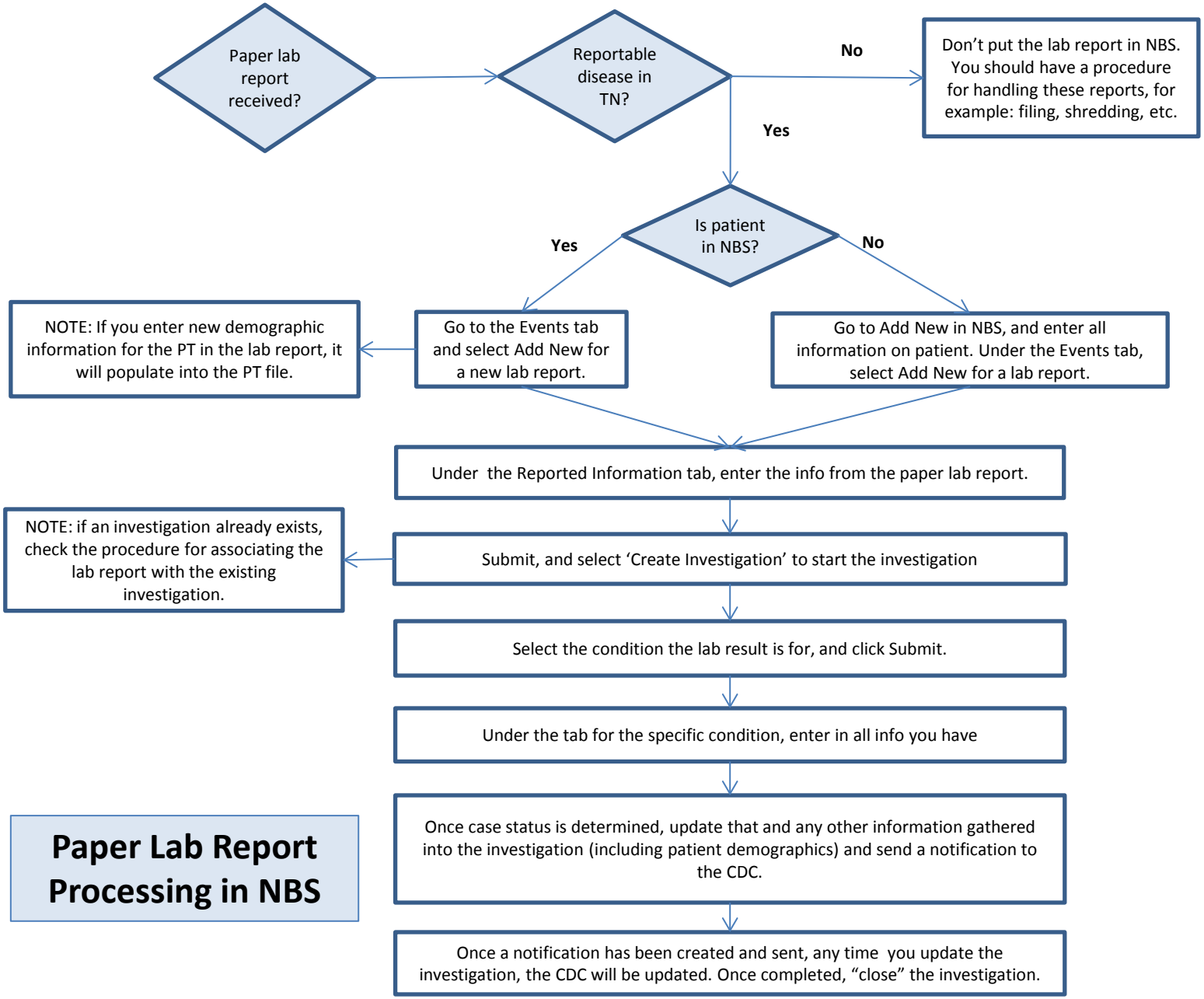
NOTE: If you receive a paper lab report for this PT and investigation, follow the paper lab report procedure to enter in the data into NBS.

CEDEP Procedures: Receiving Paper Laboratory Reports

The following set of procedures documents the steps that should be taken when you receive a paper laboratory report of a reportable disease.

1. Paper laboratory test result is received
2. Check to make sure the disease/event is reportable
3. Search for the patient in NBS
4. If the patient is already in the system, skip to step 6
5. If the patient is not in the system, 'Add New' and complete all the 'Basic Demographic Data' that you have
6. Under the 'Events' tab, select 'Add New' lab report
7. The patient demographic information will auto-populate in the 'Patient' tab
8. Under the 'Report Information' tab, enter all the information that is included in the lab report
9. If an investigation has already been created for this event, follow the procedures for 'Associating Observations'
10. If this is the first report documenting the event, submit the information and create an investigation for the specific disease/event
11. As the investigation is being completed, all the information collected should be entered into NBS
12. The *MMWR* week and year auto-populates with the week/year corresponding to the date the investigation is created in NBS. (For more information on *MMWR* week, go to the *MMWR* Section of this guide.)
13. Update information gathered regarding the patient demographics in the 'Patient' tab in the investigation
    a. NOTE: updating patient demographics in the patient's *file* will not update this information in lab reports or investigations, therefore all patient information should be updated in the specific investigation.
14. When a case status has been determined (Probable, Suspect, Confirmed, or Not a Case), a notification should be created by selecting 'Create Notification'
    a. NOTE: notifications should be created for ALL cases of reportable diseases/events, even for 'Not a Case.'
15. Once a notification is sent, any changes made to the investigation (e.g. case status) of the patient will automatically update in the notification
16. When the investigation is complete, the status should be changed to 'closed' in NBS

NOTE: For most conditions, it is common practice to create the investigation from a lab report as the lab report would prompt the start of the investigation. There are some conditions, especially those with clinical case definitions, where an investigation would be started before the receipt of a lab report (TB, varicella deaths, pregnancy associated influenza deaths, pediatric influenza deaths, etc.).



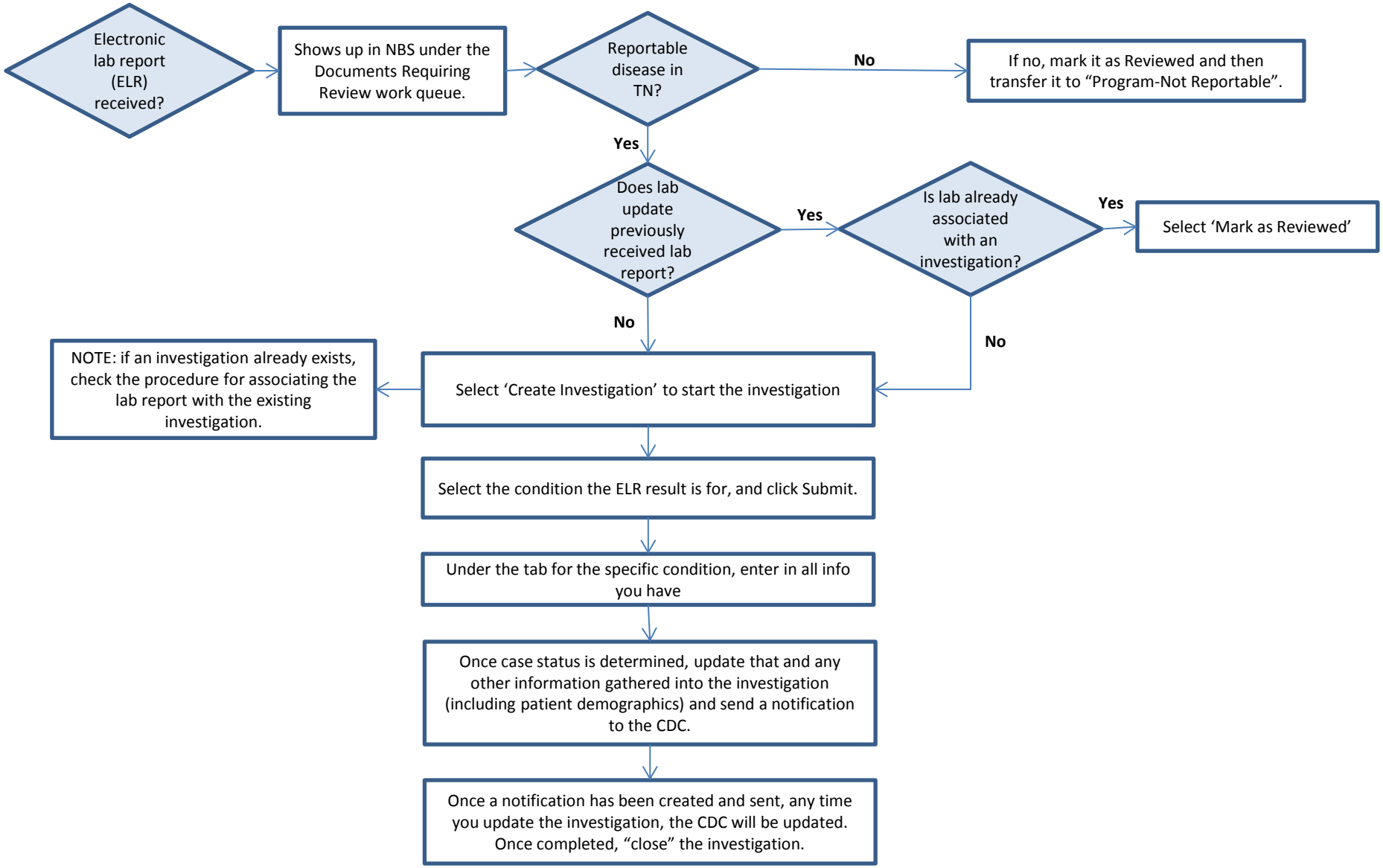
Paper Lab Report Processing in NBS

CEDEP Procedures: Receiving Electronic Laboratory Result Reports

The following set of procedures documents the steps that need to be taken when an ELR is received by NBS.

1. Electronic laboratory result report (ELR) update is received by NBS
2. The laboratory report will show up in NBS under the 'Documents Requiring Review' work queue
3. Open 'Documents Requiring Review,' and select the test/condition to view the new lab report
4. Check to make sure the disease/event is reportable. If not reportable, mark as reviewed, and then transfer to 'Program Area' = 'Non Reportable'
    a. NOTE: For the difference between not reportable and not a case, see the Frequently Asked Questions
5. If this lab updates a previously received lab, you will see more than one version under "Associated Lab Document(s)" at the bottom of the page
    a. NOTE: If an investigation has already been created, and this lab has already been associated to that investigation, you can acknowledge the update by selecting 'Mark as Reviewed'
6. Once you have looked through the lab report, select 'Mark as Reviewed' or create investigation (step 7)
    a. Once the lab is reviewed, it will no longer show up in your queue. If you are not ready to create the investigation (step 7), it is not advised to 'Mark as Reviewed.'
7. Create an investigation for the specific disease/event
    a. NOTE: If an investigation has already been started for this event, you need to follow the procedures for 'Associating Observations'.
8. The patient demographic information will auto-populate in the 'Patient' tab
9. As the investigation is being completed, all the information collected should be entered into NBS
10. The *MMWR* week and year auto-populates with the week/year corresponding to the date the investigation is created in NBS. (For more information on *MMWR* week, go to the *MMWR* Section of this guide.)
11. Update information gathered regarding the patient demographics in the 'Patient' tab in the investigation
    a. NOTE: updating patient demographics in the patient's *file* will not update this information in lab reports or investigations, therefore all patient information should be updated in the specific investigation.
12. When case status is determined (Probable, Suspect, Confirmed, or Not a Case), a notification should be created.
    a. NOTE: notifications should be created for ALL cases of reportable diseases/events, even for 'Not a Case.'
13. Once a notification is sent, any changes made to the investigation (e.g. case status) of the patient will automatically update in the notification
14. When the investigation is complete, the status should be changed to 'closed' in NBS

NOTE: For most conditions, it is common practice to create the investigation from a lab report as the lab report would prompt the start of the investigation. There are some conditions, especially those with clinical case definitions, where an investigation would be started before the receipt of a lab report.



ELR Processing in NBS

CEDEP Procedures: Associating Observations of Reportable Diseases

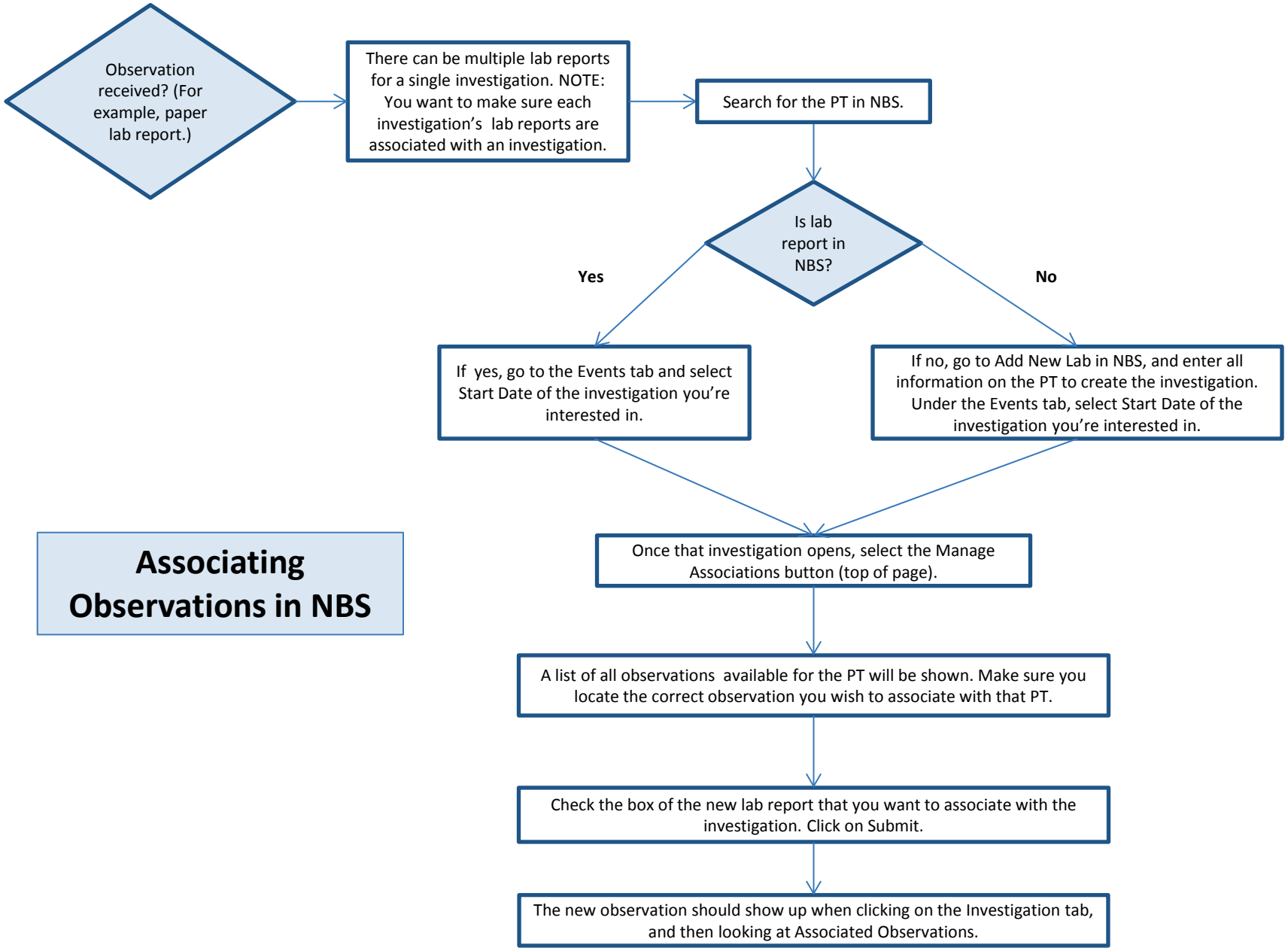
The following set of procedures documents the steps that need to be taken to associate an observation of a reportable disease with an investigation.

If an investigation is started in NBS prior to the receipt of a lab report or subsequent lab reports are received for that investigation, follow the procedures below to associate (connect) the lab to the investigation.

1. An observation (lab report) needs to be associated with a previously created investigation in NBS
2. There can be multiple lab reports for a single investigation
3. You want to ensure that all lab reports in NBS are associated with an investigation
4. Search for the patient in NBS
5. Make sure the lab report has been entered into NBS, if it has not, enter it now
6. Once in their file, select the 'Events' tab to look at investigations and observations
7. Select the 'Start Date' of the investigation you want to associate with the lab
8. Once the investigation is opened, select the 'Manage Associations' button towards the top of the page
9. A list of all observations available for the patient will be shown
10. Make sure you locate the correct observation that you wish to associate
11. Check the box of the new lab report that you would like to associate with the investigation
12. Press 'Submit'
13. The new observation can now be seen when looking at the investigation tab under 'Associated Observations'

NOTE: For most conditions, it is common practice to create the investigation from a lab report as the lab report would prompt the start of the investigation. There are some conditions, especially those with clinical case definitions, where an investigation would be started before the receipt of a lab report (TB, varicella deaths, pregnancy associated influenza deaths, pediatric influenza deaths, etc.).

Associating Observations in NBS



CEDEP Procedures: Managing Duplicates

The following set of procedures documents the steps that need to be taken to resolve duplicates (observations, investigations, or patients) found in NBS.

Managing Duplicate Observations (Lab or Case Reports)

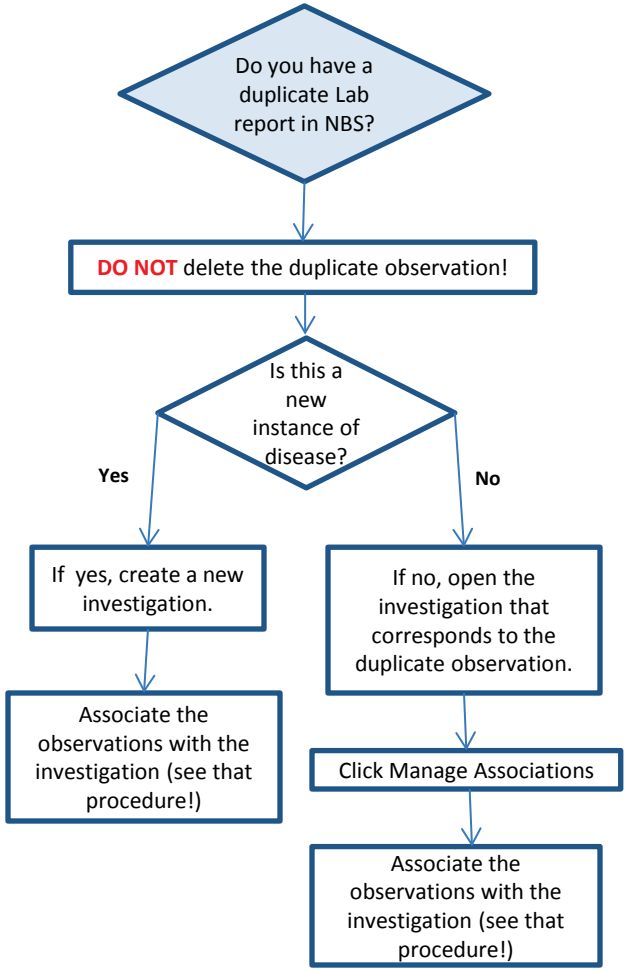
1. There are duplicate observations in NBS
2. Do not delete the duplicate observations
3. Open the appropriate investigation that corresponds to the lab reports, and click 'Manage Associations'
4. Associate all of the appropriate observations with the investigation
5. All lab reports that are in NBS should be associated with an investigation
6. Some diseases are only acquired once in a person's lifetime
    a. If an observation comes in for such a disease, it needs to be associated with the original investigation. (Examples of these diseases include Hepatitis (except pregnant Hepatitis B), most vector-borne diseases, Pertussis, Measles, Mumps, etc.)
7. Other diseases can be acquired more than once. If the new result indicates a new occurrence of the disease or a separate disease, then a new investigation should be created.

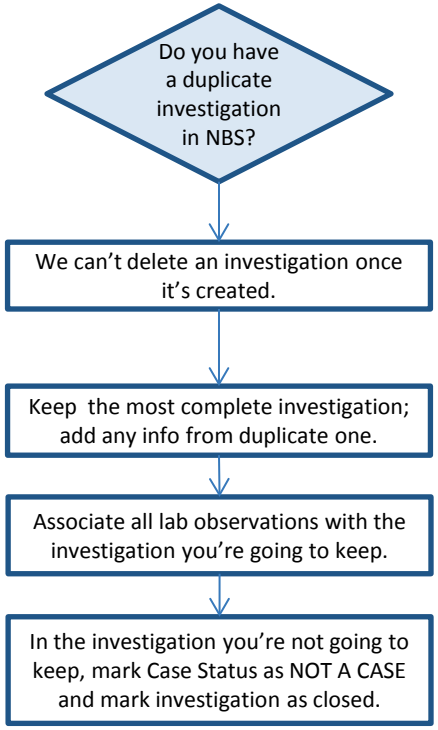
Managing Duplicate Investigations

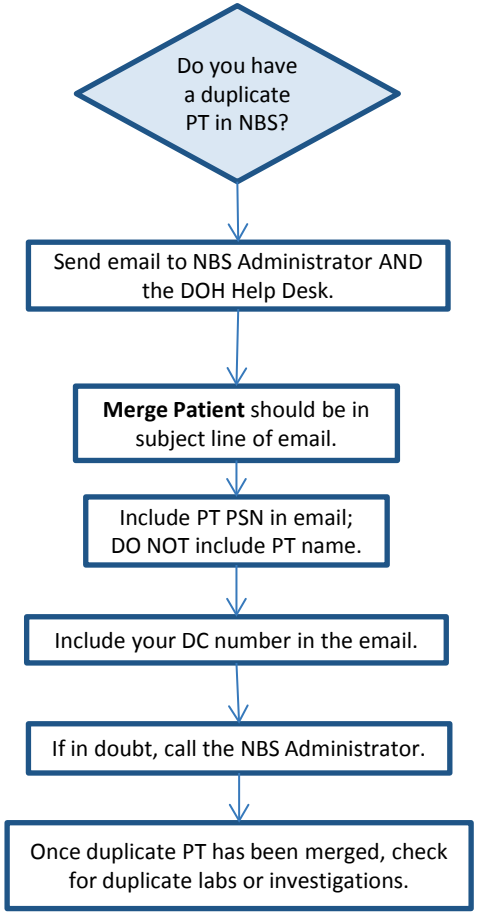
1. There are duplicate investigations for the same patient and event in NBS
2. Duplicate investigations result in "counting" the event twice in surveillance activities
3. It is not possible to delete an investigation once it is created
4. Keep the investigation with the most information
5. Transfer all information from both investigations to the investigation that will be kept
6. Associate all observations (lab reports) with the investigation being kept
7. In the other investigation, mark the case status as 'Not a Case' and the investigation status as 'Closed'. In surveillance activities, it will not be counted.

Managing Duplicate Patient Files

1. There are duplicate patient files in NBS.
2. Duplicate patient files result in duplicate investigations and "counting" the event twice in the surveillance activities
3. The NBS System Administrator must take care of merging the two patient files
4. Send an email to the NBS System Administrator and the Department of Health Help Desk (DOH.HelpDesk@tn.gov) with "Merge Patient" in the subject line
5. In the email, include the PSN/Patient ID for both patient files (not patient name) along with your personal DC#
6. If there is an error in the name, please change the incorrect file in NBS prior to notifying the administrator
7. If there is something unusual, please make note of this. For example, if you have Joy, Jordan and Jordan, Joy and are unable to determine which is correct, you will want to keep both but merge them into one file. The two files must have something in common (e.g. DOB, Social Security Number). Do not send patient names in an email; if you need to discuss a situation call the NBS System Administrator.
8. After the patient files are merged, you need to make sure there are not duplicate observations or investigations







Dealing with Duplicates in NBS

CEDEP Procedures: Change of Jurisdiction (inside Tennessee)

The following set of procedures documents the steps that need to be taken when it is determined that a patient needs to be transferred to another Tennessee jurisdiction in NBS.

Laboratory Reports Not Yet Marked as "Reviewed" (*You can still see the "Mark as Reviewed" button*)

1. A patient resides in another Tennessee jurisdiction, so the information must be transferred in NBS
    a. Select 'Edit' in the lab report and update the demographic information in the 'Patient' tab
    b. Labs coming in via ELR will not have the 'Edit' option in the lab report
        - Use the 'Lab Report Comments' section to enter the new demographic information
2. Select 'Transfer Ownership' and change the jurisdiction
3. The receiving region will see the lab report in their 'Documents Requiring Review' work queue

Laboratory Reports Already Marked as "Reviewed" (*You cannot see the "Mark as Reviewed" button*)

1. A patient resides in another Tennessee jurisdiction, so the information must be transferred in NBS
    a. Select 'Edit' in the lab report and update the demographic information in the 'Patient' tab
    b. Labs coming in via ELR will not have the 'Edit' option in the lab report
        - Use the 'Lab Report Comments' section to enter the new demographic information
2. Select 'Transfer Ownership' and change to the appropriate jurisdiction
3. Since the lab report has already been marked "Reviewed," a notice must be sent to the receiving region so they are aware of the new patient (notice can be a fax, email, or phone call. If using email, do not include the patient's name).
    a. It is very important to notify the receiving region, because when transferred, a "Reviewed" observation does not go to the 'Documents Requiring Review' work queue

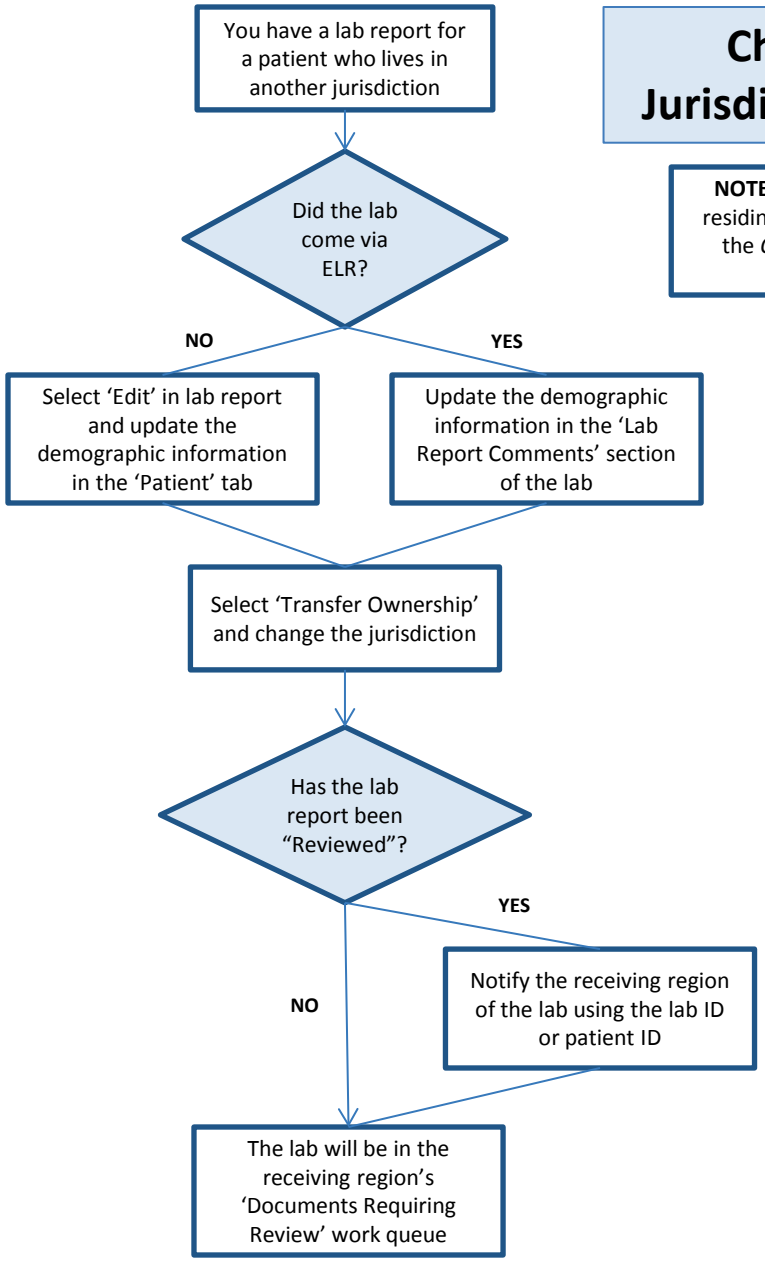
Open Investigations (*Investigation status must be "Open"*)

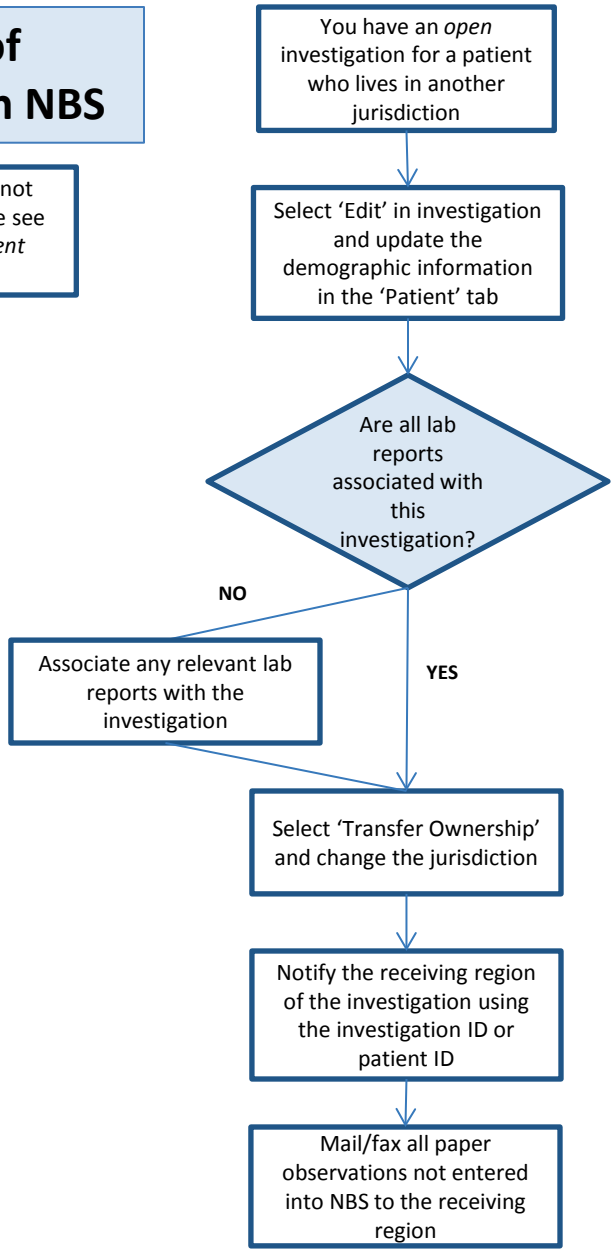
1. A patient resides in another Tennessee jurisdiction, so the information must be transferred in NBS
2. Select 'Edit' in the investigation and update the demographic information in the 'Patient' tab
3. Associate all relevant observations with the investigation
4. Select 'Transfer Ownership' and change the jurisdiction
5. Send a notice to the receiving region so they are aware of the new patient (notice can be a fax, email, or phone call. If using email, do not include the patient's name).
    a. All paper observations associated with the investigation that have not been entered into NBS should be mailed or faxed to the receiving region.

***NOTE: For transferring a TB case, please refer to the TB section for reporting procedures.**

Change of Jurisdiction in NBS

NOTE: For patients not residing in TN, please see the *Out of TN Patient* procedures





CEDEP Procedures: Transferring a Patient who Lives Out of Tennessee

The following set of procedures documents the steps that need to be taken in NBS when it is determined that a patient resides outside of Tennessee.

Laboratory Reports Not Yet Marked as "Reviewed" (*You can still see the "Mark as Reviewed" button*)

1. A patient resides outside of Tennessee, so the information must be transferred in NBS
   a. Select 'Edit' in the lab report and update the demographic information in the 'Patient' tab
   b. Labs coming in via ELR will not have the 'Edit' option in the lab report
      - Use the 'Lab Report Comments' section to enter the new demographic information
2. Select 'Transfer Ownership' and change the jurisdiction to 'Out of State'
3. The Surveillance Systems and Informatics Program will send the lab report to the respective state

Laboratory Reports Already Marked as "Reviewed" (*You cannot see the "Mark as Reviewed" button*)

1. A patient resides outside of Tennessee, so the information must be transferred in NBS
   a. Select 'Edit' in the lab report and update the demographic information in the 'Patient' tab
   b. Labs coming in via ELR will not have the 'Edit' option in the lab report
      - Use the 'Lab Report Comments' section to enter the new demographic information
2. Select 'Transfer Ownership' and change the jurisdiction to 'Out of State'
3. Since the lab report has already been marked "Reviewed," a notice must be sent to the Surveillance Systems and Informatics Program (CEDS.Informatics@tn.gov) so they are aware of the new patient (notice can be a fax, email, or phone call. If using email, do not include the patient's name).
   a. It is very important to notify the Central Office, because when transferred, a "Reviewed" observation does not go to the 'Documents Requiring Review' work queue
4. The Surveillance Systems and Informatics Program will send the lab report to the respective state

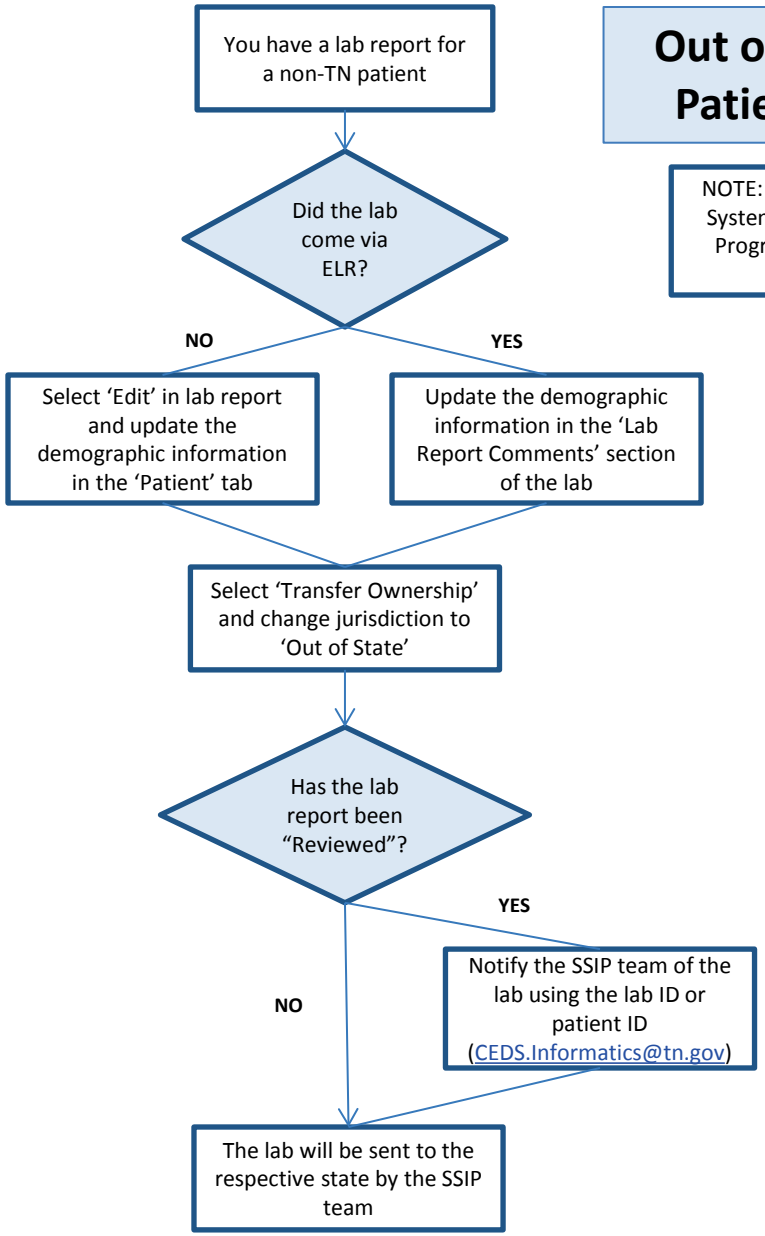
Open Investigations (*Investigation status must be "Open"*)

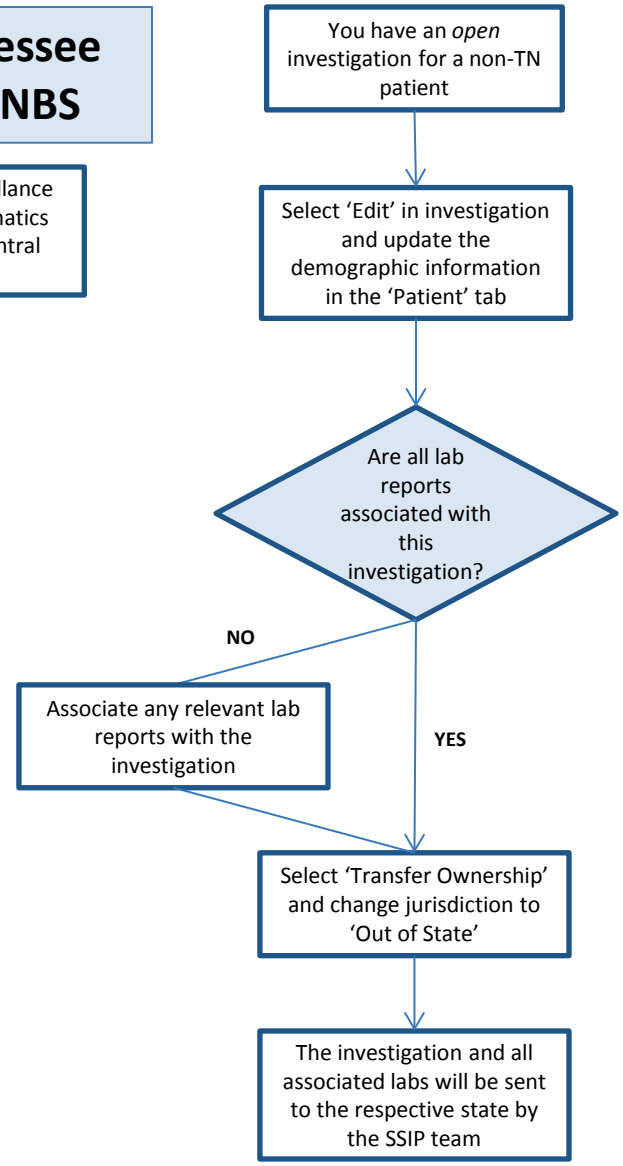
1. A patient resides outside of Tennessee, so the information must be transferred in NBS
2. Select 'Edit' in the investigation and update the demographic information in the 'Patient' tab
3. Associate all relevant observations with the investigation
4. Select 'Transfer Ownership' and change the jurisdiction to 'Out of State'
5. Send a notice to the Surveillance Systems and Informatics Program (CEDS.Informatics@tn.gov).
6. The Surveillance Systems and Informatics Program will send the investigation and associated lab reports to the respective state and close the investigation

***NOTE: For transferring a TB case, please refer to the TB section for reporting procedures.**

Out of Tennessee Patients in NBS

NOTE: **SSIP** = Surveillance Systems and Informatics Program at the Central Office





CEDEP Procedures: Getting a New User Started in NBS

The following set of procedures documents the steps that need to be taken to get a new user started in NBS.

1. A new user needs to start using NBS
2. Three documents must be filled out and sent to the NBS System Administrator to allow access to NBS:
    a. Computer Access Security Agreement
    b. Acceptable Use Policy
    c. Permissions Authorization
        i. In this document, the program areas are GEN-General, NR-Non-Reportable, and TB-Tuberculosis
        ii. Access levels are V-View Only, D-Data Entry, and S-Supervisor
        iii. If you have a RACFID (DC #), enter it
        iv. If you work for a metro, you will be issued a RACFID in order to use NBS
3. The NBS System Administrator will let you know when you are able to start using NBS
4. To access NBS, go to https://hssi.tn.gov/auth/login. It is advised to bookmark this webpage.
5. For your user name, enter your DC#
6. Your initial password will be *Password01*
7. Click OK when you receive an error message stating your password has expired, and you will be prompted to change your password
8. Enter in your user name (DC#) and current password (Password01) again. Your new password needs to be at least 8 characters long and contain a capital letter and a number in order to be valid.
9. Click OK, and you will receive a message letting you know your password has been changed
10. Back at the login page, re-enter your user name (DC#) and new password
11. Select OK on the welcome screen. The next screen is the NEDSS page, where you select 'NBS Production' or 'NBS Training'.
12. Selecting 'NBS Production' will take you into the live system where you will enter laboratory reports and investigations
13. <u>The 'NBS Training' system is what should be used for training. No real patients should be entered into the training system. The information in the training system is visible to all NBS users, so only fake, "dummy" patients and information should be entered here.</u>
14. It is advised to first go through the PowerPoint presentations and then practice by using the "dummy" reports provided in this guide.
    a. Remember, only fake information goes in the 'NBS Training' system and only real information goes in the 'NBS Production' system. If you make a mistake and put the wrong type of information into a system, please contact the NBS system administrator.

STATE OF TENNESSEE

Acceptable Use Policy
Network Access Rights and Obligations

Purpose:
To establish guidelines for State-owned hardware and software, computer network access and usage, Internet and email usage, telephony, and security and privacy for users of the State of Tennessee Wide Area Network.

Reference:
Tennessee Code Annotated, Section 4-3-5501, et seq., effective May 10, 1994.
Tennessee Code Annotated, Section 10-7-512, effective July 1, 2000.
Tennessee Code Annotated, Section 10-7-504, effective July 1, 2001.
State of Tennessee Security Policies.

Objectives:
- Ensure the protection of proprietary, personal, privileged, or otherwise sensitive data and resources that may be processed in any manner by the State, or any agent for the State.
- Provide uninterrupted network resources to users.
- Ensure proper usage of networked information, programs and facilities offered by the State of Tennessee networks.
- Maintain security of and access to networked data and resources on an authorized basis.
- Secure email from unauthorized access.
- Protect the confidentiality and integrity of files and programs from unauthorized users.
- Inform users there is no expectation of privacy in their use of State-owned hardware, software, or computer network access and usage.
- Provide Internet and email access to the users of the State of Tennessee networks.

Scope:
This Acceptable Use Policy applies to all individuals who have been provided access rights to the State of Tennessee networks, State provided email, and/or Internet via agency issued network or system User ID's. The scope does not include State phone systems, fax machines, copiers, State issued cell phones or pagers unless those services are delivered over the State's IP network.

Use and Prohibitions:

A. Data and Information Technology Resources
State employees, vendors/business partners/subrecipients, local governments, and other governmental agencies may be authorized to access state data or Information Technology (IT) network resources to perform business functions with or on behalf of the State. Users

must be acting within the scope of their employment or contractual relationship with the State and must agree to abide by the terms of this agreement as evidenced by his/her signature. It is recognized that there may be incidental personal use of State IT Resources. This practice is not encouraged and employees should be aware that all usage may be monitored and that there is no right to privacy. Various transactions resulting from network usage are the property of the state and are thus subject to open records laws.

Prohibitions

- Sending or sharing with unauthorized persons any information that is confidential by law, rule or regulation.
- Installing software that has not been authorized by the Office for Information Resources of the Department of Finance and Administration.
- Attaching processing devices that have not been authorized by the Office for Information Resources of the Department of Finance and Administration.
- Using data and IT resources to play or download games, music or videos that are not in support of business functions.
- Leaving workstation unattended without engaging password protection for the keyboard or workstation.
- Utilizing unauthorized peer-to-peer networking or peer-to-peer file sharing.
- Using data and IT resources in support of unlawful activities as defined by federal, state, and local law.
- Utilizing data and IT resources for activities that violate conduct policies established by the Department of Human Resources or the Agency where the user is employed or under contract.

B. Email

Email and calendar functions are provided to expedite and improve communications among network users.

Prohibitions

- Sending unsolicited junk email or chain letters (e.g. “spam”) to any users of the network.
- Sending any material that contains viruses, Trojan horses, worms, time bombs, cancel bots, or any other harmful or deleterious programs.
- Sending copyrighted materials via email that is either not within the fair use guidelines or without prior permission from the author or publisher.
- Sending or receiving communications that violate conduct policies established by the Department of Human Resources or the Agency where the user is employed or under contract.
- Sending confidential material to an unauthorized recipient, or sending confidential e-mail without the proper security standards (including encryption if necessary) being met.

Email created, sent or received in conjunction with the transaction of official business are public records in accordance with T.C.A 10-7-301 through 10-7-308, and the rules of the Public Records Commission. A public record is defined as follows:

> *"Public record(s)" or "state record(s)" means all documents, papers, letters, maps, books, photographs, microfilms, electronic data processing files and output, films, sound recordings or other material, regardless of physical form or characteristics made or received pursuant to law or ordinance or in connection with the transaction of official business by any governmental agency. (T.C.A. 10-7-301 (6)).*

State records are open to public inspection unless they are protected by State or Federal law, rule, or regulation. Because a court could interpret state records to include draft letters, working drafts of reports, and what are intended to be casual comments, be aware that anything sent as electronic mail could be made available to the public.

C. Internet Access

Internet access is provided to network users to assist them in performing the duties and responsibilities associated with their positions.

Prohibitions

- Using the Internet to access non-State provided web email services.
- Using Instant Messaging or Internet Relay Chat (IRC).
- Using the Internet for broadcast audio for non-business use.
- Utilizing unauthorized peer-to-peer networking or peer-to-peer file sharing.
- Using the Internet when it violates any federal, state or local law.

Statement of Consequences

Noncompliance with this policy may constitute a legal risk to the State of Tennessee, an organizational risk to the State of Tennessee in terms of potential harm to employees or citizen security, or a security risk to the State of Tennessee's Network Operations and the user community, and/or a potential personal liability. The presence of unauthorized data in the State network could lead to liability on the part of the State as well as the individuals responsible for obtaining it.

Statement of Enforcement

Noncompliance with this policy may result in the following immediate actions.

1. Written notification will be sent to the Agency Head and to designated points of contact in the User Agency's Human Resources and Information Technology Resource Offices to identify the user and the nature of the noncompliance as "cause". In the case of a vendor, subrecipient, or contractor, the contract administrator will be notified.
2. User access may be terminated immediately by the Systems Administrator, and the user may be subject to subsequent review and action as determined by the agency, department, board, or commission leadership, or contract administrator.

STATE OF TENNESSEE

Acceptable Use Policy
Network Access Rights and Obligations
User Agreement Acknowledgement

As a user of State of Tennessee data and resources, I agree to abide by the Acceptable Use Network Access Rights and Obligations Policy and the following promises and guidelines as they relate to the policy established:

1. I will protect State confidential data, facilities and systems against unauthorized disclosure and/or use.
2. I will maintain all computer access codes in the strictest of confidence; immediately change them if I suspect their secrecy has been compromised, and will report activity that is contrary to the provisions of this agreement to my supervisor or a State-authorized Security Administrator.
3. I will be accountable for all transactions performed using my computer access codes.
4. I will not disclose any confidential information other than to persons authorized to access such information as identified by my section supervisor.
5. I agree to report to the Office for Information Resources (OIR) any suspicious network activity or security breach.

Privacy Expectations

The State of Tennessee actively monitors network services and resources, including, but not limited to, real time monitoring. Users should have no expectation of privacy. These communications are considered to be State property and may be examined by management for any reason including, but not limited to, security and/or employee conduct.

I acknowledge that I must adhere to this policy as a condition for receiving access to State of Tennessee data and resources.

I understand the willful violation or disregard of any of these guidelines, statute or policies may result in my loss of access and disciplinary action, up to and including termination of my employment, termination of my business relationship with the State of Tennessee, and any other appropriate legal action, including possible prosecution under the provisions of the Computer Crimes Act as cited at TCA 39-14-601 et seq., and other applicable laws.

I have read and agree to comply with the policy set forth herein.

_____	_____
Type or Print Name	Last 4 digits of Social Security Number
_____	_____
Signature	Date

Tennessee Department of Health

National Electronic Disease Surveillance System

Permissions Authorization

Jurisdiction: Date:

Name	DC#	Email Address	Phone Number	Program Area	Access Level
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S
				GEN NR TB	V D S

Authorized by: Changes made by (Central Office staff): Date:

State of Tennessee
Department of Health

Computer Access Security Agreement

I hereby acknowledge receipt of my computer access code(s) and my use of them demonstrates my agreement to the following guidelines:

1.) I shall maintain confidentially all computer information and resources to which I have access or control.

2.) I shall take appropriate measures to safeguard and protect the information and computer resources of the State that are available to me.

3.) I shall use the information and computer resources only for authorized State business and not disclose any information or documentation obtained from, or pertaining to, the State's computer system(s) to any third party, except in the routine lawful conduct of the State's business.

4.) I shall be accountable for and accept full responsibility for all transactions performed using my computer access codes.

5.) I shall maintain all computer access codes in the strictest of confidence; immediately change them if I suspect that their secrecy has been compromised and report suspected misuse to the respective Security Administrator.

I have read and agree to comply with the guidelines set forth above.

I understand that willful violation of, or disregard for, any of these guidelines may result in disciplinary action up to and including termination of my employment, termination of my business relationship with the State of Tennessee and possible prosecution under the provisions of the Computer Crimes Act as cited at TCA 39-14-601 et seq.

Type or Print Name	Social Security Number
Signature	Date
Due to be returned to Sec. Admin	User ID

Frequently Asked Questions

- General Questions……3.2
- Lab Reports and Searching a Patient……..3.4
- Investigations and Notifications……3.7
- Reports……3.10
- Transferring to Another Region/Dealing with Duplicates……3.11
- Dates in NBS……..3.12

NBS Frequently Asked Questions (FAQs)

General NBS Questions

1. **What happens if I accidently use the back button in NBS?**
    a. *It is not enabled so an error screen will appear. After the error screen, all information that was not submitted will be lost.*
2. **How much information should I include in NBS?**
    a. *Enter all the information you have into NBS, whether for a lab report or an investigation; do not just put the bare minimum.*
3. **Why can't I see demographic information that I know was entered into NBS?**
    a. *It depends where in the system you are looking for the information and where in the system the information was entered. All demographic information should be entered into the investigation for the patient. If information is entered into the investigation, it will automatically populate into the patient's file. However, if information is entered directly into the patient's file, that is the only area that it will be updated in; i.e. it will not be updated in the investigation. If you have entered information that you believe will be populated into the patient's file, it is recommended to review the patient's file to ensure the information is there and is correct.*
4. **What is the difference between the information in a patient's file and the information in a patient's investigation file?**
    a. *These are two separate files. A patient changes over time, and so will the patient file. For example, their age increases, pregnancy status will change, address and other demographics can change, and the patient file is equipped to allow for these changes. The investigation or lab report file does not change over time. This is point-in-time information. Everything included is a snapshot in time that does not change over the course of a patient's lifetime.*
5. **What does it mean to "Review" an observation?**
    a. *When you "review" an observation, it no longer shows up in your 'Documents Requiring Review' work queue. Once you have reviewed an observation you are telling NBS that you are aware of it and are working on it. It is not recommended for you to review an observation before you create an investigation because it will no longer be available in your work queue (i.e. the "Documents Requiring Review" queue).*
6. **I forgot my password, how do I reset it?**
    a. *If you have forgotten your password or you are locked out of your account, you need to contact the NBS System Administrator to have your account reset. Please see the 'Contacts' section of this guide.*

General NBS Questions

7. **What's the difference between 'Not Reportable' and 'Not a Case'?**
    a. *When something is 'Not Reportable,' it is a disease or event that is not included on the list of reportable conditions in TN. For example, giardiasis is not on the list of reportable disease in TN anymore; if a laboratory report came in confirming Giardia organisms, it would be considered 'Not Reportable.' If something is 'Not a Case,' it is referring to a TN reportable disease or event that upon investigation is determined not to meet the case definition. For example, if a Hepatitis C patient does not meet all aspects of the case definition, it would be considered 'Not a Case.' So 'Not Reportable' refers to an event which is not of surveillance interest in TN, while 'Not a Case' is a case status determination made by an investigator evaluating a reportable event.*
8. **Who can I contact with questions about NBS?**
    a. *Your central office NBS contacts and the NBS System Administrator. For condition-specific questions, please contact the central office contact for that program. Please see the 'Contacts' section of this guide.*
9. **How do I know who to contact in the different regions?**
    a. *Please refer to the "Regional Call List" that is included in the User Guide. This document has a list of the people in the region broken up by their program area. It also includes their telephone numbers as well as their email addresses. Just remember, don't ever send patient names in an email message. This list is updated periodically, but if you notice that someone on the list no longer works with that region, please let the Central Office NBS contacts listed in Appendix 2 know so they can resolve the issue.*
10. **Where can I find case report forms for Reportable diseases in TN?**
    a. *If there is a case report form (CRF) that has been developed and is used for a TN Reportable disease, it can usually be found on the Reportable Diseases website (https://apps.health.tn.gov/ReportableDiseases/). Select the condition you are interested in, select the 'For Public Health' tab, and select the 'Case Report Forms' sub-tab. If you have questions about a form or cannot find what you are looking for, please contact the Central Office disease contact for that condition listed in Appendix 2.*
11. **What are the different user access levels within NBS?**
    a. *There are 3 access levels within NBS, View Only, Data Entry, and Supervisor.*
    View Only: These users can only view, not edit, patients, lab reports, and investigations in the system for those program areas they have access to.
    Data Entry: These users can view and edit patients, lab reports, and investigations in the system for those program areas they have access to. They can create notifications, but notifications need to be approved by someone with Supervisor access before sent to CDC.
    Supervisor: These users can view and edit patients, lab reports, and investigation in the system for those program areas they have access to. They can create notifications, and those notifications are automatically approved and sent to CDC.

Laboratory Reports and Searching for a Patient

1. **Why would this laboratory report be assigned to me if there's no patient address?**
    a. *Patient address is not always available in lab reports. In that case, NBS assigns regional jurisdiction based on Ordering Provider or Ordering Facility Address. If the ordering provider or facility is located in your region, this lab report will be assigned to you. If after figuring out patient address it is determined that the patient does not reside in your regional jurisdiction, please follow the steps for how to change jurisdiction in NBS.*
2. **Why would a paper laboratory report come in for a lab that uses ELR (such as LabCorp)?**
    a. *As a laboratory transitions into ELR, they are in a "parallel testing" environment. While they are in this environment, we collect paper lab reports from them while we are concurrently receiving their ELR in NBS. This is done as a check to make sure all labs are coming through ELR. If there are still paper lab reports coming in that are not coming through ELR, the laboratory will remain on parallel testing until this issue is resolved, but this can result in you receiving a paper lab from a laboratory that does use ELR.*
3. **Are there any recommendations for the best ways to find a patient in NBS?**
    a. *You want to provide a wide search so that the patient can be located. Don't use the patient's full name, for example instead of entering Mickey Mouse, try using Mou for the last name and Mi for the first name. Entering Mi will find Mike, Mickey, and Michael. If you search for Mickey Mouse, you might miss the patient if they were entered in using a different variation of first name or if there was a misspelling of first or last name. If you search by name but do not find the patient, it is also advised to try searching by date of birth to ensure that the patient is not in the system. The tactics described here are ways to search by the patient information. Also see PowerPoint Presentation 2: Searching a Patient & Adding a Patient. If you want to search by event information, please see questions 5, 6, and 7.*
4. **Why do I have to alter patient ID when searching in NBS?**
    a. *NBS was built by CDC for numerous states to use. They also use the Patient ID/PSN as an identifier, but it has to be more general because numerous states send their information to CDC using NBS. Since "PSN" and "TN01" are the prefix and suffix that only Tennessee uses, we have to remove them to look for a patient in NBS.*
5. **How do I search for a patient by Investigation ID Number NBS?**
    a. *Wherever you are searching, either on the Dashboard or under the Data Entry tab, search by 'Event' rather than 'Demographics'. Once you are searching by event, you are prompted to select an 'Event ID Type'. Use the drop-down menu to find 'Investigation ID'. Enter the investigation ID, and hit 'Search'. Enter the investigation ID in its entirety, CAS00000001TN01 for example. Also see PowerPoint Presentation 2: Searching a Patient & Adding a Patient.*

Laboratory Reports and Searching for a Patient

6. **How do I search for a patient by Accession Number in NBS?**
    a. *Wherever you are searching, either on the Dashboard or under the Data Entry tab, search by 'Event' rather than 'Demographics'. Once you are searching by event, you are prompted to select an 'Event ID Type'. Use the drop-down menu to find 'Accession Number ID'. Enter the accession number, and hit 'Search'. Enter the accession number in its entirety, N12E345678 for example. Also see PowerPoint Presentation 2: Searching a Patient & Adding a Patient.*
7. **How do I search for a patient by Lab ID in NBS?**
    a. *Wherever you are searching, either on the Dashboard or under the Data Entry tab, search by 'Event' rather than 'Demographics'. Once you are searching by event, you are prompted to select an 'Event ID Type'. Use the drop-down menu to find 'Lab ID'. Enter the lab ID, and hit 'Search'. Enter the Lab ID in its entirety, OBS12345678TN01 for example. Also see PowerPoint Presentation 2: Searching a Patient & Adding a Patient.*
8. **Why did I receive an ELR with a numeric patient name?**
    a. *You might receive a numeric or "coded" patient name for a number of reasons. Some doctors provide anonymous testing to patients, in which case the patient name is truly not known. Many facilities take part in clinical research, and because of blinded studies, the patient names are not a part of their medical records.*
9. **What do I do with an ELR that has a numeric patient name?**
    a. *This is dependent on the condition. It is advised to discuss with the Central Office disease contact listed in Appendix 2. It might be possible to find the patient name by calling the ordering facility or ordering provider, but this is not always the case.*
10. **What is an orphaned lab, and why are these important?**
    a. *An orphaned lab is a relic term for a lab report that is not associated with an investigation in NBS. This typically occurs when a lab report arrives in a user's "Documents Requiring Review Queue" and is marked as reviewed before an investigation is opened. Opening an investigation from the lab report will automatically associate the lab with the investigation. Orphaned labs are important because a lab that has not sparked an investigation could mean a reportable condition has been missed from our surveillance activities. This is not always the case, but this is why we consider orphaned labs significant.*

Laboratory Reports and Searching for a Patient

11. **What does result status mean in an ELR?**
    a. *For lab reports that come via ELR, TDH only accepts preliminary, final, or corrected results. The preliminary, final, or corrected status will display in the lab report. The preliminary status means the result is still preliminary. A preliminary result can be changed by a final result indicating that the result is now final. A corrected result means there is a correction and thus replaces a final result.*
12. **Why should I care about result status of the lab?**
    a. *The way NBS works, a final result will replace the preliminary result and a corrected result will replace the final result. With the new 'Associated Lab Document(s)' functionality, NBS users can view each version of the lab report. This can be helpful if you are trying to figure out why a decision was made (why an investigation was opened, why a case status determination was made, why the lab was orphaned, etc.).*
13. **Why do I see an ELR result that is negative? Should I be receiving these?**
    a. *You need to first make sure that the result is actually negative. You must always open the lab report and look at the result in the lab report, not just on the summary screen. For some ELR results in NBS, the reference range is displayed on the patient summary screen instead of the result. So, in the case of a 'Positive' result, the reference range of 'Negative' would be displayed on the summary screen. The NBS developers are aware of this problem, and the issue will be resolved in a future release. If the result of the lab actually is negative, it is advised to talk with the Central Office disease contact (found in Appendix 2) to determine why you received that lab. For some conditions, negative lab results are of interest and should be reported to TDH.*

Investigations and Notifications

1. **Can you start an investigation without a lab report (e.g. a hospital ICP reports a case of a possible reportable disease before sending the lab report and you want to start your investigation)?**
    a. *Yes, you can start an investigation regardless of the way the event was reported to you (lab report, case report, telephone report). To start an investigation without a lab report, search the patient as you usually would. Either locate the patient's file, or start a new file for a patient not in the system with whatever demographic information you might have. In the 'Events' tab, select 'Add New' under Investigation and include whatever information you currently have. As the investigation is being completed, add the information you gather into the investigation and associate the laboratory report whenever it is received. For more information visit the 'Receiving Paper Case Reports' NBS Procedure in this guide.*
2. **When would I create an investigation in NBS before receiving a lab report?**
    a. *You might receive a phone call from a hospital or provider or a case report that would prompt the start of an investigation. This report might come before the lab report is received, especially for certain conditions. Some morbidities where you would likely be alerted before receipt of a lab report would be TB, varicella deaths, pregnancy associated influenza deaths, and pediatric influenza deaths. For more information on laboratory reporting, see the 'Reportable Diseases and Events Laboratory Reporting Guidance' document in this guide.*
3. **During the course of an investigation, where should I enter new patient demographics?**
    a. *This new information should be entered into the 'Patient' tab inside the investigation. If this demographic information is entered into the patient's file, it will not populate into an already existing investigation or observation. Also see FAQ 4 under 'General NBS Questions.'*
4. **What is the difference between an opened and closed investigation?**
    a. *As soon as an investigation is created it is considered open until it is closed by the investigator. An open investigation implies that work is still being done to gather information about the case. Once an investigation is created (opened), it should always be closed. Closing an investigation is what should be done once all the information has been gathered and a definitive case status has been determined. All open investigations can be viewed in the 'Open Investigations' tab in NBS.*
        i. *NOTE: In regards to TB, when an investigation is closed, it means you are "finished" with a case and all follow-up and investigation are complete and you are ready to close the chart.*

Investigations and Notifications

5. **Are notifications still sent if an investigation is not closed?**
    a. *As long as a notification is created in NBS, it is sent to CDC. Notifications can be sent while the investigation is still open and being completed. As soon as the 'Case Status' is determined, a notification can (and should) be created. Any subsequent changes to the investigation will be sent in an updated notification to CDC.*
        i. *NOTE: In regards to TB, notifications are not sent directly to CDC, they are first sent to the central office.*
6. **How do I close an investigation?**
    a. *Open the investigation, and select 'Edit'. If a warning pops up that a notification exists for this investigation and altering information could change the notification content, this is okay- you should continue. In the specific disease/event tab, there is a section titled 'Investigation Summary'. In the 'Investigation Status' field (which currently will say 'Open'), you should select 'Closed'. Submit the changes, and your investigation will be labeled closed.*
7. **What do N, P, S, and C mean in regards to case status (***NOTE: These are all the case statuses available, but they might not apply to all programs or diseases. Please check the disease classifications at* https://apps.health.tn.gov/ReportableDiseases/*).*
    a. *N= Not a Case, P= Probable, S=Suspect, C=Confirmed*
8. **How do I know if I am classifying a disease/event the same way CDC does (N, P, S, or C)?**
    a. *CDC has a list of Nationally Notifiable Diseases with their case definitions available at:* http://wwwn.cdc.gov/nndss/*.*
    TN Department of Health also has case definitions for all the TN Reportable Diseases available at: https://apps.health.tn.gov/ReportableDiseases/*. When on the TN website, you can go to any of the diseases/events, click on the 'For Public Health' tab, and look at the 'Case Definition' tab to find the case classifications. For a MMWR publication, "counting" of nationally notifiable diseases/events is disease/event specific. For example, some diseases/events are "counted" only if their case status has been determined to be "confirmed" while others may also include "probable" in the count. Programs must familiarize themselves with MMWR publication criteria which can be found at:* http://www.cdc.gov/mmwr/about.html.
9. **Why doesn't the NBS system mirror the investigation form?**
    a. *NBS was built by CDC for numerous states to use. It is not specific to Tennessee, and therefore we do not have full control of how pages were built. It can be frustrating at times, but a way to custom build the page is now available and will be used in the future.*
10. **Can I associate 1 lab report with multiple investigations?**
    a. *Yes, lab reports can be associated with more than one investigation. When you are ready to manage associations for an investigation, you will notice that all lab reports for the patient are displayed and available for your selection. This is especially applicable for labs coming via ELR that have more than one result.*

Investigations and Notifications

11. **How do I know when to submit a notification?**
    a. *All investigations that are created must have a notification. A notification should be created as soon as a case status is determined. Regardless of the case status determination, a notification should be created. This means even if 'Not a Case'.*
        i. *NOTE: In regards to TB, a notification should only be created when a confirmed case status has been determined.*
12. **Can numerous notifications be sent to CDC for the same investigation?**
    a. *Yes, after the initial notification is created for an investigation, each time the investigation is updated (new information added, information changed, etc.) an updated notification is automatically sent to CDC. This way, new notifications do not need to be created when each update to an investigation is made.*
13. **What date should be used to determine MMWR?**
    a. *The date that should be used for MMWR week is 'Date Received by Public Health'. The date that populates for MMWR in NBS is the date the investigation was created in the system. If following correct procedures, as soon as a lab report is received it should be entered into NBS and an investigation should be created. Therefore the 'Date Received by Public Health' and the date the investigation is created should be relatively close. As long as the date the investigation was created is not more than 30 days after the date of the lab report, you do not need to change it. If the investigation is created more than 30 days after the date of the lab report, change the MMWR date to reflect the date of the lab report (this should be a relatively rare occurrence). Also see the MMWR Section of this guide for more information.*
14. **How do I edit investigator, physician, hospital, or laboratory information in NBS?**
    a. *In NBS, physicians and investigators are stored as "providers" while hospitals and laboratories are stored as "organizations." You can edit the information for those entities through the "Data Entry" tab at the top of NBS (next to "Open Investigations"). Select Provider or Organization, search for the entity, select "View" for the record you would like to edit, and then "Edit" at the top of the screen. At that point, you can edit any of the information including adding quick codes. Click "Submit" when you are done, and the information will be saved and ready to use in lab reports or investigations.*
15. **What are the differences between pending approval, approved, and completed notifications?**
    a. *Once a notification has been created, there are 3 statuses that you are likely to see: pending approval, approved, and completed. A notification that is pending approval has been created by a user with data entry rights and is awaiting approval by someone with supervisor rights. A notification that is approved is ready to be sent to CDC and is waiting to be delivered. Notifications that are approved were either created by a user with supervisor rights or created by a user with data entry rights and approved by a supervisor. Once the system has sent the approved notification to the CDC, the notification is completed and no further action is needed by NBS users.*

Reports

1. **What am I really doing when I run a report?**
    a. *Running a report is like asking the system a question, the output is the system's answer. There is not a "perfect" report that will give you all the information you might want. Although all the information entered into NBS for a patient is visible in their file, it will not all show up in the same report. The questions you ask NBS are specific to observations, patient files, or investigations, and not all three at once.*
2. **Why is new information missing from the report I ran?**
    a. *There is a process in NBS called Extract, Translate, and Load (ETL). The ETL process occurs 5 times per week. In this process, data from the operational data store is moved to the reporting data base (RDB). The process can take anywhere from 4-10 hours to run. It occurs Monday-Friday starting at 8pm. Data in the reports is not reliable while the ETL process is running and could cause the process to fail.*
3. **When running a report, is it ever okay to 'run' instead of exporting? Or must I always export?**
    a. *You can run the report if you choose, but you will just get a snapshot of information in an html format. When exporting, you can filter, sort, and analyze the data and it is more user-friendly. This is why we recommend always exporting and not running.*
4. **If I run a report based on MMWR year and there are investigations not showing up in my report, why would this be?**
    a. *The person who entered the investigation information into NBS might have forgotten to include the MMWR year, or the MMWR year could be incorrect. If you use an advanced filter and search for 'Event date,' this could help to find all the investigations for events in the year of interest. Once you have done this, you can find the investigations that have the wrong/missing MMWR year, and alter them as needed in NBS.*
5. **How do I delete a public report that is no longer used?**
    a. *If you are the person who created the public report, first go to the 'Reports' tab in NBS. Under 'Private Reports', expand the subsections and find the report you want to delete. Select 'Delete' and this will delete the report from your private reports as well as the public reports section. If you did not create the report, either have the user who created it delete it, or contact the NBS system administrator to have it removed if the person has left the health department.*
6. **How do I create a private report for my own use?**
    a. *Creating a private report can be useful if you are frequently running the same template report with the same constraints. For example, you might be using the 'Line List of Individual Cases with Program Area and Jurisdiction Security' often, but you are only interested in running it for the Arboviral conditions. Instead of selecting each Arboviral from the list every time you run the report, you can create a private report with those settings. First, make all the selections you want in the template report you are using to build your private report (disease, advanced filter, and column selections). Select 'Run', and when the screen changes, select 'Save As New'. Fill out the information necessary, and your report will now show up in your 'Private Reports'.*

Transferring to another Region and Dealing with Duplicates

1. **Why am I able to view lab and investigation information but not edit?**
    a. *In order to edit a lab or investigation, you first need to make sure you have the appropriate user rights to edit. If you are a view only user, you will not be able to edit any labs or investigations. Beginning in 2014, all NBS users were granted view only access for labs and investigations in their specific program areas (General Communicable, TB, etc.) for all jurisdictions across the state. This allows users to see events statewide aiming to prevent duplicate investigations from being opened. Although you can now view these events, you will still need data entry or supervisor rights for that jurisdiction in order to edit.*
2. **Who do I report duplicate patient records to? And what does it require to merge those two files?**
    a. *An email should be sent to the NBS system administrator as well as to the help desk (DOH.HelpDesk@TN.gov). In the email, send both of the patient identification numbers and explain that the two files need to be merged. You also need to include your DC# in the email. Remember to never send patient names in an email. See Appendix 2 for contact information.*
3. **What should I do if I have transferred an observation or investigation to another region?**
    a. *Notify the region by email or phone (in an email do not include the patient name). Also, make sure that you have entered all information you have into NBS, and send all paper documents to the region or the central office (in the case of 'Out of Tennessee'). Also see the 'Change of Jurisdiction' NBS Procedure in this guide for more information.*
        i. *NOTE: In regards to TB, the central office TB contact transfers investigations.*
4. **What do I do if I find duplicate observations?**
    a. *A duplicate observation (e.g. lab report) needs to be dealt with, but it should not be deleted. You should associate both lab reports with the investigation that it corresponds with. All lab reports in NBS should be associated with an investigation. You also need to be aware that some diseases are only acquired once in a person's lifetime. If an observation is received for such a disease, it should be associated with the original investigation. Also see the 'Managing Duplicates' NBS Procedure in this guide for more information.*
5. **What do I do if I find duplicate investigations?**
    a. *Dealing with duplicate investigations is important because otherwise the case will be counted twice in surveillance activities. It is not possible to delete an investigation once it is created. You must enter all information from both investigations into one of the investigations. All observations need to be associated with that investigation as well. For the other investigation, mark the case status as 'Not a Case' and that way it will not be counted in surveillance activities. Also see the 'Managing Duplicates' NBS Procedure in this guide for more information.*

Dates in NBS

1. **What field should I use for the earliest date a lab report was known about by public health?**
    a. *In NBS, you will probably want to look at "**Created**" or "**Date Received by Public Health**" (whichever is the earlier date). If it is an ELR, these dates will be the same. If it is a paper lab report, the "Created" date is the date the person manually enters the lab into the system. The "Date Received by Public Health" date is manually entered, so it could be earlier.*
2. **What field is the actual date of the lab report?**
    a. *In NBS, this is the "**Lab Report Date**". This will always be populated for ELRs, but for a manually entered lab, this is not a required field so it can be empty.*
3. **Is there a field that captures the date of the lab result?**
    a. *You can use the "**Date/Time**" field in the "**Resulted Tests and Results**" section of the lab report. Unfortunately, you will only have this date for labs coming in through ELR as this date is not captured for manually entered labs.*
4. **What field captures the date that symptoms started?**
    a. *Most investigations have the "**Illness Onset Date**" variable, but this is not required so it can be left empty. When the Illness Onset Date is unknown, some people use the "**Date Specimen Collected**" in the lab report as this is many times the earliest date known.*
5. **Which field has the date the investigation was started?**
    a. *If you are looking for the actual start of the investigation, you probably want to use "**Investigation Start Date**" which is manually entered and not required, so it can be left empty. If you are looking for the date when the investigation was opened in NBS, you can use the "**Created**" date in the investigation.*
6. **What is event date and how is it calculated?**
    a. *Event date is a date that is generated by NBS and is used in some of the template reports. There are 2 different event dates, a lab event date and investigation/case event date. Both are calculated using a formula of other dates from the system.*
        i. *For all conditions other than TB, **investigation/case event date** is selected using the first field that has a value in the following order:*
            1. *Onset*
            2. *Diagnosis*
            3. *First Report to County*
            4. *First Report to State*
            5. *Investigation Creation*
        ii. *The **lab event date** is selected using the first field that has a value in the following order:*
            1. *Specimen Collection*
            2. *Lab Test*
            3. *Lab Report Received by Public Health*
            4. *Lab Report Creation*

7. **What is the Report Date seen in some of the reports, including Line List of Individual Cases with Program Area and Jurisdiction Security?**
    a. *The report date is a field generated by NBS, and it is used in some template reports. It is selected using the first field that has a value in the following order:*
        i. *First Report to County*
        ii. *First Report to State*
        iii. *Investigation Creation*

Reports

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Running and Merging Reports in NBS

In NBS there are many different reports that you can run to extract data from the system. Although one report might not have all the information you are looking for, you can run multiple reports and merge the data.

What am I actually doing when I run a report?

- When you run a report in NBS, it is like you are asking the system a question. The output is the system's answer. Although all the information entered into NBS for a patient is visible in their patient file, it will not all show up in the same report. Reports in NBS are specific to observations, patient files, and investigations, and not necessarily all three at once.

When will new data be in a report?

- When you are asking your question in NBS, it is actually getting the answer from the reporting database (RDB). The data from the operational data store is moved to the RDB 5 times a week in a process called Extract, Translate, and Load (ETL). The ETL process takes anywhere form 4-10 hours, and it occurs on Monday-Friday starting at 8pm. Reports should not be used while the ETL process is running because the tables used for the reports are being built and populated in the RDB, and this could cause the process to fail and leave the reports unreliable or nonfunctional. Data from the previous day will be current in NBS reports the following day once the ETL has completed its process.

All the information I need is not in a single report, how can I fix this?

- In order to get all the information needed, you might have to run multiple reports in NBS.
- Some of the most useful reports in NBS are *Line List of Individual Cases with Program Area and Jurisdiction Security*, *Line List of Individual Labs with Program Area and Jurisdiction Security*, *Line List of Resulted Lab Tests, and the Line List of Resulted Lab Tests with Associated Investigations*.
- When running these reports it is advised to select all the available columns as sometimes the field name in the RDB is slightly different than in NBS.
- It is recommended to click "Export" and not "Run," and "Save" not "Open." If you run instead of exporting, your report will be in html format, and you will not be able to manipulate it.
- Once you have exported and saved your report, you can open it in the program you feel most comfortable with (Excel for example) and sort by person name, first notification date, etc.
- To merge the output of multiple reports (in whatever program you feel comfortable with such as SAS or Access), you will need to use a unique identifier to merge on. Some examples include the patient ID (PSN number), the investigation ID (CAS number), or lab ID (OBS number). Before merging, you need to make sure that both outputs include the unique identifier you will be using to merge the documents.
- For example, you can link two outputs by joining the tables on "Person Local ID" in Line List of Individual Labs with Program Area and Jurisdiction Security with "Patient Local ID" in Line List of Individual Cases with Program Area and Jurisdiction Security.

Tips for Using Template Reports in NBS

Below are some tips for utilizing the template reports in NBS.

1. **Make sure you know what type of event information you are looking for**
   - Before running a report, determine what information you are trying to find
   - If you are looking for lab data, try one of the following:
     - *Line List of Individual Cases with Program Area and Jurisdiction Security*
     - *Line List of Resulted Lab Tests*
   - If you are looking for investigation data, try the following:
     - *Line List of Individual Cases with Program Area and Jurisdiction Security*
   - If you are looking for lab data with associated investigations, try the following:
     - *Line List of Resulted Lab Tests with Associated Investigations*
2. **Think about the time period you are interested in**
   - There are many date fields in NBS (For more information on dates in NBS, go to the *Dates in NBS* section of the Frequently Asked Questions.)
   - Some reports start with a date range in the 'Basic Filter,' but others do not. For reports that do not have date constraints built in, it can be beneficial to use the 'Advanced Filter' to select a date constraint of some sort to avoid exporting large and difficult to manage datasets.
   - Be careful about date ranges, you do not want to over restrict your results
     - It can be helpful to expand the date range you are interested in to ensure you are capturing all information you are expecting. You can further constrain once you start analyzing your data.
3. **Don't be confused by the 2 different event dates in NBS**
   - There are 2 event dates in NBS, one for lab events and one for investigation events (For more information on the difference between the 2 event dates, go to the *Dates in NBS* section of the Frequently Asked Questions.)
   - If you are running a report for lab data, it uses the lab event date. Examples of reports that use the lab event date are:
     - *Line List of Resulted Lab Tests*
     - *Line List of Resulted Lab Tests with Associated Investigations*
   - If you are running a report for investigation data, it uses the investigation event date. Example report that uses the investigation event date is:
     - *Line List of Individual Cases with Program Area and Jurisdiction Security*
4. **Remember that over constraining in the 'Advanced Filter' can significantly reduce your results**
   - There are many options when using the 'Advanced Filter,' but if you select too many of these you might end up missing some of the results you wanted to include
   - Selecting a condition is the 'Basic Filter' for some reports, but not for others. If you are looking at lab data, selecting a condition could over constrain your results
     - For example, using the 'Advanced Filter' to filter for a condition in the *Line List of Resulted Lab Tests with Associated Investigation*s report will result in your output only containing those labs associated with investigations for that condition. If you select a condition to filter on in that report, you will not see any orphan lab results in your output.
5. **If you're unsure which report(s) to run for the information you're looking for, don't hesitate to ask!**
   - The Surveillance Systems and Informatics Program can assist – CEDS.Informatics@tn.gov

Template Reports in NBS

Below are the frequently used template reports in NBS.

Report Name	Brief Description of Report
Case Investigation with Rejected NNDs with Program Area and Jurisdiction Security	For any (or a number of) morbidities, gives a line list of the rejected notifications.
Custom Report for Disease Counts by County	For any (or a number of) morbidities and filtered by any (or a number of) counties as well as an event date range, gives a line list of investigations.
Event Metrics with Program Area and Jurisdiction Security	Filtered by a date event created time period, lists events and information such as who created the event, jurisdiction, who the event was last edited by, and the program area description.
Hepatitis Extract	Filtered by an investigation event date time period, lists information included in acute hepatitis investigations.
Line List of All Orphan Labs	Filtered by a lab report creation date range, lists all labs with the date specimen was collected, jurisdiction, the lab report code description, lab report ID, patient name and ID, and program area.
Line List of All Orphan Labs w/Test Results	Similar to Line List of All Orphan Labs, but also includes the lab test result.
Line List of Diseases with Serotype	For any (or a number of) morbidities, lists the condition, description of the condition, investigation information, and serotype information.
Line List of Haemophilus Influenza Investigations	Filtered by an investigation event date range, lists the invasive Haemophilus influenzae cases including investigation information and the lab report information.
Line List of Hepatitis Investigations	Filtered by an investigation event date range, lists information included in hepatitis investigations.
Line List of Individual Cases with Program Area and Jurisdiction Security	For any (or a number of) morbidities, gives a line list of investigations and information included in the investigations.
Line List of Individual Labs with Program Area and Jurisdiction Security	Line lists of all labs for all conditions with the order and result information included in the labs as well as isolate tracking and drug susceptibilities. The same lab could appear on multiple lines if it includes more than one result, and there will be at least 2 lines for each lab, 1 for the order and 1 for the result.
Line List of Individual Labs with Program Area, Jurisdiction Security and Associated Investigations	Similar to Line List of Individual Labs with Program Area and Jurisdiction Security, but also includes limited information about investigation(s) the lab is associated with.
Line List of Isolate Tracking	Filtered by a lab event date range, lists information about isolates sent to the state lab.
Line List of Organizations by State and County	Filtered by any (or a number of) counties, lists organizations in that county with address information and organization local IDs.
Line List of Resulted Lab Tests	Filtered by a lab event date range, lists labs for all conditions and result information included in the labs. The lab could appear on multiple lines if it includes more than one result.
Line List of Resulted Lab Tests with Associated Investigations	Similar to Line List Resulted Lab Tests, but also includes limited information about investigation(s) the lab is associated with.
Line Listing of Pertussis Investigations	Filtered by an investigation event date range, lists information included in pertussis investigations.
Strep Pneumo Line Listing Report	Filtered by an investigation event date range, lists information included in Streptococcus *pneumoniae* investigations.
Varicella Line Listing Report	Filtered by an investigation event date range, lists information included in varicella investigations.

NOTE: For reports that do not have date constraints built in, it can be beneficial to use the 'Advanced Filter' to select a date constraint of some sort (event date, MMWR year, etc.) to avoid exporting large and difficult to manage datasets.

Recommended Template Report Descriptions

Line List of Orphan Labs w/Test Results

Provides a list of all lab results that have not been associated with an investigation. Line List of All Orphan Labs w/Test Results is different from Line List of All Orphan Labs because it includes the actual results of the tests, not just the resulted test names (the names of the performed tests). If there are multiple test results in the same lab report, the output will have a separate row for each one of those results.

Basic Filter: Lab Report Creation Date

Advanced Filter Suggestions: Jurisdiction of interest, and Program Area *Not Equals* Non Reportable

Line List of Individual Cases with Program Area and Jurisdiction Security

Provides a list of all investigations for whichever conditions are selected in the Basic Filter. This report only contains information about investigations, and not any associated lab reports. This report can be very useful for getting a basic case count. Not all fields within an investigation are available in the Column Selection tab for this report. Remember to pay attention to the Case Status column as all investigations for this condition will be present in the output, not just those that were deemed confirmed cases.

Basic Filter: Condition - can select multiple conditions here

Advanced Filter Suggestions: a date range (Event Date, Investigation Start Date, etc.) and Jurisdiction of interest

Line List of Individual Labs with Program Area and Jurisdiction Security

Provides a list of all labs, regardless of whether they are associated with investigations or still orphan in nature. This report will provide a separate row for the lab order, lab result, and any associated results (including drug susceptibilities). Each lab report will have a minimum of 2 rows in this report (order and result), but some have many more than that. You can tell what information is containing in each row from the Lab Test Type column:

- Order = lab test order
- Result = lab test result
- R_Result = susceptibility result
- I_Result = isolate tracking questions within lab report
- Order_rslt = answer to the Patient Status at Specimen Collection question within lab report

Basic Filter: State – default selection is Tennessee

Advanced Filter Suggestions: a date range (Lab Report Date, Date Received by Public Health, etc.) and Jurisdiction of interest

Line List of Individual Labs with Program Area, Jurisdiction Security and Associated Investigations
Provides a list of all labs, regardless of whether they are associated with investigations or still orphan in nature, along with investigations they are associated with. This report was built utilizing the Line List of Individual Labs with Program Area and Jurisdiction Security report. The difference is that this report also has limited information regarding associated investigations. If using a condition to filter on in the Advanced Filter, keep in mind that only those labs that are associated with investigations for that condition will be present in the output. No orphan labs will be present in the output when filtered by specific conditions. Also, not all investigations for a condition will be present in this report, only those with associated labs will be present. See information on Line List of Individual Labs with Program Area and Jurisdiction Security for more details.

Basic Filter: State – default selection is Tennessee

Advanced Filter Suggestions: a date range (Lab Report Date, Date Received by Public Health, etc.), Jurisdiction of interest, and potentially condition(s) of interest

Line List of Resulted Lab Tests
Provides a list of all lab results, regardless of whether they are associated with investigations or still orphan in nature. This report provides a separate row for every lab result. Each lab report will have a minimum of 1 row in this report, but it could have many rows depending on how many results are included in that report. This report does not provide a separate row for the lab order or for associated results (including drug susceptibilities).

Basic Filter: Lab Event Date (calculated field in NBS, see FAQ's for details)

Advanced Filter Suggestions: Jurisdiction of interest

Line List of Resulted Lab Tests with Associated Investigations
Provides a list of all lab results, regardless of whether they are associated with investigations or still orphan in nature, along with investigations they are associated with. This report was built utilizing the Line List of Resulted Lab Tests report. The difference is that this report also has limited information regarding associated investigations. If using a condition to filter on in the Advanced Filter, keep in mind that only those labs that are associated with investigations for that condition will be present in the output. No orphan labs will be present in the output. Also, not all investigations for a condition will be present in this report, only those with associated labs will be present. See information on Line List of Resulted Lab Tests for more details.

Basic Filter: Lab Event Date (calculated field in NBS, see FAQ's for details)

Advanced Filter Suggestions: Jurisdiction of interest and potentially condition(s) of interest

Data Quality Management in NBS

Tennessee Department of Health

Surveillance Systems and Informatics Program

Definitions

- **Investigation** – in NBS, refers to the "bucket" containing all surveillance information relating to the public health investigation
- **Lab Report** – a report from a laboratory that could indicate a Reportable Disease. Lab reports can be associated with investigations.
- **Notification** – a message sent to CDC indicating a case of a Nationally Notifiable Disease

Reports vs. Notifications

- Reports are sent to public health departments by providers and labs
  - Case reports are made/sent by telephone, fax, or mail usually utilizing the PH-1600 form.
  - Lab reports are sent by mail or fax (paper) or via Electronic Lab Reporting (ELR)
- Notifications are how public health departments alert CDC of cases for nationally notifiable diseases
  - Notifications are generated from the NBS within individual investigations

Common Issues and Useful Reports

- Common data quality issues:
  - Duplicate patients (can be merged by system admin)
  - Duplicate investigations (cannot be merged, see *Managing Duplicates Procedure*)
  - Notifications not being created/approved for an investigation
  - Lab not associated with an investigations (orphan lab)
  - Data entry errors/missing critical information in the investigation (county, DOB, gender, race, etc.)
  - Missing/unknown case status
  - Investigations remaining open and not closed out
- Useful reports for data quality:
  - Line List of All Orphan Labs w/Test Results
  - Line List of Individual Cases with Program Area and Jurisdiction Security

Using the Advanced Filter

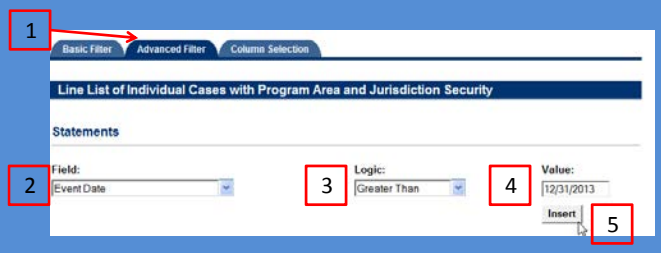
- Need to specify some constraints when pulling report in NBS
- Can use the advance filter for these constraints
  - TIP: Don't use more than 2-3 filters for a report, things can get complicated and you might end up excluding data of interest
- For more in-depth analysis and sorting, export the data and use other programs (Excel, SAS, etc.)
- Recommended filters include:
  - Date ranges
  - Jurisdiction selection
- For date ranges, consider taking a broad range but not all the data in the system (it will not give you an output)
  - Some dates are calculated fields (see FAQ's for details)
  - MMWR week/year is automated in the system based on when the investigation is opened (see MMWR Fact Sheet for details)

Line List of Orphan Labs w/Test Results

- Can see lab results that have not been associated to an investigation
- Found under "Template Reports" section
- Some labs can be left orphaned
  - Hepatitis C
  - Labs in the Not Reportable (NR) program area
- Running this report regularly can help you ensure you are not missing events that should be investigated
  - If lab is accidently marked as reviewed before investigation is started, it can seem that the lab is "lost" in the system
- Recommend filtering by a date range and jurisdiction

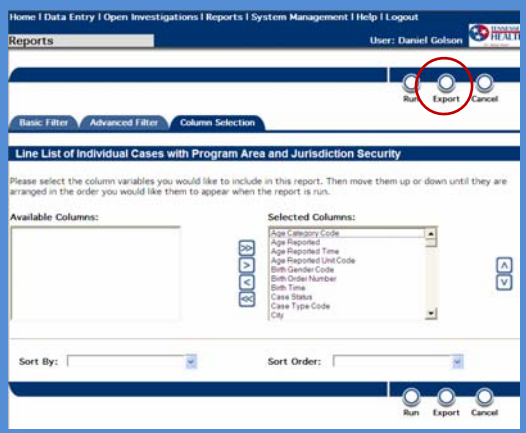
Line List of Individual Cases

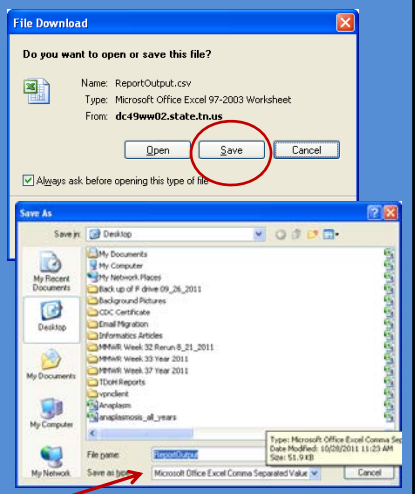
- Can track investigations for specific conditions
- Found under "Template Reports" section
- In Basic Filter, select the condition(s) of interest
- Advanced Filter Use: 5 Simple Steps
  - Use date, jurisdiction, etc. to constrain your choices.
  - Example: Event Date > 12/31/2013



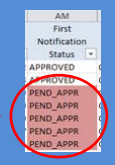
Exporting Report

- Click the "**Export**" button (not "Run")
- **Save** (not "Open") the file in CSV format





Things to Check



- Notification status
  - Blank or pending approval
- Case Status (blank or unknown)
  - Especially for closed investigations
- Investigation Status Code (open/closed)
  - Investigations created in NBS >31 days ago that are still open
- Check for duplicate investigations for same event
- Lab reports that should trigger an investigation that are still orphaned

Supervisor QA Activities

- Notifications
  - Check Approval Queue for Initial Notifications and Updated Notifications Queue
    - Initial Notifications: review investigation if necessary and approve/reject notification to be sent to CDC
    - Updated Notifications: review investigation, check the "remove" box and select "remove this notification"
- Data Quality
  - Run useful reports periodically looking for common issues (missing data, duplicates, etc.)

Data Management

- Reportable Diseases
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  - Reportable Disease and Event List……5.3
  - Reportable Disease and Event Matrix……5.5
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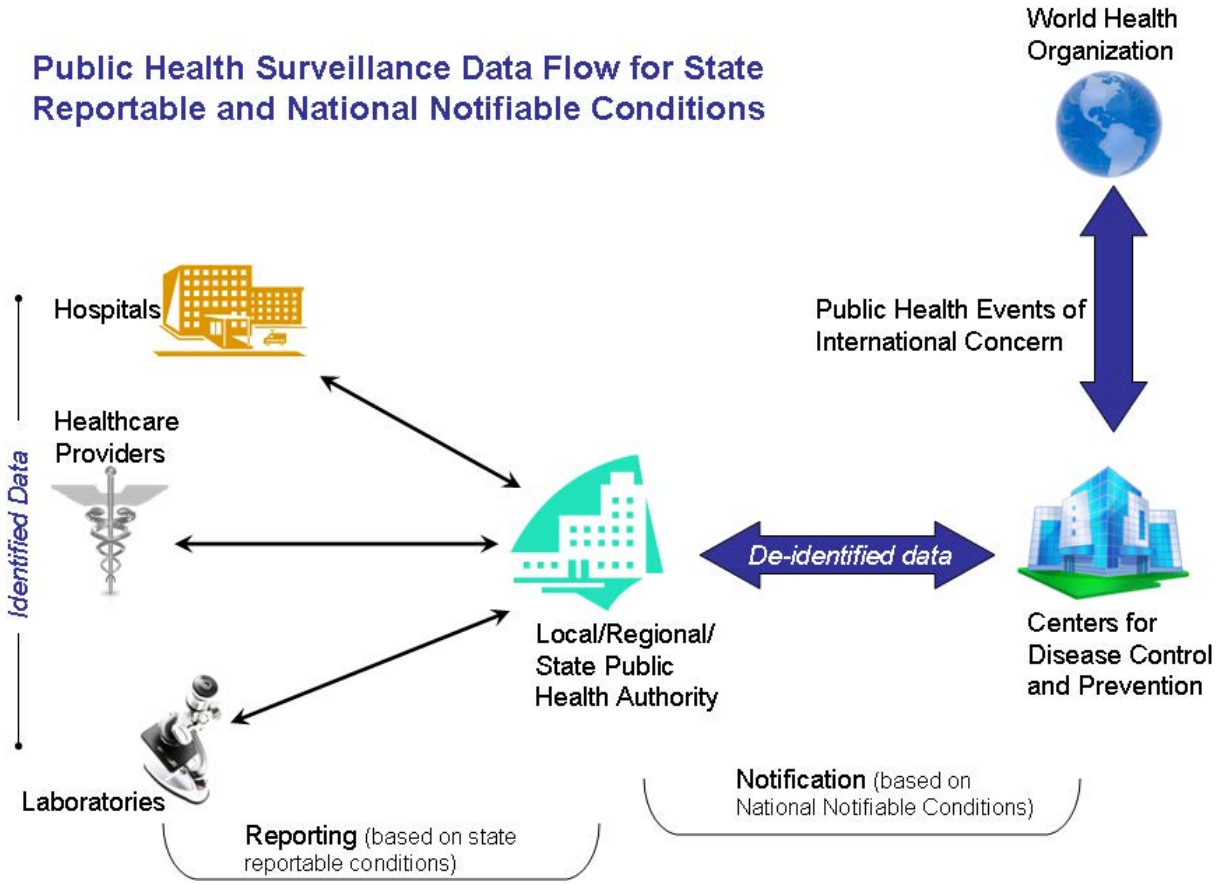
SURVEILLANCE: Reportable vs. Notifiable

Tennessee Department of Health Reportable Diseases and Events

- Within the United States, each state has the authority to define conditions of public health importance, referred to as State Reportable Conditions.
- The diseases and events listed as reportable in TN are declared to be communicable and/or dangerous to the public health and are to be reported to local, regional, or state public health authorities by all hospitals, physicians, laboratories, and other persons knowing of or suspecting a case in accordance with the provision of the statutes and regulations governing the control of communicable diseases in Tennessee.
- The potential or suspect cases of disease might be based on a positive laboratory test, clinical symptoms, or epidemiologic criteria. Public health investigations are usually conducted to determine and implement appropriate public health interventions.

Nationally Notifiable Diseases

- The Council of State and Territorial Epidemiologists (CSTE) and Centers for Disease Control and Prevention (CDC) designate certain conditions as nationally notifiable. CSTE, with input from CDC, makes recommendations annually for additions and deletions to the list of nationally notifiable diseases. CDC requests that states notify them when an instance of a disease or condition occurs that meets the national case definition. When a suspect case is determined to meet the national case definition, de-identified data are sent to CDC in a process called Notification. A condition might be on the national list but not be reportable in Tennessee, and alternatively, conditions may be on Tennessee's list of State Reportable Conditions that are not on the national list. Each state carries the authority to determine which conditions reporting entities (laboratories, hospitals, healthcare providers, etc.) are required to report.



Tennessee Department of Health
Reportable Diseases and Events

The diseases and events listed below are declared to be communicable and/or dangerous to the public and are to be reported to the local health department by all hospitals, physicians, laboratories, and other persons knowing of or suspecting a case in accordance with the provision of the statutes and regulations governing the control of communicable diseases in Tennessee (T.C.A. §68 Rule 1200-14-01-.02). See matrix for additional details.

Category 1A: Requires immediate telephonic notification (24 hours a day, 7 days a week), followed by a written report using the PH-1600 within 1 week.

[002] Anthrax (*Bacillus anthracis*)[B]
[005] Botulism-Foodborne (*Clostridium botulinum*)[B]
[004] Botulism-Wound (*Clostridium botulinum*)
[505] Disease Outbreaks (e.g., foodborne, waterborne, healthcare, etc.)
[023] Hantavirus Disease
[096] Measles-Imported
[026] Measles-Indigenous
[095] Meningococcal Disease (*Neisseria meningitidis*)
[530] Middle East Respiratory Syndrome (MERS)
[516] Novel Influenza A
[032] Pertussis (Whooping Cough)
[037] Rabies: Human
[112] Ricin Poisoning[B]
[132] Severe Acute Respiratory Syndrome (SARS)
[107] Smallpox[B]
[110] Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning[B]
[111] Viral Hemorrhagic Fever[B]

Category 1B: Requires immediate telephonic notification (next business day), followed by a written report using the PH-1600 within 1 week.

[006] Brucellosis (*Brucella* species)[B]
[502] *Burkholderia mallei* infection[B]
[532] Chikungunya
[010] Congenital Rubella Syndrome
[011] Diphtheria (*Corynebacterium diphtheriae*)
[123] Eastern Equine Encephalitis Virus Infection
[507] *Francisella* species infection (other than *F. tularensis*)[B]
[053] Group A Streptococcal Invasive Disease (*Streptococcus pyogenes*)
[047] Group B Streptococcal Invasive Disease (*Streptococcus agalactiae*)
[054] *Haemophilus influenzae* Invasive Disease
[016] Hepatitis, Viral-Type A acute
[513] Influenza-associated deaths, age <18 years
[520] Influenza-associated deaths, pregnancy-associated
[515] Melioidosis (*Burkholderia pseudomallei*)
[102] Meningitis-Other Bacterial
[031] Mumps
[033] Plague (*Yersinia pestis*)[B]
[035] Poliomyelitis-Nonparalytic
[034] Poliomyelitis-Paralytic
[119] Prion disease-variant Creutzfeldt Jakob Disease
[109] Q Fever (*Coxiella burnetii*)[B]
[040] Rubella
[041] Salmonellosis: Typhoid Fever (*Salmonella* Typhi)
[131] *Staphylococcus aureus*: Vancomycin non-sensitive – all forms
[075] Syphilis (*Treponema pallidum*): Congenital
[519] Tuberculosis, confirmed and suspect cases of active disease (*Mycobacterium tuberculosis* complex)
[113] Tularemia (*Francisella tularensis*)[B]
[108] Venezuelan Equine Encephalitis Virus Infection[B]

Category 2: Requires written report using form PH-1600 within 1 week.

[528] *Acinetobacter* species, Carbapenem-resistant[L]
[501] Babesiosis
[003] Botulism-Infant (*Clostridium botulinum*)
[121] California/LaCrosse Serogroup Virus Infection
[007] Campylobacteriosis (including EIA or PCR positive stools)
[526] Carbon Monoxide Poisoning
[503] Chagas Disease
[069] Chancroid
[055] *Chlamydia trachomatis*-Genital
[057] *Chlamydia trachomatis*-Other
[009] Cholera (*Vibrio cholerae*)
[001] Cryptosporidiosis (*Cryptosporidium* species)
[106] Cyclosporiasis (*Cyclospora* species)
[504] Dengue Fever
[522] Ehrlichiosis/Anaplasmosis – Any
[506] Enterobacteriaceae, Carbapenem-resistant
[060] Gonorrhea-Genital (*Neisseria gonorrhoeae*)
[064] Gonorrhea-Ophthalmic (*Neisseria gonorrhoeae*)
[061] Gonorrhea-Oral (*Neisseria gonorrhoeae*)
[062] Gonorrhea-Rectal (*Neisseria gonorrhoeae*)
[133] Guillain-Barré syndrome
[022] Hansen's Disease [Leprosy] (*Mycobacterium leprae*)

Category 2: Requires written report using form PH-1600 within 1 week. (continued)

[058] Hemolytic Uremic Syndrome (HUS)
[480] Hepatitis, Viral-HbsAg positive infant
[048] Hepatitis, Viral-HbsAg positive pregnant female
[017] Hepatitis, Viral-Type B acute
[018] Hepatitis, Viral-Type C acute
[021] Legionellosis (*Legionella* species)
[094] Listeriosis (*Listeria* species)
[024] Lyme Disease (*Borrelia burgdorferi*)
[025] Malaria (*Plasmodium* species)
[521] Powassan virus infection
[118] Prion disease-Creutzfeldt Jakob Disease
[533] Pseudomonas species, Carbapenem-resistant[L]
[036] Psittacosis (*Chlamydia psittaci*)
[105] Rabies: Animal
[122] St. Louis Encephalitis Virus Infection
[042] Salmonellosis: Other than *S*. Typhi (*Salmonella* species)
[517] Shiga-toxin producing *Escherichia coli* (including Shiga-like toxin positive stools, *E. coli* O157 and *E. coli* non-O157)
[043] Shigellosis (*Shigella* species)
[039] Spotted Fever Rickettsiosis (*Rickettsia* species including Rocky Mountain Spotted Fever)
[518] *Streptococcus pneumoniae* Invasive Disease (IPD)
[074] Syphilis (*Treponema pallidum*): Cardiovascular
[072] Syphilis (*Treponema pallidum*): Early Latent
[073] Syphilis (*Treponema pallidum*): Late Latent
[077] Syphilis (*Treponema pallidum*): Late Other
[076] Syphilis (*Treponema pallidum*): Neurological
[070] Syphilis (*Treponema pallidum*): Primary
[071] Syphilis (*Treponema pallidum*): Secondary
[078] Syphilis (*Treponema pallidum*): Unknown Latent
[044] Tetanus (*Clostridium tetani*)
[045] Toxic Shock Syndrome: Staphylococcal
[097] Toxic Shock Syndrome: Streptococcal
[046] Trichinosis
[101] Vancomycin resistant enterococci (VRE) Invasive Disease
[114] *Varicella* deaths
[104] Vibriosis (*Vibrio* species)
[125] West Nile virus Infections-Encephalitis
[126] West Nile virus Infections-Fever
[124] Western Equine Encephalitis Virus Infection
[098] Yellow Fever
[103] Yersiniosis (*Yersinia* species)

Category 3: Requires special confidential reporting to designated health department personnel within 1 week.

[500] Acquired Immunodeficiency Syndrome (AIDS)
[512] Human Immunodeficiency Virus (HIV)
[525] All CD4+ T-cell and HIV-1 Viral Load testing results from those laboratories performing these tests

Category 4: Laboratories and physicians are required to report all blood lead tests. Levels ≥ 5µg/dl should be reported within 1 week. Levels < 5µg/dl should be reported within 1 month.

[514] Lead Levels (blood)

Category 5: Events will be reported monthly (no later than 30 days following the end of the month) using the designated reporting mechanism. For Healthcare Associated Infections, events should be reported via the National Healthcare Safety Network (NHSN – see http://health.state.tn.us/ceds/hai/index.htm for more details); *Clostridium difficile* Infection and *Staphylococcus aureus*: Methicillin resistant Invasive Disease (Davidson County residents only) will also be reported monthly to the Emerging Infections Program (EIP). For Neonatal Abstinence Syndrome (NAS), a diagnosis should be reported using the NAS reporting portal (http://health.tn.gov/MCH/NAS/index.shtml).

[531] *Clostridium difficile* Infection[L]
[523] Healthcare Associated Infections, Catheter Associated Urinary Tract Infections
[508] Healthcare Associated Infections, Central Line Associated Bloodstream Infections
[509] Healthcare Associated Infections, *Clostridium difficile*
[524] Healthcare Associated Infections, Dialysis Events
[529] Healthcare Associated Infections, Healthcare Personnel Influenza Vaccination
[510] Healthcare Associated Infections, Methicillin resistant *Staphylococcus aureus* positive blood cultures
[511] Healthcare Associated Infections, Surgical Site Infections
[130] *Staphylococcus aureus*: Methicillin resistant Invasive Disease[L]
[527] Neonatal Abstinence Syndrome

Tennessee Department of Health
Reportable Diseases and Events Matrix

The diseases and events listed below are declared to be communicable and/or dangerous to the public and are to be reported to the local health department by all hospitals, physicians, laboratories, and other persons knowing of or suspecting a case in accordance with the provision of the statutes and regulations governing the control of communicable diseases in Tennessee (T.C.A. §68 Rule 1200-14-01-.02).

(Effective January 01, 2015)

Code	Disease or Event	Pathogen	Category[1]	Specimen Source(s)[2]	Send Isolate/Specimen[3]	Reporter[12]	Limited Catchment[14]	NHSN	BT Indicator
528	*Acinetobacter* species, Carbapenem-resistant[9,10]	Carbepenem-resistant *Acinetobacter* species[9,10]	2	Sterile Sites, Urine	–	L	H	–	–
500	Acquired Immunodeficiency Syndrome (AIDS)[7]	Human Immunodeficiency Virus (HIV)[7]	3	All	–	P	–	–	–
525	All CD4+ T-cell and HIV Viral Load testing results from those laboratories performing these tests	Human Immunodeficiency Virus (HIV)	3	All	–	L	–	–	–
002	Anthrax	*Bacillus anthracis*	1A	All	Required	L & P	–	–	Y
501	Babesiosis	*Babesia* species	2	All	–	L & P	–	–	–
005	Botulism-Foodborne	*Clostridium botulinum*	1A	All	Required	L & P	–	–	Y
003	Botulism-Infant	*Clostridium botulinum*	2	All	Required	L & P	–	–	–
004	Botulism-Wound	*Clostridium botulinum*	1A	All	Required	L & P	–	–	–
006	Brucellosis	*Brucella* species	1B	All	Required	L & P	–	–	Y
502	*Burkholderia mallei* infection	*Burkholderia mallei*	1B	All	Required	L	–	–	Y
121	California/LaCrosse Serogroup Virus Infection	LaCrosse Encephalitis Virus, Jamestown Canyon Virus, Snoeshoe Hare Virus, Trivittatus Virus, Keystone Virus and California Encephalitis Virus	2	All	–	L & P	–	–	–
007	Campylobacteriosis (including EIA or PCR positive stools)	*Campylobacter* species	2	All	*Requested*	L & P	–	–	–
526	Carbon Monoxide Poisoning	–	2	Blood	–	P	–	–	–
503	Chagas Disease	*Trypanosoma cruzi*	2	All	–	L & P	–	–	–
069	Chancroid	*Haemophilus ducreyi*	2	All	–	L & P	–	–	–
532	Chikungunya	Chikungunya Virus	1B	All	–	L & P	–	–	–
055	*Chlamydia trachomatis*-Genital[7]	*Chlamydia trachomatis*[7]	2	All	–	L & P	–	–	–
057	*Chlamydia trachomatis*-Other[7]	*Chlamydia trachomatis*[7]	2	All	–	L & P	–	–	–
009	Cholera	Toxigenic *Vibrio cholerae* O1 or O139	2	All	Required	L & P	–	–	–
531	*Clostridium difficile* Infection[9]	*Clostridium difficile*[9]	5	All	*Requested*	L & P	D	–	–
010	Congenital Rubella Syndrome	Rubella Virus	1B	All	–	L & P	–	–	–
001	Cryptosporidiosis	*Cryptosporidium* species	2	All	–	L & P	–	–	–
106	Cyclosporiasis	*Cyclospora* species	2	All	–	L & P	–	–	–
504	Dengue Fever	Dengue Virus	2	All	–	L & P	–	–	–
011	Diphtheria	*Corynebacterium diphtheriae* or *Corynebacterium ulcerans*	1B	All	Required	L & P	–	–	–
505	Disease Outbreaks (e.g., foodborne, waterborne, healthcare, etc.)	–	1A	All	*By Request*	P	–	–	–
123	Eastern Equine Encephalitis Virus Infection	Eastern Equine Encephalitis Virus	1B	All	–	L & P	–	–	–
522	Ehrlichiosis/Anaplasmosis – Any	*Anaplasma* species or *Ehrlichia* species	2	All	–	L & P	–	–	–
506	Enterobacteriaceae, Carbapenem-resistant[10,13]	Carbapenem-resistant *Escherichia coli, Klebsiella* species, *Enterobacter* species[10,13]	2	All	Required	L & P	–	–	–
507	*Francisella* species infection	*Francisella* species (other than *F. tularensis*)	1B	All	Required	L	–	–	Y
060	Gonorrhea-Genital[7]	*Neisseria gonorrhoeae*[7]	2	All	–	L & P	–	–	–
064	Gonorrhea-Ophthalmic[7]	*Neisseria gonorrhoeae*[7]	2	All	–	L & P	–	–	–
061	Gonorrhea-Oral[7]	*Neisseria gonorrhoeae*[7]	2	All	–	L & P	–	–	–
062	Gonorrhea-Rectal[7]	*Neisseria gonorrhoeae*[7]	2	All	–	L & P	–	–	–
053	Group A Streptococcal Invasive Disease	*Streptococcus pyogenes*	1B	Sterile Only, NF/STSS Wounds[4], Muscle[5]	Required	L & P	–	–	–
047	Group B Streptococcal Invasive Disease	*Streptococcus agalactiae*	1B	Sterile Only	–	L & P	–	–	–
133	Guillain-Barré syndrome	–	2	–	–	P	–	–	–
054	*Haemophilus influenzae* Invasive Disease	*Haemophilus influenzae*	1B	Sterile Only	Required	L & P	–	–	–
022	Hansen's Disease (Leprosy)	*Mycobacterium leprae*	2	All	Required	L & P	–	–	–
023	Hantavirus Disease	Hantavirus	1A	All	–	L & P	–	–	–

Code	Disease or Event	Pathogen	Category[1]	Specimen Source(s)[2]	Send Isolate/Specimen[3]	Reporter[12]	Limited Catchment[14]	NHSN	BT Indicator
523	Healthcare Associated Infections, Catheter Associated Urinary Tract Infections	–	5	Urine	–	P	–	Y	–
508	Healthcare Associated Infections, Central Line Associated Bloodstream Infections	–	5	Blood	–	P	–	Y	–
509	Healthcare Associated Infections, *Clostridium difficile*	*Clostridium difficile*	5	All	–	P	–	Y	–
524	Healthcare Associated Infections, Dialysis Events	–	5	All	–	P	–	Y	–
529	Healthcare Associated Infections, Healthcare Personnel Influenza Vaccination	–	5	–	–	P	–	Y	–
510	Healthcare Associated Infections, Methicillin resistant *Staphylococcus aureus* positive blood cultures	Methicillin resistant *Staphylococcus aureus*	5	Blood	–	P	–	Y	–
511	Healthcare Associated Infections, Surgical Site Infections	–	5	All	–	P	–	Y	–
058	Hemolytic Uremic Syndrome (HUS)	–	2	–	–	P	–	–	–
480	Hepatitis, Viral-HBsAg positive infant	Hepatitis B Virus	2	All	–	L & P	–	–	–
048	Hepatitis, Viral-HBsAg positive pregnant female	Hepatitis B Virus	2	All	–	L & P	–	–	–
016	Hepatitis, Viral-Type A acute	Hepatitis A Virus	1B	All	*Requested*	L & P	–	–	–
017	Hepatitis, Viral-Type B acute[7]	Hepatitis B Virus[7]	2	All	*Requested*	L & P	–	–	–
018	Hepatitis, Viral-Type C acute	Hepatitis C Virus	2	All	–	L & P	–	–	–
512	Human Immunodeficiency Virus (HIV)[7]	Human Immunodeficiency Virus (HIV)[7]	3	All	–	L & P	–	–	–
513	Influenza-associated deaths, age <18 years	Human influenza virus	1B	All	*Requested*	P	–	–	–
520	Influenza-associated deaths, pregnancy-associated[11]	Human influenza virus[11]	1B	All	*Requested*	P	–	–	–
514	Lead Levels (blood)[8]	–	4	Blood	–	L & P	–	–	–
021	Legionellosis	*Legionella* species	2	All	Required	L & P	–	–	–
094	Listeriosis	*Listeria* species	2	All	Required	L & P	–	–	–
024	Lyme Disease	*Borrelia burgdorferi*	2	All	–	L & P	–	–	–
025	Malaria	*Plasmodium* species	2	All	Required	L & P	–	–	–
096	Measles-Imported	Measles virus	1A	All	–	L & P	–	–	–
026	Measles-Indigenous	Measles virus	1A	All	–	L & P	–	–	–
515	Melioidosis	*Burkholderia pseudomallei*	1B	All	Required	L & P	–	–	Y
102	Meningitis-Other Bacterial	–	1B	Sterile Only	–	P	–	–	–
095	Meningococcal Disease	*Neisseria meningitidis*	1A	Sterile Only	Required	L & P	–	–	–
530	Middle East Respiratory Syndrome (MERS)	*Middle East Respiratory Syndrome Coronavirus (MERS-CoV)*	1A	All	Required	L & P	–	–	–
031	Mumps	Mumps virus	1B	All	–	L & P	–	–	–
527	Neonatal Abstinence Syndrome	–	5	–	–	P	–	–	–
516	Novel Influenza A	Human influenza A virus (novel subtypes)	1A	All	Required	L & P	–	–	–
032	Pertussis (Whooping Cough)	*Bordetella pertussis*	1A	All	–	L & P	–	–	–
033	Plague	*Yersinia pestis*	1B	All	Required	L & P	–	–	Y
035	Poliomyelitis-Nonparalytic	Poliovirus	1B	All	–	L & P	–	–	–
034	Poliomyelitis-Paralytic	Poliovirus	1B	All	–	L & P	–	–	–
521	Powassan virus infection	Powassan virus	2	All	–	L & P	–	–	–
118	Prion disease-Creutzfeldt Jakob Disease	–	2	All	–	L & P	–	–	–
119	Prion disease-variant Creutzfeldt Jakob Disease	–	1B	All	–	L & P	–	–	–
533	*Pseudomonas* species, Carbapenem-resistant[9,10]	Carbepenem-resistant *Pseudomonas* species[9,10]	2	All	*Requested*	L	S	–	–
036	Psittacosis	*Chlamydia psittaci*	2	All	–	L & P	–	–	–
109	Q Fever	*Coxiella burnetii*	1B	All	–	L & P	–	–	Y
105	Rabies: Animal	Rabies virus	2	All	–	L & P	–	–	–
037	Rabies: Human	Rabies virus (Lyssavirus)	1A	All	–	L & P	–	–	–
112	Ricin Poisoning	–	1A	All	–	L & P	–	–	Y
040	Rubella	Rubella Virus	1B	All	–	L & P	–	–	–
122	St. Louis Encephalitis Virus Infection	St. Louis Encephalitis Virus	2	All	–	L & P	–	–	–
042	Salmonellosis: Other than *S*. Typhi	*Salmonella* species (other than *S*. Typhi)	2	All	Required	L & P	–	–	–
041	Salmonellosis: Typhoid Fever	*Salmonella* Typhi	1B	All	Required	L & P	–	–	–
132	Severe Acute Respiratory Syndrome (SARS)	Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV)	1A	All	Required	L & P	–	–	–
517	Shiga-toxin producing Escherichia coli (including Shiga-like toxin positive stools, E. coli O157 and E. coli non-O157)[6]	Shiga-toxin producing *Escherichia coli*[6]	2	All	Required	L & P	–	–	–
043	Shigellosis	*Shigella* species	2	All	Required	L & P	–	–	–
107	Smallpox	Variola virus (Orthopox virus)	1A	All	–	L & P	–	–	Y
039	Spotted Fever Rickettsiosis (including Rocky Mountain Spotted Fever)	*Rickettsia* species	2	All	–	L & P	–	–	–
110	Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning	Enterotoxin B producing *Staphylococcus aureus*	1A	All	–	L & P	–	–	Y

Code	Disease or Event	Pathogen	Category[1]	Specimen Source(s)[2]	Send Isolate/Specimen[3]	Reporter[12]	Limited Catchment[14]	NHSN	BT Indicator
130	*Staphylococcus aureus* : Methicillin resistant Invasive Disease[9]	Methicillin resistant *Staphylococcus aureus* [9]	5	Sterile Only	–	L & P	D	–	–
131	*Staphylococcus aureus* : Vancomycin non-sensitive – all forms[10]	Vancomycin non-sensitive *Staphylococcus aureus* [10]	1B	All	Required	L & P	–	–	–
518	*Streptococcus pneumoniae* Invasive Disease (IPD)[10]	*Streptococcus pneumoniae* [10]	2	Sterile Only	Required	L & P	–	–	–
074	Syphilis: Cardiovascular[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
075	Syphilis: Congenital[7]	*Treponema pallidum* [7]	1B	All	–	L & P	–	–	–
072	Syphilis: Early Latent[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
073	Syphilis: Late Latent[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
077	Syphilis: Late Other[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
076	Syphilis: Neurological[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
070	Syphilis: Primary[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
071	Syphilis: Secondary[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
078	Syphilis: Unknown Latent[7]	*Treponema pallidum* [7]	2	All	–	L & P	–	–	–
044	Tetanus	*Clostridium tetani*	2	All	Required	L & P	–	–	–
045	Toxic Shock Syndrome: Staphylococcal	*Staphylococcus aureus*	2	All	–	L & P	–	–	–
097	Toxic Shock Syndrome: Streptococcal	*Streptococcus pyogenes*	2	All	–	L & P	–	–	–
046	Trichinosis	*Trichinella* species	2	All	–	L & P	–	–	–
519	Tuberculosis, confirmed and suspect cases of active disease	*Mycobacterium tuberculosis* complex (*M . tuberculosis* , *M . bovis* , *M . africanum* , *M . canetti* , *M . microti*)	1B	All	Required	L & P	–	–	–
113	Tularemia	*Francisella tularensis*	1B	All	Required	L & P	–	–	Y
101	Vancomycin resistant enterococci (VRE) Invasive Disease	Vancomycin resistant *Enterococcus* species	2	Sterile Only	–	L & P	–	–	–
114	Varicella deaths	Varicella virus	2	All	–	P	–	–	–
108	Venezuelan Equine Encephalitis Virus Infection	Venezuelan Equine Encephalitis Virus	1B	All	–	L & P	–	–	Y
104	Vibriosis	*Vibrio* species (other than toxigenic *V . cholerae* O1 or O139)	2	All	Required	L & P	–	–	–
111	Viral Hemorrhagic Fever	Ebola virus, Marburg virus, Crimean-Congo hemorrhagic fever viruses, Lassa virus, Lujo virus, New world arenaviruses (Guanarito, Machupo, Junin, Sabia viruses)	1A	All	Required	L & P	–	–	Y
125	West Nile virus Infections-Encephalitis	West Nile virus	2	All	–	L & P	–	–	–
126	West Nile virus Infections-Fever	West Nile virus	2	All	–	L & P	–	–	–
124	Western Equine Encephalitis Virus Infection	Western Equine Encephalitis Virus	2	All	–	L & P	–	–	–
098	Yellow Fever	Yellow Fever virus	2	All	–	L & P	–	–	–
103	Yersiniosis	*Yersinia* species (other than *Y . pestis*)	2	All	*Requested*	L & P	–	–	–

[1]Category 1A diseases require immediate telephonic notification (24 hours a day, 7 days a week), followed by a written report using the PH-1600 within 1 week. Category 1B diseases require immediate telephonic notification (next business day), followed by a written report using the PH-1600 within 1 week. Category 2 diseases only require a written report using the PH-1600 within 1 week. Category 3 diseases require special confidential reporting to designated health department personnel within 1 week. For Category 4, laboratories and physicians are required to report all blood lead tests. Levels ≥ 5µg/dl should be reported within 1 week. Levels < 5µg/dl should be reported within 1 month. For Category 5, events will be reported monthly (no later than 30 days following the end of the month) using the designated reporting mechanism. For Healthcare Associated Infections, events should be reported via the National Healthcare Safety Network (NHSN – see http://health.state.tn.us/ceds/hai/index.htm for more details); *Clostridium difficile* Infection and *Staphylococcus aureus* : Methicillin resistant Invasive Disease (Davidson County residents only) will also be reported monthly to the Emerging Infections Program (EIP). For Neonatal Abstinence Syndrome (NAS), a diagnosis should be reported using the NAS reporting portal (http://health.tn.gov/MCH/NAS/index.shtml).

[2]For most notifiable diseases, a patient is reportable when the pathogen is isolated or detected from any specimen source (unless where otherwise indicated). A normally "sterile site" is defined as: blood, CSF, pleural fluid (includes chest fluid, thoracocentesis fluid), peritoneal fluid (includes abdominal fluid, ascites), pericardial fluid, bone (includes bone marrow), joint (includes synovial fluid; fluid, needle aspirate or culture of any specific joint: knee, ankle, elbow, hip, wrist), internal body sites (specimen obtained from surgery or aspirate from one of the following: lymph node, brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, or ovary).

[3]It shall be the responsibility of the director of a medical laboratory to submit cultures of designated microorganisms for confirmation, typing and/or antibiotic sensitivity. All cultures shall be accompanied by the following information: (a) Patient's full name, address, age, and sex. (b) Physician's name and address. (c) Anatomic source of culture. Refer to the Tennessee Department of Health Laboratory Services' Directory of Services website for specimens needed for testing (http://health.state.tn.us/lab/directory.htm).

[4]Isolates from wounds will only be considered for Group A Streptococcal Invasive Disease when accompanied by necrotizing fasciitis (NF) or streptococcal toxic shock syndrome (STSS).

[5]Isolates from muscle will only be considered for Group A Streptococcal Invasive Disease.

[6]For any Shiga-toxin producing *Escherichia coli* (STEC), including *E . coli* O157s and *E . coli* non-O157s, EIA positive broths for shiga-like toxin will also be accepted.

[7]In accordance with T.C.A. §37-1-403, any physician or other person diagnosing or treating venereal herpes or any of these reportable sexually transmitted diseases in a child 13 years of age or younger should make a confidential written report of the case to the Department.

Code	Disease or Event	Pathogen	Category[1]	Specimen Source(s)[2]	Send Isolate/Specimen[3]	Reporter[12]	Limited Catchment[14]	NHSN	BT Indicator

[8]For blood lead levels ≥ 5 µg/dl:
Report results within 1 week of receipt of results. Reports should include Patient's First and Last Name, Date of Birth, Street Address, City, State, Zip Code and County of Residence, Sample Date, Sample Type, Provider's Name, Provider's Phone Number and Payment Source.

For blood lead levels < 5 µg/dl:
Report results within 1 month of receipt of results. Reports should include Patient's First and Last Name, Date of Birth, Street Address, City, State, Zip Code and County of Residence, Sample Date, Sample Type, Provider's Name, Provider's Phone Number and Payment Source.

Laboratories should report electronically in a manner approved by the Tennessee Department of Health. If you wish to utilize the ELR interface you currently use to report communicable diseases to TDH, please contact CEDS.Informatics@tn.gov. Practitioners using portable devices should report using LeadTRK electronic system available at https://leadinput.tennessee.edu/leadin/ OR standard forms available at http://health.tn.gov/MCH/Lead.shtml#4 and fax to Housing and Environmental Health, University of Tennessee Extension (865) 974-5370. Email leadtrk@utk.edu for any questions or concerns.

[9]During monthly Emerging Infections Program (EIP) active surveillance visits, TDH surveillance officers will work with sentinel sites to report patients and coordinate referral of selected positive specimens using site-specific procedures. For Carbapenem-resistant Acinetobacter (CRA), a printout of antimicrobial susceptibility results should also be submitted (see footnote 10).

[10]A printout of antimicrobial susceptibilty results must also be attached to the PH-1600 when reporting the following diseases to TDH: *Acinetobacter* species, Carbapenem-resistant; Enterobacteriaceae, Carbapenem-resistant; *Pseudomonas* species, Carbapenem-resistant; *Staphylococcus aureus* : Vancomycin non-sensitive – all forms; and *Streptococcus pneumoniae* Invasive Disease (IPD).

[11]A pregnancy-associated death is a maternal death up to 6 weeks post-partum.

[12]The party reponsible for reporting is indicated by one of the following: L=Laboratory, P=Medical provider or other person knowing of or suspecting a case, L & P= Both.

[13]Reporting and submission of isolates which are non-susceptible to one or more carbapenems (includes intermediate and resistant to any carbapenem) is required for the following organisms: *Escherichia coli* , *Klebsiella* species, and *Enterobacter* species.

[14]Dependent upon the disease or event, only residents/laboratories of the specified catchment areas are required/requested to submit isolates/specimens to the state public health laboratory: H=Healthcare Associated Infections (HAI): Residents of Davidson, Cheatham, Robertson, Sumner, Wilson, Rutherford, Dickson and Williamson; D=Emerging Infections Program (EIP) Sentinel Site Surveillance: Residents of Davidson County; and S=HAI Sentinel Laboratory Surveillance: Sentinel Laboratories in Davidson County.

Reportable Diseases and Events Laboratory Guidance

(Effective January 01, 2015)

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Detection in one or more specimens of etiological agents of disease or conditions not limited to those listed in this Table that are of urgent public health significance[11]	1A	RE	Detection in one or more specimens of etiological agents of disease or conditions not limited to those listed in this Table that are of urgent public health significance[11]		Disease Outbreaks (e.g., foodborne, waterborne, healthcare, etc.)[11]
Acinetobacter species, Carbapenem-resistant[9,10]	2		*Acinetobacter* from normally sterile sites or urine and non-susceptible isolates (intermediate or resistant to at least one carbapenem or PCR detection of carbapenemase-producing gene) from residents of Davidson, Cheatham, Robertson, Sumner, Wilson, Rutherford, Dickson, or Williamson counties. Please include all susceptibility test results.[9,10]	N	*Acinetobacter* species, Carbapenem-resistant[9,10]
Anaplasma phagocytophilum, Ehrlichia chaffeensis, Ehrlichia ewingii, Anaplasma species, *Ehrlichia* species	2		Positive by any method, include speciation results if known		Anaplasmosis/Ehrlichiosis - Any
Babesia species	2		Positive by any method		Babesiosis
Bacillus anthracis	1A	R	Positive by any method		Anthrax
Bordetella pertussis	1A		Positive culture or detected by nucleic acid amplification or polymerase chain reaction (PCR)		Pertussis (Whooping Cough)
Borrelia burgdorferi	2		Positive by any method		Lyme Disease
Brucella species	1B	R	Positive by any method		Brucellosis
Bunyaviruses	1A	R	Positive by any method		Viral Hemorrhagic Fever
Burkholderia species	1B	R	Positive by any method		*Burkholderia* species infection
Burkholderia pseudomallei	1B	R	Positive by any method		Melioidosis
California/LaCrosse serogroup viruses	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		California/LaCrosse serogroup virus infection
Campylobacter species	2	RE	Positive by any method (including culture, EIA, and PCR), include speciation results if known		Campylobacteriosis
Chikungunya virus	1B		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Chikungunya virus infection
Chlamydia psittaci	2		Positive or detected by culture, serology, or PCR		Psittacosis
Chlamydia trachomatis[7]	2		Positive by any method from any specimen site		Chlamydia[7]
Clostridium botulinum or botulinum toxin	1A	R	Positive by any method		Botulism -foodborne -wound
Clostridium botulinum or botulinum toxin	2	R	Positive by any method		Botulism, infant
Clostridium tetani	2	R	Positive by any method		Tetanus

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Corynebacterium diphtheria or *Corynebacterium ulcerans*	1B	R	Positive culture from a clinical specimen or histopathology		Diphtheria
Coxiella burnetii	1B		Demonstration by serology: - Phase I or phase II antigen IgG ≥1:128 by indirect immunofluorescence assay (IFA) - Elevated phase II IgG or IgM by enzyme-linked immunosorbent assay (ELISA), dot-ELISA, or latex		Q Fever
			Detection by PCR		
			Demonstration by immunohistochemical methods (IHC)		
			Detection by culture		
Crimean-Congo hemorrhagic fever viruses	1A	R	Positive by any method		Viral Hemorrhagic Fever
Cryptosporidium species	2		Positive by any method, include methodology		Cryptosporidiosis
Cylospora species	2		Positive by any method, include speciation results if known		Cyclosporiasis
Dengue virus	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Dengue Fever
Ebola virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Eastern equine encephalitis virus	1B		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Eastern equine encephalitis virus infection
Escherichia coli, Carbapenem resistant[10]	2	R	*Escherichia coli,* from clinical specimen and nonsusceptible (i.e intermediate- or resistant) to at least one carbapenem OR production of carbapenemase (i.e. *Klebsiella pneumonia* carbapenemase [KPC], New Delhi metallo-β-lactamase [NDM], Verona integron encoded metallo-β-lactamase [VIM], the imipenemase [IMP] metallo-β-lactamase, OXA-48 carbapenemase) demonstrated by recognized test (e.g. polymerase chain reaction, metallo-β-lactamase test, modified-Hodge test, Carba-NP). Include all susceptibility results, plus all results regarding carbapenemase production (positive or negative)[10]		Enterobacteriaceae, Carbapenem-resistant[10]
Ehrlichia chaffeensis, Ehrlichia ewingii, Anaplasma phagocytophilum, Anaplasma species, *Ehrlichia* species	2		Positive by any method, include speciation results if known		Ehrlichiosis/Anaplasmosis - Any
Enterobacter species, Carbapenem resistant[10]	2	R	*Enterobacter* species, from clinical specimen and nonsusceptible (i.e intermediate- or resistant) to at least one carbapenem OR production of carbapenemase (i.e. *Klebsiella pneumonia* carbapenemase [KPC], New Delhi metallo-β-lactamase [NDM], Verona integron encoded metallo-β-lactamase [VIM], the imipenemase [IMP] metallo-β-lactamase, OXA-48 carbapenemase) demonstrated by recognized test (e.g. polymerase chain reaction, metallo-β-lactamase test, modified-Hodge test, Carba-NP). Include all susceptibility results, plus all results regarding carbapenemase production (positive or negative)[10]		Enterobacteriaceae, Carbapenem-resistant[10]

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Enterococcus species, vancomycin resistant[10]	2		Isolation of enterococci from a clinical specimen from a sterile site AND "Nonsusceptible" isolate (i.e., intermediate- or high level resistant) to vancomycin[10]		Vancomycin resistant enterococci (VRE) Invasive Disease[10]
Francisella species (including *F. tularensis*)	1B	R	Positive by any method		Tularemia or other *Francisella* species infections
Guanarito virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Haemophilus ducreyi	2		Positive by any method		Chancroid
Haemophilus influenzae	1B	R	Positive culture or PCR from a sterile site		*Haemophilus influenzae* Invasive Disease
Hantavirus	1A		Positive by any method		Hantavirus disease
Hepatitis A virus	1B	RE	Positive IgM anti-HAV; include associated results for additional serological markers for hepatitis (including hepatitis B and C) and alanine aminotransferase (ALT) and aspartate aminotransferase (AST) if available		Hepatitis, Viral – Type A acute
Hepatitis B virus[7]	2	RE	Positive hepatitis B surface antigen (HBsAg) or positive IgM antibody to hepatitis B core antigen (anti-HBc); include pregnancy status and additional associated serological markers for hepatitis(including hepatitis A and C), nucleic acid tests for HBV DNA, and alanine aminotransferase (ALT) if available		Hepatitis, Viral - Hepatitis B surface antigen (HBsAg) positive child less than 24 months Hepatitis, Viral – Hepatitis B surface antigen (HBsAg) positive pregnant female Hepatitis, Viral – Type B acute[7]
Hepatitis C virus	2		Positive anti-HCV by screening assay with a signal to cut-off (or index value) ratio predictive of a true positive ≥95% of the time as determined by the particular assay (see CDC's "Hepatitis C Information for Health Professionals" at www.cdc.gov/hepatitis/hcv/labtesting.htm for a listing of screening test kits, their manufacturers, assay formats, and signal to cut-off [or index value] ratios predictive of a true positive ≥95% of the time) AND positive confirmatory assay (e.g., nucleic acid amplification for HCV RNA [qualitative, quantitative or genotype testing]); include signal to cut-off (or index value) ratio in the results section of the laboratory report; include all associated results (positive or negative) for additional serologic markers of hepatitis (including hepatitis A and B) and alanine aminotransferase (ALT) if available		Hepatitis, Viral – Type C acute
Human Immunodeficiency Virus (HIV)[7]	5		HIV confirmatory test positive by any method, CD4 Count[12], CD4 %[12], HIV Viral Load Count[12], HIV Viral Load Log Count[12]		Human Immunodeficiency Virus (HIV)[7] Acquired Immune Deficiency Syndrome (AIDS)[7]
Influenza virus, detection of a novel or pandemic influenza A virus strain from a human	1A	R	Positive viral culture or PCR		Influenza due to novel A strains
Junin virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Klebsiella species, Carbapenem resistant[10]	2	R	*Klebsiella* species, from clinical specimen and nonsusceptible (i.e intermediate- or resistant) to at least one carbapenem OR production of carbapenemase (i.e. *Klebsiella pneumonia* carbapenemase [KPC], New Delhi metallo-β-lactamase [NDM], Verona integron encoded metallo-β-lactamase [VIM], the imipenemase [IMP] metallo-β-lactamase, OXA-48 carbapenemase) demonstrated by recognized test (e.g. polymerase chain reaction, metallo-β-lactamase test, modified-Hodge test, Carba-NP). Include all susceptibility results, plus all results regarding carbapenemase production (positive or negative)[10]		Enterobacteriaceae, Carbapenem-resistant[10]

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Lassa virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Lead Levels (blood)[8]	4		All blood lead tests performed[8]		Lead Levels (blood)[8]
Legionella species	2	R	Positive by any method		Legionellosis
Listeria species	2	R	Positive by any method (including culture and PCR), include speciation results if known		Listeriosis
Lujo virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Machupo	1A	R	Positive by any method		Viral Hemorrhagic Fever
Marburg virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Measles virus	1A		Positive IgM or rising IgG titer or detected by nucleic acid amplification or positive viral culture		Measles (Rubeola) -Imported -Indigenous
Meningitis, isolation or demonstration of any bacterial species from cerebrospinal fluid	1B		Isolation of any bacteria from cerebrospinal fluid by culture, antigen, or PCR testing		Meningitis – Other Bacterial
Middle East Respiratory Syndrome Coronavirus (MERS-CoV)	1A	R	Positive by any method		Middle East Respiratory Syndrome (MERS)
Mumps virus	1B		Positive IgM or rising IgG titer or detected by nucleic acid amplification or positive viral culture		Mumps
Mycobacterium leprae	2	R	Demonstration of acid-fast bacilli in skin or dermal nerve		Leprosy (Hansen's Disease)
Mycobacterium tuberculosis complex (M. tuberculosis, M. bovis, M. africanum, M. canettii, M. microti)	1B	R	Any AFB smear (Flurochrome, acid-fast stain) from any site indicating presence of an acid-fast bacilli		Tuberculosis, confirmed and suspect cases of active disease
			Any Nucleic Acid Amplification (NAA) test (including but not limited to PCR, MTD, GeneXpert, MTBDR plus [HAIN test]) indicating detection of *Mycobacterium tuberculosis* complex or associated point mutation from any site		
			Any culture result by HPLC or DNA probe for *Mycobacterium tuberculosis* complex from any site		
			All anti-TB drug susceptibility results, by molecular or dilutional method, from a specimen or isolate with confirmed presence of *Mycobacterium tuberculosis* from any site. Anti-TB drugs include: isoniazid, rifamycins, pyrazinamide, ethambutol, streptomycin, levofloxacin, moxifloxacin, amikacin, capreomycin, kanamycin, cycloserine, ethionamide, para-aminosalicyclic acid, clofazimine, bedaquiline, delamanid, linezolid, amoxicillin-clavulanate, and imipenem		
Neisseria gonorrhoeae[7]	2		Positive by any method from any specimen site		Gonorrhea[7]
Neisseria meningitidis	1A	R	Positive culture or detected by nucleic acid amplification or positive immunohistochemistry or Gram-stain showing Gram-negative diplococci in CSF, blood, or any other sterile site or from petechial or purpuric lesion scrapings		Meningococcal Disease
Plasmodium species	2	R	Positive by any method		Malaria

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Poliovirus	1B		Positive viral culture or detected by PCR		Poliomyelitis -Nonparalyitic -Paralytic
Powassan virus	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Powassan virus infection
Prion	1B		Positive by any method		Prion disease – Creutzfeldt Jakob Disease Prion disease – variant Creutzfeldt Jakob Disease
Pseudomonas aeruginosa, carbapenem resistant[10]	2	R	Isolation of Pseudomonas aeruginosa from any specimen source and resistant to imipenem, meropenem, or doripenem from pre-identified sentinel laboratories in Davidson county. Include all susceptibility results, plus any available results regarding carbapenemase production (positive or negative).[10]	N	*Pseudomonas aeruginosa,* carbapenem resistant[10]
Rabies virus - animal	2		Only the Tennessee Department of Health Laboratory is approved for animal rabies testing		Rabies: Animal
Rabies virus - human	1A		Testing is available only by coordination with the Tennessee Department of Health Laboratory Services and CDC		Rabies: Human
Ricin toxin	1A		Positive by any method (including detection of DNA and presumptive identification of ricin toxin by fluoroimmunoassay)		Ricin poisoning
Rickettsia species (other than *R. typhus*)	2		Positive by any method, include speciation results if known		Spotted Fever Rickettsiosis (including Rocky Mountain Spotted Fever)
Rubella virus	1B		Positive IgM or rising IgG titer or detected by nucleic acid amplification or positive viral culture		Rubella, including congenital rubella syndrome
Sabia virus	1A	R	Positive by any method		Viral Hemorrhagic Fever
Salmonella species (other *S.* Typhi)	2	R	Positive by any method (including culture and PCR), include speciation results if known		Salmonellosis: Other than *S.* Typhi
Salmonella Typhi	1B	R	Positive by any method (including culture and PCR), include speciation results if known		Salmonellosis: Typhoid Fever
SARS-associated Coronavirus (SARS-CoV)	1A	R	Positive by any method		Severe Acute Respiratory Syndrome (SARS)
Shiga-toxin producing *Escherichia coli* (including Shiga-like toxin positive stools, *E. coli* O157 and *E. coli* non-O157)[6]	2	R	Positive by any method (including culture, EIA, and PCR), include speciation results if known; For state public health labs, please include negative, not isolated, and no growth results.		Shiga-toxin producing *Escherichia coli* (including Shiga-like toxin positive stools, *E. coli* O157 and *E. coli* non-O157)[6]
Shigella species	2	R	Positive by any method (including culture and PCR), include speciation results if known		Shigellosis
St. Louis encephalitis virus	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		St. Louis encephalitis virus infection

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Staphylococcus aureus, methicillin resistant[9]	5		Isolation of *S. aureus* from a clinical specimen from a sterile site AND "non-susceptible" isolate identified (i.e., intermediate- or high-level resistance to cefoxitin, methicillin, nafcillin, or oxacillin) OR detection of methicillin resistant *S. aureus* by nucleic acid amplification from a sterile site for Davidson County residents.[9]		*Staphylococcus aureus:* Methicillin resistant Invasive Disease (Davidson County residents only)[9]
Staphylococcus aureus, vancomycin non-sensitive – all forms[10]	1B	R	Isolation of S. aureus from a clinical specimen AND "non-susceptible" isolate identified (i.e., intermediate- or high-level resistance to vancomycin); please include all susceptibility test results[10]		*Staphylococcus aureus:* vancomycin non-sensitive – all forms[10]
Staphylococcus enterotoxin B	1A		Positive by any method		Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning
Streptococcus agalactiae	1B		Positive culture or nucleic acid amplification from a normally sterile site		Group B Streptococcal Invasive Disease
Streptococcus pneumoniae [10]	2	R	Positive culture from any sterile site; please include all susceptibility tests performed.[10]		*Streptococcus pneumoniae* Invasive Disease (IPD)[10]
Streptococcus pyogenes	1B	R	Positive culture or nucleic acid amplification from a normally sterile site, wound[4] or muscle[5]		Group A Streptococcal Invasive Disease
Treponema pallidum [7]	2		Positive/reactive by any method		Syphilis -Cardiovascular[7] -Early Latent[7] -Late Latent[7] -Late Other[7] -Neurological[7] -Primary[7] -Secondary[7] -Unknown Latent[7]
Treponema pallidum [7]	1B		Positive/reactive by any method		Syphilis -Congenital[7]
Trichinella spiralis	2		Positive serology or biopsy		Trichinosis (Trichinellosis)
Trypanosoma cruzi	2		Positive by any method		Chagas Disease
Variola virus (orthopox virus)	1A		Positive by any method or suspected		Smallpox
Venezuelan equine encephalitis virus	1B		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Venezuelan equine encephalitis virus infection
Vibrio cholerae (Toxigenic O1 or O139)	2	R	Positive by any method (including culture, PCR, and cholera toxin test), include speciation results if known		Cholera
Vibrio species (Non-toxigenic O1 or O139), *Grimontia hollisae, Photobacterium damselae*	2	R	Positive by any method (including culture, PCR, and cholera toxin test), include speciation results if known		Vibriosis

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**
Western equine encephalitis virus	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Western equine encephalitis virus infection
West Nile virus	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		West Nile virus infection
Yellow fever virus	2		Positive IgM. Quantitative IgG indicating a positive test result. Isolation of virus or demonstration of specific viral antigen or nucleic acid. Virus-specific neutralizing antibodies.		Yellow Fever
Yersinia pestis	1B	R	Positive by any method		Plague
Yersinia species	2	RE	Positive by any method (including culture and PCR), include speciation results if known		Yersiniosis

[1]Category 1A diseases require immediate telephonic notification (24 hours a day, 7 days a week), followed by a written report using the PH-1600 within 1 week. Category 1B diseases require immediate telephonic notification (next business day), followed by a written report using the PH-1600 within 1 week. Category 2 diseases only require a written report using the PH-1600 within 1 week. Category 3 diseases require special confidential reporting to designated health department personnel within 1 week. For Category 4, laboratories and physicians are required to report all blood lead tests. Levels ≥ 5µg/dl should be reported within 1 week. Levels < 5µg/dl should be reported within 1 month. For Category 5, events will be reported monthly (no later than 30 days following the end of the month) using the designated reporting mechanism. For Healthcare Associated Infections, events should by reported via the National Healthcare Safety Network (NHSN – see http://health.state.tn.us/ceds/hai/index.htm for more details); *Clostridium difficile* Infection and *Staphylococcus aureus* : Methicillin resistant Invasive Disease (Davidson County Residents only) will also be reported monthly to the Emerging Infections Program (EIP). For Neonatal Abstinence Syndrome (NAS), a diagnosis should be reported using the NAS reporting portal (http://health.tn.gov/MCH/NAS/index.shtml).

[2]For most notifiable diseases, an event is reportable when the pathogen is isolated or detected from any specimen source (unless where otherwise indicated). A normally "sterile site" is defined as: blood, CSF, pleural fluid (includes chest fluid, thoracocentesis fluid), peritoneal fluid (includes abdominal fluid, ascites), pericardial fluid, bone (includes bone marrow), joint (includes synovial fluid; fluid, needle aspirate or culture of any specific joint: knee, ankle, elbow, hip, wrist), internal body sites (specimen obtained from surgery or aspirate from one of the following: lymph node, brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, or ovary).

[3]It shall be the responsibility of the director of a medical laboratory to submit cultures of designated microorganisms for confirmation, typing and/or antibiotic sensitivity. All cultures shall be accompanied by the following information: (a) patient's full name, address, age, and sex. (b) Physician's name and address. (c) Anatomic source of culture. Refer to the Tennessee Department of Health Laboratory Services' Directory of Services website for specimens needed for testing (http://health.state.tn.us/lab/directory.htm). R = Required. RE = Requested.

[4]Isolates from wounds will only be considered for Group A Streptococcal Invasive Disease when accompanied by necrotizing fasciitis (NF) or streptococcal toxic shock syndrome (STSS).

[5]Isolates from muscle will only be considered for Group A Streptococcal Invasive Disease.

[6]For any Shiga-toxin producing *Escherichia coli* (STEC), including *E . coli* O157s and *E . coli* non-O157s, EIA positive broths for shiga-like toxin will also be accepted.

[7]In accordance with T.C.A. §37-1-403, any physician or other person diagnosing or treating venereal herpes or any of these reportable sexually transmitted diseases in a child 13 years of age or younger should make a confidential written report of the case to the Department.

Laboratory					Healthcare Provider
Agents, Reportable Laboratory Requests and Results	**Category[1]**	**Send Isolate or Specimen?[3]**	**Findings to Report to Public Health[2]**	**ELR[13]**	**Reportable Disease or Event**

[8]For blood lead levels ≥ 5 µg/dL:
Report results within 1 week of receipt of results. Report should include Patient's First and Last Name, Date of Birth, Street Address, City, State, Zip Code and County of Residence, Sample Date, Sample Type, Provider's Name, Provider's Phone Number and Payment Source.

For blood lead levels < 5 µg/dL: Report results within 1 month of receipt of results. Report should include at least Patient's First and Last Name, Date of Birth, Street Address, City, State, Zip Code and County of Residence, Sample Date, Sample Type, Provider's Name, Provider's Phone Number and Payment Source.

Laboratories should report electronically in a manner approved by Tennessee Department of Health. If you wish to utilize the ELR interface you currently use to report communicable diseases to TDH, please contact CEDS.Informatics@tn.gov. Practitioners using portable devices should report using LeadTRK electronic system available at https://leadinput.tennessee.edu/leadin/ OR standard forms available at http://health.tn.gov/MCH/Lead.shtml#4 and fax to Housing and Environmental Health, University of Tennessee Extension (865) 974-5370. Email leadtrk@utk.edu for any questions or concerns.

[9]Under the auspices of the Emerging Infections Program (EIP), sentinel surveillance has been established for Davidson County residents for *Clostridium difficile* Infection (CDI) and Methicillin-resistant *Staphylococcus aureus* (MRSA). The EIP sentinel surveillance has also been established for Davidson, Cheatham, Robertson, Sumner, Wilson, Rutherford, Dickson, and Williamson counties residents for Carbapenem resistant *Acinetobacter* species. During monthly EIP active surveillance visits, TDH surveillance officers will work with sentinel sites to report patients and coordinate referral of selected positive specimens using site-specific procedures. For CRA, a printout of antimicrobial susceptibility results should also be submitted (see footnote 10).

[10]The qualitative (interpreted results) and the quantitative (numeric results) of antimicrobial susceptibility results must also be attached to the PH-1600 when reporting the following diseases to TDH: *Acinetobacter* , Carbapenem-resistant; Enterobacteriaceae, Carbapenem-resistant; *Enterococcus* species, vancomycin resistant; *Pseudomonas aeruginosa* , carbapenem resistant; *Staphylococcus aureus* : Vancomycin non-sensitive – all forms; and *Streptococcus pneumoniae* Invasive Disease (IPD).

[11]Labs reporting outbreak events or conditions not listed in this Table but of public health significance should immediately contact the TDH Communicable and Environmental Disease Services via telephone at (615) 741-7247 or 1-800-404-3006.

[12]HIV Viral Load Counts, HIV Viral Load Log Counts, CD4 Counts, and CD4 % are reportable only from laboratories performing those tests.

[13]'N' indicates findings that are laboratory observations which are reportable to TDH, however should not be included in Electronic Laboratory Reporting (ELR) messages. These laboratory observations will be reported by other means, details for which can be found in the footnotes they reference.

Completing Case Reports for TN Reportable Diseases and Events

** Currently, these diseases/events use other surveillance systems and not NBS.*

- **NBS**= Diseases and events that use the NEDSS Base System (NBS) for surveillance in Tennessee.
- **Send Paper CRF to CEDEP**= Diseases and events in which the case report should be physically sent to CEDEP.
- **Case Report Form (CRF)=** There is a specific CRF for this condition, see *Investigations in NBS* document for recommendations on FoodNet conditions

Disease/Event Name	NBS	Send Paper CRF to CEDEP	Case Report Form (CRF)
Acinetobacter species, Carbapenem-resistant (Davidson County residents)*			
Acquired Immunodeficiency Syndrome (AIDS)*			
Anthrax (*Bacillus anthracis*)	X		
Babesiosis (*Babesia* species)	X		
Botulism-Foodborne (*Clostridium botulinum*)	X		
Botulism-Infant (*Clostridium botulinum*)	X		
Botulism-Wound (*Clostridium botulinum*)	X		
Brucellosis (*Brucella* species)	X		
Burkholderia species infection*			
California/LaCrosse Serogroup Virus Infection	X	X	X
Campylobacteriosis (including EIA or PCR positive stools)	X	X	X
Carbon Monoxide Poisoning	X	X	X
Chagas Disease	X	X	X
Chancroid*			
Chlamydia trachomatis –Genital*			
Chlamydia trachomatis-Other*			
Chikungunya	X	X	X
Cholera (*Vibrio cholerae*)	X	X	X
Clostridium difficile Infection (Davidson County residents only)*			
Congenital Rubella Syndrome	X		
Cryptosporidiosis (*Cryptosporidium* species)	X		
Cyclosporiasis (*Cyclospora* species)	X		
Dengue, Dengue, Sever, and Dengue-like Illness	X	X	X
Diptheria (*Corynebacterium diphtheriae*)	X		
Disease Outbreaks (e.g. foodborne, waterborne, healthcare, etc.)*			
Eastern Equine Encephalitis Virus Infection	X	X	X
Ehrlichiosis/Anaplasmosis- Any	X	X	X
Enterobacteriaceae, Carbapenem-resistant	X		
Francisella Species infection*			
Gonorrhea-Genital (*Niesseria gonorrhoeae*)*			
Gonorrhea-Opthalmic (*Niesseria gonorrhoeae*)*			
Gonorrhea-Oral (*Niesseria gonorrhoeae*)*			
Gonorrhea-Rectal (*Niesseria gonorrhoeae*)*			
Group A Streptococcal Invasive Disease (*Streptococcus pyogenes*)	X		
Group B Streptococcal Invasive Disease (*Streptococcus agalactiae*)	X		
Guillain-Barre Syndrome	X		

Disease/Event Name	NBS	Send Paper CRF to CEDEP	Case Report Form (CRF)
Haemophilus influenzae Invasive Disease	X		
Hansen's Disease (Leprosy)	X		
Hantavirus Disease	X		
Healthcare Associated Infections, Catheter Associated Urinary-Tract Infections*			
Healthcare Associated Infections, Central Line Associated Bloodstream Infections*			
Healthcare Associated Infections, *Clostridium difficile**			
Healthcare Associated Infections, Dialysis Events*			
Healthcare Associated Infections, Healthcare Personnel Influenza Vaccination*			
Healthcare Associated Infections, Methicillin resistant *Staphylococcus* aureus positive blood cultures *			
Healthcare Associated Infections, Surgical Site Infections*			
Hemolytic Uremic Syndrome (HUS)	X		
Hepatitis, Viral-HbsAg positive infant	X		
Hepatitis, Viral-HbsAg positive pregnant female	X		
Hepatitis, Viral-Type A acute	X		
Hepatitis, Viral-Type B acute	X		
Hepatitis, Viral-Type C acute	X		
Human Immunodeficiency Virus (HIV)*			
Influenza-associated deaths, age <18 years	X		X
Influenza-associated deaths, pregnancy-associated	X		
Lead Levels (Blood)*			
Legionellosis (*Legionella* species)	X		X
Listeriosis (*Listeria* species)	X	X	X
Lyme Disease (*Borrelia burgdorferi*)	X	X	X
Malaria (*Plasmodium* species)	X	X	X
Measles-Imported	X		
Measles-Indigenous	X		
Melioidosis (*Burkholderia pseudomallei*)	X		
Meningitis-Other Bacterial	X		
Meningococcal Disease (*Neisseria meningitidis*)	X		
Middle East Respiratory Syndrome (MERS)*			X
Mumps	X		
Neonatal Abstinence Syndrome*			
Novel Influenza A	X	X	X
Pertussis (Whooping Cough)	X		
Plague (*Yersinia pestis*)	X		
Poliomyelitis-Nonparalytic	X		
Poliomyelitis-Paralytic	X		
Powassan virus infection	X	X	X
Prion disease-Creutzfeldt Jakob Disease	X		
Prion disease-variant Creutzfeldt Jakob Disease	X		
Psittacosis (*Chlamydia psittaci*)	X		

Disease/Event Name	NBS	Send Paper CRF to CEDEP	Case Report Form (CRF)
Q Fever (*Coxiella burnetii*)	X		X
Rabies: Animal	X		
Rabies: Human	X		
Ricin Poisoning*			
Rubella	X		
St. Louis Encephalitis Virus Infection	X	X	X
Salmonellosis: Other than *S*. Typhi (*Salmonella* species)	X	X	X
Salmonellosis: Typhoid fever (*Salmonella* typhi)	X	X	X
Severe Acute Respiratory Syndrome (SARS)*			
Shiga-toxin producing *Escherichia coli*	X	X	X
Shigellosis (*Shigella* species)	X		
Smallpox	X		
Spotted Fever Rickettsiosis (including Rocky Mountain Spotted Fever)	X	X	X
Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning	X		
Staphylococcus aureus: Methicillin resistant Invasive Disease (Davidson County residents)*			
Staphylococcus aureus: Vancomycin non-sensitive - all forms*			
Streptococcus pneumoniae Invasive Disease (IPD)	X		
Syphilis (*Treponema pallidum*): Cardiovascular*			
Syphilis (*Treponema pallidum*): Congenital*			
Syphilis (*Treponema pallidum*): Early Latent*			
Syphilis (*Treponema pallidum*): Late Latent*			
Syphilis (*Treponema pallidum*): Late Other*			
Syphilis (*Treponema pallidum*): Neurological*			
Syphilis (*Treponema pallidum*): Primary*			
Syphilis (*Treponema pallidum*): Secondary*			
Syphilis (*Treponema pallidum*): Unknown Latent*			
Tetanus	X		
Toxic Shock Syndrome: Staphylococcal	X		
Toxic Shock Syndrome: Streptococcal	X		
Trichinosis	X		
Tuberculosis, confirmed and suspect cases of active disease	X		X
Tularemia (*Francisella tularensis*)	X		X
Vancomycin resistant enterococci (VRE) Invasive Disease	X		
Varicella deaths	X		
Venezuelan Equine Encephalitits Virus Infection	X		
Vibriosis (non-cholera *Vibrio* species infections)	X	X	X
Viral Hemorrhagic Fever	X		
West Nile virus Infections-Encephalitis	X	X	X
West Nile virus Infections-Fever	X	X	X
Western Equine Encephalitis Virus Infection	X	X	X
Yellow Fever	X	X	X
Yersiniosis (*Yersinia* species)	X		

Morbidity Names in NBS

Disease/Event Name on Reportable Disease Matrix	Disease/Event Name in NBS
Anthrax (*Bacillus anthracis*)	**Anthrax**
Babesiosis (*Babesia* species)	**Babesiosis**
Botulism-Foodborne (*Clostridium botulinum*)	**Botulism, foodborne**
Botulism-Infant (*Clostridium botulinum*)	**Botulism, infant**
Botulism-Wound (*Clostridium botulinum*)	**Botulism, wound**
Brucellosis (*Brucella* species)	**Brucellosis**
California/LaCrosse Serogroup Virus Infection	**California serogroup virus neuroinvasive/non-neuroinvasive disease**
Campylobacteriosis (including EIA or PCR positive stools)	**Campylobacteriosis**
Carbon Monoxide Poisoning	**Carbon Monoxide Poisoning**
Chagas Disease	**Chagas Disease**
Chikungunya	**Chikungunya Virus**
Cholera (*Vibrio cholerae*)	**Cholera**
Congenital Rubella Syndrome	**Rubella, Congenital Syndrome (CRS)**
Cryptosporidiosis (*Cryptosporidium* species)	**Cryptosporidiosis**
Cyclosporiasis (*Cyclospora* species)	**Cyclosporiasis**
Dengue	**Dengue / Dengue, severe**
Diptheria (*Corynebacterium diphtheriae*)	**Diptheria**
Eastern Equine Encephalitis Virus Infection	**Eastern equine encephalitis neuroinvasive/non-neuroinvasive disease**
Ehrlichiosis/Anaplasmosis- Any	**Ehrlichiosis/Anaplasmosis, undetermined**
Enterobacteriaceae, Carbapenem-resistant	**Carbapenamase-producing Enterobacteriaciae**
Group A Streptococcal Invasive Disease (*Streptococcus pyogenes*)	**Group A Streptococcus, invasive**
Group B Streptococcal Invasive Disease (*Streptococcus agalactiae*)	**Group B Streptococcus, invasive**
Guillain-Barre Syndrome	**Guillain-Barre Syndrom**
Haemophilus influenzae Invasive Disease	**Haemophilus influenza, invasive**
Hansen's Disease (Leprosy)	**Hansen disease (Leprosy)**
Hantavirus Disease	**Hantavirus infection**
Hemolytic Uremic Syndrome (HUS)	**Hemolytic uremic syndrome**
Hepatitis, Viral-HbsAg positive infant	**Hepatitis**
Hepatitis, Viral-HbsAg positive pregnant female	**Hepatitis**
Hepatitis, Viral-Type A acute	**Hepatitis**
Hepatitis, Viral-Type B acute	**Hepatitis**
Hepatitis, Viral-Type C acute	**Hepatitis**
Influenza-associated deaths, age <18 years	**Influenza-associated pediatric mortality**
Influenza-associated deaths, pregnancy-associated	**Influenza-associated deaths, pregnancy associated**
Legionellosis (*Legionella* species)	**Legionellosis**
Listeriosis (*Listeria* species)	**Listeriosis**
Lyme Disease (*Borrelia burgdorferi*)	**Lyme disease**
Malaria (*Plasmodium* species)	**Malaria**
Measles-Imported	**Measles (Rubeola)**
Measles-Indigenous	**Measles (Rubeola)**
Melioidosis (*Burkholderia pseudomallei*)	**Melioidosis (Burkholderia pseudomallei)**

Disease/Event Name on Reportable Disease Matrix	Disease/Event Name in NBS
Meningitis-Other Bacterial	**Reported under the organism causing the meningitis**
Meningococcal Disease (*Neisseria meningitidis*)	**Neisseria meningitides, invasive (Mening. disease)**
Mumps	**Mumps**
Novel Influenza A	**Novel Influenza A Virus Infections**
Pertussis (Whooping Cough)	**Pertussis**
Plague (*Yersinia pestis*)	**Plague**
Poliomyelitis-Nonparalytic	**Poliovirus infection, nonparalytic**
Poliomyelitis-Paralytic	**Poliomyelitis, Paralytic**
Powassan virus infection	**Powassan virus, neuroinvasive/non-neuroinvasive**
Prion disease-Creutzfeldt Jakob Disease	**Creutzfeld Jakob Disease**
Prion disease-variant Creutzfeldt Jakob Disease	**Creutzfeld Jakob Disease**
Psittacosis (*Chlamydia psittaci*)	**Psittacosis (Ornithosis)**
Q Fever (*Coxiella burnetii*)	**Q Fever, Acute/Chronic**
Rabies: Animal	**Rabies, animal**
Rabies: Human	**Rabies, human**
Rubella	**Rubella**
St. Louis Encephalitis Virus Infection	**St. Louis Encephalitis, neuroinvasive/non-neuroinvasive**
Salmonellosis: Other than *S*. Typhi (*Salmonella* species)	**Salmonellosis**
Salmonellosis: Typhoid fever (*Salmonella* typhi)	**Typhoid fever (Salmonella typhi)**
Shiga-toxin producing *Escherichia coli*	**Shiga toxin-producing Escherichia coli (STEC)**
Shigellosis (*Shigella* species)	**Shigellosis**
Smallpox	**Smallpox**
Spotted Fever Rickettsiosis (including Rocky Mountain Spotted Fever)	**Spotted Fever Rickettsiosis**
Staphylococcal Enterotoxin B (SEB) Pulmonary Poisoning	**Staphylococcal enterotoxin**
Streptococcus pneumoniae Invasive Disease (IPD)	**Streptococcus pneumonia, invasive disease (IPD)**
Tetanus	**Tetanus**
Toxic Shock Syndrome: Staphylococcal	**Toxic-shock syndrome, staphylococcal**
Toxic Shock Syndrome: Streptococcal	**Group A Streptococcus, invasive**
Trichinosis	**Trichinosis (Trichinellosis)**
Tuberculosis, confirmed and suspect cases of active disease	**Tuberculosis**
Tularemia (*Francisella tularensis*)	**Tularemia**
Vancomycin resistant enterococci (VRE) Invasive Disease	**VRE (Vancomycin-Resistant Enterococcus-Invasive)**
Varicella deaths	**Varicella (Chickenpox)**
Venezuelan Equine Encephalitits Virus Infection	**Venezuelan equine encephalitis, neuroinvasive/non-neuroinvasive**
Vibriosis (non-cholera *Vibrio* species infections)	**Vibriosis (non-cholera Vibrio species infections)**
Viral Hemorrhagic Fever	**Viral hemorrhagic fever**
West Nile virus Infections	**West Nile virus neuroinvasive/non-neuroinvasive disease**
Western Equine Encephalitis Virus Infection	**Western equine encephalitis, neuroinvasive/non-neuroinvasive**
Yellow Fever	**Yellow fever**
Yersiniosis (*Yersinia* species)	**Yersiniosis**

NBS Data Entry Guide

Critical- This information is essential and all efforts should be made to obtain 'Critical' information. This information is not 'Required' by NBS; for example, if you do not have the patient's current sex, you will not be prevented from moving forward in NBS.
Important- Attempt to obtain this as all information is helpful to an investigation.
Required- This information is necessary to move forward in NBS.

ADD PATIENT

NOTE: ALL information you have should be entered into NBS

	Critical to Investigation	Important to Investigation	Required by NBS
Information As of Date			X
Last Name	X		
First Name	X		
Middle Name		X	
Suffix		X	
DOB	X		
Current Sex	X		
Is the patient deceased?	X		
If so, Date of Death	X		
Marital Status		X	
Street Address		X	
City	X		
State	X		
Zip		X	
County	X		
Country	X		
Home Phone		X	
Work Phone		X	
Cell Phone		X	
Email		X	
Ethnicity	X		
Race	X		
Identification Type		X	

Investigations in NBS

Each program has different procedures regarding investigations in NBS. Below is some common information that can help you when investigating cases of reportable diseases in Tennessee.

FoodNet:

- Lab reports should be entered into NBS within 10 days from specimen collection date.
- Investigations should be closed in NBS within 30 days of date reported to public health.
- If the time between the initial lab report and a new lab report for the same condition is less than 30 days, the new lab report can be associated to the original investigation.
- If the time between the initial lab report and a new lab report for the same condition is greater than or equal to 30 days, create a new investigation.
- If there are multiple serotypes for the same pathogen, new investigations need to be created for each serotype and the correct labs should be associated.
- If you are aware that a case has resolved symptoms, a new lab should prompt a new investigation and should be investigated as a new case.
- The following guidelines regarding transmission and completeness of national case report forms for select FoodNet pathogens have been published by CDC:
    - For Cholera and Other *Vibrio* Illness Surveillance (COVIS) and National Typhoid and Paratyphoid Fever Surveillance (NTPFS) Case Report Forms:
        - National CRFs should be submitted to CDC within 30 days of specimen collection date.
        - These forms need to be completed for the following serotypes/species from all specimen sources:
            - COVIS:
                - *Vibrio* species, *Grimontia hollisae*, *Photobacterium damselae*, Toxigenic *Vibrio cholerae* O1 and O139
            - NTPFS:
                - *Salmonella* Tyhpi, *Salmonella* Paratyphi A, *Salmonella* Paratyphi B, *Salmonella* Paratyphi B (formerly known as *Salmonella* Java), *Salmonella* Paratyphi C
    - For Listeria Initiative:
        - Interviews should be reported to CDC within 7 days of interview date.
        - These forms need to be completed for all *Listeria* species from all specimen sources.
        - Clinical isolates should be forwarded to the state lab. Their PFGE tiff file must be uploaded to PulseNet within 14 days of specimen collection date.
    - If you choose to fax to CDC directly, please send a copy to us in FoodNet as well. Otherwise, just send us the form and we will forward to the appropriate CDC National Surveillance Team. When faxing to us, please let us know if you would prefer us to send the forms to CDC. If you have any questions, let the FoodNet team know.

Hospital Acquired Infections:

- For the following diseases, a case is considered a new event (warranting a new investigation) if samples are collected more than 30 days apart OR if there is evidence that the disease was cleared (i.e., a negative culture, antibiotic treatment) and a subsequent test is positive again:
    - Strep pneumo invasive disease (penicillin sensitive)
    - Strep pneumo invasive disease (penicillin resistant)
    - Group A invasive disease
    - Vancomycin Resistant Enterococci
    - Staphylococcus aureus, methicillin resistant invasive disease (MRSA)
    - Staphylococcus aureus, vancomycin resistant non-sensitive (all forms)
    - Enterobactericeae, Carbapenem resistant
    - Streptococcus pneumo invasive disease (IPD)
- It is unlikely that you will receive cases that are within 30 days of each other (patients are usually hospitalized for longer than that), but if you do receive information on the same person twice within a 30 day period then it can be linked to the old investigation.

Vaccine Preventable Diseases (VPDs):

- Immediate investigation should begin *immediately* for most VPD reports or lab results.
- Central office Immunization Program staff should be immediately contacted by phone and/or email for all ***suspected*** cases of:
    - Measles
    - Mumps
    - Rubella
    - Invasive meningococcal disease
    - Pediatric influenza deaths
    - Pregnancy-related influenza deaths

  and for ***confirmed*** cases of:
    - Acute hepatitis A
- Central office should be notified immediately of all suspected outbreaks of a VPD
- Specimens or isolates from cases of invasive *Haemophilus influenzae* and *Neisseria meningitidis* are required to be submitted to TDH Laboratory Services for serotyping and serogrouping. Regional investigation staff should remind clinical labs to forward immediately. Serotyping/serogrouping results should be entered into NBS investigations.
- Specimens should also be sought for pediatric and pregnancy-related influenza deaths.
- Most VPD investigations should be closed in NBS within 7-10 days. Measles, mumps, meningococcal and hepatitis A investigations should only be open for 24-36 hours.
- With most VPDs (pertussis, measles, mumps, rubella, diphtheria, Hepatitis A, Hepatitis B, polio, and chickenpox), immunity post infection is long term (10-15 years).

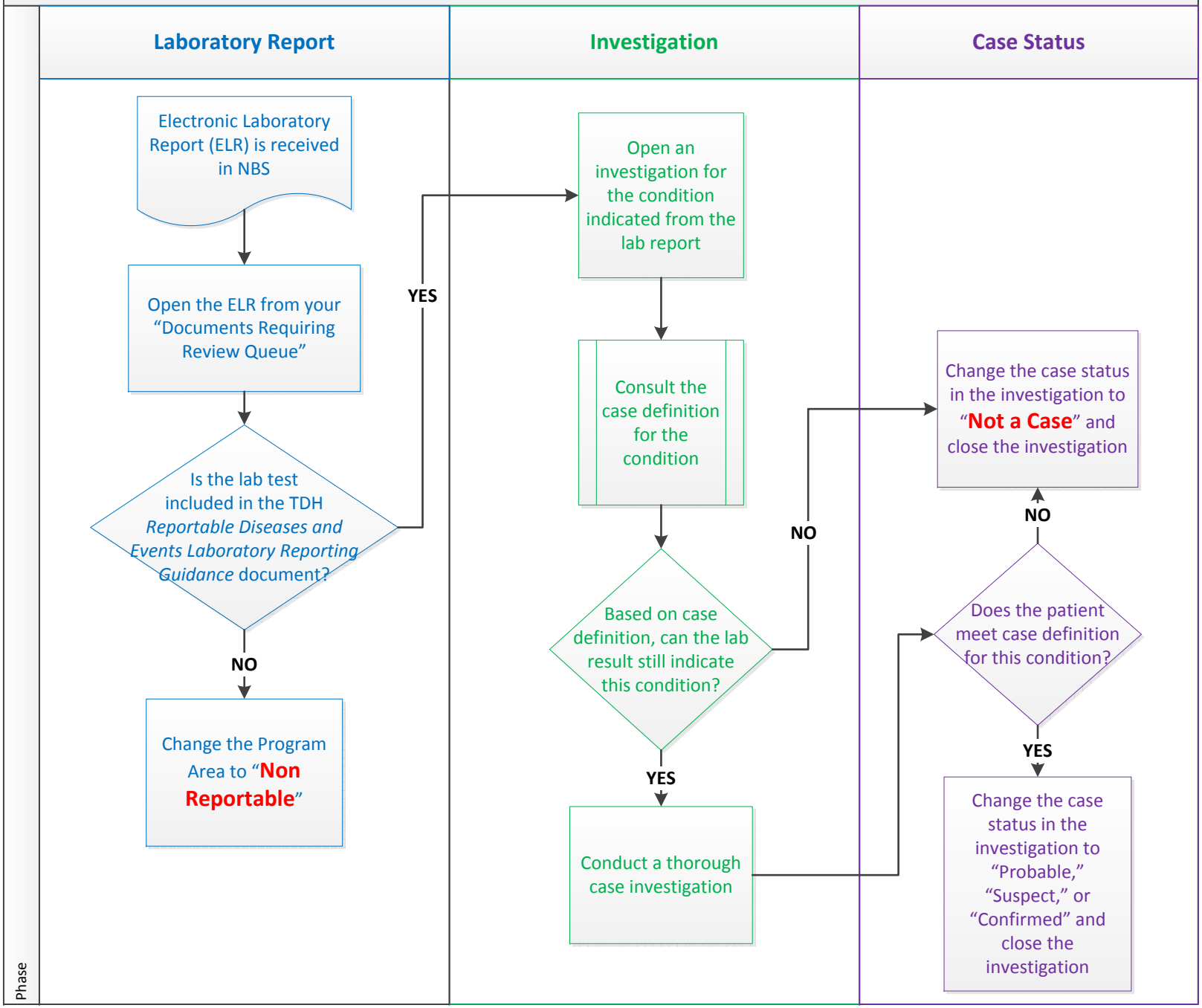
Tuberculosis

- If TB disease recurs within a consecutive 12-month period after the patient completed therapy, the patient does not receive a new state case number. The patient is linked to his old state case number, but is a non-countable case marked as "Verified Case: Recurrent TB within 12 months after completing therapy."
- If TB disease recurs more than 12 months after the patient completed therapy, the patient receives a new state case number. The patient is linked to his old state case number and is counted as a new case of TB.

Vector borne/Zoonotic:

- Investigations should not be open longer than 30 days.

Handling Non Reportable Electronic Laboratory Reports vs. Not a Case Investigations in NBS



TN Department of Health *MMWR* Fact Sheet

Business rules for assigning *MMWR* week*:*
The first day of any *Morbidity and Mortality Weekly Report* (*MMWR*) week is Sunday. *MMWR* week numbering is sequential beginning with 1 and incrementing with each week to a maximum of 52 or 53. *MMWR* week #1 of an *MMWR* year is the first week of the year that has at least four days in the calendar year. For example, if January 1 occurs on a Sunday, Monday, Tuesday or Wednesday, the calendar week that includes January 1 would be *MMWR* week #1. If January 1 occurs on a Thursday, Friday, or Saturday, the calendar week that includes January 1 would be the last *MMWR* week of the previous year (#52 or #53). Because of this rule, December 29, 30, and 31 could potentially fall into *MMWR* week #1 of the following *MMWR* year.

The National Electronic Disease Surveillance System (NEDSS) message structure supports the electronic notification of a number of dates, and state health departments may choose to assign *MMWR* week based on any of these dates. In TN, the rules for assigning *MMWR* week are:

- ***MMWR* week should be based on the date first reported to public health (i.e., the date the local, regional, metro, or state health department was first made aware of the case).**
- ***MMWR* week is automatically populated in the NEDSS Base System (NBS) with the date the investigation was created.**
- **This automated *MMWR* date does not usually need to be altered.**

The reason the automated *MMWR* date does not usually need to be changed is because the date first reported to public health and the date the investigation is created should be relatively close. This is because protocol is to enter an observation (lab report) into NBS and create an investigation as soon as the observation is received. However, there are rare instances when the *MMWR* date will need to be altered:

- **If the date the investigation is created in NBS is 30 days or longer after the date of the lab report, *MMWR* week should be changed.**
    - **The local or state health department should reassign *MMWR* week to correspond with the date of the lab or case report.**

This is a relatively rare occurrence, and should not be happening routinely. The date of the lab or case report is the date the report was created. When backdating *MMWR* week, this date is used because it is the closest date to when the case would have been reported to public health.

In TN, *MMWR* is used as a form of data management, not a measure of true disease incidence. Although it might seem logical to use *MMWR* to track true disease incidence, NBS supports many dates that are more relevant to disease incidence such as date of disease onset, diagnosis, or laboratory result. We use *MMWR* to track how many reportable diseases or events were reported each week.

What is *MMWR*?

The *MMWR* series is prepared by the Centers for Disease Control and Prevention (CDC). You can view the current issue at http://www.cdc.gov/mmwr/. It is often referred to as "the voice of CDC," because it is the agency's primary vehicle for scientific publication of timely, reliable, authoritative, accurate, objective, and useful public health information and recommendations. *MMWR* readership predominantly consists of physicians, nurses, public health practitioners, epidemiologists and other scientists, researchers, educators, and laboratorians. The data in the weekly *MMWR* are provisional, based on weekly notifications to CDC by local and state health departments.

Purpose of *MMWR*:

MMWR week is used to support public health reporting in the *MMWR* weekly morbidity tables and the annual *Summary of Notifiable Diseases, United States*.

What is *MMWR* week?

The *MMWR* week is the week of the epidemiologic year for which the National Notifiable Diseases Surveillance System (NNDSS) disease notification is assigned. This week is chosen by the notifying local or state health department for the purposes of *MMWR* disease incidence notification and publishing. Values for *MMWR* week range from 1 to 53, although most years consist of 52 weeks. *MMWR* week supports notification of notifiable infectious disease incidence data at the national level. States may assign *MMWR* week for data management or notification purposes more so than for monitoring 'true' disease incidence. **Those conducting analyses defining notifiable disease incidence patterns should determine whether analysis by *MMWR* week or another epidemiologically-relevant date type is more appropriate for their needs**. *MMWR* week might be used for analyses or quality control, but other dates such as date of disease onset, diagnosis, or laboratory result are more accurate for tracking disease incidence.

***NOTE**: For a brief history of National Notifiable Diseases visit:
http://wwwn.cdc.gov/nndss/

JANUARY 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
Week 1						
5	6	7	8	9	10	11
Week 2						
12	13	14	15	16	17	18
Week 3						
19	20	21	22	23	24	25
Week 4						
26	27	28	29	30	31	
Week 5						
		NOTES:				

FEBRUARY 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
Week 5						
2	3	4	5	6	7	8
Week 6						
9	10	11	12	13	14	15
Week 7						
16	17	18	19	20	21	22
Week 8						
23	24	25	26	27	28	
Week 9						
		NOTES:				

MARCH 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
Week 9						
2	3	4	5	6	7	8
Week 10						
9	10	11	12	13	14	15
Week 11						
16	17	18	19	20	21	22
Week 12						
23	24	25	26	27	28	29
Week 13						
30	31	NOTES:				
Week 14						

APRIL 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
Week 14						
6	7	8	9	10	11	12
Week 15						
13	14	15	16	17	18	19
Week 16						
20	21	22	23	24	25	26
Week 17						
27	28	29	30			
Week 18						
		NOTES:				

MAY 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
Week 18						
4	5	6	7	8	9	10
Week 19						
11	12	13	14	15	16	17
Week 20						
18	19	20	21	22	23	24
Week 21						
25	26	27	28	29	30	31
Week 22						
		NOTES:				

JUNE 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Week 23						
8	9	10	11	12	13	14
Week 24						
15	16	17	18	19	20	21
Week 25						
22	23	24	25	26	27	28
Week 26						
29	30					
Week 27						
		NOTES:				

JULY 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
Week 27						
6	7	8	9	10	11	12
Week 28						
13	14	15	16	17	18	19
Week 29						
20	21	22	23	24	25	26
Week 30						
27	28	29	30	31		
Week 31						
		NOTES:				

AUGUST 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
Week 31						
3	4	5	6	7	8	9
Week 32						
10	11	12	13	14	15	16
Week 33						
17	18	19	20	21	22	23
Week 34						
24	25	26	27	28	29	30
Week 35						
31		NOTES:				
Week 36						

SEPTEMBER 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
Week 36						
7	8	9	10	11	12	13
Week 37						
14	15	16	17	18	19	20
Week 38						
21	22	23	24	25	26	27
Week 39						
28	29	30				
Week 40						
		NOTES:				

OCTOBER 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
Week 40						
5	6	7	8	9	10	11
Week 41						
12	13	14	15	16	17	18
Week 42						
19	20	21	22	23	24	25
Week 43						
26	27	28	29	30	31	
Week 44						
		NOTES:				

NOVEMBER 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
Week 44						
2	3	4	5	6	7	8
Week 45						
9	10	11	12	13	14	15
Week 46						
16	17	18	19	20	21	22
Week 47						
23	24	25	26	27	28	29
Week 48						
30		NOTES:				
Week 49						

DECEMBER 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
Week 49						
7	8	9	10	11	12	13
Week 50						
14	15	16	17	18	19	20
Week 51						
21	22	23	24	25	26	27
Week 52						
28	29	30	31			
Week 53						
		NOTES:				

JANUARY 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
Week 53 - 2014						
4	5	6	7	8	9	10
Week 1						
11	12	13	14	15	16	17
Week 2						
18	19	20	21	22	23	24
Week 3						
25	26	27	28	29	30	31
Week 4						
		NOTES:				

FEBRUARY 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Week 5						
8	9	10	11	12	13	14
Week 6						
15	16	17	18	19	20	21
Week 7						
22	23	24	25	26	27	28
Week 8						
		NOTES:				

MARCH 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Week 9						
8	9	10	11	12	13	14
Week 10						
15	16	17	18	19	20	21
Week 11						
22	23	24	25	26	27	28
Week 12						
29	30	31				
Week 13						
		NOTES:				

APRIL 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
Week 13						
5	6	7	8	9	10	11
Week 14						
12	13	14	15	16	17	18
Week 15						
19	20	21	22	23	24	25
Week 16						
26	27	28	29	30		
Week 17						
		NOTES:				

MAY 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
Week 17						
3	4	5	6	7	8	9
Week 18						
10	11	12	13	14	15	16
Week 19						
17	18	19	20	21	22	23
Week 20						
24	25	26	27	28	29	30
Week 21						
31			NOTES:			
Week 22						

JUNE 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
Week 22						
7	8	9	10	11	12	13
Week 23						
14	15	16	17	18	19	20
Week 24						
21	22	23	24	25	26	27
Week 25						
28	29	30				
Week 26						
		NOTES:				

JULY 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
Week 26						
5	6	7	8	9	10	11
Week 27						
12	13	14	15	16	17	18
Week 28						
19	20	21	22	23	24	25
Week 39						
26	27	28	29	30	31	
Week 30						
		NOTES:				

AUGUST 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
Week 30						
2	3	4	5	6	7	8
Week 31						
9	10	11	12	13	14	15
Week 32						
16	17	18	19	20	21	22
Week 33						
23	24	25	26	27	28	29
Week 34						
30	31		NOTES:			
Week 35						

SEPTEMBER 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
Week 35						
6	7	8	9	10	11	12
Week 36						
13	14	15	16	17	18	19
Week 37						
20	21	22	23	24	25	26
Week 38						
27	28	29	30			
Week 39						
		NOTES:				

OCTOBER 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
Week 39						
4	5	6	7	8	9	10
Week 40						
11	12	13	14	15	16	17
Week 41						
18	19	20	21	22	23	24
Week 42						
25	26	27	28	29	30	31
Week 43						
		NOTES:				

NOVEMBER 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Week 44						
8	9	10	11	12	13	14
Week 45						
15	16	17	18	19	20	21
Week 46						
22	23	24	25	26	27	28
Week 47						
29	30					
Week 48						
			NOTES:			

DECEMBER 2015

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
Week 48						
6	7	8	9	10	11	12
Week 49						
13	14	15	16	17	18	19
Week 50						
20	21	22	23	24	25	26
Week 51						
27	28	29	30	31		
Week 52						
		NOTES:				

JANUARY 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
Week 52 - 2014						
3	4	5	6	7	8	9
Week 1						
10	11	12	13	14	15	16
Week 2						
17	18	19	20	21	22	23
Week 3						
24	25	26	27	28	29	30
Week 4						
31		NOTES:				

FEBRUARY 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
Week 5						
7	8	9	10	11	12	13
Week 6						
14	15	16	17	18	19	20
Week 7						
21	22	23	24	25	26	27
Week 8						
28	29					
Week 9						
		NOTES:				

MARCH 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
Week 9						
6	7	8	9	10	11	12
Week 10						
13	14	15	16	17	18	19
Week 11						
20	21	22	23	24	25	26
Week 12						
27	28	29	30	31		
Week 13						
		NOTES:				

APRIL 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
Week 13						
3	4	5	6	7	8	9
Week 14						
10	11	12	13	14	15	16
Week 15						
17	18	19	20	21	22	23
Week 16						
24	25	26	27	28	29	30
Week 17						
		NOTES:				

MAY 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Week 18						
8	9	10	11	12	13	14
Week 19						
15	16	17	18	19	20	21
Week 20						
22	23	24	25	26	27	28
Week 21						
29	30	31				
Week 22						
			NOTES:			
Week 22						

JUNE 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
Week 22						
5	6	7	8	9	10	11
Week 23						
12	13	14	15	16	17	18
Week 24						
19	20	21	22	23	24	25
Week 25						
26	27	28	29	30		
Week 26						
		NOTES:				

JULY 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
Week 26						
3	4	5	6	7	8	9
Week 27						
10	11	12	13	14	15	16
Week 28						
17	18	19	20	21	22	23
Week 39						
24	25	26	27	28	29	30
Week 30						
31		NOTES:				

AUGUST 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
Week 31						
7	8	9	10	11	12	13
Week 32						
14	15	16	17	18	19	20
Week 33						
21	22	23	24	25	26	27
Week 34						
28	29	30	31			
Week 35						
			NOTES:			
Week 35						

SEPTEMBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
Week 35						
4	5	6	7	8	9	10
Week 36						
11	12	13	14	15	16	17
Week 37						
18	19	20	21	22	23	24
Week 38						
25	26	27	28	29	30	
Week 39						
		NOTES:				

OCTOBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1
Week 39						
2	3	4	5	6	7	8
Week 40						
9	10	11	12	13	14	15
Week 41						
16	17	18	19	20	21	22
Week 42						
23	24	25	26	27	28	29
Week 43						
30	31	NOTES:				

NOVEMBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
Week 44						
6	7	8	9	10	11	12
Week 45						
13	14	15	16	17	18	19
Week 46						
20	21	22	23	24	25	26
Week 47						
27	28	29	30			
Week 48						
			NOTES:			

DECEMBER 2016

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
Week 48						
4	5	6	7	8	9	10
Week 49						
11	12	13	14	15	16	17
Week 50						
18	19	20	21	22	23	24
Week 51						
25	26	27	28	29	30	31
Week 52						
		NOTES:				

2014			2015			2016		
MMWR	start date	end date	MMWR	start date	end date	MMWR	start date	end date
1	12/29/2013	1/4/2014	1	1/4/2015	1/10/2015	1	1/3/2016	1/9/2016
2	1/5/2014	1/11/2014	2	1/11/2015	1/17/2015	2	1/10/2016	1/16/2016
3	1/12/2014	1/18/2014	3	1/18/2015	1/24/2015	3	1/17/2016	1/23/2016
4	1/19/2014	1/25/2014	4	1/25/2015	1/31/2015	4	1/24/2016	1/30/2016
5	1/26/2014	2/1/2014	5	2/1/2015	2/7/2015	5	1/31/2016	2/6/2016
6	2/2/2014	2/8/2014	6	2/8/2015	2/14/2015	6	2/7/2016	2/13/2016
7	2/9/2014	2/15/2014	7	2/15/2015	2/21/2015	7	2/14/2016	2/20/2016
8	2/16/2014	2/22/2014	8	2/22/2015	2/28/2015	8	2/21/2016	2/27/2016
9	2/23/2014	3/1/2014	9	3/1/2015	3/7/2015	9	2/28/2016	3/5/2016
10	3/2/2014	3/8/2014	10	3/8/2015	3/14/2015	10	3/6/2016	3/12/2016
11	3/9/2014	3/15/2014	11	3/15/2015	3/21/2015	11	3/13/2016	3/19/2016
12	3/16/2014	3/22/2014	12	3/22/2015	3/28/2015	12	3/20/2016	3/26/2016
13	3/23/2014	3/29/2014	13	3/29/2015	4/4/2015	13	3/27/2016	4/2/2016
14	3/30/2014	4/5/2014	14	4/5/2015	4/11/2015	14	4/3/2016	4/9/2016
15	4/6/2014	4/12/2014	15	4/12/2015	4/18/2015	15	4/10/2016	4/16/2016
16	4/13/2014	4/19/2014	16	4/19/2015	4/25/2015	16	4/17/2016	4/23/2016
17	4/20/2014	4/26/2014	17	4/26/2015	5/2/2015	17	4/24/2016	4/30/2016
18	4/27/2014	5/3/2014	18	5/3/2015	5/9/2015	18	5/1/2016	5/7/2016
19	5/4/2014	5/10/2014	19	5/10/2015	5/16/2015	19	5/8/2016	5/14/2016
20	5/11/2014	5/17/2014	20	5/17/2015	5/23/2015	20	5/15/2016	5/21/2016
21	5/18/2014	5/24/2014	21	5/24/2015	5/30/2015	21	5/22/2016	5/28/2016
22	5/25/2014	5/31/2014	22	5/31/2015	6/6/2015	22	5/29/2016	6/4/2016
23	6/1/2014	6/7/2014	23	6/7/2015	6/13/2015	23	6/5/2016	6/11/2016
24	6/8/2014	6/14/2014	24	6/14/2015	6/20/2015	24	6/12/2016	6/18/2016
25	6/15/2014	6/21/2014	25	6/21/2015	6/27/2015	25	6/19/2016	6/25/2016
26	6/22/2014	6/28/2014	26	6/28/2015	7/4/2015	26	6/26/2016	7/2/2016
27	6/29/2014	7/5/2014	27	7/5/2015	7/11/2015	27	7/3/2016	7/9/2016
28	7/6/2014	7/12/2014	28	7/12/2015	7/18/2015	28	7/10/2016	7/16/2016
29	7/13/2014	7/19/2014	29	7/19/2015	7/25/2015	29	7/17/2016	7/23/2016
30	7/20/2014	7/26/2014	30	7/26/2015	8/1/2015	30	7/24/2016	7/30/2016
31	7/27/2014	8/2/2014	31	8/2/2015	8/8/2015	31	7/31/2016	8/6/2016
32	8/3/2014	8/9/2014	32	8/9/2015	8/15/2015	32	8/7/2016	8/13/2016
33	8/10/2014	8/16/2014	33	8/16/2015	8/22/2015	33	8/14/2016	8/20/2016
34	8/17/2014	8/23/2014	34	8/23/2015	8/29/2015	34	8/21/2016	8/27/2016
35	8/24/2014	8/30/2014	35	8/30/2015	9/5/2015	35	8/28/2016	9/3/2016
36	8/31/2014	9/6/2014	36	9/6/2015	9/12/2015	36	9/4/2016	9/10/2016
37	9/7/2014	9/13/2014	37	9/13/2015	9/19/2015	37	9/11/2016	9/17/2016
38	9/14/2014	9/20/2014	38	9/20/2015	9/26/2015	38	9/18/2016	9/24/2016
39	9/21/2014	9/27/2014	39	9/27/2015	10/3/2015	39	9/25/2016	10/1/2016
40	9/28/2014	10/4/2014	40	10/4/2015	10/10/2015	40	10/2/2016	10/8/2016
41	10/5/2014	10/11/2014	41	10/11/2015	10/17/2015	41	10/9/2016	10/15/2016
42	10/12/2014	10/18/2014	42	10/18/2015	10/24/2015	42	10/16/2016	10/22/2016
43	10/19/2014	10/25/2014	43	10/25/2015	10/31/2015	43	10/23/2016	10/29/2016
44	10/26/2014	11/1/2014	44	11/1/2015	11/7/2015	44	10/30/2016	11/5/2016
45	11/2/2014	11/8/2014	45	11/8/2015	11/14/2015	45	11/6/2016	11/12/2016
46	11/9/2014	11/15/2014	46	11/15/2015	11/21/2015	46	11/13/2016	11/19/2016
47	11/16/2014	11/22/2014	47	11/22/2015	11/28/2015	47	11/20/2016	11/26/2016
48	11/23/2014	11/29/2014	48	11/29/2015	12/5/2015	48	11/27/2016	12/3/2016
49	11/30/2014	12/6/2014	49	12/6/2015	12/12/2015	49	12/4/2016	12/10/2016
50	12/7/2014	12/13/2014	50	12/13/2015	12/19/2015	50	12/11/2016	12/17/2016
51	12/14/2014	12/20/2014	51	12/20/2015	12/26/2015	51	12/18/2016	12/24/2016
52	12/21/2014	12/27/2014	52	12/27/2015	1/2/2016	52	12/25/2016	12/31/2016
53	12/28/2014	1/3/2015						

Electronic Lab Reporting Acronyms and Definitions

With the Meaningful Use Incentive Program and a number of large, national reference laboratories starting to share information with the Tennessee Department of Health (TDH) through electronic lab reporting, there are likely some terms that you have heard but are unfamiliar with. This document defines some of those terms and acronyms.

ELR – Electronic Laboratory Result Reporting. For our business, this is the electronic submission of laboratory results thought to be indicative of a Reportable condition in TN using interoperability Standards.

ELR Message – We often use this phrase when referring to electronic lab reports. The message is what the facility electronically sends to TDH with all the patient, order, observation, and specimen information formatted according to HL7 Standards.

HL7 – HL7 is short for Health Level Seven International. The HL7 Messaging Standard facilitates electronic data exchange of healthcare information. TDH requires the use of HL7 version 2.x messages for electronic transmission of ELR data.

LOINC – LOINC is short for Logical Observation Identifiers Names and Codes. LOINC is a Standard coding system for identifying laboratory and clinical observations. You will see LOINC codes for the ordered test and the resulted test in ELR messages.

Observation – This is what was *observed*. For our business, the observation is the resulted lab test. You will often hear us use observation synonymously with the result, even though the term observation can have a much broader meaning.

Observation Result Status – For lab reports that come via ELR, TDH only accepts preliminary, final, or corrected results. The preliminary, final, or corrected status will display in the lab report. The preliminary status means the result is still preliminary. A preliminary result can be changed by a final result indicating that the result is now final. A corrected result means there is a correction and thus replaces a final result.

Order Result Status – This is the status of results for this order. TDH only accepts preliminary, final, or corrected results. The status is usually final, but there are instances where there is more than 1 result observation associated with an order, so this field may yield a different value. The status is set to final when all of the laboratory result observations associated with the order are final. Keep in mind that not all of the laboratory result observations may be reportable, so TDH might only receive some of those results.

Ordering Facility – This is the facility that ordered the lab test that was sent to TDH. This could be the same facility as the performing facility and/or the same facility as the reporting facility, but it might not be.

Performing Facility – This is the facility that actually performed the lab test that was sent to TDH. This could be the same facility as the reporting facility and/or the ordering facility, but it might not be. Many times the performing facility is a large reference lab that does more extensive laboratory testing than the reporting facility or the ordering facility.

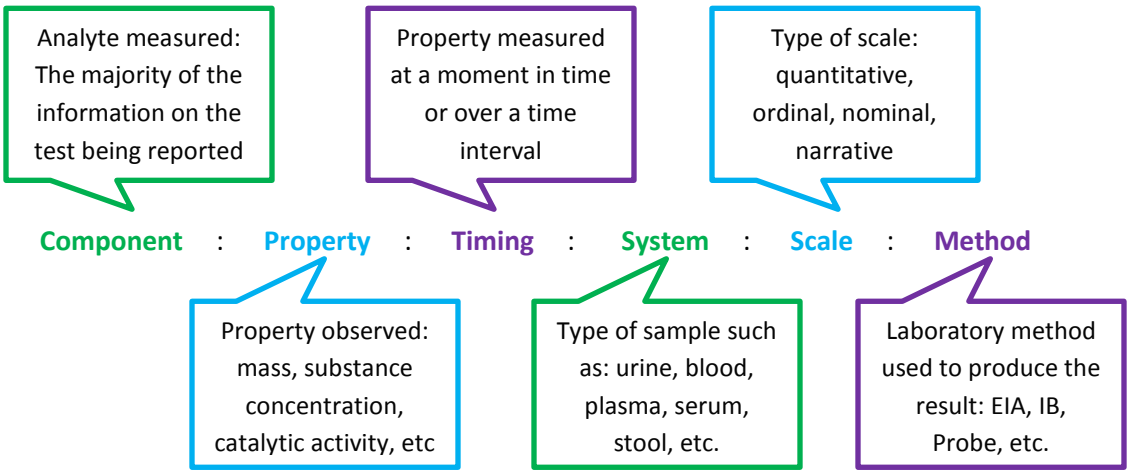
Reporting Facility – This is the facility that is sending the ELR message to TDH to report a lab result for a Reportable condition in TN. This may or may not be the same facility that ordered and/or performed the lab test.

SNOMED – SNOMED-CT is short for Systemized Nomenclature of Medicine – Clinical Terms. SNOMED-CT is a Standardized healthcare terminology. You will see SNOMED-CT codes for nominal and ordinal test results as well as specimen sources in ELR messages.

LOINC Codes: What are they and what do they mean?

A term you might have heard used before is LOINC, but you are likely asking yourself what that means. It is pronounced like the sound a pig makes, "oink", with an 'L', L-OINC. LOINC stands for Logical Object Identifiers, Names, and Codes. It is a Standard coding system for identifying laboratory and clinical observations. LOINC is one of the Standardized terminologies used to achieve interoperability. For our business, interoperability is the ability to electronically exchange data with any system that speaks using Standard language securely and accurately so that meaning is maintained and therefore *communication of information* is achieved.

All of TDH's ELR trading partners use LOINC codes for their resulted laboratory tests. A LOINC code is a numeric code, and for ELR purposes, that code is sent with a text description of the code. Our ELR trading partners can send a LOINC fully-specified name, a LOINC long name, or a local description for the resulted test description. The fully-specified name is a six-part formal name separated by colons:



Here are some examples of how you will see resulted test names:

LOINC = 25419-3

-*Fully-specified name*: **Mumps virus Ab.IgM: ACnc: Pt: Ser: Qn: EIA**

-*Long name*: **Mumps virus IgM Ab [Units/volume] in Serum by Immunoassay**

LOINC = 625-4

-*Fully-specified name:* **Bacteria identified: Prid: Pt: Stool: Nom: Culture**

-*Long name:* **Bacteria identified in Stool by Culture**

For more information on LOINC, please visit: http://loinc.org/
To look-up a specific LOINC code you have received, please visit: http://search.loinc.org/

Why would you want to use http://search.loinc.org/?

Although most laboratories provide us with detailed information about the tests they are performing, there are some instances when you might need to look for more information about the specimen, test method used, etc. Searching the LOINC code can sometimes assist you in finding this type of information.

Here is an example of how you might use http://search.loinc.org/:

You receive an ELR in NBS with the following information for the resulted test:

Resulted Tests and Results

Resulted Test: West Nile virus Ab.IgG
Result(s): Positive(SNOMED)

The reporting laboratory didn't provide all the information about the test performed, so you turn to the LOINC code:

Test Code(s): 30178-8 (LN LOINC)

You go to http://search.loinc.org/ *and agree to the terms. After searching for the LOINC from the lab report, you get this information:*

LOINC from Regenstrief | 30178-8 | Search

LOINC	LongName	Component	Property	Timing	System	Scale	Method
30178-8	West Nile virus IgG Ab [Presence] in Unspecified specimen by Immunoassay	West Nile virus Ab.IgG	ACnc	Pt	XXX	Ord	EIA

You can now see the long name for this LOINC – **West Nile virus IgG Ab [Presence] in Unspecified specimen by Immunoassay**

This type of information could be very important depending on the condition. For example, the method used (Immunoassay in this example) could be a major factor in determining case definition classification. Without that information, it might be more difficult to decide whether the patient meets case definition.

NOTE: LOINC codes are used across laboratories, so they are not specific to each individual laboratory. If you have detailed questions about a test performed at a specific laboratory, it is advised to contact that facility or consult their test catalog (if it is available online).

Example LOINC Abbreviations for the Six Components of the Fully-Specified Name

Component

Abbreviation	Full Name	Abbreviation	Full Name
Ab	Antibody	**HTLV 1**	Human t-cell lymphotropic virus-1
Ag	Antigen	**Ig "X"**	Immunoglobulins (IgG, IgM)
DNA	Deoxyribonucleic acid	**NOS**	Not otherwise specified
HIV	Human immunodeficiency virus	**RNA**	Ribonucleic acid
HLA	Human histocompatibility complex derived antigens	**rRNA**	Ribosomal ribonucleic acid

Property

	Abbreviation	Full Name
Enzymatic Activity	CAct	Catalytic Activity
	CCnc	Catalytic Concentration
	CRto	Catalytic Ratio
	CCnt	Catalytic Content
	CFr	Catalytic Fraction
	CFr.DF	Decimal catalytic fraction
	CRat	Catalytic Rate
	RelCCnc	Relative Catalytic Concentration
	CSub	Catalytic Substance
Entitic	EntCat	Entitic Catalytic Activity
	EntLen	Entitic Length
	EntMass	Entitic Mass
	EntNum	Entitic Number
	EntVol	Entitic Volume
	EntSub	Entitic Substance
Mass	Mass	Mass
	MAric	Mass Aeric
	MCnc	Mass Concentration
	MRto	Mass Ratio
	MCnt	Mass Content
	MFr	Mass Fraction
	MFr.DF	Mass Decimal Fraction
	MRat	Mass Rate
	RelMCnc	Relative Mass Concentration
	RelMRat	Relative Mass Rate
	ThrMCnc	Threshold Mass Concentration
	MCncDiff	Difference in Mass Concentration
	MCPctDiff	Percent Difference in Mass Concentration
Substance	RelSCnc	Relative Substance Concentration
	Sub	Substance Amount
	SCnc	Substance Concentration

	SRto	Substance Ratio
	SCnt	Substance Content
	SFr	Substance Fraction
	SFr.DF	Decimal Substance Fraction
	SRat	Substance Rate
	RelSRat	Relative Substance Rate
	ThrSCnc	Threshold Substance Concentration
	SCncDiff	Difference in Substance Concentration
	LsCnc	Log substance concentration
Counts	Num	Number
	Naric	Number Aeric (number per area)
	NCnc	Number Concentration (count/vol)
	NCnt	Number Content = Count/Mass
	NFr	Number Fraction
	NRat	Number=Count/Time
	NRto	Number Ratio
	LnRto	Log Number Ratio
	LnCnc	Log Number Concentration
Volumes	Vol	Volume
	VCnt	Volume Content
	VFr	Volume Fraction
	VFr.DF	Volume Decimal Fraction
	VRat	Volume Rate
	VRatCnt	Volume Rate Content
	VRatRto	Volume Rate Ratio
	VRto	Volume Ratio
	RelVol	Relative Volume
	RelVRat	Relative Volume Rate
	ArEnrg	Energy/Area
	ArResis	Resistance/Area
	ArVol	Volume/Area
	ArVRat	Volume Rate/Area
	VFrDiff	Difference in Volume Fraction
	VPctDiff	Percent Volume Difference
	VRtoPctDiff	Percent Volume Ratio Difference
Time	Time	Time
	TmStp	Time Stamp—Date and Time
	TRto	Time Ratio
	TQ2	Timing Quantity 2
	RelTime	Relative Time
	DateRange	Date Range
	ClockTime	Clock Time
	TmStp	Time Stamp—Date and Time
	TimeDif	Time Difference

Arbitrary	ACnc	Arbitrary Concentration
	ACnt	Arbitrary Content
	ThrACnc	Threshold Arbitrary Concentration
	ARat	Arbitrary Rate
	LaCnc	Log Arbitrary Concentration
	RelACnc	Relative Arbitrary Concentration
	AFr	Arbitrary Fraction

Timing

Abbreviation	Full Name
Pt	To identify measures at a point in time
XXX	Not specified

System

Abbreviation	Name	Abbreviation	Name	Abbreviation	Name
Abscess	Abscess	**Endomet**	Endometrium	**Placent**	Placenta
Amnio fld	Amniotic fluid	**RBC**	Erythrocytes	**Plas**	Plasma
Anal	Anus	**Eye**	Eye	**Plr fld**	Pleural fluid (thoracentesis fld)
Asp	Aspirate	**Exhl gas**	Exhaled gas (=breath)	**PPP**	Platelet poor plasma
Bil fld	Bile fluid	**Fibroblasts**	Fibroblasts	**Ser**	Serum
BldA	Blood arterial	**Fistula**	Fistula	**Skin**	Skin
BldL	Blood bag	**Body fld**	Body fluid, unsp	**Sputum**	Sputum
BldC	Blood capillary	**Food**	Food sample	**Sptt**	Sputum - tracheal aspirate
BldCo	Blood – cord	**Gas**	Gas	**Stool**	Stool = Fecal
BldMV	Blood- Mixed Venous	**Gast fld**	Gastric fluid/contents	**Sweat**	Sweat
BldP	Blood – peripheral	**Genital**	Genital	**Synv fld**	Synovial fluid (Joint fluid)
BldV	Blood venous	**Genital fld**	Genital fluid	**Tear**	Tears
Bld.dot	Blood filter paper	**Genital loc**	Genital lochia	**Thrt**	Throat
Bone	Bone	**Genital muc**	Genital mucus	**Platelets**	Thrombocyte (platelet)
Brain	Brain	**Hair**	Hair	**Tiss**	Tissue, unspecified
Bronchial	Bronchial	**Inhl gas**	Inhaled gas	**Tlgi**	Tissue large intestine
Burn	Burn	**Isolate**	Isolate	**Tsmi**	Tissue small intestine
Calculus	Calculus (=Stone)	**WBC**	Leukocytes	**Trachea**	Trachea
Cnl	Cannula	**Line**	Line	**Tube**	Tube, unspecified
CTp	Catheter tip	**Liver**	Liver	**Ulc**	Ulcer
CSF	Cerebral spinal fluid	**Lung tiss**	Lung tissue	**Urethra**	Urethra
Cvm	Cervical mucus	**Bone mar**	Marrow (bone)	**Urine**	Urine

Cvx	Cervix	**Meconium**	Meconium	**Urine sed**	Urine sediment
Col	Colostrum	**Milk**	Milk	**Unk sub**	Unknown substance
Cnjt	Conjunctiva	**Nail**	Nail	**Vag**	Vagina
Crn	Cornea	**Nose**	Nose (nasal passage)	**Vitr fld**	Vitreous Fluid
Dentin	Dentin	**Nph**	Naspopharynx	**Vomitus**	Vomitus
Dial fld	Dialysis fluid	**Penile vessels**	Penile vessels	**Bld**	Whole blood
Dose	Dose med or substance	**Penis**	Penis	**Water**	Water
Drain	Drain	**Pericard fld**	Pericardial fluid	**Wound**	Wound
Duod fld	Duodenal fluid	**Periton fld**	Peritoneal fluid /ascites	**XXX**	To be specified in another part of the message
Ear	Ear	**Dial fld prt**	Peritoneal dialysis fluid		

Scale

Abbreviation	Scale Type	Description
Qn	Quantitative	Numeric value relating to a continuous numeric scale. Can be an integer, ratio, real number, or range.
Ord	Ordinal	Categorical responses such as 1+, positive, reactive, etc.
Nom	Nominal	Categorical responses that do not have ordering like names of bacteria.
Nar	Narrative	Text narrative such as a microscopic description.

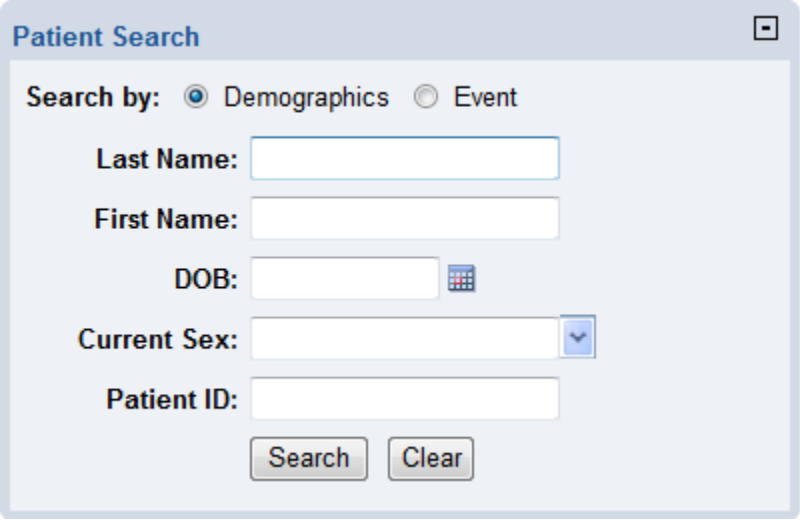
Method

Abbreviation	Method	Abbreviation	Method
Aggl	Agglutination	**LA**	Latex Agglutination
Coag	Coagulation Assay	**LHR**	Leukocyte Histamine Release
Comp fix	Complement Fixation	**MIC**	Minimum Inhibitory Concentration
CT	Computerized Tomography	**MLC**	Minimum Lethal Concentration
Cyto stain	Cytology Stain	**Molgen**	Molecular Genetics
Probe	DNA Nucleic Acid Probe	**Neut**	Neutralization
Chromo	Chromogenic/Enzymatic Assay	**RIA**	Radioimmunoassay
EIA	Immunoassay	**SBT**	Serum Bacterial Titer
Floc	Flocculation Assay	**RPR**	Rapid Plasma Reagin
HAI	Hemagglutination Inhibition	**US**	Ultrasound
HA	Hemagglutination	**VAP**	Vertical Auto Profile
IB	Immune Blot	**VC**	Visual Count
IF	Immune Fluorescence (DFA, IFA, FA)	**VDRL**	Venereal Disease Research Laboratory

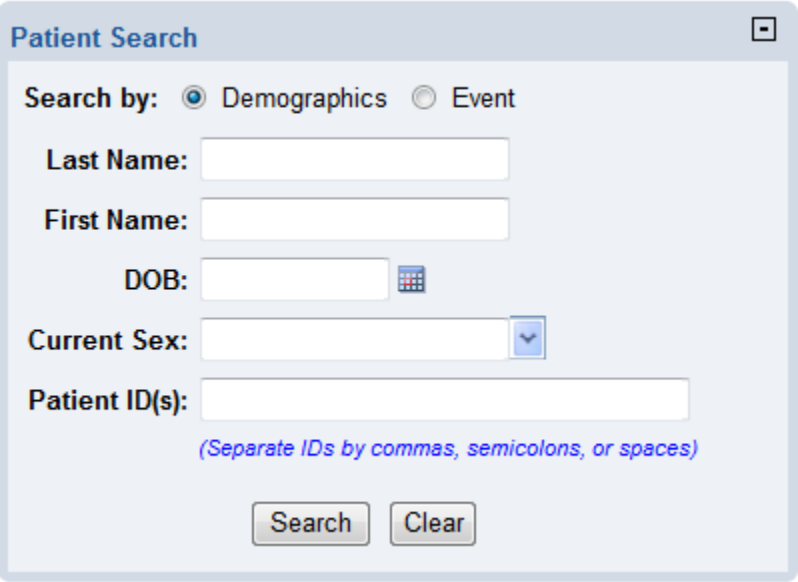
New Features of NBS Version 4.4

You can now search by multiple Patient ID's

Current NBS:



New NBS:



In the new NBS (4.4.1.1), you can search by multiple Patient IDs. This will be helpful when you need to have 2 patient files merged due to duplicates. Before sending the NBS System Administrator the two Patient ID's, you can search them both to see the patient summaries side-by-side to ensure that these are the same patient.

You can now see multiple ID's for each patient

Current NBS:

View Lab Report

Patient Information | Test Results | Order Information | Other Information

Patient Information Back to Top

Name:
Alias:
Home Address: Bristol, Tennessee 37620
Home Phone: - - **Ext:** **Work Phone:** **Ext:**
Sex: Female **Race:** Unknown
DOB: / / **Age:**
Deceased: **Death Date/Time:**
Marital Status: **Ethnicity:**
Patient Comments: **SSN:**

ID Type	ID	Assigning Authority	Expiration Date
Person number		34D0655059	

New NBS:

View Lab Report

Patient Information | Test Results | Order Information | Other Information

Patient Information Back to Top

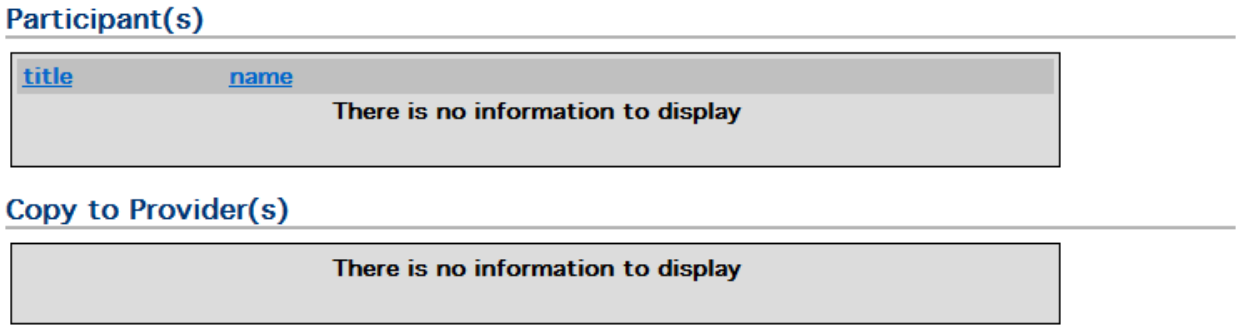
Name:
Alias:
Home Address: MEMPHIS, Tennessee 38187 United States
Home Phone: **Ext:** **Work Phone:** **Ext:**
Sex: Male **Race:** Black or African American
DOB: / / **Age:**
Deceased: **Death Date/Time:**
Marital Status: **Ethnicity:** Not Hispanic or Latino
Patient Comments: **SSN:**

ID Type	ID	Assigning Authority	Expiration Date
Medical record number		44D0659319	
Patient Internal Identifier		44D0659319	

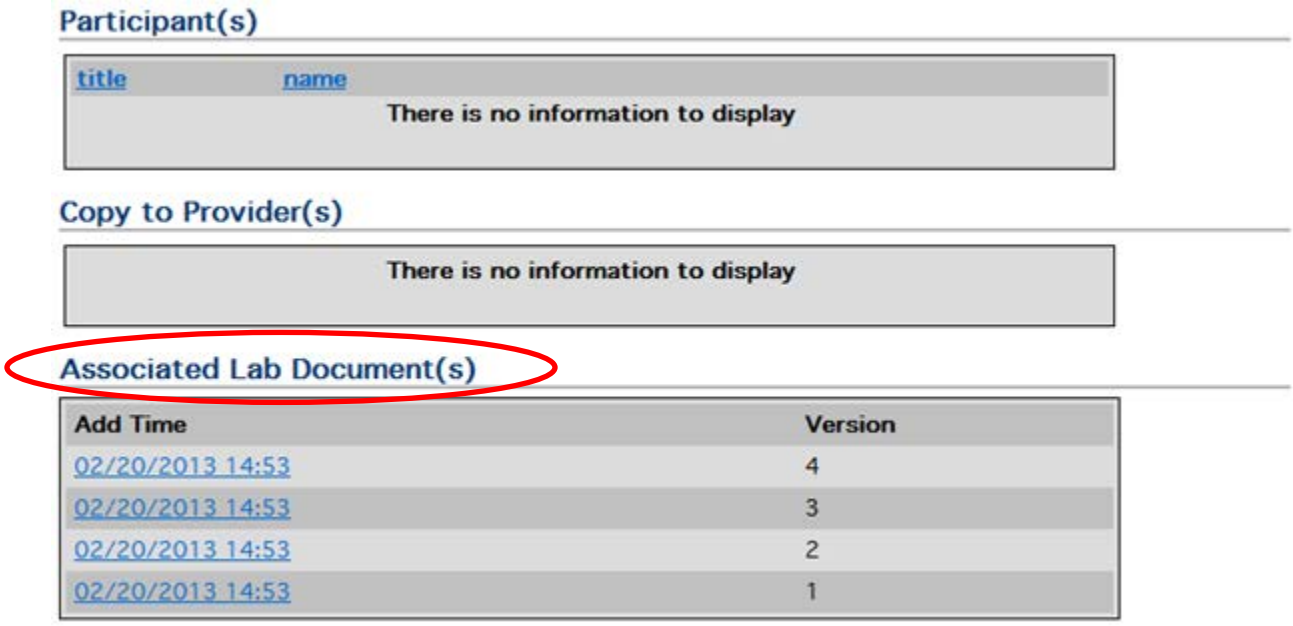
In the new NBS (4.4.1.1), you can see multiple ID's for each patient who has a laboratory coming via ELR. The old NBS only displayed 1 ID, even if the reporting laboratory provided multiple ID's in their ELR message. Now, you will be able to see each ID reported.

There is a new section for Associated Lab Document(s)

Current NBS:



New NBS:



At the very bottom of each laboratory report coming into NBS via ELR, there is a new subsection called 'Associated Lab Document(s)'. This new lab document displays all of the information captured in the lab report, but in a different format. It also has the ELR XML Message that NBS built the lab report based off of. For NBS users, this XML information will likely not be of use, but it will be helpful if there are ever errors that the NBS System Administrator needs to investigate. These new lab documents are also going to help with preliminary and corrected lab reports (see the next page).

You can see multiple versions of electronic lab reports (if more than one exists)

New NBS:

Associated Lab Document(s)

Add Time	Version
02/20/2013 14:53	4
02/20/2013 14:53	3
02/20/2013 14:53	2
02/20/2013 14:53	1

As you can see, the new 'Associated Lab Document(s)' can have multiple lab reports. This is because the new NBS keeps a record off all versions of the lab report coming via ELR. With lab reports that come via ELR, the lab can send preliminary results (P), final results (F), or corrected results (C). A final result will replace the preliminary result in NBS and the corrected result will replace a final result. With the new lab document functionality, NBS users can view each version of the lab report. This can be very helpful if you are trying to figure out why a decision was made (why an investigation was opened, why a case status determination was made, etc.).
Using the screenshot above as an example, there are 4 versions of that lab report. The user interface will always display the most recent version of the lab, in this example that is the corrected result:

Resulted Tests and Results

Resulted Test: WEST NILE VIRUS AB.IGG(WEST NILE VIRUS AB, IGG, S)
Result(s):
NEGATIVE

Reference Range: NEGATIVE
Interpretation:
Result Method:
Status: Corrected
Test Code(s): 29566-7 (LN LOINC) /WNVGS (L LOCAL)
Result Code(s):
Result Comments: MSH-10:

Date/Time: 2012-10-24 15:53:00.0
Performing Facility: MAYO CLINIC LABS-ROCH SUPERIOR DR
Facility ID: 24D1040592 (FI CLIA)

If you scroll down to the bottom of the lab report to the 'Associated Lab Document(s)' and open one of the versions of the lab, you can view the final and the preliminary lab reports:

Resulted Test

Test/Drug Name	Result/Organism	Status
WEST NILE VIRUS AB.IGG (29566-7 [LN]) /WEST NILE VIRUS AB, IGG, S (WNVGS [L])	NEGATIVE	P
Performed Date/Time	**Test Result Method**	**Performing Facility**
08/24/2012 18:35		MAYO CLINIC LABS-ROCH SUPERIOR DR (24D1040592 [CLIA])
Ref. Range	**Abnormal Flag**	
NEGATIVE		
Comments		

The upgraded version of NBS has some major changes for how ELR messages are processed and brought into the system. Because of that, you might see some things that look a little different than what you are used to.

Order Status

In an ELR message, there are 2 statuses that we receive –one for the order, and one for the result. The result status is the one that we are more interested in, as this lets us know if the result that we received is preliminary, final, or corrected. In order to process all ELR messages that we receive, we had to change the order status on all messages to final. Most of the messages will not be altered, as the order status of final is what we receive for the majority of messages, but some will.

Test Results

Ordered Test:	Hepatitis B Surface Antigen Confirmation
Codes:	7905-3(LN LOINC)
Status:	Final

This is a temporary fix as this issue will be resolved in a future NBS patch release. Anytime the order status has been changed from preliminary to final or from corrected to final, you will know because there will be a note in the 'Result Comments':

Resulted Tests and Results

Resulted Test: Bacteria XXX Cult(CULTURE, ROUTINE)
Result(s):
MODERATE GROWTH OF

Reference Range:
Interpretation:
Result Method:
Date/Time: 2013-02-21 11:29:00.0
Performing Facility: Magic Valley Regional Med Ctr
Facility ID: ML
(FI)

Status: Final
Test Code(s): 6463-4 (LN LOINC) /CU (L LOCAL)
Result Code(s):
Result Comments: MSH-10: 20130226015526000003.
Original Specimen Collection Date/Time: 02-21-2013 11:29.
TDH changed the Order Status from Preliminary to Final.

Date/Time of the Result

The upgraded version of NBS requires a date/time of analysis, without this date the lab result will not migrate into NBS. This should be sent in every ELR message, but if it is ever empty, we will populate it with 99990909. Again, this is a temporary fix, and the issue will be resolved in a future NBS patch release. Anytime we have made this addition, you will know because it will look like this:

Resulted Tests and Results

Resulted Test: CD4 % Helper T Cells(CD4 % Helper T Cells)
Result(s):
414.00000 %

Reference Range:
Interpretation: Normal
Result Method:
Date/Time: 9999-09-09 00:00:00.0
Performing Facility: Methodist University
Facility ID: 44D0313808
(FI)

Status: Final
Test Code(s): 32516-7 (LN LOINC) /379 (L LOCAL)
Result Code(s):
Result Comments: Performing Lab Address: 1265 Union Avenue, Memphis, TN 38104

Performing Lab Address

NBS does display the performing facility, but it does not have a place to display the performing facility's address. This is something that we receive in ELR messages and wanted to make available to users. Whenever we receive this information, you will be able to see it in the 'Result Comments':

Resulted Tests and Results

Resulted Test: CD4 % Helper T Cells(CD4 % Helper T Cells)
Result(s):
414.00000 %

Reference Range:
Interpretation: Normal
Result Method:
Status: Final
Test Code(s): 32516-7 (LN LOINC) /379 (L LOCAL)
Result Code(s):
Result Comments: Performing Lab Address: 1265 Union Avenue, Memphis, TN 38104

Date/Time: 9999-09-09 00:00:00.0
Performing Facility: Methodist University
Facility ID: 44D0313808
(FI)

Message Control ID

In order to process all ELR messages that we receive, we have to alter the message control ID that is sent to us. Although this is mainly used by the Surveillance Systems and Informatics Program when processing the ELR messages, it is displayed in the lab report in NBS. We do not foresee many instances when users will need this information, but you might notice a note with the original, unaltered message control ID in the 'Result Comments':

Resulted Tests and Results

Resulted Test: Culture Body Fluid(Culture Body Fluid)
Result(s): Neisseria gonorrhoeae

Reference Range:
Interpretation: Abnormal
Result Method:
Status: Final
Test Code(s): 610-6 (LN LOINC) /101 (L LOCAL)
Result Code(s): 68704007SCT/
Result Comments: Performing Lab Address: 50 North Dunlap Street, Memphis, TN 38103
MSH-10: 201304101145386955.
Original Specimen Collection Date/Time: 05-28-2012 13:41:00.

Date/Time: 2012-06-01 07:32:00.0
Performing Facility: Methodist Le Bonheur Childrens
Facility ID: 44D0659319
(FI 44D0659319)

Date Specimen Collected

When ELR messages are received, there could be multiple lab results for the same patient. A sender might send all those results in one message. Due to user right restrictions to the different program areas in NBS, some of these results need to be split into more than one ELR message. This is a temporary fix, and the issue will be resolved in a future NBS patch release. In those cases, we have to alter the specimen collection date/time so all messages can be processed. This will only occur for certain tests, those that are subscribed (not for the majority of labs – STDs and HIV as an example). The original specimen collection date/time is listed in the 'Result Comments' for all labs (in military time):

Resulted Tests and Results

Resulted Test: Culture Body Fluid(Culture Body Fluid)
Result(s): Neisseria gonorrhoeae

Reference Range:
Interpretation: Abnormal
Result Method:
Status: Final
Test Code(s): 610-6 (LN LOINC) /101 (L LOCAL)
Result Code(s): 68704007SCT/
Result Comments: Performing Lab Address: 50 North Dunlap Street, Memphis, TN 38103
MSH-10: 201304101145386955.
Original Specimen Collection Date/Time: 05-28-2012 13:41:00.

Date/Time: 2012-06-01 07:32:00.0
Performing Facility: Methodist Le Bonheur Childrens
Facility ID: 44D0659319
(FI 44D0659319)

New NBS Users

- Procedures and Documentation to Complete
  - Please see "New NBS Users" procedures (page 2.16)
- NBS Power Point Presentations
  - Logging In and System Overview……6.2
  - Searching for and Adding Patients……6.17
  - Adding Laboratory Reports and Checking Queues……6.26
  - Creating Investigations and Associating Labs……6.38
  - Changing a Jurisdiction……6.49
  - Merging Records……6.62
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- Practice Section
  - Introduction……6.87
  - Salmonellosis Case……6.88
  - Tuberculosis Case……6.98

NEDSS Based System Training

Tennessee Training Guide

Objectives

- Overall training objectives:
  - Introduction to NEDSS Based System (NBS)
  - Common Tasks, and how to do them
  - Quality Assurance
  - Running Reports
  - Practice

NBS & NEDSS

- **NEDSS** – **N**ational **E**lectronic **D**isease **S**urveillance **S**ystem is an initiative that promotes the use of data & information systems standards for disease surveillance
- **NBS** – **N**EDSS **B**ase **S**ystem is the CDC supplied NEDSS solution currently used by multiple states, including TN (WV, AL, KY, AR, VA, SC)

Surveillance Systems at CEDS

- **NBS** – NEDSS Based System
  - General Communicable Diseases
  - Tuberculosis
  - FoodNet
- **eHARS** – e-HIV/AIDS Reporting System
  - HIV
- **PRISM** - Patient Reporting, Investigation and Surveillance Manager
  - STD
  - HIV/AIDS

Why use NBS?

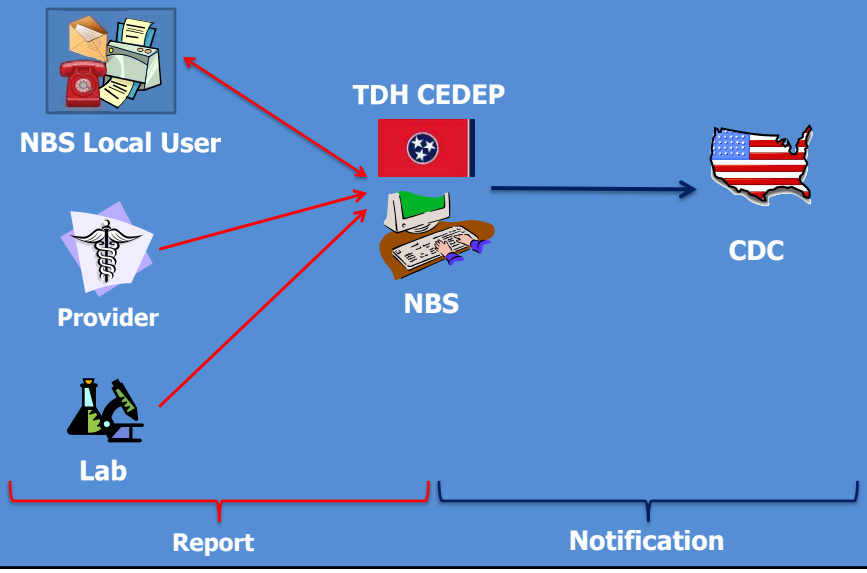
- The ultimate goal is to:
  - Provide greater and better access to more reliable and valid health information
  - Promote and maintain security
  - Facilitate more timely and efficient decision-making and patient management

A Note on Notification,

Or a Report on Reporting

- **Reports** are sent to public health departments by providers and labs.
  - **Case reports** are made/sent by telephone, fax, or mail using PH-1600.
  - **Lab reports** are sent either by mail or fax (paper) or via Electronic Lab Result reporting
- **Notifications** are how public health departments let CDC know about cases of nationally notifiable diseases.

Reporting vs. Notification



Common Tasks

1. Logging in & System Overview
2. Searching for a Patient
3. Adding a Patient
4. Adding a Paper Lab Report
5. Checking the Queue
6. Creating an Investigation
7. Associating a Lab Report with an Investigation
8. Changing a Jurisdiction
9. Merging Records
10. Running Reports

Lesson 1:
Logging in & System Overview

Terms as Used in NBS

- Events
- Observations
- Investigations
- Notifications

Terms

- **Events** – all types of surveillance information associated with a patient; includes:
  - Observations (e.g. lab reports)
  - Investigations
  - Vaccinations
  - Treatments

Terms

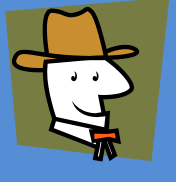
- **Observation** – refers to types of surveillance information most likely to trigger an investigation, specifically:
  - Lab Reports
  - Morbidity Reports

Terms

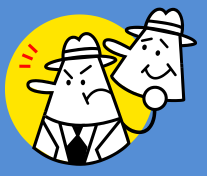
- **Investigation** – in NBS, refers to the "bucket" containing all surveillance information relating to the public health investigation
- **Notification** – a message sent to CDC indicating a case of a Nationally Notifiable Disease

Benefits of NBS

- Database storage of case, investigation, and laboratory information
- Less hard-copy, physical data storage needed by regions, metros, programs
- Useful for
  - Basic epidemiologic analyses
  - Business process, work-flow, and program-specific work-burden analyses
  - Report generation
- Data can be used at the local or state level by
  - Epidemiologists
  - Data analysts
  - Investigation Staff
  - Clinical Staff
  - Program managers



Drawbacks



- Can be intimidating
- Learning curve
- Requires some local-user, program-level oversight for maintaining data quality
- Lack of flexibility in user interface
- Complexity of advanced analysis & reporting due to relational database design (requires use of database admin.)

Benefits

- Database storage of case, investigation, and laboratory information
- Less hard-copy, physical data storage needed by regions, metros, programs
- Useful for
  - basic epidemiologic analyses
  - business process, work-flow, and program-specific work-burden analyses
  - Report Generation
- Data can be used at the local or state level by
  - Epidemiologists
  - Data analysts
  - Investigation Staff
  - Clinical Staff
  - Program managers

Drawbacks

- Learning curve
- Can be intimidating
- Requires some local-user program-level oversight for maintaining data quality
- Lack of flexibility
- Complex advanced analysis

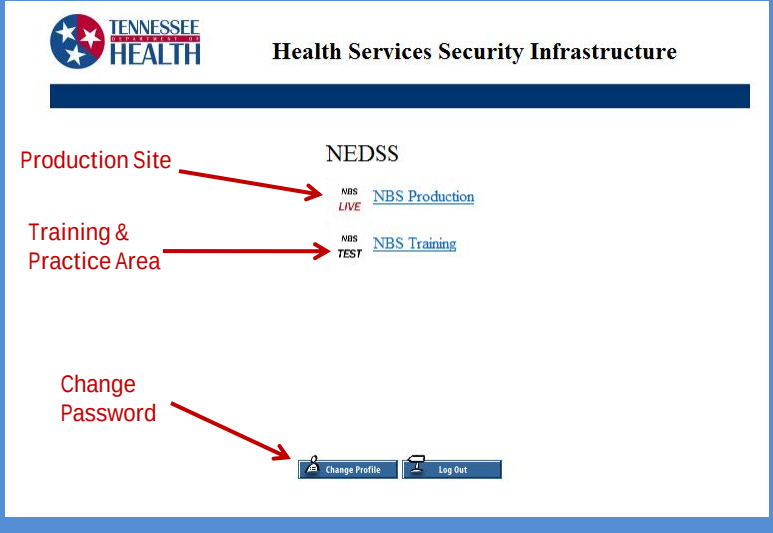
https://hssi.tn.gov/auth/login

BOOKMARK this.

Logging In

- If it is your first time using NBS, your user name is your DC# and your password is Password01
- You will receive an error message that your password has expired
- You will be prompted to change your password (at least 8 characters long, contain at least 1 capital letter and 1 number)
- You will be taken back to the initial login screen

/auth/Login
Convert
Select
Case Definitions for Infectiou...
TENNESSEE HEALTH
Health Services Security Infrastructure
Welcome!
Your last successful login was on 2011-01-28 14:54:58.717
from 10.172.162.60
Your last unsuccessful login was on 2011-01-28 12:11:29.612
from 10.172.162.60
OK


TENNESSEE HEALTH
Health Services Security Infrastructure
Production Site
NEDSS
NBS LIVE
NBS Production
Training & Practice Area
NBS TEST
NBS Training
Change Password
Change Profile
Log Out

Training vs. Production Site

Training (test)

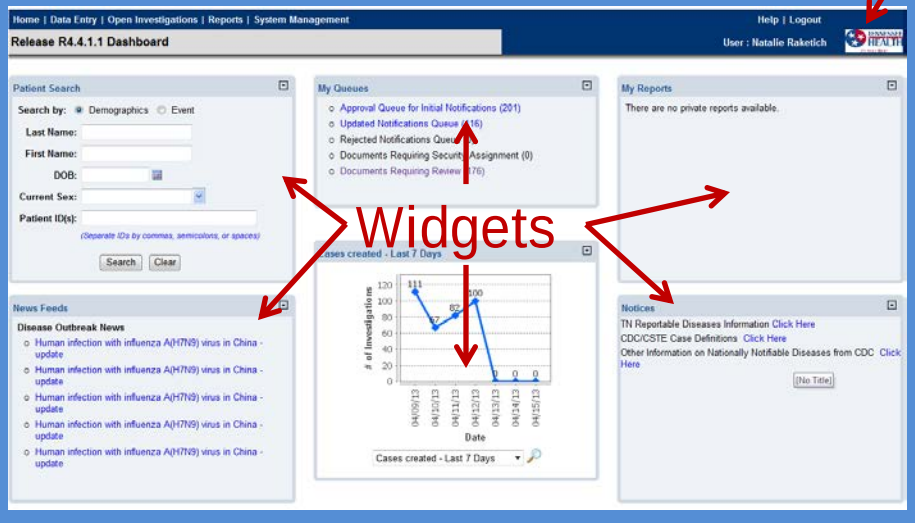
- Training is for practice
- Use Training site when:
  - Trying new functions
  - Training new users
  - Getting comfortable with the system
- Training system is for test or 'dummy' data, not for real, production data
- Running reports in Training will result in test data in reports

Production

- Production is not for practice
- Please do not enter any test or 'dummy' patients in the production system
- Reports can be generated
- Running reports in Production should result in production data in reports

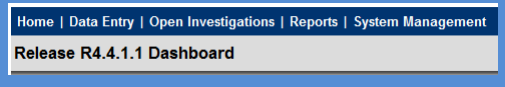
The Dashboard

Production Environment

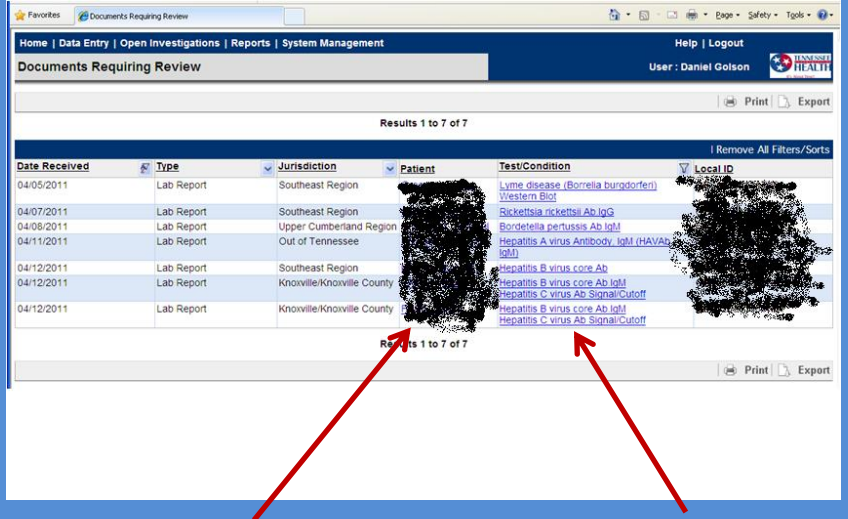


Potential Land Mine!

- **DO NOT** use your browser's **BACK** button in NBS, it will cause you only pain and frustration
- Use the main menu at the top of the page



Reviewing New Lab Reports



To view all events for a patient, select the **Patient** name

To only view the observation (lab report), select the **Test/Condition**, not the Patient name

Reviewing a New Lab Report

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

View Lab Report — User: Natalie Raketich

Patient ID: 149002 | Observation ID: OBS10133007TN01 — Return to Documents Requiring Review | View File

Mark as Reviewed | Transfer Ownership | Edit | Delete | Create Investigation | Print

Created: 11/10/2011 by: Daniel Golson — Updated: 11/10/2011 by: Daniel Golson

Lab Report Date: 10/10/2011 — Date Received by Public Health: 11/10/2011

View Lab Report

Patient Information | Test Results | Order Information | Custom Fields | Custom Fields For Patient

Patient Information — Back to Top

Name: Conan The Barbarian
Home Address: Tennessee
Home Phone:
Sex: Male — Race: Unknown
DOB: 12/12/1900 — Age: 110 Years
Death Date/Time:
Marital Status: Polygamous — Ethnicity:
Patient Comments: — SSN:

Test Results — Back to Top

Ordered Test: No Information Given

Resulted Tests and Results
Resulted Test: BACTERIA IDENTIFIED
Result(s): Bordetella pertussis (organism)
Reference Range:
Status:
Result Comments:

Order Information — Back to Top

Facility and Provider Information
Reporting Facility: Vanderbilt University Medical Center, 21st Ave South, Nashville, Tennessee 37232, 615-322-5000
Ordering Facility: There is no Ordering Facility selected.
Ordering Provider: There is no Ordering Provider selected.

Viewing All Events for a Patient

Home | Data Entry | Open Investigations | Reports | System Management — Help | Logout

Patient File — User : Natalie Raketich

Return to Documents Requiring Review — Print

Conan TheBarbarian, Jr. | Male | 10/15/1954 (57 Years) — Patient ID: 156020

Summary | Events | Demographics

Expand All | Collapse All

Patient Events History

Go to: Investigations | Lab Reports | Mobidity Reports | Vaccinations | Treatments | Case Reports | Contact Records

Investigations (1) — Add New — Back To Top

Start Date	Status	Condition	Case Status	Notification	Jurisdiction	Investigator	Investigation ID
No Date	Open	Novel Influenza A Virus Infections	Confirmed	COMPLETED	Upper Cumberland Region		CAS10113008TN01

Lab Reports (2) — Add New — Back To Top

Date Received	Provider/Reporting Facility	Date Collected	Test Results	Associated With	Event ID
09/12/2011 12:02 PM	Reporting Facility: Vanderbilt University Medical Center	09/06/2011	• INFLUENZA VIRUS IDENTIFIED: Influenza, A/H5 • Influenza A virus - Result: present		OBS10130035TN01
09/12/2011 12:02 PM	Reporting Facility: Vanderbilt University Medical Center	09/06/2011	• INFLUENZA VIRUS IDENTIFIED: Influenza, A/H5 • Influenza A virus - Result: present		OBS10130041TN01

Morbidity Reports (0) — Add New — Back To Top

Vaccinations (0) — Add New — Back To Top

Treatments (0) — Back To Top

Case Reports (0) — Back To Top

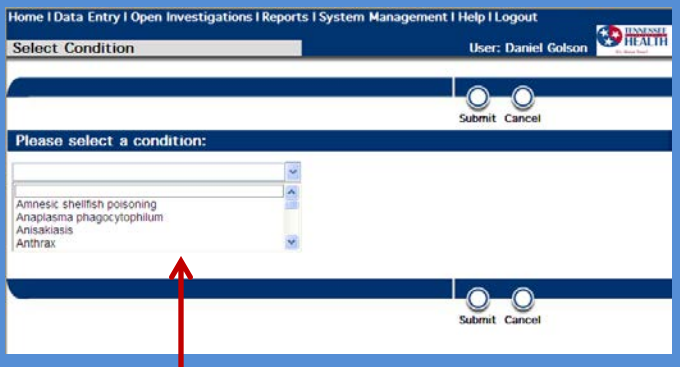
Contact Records (0) — Back To Top

Previous Next

Summary | Events | Demographics

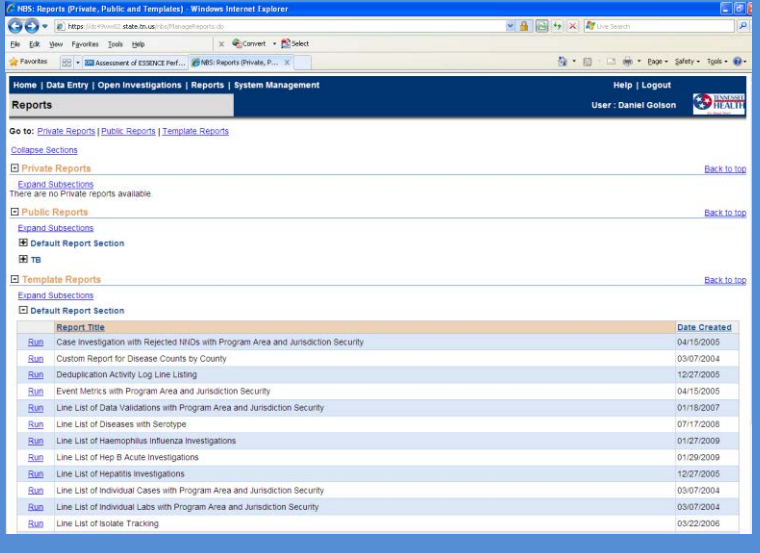
Print

Creating an Investigation

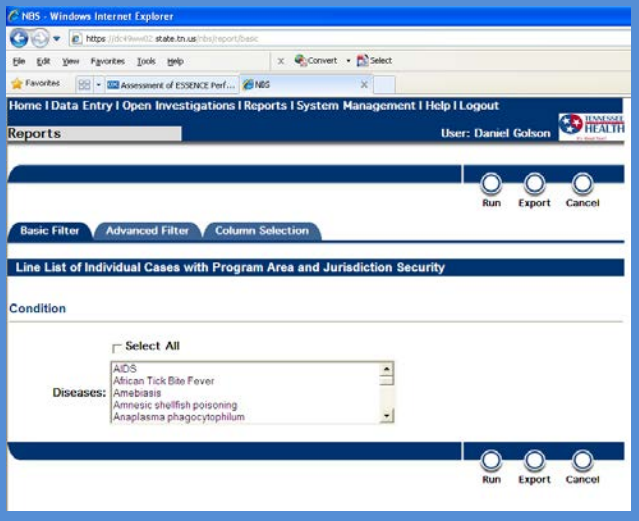


May see conditions which are not reportable in TN, this is because NBS is a CDC-developed tool

Running Reports



Running Reports



Data Quality

Demographics

Critical	Important	Helpful
• First Name • Last Name • DOB • County • Sex • Deceased? • Date of Death • City • State • County • Ethnicity • Race	• Middle Name • Suffix • Marital Status • Street Address • Zip Code • Home Phone • Identification Type	• Work Phone • Cell Phone • Email

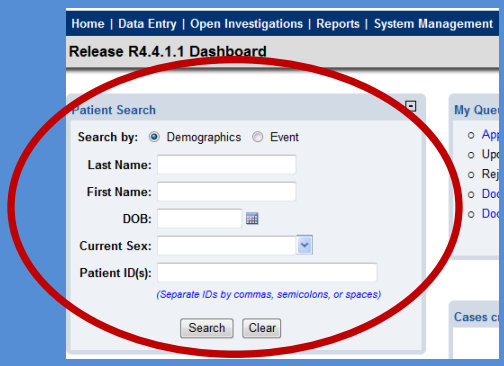
Lesson 2: Searching a Patient & Adding a Patient

Common Tasks

1. Logging in & System Overview
2. **Searching for a Patient**
3. **Adding a Patient**
4. Adding a Paper Lab Report
5. Checking the Queue
6. Creating an Investigation
7. Associating a Lab Report with an Investigation
8. Changing a Jurisdiction
9. Merging Records
10. Running Reports

Searching for a Patient

Searching for a Patient from the Dashboard



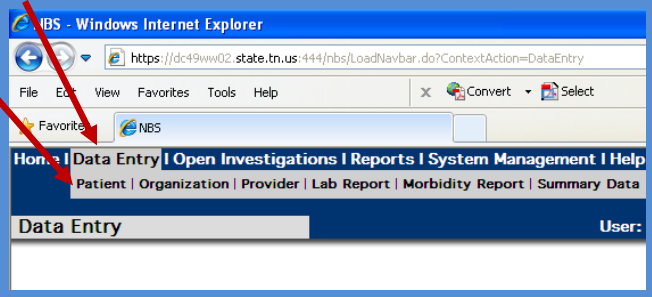
Try to be broad in your search in case the patient is in the system with slight name misspelling, e.g. use the part of the name if it is uncommon, "The Fr" for "The Frog."

Patient Search from the Dashboard is set up for "Contains" rather than "Equals" the data you enter.

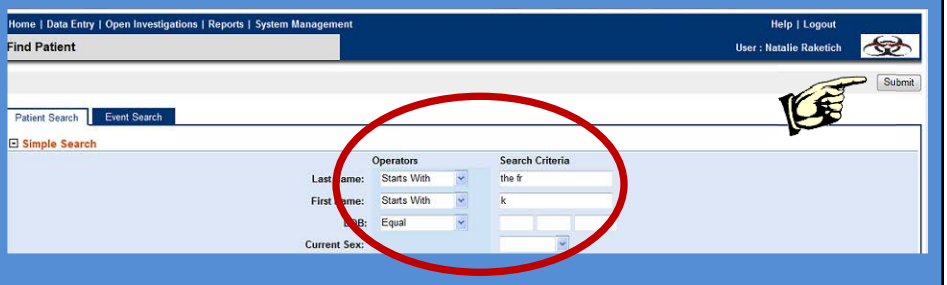
Searching for a Patient Using the Main Menu

From the main menu:

- Select Data Entry
- Select Patient



Searching for a Patient



- In this area, you can change the search operators (e.g. "starts with," "contains," "sounds like,").
- Also, this is the screen you will be sent to, if you have to refine your search.
- Use the Submit button to complete your search.

Searching for a Patient

Home | Data Entry | Open Investigations | Reports | System Management
Help | Logout
Search Results
User : Natalie Raketich

New Search | Refine Search
Add New

Your Search Criteria: Last Name Starts With 'the fr', First Name Starts With 'k', resulted in 1 possible matches. Would you like to refine your search or add a new patient?

Results 1 to 1 of 1

| Remove All Filters/Sorts

Patient ID	Name	Age/DOB/Sex	Address	Phone/Email	ID
143000	Legal The Frog, Kermit	31 Years 10/09/1980 Unknown	Home 123 Sesame Street Nashville, Tennessee 37206		

Results 1 to 1 of 1

Add New

Searching for a Patient

- Can also search by Date of Birth (DOB)
- By Patient ID (PSN)
  - This is the PSN minus the “PSN1” prefix & the “TN01” suffix
  - E.g. PSN12345678TN01 would be searched using 2345678

Favorites | NBS

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Patient | Organization | Provider | Lab Report | Morbidity Report | Summary Data

Data Entry

User: Daniel Golson

TENNESSEE HEALTH

Home | Data Entry | Open Investigations | Reports | System Management

Help | Logout

Find Patient

User : Natalie Raketich

Submit

Patient Search | Event Search

Simple Search

Collapse Sections

	Operators	Search Criteria
Last Name:	Starts With	
First Name:	Starts With	
DOB:	Equal	
Current Sex:		
Street Address:	Contains	
City:	Contains	
State:		
Zip:		
Patient ID:		

Advanced Search

ID Type:	
ID Value:	
Telephone:	
Ethnicity:	
Race:	
Include records that are:	☑ Active ☐ Deleted ☐ Superceded

Previous Next

Patient Search | Event Search

Submit

Searching by Patient ID (PSN)

Home | Data Entry | Open Investigations | Reports | System M

Release R4.4.1.1 Dashboard

Patient Search

Search by: ◉ Demographics ○ Event

Last Name:

First Name:

DOB:

Current Sex:

Patient ID(s): 2345678

(Separate IDs by commas, semicolons, or spaces)

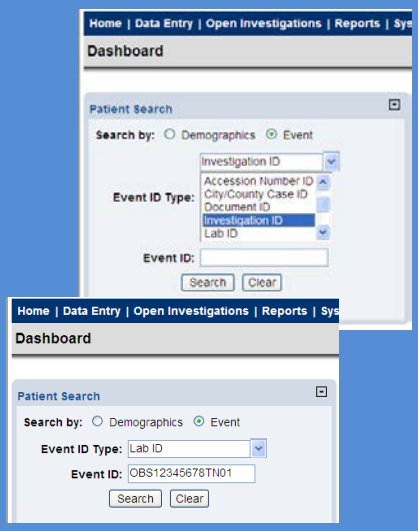
Search Clear

Drop prefix & suffix;
PSN12345678TN01
becomes 2345678

Additional Ways to Search

Searching Events

- Investigation ID
  - Use full ID → CAS12345678TN01
- Lab ID
  - Use full ID → OBS12345678TN01
- Accession Number ID
  - E.g. that used by TDH Lab
  - Use full ID → N12E345678

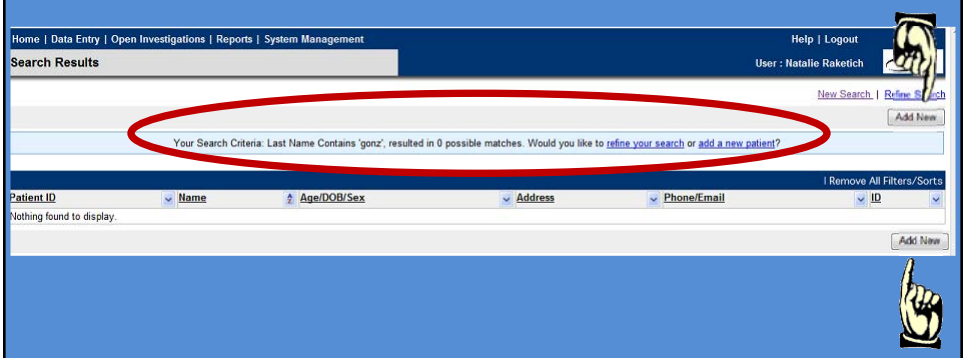


Adding a Patient

Adding a Patient

- A search **MUST** be performed to insure that the patient is not already in the database.
- NBS will not allow you to add a patient until you have searched.
- First, try a search by entering only the patient's last name. It is only necessary to type in the first few letters of the last name.

Adding a Patient



Adding a Patient

Home | Data Entry | Open Investigations | Reports | System Management

Help | Logout

Add Patient - Basic

User : Natalie Raketich

Submit | Cancel | Add Extended Data

Basic Demographic Data

Collapse Subsections

General Information

* Information As of Date: 01/30/2012

Comments:

Name Information

Last Name:

First Name:

Middle Name:

Suffix:

Other Personal Details

DOB:

Current Age:

Current Sex:

Is the patient deceased?

Date of Death:

Marital Status:

Address

Street Address 1:

Street Address 2:

City:

State: Tennessee

Zip:

County:

Country: United States

On the Basic Demographic Data page, input the new patient's data.

Adding a Patient

Telephone

Home Phone:

Work Phone:

Work Phone Ext:

Cell Phone:

Email:

Ethnicity and Race Information

Ethnicity:

Race: American Indian or Alaska Native

Asian

Black or African American

Native Hawaiian or Other Pacific Islander

White

Unknown

Identification

Type	Assigning Authority	ID Value
No Data has been entered.		

Type:

Assigning Authority:

ID Value:

Add ID

Patient Custom Fields

Back to top

Collapse Subsections

Custom Fields

TEST LDF

TEST GA2 LDF

test5

Submit | Cancel | Add Extended Data

Once all patient information is completely entered, select the Submit button.

Extended Data Page

- Includes additional demographic data
- Additional fields for data regarding Name, Sex, Mortality, etc.

A Note on Labs vs. Investigations

- Remember both Lab Reports and Investigations are Events. They can be associated, e.g. an Investigation may have multiple Lab Reports.
- It is advised when receiving a new paper Lab Report, to enter it first, *before* opening an investigation.
  - NOTE: If you receive a case report or phone call before a lab report, start the investigation first and associate a lab if/when it is received.

Lesson 3:
Adding a Paper Lab Report & Checking the Queues

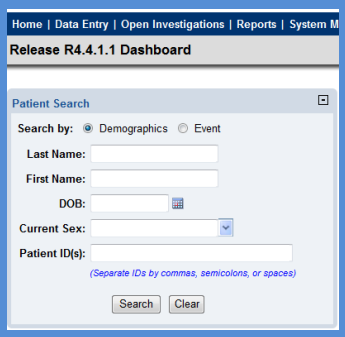
Common Tasks

1. Logging in & System Overview
2. Searching for a Patient
3. Adding a Patient
4. **Adding a Paper Lab Report**
5. **Checking the Queues**
6. Creating an Investigation
7. Associating a Lab Report with an Investigation
8. Changing a Jurisdiction
9. Merging Records
10. Running Reports

Adding a Paper Lab Report

Adding a Paper Lab Report

- First, search for patient in NBS
  - Scenario = receive new paper lab for a "Monster, Cookie"
  - Try to be broad in your search in case patient is in the system with slight name misspelling.
  - E.g. try searching by just last name if it is uncommon or better yet, part of last name, "Mons"



Adding a Lab Report

Home | Data Entry | Open Investigations | Reports | System Management
Help | Logout
Search Results
User : Natalie Raketich

New Search | Refine Search
Add New

Your Search Criteria: Last Name Contains 'mons', resulted in 1 possible matches. Would you like to refine your search or add a new patient?

Results 1 to 1 of 1

Patient ID	Name	Age/DOB/Sex	Address	Phone/Email	ID
144044	Legal Monster, Cookie	28 Years 10/10/1983 Male	Home 123 Sesame Street Nashville, Tennessee 37206		

Results 1 to 1 of 1

Add New

Select the Patient ID Number that corresponds to the correct patient

Adding a Lab Report

Home | Data Entry | Open Investigations | Reports | System Management
Help | Logout
Patient File
User : Natalie Raketich

Print

Cookie Monster | Male | 10/10/1983 (28 Years) Patient ID: 144044

Summary | Events | Demographics

Expand All | Collapse All

Patient Events History

Go to: Investigations | Lab Reports | Morbidity Reports | Vaccinations | Treatments | Case Reports | Contact Records

- Investigations (0) — Add New — Back To Top
- Lab Reports (0) — Add New — Back To Top
- Morbidity Reports (0) — Add New — Back To Top
- Vaccinations (0) — Add New — Back To Top
- Treatments (0) — Back To Top
- Case Reports (0) — Back To Top
- Contact Records (0) — Back To Top

Previous Next

Summary | Events | Demographics

Print

1) Click on "EVENTS" tab
2) Click "Add New" button for Lab Reports

Adding a lab Report

Adding Report Information

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Add Lab Report — User: Daniel Golson

Patient ID: 144044

Submit | Submit and Create Investigation | Cancel

Name: Cookie Monster DOB: 10/10/1983 Current Sex: Male

Patient | Report Information

Order Information | Test Result(s) | Administrative | Custom Fields

Order Information — Back to Top

** Indicates a required field*

Facility and Provider Information

Search | Clear | Code Lookup

* Reporting Facility: There is no Reporting Facility selected.

Search | Clear | Code Lookup

Ordering Facility: There is no Ordering Facility selected.

- **REPORTING FACILITY is a required field.**
- **To find a reporting facility, select SEARCH.**

Adding a Lab Report

Searching for a reporting facility

Org Search Criteria - Windows Internet Explorer

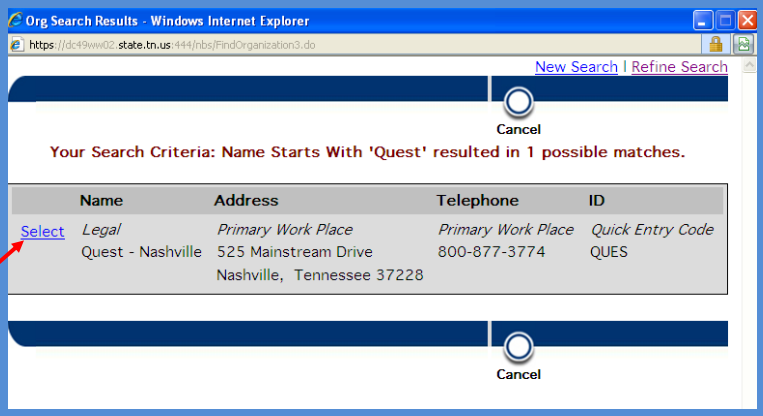
Submit | Cancel

	Operators	Search Criteria
Name:	Starts With	Quest
Street Address:	Contains	
City:	Contains	
State:		
Zip:		
Telephone:		
ID Type:		
ID Value:		

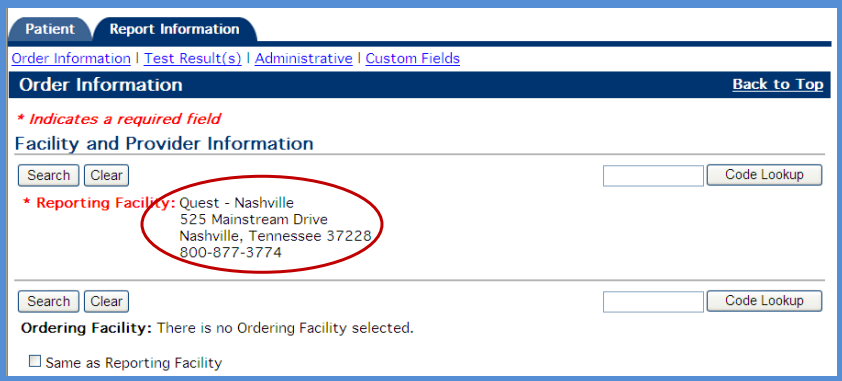
Submit | Cancel

Adding a Lab Report

Searching for a reporting facility



A list of reporting facilities will appear. Choose Select when the correct facility is recognized. If the facility is not in the list, you must add it using the 'Data Entry' tab at the top of the screen.



The reporting facility chosen from the search criteria page is automatically entered into the appropriate area.

The ordering provider, usually a physician, and ordering facility should also be entered if provided.

Enter data in the order it appears in NBS as sometimes the input for the required questions are necessary to populate further fields

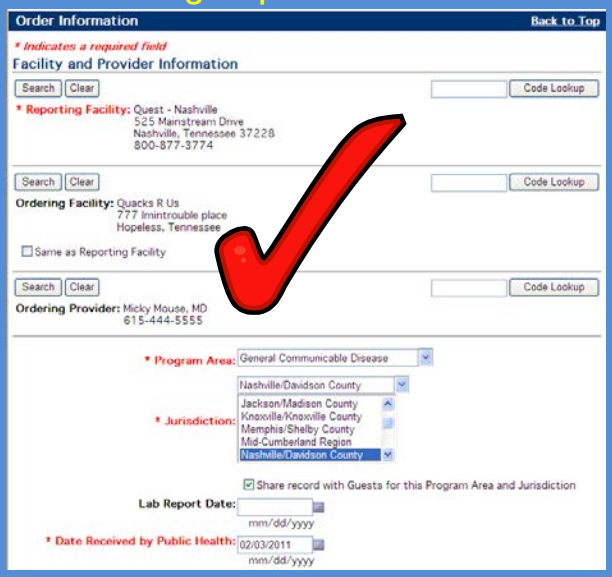
Adding a lab Report

Adding Report Information

- Required Fields
  - Reporting Facility
  - Program Area
  - Jurisdiction
  - Date received by Public Health
  - Resulted Test
- Caution
  - Date received by Public Health is pre-populated with current date
  - Should be changed manually if it is not correct

Adding a lab Report

Adding Report Information



Adding a lab Report

Adding Report Information

Ordered Test:
Accession Number:
Specimen Source:
Specimen Site:
Date Specimen Collected: mm/dd/yyyy
Patient Status at Specimen Collection:

Next select from drop down lists for:

- **Ordered Test** → the type of test which was ordered
- **Specimen Source** → tissue type or other source from which specimen was obtained
- **Specimen Site** → bodily site from which specimen was collected
- **Patient Status at Specimen Collection** → hospitalized, outpatient, or unknown

Adding a lab Report

Adding Report Information

Ordered Test: Culture, Stool
Accession Number: 1234567890
Specimen Source: Stool = Fecal
Specimen Site:
Date Specimen Collected: 01/03/2011 mm/dd/yyyy
Patient Status at Specimen Collection: hospitalized

In this example, we've received a paper lab report of a stool culture from a hospitalized patient.

Salmonella species were identified. Some drop down choices allow for or require additional information. Here, we were required to provide data on the 'Organism'. For this example it is an untyped Salmonella species for which we do not have susceptibility test information.

Test Result(s) Back to Top

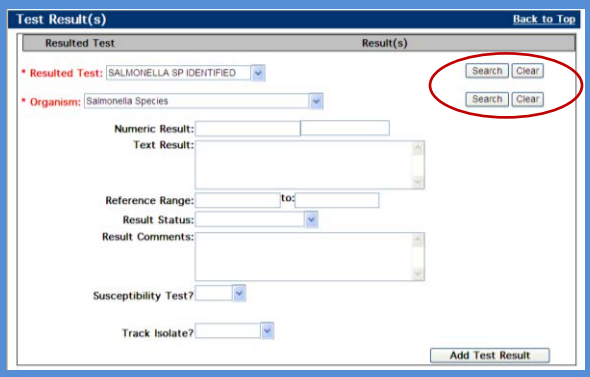
Resulted Test | Result(s)

Resulted Test: SALMONELLA SP IDENTIFIED Search Clear
* Organism: Salmonella Species Search Clear
Numeric Result:
Text Result:
Reference Range: to:
Result Status:
Result Comments:
Susceptibility Test?
Track Isolate?
Add Test Result

Adding a lab Report

Adding Report Information

When you're looking for a test name or organism name, they will not always be in the drop-down list. You can use the search tool next to the field to find more choices.

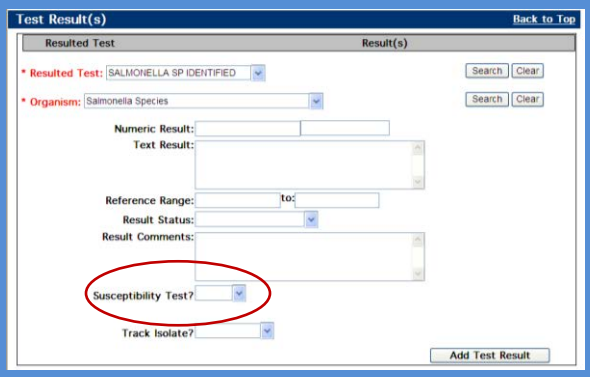


Adding a lab Report

Adding Report Information

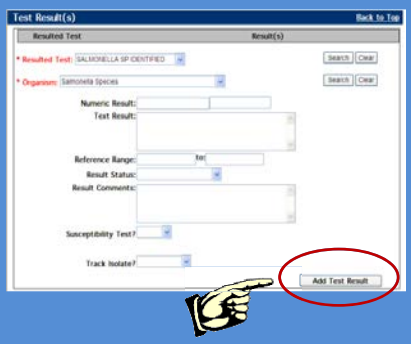
In this example, there was no susceptibility information. If you did have that information, you can answer yes to the 'Susceptibility Test?' question, and more fields will display for you to answer.

NOTE: This question will only displays based on the 'Resulted Test' you selected.

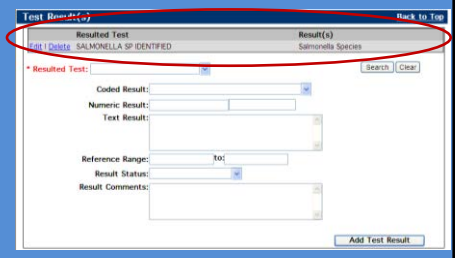


Adding a lab Report

Adding Test Result and Submitting Lab Report



=



The last step is to SUBMIT the lab report

Checking the Queues

Checking the Queues

Home | Data Entry | Open Investigations | Reports | System Management

Release R4.4.1.1 Dashboard

Patient Search

Search by: Demographics Event

Last Name:

First Name:

DOB:

Current Sex:

Patient ID(s):

(Separate IDs by commas, semicolons, or spaces)

Search Clear

My Queues

- Approval Queue for Initial Notifications (56)
- Updated Notifications Queue (0)
- Rejected Notifications Queue (0)
- Documents Requiring Security Assignment (1)
- Documents Requiring Review (729)

Cases created - Last 7 Days

Click on Documents Requiring Review.

Checking the Queues

Documents Requiring Review

Home | Data Entry | Open Investigations | Reports | System Management

Help | L

Documents Requiring Review

User : Daniel

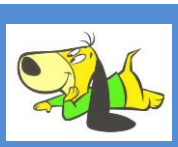
Results 21 to 22 of 22 Previous 1 | 2 Next

Date Received	Type	Jurisdiction	Patient	Test/Condition	Local ID
01/31/2011	Morbidity Report	Nashville/Davidson County	The Great, Gonzo	MRSA (S.aureus, methicillin resistant)	OBS1012
02/07/2011	Lab Report	Mid-Cumberland Region	Doggie, Augie	SHIGELLA SP IDENTIFIED	OBS1012

Results 21 to 22 of 22 Previous 1 | 2 Next

Patient Record

Observation Record – Lab Report



Checking the Queues

Using the Patient Record

Home | Data Entry | Open Investigations | Reports | System Management — Help | Logout

Patient File — User : Natalie Raketich

Return to Documents Requiring Review

Print

Lamb Chop | Female | 12/11/1991 (20 Years) — Patient ID: 162000

Summary | Events | Demographics

Expand All | Collapse All

Patient Summary

Go to: Patient Summary | Open Investigations | Documents Requiring Review

Patient Summary — Back To Top

Address (Home)
456 Play-along Drive
Memphis, Tennessee 38104

No Phone Info Available

No ID Info Available

Race
No Race Info Available
Ethnicity
No Ethnicity Info Available

Open Investigations (0) — Back To Top

Documents Requiring Review (1) — Back To Top

Document Type	Date Received	Provider/Reporting Facility	Event Date	Description	Event ID
Lab Report	12/05/2011 11:18 AM	**Reporting Facility:** Methodist Healthcare University Hospital	**Date Collected:** 11/28/2011	• **HCV QM by bDNA, S:** =1.00000	OBS10136000TN01

Previous Next

With Lamb Chop, the 'Document Requiring Review' is the new 'Lab Report'. Click on the 'Lab Report' or go to the 'Events' tab to view this new observation.

Checking the Queues

Using the Observation Record

Alternatively, selecting the Test/Condition listed for the patient will automatically take you to the document requiring review.

Documents Requiring Review — User : Natalie Raketich

Print | Export

Results 1 to 14 of 14

Remove All Filters/Sorts

Date Received	Type	Jurisdiction	Patient	Test/Condition	Local ID
06/15/2011	Lab Report	Mid-Cumberland Region	Garman, Graig	CAMPYLOBACTER SP IDENTIFIED	OBS10132015TN01
09/12/2011	Lab Report	Upper Cumberland Region	TheBarbarian, Conan	Influenza A virus - Result INFLUENZA VIRUS IDENTIFIED	OBS10130041TN01
09/12/2011	Lab Report	Upper Cumberland Region	Me, Mini	Influenza virus - Result	OBS10130054TN01
09/12/2011	Lab Report	Upper Cumberland Region	TheBarbarian, Conan	Influenza A virus - Result INFLUENZA VIRUS IDENTIFIED	OBS10130035TN01
09/21/2011	Lab Report	Chattanooga/Hamilton County	Fett, Boba	BACTERIA IDENTIFIED	OBS10131000TN01
10/03/2011	Lab Report	Upper Cumberland Region	Flintstone, Wilma	BACTERIA IDENTIFIED	OBS10131010TN01
10/07/2011	Lab Report	Mid-Cumberland Region	mouse, mickey	SALMONELLA SP IDENTIFIED	OBS10132031TN01
10/27/2011	Lab Report	Nashville/Davidson County	jenkins, ed	AEROBIC BACTERIA IDENTIFIED	OBS10132000TN01
10/28/2011	Lab Report	Mid-Cumberland Region	Freeman, Morgan	CAMPYLOBACTER SP IDENTIFIED	OBS10132026TN01
10/28/2011	Lab Report	Mid-Cumberland Region	Garman, Graig	CAMPYLOBACTER SP IDENTIFIED	OBS10132010TN01
10/28/2011	Lab Report	Mid-Cumberland Region	Garman, Graig	SALMONELLA SP IDENTIFIED	OBS10132005TN01
11/03/2011	Lab Report	Mid-Cumberland Region	Garman, Graig	ESCHERICHIA COLI IDENTIFIED E. coli shiga toxin test, PCR	OBS10132020TN01
11/10/2011	Lab Report	East Region	The Barbarian, Conan	BACTERIA IDENTIFIED	OBS10133007TN01
12/05/2011	Lab Report	Memphis/Shelby County	Chop, Lamb	HCV QM by bDNA, S	OBS10136000TN01

Results 1 to 14 of 14

Checking the Queues

Viewing the Lab Report

Once you have marked a report as reviewed, it will no longer be available in your 'Documents Requiring Review' queue. Therefore, you should 'Create Investigation' before marking as reviewed.

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

View Lab Report — User: Natalie Raketich

Patient ID: 102000 | Observation ID: OBS10136000TN01 — Return to Documents Requiring Review | View File

Mark as Reviewed | Transfer Ownership | Edit | Delete | Create Investigation | Print

Created: 12/05/2011 by: Daniel Golson — Updated: 12/05/2011 by: Daniel Golson

Lab Report Date: 12/01/2011 — Date Received by Public Health: 12/05/2011

View Lab Report

Patient Information | Test Results | Order Information | Custom Fields | Custom Fields For Patient

Patient Information — Back to Top

Name: Lamb Chop
Home Address: 456 Play-along Drive, Memphis, Tennessee 38104
Home Phone:
Sex: Female — Race:
DOB: 12/11/1991 — Age: 19 Years
Death Date/Time:
Marital Status: — Ethnicity:
Patient Comments: — SSN:

Test Results — Back to Top

Ordered Test: Hepatitis Panel

Resulted Tests and Results

Resulted Test: HCV QM by bDNA, S
Result(s): = 1.00000
Reference Range:
Status:
Result Comments:

Lesson 4: Creating Investigations & Associating Lab Reports with Investigations

Common Tasks

1. Logging in & System Overview
2. Searching for a Patient
3. Adding a Patient
4. Adding a Paper Lab Report
5. Checking the Queues
6. **Creating an Investigation**
7. **Associating a Lab Report with an Investigation**
8. Changing a Jurisdiction
9. Merging Records
10. Running Reports

Creating an Investigation

Creating an Investigation

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

View Lab Report — User: Daniel Golson

Patient ID: 144094 | Observation ID: OBS10121726TN01 — Return to File: Events

Transfer Ownership | Edit | Delete | Create Investigation | Print

Created: 02/04/2011 by: Daniel Golson — Updated: 02/04/2011 by: Daniel Golson

Lab Report Date: — Date Received by Public Health: 02/04/2011

View Lab Report

Patient Information | Test Results | Order Information | Custom Fields | Custom Fields For Patient

Patient Information — Back to Top

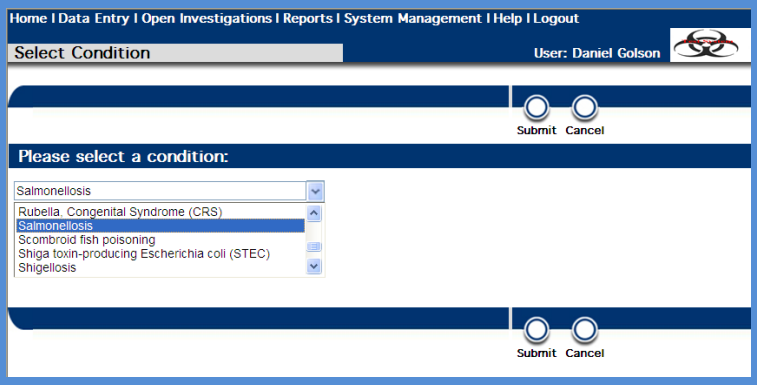
Name: Magilla Gorilla
Home Address: 5 Hanna-Barbera Lane, Cartoonville, Tennessee 37818
Home Phone:
Sex: Male — Race: Unknown
DOB: 01/09/1961 — Age: 50 Years
Death Date/Time:
Marital Status: — Ethnicity:
Patient Comments: — SSN:

Test Results — Back to Top

Ordered Test: No Information Given

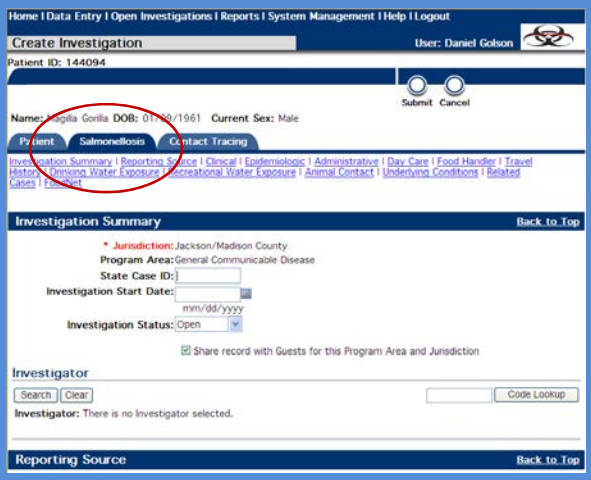
Resulted Tests and Results
Resulted Test: SALMONELLA SP IDENTIFIED
Result(s): Salmonella Species
Reference Range:
Status:
Result Comments:

Creating an Investigation



- Use drop-down menu to select the condition for investigation.
- Press submit.

Creating an Investigation



A condition-specific investigation tab is created. While looking through the Case Investigation page, there are many areas for information and data input, possibly including Reporting Source, Clinical, Epidemiologic, Administrative, and others. Different conditions have different questions to answer, the data from which may then create more fields for data input.

Creating an Investigation

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Edit Investigation — User: Daniel Golson

Patient ID: 144094 | Investigation ID: CAS10103087TN01

Submit Cancel

Created: 02/04/2011 by: Daniel Golson Updated: 02/04/2011 by: Daniel Golson

Name: Magilla Gorilla DOB: 01/09/1961 Current Sex: Male

Patient | Salmonellosis | Contact Tracing

Investigation Summary | Reporting Source | Clinical | Epidemiologic | Administrative | Day Care | Food Handler | Travel History | Drinking Water Exposure | Recreational Water Exposure | Animal Contact | Underlying Conditions | Related Cases | FoodNet

Investigation Summary — Back to Top

* Jurisdiction: Jackson/Madison County
Program Area: General Communicable Disease
State Case ID:
Investigation Start Date: 02/04/2011 mm/dd/yyyy
Investigation Status: Open
☑ Share record with Guests for this Program Area and Jurisdiction

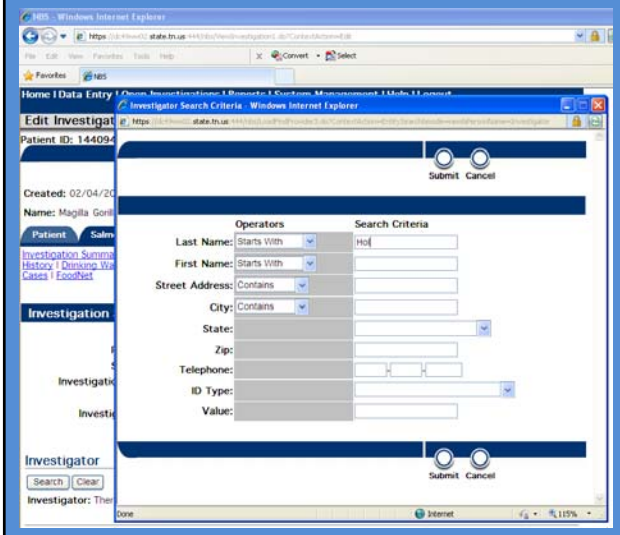
Investigator

Search | Clear | Code Lookup

Investigator: There is no Investigator selected.

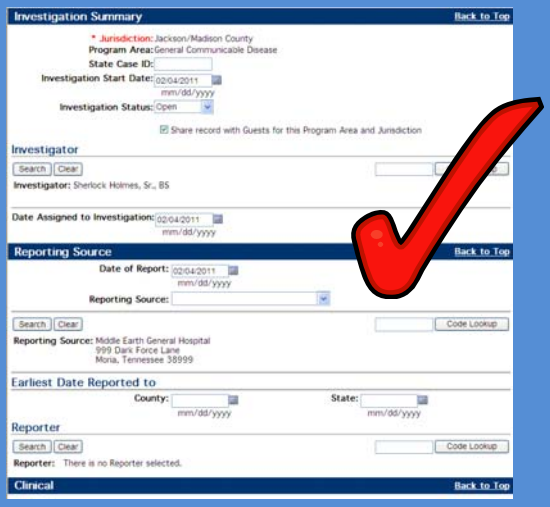
- **Jurisdiction is a required field and must be completed if not auto-populated.**
- **Enter an 'Investigation Start Date' and assign an 'Investigator' by using the SEARCH button.**

Creating an Investigation



A pop up window will appear where you can search for the Investigator by name

Creating an Investigation



Answer ALL questions that you have answers for to complete the investigation.

Creating an Investigation

Case Definitions

- Refer to case definitions from the Council of State and Territorial Epidemiologists (CSTE) and CDC

http://wwwn.cdc.gov/nndss/#public

- Definitions can be found on CEDEP's website:

https://apps.health.tn.gov/ReportableDiseases/

BOOKMARK these.

Creating an Investigation

Epidemiologic — Back to Top

Is this patient associated with a day care facility? No

Is this patient a food handler? No

Is this case part of an outbreak? No

Where was the disease acquired? Indigenous, within jurisdiction

Transmission Mode: Foodborne

Detection Method: Provider reported

Confirmation Method: (Use Ctrl to select more than one) Epidemiologically linked; Laboratory confirmed; Laboratory report; Local/State specified; Medical record review

Confirmation Date: 01/21/2011 mm/dd/yyyy

Case Status: (Required for Notification) Confirmed

MMWR Week: (Required for Notification) 03

MMWR Year: (Required for Notification) 2011

See *TN Department of Health MMWR Fact Sheet* for more information on MMWR week and year

These 3 items are <u>REQUIRED</u> in order to send a Notification to CDC

Sending a Notification

- A notification needs to be made for every investigation that is created
- As soon as a case status is hypothesized (does not need to be definitive) a notification should be created
  - NOTE: notifications should be sent for any case status (S,P,C,N- even 'Not a Case')
- After submitting investigation information, select the 'Create Notifications' button
- The 'Create Notification' window will pop up, select 'Submit'
- You only need to create a notification once, any updates to the investigation will automatically update in the notification

Patient ID: 93079 | Investigation ID: CAS1006

Manage Associations | Create Notifications | Transfer Ownership

Created: 01/09/2008 by: Beth Collier Updated:

Name: Wilma Flintstone DOB: 07/26/1968 Cur

Patient | Hepatitis | Acute Hepatitis B

Investigation Summary | Reporting Source | Clinical | Observations | Associated Treatments | Associated

Create Notification — User: Natalie Raketich

Patient ID: 93079 | Investigation ID: CAS10064022TN01

Submit Cancel

Investigation ID: CAS10064022TN01 — Condition: Hepatitis B, acute

Case Status: Confirmed

General Comments:

Submit Cancel

Closing an Investigation

Patient | Novel Influenza A Virus Infections | Contact Tracing

nvestigation Summary | Reporting Source | Clinical | Epidemiologic | Administrative | Condition Specific Custom Fields

Investigation Summary Back to Top

* **Jurisdiction:** Upper Cumberland Region
Program Area: General Communicable Disease
State Case ID:
Investigation Start Date:
mm/dd/yyyy
Investigation Status: Closed / Closed / Open
☑ Share record with Guests for this Program Area and Jurisdiction

When you are done with the investigation, make sure you change the 'Investigation Status' from "Open" to "Closed.

Closing an Investigation

Related Cases Back to Top

Does the patient know of any similarly ill persons? No
Are there other cases related to this one? no, sporadic

FoodNet Back to Top

FoodNet Case? ☑

Transfer Hospital Information
Was patient transferred from one hospital to another? No

Second Hospitalization
Was there a second hospitalization? No

Immigration
Did patient immigrate to the US within 7 days of specimen collection? No

Case Control Information
In case-control study? No

Outbreak Information
Type of Outbreak: Foodborne
CDC EFORS Number

Audit Information
Was case found during an audit? No

Interview Information
Was the case interviewed by public health (i.e., state or local health department or FoodNet staff)? Yes

Patient | Salmonellosis | Contact Tracing

Submit Cancel

Once you have filled in all the information you have, select '<u>SUBMIT</u>'

Managing Associations

Associating a Lab Report with an Investigation

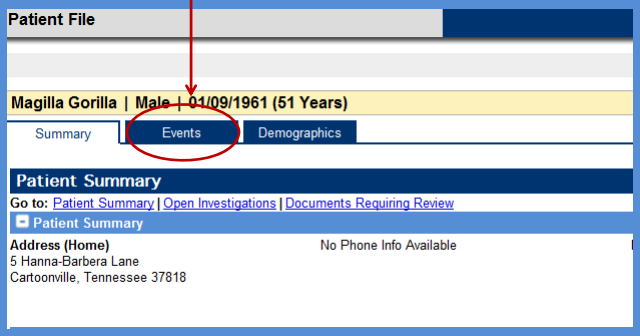
Why associate lab reports?

- Often there are multiple lab reports for a single investigation (e.g. further testing done at State lab for speciation of an enteric bacteria or paired sera for clinical diagnosis of acute hepatitis C)
- Duplicates often result in labs that are not connected to the investigation
- Associating labs with investigations enables you to **see all lab reports** that may be important to the investigation while ***in*** the investigation screens

Managing Associations

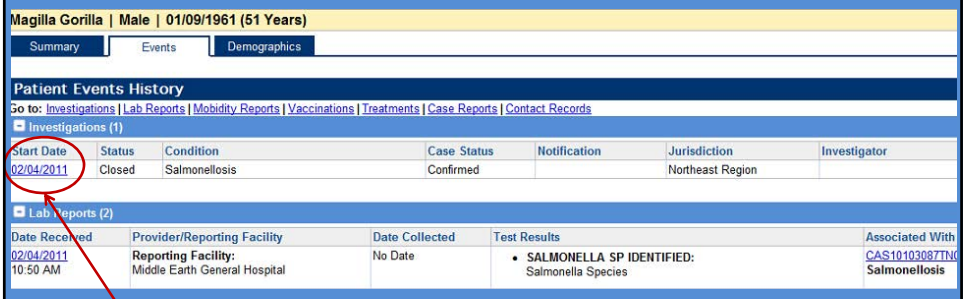
Associating a Lab Report with an Investigation

Once you are on the patient's page of interest, select the 'Events' tab to look at the case investigations and lab reports for the patient



Managing Associations

Associating a Lab Report with an Investigation



Select the investigation you want to associate the new lab report with

Managing Associations

Associating a Lab Report with an Investigation

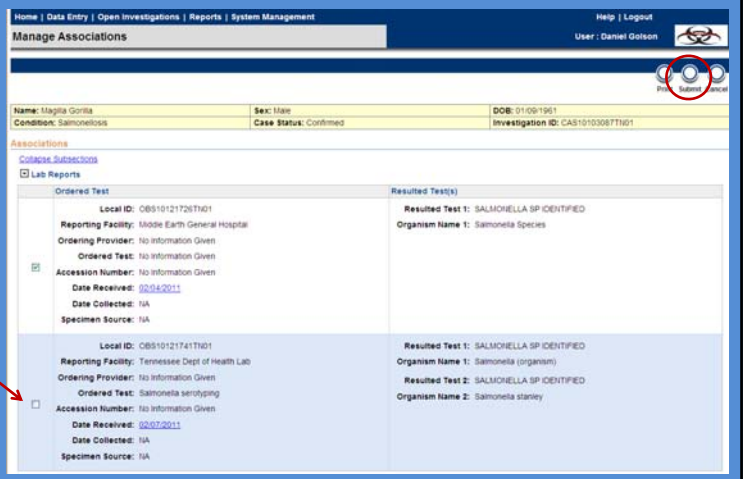
Select "Manage Associations" button.

Managing Associations

Associating a Lab Report with an Investigation

1) **Check the box of the new lab report which you would like to associate with the investigation**

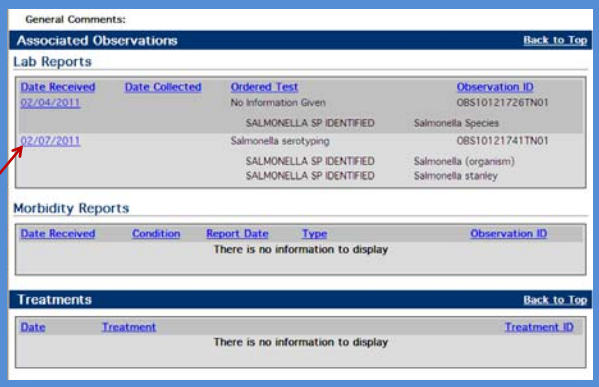
2) **Press 'SUBMIT'**



NOTE: You can associate 1 lab report with more than one investigation

Managing Associations

Associating a Lab Report with an Investigation



New Lab

Now when looking at the Investigation tab, we can see both of the lab reports associated with this investigation

Lesson 5:
Changing a Jurisdiction

Common Tasks

1. Logging in & System Overview
2. Searching for a Patient
3. Adding a Patient
4. Adding a Paper Lab Report
5. Checking the Queue
6. Creating an Investigation
7. Associating a Lab Report with an Investigation
8. **Changing a Jurisdiction**
9. Merging Records
10. Running Reports

Changing a Jurisdiction

Changing a Jurisdiction
Once an Investigation Has Been Opened

- On 2/4/2011, Jackson/Madison Co. (JMR) reviews an ELR for a cultured *Salmonella* species
- JMR opens an investigation
- During the investigation, it is found that Cartoonville is not in the Jackson/Madison County area, but instead somewhere in the southwest of Greene County
- JMR changes the jurisdiction to Northeast Region

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management

Search Results

User : N

Your Search Criteria: Last Name Contains 'gori', resulted in 1 possible matches. Would you like to refine your search or add a new patient?

Results 1 to 1 of 1

Patient ID	Name	Age/DOB/Sex	Address	Phone/Email
144094	Legal Gorilla, Magilla	51 Years 01/09/1961 Male	Home 5 Hanna-Barbera Lane Cartoonville, Tennessee 37818	

Results 1 to 1 of 1

Search for the case, and select the 'Patient ID' to open the patient's file

Changing a Jurisdiction

Select the 'Events' tab

Patient File

Magilla Gorilla | Male | 01/09/1961 (51 Years)

Summary | Events | Demographics

Patient Summary

Go to: Patient Summary | Open Investigations | Documents Requiring Review

Patient Summary

Address (Home)
5 Hanna-Barbera Lane
Cartoonville, Tennessee 37818

No Phone Info Available

Changing a Jurisdiction

Magilla Gorilla | Male | 01/09/1961 (51 Years)

Summary | Events | Demographics

Patient Events History

Go to: Investigations | Lab Reports | Mobidity Reports | Vaccinations | Treatments | Case Reports | Contact Records

Investigations (1)

Start Date	Status	Condition	Case Status	Notification	Jurisdiction	Investigator
02/04/2011	Closed	Salmonellosis	Confirmed		Northeast Region	

Lab Reports (2)

Date Received	Provider/Reporting Facility	Date Collected	Test Results	Associated With
02/04/2011 10:50 AM	**Reporting Facility:** Middle Earth General Hospital	No Date	• **SALMONELLA SP IDENTIFIED:** Salmonella Species	CAS10103087TN0 **Salmonellosis**

- Best to change the jurisdiction in the 'Investigations' section because this will also change the Jurisdiction in all Associated Observations.
- Can change the Jurisdiction for each of the Lab Reports here, but you will still need to change the Jurisdiction in the Investigations tab.

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

View Investigation — User: Daniel Golson

Patient ID: 144094 | Investigation ID: CAS10103087TN01 — Return To File: Events

Manage Associations | Create Notifications | Transfer Ownership | Edit | Print

Created: 02/04/2011 **by:** Daniel Golson **Updated:** 02/07/2011 **by:** Daniel Golson

Name: Magilla Gorilla **DOB:** 01/09/1961 **Current Sex:** Male

Patient | Salmonellosis | Contact Tracing

Investigation Summary | Reporting Source | Clinical | Epidemiologic | Administrative | Associated Observations | Treatments | Associated Vaccinations | Associated Documents | Notifications | Day Care | Food Handler | Travel History | Drinking Water Exposure | Recreational Water Exposure | Animal Contact | Underlying Conditions | Related Cases | FoodNet

Investigation Summary — Back to Top

*** Jurisdiction:** Jackson/Madison County
Program Area: General Communicable Disease
State Case ID:
Investigation Start Date: 02/04/2011
Investigation Status: Open

☑ Share record with Guests for this Program Area and Jurisdiction

Investigator

Changing a Jurisdiction

Transfer Investigation Ownership -- Webpage Dialog

Transfer CA$10103087TN01 from Jackson/Madison County Jurisdiction to:

* New Jurisdiction:

If this investigation has any associated observations or documents, the jurisdiction for these observations or documents will be transferred automatically to this new jurisdiction, as well.

NOTE: Any contact records associated with this investigation WILL NOT be transferred to the new jurisdiction. If you would like to transfer the jurisdiction for any of the contact records, you can transfer them manually from the edit contact record screen.

Submit Cancel

Changing a Jurisdiction

Transfer Investigation Ownership -- Webpage Dialog

Transfer CA$10103087TN01 from Jackson/Madison County Jurisdiction to:

* New Jurisdiction: Northeast Region

Knoxville/Knoxville County
Memphis/Shelby County
Mid-Cumberland Region
Nashville/Davidson County
Northeast Region

If this investigation has any associated observations or documents, the jurisdiction for these observations or documents will be transferred automatically to this new jurisdiction, as well.

NOTE: Any contact records associated with this investigation WILL NOT be transferred to the new jurisdiction. If you would like to transfer the jurisdiction for any of the contact records, you can transfer them manually from the edit contact record screen.

Submit Cancel

Changing a Jurisdiction from a Lab Report

- Nashville/Davidson Co. (NDR) reviews a lab report for a case residing in Brentwood
- Prior to opening an investigation, the NDR finds that the case is a Williamson County resident
- NDR changes the jurisdiction to Mid-Cumberland Region

Changing a Jurisdiction

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management

Search Results

User : N

Your Search Criteria: Last Name Contains 'doggie', resulted in 1 possible matches. Would you like to refine your search or add a new patient?

Results 1 to 1 of 1

Patient ID	Name	Age/DOB/Sex	Address	Phone/Email
144104	Legal Doggie, Augie	40 Years 05/05/1971 Male	Home 9000 Forest Lawn Drive Brentwood, Tennessee 37027	

Results 1 to 1 of 1

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management

Patient File

Augie Doggie | Male | 05/05/1971 (40 Years)

Summary | Events | Demographics

Patient Summary

Go to: Patient Summary | Open Investigations | Documents Requiring Review

Patient Summary

Address (Home)
9000 Forest Lawn Drive
Brentwood, Tennessee 37027
Davidson County

No Phone Info Available

No ID Info Available

Open Investigations (0)

Documents Requiring Review (0)

Previous Next

Summary | Events | Demographics

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management

Patient File

Augie Doggie | Male | 05/05/1971 (40 Years)

Summary | Events | Demographics

Patient Events History

Go to: Investigations | Lab Reports | Mobidity Reports | Vaccinations | Treatments | Case Reports | Contact Records

Investigations (2)

Lab Reports (4)

Date Received	Provider/Reporting Facility	Date Collected	Test Results
02/07/2011 1:20 PM	Reporting Facility: Vanderbilt University Medical Center	02/01/2011	• SHIGELLA SP IDENTIFIED: Shigella (organism)

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

View Lab Report

User: Daniel Golson

Patient ID: 144104 | Observation ID: OBS10121748TN01

Return to File: Events

Transfer Ownership | Edit | Delete | Create Investigation | Print

Created: 02/07/2011 by: Daniel Golson

Updated: 02/07/2011 by: Daniel Golson

Lab Report Date: 02/07/2011

Date Received by Public Health: 02/07/2011

View Lab Report

Patient Information | Test Results | Order Information | Custom Fields | Custom Fields For Patient

Patient Information — Back to Top

Name: Augie Doggie

Home Address: 9000 Forest Lawn Drive
Brentwood, Tennessee 37027 Davidson County

Home Phone:

Sex: Male

Race: Unknown

DOB: 05/05/1971

Age: 39 Years

Death Date/Time:

Marital Status:

Ethnicity:

Patient Comments:

SSN:

Test Results — Back to Top

Ordered Test: Culture, Stool

Resulted Tests and Results

Resulted Test: SHIGELLA SP IDENTIFIED

Result(s): Shigella (organism)

Reference Range:

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Transfer Ownership

User: Daniel Golson

Observation ID: OBS10121748TN01

Submit Cancel

* Indicates a required field

Transfer to:

* Program Area: General Communicable Disease

* Jurisdiction: Mid-Cumberland Region

Memphis/Shelby County
Mid-Cumberland Region
Nashville/Davidson County
Northeast Region
Out of Tennessee

Submit Cancel

Changing a Jurisdiction

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Transfer Confirmation

User: Daniel Golson

Observation ID: OBS10121748TN01

View File

This record has been successfully transferred to:

Program Area: CEDS

Jurisdiction: Mid-Cumberland Region

Changing a Jurisdiction

Jurisdiction changes should be handled as follows:

- **Send an email or fax with a brief explanation to the receiving region.**
- **Do not sent the patient's name in an email.**
- **(If don't know receiving region's contact, please follow up with the NBS Central Office contacts.)**

If out of state:

- **Send an email and the Patient ID# to the NBS Central Office contacts**

Changing a Jurisdiction

If unsure of which county to assign the patient to:

- http://www.naco.org/Counties/Pages/CitySearch.aspx
- This website allows you to search for county by city name or zip code.
- It can be very useful, and might be worth bookmarking especially for regions who deal with this issue often.

Changing a Jurisdiction (Within State)

Send

To... Donna C. Savage;

Cc...

Subject: Patient Transferred to MidCumberland Region

Hi Donna,

I just transferred this patient to you. He lives in Williamson County. Patient ID #123456.

Let me know if you have any questions.

Thanks,
Natalie

Changing a Jurisdiction (Out of State)

File | Message | Insert | Options | Format Text | Review

Paste | Cut | Copy | Format Painter | Clipboard | Calibri (Body) | 11 | Basic Text

Send

To... Natalie Raketich

Cc...

Subject: Out of State Patient

Hi Natalie,

This patient does not reside in Tennessee. Patient ID #123456.

Best,

Donna

Receive Lab Report with No Address

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

View Lab Report — User: Daniel Golson

Patient ID: [redacted] | Observation ID: OBS[redacted]01 — Return to Documents Requiring Review | View File

Mark as Reviewed | Transfer Ownership | Delete | Create Investigation | Print

Created: 09/04/2011 by: nedss elrload — Updated: 09/04/2011 by: nedss elrload

Lab Report Date: 09/03/2011 — Date Received by Public Health: 09/04/2011

Submitted by Outside Facility

View Lab Report

Patient Information | Test Results | Order Information | Other Information

Patient Information — Back to Top

Name: [redacted]
Alias:
Home Address:
Home Phone: Ext:
Sex: Female
DOB: 04/27/1977
Deceased:
Marital Status:
Patient Comments:
Work Phone: Ext:
Race: Unknown
Age:
Death Date/Time:
Ethnicity:
SSN:

ID Type	ID	Assigning Authority	Expiration Date
Person number	[redacted]	[redacted]	

Test Results — Back to Top

Ordered Test: Lyme, Western Blot, Serum

Lab Report with No Patient Address

- Sometimes Lab reports are received by a Jurisdiction (e.g. via ELR) with no patient address or incomplete patient address.
- ELR lab reports cannot be edited like those that you have entered yourself.
- Please provide the address information you learn when you transfer the lab report to another Jurisdiction or Out of State.

Lab Report with No Patient Address

- Why did I receive it?
  - When Patient Address is missing, NBS assigns regional jurisdiction based upon Ordering Provider or Ordering Facility Address.
- Where can I add address info when I cannot edit the lab report?
  - Under "Lab Report Comments," ("Order Information" Section), press "Add Comment" button & type in address information you've learned with your name and date.

Adding Address Information to ELR

Order Information Back to Top

Facility and Provider Information

Reporting Facility: LABCORP

Ordering Facility: United Neighborhood
1501 12th Avenue South
Nashville, Tennessee 37203
615-269-3461

Ordering Provider: PETER SEARS, MD
1501 12th Avenue South
Nashville, Tennessee 37203
615-269-3461

Order Details

Program Area: General Communicable Disease
Jurisdiction: Nashville/Davidson County
☑ Share record with Guests for this Program Area and Jurisdiction
Date Specimen Collected: 08/29/2011 02:59 PM
Specimen Source:
Specimen Site:
Accession Number: 24176614940
Specimen Details: UR
Patient Status at Specimen Collection:

Lab Report Comments

Add Comment

There is no information to display

Lesson 6:
Merging Records

Common Tasks

1. Logging in & System Overview
2. Searching for a Patient
3. Adding a Patient
4. Adding a Paper Lab Report
5. Checking the Queue
6. Creating an Investigation
7. Associating a Lab Report with an Investigation
8. Changing a Jurisdiction
9. **Merging Records**
10. Running Reports

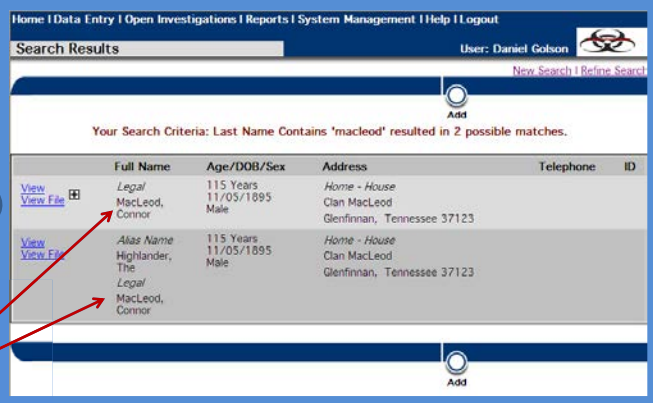
Merging Records

Merging Records
Duplicate patients

- Sources:
  - A byproduct of the ELR process (electronic lab reporting)
  - Not enough "Patient Search"
    - When searching for a patient want to be broad. If making too exact of a search you could miss some records if they have been misspelled, a nickname or shortened version of name has been used, etc.
- De-duplication process runs nearly every day and resolves many duplicate patient records, if the problem can wait

Merging Records

Duplicate patients



Merging Records

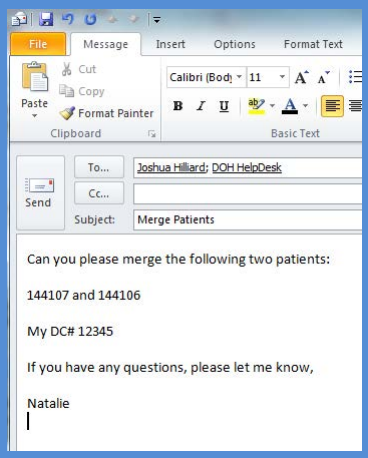
Duplicate patients

In order to have patient records merged, send an email request with patient identification numbers to the NBS Administrator and the DOH Help Desk: DOH.HelpDesk@tn.gov

Please put "Merge Patients" in the subject line.

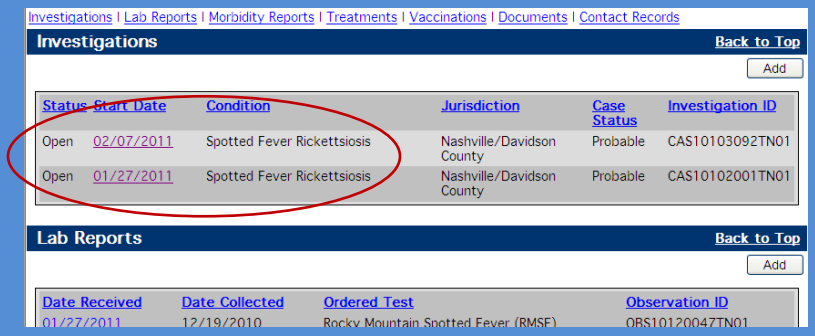
In the email, include: PSN#'s and your DC#

An example



Duplicate Investigations

- **Investigations** cannot be deleted once created
- Same disease with either the same date or almost the same date
- Duplicates of one-time-only diseases



Investigations | Lab Reports | Morbidity Reports | Treatments | Vaccinations | Documents | Contact Records

Investigations Back to Top

Add

Status	Start Date	Condition	Jurisdiction	Case Status	Investigation ID
Open	02/07/2011	Spotted Fever Rickettsiosis	Nashville/Davidson County	Probable	CAS10103092TN01
Open	01/27/2011	Spotted Fever Rickettsiosis	Nashville/Davidson County	Probable	CAS10102001TN01

Lab Reports Back to Top

Add

Date Received	Date Collected	Ordered Test	Observation ID
01/27/2011	12/19/2010	Rocky Mountain Spotted Fever (RMSF)	OBS10120047TN01

Duplicate Investigations

One of the investigations must be changed to "Not a Case" in order to not count the record twice in surveillance activities.

Name: Foz Bear **DOB:** 01/10/1980 **Current Sex:** Male

Summary | Demographics | Events

Investigations | Lab Reports | Morbidity Reports | Treatments | Vaccinations | Documents | Contact Records

Investigations Back to Top

Add

Status	Start Date	Condition	Jurisdiction	Case Status	Investigation ID
Open	02/07/2011	Spotted Fever Rickettsiosis	Nashville/Davidson County	Not a Case	CAS10103092TN01
Open	01/27/2011	Spotted Fever Rickettsiosis	Nashville/Davidson County	Probable	CAS10102001TN01

Lab Reports Back to Top

Add

Lesson 7: Quality Assurance & Running Reports

Common Tasks

1. Logging in & System Overview
2. Searching for a Patient
3. Adding a Patient
4. Adding a Paper Lab Report
5. Checking the Queue
6. Creating an Investigation
7. Associating a Lab Report with an Investigation
8. Changing a Jurisdiction
9. Merging Records
10. **Quality Assurance and Running Reports**

NBS Helps with Quality

- **NBS offers several validations to help improve the quality of data entered into NBS.**
- **Validations include:**

Event Type	Data Validation
Investigation	Patient DOB > Diagnosis Date
Investigation	Patient DOB > Illness Onset Date
Investigation	Patient DOB > Date Reported to County
Investigation	Patient DOB > Date Reported to State
Investigation	Patient DOB > Investigation Start Date
Investigation	Illness Onset Date > Diagnosis Date
Investigation	Pregnant Male
Lab Report	Patient DOB > Date Specimen Collected
Lab Report	Lab Report Date > Date Received by Public Health

Running Reports

- Epidemiologists, Analysts, and all other NBS users can utilize the report functions of NBS for data analyses and as a quality assurance tool to assist in detecting duplicate cases, duplicate case investigations, open or uninvestigated cases, investigations without a case status, investigations without CDC Notification sent, etc.
- Running of reports is crucial for supervisors and program managers in order to monitor cases in a jurisdiction, monitor the work flow of investigators, and assure data quality.

What I've Learned…

- Run generalized reports & do your sorting, stratifying, and sub-stratifying elsewhere (i.e. in Excel)
- Do NOT "Run" your report in NBS, "Export" it & save it elsewhere as a CSV file
- When running new reports, choose ALL of the available variables until you know exactly what type of data the variables contain
- Report fields are not the field names as they are actually housed in NBS & are not necessarily the variable names as they are displayed in the data entry portions of NBS

Some Useful Reports

- **Line List of Individual Cases with Program Area and Jurisdiction Security**
- **Line List of Individual Labs with Program Area and Jurisdiction Security**
- **Line List of Resulted Lab Tests**

Home | Data Entry | Open Investigations | Reports | System Management

Help | Logout

Reports

User : Daniel Golson

Go to: Private Reports | Public Reports | Template Reports

Collapse Sections

Private Reports — Back to top

Expand Subsections

There are no Private reports available.

Public Reports — Back to top

Expand Subsections

Default Report Section

TB

Template Reports — Back to top

Expand Subsections

Default Report Section

TB

Run	Line List of All Orphan Labs	05/16/2011
Run	Line List of Data Validations with Program Area and Jurisdiction Security	01/18/2007
Run	Line List of Diseases with Serotype	07/17/2008
Run	Line List of Haemophilus Influenza Investigations	01/27/2009
Run	Line List of Hep B Acute Investigations	01/29/2009
Run	Line List of Hepatitis Investigations	12/27/2005
Run	Line List of Individual Cases with Program Area and Jurisdiction Security	03/07/2004
Run	Line List of Individual Labs with Program Area and Jurisdiction Security	03/07/2004
Run	Line List of Isolate Tracking	03/22/2006
Run	Line List of Neisseria Meningitidis Investigations	01/27/2009
Run	Line List of Organizations by State and County	04/15/2005
Run	Line List of Resulted Lab Tests	12/27/2005
Run	Line List of Summary Case Reports	12/27/2005
Run	Line List of Vaccine Preventable Disease Investigations	01/27/2009
Run	Line Listing of Pertussis Investigations	01/12/2009
Run	NBS Core Datamart	10/16/2008

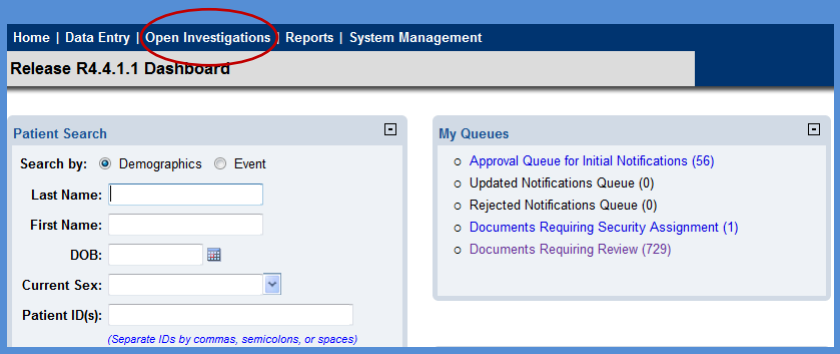
Quality Assurance & Running Reports

Quality Assurance
Open Investigations

Review 'Open Investigations' Queue

- Weekly or monthly
- Assure cases are not "overdue"
- Assure investigations are not missing the following:
  - DOB
  - Case Status
  - Notification
  - County of Jurisdiction

Open Investigations Queue



Open Investigations Queue

Home | Data Entry | Open Investigations | Reports | System Management

Help | Logout

Open Investigations Queue

User : Daniel Golson

Print | Export

Results 1 to 7 of 7

| Remove All Filters/Sorts

Start Date	Investigator	Jurisdiction	Patient	Condition	Case Status	Notification
02/07/2011		Nashville/Davidson County	Bear, Foz	Spotted Fever Rickettsiosis	Not a Case	
02/04/2011		Northeast Region	Gorilla, Magilla	Salmonellosis	Confirmed	
02/03/2011		Chattanooga/Hamilton County	Jenkins, Bootsy	Carbapenemase-producing Enterobacteriaciae	Confirmed	
02/02/2011		Nashville/Davidson County	Snuffaleupagus, Mister	Yellow fever	Confirmed	
02/02/2011		Nashville/Davidson County	Elmo, Tickle	Hemolytic uremic syndrome	Confirmed	
02/02/2011	Bunny, Bugs	Nashville/Davidson County	Snuffaleupagus, Mister	Neisseria meningitidis, invasive (Mening. disease)	Confirmed	
02/01/2011		Chattanooga/Hamilton County	Spears, Britany	Shiga toxin-producing Escherichia coli (STEC)	Confirmed	

Results 1 to 7 of 7

Print | Export

Quality Assurance

Review Investigations

- Review "Closed Investigations"
  - Run Monthly Report (Line List of Individual Cases with Program Area and Jurisdiction Security)
  - If "Open Investigations" are reviewed regularly & completed, this process will be smooth
  - Assure cases are **not missing** critical data:
    - Name (First or Last)
    - DOB
    - County
    - Case Status is missing or marked "Unknown"
    - No "Notification" was sent
    - Notifications are 'Pending Approval"
- Review ALL "Investigations" for duplicates
  - Run Monthly Report
  - Assure investigations are **not duplicated**

Quality Assurance

Review Investigations

QA – Review Investigations

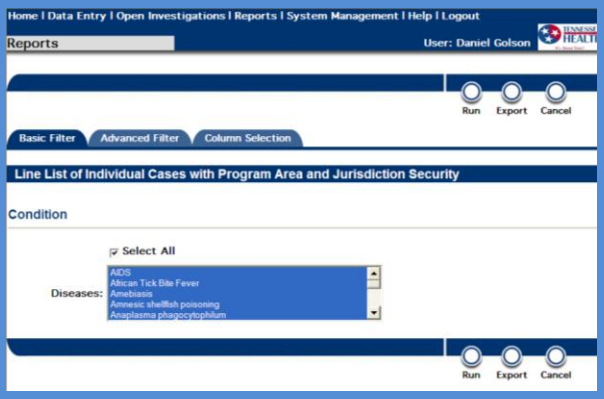
"Line List of Individual Cases with Program Area and Jurisdiction" Report

- Basic Filter
  - Condition – Check Select All box
- Advanced Filter
  - Field – select "Report Date"
  - Logic – select "Greater Than"
  - Value – type date, e.g. greater than 12/31/2011 to look at all Investigations for your Jurisdiction this year
  - Click "Insert" (you will see your filter statement under "Basic Filters selected plus:"
- Column Selection
  - Select all "Available Columns" using the double-arrow button
- Click the "Export" button (not "Run")
- Save (not "Open") the file in CSV format

QA – Review Investigations

"Line List of Individual Cases with Program Area and Jurisdiction" Report

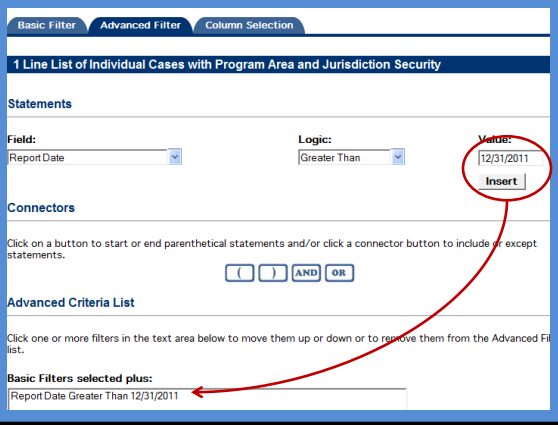
- Basic Filter
  - Condition – Check Select All box

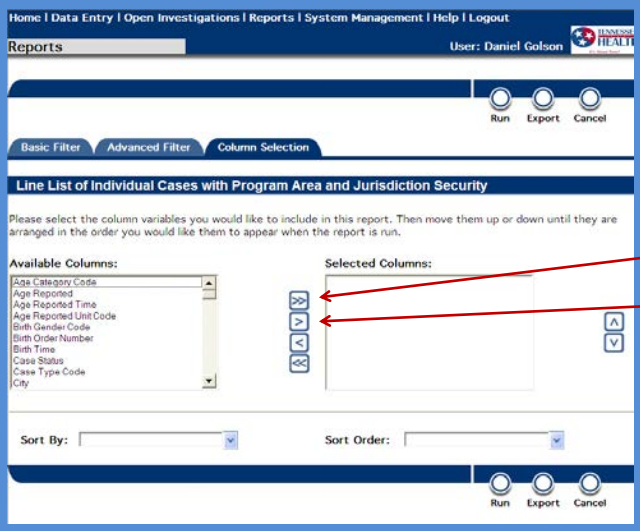


QA – Review Investigations

"Line List of Individual Cases with Program Area and Jurisdiction" Report

- Advanced Filter
  - Field – select "Report Date"
  - Logic – select "Greater Than"
  - Value – type date, e.g. greater than 12/31/2011 to look at all Investigations for your Jurisdiction this year
  - Click "Insert" (you will see your filter statement under "Basic Filters selected plus:"





Add all

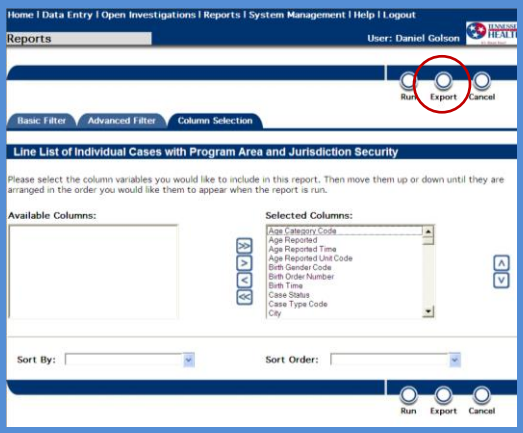
Add selection

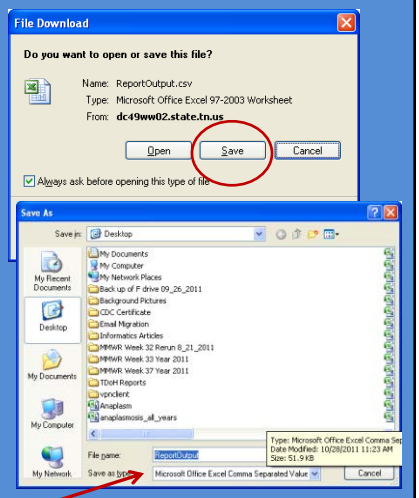
- Choose ALL of the available variables until you know exactly what types of data each variable contains

QA – Review Investigations

"Line List of Individual Cases with Program Area and Jurisdiction" Report

- Click the "Export" button (not "Run")
- Save (not "Open") the file in CSV format



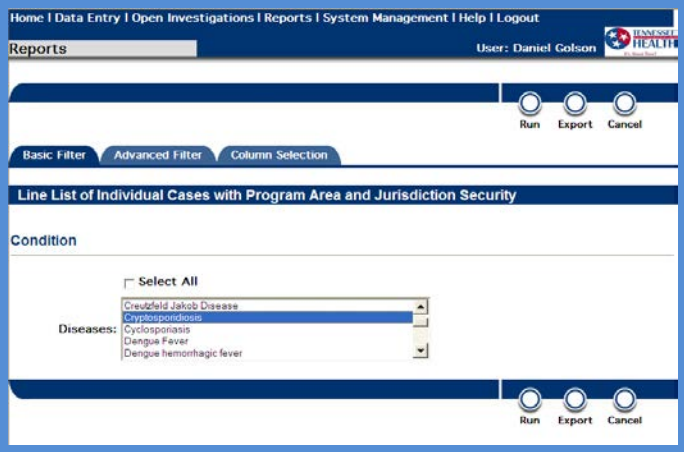


QA – Review Investigations

"Line List of Individual Cases with Program Area and Jurisdiction" Report

- You can open your new file in Excel & sort by:
  - "Investigation Status" to determine which are closed ("C"), which are open ("O")
  - "Person Name" to determine if there are duplicates
  - "First Notification Date" to determine if any investigations have not had notifications sent to CDC

A Report for a Specific Condition



- Use drop-down menu to select the condition for investigation
- Select "Column Selection" tab

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Reports

User: Daniel Golson

Run Export Cancel

Basic Filter | Advanced Filter | Column Selection

Line List of Individual Cases with Program Area and Jurisdiction Security

Please select the column variables you would like to include in this report. Then move them up or down until they are arranged in the order you would like them to appear when the report is run.

Available Columns:

Age Category Code
Age Reported
Age Reported Time
Age Reported Unit Code
Birth Gender Code
Birth Order Number
Birth Time
Case Status
Case Type Code
City

Selected Columns:

Sort By:

Sort Order:

Run Export Cancel

Add all

Add selection

- Choose ALL of the available variables until you know exactly what types of data each variable contains

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Reports

User: Daniel Golson

Run Export Cancel

Basic Filter | Advanced Filter | Column Selection

Line List of Individual Cases with Program Area and Jurisdiction Security

Statements

Field:

Event Date

Ethnic Group Indicator
Event Date
Event Type
First Notification Date
First Notification Sent Date

Connectors

Click on a button to start or end parenth statements.

Home | Data Entry | Open Investigations | Reports | System Management | Help | Logout

Reports

User: Daniel Golson

Run Export Cancel

Basic Filter | Advanced Filter | Column Selection

Line List of Individual Cases with Program Area and Jurisdiction Security

Statements

Field:

Event Date

Logic:

Equals
Not Equals
Between
Less Than
Greater Than

Value:

Insert

Run Export Cancel

Basic Filter | Advanced Filter | Column Selection

Line List of Individual Cases with Program Area and Jurisdiction Security

Statements

Field: Event Date

Logic: Greater Than

Value: 01/01/2010

Insert

Connectors

Click on a button to start or end parenthetical statements and/or click a connector button to include or except statements.

( ) AND OR

Advanced Criteria List

Click one or more filters in the text area below to move them up or down or to remove them from the Advanced Filter list.

Basic Filters selected plus:

Event Date Greater Than 01/01/2010

Line List of Individual Cases with Program Area and Jurisdiction Security

Statements

Field: Jurisdiction

Logic: Equals

Value:
Knoxville/Knoxville County
Memphis/Shelby County
Mid-Cumberland Region
Nashville/Davidson County
Northeast Region

Insert

Connectors

Click on a button to start or end parenthetical statements and/or click a connector button to include or except statements.

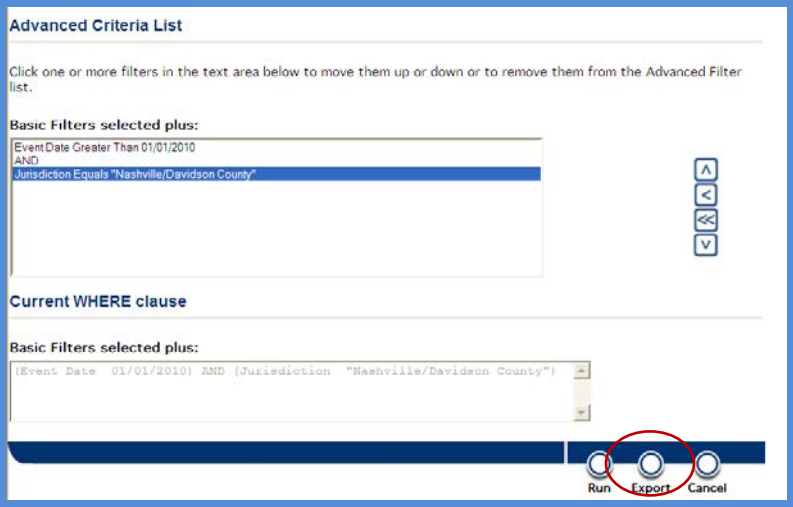
( ) AND OR

Advanced Criteria List

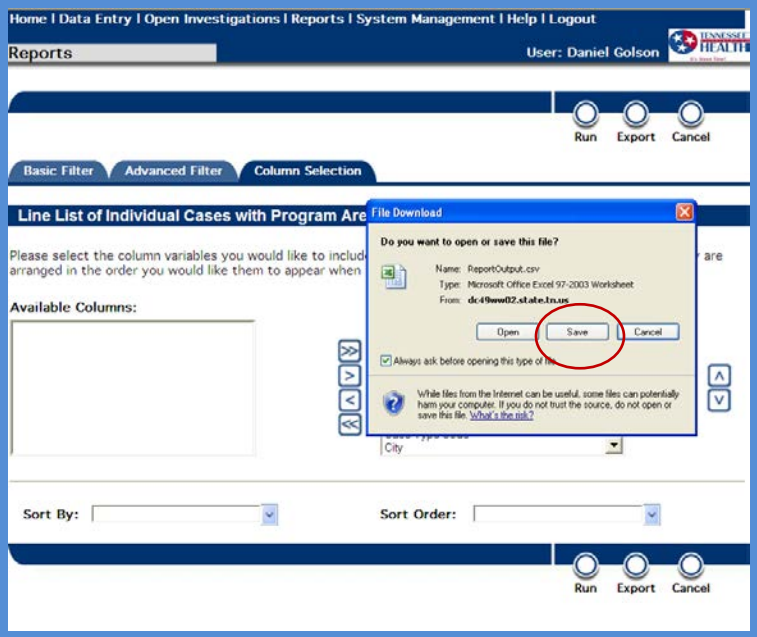
Click one or more filters in the text area below to move them up or down or to remove them from the Advanced Filter list.

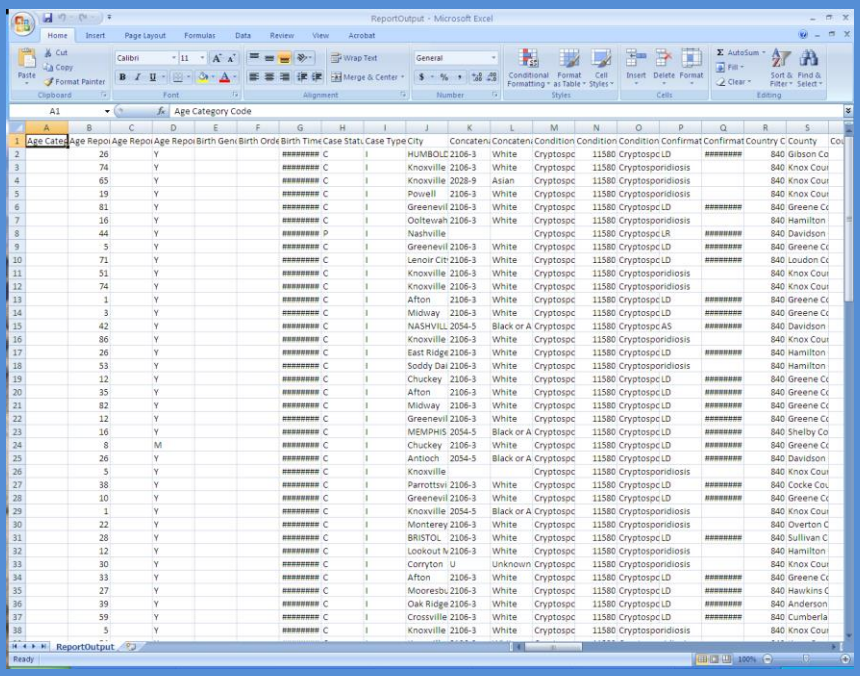
Basic Filters selected plus:

Event Date Greater Than 01/01/2010
AND



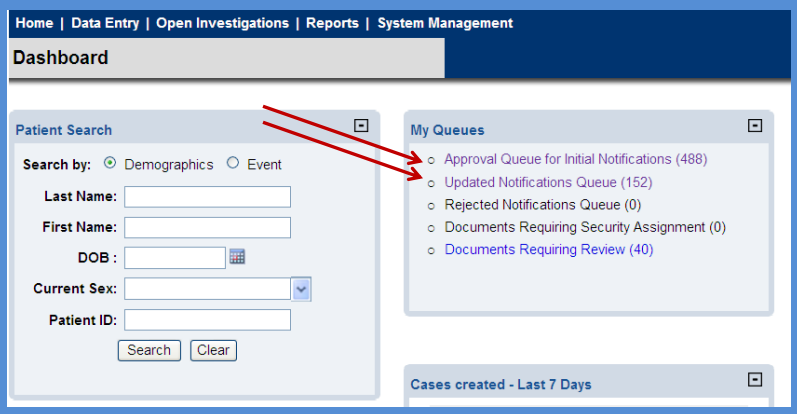
- "Export" your report & save it as a CSV (don't "Run" the report)





Quality Assurance

Notifications Queues



Lesson 8: Potential Land Mines & Helpful Hints

Sometimes you might get frustrated with the system

- While using NBS, some things might seem strange or not make sense
- As a user, you might view these as “errors” that we should try to fix, but most of the time there is a reason for how the system works
- This lesson includes helpful hints and explanations that will be valuable for all NBS users

The Back Button

- The back button is the arrow that takes you back one screen when using the internet
- It should **never** be used in NBS
- It is not enabled, and therefore does not function with the system
- If you find yourself using the back button, you will be sent an error screen
- After this error screen, all information that was not submitted will be lost and any work you just did will have to be done again

Practice etiquette even when using NBS

- If you find a duplicate patient in NBS, it is very important to have them merged. Contact the NBS System Administrator and the TDH Help Desk DOH.HelpDesk@tn.gov
- Enter all information you have whether it be for a lab report or an investigation. Don't just put in the bare minimum.
- If you open and investigation, close it.
- All investigations that are created must have a notification, even if "Not a Case"
- If you transfer an observation or investigation to another region
  - Notify the region by email or phone
  - Make sure you enter all the information you gathered on that patient
- If you find that a patient resides outside of TN, transfer the case jurisdiction to "Out of Tennessee"

Why doesn't NBS mirror the investigation form?

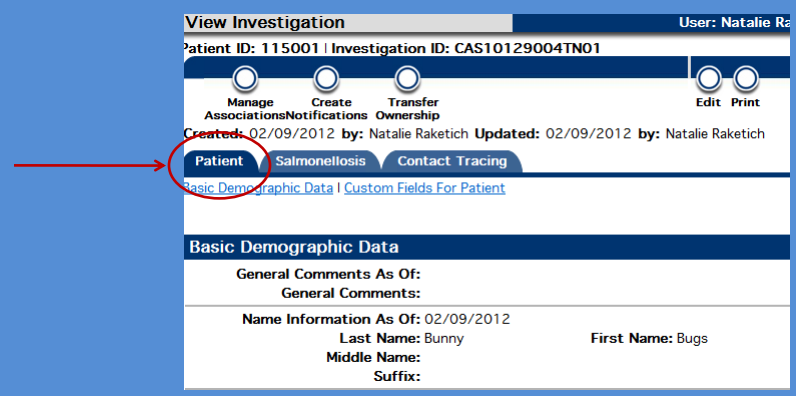
- NBS is a system developed by CDC
- It is meant to be used by a number of states, not just Tennessee
- We do not have full control of how pages were built
- The way it was made was as a general format, not taking into account individual state's investigation forms

Where to enter new information

- During the course of an investigation, it is likely that new demographic information will be gathered
- This new information should be entered into the 'Patient' tab inside the investigation
- If this demographic information is entered into the patient's file, it will not populate into an already existing investigation or lab report

Where to enter new information

- This is where the newly gathered demographic information should go



Patient Information vs. Investigation Information

- These are two different things
- A patient changes over time
  - Their age increases
  - Pregnancy status will change
  - Address information can change
  - Etc.
- The investigation/lab report does not
  - This is point-in-time information
  - Everything included is a snapshot in time that does not change over the course of a patient's lifetime

What you're really doing when running a report

- Although all the information entered for a patient is visible in their file, it will not all show up in the same report
- Running a report is like asking the system a question, the output is the system's answer
- Different reports ask different questions
- You might be asking a question about investigations when you are meaning to gather information about patients

Why isn't new information showing up in the report I ran?

- In NBS a process called ETL occurs 3 times a week
- ETL= Extract, Translate, & Load
- This moves data from operational data store to reporting database (RDB)
- It takes anywhere from 14-24 hours to run
- This occurs Mon & Wed at 1pm and Fri at 4pm
- Data in the reporting database (in reports you run) is not reliable while the ETL process is running because the tables used for reports are being built and populated in the RDB

Why isn't new information showing up in the report I ran?

- So the ETL is running 3 times a week
  - Mon 1pm
  - Wed 1pm
  - Fri 4pm
- A record entered Wed morning in the user interface (NBS) will be available in a report on Thursday
- A record entered Wed at 2 pm in the user interface (NBS) will not be available in a report until Monday

Help

- NBS System Administrator is:
  - Josh Hilliard Joshua.Hilliard@tn.gov
- Central Office CEDEP contacts:
  - CEDS.Informatics@tn.gov
  - Natalie Raketich Natalie.Raketich@tn.gov
  - Daniel Golson Daniel.Golson@tn.gov
- There is a help document available, once you get signed on to NBS.
- NBS user monthly conference calls – 2nd Thursday of each month @ 9 am

Practice in NBS Using "Dummy" Patients

- This section has fake or "dummy" observations and investigations.
- You can use these to practice using NBS.
- You can create a patient, lab, and investigation using the information provided.
- **Make sure you are doing all of this in the NBS TEST/TRAINING SYSTEM!**
- You can make up whatever demographic information you want for these patients, but if you are having trouble, here are some easy instructions:
    - Patient Name:
        - Use your middle name for the first name.
        - Use your street name for the last name.
    - City, County, Zip, and Jurisdiction:
        - Use your office address for all of this information.
        - Use the regional jurisdiction you work in for the jurisdiction.
    - Investigator:
        - You can use the actual person in your office who investigates cases.
    - Parent's last name:
        - Use the same last name as the patient (your street name).
- You can use these patients to walk through the procedures or the Powerpoints in NBS.

Tennessee Department of Health
Reportable Diseases and Events

Reportable Diseases and Events are declared to be communicable and/or dangerous to the public and are to be reported to the local health department by all hospitals, physicians, laboratories, and other persons knowing of or suspecting a case in accordance with the provision of the statutes and regulations governing the control of communicable diseases in Tennessee (T.C.A. §68 Rule 1200-14-01-.02). For more specific details, download the Reportable Diseases and Events Matrix (http://health.state.tn.us/ReportableDiseases). If further guidance is needed, contact Communicable and Environmental Disease Services at (615) 741-7247 or (800) 404-3006.

Disease/Event Code: 042

Demographics

Patient Name:

Date of Birth: 2/14/2010

Gender: ☐ Male ☐ Female

Ethnicity: ☐ Hispanic ☒ Not Hispanic

Race: ☐ American Indian / Alaskan ☐ Asian ☐ Black / African American ☐ Hawaiian / Pacific Islander ☒ White ☐ Other (_____)

Street Address:

City:

State: TN

County:

Zip Code:

Phone: ( )

Clinical Information

Onset Date: ___/___/_____

Hospitalized?: ☐ Yes ☒ No ☐ Unknown

Admission Date: ___/___/_____

Discharge Date: ___/___/_____

Died?: ☐ Yes ☒ No ☐ Unknown

Pregnant?: ☐ Yes ☒ No ☐ Unknown

STD Treatment Date: ___/___/_____

STD Treatment:

Provider

Physician Name: Mickey Mouse, MD

Facility/Hospital Name: Baptist Memorial Hospital

Phone: ( )

Laboratory

Test: Stool Culture

Specimen Collection Date: 2/14/2012

Result: Salmonella sp

Specimen Source: Stool

Disease/Event Code:

Demographics

Patient Name:

Date of Birth: ___/___/_____

Gender: ☐ Male ☐ Female

Ethnicity: ☐ Hispanic ☐ Not Hispanic

Race: ☐ American Indian / Alaskan ☐ Asian ☐ Black / African American ☐ Hawaiian / Pacific Islander ☐ White ☐ Other (_____)

Street Address:

City:

State:

County:

Zip Code:

Phone: ( )

Clinical Information

Onset Date: ___/___/_____

Hospitalized?: ☐ Yes ☐ No ☐ Unknown

Admission Date: ___/___/_____

Discharge Date: ___/___/_____

Died?: ☐ Yes ☐ No ☐ Unknown

Pregnant?: ☐ Yes ☐ No ☐ Unknown

STD Treatment Date: ___/___/_____

STD Treatment:

Provider

Physician Name:

Facility/Hospital Name:

Phone: ( )

Laboratory

Test:

Specimen Collection Date: ___/___/_____

Result:

Specimen Source:

Date of Report: 2/21/12 Person Reporting/Title: _____ Phone: (_____) _____

Tennessee Department of Health

FoodNet Case Report

Please fill this form out as complete as possible. Anything that appears in red is not available for data entry into NEDSS. However, you may find those fields helpful in your investigation. Do not forget to complete the appropriate disease-specific supplement form.

DEMOGRAPHICS

Last Name: _____ First: _____ Middle: _____ DOB: 2/14/2010

Reported Age: 2 □ Days □ Months ☒ Years Sex: ☒ Male □ Female □ Unknown

Street Address: _____

City: _____ County: _____ State: TN Zip: _____

Home Phone: _____ Work: _____ Cell: _____

Ethnicity: □ Hispanic ☒ Not Hispanic

Race: □ American Indian / Alaskan □ Asian □ Black / African American □ Hawaiian / Pacific Islander ☒ White □ Other (_____)

Employer/School/Daycare: Non Occupation: _____

LAB REPORT

Reporting Facility: Baptist Memorial Hospital Ordering Facility: Baptist Memorial Hospital

Ordering Provider: Mickey Mouse Phone Number: _____

Jurisdiction: □ East Tennessee □ Mid-Cumberland □ Northeast □ South Central □ Southeast □ West Tennessee □ Upper Cumberland □ Nashville/Davidson □ Chattanooga/Hamilton □ Knoxville/Knox □ Jackson/Madison □ Memphis/Shelby □ Sullivan □ Out of Tennessee □ Unassigned

Lab Report Date: 2/21/12
Date Received by Public Health: 2/21/12
Date Specimen Collected: 2/14/12

Specimen Source: □ Blood □ CSF ☒ Stool □ Urine □ Other _____ □ Unknown _____

RESULTED TEST

CULTURE METHODS

□ *Campylobacter* sp identified
□ *Cryptosporidium* sp
□ *Cyclospora* identified
□ *E. coli* identified
□ *Listeria* sp identified
☒ *Salmonella* sp identified
□ *Shigella* sp identified
□ *Yersinia* identified
□ *Vibrio* sp identified

NON-CULTURE METHODS

□ *Campylobacter* test, EIA
□ positive □ indeterminate
□ negative
□ *Campylobacter* test, PCR
□ positive □ indeterminate
□ negative

□ *Cryptosporidium*
□ acid-fast stain □ DFA □ EIA
□ rapid cartridge □ PCR □ Other
□ *E. coli* Shiga toxin test, EIA
□ stx1 □ stx1 & stx2
□ stx2 □ undifferentiated

□ *E. coli* Shiga toxin test, PCR
□ stx1 □ stx1 & stx2
□ stx2 □ undifferentiated
□ Microorganism identified, by PCR

ORGANISM

INVESTIGATION

INVESTIGATION SUMMARY

Investigation Start Date: 2/21/12
Investigation Status: ☒ Open □ Closed
Investigator: _____
Date Assigned to Investigation: 2/21/12

REPORTING SOURCE

Date of Report: ___/___/_____
Reporting Source: _____
Earliest Date Reported to County: ___/___/_____
Reporter: _____

CLINICAL INFORMATION

Physician: _____ Physician's Phone: _____

Was the patient hospitalized for this illness?: □ Yes ☒ No □ Unknown

Hospital: _____
Admission Date: ___/___/_____ Discharge Date: ___/___/_____
If patient not hospitalized, Diagnosis Date: ___/___/_____

Is the patient pregnant?: □ Yes ☒ No □ Unknown Did the patient die from this illness?: □ Yes ☒ No □ Unknown

EPIDEMIOLOGIC INFORMATION

Is this patient associated with a daycare facility?: □ Yes ☒ No □ Unknown
If yes, name of daycare: _____

Is this patient a food handler?: □ Yes ☒ No □ Unknown
If yes, name of restaurant/facility: _____

Is this case part of an outbreak?: □ Yes □ No ☒ Unknown
If part of a multistate cluster or outbreak, list CDC cluster code: _____

Transmission Mode: □ Foodborne □ Waterborne □ Zoonotic ☒ Indeterminate □ Other _____

Case Status: ☒ Confirmed □ Probable □ Suspect

FOOD CORE QUESTIONS (FOR ADMINISTRATIVE USE ONLY):

DRAFT UPDATED 06/2011

Was the case interviewed by public health? □ Yes □ No □ Unknown
If no, was an attempt made? □ Yes □ No □ Unknown
Date of first interview attempt: ___/___/_____ Date of interview: ___/___/_____
Interviewer's Name: _____

Was a food history obtained? □ Yes □ No □ Unknown
Was the case entered into NEDSS? □ Yes □ No □ Unknown
Date entered into NEDSS: ___/___/_____
Data Entry Person's Name: _____
Other Notes: _____

Symptom History

Not sure time of day

Date/Time of Illness Onset: 2 / 8 / 2012 ___:___ □ AM □ PM First Symptom: diarrhea

Symptoms: (Check all that apply)

- [x] Abdominal cramps
- □ Cellulitis
- [x] Fever (Max) low grade °F
- [x] Vomiting
- [x] Anorexia
- □ Chills
- □ Headache
- □ Weight loss
- □ Backache
- □ Constipation
- □ Muscle aches
- □ Reactive Arthritis
- [x] Bloody diarrhea
- [x] Diarrhea
- □ Nausea
- □ Other
- □ Bullae
- [x] Fatigue
- □ Shock

If Yes to Diarrhea,

Date/Time of Diarrhea Onset: 2 / 8 / 2012 ___:___ □ AM □ PM ?

Maximum number of stools in a 24-hour period: about 15

Are you still experiencing symptoms? [x] Yes □ No □ Unknown

If no longer experiencing symptoms, how long did they last?: _____ □ Minutes □ Hours □ Days

If Yes to Vomiting,

Date/Time of Vomiting Onset: 2 / 13 / 2012 9 : 00 [x] AM □ PM

Maximum number of vomiting episodes in a 24-hour period: 5

Are you still experiencing symptoms? □ Yes [x] No □ Unknown

If no longer experiencing symptoms, how long did they last?: 2-3 □ Minutes □ Hours [x] Days

Other Illness Information

Date/Time of Recovery: ___/___/_____ ___:___ □ AM □ PM

Duration of Illness: _____ □ Minutes □ Hours □ Days

If known, Date/Time of Exposure: ___/___/_____ ___:___ □ AM □ PM

Location: Still ill

Travel History

Did patient travel prior to onset of illness? □ Yes [x] No □ Unknown

1. Type: □ Domestic □ International Destination 1: _____ Mode of travel: □ Airplane □ Bus □ Car □ Cruise □ Ship □ Train
   Date of Arrival: ___/___/_____ Date of Departure: ___/___/_____
2. Type: □ Domestic □ International Destination 1: _____ Mode of travel: □ Airplane □ Bus □ Car □ Cruise □ Ship □ Train
   Date of Arrival: ___/___/_____ Date of Departure: ___/___/_____

If more than 2 destinations, please specify here:

Related Cases

Does the patient know of any similarly ill persons?: □ Yes [x] No □ Unknown

If yes, did the health department collect contact information about other similarly ill persons and investigate further?: □ Yes □ No □ Unknown

Are there any other cases related to this one?: □ Yes, household □ Yes, outbreak □ No, sporadic □ Unknown

Provide names, onset dates, contact information and any other details for similarly ill persons or related cases:

FoodNet

FoodNet Case?: [x] Yes □ No □ Unknown

Transfer Hospital Information

Was the patient transferred from one hospital to another?: □ Yes [x] No □ Unknown

If yes, specify name of the hospital to which the patient was transferred: _____

Second Hospitalization

Was there a second hospitalization?: □ Yes [x] No □ Unknown

If yes, Hospital Name: _____
Admission Date: ___/___/_____
Discharge Date: ___/___/_____

Immigration

Did patient immigrate to the US within 7 days of specimen collection?: □ Yes [x] No □ Unknown

Case-Control Information

In a case-control study? □ Yes [x] No □ Unknown

Outbreak Information

Type of outbreak:

- □ Animal contact
- □ Environmental contamination other than food/water
- □ Foodborne
- [x] Indeterminate
- □ Other
- □ Person-to-person
- □ Waterborne
- □ Unknown

CDC EFORS/NORS number? _____

Audit Information

Was the case found during an audit*? □ Yes [x] No □ Unknown

Our FoodNet hospital visit constitutes an audit.

Tennessee Department of Health

Salmonellosis

Please fill this form out as complete as possible. Anything that appears in **blue** is available for data entry into NEDSS. All other questions may be useful in your investigation. Do not forget to complete the generic FoodNet Case Report form.

Last Name: _____ First: _____ Middle: _____ DOB: 2 / 14 / 2010

PSN1_ _ _ _ _ _ _ _TN01 CAS1_ _ _ _ _ _ _ _TN01 State Lab Accession #: _____

INFECTION TIMELINE

Enter onset date in heavy box. Count back to calculate the probable exposure period. Ask about exposures between those dates. For *Salmonella*, the exposure period is 7 days before illness onset.

EXPOSURE PERIOD | COMMUNICABLE

days from onset -7 -6 -5 -4 -3 -2 -1 onset

calendar dates ☐ ☐ ☐ weeks

POSSIBLE SOURCE(S) OF INFECTION DURING EXPOSURE PERIOD

First I'd like to ask a few questions about exposures you may have had in the 7 days before you or the patient got sick. I will need to ask you questions about various items, including special events, special diets, water, animals and various foods you or the patient may have come into contact with.

[1]	Y	?	N	LEAD-IN QUESTIONS
A	☐	☐	☒	Did the patient attend any special events (e.g., concerts, festivals, sporting events, reunions, religious gatherings, etc.)? *If yes*, what?_____ Where?_____ When?_____
B	☐	☐	☒	Are you a vegetarian or vegan?
C	☐	☐	☒	Before you got sick, were you on any kind of special or restricted diet for medical, weight loss, religious, or any other reasons? *If yes*, describe_____
				What is the source of tap water at home? D ☐ Do not use tap water E ☒ Municipal, city or county F ☐ Other_____ G ☐ Private well; *If yes*, how was the well water treated?_____
				What is the source of tap water at school/work?: H ☐ Do not use tap water I ☐ Municipal, city or county J ☐ Other_____ K ☐ Private well; *If yes*, how was the well water treated?_____
L	☐	☐	☒	Did the patient drink untreated water in the 7 days prior onset of illness?
M	☐	☐	☒	Was there any recreational water exposure in the 7 days prior to illness? Where?_____ When?_____ *If yes*, what was the recreational water type? N ☐ hot spring O ☐ hot tub, whirlpool, jacuzzi, spa P ☐ interactive fountain Q ☐ lake, pond, river, stream R ☐ ocean S ☐ recreational water park T ☐ swimming pool U ☐ other_____ V ☐ unknown

[2]	Y	?	N	LIVE ANIMAL CONTACT, PETS, PET FOOD, MANURE and COMPOST
A	☐	☐	☒	Visit a farm with animals?
B	☐	☐	☒	Live on a farm with animals?
C	☐	☐	☒	Visit a live animal exhibit (petting zoos, fairs, 4H, etc.)?
D	☒	☐	☐	Come into contact with any animals? Where? Home When?_____ *If yes*, type of animal? E ☐ cat F ☐ cattle G ☐ chicken H ☒ dog 1 dog I ☐ goats J ☐ lizard K ☐ other L ☐ other amphibian M ☐ other mammal N ☐ other reptile O ☐ rodent P ☐ sheep Q ☐ turkey R ☐ turtle S ☐ unknown *If other*, other amphibian, other mammal or other reptile, please specify: _____
T	☐	☐	☒	Come into any contact with tropical fish or aquariums?
U	☐	☐	☒	Come into any contact with animal feces or manure?
V	☐	☐	☒	Work in the garden?
W	☐	☐	☐	*If yes*, did the patient apply animal manure or compost derived from animal manure to their garden? *If yes*, type of manure/compost? _____ When?_____
X	☐	☐	☒	Have any contact or household use of pet treats or chews (e.g., pig ears, pizzles, rawhide chews, package treats…)
Y	☐	☐	☒	Have any contact with dry, canned or frozen animal feed? *If yes*, please specify:_____

at home inside dog

Provide details (name or location of animal contact, whether or not pet was acquired before illness onset) for those items checked above. If contact was with an animal not listed above, please specify.

McDonald's several times

Now I'd like to ask about the food you ate in the 7 days before you got sick. Please try to remember what you may have eaten during that time period. We'll start with the day (or day before) you got sick and work backwards. If a meal was eaten out, please specify the name and location of the restaurant.

Day 1 2/8/2012 [3]

Breakfast	Lunch	Dinner	Other/Snacks
A ☒ Home B ☐ Out	C ☒ Home D ☐ Out	E ☐ Home F ☐ Out	G ☐ Home H ☐ Out
sausage biscuit	chicken		

Day 2 ___/___/___

Breakfast	Lunch	Dinner	Other/Snacks
I ☐ Home J ☐ Out	K ☐ Home L ☐ Out	M ☐ Home N ☐ Out	O ☐ Home P ☐ Out

Day 3 ___/___/___

Breakfast	Lunch	Dinner	Other/Snacks
Q ☐ Home R ☐ Out	S ☐ Home T ☐ Out	U ☐ Home V ☐ Out	W ☐ Home X ☐ Out

Day 4 ___/___/___ [18]

Breakfast	Lunch	Dinner	Other/Snacks
A ☐ Home B ☐ Out	C ☐ Home D ☐ Out	E ☐ Home F ☐ Out	G ☐ Home H ☐ Out

Day 5 ___/___/___

Breakfast	Lunch	Dinner	Other/Snacks
I ☐ Home J ☐ Out	K ☐ Home L ☐ Out	M ☐ Home N ☐ Out	O ☐ Home P ☐ Out

Day 6 ___/___/___

Breakfast	Lunch	Dinner	Other/Snacks
Q ☐ Home R ☐ Out	S ☐ Home T ☐ Out	U ☐ Home V ☐ Out	W ☐ Home X ☐ Out

Day 7 ___/___/___ [19]

Breakfast	Lunch	Dinner	Other/Snacks
A ☐ Home B ☐ Out	C ☐ Home D ☐ Out	E ☐ Home F ☐ Out	G ☐ Home H ☐ Out

[If applicable] *You said that you ate out at some restaurants. Let me run through a list of some popular national chains to see if you remember eating there during that time.*

[4]	Y	?	N	RESTAURANT GENRES		Y	?	N	RESTAURANT GENRES 2
A	☐	☐	☒	Asian (e.g., Chinese, Japanese, Indian, Thai, etc.)	F	☐	☐	☒	Middle Eastern/Arabic/Lebanese
B	☐	☐	☒	Barbeque	G	☒	☐	☐	Other American
C	☐	☐	☒	Greek	H	☐	☐	☒	Other Ethnic Food
D	☒	☐	☐	Italian or Pizzeria – Pizza Hut Meat Lover's Pizza	I	☐	☐	☒	Seafood
E	☐	☐	☒	Mexican/Tex-Mex	J	☐	☐	☒	Sushi

Provide details (location, dates, times) for those restaurant genres checked above. If you can recall eating at any other restaurants (not listed above) that week, please list them by name; if possible, what was eaten.

McDonald's, Chicken Nugget Happy Meal

Now I'd like to ask about where the food came from that you ate at home in those 7 days. In other words, this isn't necessarily where you shopped in those days, but where the food that you ate during that time came from. OK? Did any of it come from...

[5]	Y	?	N	SOURCES OF FOOD AT HOME [*List store names and check if they use a "shopper card" or save itemized receipts*]
A	☒	☐	☐	grocery stores/supermarkets (*specify*) ☒ Wal-Mart ☐ _____ ☐ _____
B	☐	☐	☒	warehouse stores (Costco, Sam's Club, ...) ☐ _____ ☐ _____ ☐ _____
C	☐	☐	☒	small markets and mini-marts
D	☐	☐	☒	specialty markets (e.g., ethnic, gourmet, or organic groceries)
E	☐	☐	☒	health foods, "whole food" stores
F	☐	☐	☒	delicatessens, including supermarket delis
G	☐	☐	☒	bakeries, bagel and doughnut shops
H	☐	☐	☒	farmer's markets, roadside stands, open-air markets, on farm
I	☐	☐	☒	CSA produce (Community Supported Agriculture)
J	☐	☐	☒	fish or meat specialty shops; butcher's
K	☐	☐	☒	take-out or home delivered ready-to-eat food (e.g., Pizza, Chinese)
L	☐	☐	☒	home delivery grocery services (e.g., Schwan's, Meals-on-Wheels)
M	☒	☐	☐	Would you be willing to provide shopping records (e.g., receipts, shopper cards, membership records, etc.) if the need arises?

Now I'd like to ask you about a long list of food items, and for each one my question will be "Did you eat it in that same 7- day period before you got sick?" The lists are organized into categories, like eggs and dairy foods, vegetables and fruits, and so on. For each item, give me a "yes" or "no" if you remember eating or even tasting it in those 7 days before you got sick. Some of the questions might seem a little repetitive, but we must ask them in the same manner to everyone. So please try and answer each question individually, even if you think it was already covered. Unless I say otherwise, I'm interested in whether you ate these items at home or away from home—either one, OK?

[6]	Y	?	N	EGGS AND DAIRY
A	☒	☐	☐	eggs (anything anywhere from whole shell eggs [i.e., not powdered or processed]) *If yes, ...*
B	☒	☐	☐	any eggs at home - Wal-Mart, brand unknown
C	☐	☐	☒	any eggs at restaurants or elsewhere away from home
D	☐	☐	☒	any eggs anywhere that were raw or runny
E	☐	☐	☒	anything uncooked made with raw eggs (e.g., cookie dough, sauces, mousse, homemade ice cream or mayo)
F	☒	☐	☐	butter (real butter; not margarine) - Wal-Mart
G	☐	☐	☒	buttermilk (fluid, not powdered)
H	☒	☐	☐	sour cream - Wal-Mart, Daisy
I	☐	☐	☒	yogurt (e.g., frozen yogurt, yogurt drinks or other store-bought yogurt)
J	☒	☐	☐	Ice cream (e.g., tubs, cartons, bars, frozen dairy desserts, Baskin-Robbins, etc.) - Wal-Mart, Moose Tracks, Breyer's
K	☐	☐	☒	any unpasteurized (raw) milk
L	☒	☐	☐	any pasteurized ("regular") milk. *If yes*, specify type: A lot - 2%. Wal-Mart, Prarie Farms

[7]	Y	?	N	CHEESE
A	☐	☐	☒	cream cheese or Neufchatel
B	☐	☐	☒	cottage cheese
C	☐	☐	☒	any "string" cheese
D	☒	☐	☐	any shredded cheese - Cheddar, Kraft from Wal-Mart
E	☐	☐	☒	any cheese sold as or cut from solid blocks (e.g., Cheddar, Swiss, Colby, Jack, ...)
F	☐	☐	☒	any processed cheese sold in slices
G	☐	☐	☒	any dry/powdered cheese (e.g., Parmesan, Romano, etc.)
H	☐	☐	☒	any homemade or store-bought Mexican-style (e.g., Queso fresco, Queso blanco)
I	☐	☐	☒	any other cheese (e.g., Bleu, Brie, Goat, Mozzarella, Sheep, Ricotta, etc.)

Provide details (brands, packaging, dates, times) for those items checked above.

[8]	Y	?	N	FRESH, FROZEN, COOKED, PROCESSED MEAT & POULTRY 1
A	☒	☐	☐	any chicken prepared at home Wal-Mart
				if yes, B ☐ fresh C ☒ frozen
				if yes, D ☐ ground E ☒ whole F ☐ deli slices
G	☒	☐	☐	any chicken eaten away from home (including tenders, strips, nuggets, etc.) McD's nuggets
H	☐	☐	☒	any turkey prepared at home
				if yes, I ☐ fresh J ☐ frozen
				if yes, K ☐ ground L ☐ whole M ☐ deli slices
N	☐	☐	☒	any turkey eaten away from home
O	☒	☐	☐	any beef prepared at home
				if yes, P ☒ fresh Q ☐ frozen Kill own cow
				if yes, R ☒ ground S ☐ whole (e.g., steak, roast, etc.) T ☐ deli slices
U	☒	☐	☐	any beef eaten away from home - Pizza Hut, Meat Lover's

[9]	Y	?	N	FRESH, FROZEN, COOKED, PROCESSED MEAT & POULTRY 2
A	☒	☐	☐	any pork prepared at home
				if yes, B ☐ fresh C ☒ frozen Wal-Mart
				if yes, D ☐ ground E ☒ whole (e.g., tenderloin, roast, etc.) F ☐ ham G ☒ bacon Wal-Mart Bologna
H	☐	☐	☒	any pork eaten away from home
I	☐	☐	☒	any wild venison or game (e.g., deer, elk, duck, bison, game hen, lamb, veal, etc.)
J	☐	☐	☒	any organ meats (liver, kidney, brains) or chitterlings
K	☒	☐	☐	any sausage (e.g., links, patties, ground, bratwurst, kielbasa, etc.) Williams
L	☒	☐	☐	any corn dogs or hot dogs
M	☒	☐	☐	any dried or cured meats (pepperoni, salami, prosciutto, jerky, strips, etc.) Pizza Hut Pizza
N	☒	☐	☐	any other meats prepared at home or eaten away from home Bologna

Provide details (brands, packaging, dates, times) for those items checked above.

[10]	Y	?	N	FISH & SEAFOOD *(not canned)*
A	☐	☐	☒	any fish (fresh, smoked, or dried)
B	☐	☐	☒	any shellfish (e.g., crab, oysters, clams, scallops, shrimp, lobster, crawfish, mussels, etc.)
C	☐	☐	☒	any sushi, sashimi, or ceviche
D	☐	☐	☒	any seaweed or seaweed products
E	☐	☐	☒	any other seafood (e.g., squid, etc.)
F	☐	☐	☒	any commercially prepared seafood salad
G	☐	☐	☒	any imitation Krab (surimi) or similar product

Provide details (brands, packaging, dates, times) for those items checked above.

Now let me ask you about fresh vegetables and other produce. I'll ask about frozen stuff later.

[11]	Y	?	N	FRESH VEGETABLES 1
A	☐	☐	☒	carrots (mini, full size, peeled, shredded, etc.)
B	☐	☐	☒	celery
C	☐	☐	☒	cucumbers
D	☒	☐	☐	broccoli Wal-Mart
E	☐	☐	☒	cauliflower
F	☐	☐	☒	bell peppers (green, red, yellow, orange)
G	☐	☐	☒	other fresh peppers (chilis, jalapeños) (*specify*) _____
H	☐	☐	☒	asparagus
I	☐	☐	☒	snow peas (eaten in pod)
J	☐	☐	☒	other fresh peas (*specify*) _____
K	☐	☐	☒	fresh beans
L	☐	☐	☒	zucchini or other "soft" squash
M	☐	☐	☒	any "hard" squash (pumpkin, acorn, butternut, etc.)
N	☐	☐	☒	fresh potatoes
O	☐	☐	☒	yams or sweet potatoes
P	☐	☐	☒	any commercial fresh tomatoes eaten raw at home or away from home (including on sandwiches)
				if yes, specify Q ☐ cherry R ☐ grape S ☐ Roma T ☐ other (e.g., beefsteak) U ☐ sold on vine

Provide details (brands, packaging, dates, times) for those items checked above.

[12]	Y	?	N	FRESH VEGETABLES 2
A	☐	☐	☒	white or yellow onions
B	☐	☐	☒	green onions (scallions)
C	☐	☐	☒	commercially made guacamole mix
D	☐	☐	☒	fresh avocados or other avocado products
E	☐	☐	☒	cabbage
F	☐	☐	☒	bean sprouts, including in meals (e.g., stir-fry, etc.)
G	☐	☐	☒	alfalfa sprouts
H	☐	☐	☒	any other sprouts (clover, mixed, broccoli, daikon radish, ...)
I	☐	☐	☒	handle any sprouts, even if you didn't eat them
J	☒	☐	☐	any lettuce or other greens *if yes*, type: head of iceberg brand: Wal-Mart
K	☐	☐	☒	anything from a salad bar
L	☐	☐	☒	fresh basil or pesto (at home or away)
M	☐	☐	☒	fresh parsley (regular or Italian)
N	☐	☐	☒	fresh cilantro
O	☐	☐	☒	any fresh vegetable juice

Provide details (brands, packaging, dates, times) for those items checked above.

[13]	Y	?	N	FRESH FRUIT 1 *(Eaten alone or in a fruit salad; Not canned, frozen, dried, or cooked)*
A	☐	☐	☒	apples
B	☐	☐	☒	pears
C	☐	☐	☒	peaches
D	☐	☐	☒	nectarines
E	☐	☐	☒	apricots
F	☐	☐	☒	plums
G	☐	☐	☒	oranges
H	☐	☐	☒	tangerines
I	☐	☐	☒	grapefruit
J	☐	☐	☒	fresh lemon or lime (including any garnishes in drinks)
K	☐	☐	☒	other citrus fruit (*specify*)
L	☐	☐	☒	any raw or unpasteurized fruit juice
M	☒	☐	☐	strawberries Wal-Mart
N	☐	☐	☒	raspberries
O	☐	☐	☒	blueberries
P	☐	☐	☒	blackberries
Q	☐	☐	☒	cranberries
R	☐	☐	☒	other fresh berries (*specify*)
S	☐	☐	☒	cherries
T	☐	☐	☒	grapes (green, red, ...)
U	☒	☐	☐	bananas Wal-Mart

[14]	Y	?	N	FRESH FRUIT 2 *(Eaten alone or in a fruit salad; Not canned, frozen, dried, or cooked)*
A	☐	☐	☒	cantaloupe
B	☐	☐	☒	honeydew
C	☐	☐	☒	watermelon
D	☐	☐	☒	any other kind of melon (*specify*)
E	☐	☐	☒	any pre-mixed cut melon or melon salad
F	☐	☐	☒	kiwi
G	☐	☐	☒	pineapple
H	☐	☐	☒	mango
I	☐	☐	☒	papaya, guava, or pomegranate
J	☐	☐	☒	other "exotic" fruits (*specify*)

Provide details (brands, packaging, dates, times) for those items checked above.

[14]Y	?	N	PREMIXED, DRIED FOODS, NUTS
K ☐	☐	☒	whole peanuts (specify shelled or in-shell)
L ☒	☐	☐	peanut butter (specify brands) Jif Creamy
M ☐	☐	☒	almonds (e.g., whole, pre-chopped, sliced, almond-dusted pastries or candies, etc.)
N ☐	☐	☒	walnuts
O ☐	☐	☒	cashews
P ☐	☐	☒	pistachios
Q ☐	☐	☒	hazelnuts (filberts)
R ☐	☐	☒	any other (whole, pre-chopped, sliced) nuts or mixed nuts
S ☐	☐	☒	any ground nut paste or spread other than peanut butter (e.g., almond butter)
T ☐	☐	☒	sunflower seeds
U ☐	☐	☒	sesame seeds
V ☐	☐	☒	tahini, halva, or other sesame products
W ☐	☐	☒	hummus or baba ghanuj

Provide details (brands, packaging, dates, times) for those items checked above.

Finally, I'll ask a few questions about some miscellaneous items and frozen foods you may have eaten in the 7 days before you got sick.

[15]Y	?	N	MISCELLANY 1
A ☐	☐	☒	raisins
B ☐	☐	☒	any other commercial dried fruit (*specify*)
C ☒	☐	☐	any pre-made pudding or custard (not a mix) Jello pudding cups - Wal-Mart
D ☐	☐	☒	applesauce
E ☒	☐	☐	other packaged snack food and treats (e.g., Pirate's Booty) (*specify*) Candy (gummy worms, M+Ms, Reese's cups,
F ☐	☐	☒	salsa
G ☐	☐	☒	any other kind of store-bought, packaged sauce or dip (*specify*)
H ☐	☐	☒	flavored oils
I ☒	☐	☐	taco shells - Taco Bell
J ☒	☐	☐	tortillas - Aztec - Wal-Mart
K ☐	☐	☒	bulk chocolate (not commercially wrapped bars or candy)
L ☐	☐	☒	tofu
M ☐	☐	☒	olives
N ☐	☐	☒	flavored milk powder (e.g., chocolate)
O ☐	☐	☒	liquid baby formula
P ☐	☐	☒	powdered baby formula
Q ☐	☐	☒	store-bought puréed baby food (e.g., Gerbers)
R ☐	☐	☒	any other foods specifically marketed for babies or popular with babies (*specify*)
S ☐	☐	☒	any spices bought in bulk or at ethnic specialty markets (e.g., from a bin or in a plastic pouch, Indian groceries, etc.)
T ☒	☐	☐	any spices at home first opened in the 2 weeks before illness onset MRS. Dash

[16]Y	?	N	MISCELLANY 2
A ☐	☐	☒	any "cold" breakfast cereals (e.g., Cheerios, Raisin Bran, ...)
B ☒	☐	☐	hot breakfast cereals (oatmeal, Malt-o-Meal, etc.) oats - Wal-Mart
C ☐	☐	☒	trail mix
D ☐	☐	☒	granola (loose, cereal type)
E ☐	☐	☒	granola bars, power bars, Clif bar, Luna bar, ...
F ☐	☐	☒	tabouleh
G ☐	☐	☒	garbanzos (chickpeas), falafel
H ☐	☐	☒	soybeans
I ☒	☐	☐	fruit roll-ups, fruit leather, or similar - Wal-Mart
J ☐	☐	☒	fruit "smoothies" ☐ homemade ☐ commercial
K ☐	☐	☒	any non-frozen special diet meals (e.g., Weight Watchers, etc.)
L ☐	☐	☒	commercial bottled water in large, multi-user tanks or carboys
M ☐	☐	☒	any other bottled water in personal size containers

Provide details (brands, packaging, dates, times) for those items checked above.

[17]	Y	?	N	FROZEN FOODS
A	☐	☐	☒	frozen "TV" dinners or boxed entrees
B	☐	☐	☒	pot pies
C	☐	☐	☒	frozen pre-mixed meals in bag (e.g., stir-fry mix, etc.)
D	☐	☐	☒	frozen vegetables in a box (spinach, peas, corn, ...)
E	☐	☐	☒	frozen vegetables in a bag (spinach, peas, corn, ...)
F	☐	☐	☒	frozen snack foods (e.g., mozzarella sticks, jalapeño poppers, potato skins)
G	☐	☐	☒	frozen berries
H	☐	☐	☒	frozen fruit
I	☐	☐	☒	frozen vegetarian stuff (e.g., Gardenburgers, Boca burgers, Morningstar stuff)
J	☐	☐	☒	frozen fish
K	☐	☐	☒	frozen fish products (filets, fish sticks, nuggets)
L	☐	☐	☒	other frozen seafood
M	☒	☐	☐	frozen chicken strips or nuggets (at home) Wal-Mart, Tyson
N	☐	☐	☒	any other frozen chicken products
O	☐	☐	☒	any frozen cook-and-serve chicken or poultry products (e.g., chicken Kiev dinners, chicken cordon bleu, etc.)
P	☐	☐	☒	frozen pizza
Q	☐	☐	☒	frozen Mexican-style items (burritos, taquitos, etc.)
R	☐	☐	☒	frozen shrimp, frog legs, lobster, crab, other seafood
S	☐	☐	☒	frozen diet meals of any kind

Provide details (brands, packaging, dates, times) for those items checked above.

Summary of Follow-Up

- ☐ **Exclude from sensitive occupations (HCW, food, daycare) or situations until 2 negative stools**
- ☐ **Culture close contacts in sensitive occupations (HCW, food, daycare) or situations (daycare) regardless of symptom**
- ☐ **Initiate traceback investigation**
- ☐ **Hygiene education provided**
- ☐ **Restaurant inspection**
- ☐ **Daycare inspection**
- ☐ **Investigation of raw milk/dairy**
- ☐ **Other** _____

Alternate Contact Information

Last Name: _____ **First:** Mary **Relationship:** ☒ Parent ☐ Spouse ☐ Household Member ☐ Friend ☐ Other (_____)

Phone Number: _____

Comments

_____ has a brother. They both ate at McDonald's, but the brother did not become ill. The brother did not have chicken nuggets.

Believe it or not, that's the end of the questionnaire. Thank you very much for your time. These interviews are extremely valuable in helping us solve the mystery of why people are getting sick. Depending on what we find out when we put these interviews together, we may need to follow up about a few details.

Patient's Name (Last) (First) (M.I.)

Street Address (ZIP CODE)

CDC SAFER · HEALTHIER · PEOPLE™

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES-
FORM APPROVED OMB NO. 0920-0026 Exp. Date 05/31/2011

REPORT OF VERIFIED CASE OF TUBERCULOSIS

1. Date Reported

Month 11 Day 01 Year 2010

2. Date Submitted

Month 11 Day 02 Year 2010

3. Case Numbers

	Year Reported (YYYY)	State Code	Locally Assigned Identification Number	Reason:
State Case Number	2010	TN		
City/County Case Number	2010	TN		
Linking State Case Number				
Linking State Case Number				

4. Reporting Address for Case Counting

City

Within City Limits *(select one)* ☐ Yes ☐ No

County

ZIP CODE —

5. Count Status *(select one)*

Countable TB Case

☐ Count as a TB case

Noncountable TB Case

☐ Verified Case: Counted by another U.S. area (e.g., county, state)

☐ Verified Case: TB treatment initiated in another country *Specify*_____

☐ Verified Case: Recurrent TB within 12 months after completion of therapy

6. Date Counted

Month Day Year

7. Previous Diagnosis of TB Disease *(select one)*

☐ Yes ☒ No

If YES, enter year of previous TB disease diagnosis:

8. Date of Birth

Month 10 Day 10 Year 1951

9. Sex at Birth *(select one)*

☐ Male ☐ Female

10. Ethnicity *(select one)*

☐ Hispanic or Latino

☒ Not Hispanic or Latino

11. Race *(select one or more)*

☐ American Indian or Alaska Native

☐ Asian: *Specify*_____

☒ Black or African American

☐ Native Hawaiian or Other Pacific Islander: *Specify*_____

☐ White

12. Country of Birth

"U.S.-born" (or born abroad to a parent who was a U.S. citizen) *(select one)* ☒ Yes ☐ No

Country of birth: *Specify* UNITED STATES

13. Month-Year Arrived in U.S.

Month Year

14. Pediatric TB Patients (<15 years old)

Country of Birth for Primary Guardian(s): *Specify*

Guardian 1_____

Guardian 2_____

Patient lived outside U.S. for >2 months? *(select one)* ☐ Yes ☐ No ☐ Unknown

If YES, list countries, *specify*:

15. Status at TB Diagnosis *(select one)*

☒ Alive ☐ Dead

If DEAD, enter date of death: Month Day Year

If DEAD, was TB a cause of death? *(select one)*

☐ Yes ☐ No ☐ Unknown

16. Site of TB Disease *(select all that apply)*

☒ Pulmonary

☐ Pleural

☐ Lymphatic: Cervical

☐ Lymphatic: Intrathoracic

☐ Lymphatic: Axillary

☐ Lymphatic: Other

☐ Lymphatic: Unknown

☐ Laryngeal

☐ Bone and/or Joint

☐ Genitourinary

☐ Meningeal

☐ Peritoneal

☐ Site not stated

☐ Other: Enter anatomic site(s):

Public reporting burden of this collection of information is estimated to average 35 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC, Project Clearance Officer, 1600 Clifton Road, MS D-74, Atlanta, GA 30333, ATTN: PRA (0920-0026). Do not send the completed form to this address.

Information contained on this form which would permit identification of any individual has been collected with a guarantee that it will be held in strict confidence, will be used only for surveillance purposes, and will not be disclosed or released without the consent of the individual in accordance with Section 308(d) of the Public Health Service Act (42 U.S.C. 242m).

REPORT OF VERIFIED CASE OF TUBERCULOSIS

17. Sputum Smear *(select one)*

[X] Positive [ ] Not Done
[ ] Negative [ ] Unknown

Date Collected: Month 09 Day 16 Year 2010

18. Sputum Culture *(select one)*

[X] Positive [ ] Not Done
[ ] Negative [ ] Unknown

Date Collected: Month 09 Day 16 Year 2010

Date Result Reported: Month 11 Day 05 Year 2010

Reporting Laboratory Type *(select one)*: [X] Public Health Laboratory [ ] Commercial Laboratory [ ] Other

19. Smear/Pathology/Cytology of Tissue and Other Body Fluids *(select one)* Enter anatomic site: Bronchial fluid

[X] Positive [ ] Not Done
[ ] Negative [ ] Unknown

Date Collected: Month 09 Day 16 Year 2010

Type of exam *(select all that apply)*: [X] Smear [ ] Pathology/Cytology

20. Culture of Tissue and Other Body Fluids *(select one)* Enter anatomic site: Bronchial fluid

[X] Positive [ ] Not Done
[ ] Negative [ ] Unknown

Date Collected: Month 09 Day 16 Year 2010

Date Result Reported: Month 11 Day 10 Year 2010

Reporting Laboratory Type *(select one)*: [X] Public Health Laboratory [ ] Commercial Laboratory [ ] Other

21. Nucleic Acid Amplification Test Result *(select one)*

[X] Positive [ ] Not Done
[ ] Negative [ ] Unknown
[ ] Indeterminate

Date Collected: Month 09 Day 16 Year 2010

Date Result Reported: Month 09 Day 18 Year 2010

Enter specimen type: [X] Sputum
OR
If not Sputum, enter anatomic site:

Reporting Laboratory Type *(select one)*: [X] Public Health Laboratory [ ] Commercial Laboratory [ ] Other

Initial Chest Radiograph and Other Chest Imaging Study

22A. Initial Chest Radiograph *(select one)*

[ ] Normal [X] Abnormal* (consistent with TB) [ ] Not Done [ ] Unknown

* For ABNORMAL Initial Chest Radiograph: Evidence of a cavity *(select one)*: [X] Yes [ ] No [ ] Unknown
Evidence of miliary TB *(select one)*: [ ] Yes [X] No [ ] Unknown

22B. Initial Chest CT Scan or Other Chest Imaging Study *(select one)*

[ ] Normal [X] Abnormal* (consistent with TB) [ ] Not Done [ ] Unknown

* For ABNORMAL Initial Chest Radiograph: Evidence of a cavity *(select one)*: [X] Yes [ ] No [ ] Unknown
Evidence of miliary TB *(select one)*: [ ] Yes [X] No [ ] Unknown

23. Tuberculin (Mantoux) Skin Test at Diagnosis *(select one)*

[X] Positive [ ] Not Done
[ ] Negative [ ] Unknown

Date Tuberculin Skin Test (TST) Placed: Month 09 Day 16 Year 2010

Millimeters (mm) of induration: 24

24. Interferon Gamma Release Assay for *Mycobacterium tuberculosis* at Diagnosis *(select one)*

[ ] Positive [X] Not Done
[ ] Negative [ ] Unknown
[ ] Indeterminate

Date Collected: Month Day Year

Test type:
*Specify*_____

25. Primary Reason Evaluated for TB Disease *(select one)*

[X] TB Symptoms
[ ] Abnormal Chest Radiograph (consistent with TB)
[ ] Contact Investigation
[ ] Targeted Testing
[ ] Health Care Worker
[ ] Employment/Administrative Testing
[ ] Immigration Medical Exam
[ ] Incidental Lab Result
[ ] Unknown

REPORT OF VERIFIED CASE OF TUBERCULOSIS

26. HIV Status at Time of Diagnosis *(select one)*

☒ Negative ☐ Indeterminate ☐ Not Offered ☐ Unknown
☐ Positive ☐ Refused ☐ Test Done, Results Unknown

If POSITIVE, enter:
State HIV/AIDS Patient Number: ☐☐☐☐☐☐☐☐☐☐ City/County HIV/AIDS Patient Number: ☐☐☐☐☐☐☐☐☐☐

27. Homeless Within Past Year *(select one)*

☐ No ☒ Yes ☐ Unknown

28. Resident of Correctional Facility at Time of Diagnosis *(select one)* ☒ No ☐ Yes ☐ Unknown

If YES, *(select one)*:
☐ Federal Prison ☐ Local Jail ☐ Other Correctional Facility
☐ State Prison ☐ Juvenile Correction Facility ☐ Unknown

If YES, under custody of Immigration and Customs Enforcement? *(select one)*
☐ No ☐ Yes

29. Resident of Long-Term Care Facility at Time of Diagnosis *(select one)* ☒ No ☐ Yes ☐ Unknown

If YES, *(select one)*:
☐ Nursing Home ☐ Residential Facility ☐ Alcohol or Drug Treatment Facility ☐ Unknown
☐ Hospital-Based Facility ☐ Mental Health Residential Facility ☐ Other Long-Term Care Facility

30. Primary Occupation Within the Past Year *(select one)*

☐ Health Care Worker ☐ Migrant/Seasonal Worker ☐ Retired ☐ Not Seeking Employment (e.g. student, homemaker, disabled person)
☐ Correctional Facility Employee ☐ Other Occupation ☒ Unemployed ☐ Unknown

31. Injecting Drug Use Within Past Year *(select one)*
☒ No ☐ Yes ☐ Unknown

32. Non-Injecting Drug Use Within Past Year *(select one)*
☐ No ☒ Yes ☐ Unknown

33. Excess Alcohol Use Within Past Year *(select one)*
☐ No ☒ Yes ☐ Unknown

34. Additional TB Risk Factors *(select all that apply)*

☐ Contact of MDR-TB Patient (2 years or less) ☐ Incomplete LTBI Therapy ☒ Diabetes Mellitus ☐ Other *Specify* _____
☐ Contact of Infectious TB Patient (2 years or less) ☐ TNF-α Antagonist Therapy ☐ End-Stage Renal Disease ☐ None
☐ Missed Contact (2 years or less) ☐ Post-organ Transplantation ☐ Immunosuppression (not HIV/AIDS)

35. Immigration Status at First Entry to the U.S. *(select one)*

☒ Not Applicable
- "U.S.-born" (or born abroad to a parent who was a U.S. citizen)
- Born in 1 of the U.S. Territories, U.S. Island Areas, or U.S. Outlying Areas

☐ Immigrant Visa ☐ Tourist Visa ☐ Asylee or Parolee
☐ Student Visa ☐ Family/Fiancé Visa ☐ Other Immigration Status
☐ Employment Visa ☐ Refugee ☐ Unknown

36. Date Therapy Started

Month	Day	Year
09	18	2010

37. Initial Drug Regimen *(select one option for each drug)*

	No	Yes	Unk		No	Yes	Unk		No	Yes	Unk
Isoniazid		☒		Ethionamide	☒			Moxifloxacin	☒		
Rifampin		☒		Amikacin	☒			Cycloserine	☒		
Pyrazinamide		☒		Kanamycin	☒			Para-Amino Salicylic Acid	☒		
Ethambutol		☒		Capreomycin	☒			Other	☒		
Streptomycin	☒			Ciprofloxacin	☒			*Specify* _____			
Rifabutin	☒			Levofloxacin	☒			Other			
Rifapentine	☒			Ofloxacin	☒			*Specify* _____			

Comments:

Appendix 1: Individual Program Area NBS Rules

- Environmental Epidemiology…….....……A1.2
- FoodNet……A1.10
- Tuberculosis……..A1.40
- Vector-borne and Zoonotic Diseases (VBD_Zoo)…….A1.125
- Vaccine Preventable Disease (VPD) ……...A1.160
- Hepatitis……...A1.166

Environmental Epidemiology

Morbidities Include:

- Carbon Monoxide Poisoning

Carbon Monoxide Poisoning

Carbon Monoxide Poisoning Surveillance

Carbon monoxide poisoning surveillance was established to collate a more comprehensive description of the burden of CO exposure in the state of Tennessee and to assist in the development of targeted health communications.

Primary case finding is conducted from Poison Control Center (PCC) reports. The Council of State and Territorial Epidemiologists reports that CO surveillance based on case information from PCC has value for situational awareness and for retrospective analyses.

Additional case reports are obtained from hospital emergency departments (EDs), including hospital laboratory findings of elevated carboxyhemoglobin (COHb) test results.

Reporting Carbon Monoxide Poisoning

A diagnosis of carbon monoxide (CO) poisoning, with or without laboratory confirmation of elevated venous carboxyhemoglobin (COHb) levels, is reportable to the Tennessee Department of Health.

Clinical Description

The clinical presentation of acute CO poisoning varies depending on the duration and magnitude of exposure and between individuals with the same degree of exposure or the same venous COHb level. The most common signs and symptoms include headache, nausea, fatigue, weakness, abdominal discomfort/pain, confusion, and dizziness. Other signs and symptoms may include visual disturbances like blurred vision, numbness and tingling, ataxia, irritability, agitation, chest pain, shortness of breath, palpitations, seizures, and loss of consciousness.

Criteria for Diagnosis

Biologic: elevated COHb concentration in blood. Elevated levels of COHb should be interpreted considering endogenous production, patient smoking status, and exposures to secondhand smoke.

OR

Environmental: detection of CO from environmental monitoring data as provided by first responders (e.g. Fire Department, Hazmat), environmental consultants, or other reliable sources.

Any of the following are sufficient for reporting to TDH:

- Medical Records, clinical reports, or Poison Center Records of signs or symptoms consistent with CO poisoning
- Hospital record containing a coded diagnosis of CO (ICD-9-CM 986, ICD-10-CM code T58.x), or cause of injury code E868.2, E868.3, E868.9, E982.0, E982.1, E952.0, E952.1.
- Poison Center Reports of CO exposure with health effects
- Laboratory findings of elevated COHb levels, as interpreted by a clinician

Case Classification

Confirmed:

- ☐ A carboxyhemoglobin level, as measured by a blood sample, of >=5% in non-smokers

-*OR*-

- ☐ A carboxyhemoglobin level, as measured by a blood sample of >=12% in smokers or for whom smoking status is unknown.

-*OR*-

- ☐ In the absence of laboratory confirmation of an elevated COHb level, signs or symptoms consistent with acute carbon monoxide poisoning, *AND*
    - A positive environmental exposure* consistent with CO poisoning.

-*OR*-

- ☐ A Poison Control Center (PCC) report with "exposure" recorded as the type of call, when the exposure substance was carbon monoxide, *AND*
    - A minor, moderate or major medical effect or death was reported, *AND*
    - A positive environmental exposure* consistent with CO poisoning was indicated in the case notes.

-*OR*-

- ☐ A medical care record for CO poisoning in which the Nature of Injury code N-986 "Toxic effect of CO" is listed anywhere in the record.

-*OR*-

- ☐ A medical care record in which an External Cause of Injury code (E-code), indicating exposure to carbon monoxide (exclusively) is listed anywhere in the record, i.e., E868.3, E868.8, E868.9, E952.1, or E982.1. [Note: ICD codes are listed in Appendix 1]

-*OR*-

- ☐ A mortality record or a medical care record in which T58, Toxic Effect of Carbon Monoxide, is listed anywhere in the record.

Probable:

- ☐ A carboxyhemoglobin level, as measured by a blood sample, that is 9%<=COHb< 12% in smokers or for those whom smoking status is unknown.

-*OR*-

- ☐ A carboxyhemoglobin level, as measured by a pulse co-oximeter of >=12%.

-*OR*-

- ☐ In the absence of environmental monitoring† data, a report of a patient with signs or symptoms consistent with acute CO poisoning, *AND*

- A concurrent environmental exposure* as that of a confirmed CO poisoning case.

-*OR*-

- ☐ Loss of consciousness or death without alternative explanation, *AND*
  - Exposure to a source of CO.

-*OR*-

- ☐ A report of a patient with an environmental exposure* consistent with CO poisoning.

-*OR*-

- ☐ A PCC report with "exposure" recorded as the type of call, when the exposure substance was carbon monoxide, *AND*
  - A moderate or major medical outcome or death was reported.

-*OR*-

- ☐ A medical care record in which an E-code indicating acute carbon monoxide poisoning inferred from motor vehicle exhaust gas exposure is listed anywhere in the record, i.e., E868.2, E952.0, or E982.0. [Note: ICD codes are listed in Appendix 1]

Suspect:

- ☐ A carboxyhemoglobin level, as measured by a pulse co-oximeter, that is 9%<=COHb< 12%.

-*OR*-

- ☐ In the absence of laboratory confirmation of an elevated COHb, a report of a patient with non-specific symptoms (headache, dizziness, and/or fatigue/weakness), *AND*
  - Environmental monitoring† consistent with an exposure to CO, *OR*
  - Exposure to a source of CO.

-*OR*-

- ☐ In the absence of an N-986 code:
  - A medical care record in which an E-code that mentions CO exposure as a cause of illness is listed anywhere in the record (E818.0-.9, E825.0-.9, E844.0-.9, E867, E868.0, E868.1, E890.2, E891.2), *OR*
  - A medical care record in which an E-Code where carbon monoxide exposure is plausible is listed (E838.0-.9, E869.9, E951.0, E951.1, E951.8, E952.9, E962.2, E962.9, E968.0, E981.0, E981.1, E981.8, E988.1). [Note: ICD codes are listed in Appendix 1]

-*OR*-

- ☐ In the absence of T58 code, a mortality record in which a code that mentions CO exposure as a cause of illness, is listed anywhere in the record (X47, X67, Y17).

-*OR*-

- ☐ A PCC report with "exposure" recorded as the type of call, when the exposure substance was carbon monoxide, *AND*
    - A minor medical outcome was reported.

*Environmental exposure: Environmental exposure consistent with CO poisoning is defined as having a quantified indoor air concentration measurement of CO, and a known duration of exposure which is consistent with CO poisoning. For example, an exposure to 100 ppm of CO for approximately 100 minutes to achieve a COHb level of at least 5.0%.

†Environmental monitoring: Environmental monitoring evidence is defined as documentation of a CO detector that alarmed or documentation of an unquantified elevated level of CO (e.g., fire department notation).

Process: Reporting carbon monoxide poisoning

Procedure: All cases (suspected or confirmed) are reportable to the Health Department. Data are compiled by the Environmental Epidemiology program staff in the Central Office. Cases are allocated for investigation based on the data provided in the initial report. Data collected for every investigation are entered into NBS.

Methods: Paper reports of carbon monoxide poisoning should be sent to the Central Office. Carbon monoxide poisoning is not reported electronically. Carbon monoxide poisoning investigations will be promptly entered into NBS by Central Office Environmental Epidemiology Program Staff. Case data will be aggregated on a to-be-determined basis and disseminated to the regional health departments.

Carbon Monoxide (CO) Poisoning is a Category 2 reportable event requiring written report within one week. To maintain reporting continuity and rapport with providers, PH-1600 forms may be sent to the local, regional, or state health department. If you receive a CO report, please forward the PH-1600 and any other applicable medical records or patient information to the Central Office Environmental Epidemiology Program Staff.

Environmental Epidemiology Program Contacts:

Phone: (615) 741-7247 or 1-800-404-3006

Fax: (615) 741-3857

Email: NTSIP.health@tn.gov

Sutapa Mukhopadhyay, National Toxic Substance Incidents Program Coordinator

David Borowski, Assistant Director, Environmental Epidemiology Program

Craig A. Shepherd, Director, Environmental Epidemiology and EHS-Net Programs

Laboratory Observations

The laboratory test to confirm carbon monoxide poisoning measures the patient's carboxyhemoglobin (COHb) level. Carbon monoxide levels can be tested either in whole blood or exhaled air.

It is important to know how much time has elapsed since the patient left the toxic environment, because the elapsed time from exposure to measurement impacts the resulting COHb level. If the patient has been breathing normal room air for several hours, COHb testing may be less useful.

Most hospitals use a COHb reference range of <1.5% for non-smokers and 1.5 – 5.0% COHb level for smokers to support a diagnosis of CO poisoning. For the purpose of 2013 case reporting and to best describe the magnitude of carbon monoxide poisoning in the state, any clinical interpretation of a COHb level as "elevated" should be reported. These laboratory findings are not reported by laboratories and not accepted as Electronic Laboratory Result Reporting (ELR). Laboratory findings will be entered in NBS investigations as a field variable.

Testing is not available at the State of Tennessee Division of Laboratory Services.

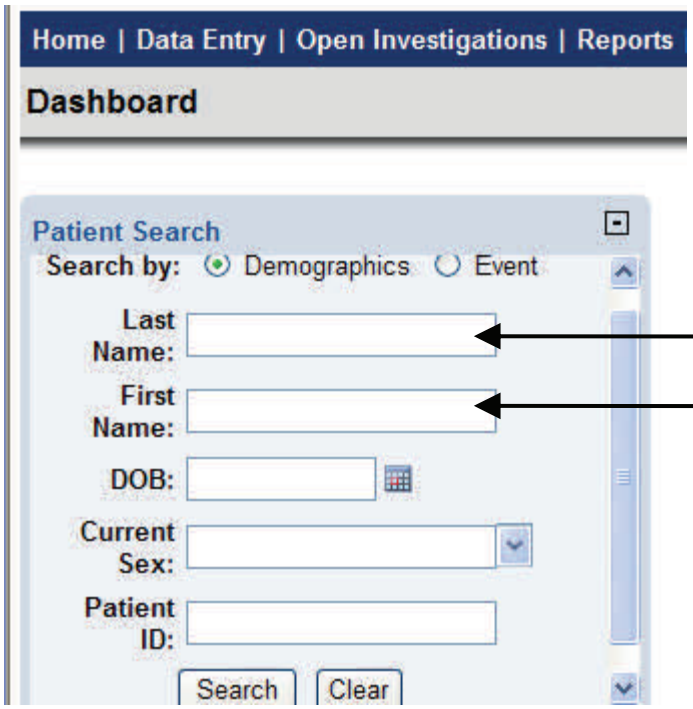
FoodNet

Morbidities Include:

- Campylobacteriosis (including EIA or PCR positive stools)
- Cholera (*Vibrio cholerae*)
- Cryptosporidiosis (*Cryptosporidium* species)
- Cyclosporiasis (*Cyclospora* species)
- Hemolytic Uremic Syndrome (HUS)
- Listeriosis (*Listeria* species)
- Salmonellosis: Other than S. Typhi (*Salmonella* species)
- Salmonellosis: Typhoid fever (*Salmonella typhi*)
- Shiga-toxin producing *Escherichia coli* (including Shiga-like toxin positive stools, *E. coli* O157 and *E. coli* non-O157)
- Shigellosis (*Shigella* species)
- Vibriosis (non-cholera *Vibrio* species infections)
- Yersiniosis (*Yersinia* species)

Searching for cases

Step 1



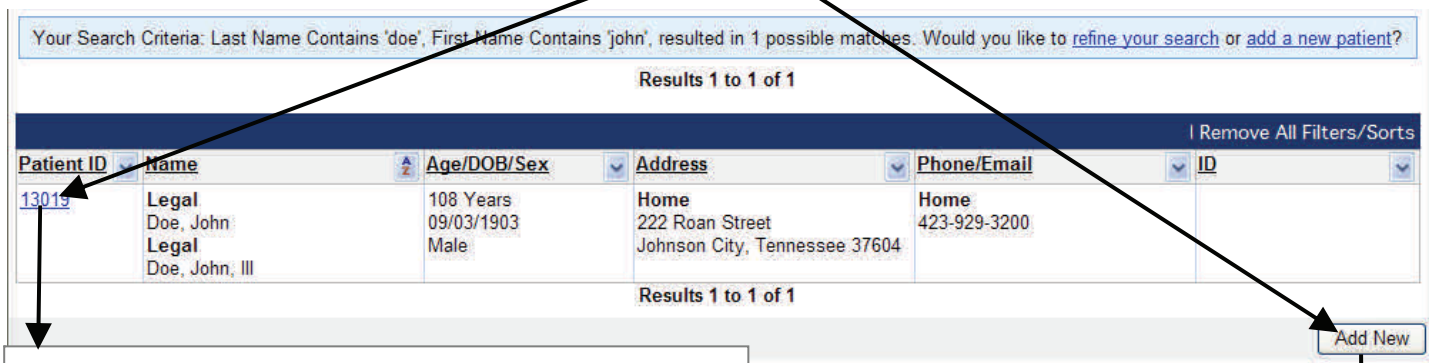
Type in patient last name and part of first name **or** DOB then click "search"

Step 2

Result of Search – Is this the correct person?

YES

NO



1)Click on "*Patient ID*" if this is the correct person
2)Skip step 3
3)Proceed to **step 4**

After clicking "*Add New*" , complete the demographics section (step 3)

Entering Demographics

Step 3

*complete the following information

Submit | Cancel | Add Extended Data

Basic Demographic Data

Collapse Subsections

General Information

* Information As of Date: 03/02/2012

Comments:

Name Information

*Last Name: doe

* First Name: jon

Middle Name:

Suffix:

Other Personal Details

* DOB:

Current Age:

*Current Sex:

*Is the patient deceased?

Date of Death:

Marital Status:

Address

*Street Address 1:

*Street Address 2:

* City:

* State: Tennessee

* Zip:

*County:

Country: United States

Telephone

*Home Phone:

Work Phone: (Enter if available)

Work Phone Ext:

Cell Phone: (Enter if available)

Email:

Ethnicity and Race Information

* Ethnicity:

* Race:
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ White
- ☐ Unknown

* Submit | Cancel | Add Extended Data

Adding a lab report

Step 4

Click on "Events" Tab

John Doe | Male | 09/03/1903 (108 Years) Patient ID: 13019

Summary | Events | Demographics

Expand All | Collapse All

Patient Summary

Go to: Patient Summary | Open Investigations | Documents Requiring Review

Patient Summary — Back To Top

Address (Home)
222 Roan Street
Johnson City, Tennessee 37604
Washington County

Home
423-929-3200

No ID Info Available

Race
Multi Race
Ethnicity
Not Hispanic or Latino

Open Investigations (0) — Back To Top

Documents Requiring Review (0) — Back To Top

Previous Next

Summary | Events | Demographics

Print

Step 5

Click "Add New" to add new lab report

Patient Events History

Go to: Investigations | Lab Reports | Mobidity Reports | Vaccinations | Treatments | Case Reports | Contact Records

Investigations (0) — Add New — Back To Top

Lab Reports (1) — Add New — Back To Top

Date Received	Provider/Reporting Facility	Date Collected	Test Results	Associated With	Event ID
11/04/2010 8:33 AM	**Reporting Facility:** Vanderbilt University Medical Center	10/10/2010	• **SALMONELLA SP IDENTIFIED:** Salmonella Species		OBS10118031TN01

Morbidity Reports (0) — Add New — Back To Top

Vaccinations (0) — Add New — Back To Top

Treatments (0) — Back To Top

Case Reports (0) — Back To Top

Contact Records (0) — Back To Top

Previous Next

Summary | Events | Demographics

Print

Step 6 Entering a Lab

Click on search and type in facility name

Facility and Provider Information

Search | Clear | TDOH | Code Lookup

*Reporting Facility: TENNESSEE DEPARTMENT OF HEALTH LAB
630 HART LANE
NASHVILLE,Tennessee 37247-0801

Search | Clear | Code Lookup

*Ordering Facility: There is no Ordering Facility selected.

☐ Same as Reporting Facility

Search | Clear | Code Lookup

*Ordering Provider: There is no Ordering Provider selected.

Choose jurisdiction according to patient's address OR address of local ordering provider or facility.

*Program Area: General Communicable Disease

*Jurisdiction: Northeast Region

☑ Share record with Guests for this Prog

Enter the date the lab report was generated by the lab

*Lab Report Date: mm/dd/yyyy

*Date Received by Public Health: 01/24/2012 mm/dd/yyyy

Enter the date stamped on the paper lab

Ordered Test:

If state lab result - enter accession number

*Accession Number: N12E000075

*Specimen Source: Stool = Fecal

Specimen Site:

*Date Specimen Collected: 12/30/2011 mm/dd/yyyy

Patient Status at Specimen Collection:

Choose the appropriate *resulted test* from the following choices:

Campylobacter (see the "Disease-Specific NEDSS Data Entry Guide" for instructions)

Cryptosporidium (see the "Disease-Specific NEDSS Data Entry Guide" for instructions)

Cyclospora Identified

Escherichia Coli (see the "Disease-Specific NEDSS Data Entry Guide" for instructions)

Listeria SP Identified

Salmonella SP Identified

Shigella SP Identified

Vibrio SP Identified

Yersinia Identified

Test Result(s) Back to T

Resulted Test | Result(s)

*Resulted Test: SALMONELLA SP IDENTIFIED | Search | Clear

*Organism: Salmonella Bareilly | Search | Clear

If you know the serotype enter here! If not, simply choose *species*

(e.g. "salmonella species")

If serotype not found in organism drop-down box click "search" to find correct serotype

Numeric Result:

Text Result:

Reference Range: to:

Result Status:

Result Comments:

Enter any serotypes that can not be found through the "search" here

Susceptibility Test?

Track Isolate?

*Add Test Result

Click on "Add Test Result"

Click on "submit"

*Submit Cancel

Disease-Specific NEDSS Data Entry Guide

Campylobacter

Diagnosis	Examples from paper lab reports	Resulted Test (Lab- NEDSS)	Organism (Lab- NEDSS)	Coded Result (Lab- NEDSS)
Culture-confirmed as *Campylobacter* (by ANY lab)	Campylobacter species Campylobacter jejuni	CAMPYLOBACTER SP IDENTIFIED	Enter serotype *(e.g.Campylobacter jejuni) If no species noted, enter: Campylobacter species*	leave blank
Campylobacter specimens that have NOT been culture-confirmed (without species level results*)	Campylobacter detected by EIA Campylobacter detected by PCR	Campylobacter test, EIA or immunoassay Campylobacter test, PCR	no organism requested	positive, negative, indeterminate

*For those PCR laboratory results with serotype/species level data, see the laboratory-specific data entry guide at the end.

If there is a culture-confirmed lab report associated with the investigation, then the case status should be “Confirmed”. If there are only positive results for non-culture test methods (i.e. EIA or PCR) associated with the investigation, then the case should be marked as “Probable”. Those persons without any positive laboratory results, but epi-linked to a confirmed case, should also be marked as “Probable”.

For Campylobacteriosis, there are also additional FoodNet questions that must be answered in the investigation under “Other Clinical Data”.

- Was the isolate identified as Campylobacter?
  - Legal Values: Yes, No, Not Tested, Unknown
  - This question is asking whether or not the case is culture-confirmed. If no culture was performed on this case, then the answer would be “Not Tested”. If the case was culture positive, the answer would be “Yes”. If the case was culture negative, the answer would be “No”.
- What was the EIA result at clinical laboratory?
  - Legal Values: Positive, Negative, Indeterminate, Not Tested
  - This is the most common non-culture test method on the market.
- What was the PCR result at clinical laboratory?
  - Legal Values: Positive, Negative, Indeterminate, Not Tested
  - This would be marked “Positive” for any case with a positive PCR result. The PCR result could either say positive, negative or that a specific species was detected. Both Diatherix Laboratories and Medical Diagnostic Laboratories have the capability of testing by PCR to the species level.
- What was the species result at clinical laboratory?
  - Legal Values: Campylobacter jejuni, Campylobacter lari, Campylobacter coli, Campylobacter jejuni ssp jejuni, Campylobacter species, Not Tested, etc.
  - If a culture result has been entered into NBS or a PCR result that yielded a species (e.g., a DIATHERIX result), then a specific species should be selected. If the only result available was an EIA result, then this question should be marked as “Not Tested”.
- What was the EIA result at SPHL?
  - Legal Values: Positive, Negative, Indeterminate, Not Tested
  - SPHL stands for state public health lab. This will always be “Not Tested”, as our SPHL does not utilize the EIA test method.
- What was the PCR result at SPHL?
  - Legal Values: Positive, Negative, Indeterminate, Not Tested
  - For now, our SPHL does not use the PCR test method for Campylobacter. However, they do have the capacity to do so. Typically, this answer will be “Not Tested”. If the SPHL begins to use PCR to detect Campylobacter, we will let you know.
- What was the species result at SPHL?
  - Legal Values: Campylobacter jejuni, Campylobacter lari, Campylobacter coli, Campylobacter jejuni ssp jejuni, Campylobacter species, Not Tested, etc.
  - If a culture result has been entered into NBS or a PCR result that yielded a species (e.g., a DIATHERIX result), then a specific species should be selected. If the only result available was an EIA result, then this question should be marked as “Not Tested”.
- What was the PCR result at CDC?
  - Legal Values: Positive, Negative, Indeterminate, Not Tested
  - We very rarely receive test results from CDC for Campylobacter. Typically, this answer will be “Not Tested”.

Disease-Specific NEDSS Data Entry Guide

Shiga-toxin producing E. coli (STEC)

Diagnosis	Examples from paper lab reports	Resulted Test (Lab- NEDSS)	Organism (Lab- NEDSS)	Coded Result (Lab- NEDSS)
Culture-confirmed as *E. coli* O157 (by ANY lab)	*E. coli* O157 *E. coli* O157:H7 *E. coli* O157:non-motile	ESCHERICHIA COLI IDENTIFIED	Escherichia coli, serotype O157 Escherichia coli, serotype O157:H7 (organism) EHEC, serotype O157:non-motile	leave blank
Shiga-toxin positive stool specimens that have NOT been culture-confirmed as *E. coli* O157*	* Enterohemorrhagic *E. coli* EIA * Shiga toxins (including *E. coli*) EIA * Positive for shiga-like toxins STX 1 by EIA * *E. coli* O157 screen positive	E. coli shiga toxin test, EIA or immunoassay	no organism requested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Positive Negative Indeterminate
	Shiga toxins (including *E. coli*) by PCR	E. coli shiga toxin test, PCR	no organism requested	
STECs other than *E. coli* O157	*E. coli* O111, *E. coli* 045, *E. coli* O145, etc.	ESCHERICHIA COLI IDENTIFIED	Enter serotype *(e.g. Escherichia coli, serotype O111). If serotype unknown, enter:* Escherichia coli not O157	leave blank
	Shiga-toxin producing Escherichia coli non-O157:H7, positive by EIA, sent to CDC	ESCHERICHIA COLI IDENTIFIED E. coli shiga toxin test, EIA or immunoassay	Escherichia coli not O157 Leave blank	Leave blank Positive
Serology	This lab report would come from CDC.	Escherichia coli o157:H7 antigen	Leave blank	Positive

*For those PCR laboratory results with serotype/species level data, see the laboratory-specific data entry guide at the end.

If there is a culture-confirmed lab report associated with the investigation, then the case status should be “Confirmed”. If there are only positive results for non-culture test methods (i.e. EIA or PCR) associated with the investigation, then the case should be marked as “Suspect”. Those persons without any positive laboratory results, but epi-linked to a confirmed case, should be marked as “Probable”. Those cases, typically HUS cases, that do not have a culture confirmed STEC, but are serum antigen positive for O157:H7 (performed by CDC), should also be marked as “Probable”.

For STEC, there are also additional FoodNet questions that must be answered in the investigation under “Other Clinical Data”.

- Did the patient have HUS?
  - Legal Values: Yes, No, Unknown
  - If you answer “Yes” to this question, an HUS investigation also needs to be entered for this case. There is also an HUS special study being performed by CDC FoodNet. So please give FoodNet folks in central office the heads up about those cases.

- Was the isolate biochemically identified as *E. coli*?

    - Legal Values: Yes, No, Not Tested, Unknown
    - This question is asking whether or not the case is culture-confirmed. If no culture was performed on this case, then the answer would be “Not Tested”. If the case was culture positive, the answer would be “Yes”. If the case was culture negative, the answer would be “No”.
- Was isolate Shiga toxin positive?
    - Legal Values: Yes, No, Not Tested, Unknown
    - If there was a positive shiga-toxin test by any non-culture test method (i.e. EIA or PCR), this should be marked as “Yes”. If the case was shiga-toxin negative, the answer would be “No”. If no non-culture shiga-toxin test was performed on this case, the answer should be “Not Tested”.
- What was the EIA result at clinical laboratory?
    - Legal Values: Positive Undifferentiated, Stx1+, Stx2+, Stx1+ and Stx2+, Negative, Not Tested
    - This is the most common non-culture test method on the market. Most commercial laboratories will reflex to culture if they yield a positive EIA shiga-toxin test.
- What was the PCR result at clinical laboratory?
    - Legal Values: Positive Undifferentiated, Stx1+, Stx2+, Stx1+ and Stx2+, Negative, Not Tested
    - This would be marked “Positive” for any case with a positive PCR result, whether it be for shiga-toxin or to the serotype level. Both Diatherix Laboratories and Medical Diagnostic Laboratories have the capability of testing by PCR to the serotype level.
- What was the EIA result at SPHL?
    - Legal Values: Positive Undifferentiated, Stx1+, Stx2+, Stx1+ and Stx2+, Negative, Not Tested
    - SPHL stands for state public health lab. This will always be “Not Tested”, as our SPHL does not utilize the EIA test method.
- What was the PCR result at SPHL?
    - Legal Values: Positive Undifferentiated, Stx1+, Stx2+, Stx1+ and Stx2+, Negative, Not Tested
    - Every lab result from our SPHL should have both a culture result and a PCR shiga-toxin result. They will specify the type of toxin produced (i.e. Stx1+, Stx2+, Stx1+ and Stx2+, negative).
- What was the PCR result at CDC?
    - Legal Values: Positive Undifferentiated, Stx1+, Stx2+, Stx1+ and Stx2+, Negative, Not Tested
    - Lab results from CDC typically take a long time to come back (~6 months). They will specify the type of toxin produced (i.e. Stx1+, Stx2+, Stx1+ and Stx2+, negative).

Disease-Specific NEDSS Data Entry Guide

Cryptosporidium

Diagnosis	Examples from paper lab reports	Resulted Test (Lab- NEDSS)	Organism (Lab- NEDSS)	Coded Result (Lab- NEDSS)
[Confirmed] Culture-confirmed as *Cryptosporidium (by ANY lab)*	Cryptosporidium oocysts seen Cryptosporidium species Cryptosporidium parvum	CRYPTOSPORIDIUM SP	Enter species *(e.g.* Cryptosporidium parvum*).* *If no serotype noted, enter:* Cryptosporidium *species*	leave blank
[Confirmed] Acid fast stain	Cryptosporidium oocysts seen Cryptosporidium species Cryptosporidium parvum	Cryptosporidium species, acid fast stain	Enter species *(e.g.* Cryptosporidium parvum*).* *If no serotype noted, enter:* Cryptosporidium *species*	leave blank
[Confirmed] PCR*	Cryptosporidium oocysts seen Cryptosporidium species Cryptosporidium parvum	Cryptosporidium, PCR	Enter species *(e.g.* Cryptosporidium parvum*).* *If no serotype noted, enter:* Cryptosporidium *species*	leave blank
[Probable] Rapid Cartridge Test	Cryptosporidium oocysts seen Cryptosporidium species Cryptosporidium parvum	Cryptosporidium, rapid cartridge test	leave blank	Positive Negative Indeterminate
[Confirmed] DFA	Cryptosporidium oocysts seen	Cryptosporidium, DFA	leave blank	positive, negative, indeterminate
[Probable] Unknown Test Type	Cryptosporidium oocysts seen Cryptosporidium species Cryptosporidium parvum	Cryptosporidium, other	Enter species *(e.g.* Cryptosporidium parvum*).* *If no serotype noted, enter:* Cryptosporidium *species*	leave blank
[Confirmed] EIA or immunoassay	Ag positive ELISA positive EIA positive	Cryptosporidium, EIA or immunoassay	leave blank	positive, negative, indeterminate
[Confirmed] O&P, Stool Conc and Smear (aka. light microscopy of stained specimen)	Cryptosporidium oocysts seen	OVA AND PARASITES IDENTIFIED	Enter species *(e.g.* Cryptosporidium parvum*).* *If no serotype noted, enter:* Cryptosporidium *species*	leave blank

* PCR laboratory results with serotype/species level data from Diatherix Laboratories, Medical Diagnostics Laboratory, Genova Diagnostics/Metametrix Clinical Laboratory, and from facilities using Luminex xTAG technology can also be entered using the directions on the laboratory-specific data entry guide.

Laboratory-Specific NEDSS Data Entry Guide

BD Max Enteric

Within the last month or so, a number of facilities have swapped over to using the BD Max Enteric for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify pathogens and toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using BD Max Enteric is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter species	Not Tested	Positive
Cryptosporidium	Microorganism Identified, by PCR	Cryptosporidium Cryptosporidium species Cryptosporidium (organism)	Not applicable	Not applicable
Cyclospora	Microorganism Identified, by PCR	Cyclospora cayetanensis (organism)	Not applicable	Not applicable
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	Escherichia coli, serotype O157 *[use the search button]*	Not Tested	Positive undifferentiated
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Positive undifferentiated Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Enteroinvasive E. coli (EIEC)/ Shigella	Microorganism Identified, by PCR	Shigella species (organism) Shigella (organism)	Not applicable	Not applicable
Vibrio	Microorganism Identified, by PCR	Vibrio species *[use the search button]* *Vibrio cholerae*	Not applicable	Not applicable
Yersinia	Microorganism Identified, by PCR	Yersinia enterocolitica (organism)	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using BD Max Enteric is the only lab report associated with the investigation, then the case status should be "Suspect". EAEC, EPEC, and ETEC are not reportable and should not be entered into NBS.

Facilities we know that are using this technology include: Jackson-Madison County General Hospital.

Laboratory-Specific NEDSS Data Entry Guide

BioFire Film Array

Within the last month or so, a number of facilities have swapped over to using the BioFire Film Array for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify pathogens and toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using BioFire Film Array is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter species	Not Tested	Positive
Cryptosporidium	Microorganism Identified, by PCR	Cryptosporidium Cryptosporidium species Cryptosporidium (organism)	Not applicable	Not applicable
Cyclospora	Microorganism Identified, by PCR	Cyclospora cayetanensis (organism)	Not applicable	Not applicable
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	Escherichia coli, serotype O157 *[use the search button]*	Not Tested	Positive undifferentiated
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Positive undifferentiated Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Enteroinvasive E. coli (EIEC)/ Shigella	Microorganism Identified, by PCR	Shigella species (organism) Shigella (organism)	Not applicable	Not applicable
Vibrio	Microorganism Identified, by PCR	Vibrio species *[use the search button]* *Vibrio cholerae*	Not applicable	Not applicable
Yersinia	Microorganism Identified, by PCR	Yersinia enterocolitica (organism)	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using BioFire Film Array is the only lab report associated with the investigation, then the case status should be "Suspect". EAEC, EPEC, and ETEC are not reportable and should not be entered into NBS.

Facilities we know that are using this technology include: Tennessee Department of Health State Public Health Laboratory (outbreaks only).

Laboratory-Specific NEDSS Data Entry Guide

Diatherix Laboratories

Many of you have received lab reports from Diatherix Laboratories (Huntsville, AL) over the past few months. I wanted to make sure you were aware of the type of testing Diatherix is performing. They only identify pathogens by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a Diatherix lab is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism/Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter jejuni	Not Tested	Positive
Cryptosporidium	Microorganism Identified, by PCR	Cryptosporidium parvum (organism)	Not applicable	Not applicable
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	EHEC, Escherichia coli *[use the search button]*	Not Tested	Positive undifferentiated
	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate
Listeria	Microorganism Identified, by PCR	Listeria monocytogenes (organism)	Not applicable	Not applicable
Salmonella	Microorganism Identified, by PCR	Salmonella enterica (organism)	Not applicable	Not applicable
Enteroinvasive E. coli (EIEC)/ Shigella	Microorganism Identified, by PCR	Shigella species (organism) Shigella (organism)	Not applicable	Not applicable
Vibrio	Microorganism Identified, by PCR	Vibrio parahaemolyticus *[use the search button]*	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If the Diatherix lab report is the only lab report associated with the investigation, then the case status should be "Suspect". EPEC and ETEC are not reportable and should not be entered into NBS.

See the link for a copy of what the lab report my look like...

http://www.diatherix.com/pdf/report-formats/GP Report Format.pdf

Laboratory-Specific NEDSS Data Entry Guide

Genova Diagnostics/Metametrix Clinical Laboratory

If you start to receive lab reports from Genova Diagnostics/Metametrix Clinical Laboratory (e.g. Georgia, North Carolina, etc.), I wanted to make sure you were aware of the type of testing they are performing. They only identify pathogens by PCR. However on June 17, 2013, they will also begin to confirm STEC cases using an EIA Shiga-toxin test. Eventually, they hope to develop a PCR target to detect shiga-toxin. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a Genova Diagnostics/Metametrix Clinical Laboratory lab is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism/Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*	What was the EIA result at clinical laboratory?*
Campylobacter	Campylobacter test, EIA or immunoassay	Positive Negative Indeterminate	Not Tested	Not Tested	Positive Negative Indeterminate
Cyclospora	Microorganism Identified, by PCR	Cyclospora cayetanesis (organism)	Not applicable	Not applicable	Not applicable
Cryptosporidium	Microorganism Identified, by PCR	Cryptosporidium Cryptosporidium species Cryptosporidium (organism)	Not applicable	Not applicable	Not applicable
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	Escherichia coli, serotype O157:H7 (organism)	Not Tested	Positive undifferentiated	Not Tested
	E. coli shiga toxin test, EIA or immunoassay	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxins 2 positive Positive Negative Indeterminate	Not Tested	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxins 2 positive Positive Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable	Not applicable
Vibrio	Microorganism Identified, by PCR	Vibrio species *[use the search button]*	Not applicable	Not applicable	Not applicable
Yersinia	Microorganism Identified, by PCR	Yersinia (organism)	Not applicable	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

For all pathogens other than Cryptosporidium or Cyclospora, then the case status should be "Suspect" if the Genova Diagnostics/Metametrix Clinical Laboratory lab report is the only lab report associated with the investigation.

See the link for a copy of what the lab report my look like...

http://www.gdx.net/core/sample-reports/GI-Effects-Microbial-Ecology-SR.pdf

Laboratory-Specific NEDSS Data Entry Guide

Luminex xTAG technology

Within the last month or so, a number of facilities have swapped over to using the Luminex xTAG technology for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify pathogens and toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using Luminex xTAG technology is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter species	Not Tested	Positive
Cryptosporidium	Microorganism Identified, by PCR	Cryptosporidium Cryptosporidium species Cryptosporidium (organism)	Not applicable	Not applicable
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	Escherichia coli, serotype O157 *[use the search button]*	Not Tested	Positive undifferentiated
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Shigella	Microorganism Identified, by PCR	Shigella species Shigella (organism)	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using Luminex xTAG technology is the only lab report associated with the investigation, then the case status should be "Suspect".

Facilities we know that are using this technology include: LeBonheur, Vanderbilt, Genetic Assays, American Esoteric Laboratories – Memphis.

See the link for a copy of the panel...

http://geneticassays.com/7667GPP.pdf

Laboratory-Specific NEDSS Data Entry Guide

Medical Diagnostic Laboratories

Some of you have received lab reports from Medical Diagnostic Laboratories (Hamilton, NJ) over the past few months. I wanted to make sure you were aware of the type of testing Medical Diagnostic Laboratories is performing. They primarily identify enteric pathogens by PCR. However for *Yersinia*, the test used is Western blot. They do not culture enteric pathogens at all. This means you will need to enter in their results into NBS in a similar manner to those reports coming from Diatherix, with the exception of *Yersinia*.

Lab reports from Medical Diagnostic Laboratories should be entered into NBS as follows...

Pathogen	Resulted Test	Organism/Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter jejuni	Not Tested	Positive
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	Escherichia coli, serotype O157:H7	Not Tested	Positive undifferentiated
Listeria	Microorganism Identified, by PCR	Listeria monocytogenes (organism)	Not applicable	Not applicable
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Shigella	Microorganism Identified, by PCR	Shigella boydii (organism) Shigella dysenteriae (organism) Shigella flexneri (organism) Shigella sonnei (organism) Shigella species Shigella (organism)	Not applicable	Not applicable
Yersinia	Yersinia antibody, IgG Yersinia antibody, IgM *(IgG and IgM are not reportable)*	Postive	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If the Medical Diagnostic Laboratories lab report is the only lab report associated with the investigation, then the case status should be "Suspect".

See the link for a copy of tests they perform...

http://www.mdlab.com/html/test_menu.html

--Click on the Tests By Category tab

--In the drop-down menu, select Intestinal Pathogen

--For *Yersinia*, select Bacteriology in the drop-down menu

Laboratory-Specific NEDSS Data Entry Guide

Nanosphere Verigene

Within the last month or so, a number of facilities have swapped over to using the Nanosphere Verigene for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify pathogens and toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using Nanosphere Verigene is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter species	Not Tested	Positive
Listeria (preceded by Gram-positive culture)	Microorganism Identified, by PCR	Listeria species Listeria (organism)	Not applicable	Not applicable
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Shigella	Microorganism Identified, by PCR	Shigella species (organism) Shigella (organism)	Not applicable	Not applicable
Vibrio	Microorganism Identified, by PCR	Vibrio species *[use the search button]*	Not applicable	Not applicable
Yersinia	Microorganism Identified, by PCR	Yersinia enterocolitica (organism)	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using Nanosphere Verigene is the only lab report associated with the investigation, then the case status should be "Suspect". EAEC, EPEC, and ETEC are not reportable and should not be entered into NBS.

Facilities we know that are using this technology include: Cookeville Regional Medical Center.

Laboratory-Specific NEDSS Data Entry Guide

Prodesse ProGastro SSCS

Within the last month or so, a number of facilities have swapped over to using the Prodesse ProGastro SSCS for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify pathogens and toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using Prodesse ProGastro SSCS is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter species	Not Tested	Positive
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Shigella	Microorganism Identified, by PCR	Shigella species (organism) Shigella (organism)	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using Prodesse ProGastro SSCS is the only lab report associated with the investigation, then the case status should be "Suspect".

Laboratory-Specific NEDSS Data Entry Guide

Seegene Seeplex Diarrhea ACE Detection

Within the last month or so, a number of facilities have swapped over to using the Seegene Seeplex for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify pathogens and toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using Seegene Seeplex is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Campylobacter	Microorganism Identified, by PCR	Campylobacter species	Not Tested	Positive
Shiga-toxin producing *E. coli*	Microorganism Identified, by PCR	Escherichia coli, serotype O157:H7 (organism)	Not Tested	Positive undifferentiated
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate	Not Tested	Shiga toxins 1 & 2 positive Shiga toxin 1 positive Shiga toxin 2 positive Negative Indeterminate
Salmonella	Microorganism Identified, by PCR	Salmonella species Salmonella (organism)	Not applicable	Not applicable
Shigella	Microorganism Identified, by PCR	Shigella species (organism) Shigella (organism)	Not applicable	Not applicable
Vibrio	Microorganism Identified, by PCR	Vibrio species *[use the search button]*	Not applicable	Not applicable
Yersinia	Microorganism Identified, by PCR	Yersinia enterocolitica (organism)	Not applicable	Not applicable

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using Seegene Seeplex is the only lab report associated with the investigation, then the case status should be "Suspect".

Laboratory-Specific NEDSS Data Entry Guide

Statens Serum Institut

Within the last month or so, a number of facilities have swapped over to using the Statens Serum Institut for their testing. I wanted to make sure you were aware of the type of testing these facilities are performing. They only identify toxins by PCR. They do not culture at all. This means you will need to enter in their results into NBS in a different manner.

If a facility using Statens Serum Institut is the only lab associated with the case, meaning no culture has been performed, please enter the following in the lab report...

Pathogen	Resulted Test	Organism / Coded Result	Was the isolate [biochemically] identified as…?*	What was the PCR result at clinical laboratory?*
Shiga-toxin producing *E. coli*	E. coli shiga toxin test, PCR	Shiga toxins 1 & 2 positive	Not Tested	Shiga toxins 1 & 2 positive
		Shiga toxin 1 positive		Shiga toxin 1 positive
		Shiga toxin 2 positive		Shiga toxin 2 positive
		Positive		Positive undifferentiated
		Negative		Negative
		Indeterminate		Indeterminate

*These additional FoodNet questions can be found in the investigation under "Other Clinical Data".

If a facility using Statens Serum Institut is the only lab report associated with the investigation, then the case status should be "Suspect". EAECis not reportable and should not be entered into NBS.

NEDSS Refresher

Objectives

- Review case definitions
- Investigation
  - Demographics/transferring cases
  - Death
  - FoodCORE variables
  - Other clinical data
- Creating notifications
- Case study
- Other issues
  - Negative STEC labs
  - Training needs?

Case Definitions (CD)

- CD for nationally notifiable conditions can be found on CDCs website
  - http://wwwn.cdc.gov/nndss/
- See attachment for a cheat sheet for FoodNet pathogens
  - Year Made Nationally Notifiable, Year Case Definition Published, Clinical Description, Laboratory Criteria for Diagnosis, Case Classification, Comments (if applicable)
  - For those that pathogens that require a CDC Case Report Form to be completed, you will see a CDC logo
  - For those Central Office would like a copy of the CRF, you will see a TDH logo

FoodCORE data.

Performance Metrics:	*Salmonella* Measures		STEC Measures		*Listeria* Measures	
	4/1/12-12/31/12	10/1/11-12/31/12	4/1/12-12/31/12	10/1/11-12/31/12	4/1/12-12/31/12	10/1/11-12/31/12
10c. % of cases with complete demographic data	70.0%	71.0%	84.5%	84.6%	85.7%	87.5%
10d. % of cases with exposure history	65.6%	66.2%	73.6%	73.1%	85.7%	87.5%

- Complete demographic data = county, DOB, race, sex,
  - Race is missing most often
- Exposure history = Food History

FoodNET data (Prelim 2012)

Performance Goal	Expected Minimum %	TN %
Cases with "unknown" hospitalization	≤5	12
Hospitalized cases with "unknown" outcome	≤1	1
Completion of information on age	≥95	100
Completion of information on sex	≥95	99
Completion of information on race	Varies by pathogen (75–90)	73
Completion of information on ethnicity	Varies by pathogen (75–90)	70

FoodNET data (Prelim 2012)

Goal	Expected %	TN %
Outbreak-associated cases with NORS number (all pathogens)	100	95
Outbreak type reported for outbreak-associated cases (all pathogens)	98	100
Median # of days from specimen collection to data entry	≤10 days	6 days
Submission of national case report forms		
COVIS*	100	13
NSTPF*	100	0
Listeria	100	86

*COVIS=Vibrio; NTSPF=Typhoid/Paratyphoid

Investigation: Demographics/Transferring Cases

- Update demographics in the investigation
  - Race/ethnicity—unknown be careful
  - Gender
  - Address
- Update the case's address before transferring to another region or out of state

Reporting Deaths

- Be sure to complete death questions in both the investigation and demographics
  - Check for consistency

    If…
    "patient deceased" in demographics = no

    Then…
    "did patient die from this illness" in investigation should = no

Reporting Deaths

- Investigation
  - Answer "yes" if the patient died within 7 days of specimen collection

Condition

Diagnosis Date:
Illness Onset Date: **Illness End Date:**
Illness Duration: Days
Age at Onset: Years
Is the patient pregnant?
Does the patient have pelvic inflammatory disease?
Did the patient die from this illness?

Reporting Deaths

- Demographics
  - Enter "Yes" if person died at any time during the investigation

Mortality Back To Top

Mortality Information As Of : 04/05/2013
Is the patient Deceased:
Date of Death:
Death City:
Death State:
Death County:
Death Country:

Investigation: FoodCORE

Condition Specific Custom Fields Back to Top

FOODCORE Questions

If case not interviewed, was an attempt made by public health?

Date of first interview attempt: 02/28/2013
Date of interview: 02/28/2013
Name of interviewer: Susan Miller
Was food history obtained? Yes

Investigation: Other Clinical Data

- Campylobacter Investigations

Other Clinical Data Back to Top

Was the isolate identified as Campylobacter?
What was the EIA result at clinical laboratory?
What was the PCR result at clinical laboratory?
What was the species result at clinical laboratory?
What was the EIA result at SPHL?
What was the PCR result at SPHL?
What was the species result at SPHL?
What was the PCR result at CDC?

- See Disease-Specific NEDSS Data Entry Guide for more information

Investigation: Other Clinical Data

- STEC Investigations

Other Clinical Data Back to Top

Did patient have HUS?
Was the isolate biochemically identified as *E. coli*?
Was isolate Shiga toxin positive?
What was the EIA result at clinical laboratory?
What was the PCR result at clinical laboratory?
What was the EIA result at SPHL?
What was the PCR result at SPHL?
What was the PCR result at CDC?

- See Disease-Specific NEDSS Data Entry Guide for more information

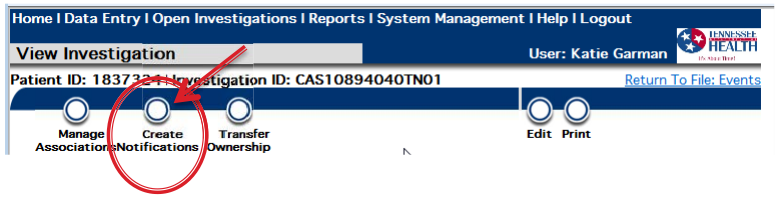
Creating a Notification

- Very Important
- If you do not create a notification it is telling CDC "I did not do any work!"
  - Number will not be included in MMWR
- Historically, Regions have asked Central Office not to do this
  - Regions <u>must</u> create their own notification
  - Only need to send notification once

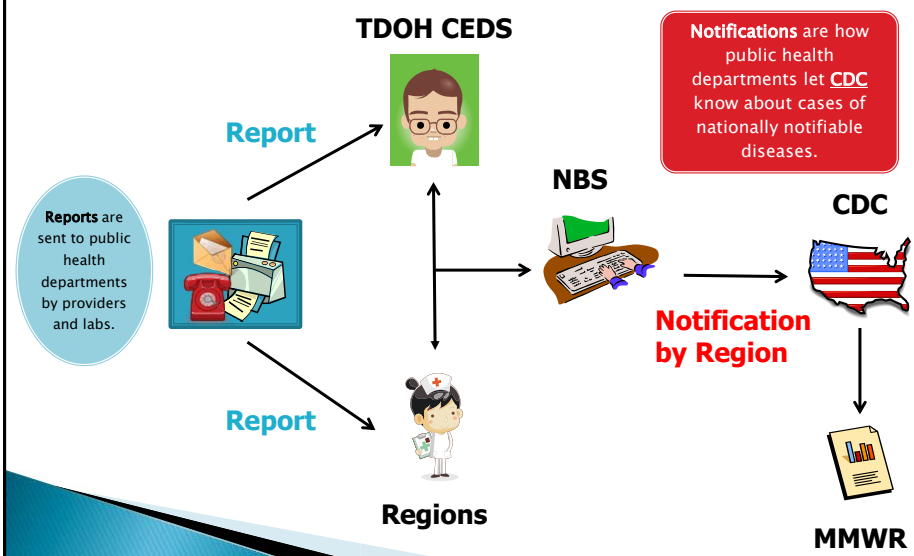
❖Reporting vs. Notifications

How to Create a Notification

- One click and you're done!!



Reporting vs. Notification



Negative STEC labs

- TDH Public Health Labs have been asked by CDC to put in all STEC results, negative or positive
- Please do not assign negative STEC labs to FoodCORE
- How to eliminate orphan labs?
  - Open an investigation from the lab report
  - Mark “not a case”
  - Mark the investigation closed
  - Create and approve a notification

Example: Negative STEC Lab

Patient Summary

Go to: Patient Summary | Open Investigations | Documents Requiring Review

Patient Summary Back To Top

Address (Home)
1407 Jedi Ln
A Galaxy Far Far Away, Tennessee 12121
Rutherford County

Home
615-999-9999

No ID Info Available

Race
Asian
Ethnicity
No Ethnicity Info Available

Open Investigations (0) Back To Top

Documents Requiring Review (1) Back To Top

Document Type	Date Received	Provider/Reporting Facility	Event Date	Description	Event ID
Lab Report	03/15/2013 10:07 AM	**Reporting Facility:** Tennessee Dept of Health Lab	**Date Collected:** 03/11/2013	• **E. coli shiga toxin test, PCR:** negative	OBS10158000TN01

Resources

- Case Definitions
- Disease Specific NEDSS Data Entry Guide
- NEDSS Lab Report Cheat Sheet

Diatherix Lab Report

THIS IS PCR

Client Name	CENNTENNIAL PEDIATRICS-BRENTWOOD(3765)
Client Address	343 Franklin Road, Ste 210 Brentwood, TN 37027
Client Phone	615-373-2248

Patient	DOB	GENDER	Accession ID	Detected	Physician	Reported	Collected	Source
[redacted]	4/6/2006	Male	1212345318	Campylobacter jejuni	CANDICE CREWS	1/26/2013	1/25/2013	STOOL

Client Name	DICKSON MEDICAL ASSOCIATES- SOUTH(2650)
Client Address	758 HIGHWAY 46, SOUTH DICKSON, TN 37055
Client Phone	615-446-1378

Patient	DOB	GENDER	Accession ID	Detected	Physician	Reported	Collected	Source
[redacted]	5/16/1968	Male	1212050362	Campylobacter jejuni	KELLEY ROSS	1/26/2013	1/25/2013	STOOL

Client Name	SUMMIT MEDICAL GROUP
Client Address	2319 S. ROANE STREET HARRIMAN, TN 37748
Client Phone	865-882-0105

Patient	DOB	GENDER	Accession ID	Detected	Physician	Reported	Collected	Source
[redacted]	1/23/1954	Female	1212390756	Escherichia coli 0157 *Shiga-toxin positive, by EIA	BHAVAMA VORA	1/26/2013	1/16/2013	STOOL

Tuberculosis

Morbidities Include:

- Tuberculosis, confirmed and suspect cases of active disease
  - *Mycobacterium tuberculosis* complex. *Mycobacterium tuberculosis* complex refers to a genetically closely related group of *Mycobacterium* species that can cause tuberculosis, including:
    - *Mycobacterium tuberculosis*
    - *Mycobacterium africanum*
    - *Mycobacterium bovis*
    - *Mycobacterium bovis BCG*
    - *Mycobacterium microti*
    - *Mycobacterium canettii*
- Latent Tuberculosis Infection (Not TN Reportable)

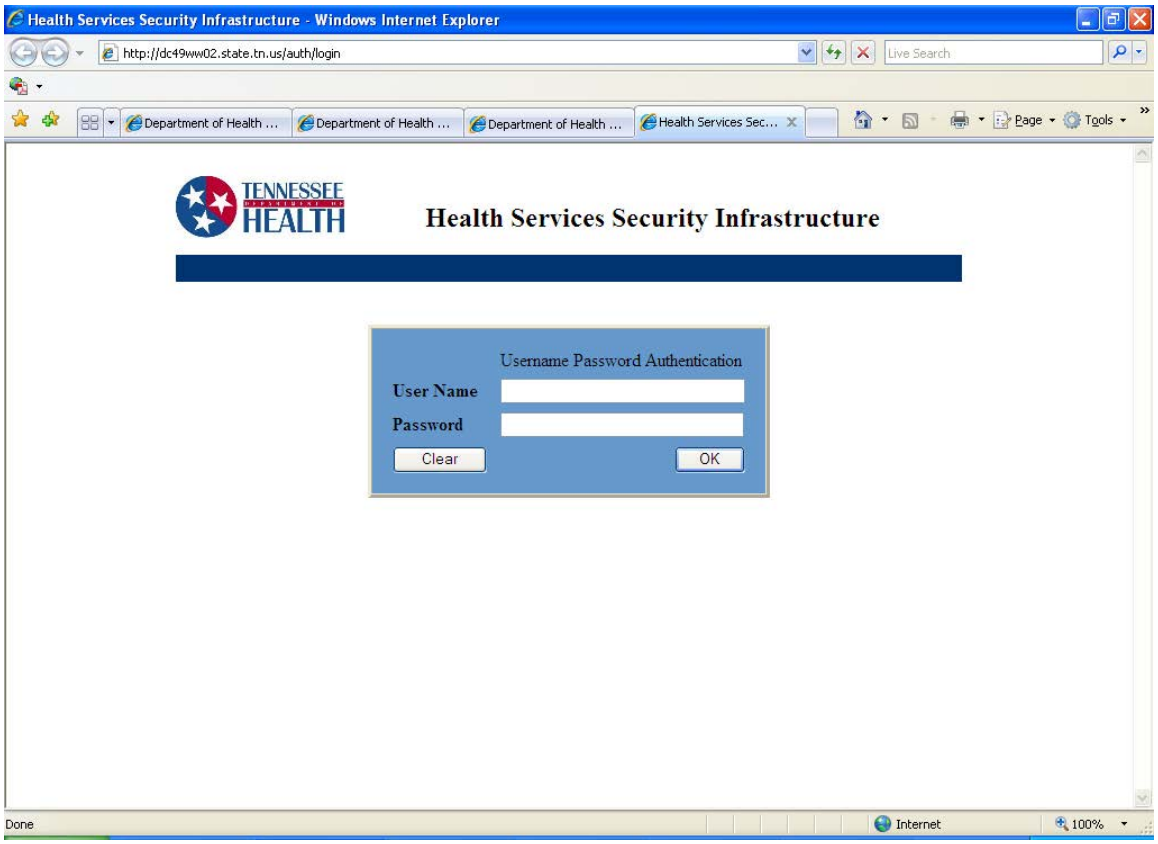
Access, Login, Logout

1. This is a procedure for connecting and logging into the NBS System (where the TB PAM is located). Open up your internet browser and type in the following link into the address bar:

   http://dc49ww02.state.tn.us/auth/login

   Tip: You can create a shortcut to the NBS system on your desktop and just double-click it from the desktop. (See section on creating a shortcut).

   You will be directed to the login page:

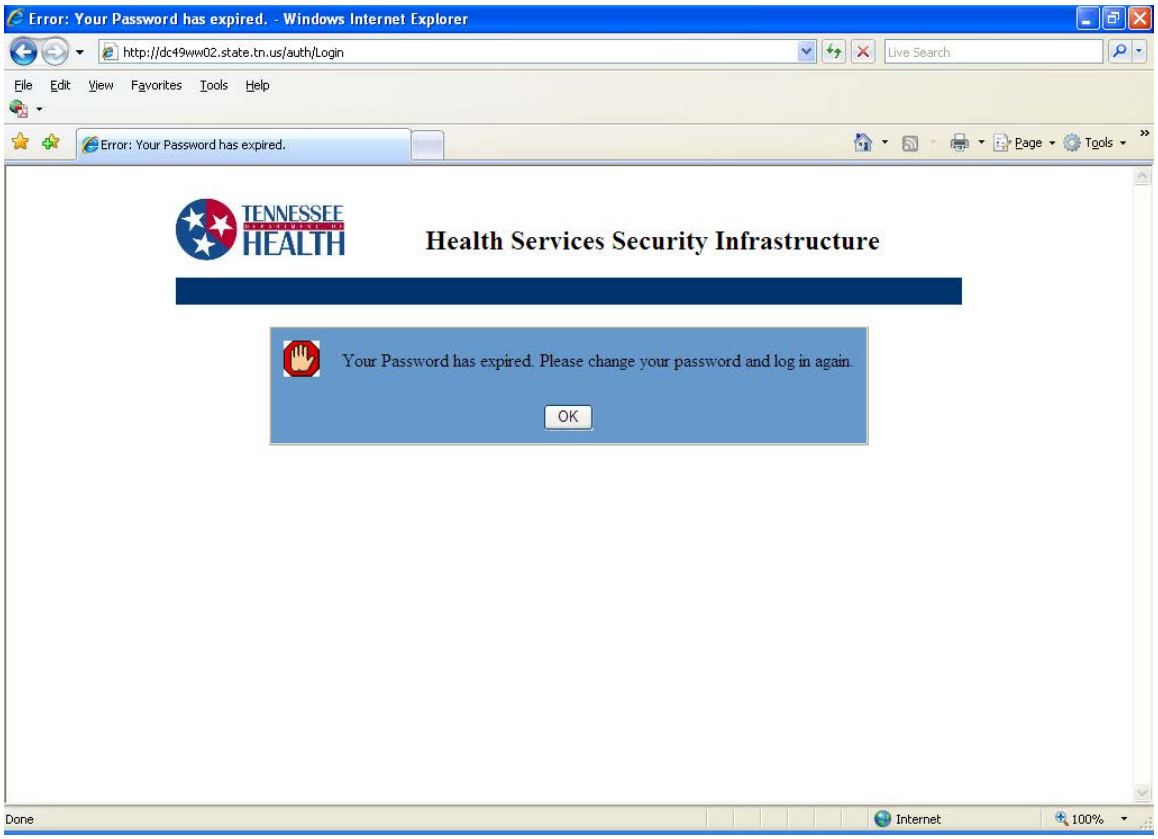


2. Enter in your User Name.

   Note: Your User Name is your DC #.

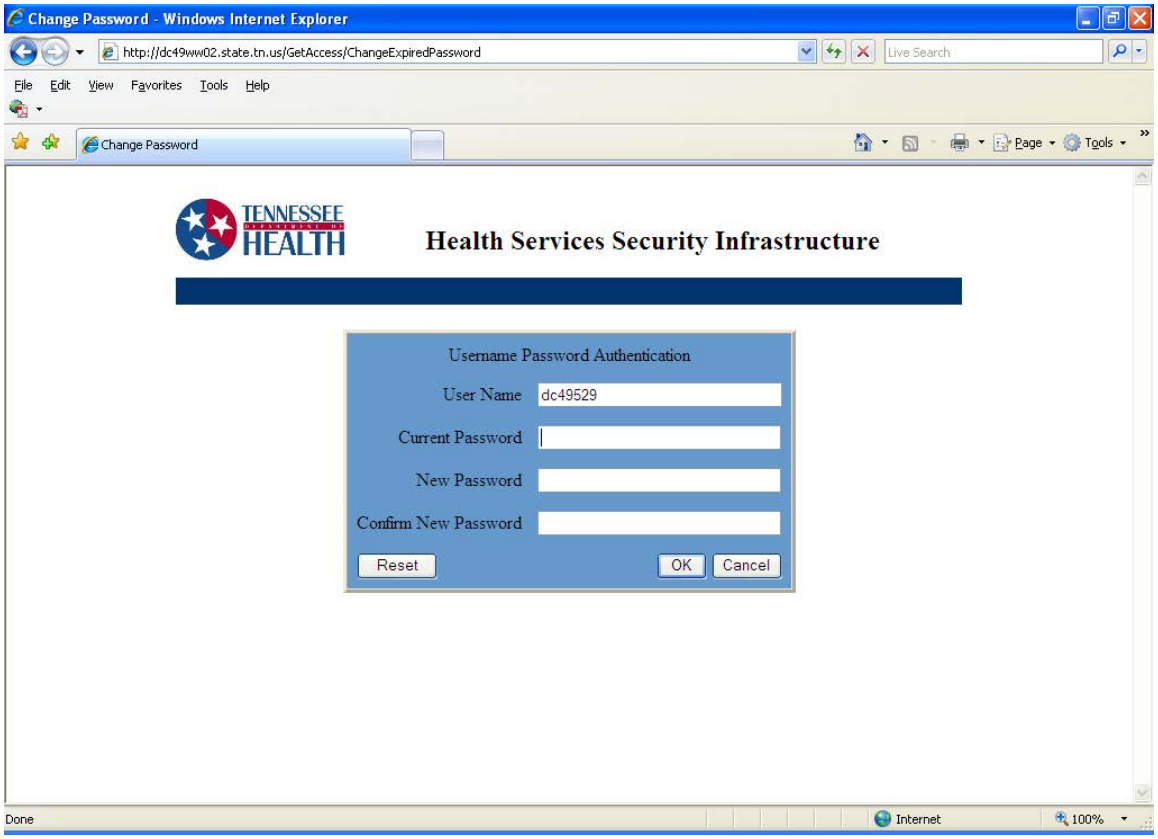
3. Enter in your Password. Everyone's initial password will be Password01.

   You should receive an error message telling you that your password has expired:



4. Click **OK**.

5. You will now be prompted to change your password:

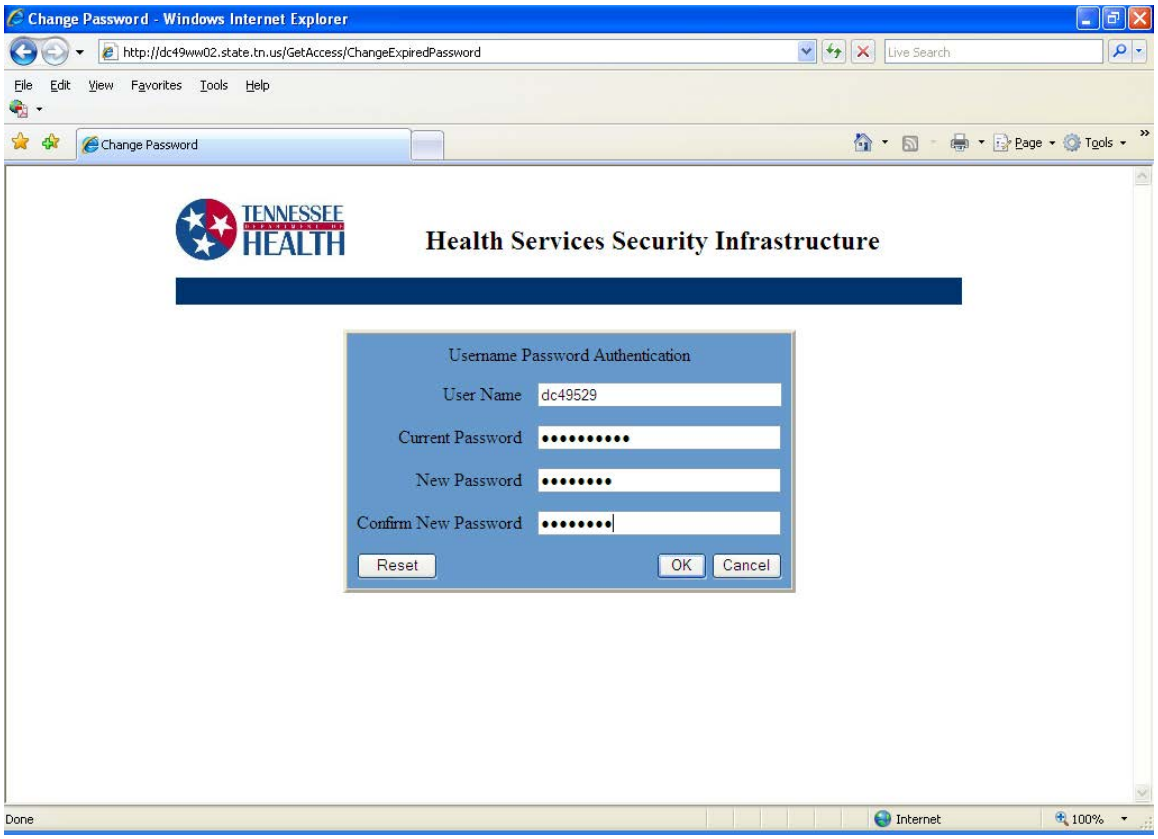


Note: Please make sure your DC # is correct in the "User Name" field.

Note: Enter Password01 in the "Current Password" field then proceed to enter in a new password.

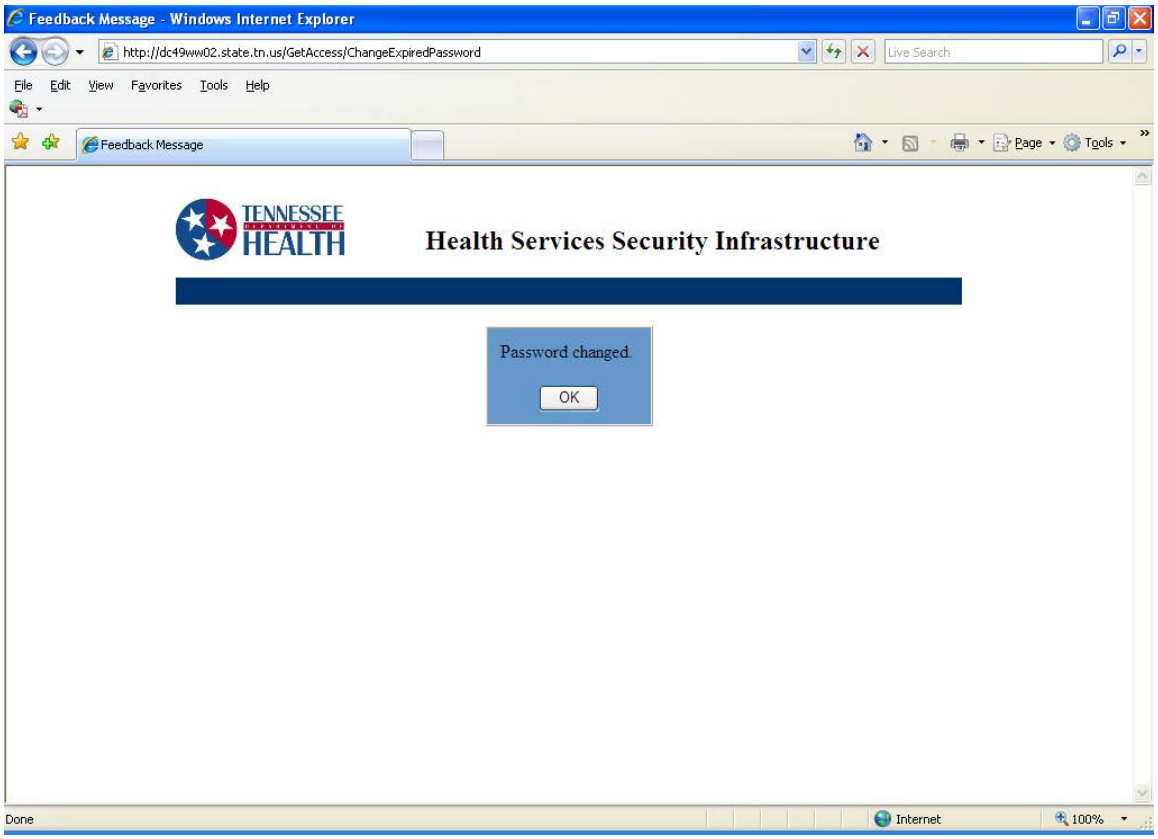
Note: Your new password MUST be at least 8 characters long and contain at least one capital letter and at least one number.

Note: You will have to enter your new password in the "New Password" field and the "Confirm New Password" field.



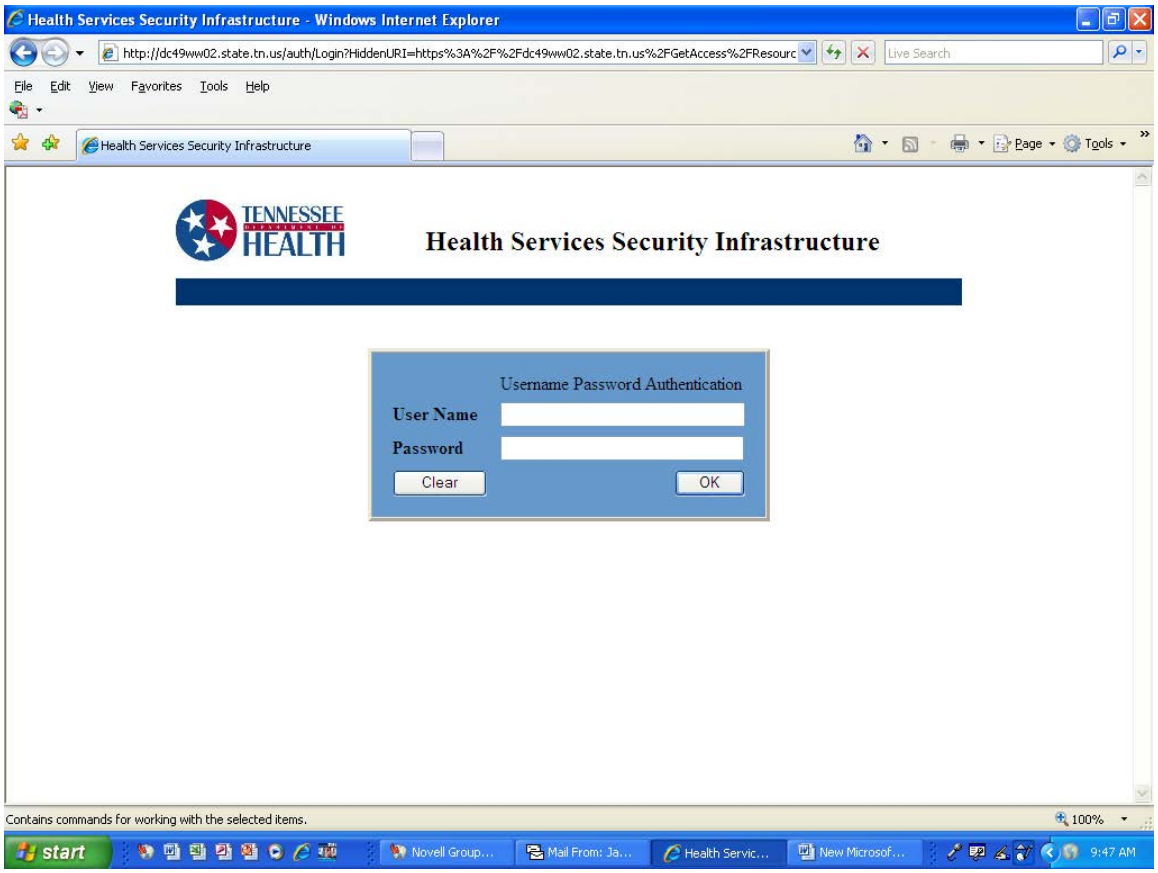
6. Click the **OK** button.

7. You should receive a message that your password has been changed:



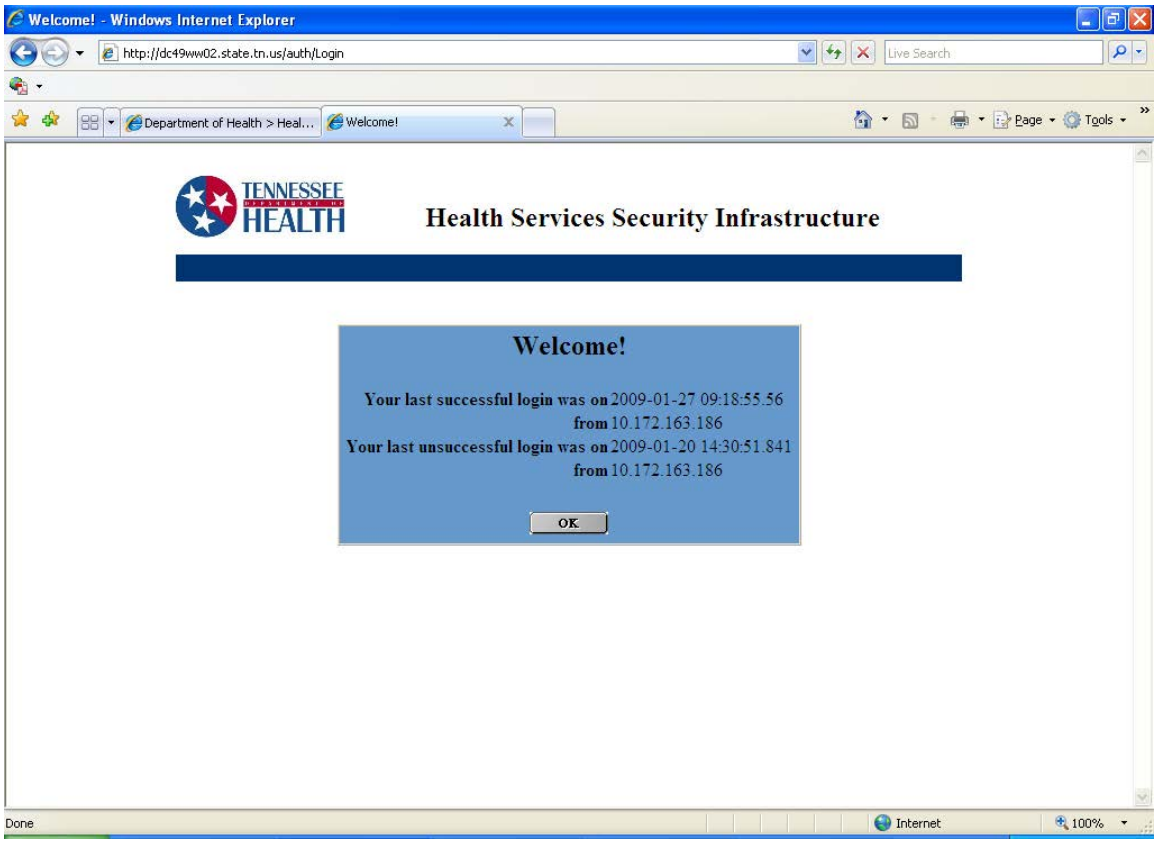
8. Click the **OK** button.

9. You will now be directed back to the homepage and will have to re-enter your User Name and new password:

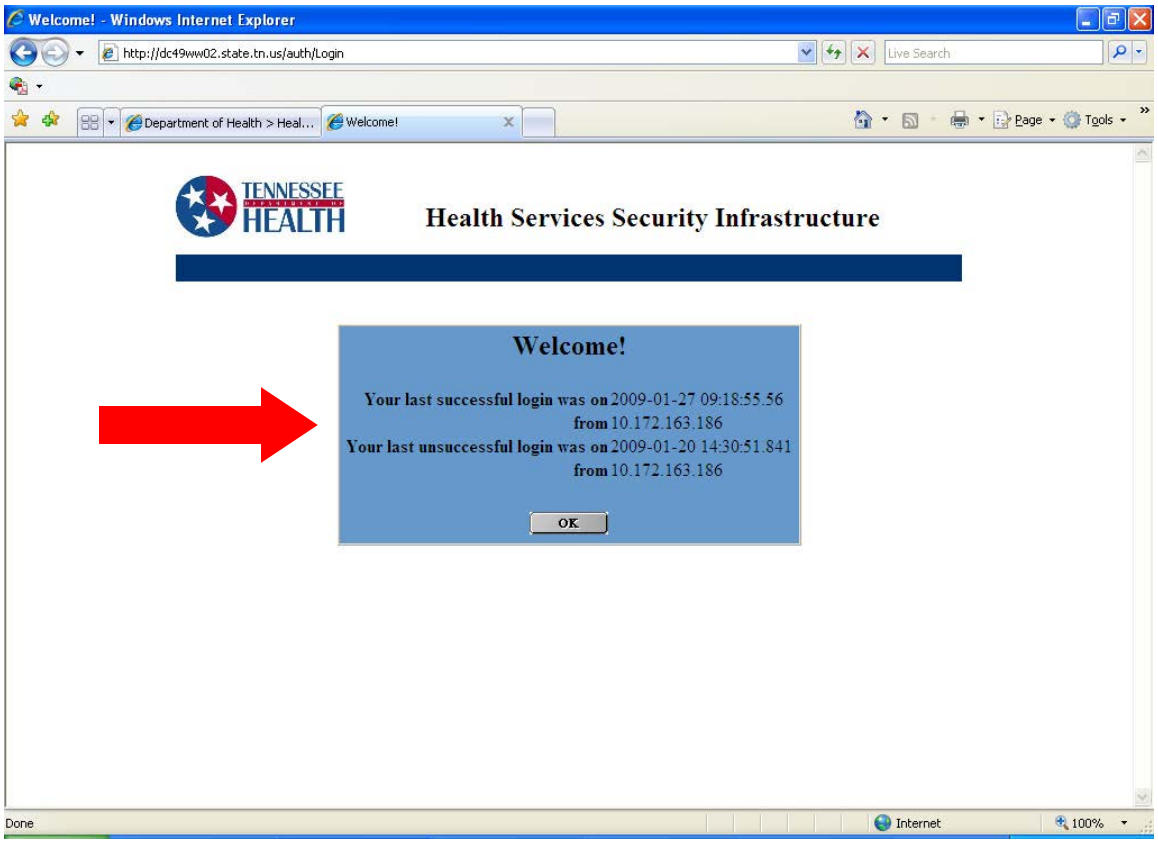


10. After you have entered in your User Name (your DC #) and your new password, click the **OK** button.

11. You will be directed to a welcome screen:



<u>Note: This screen will inform you of your last successful and unsuccessful login.</u>

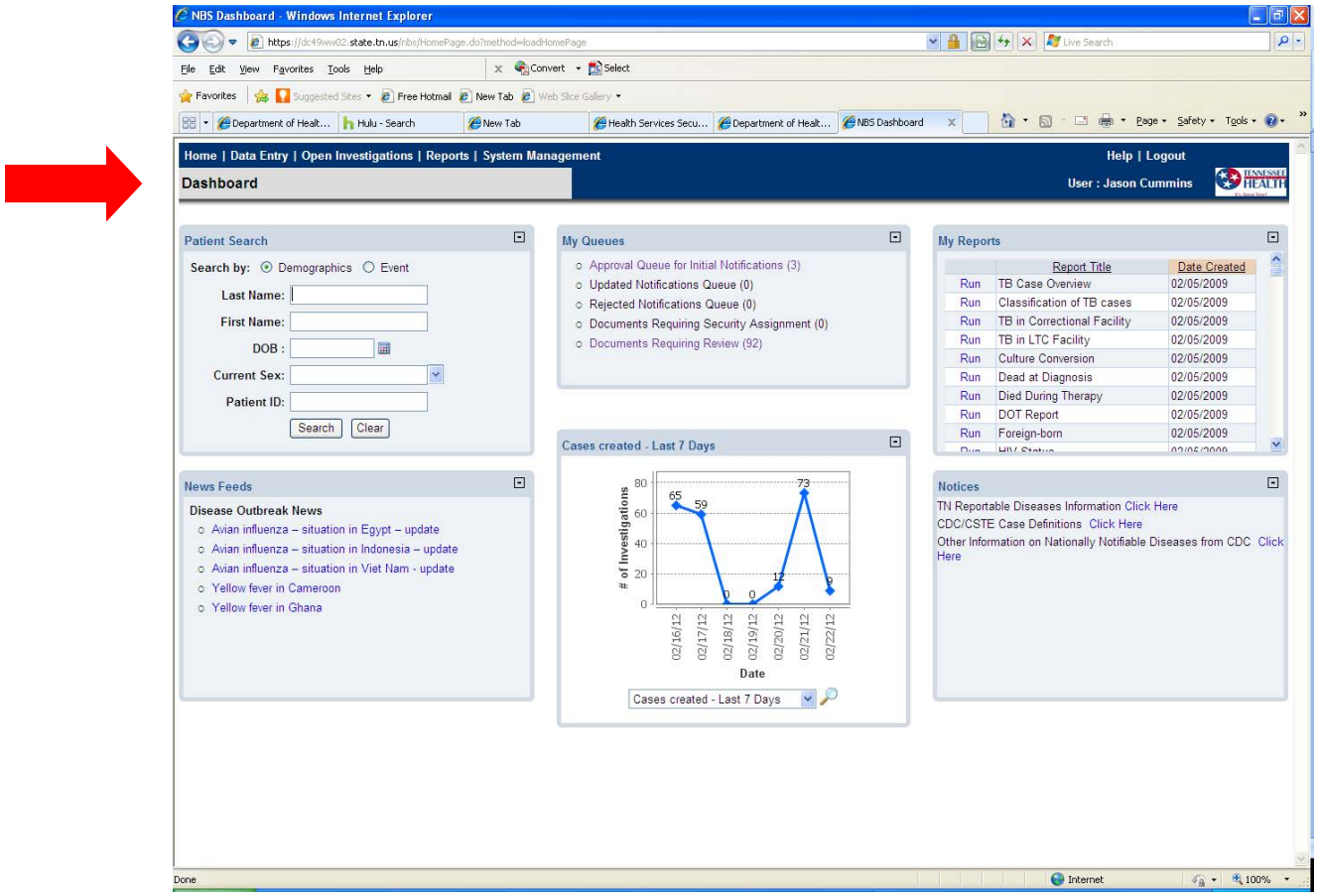


12. Click the **OK** button.

13. You will now be directed to the following screen:

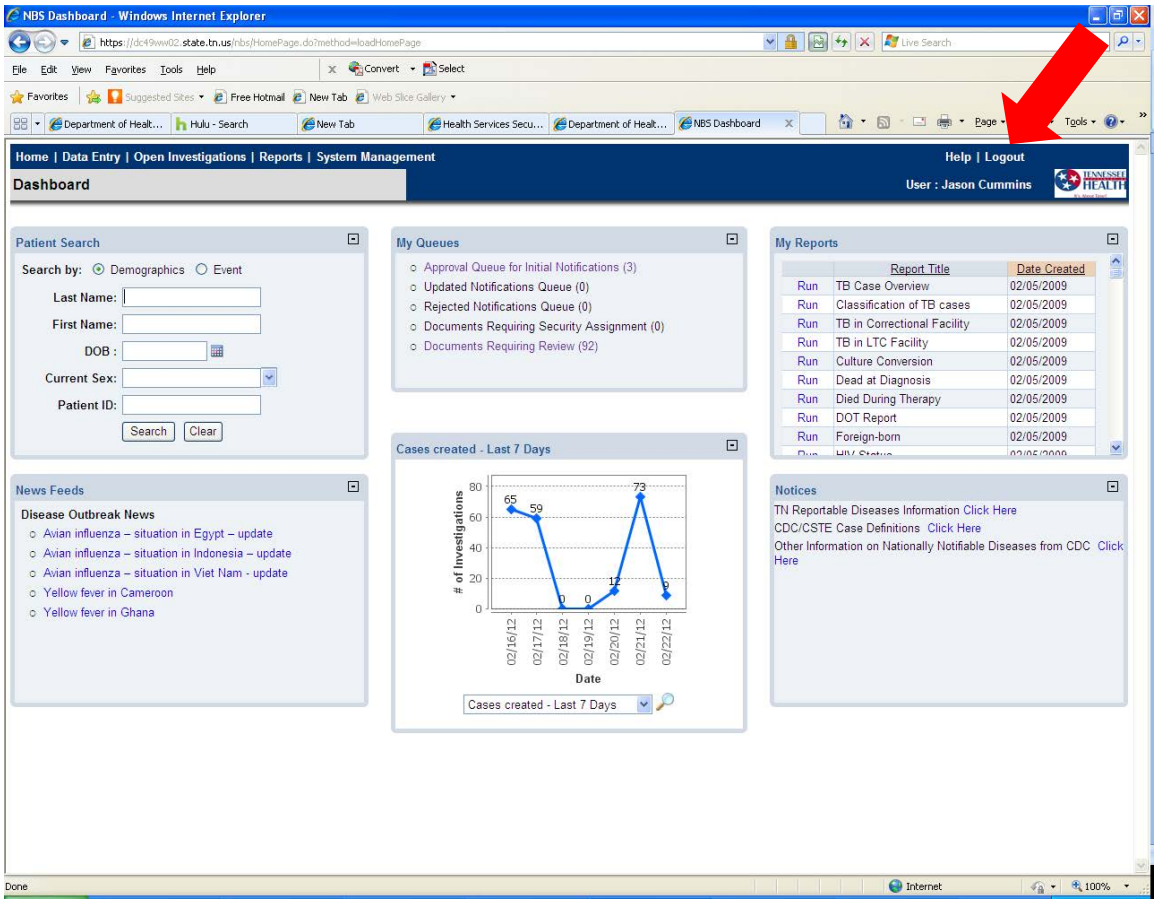
14. To access the TB PAM, click the **NBS** link:

15. You will be directed to the NBS Dashboard:



16. Following the instructions for “Finding and Adding a Patient,” “Creating a TB Investigation,” and “TB Investigation Data Entry” that can be found in your TB PAM training guide.

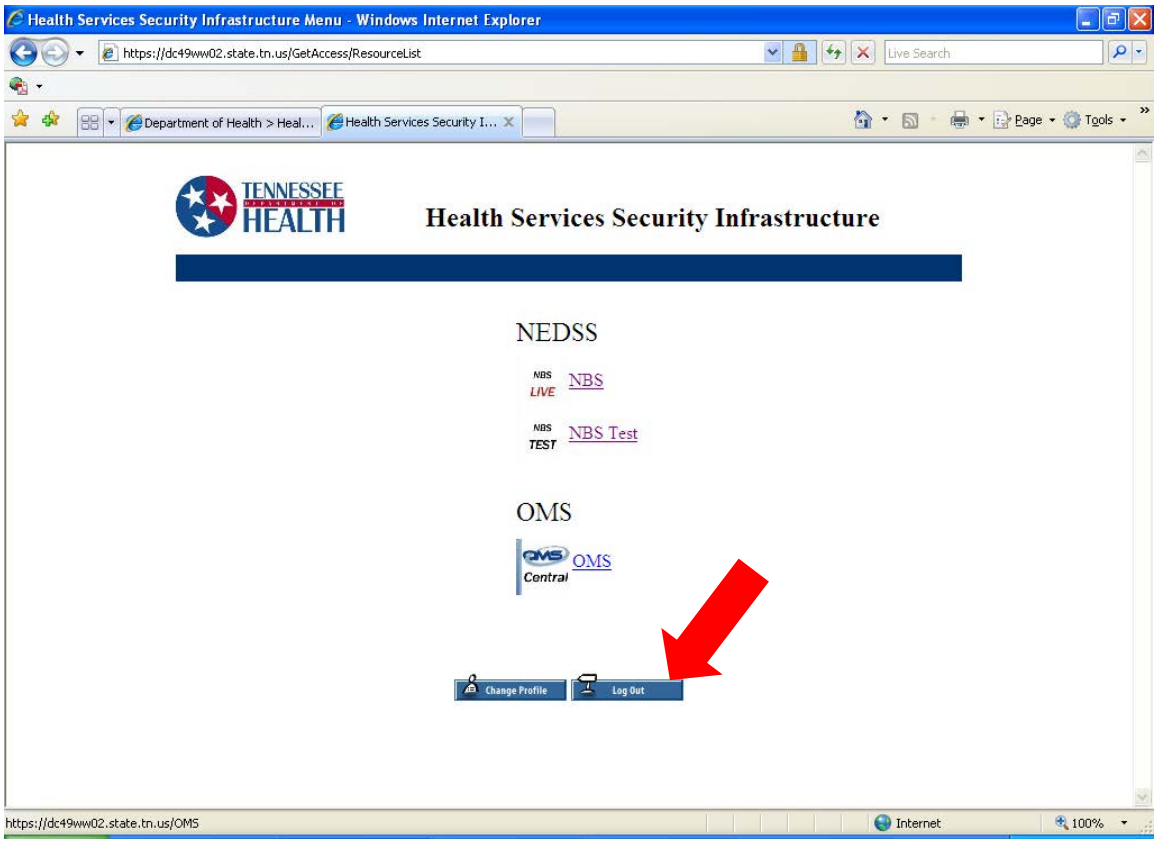
17. To logout, click the **LOGOUT** link at the top of the screen:



18. You should be directed to the NBS page:

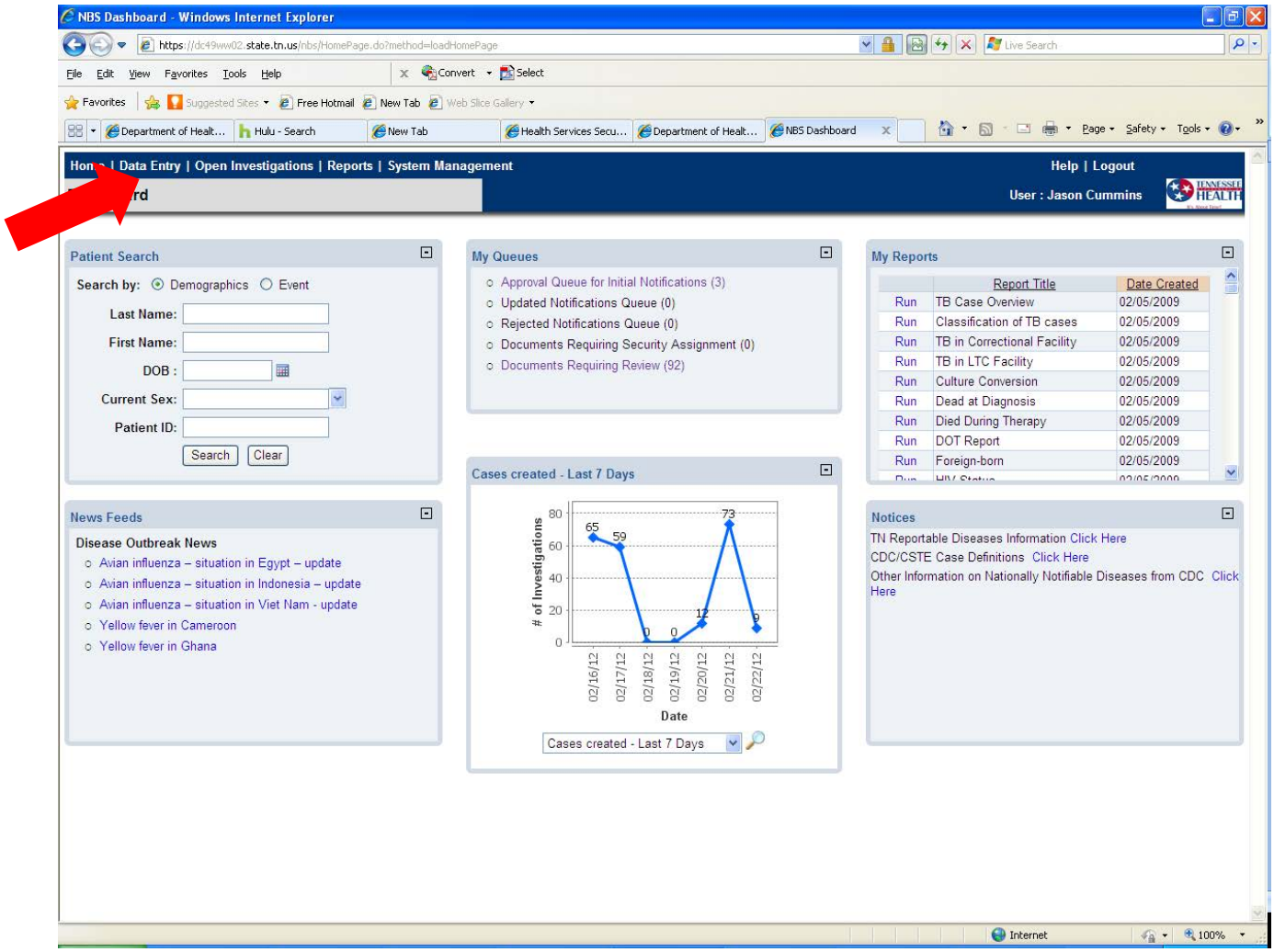
Note: You will have to logout here as well.

19. Click the **LOG OUT** button at the bottom of the screen:

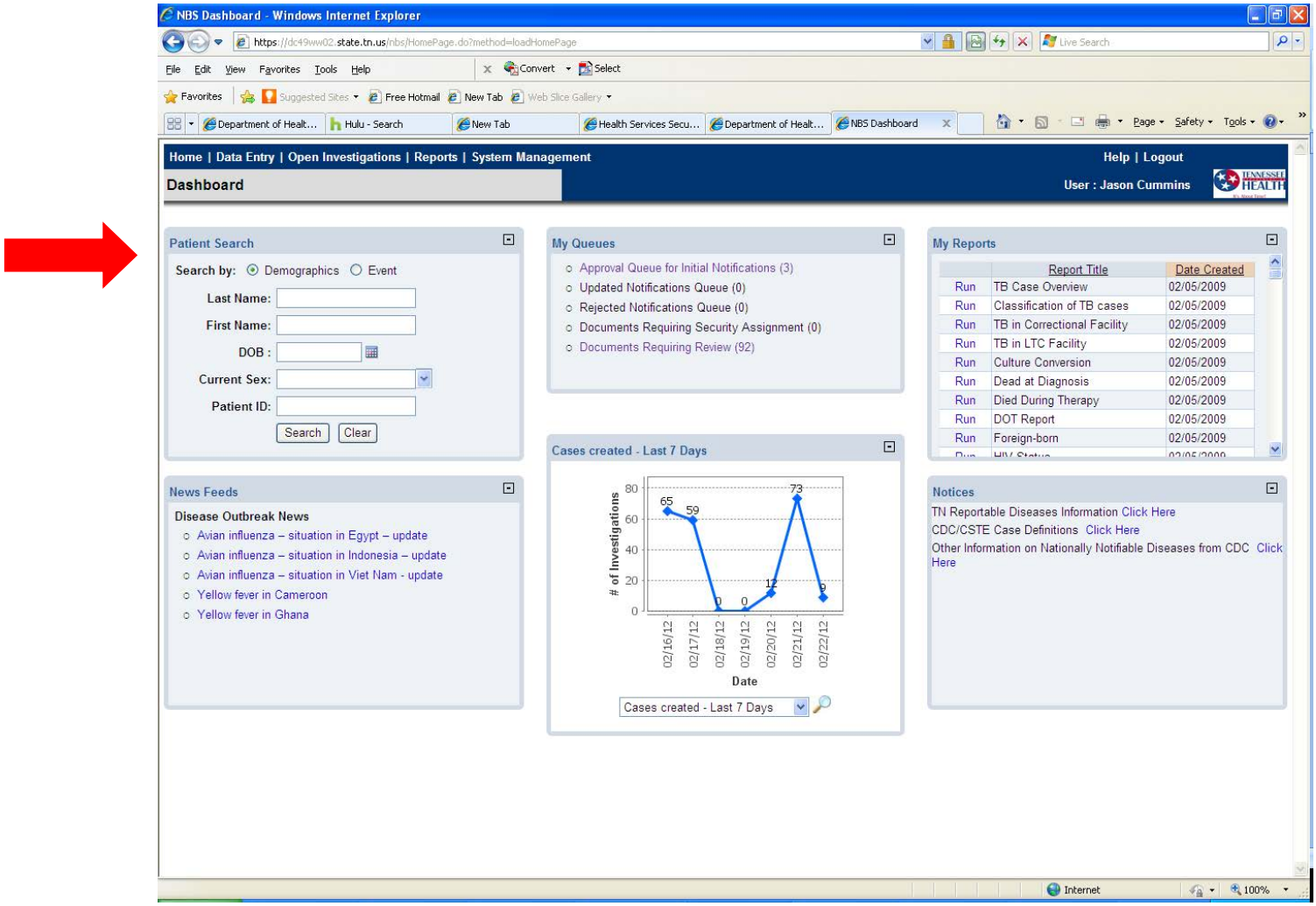

Health Services Security Infrastructure Menu - Windows Internet Explorer
https://dc49ww02.state.tn.us/GetAccess/ResourceList
Live Search
Department of Health > Heal...
Health Services Security I...
Page
Tools
TENNESSEE HEALTH
Health Services Security Infrastructure
NEDSS
NBS LIVE
NBS
NBS TEST
NBS Test
OMS
OMS Central
OMS
Change Profile
Log Out
https://dc49ww02.state.tn.us/OMS
Internet
100%

Finding a Patient
Adding a Patient

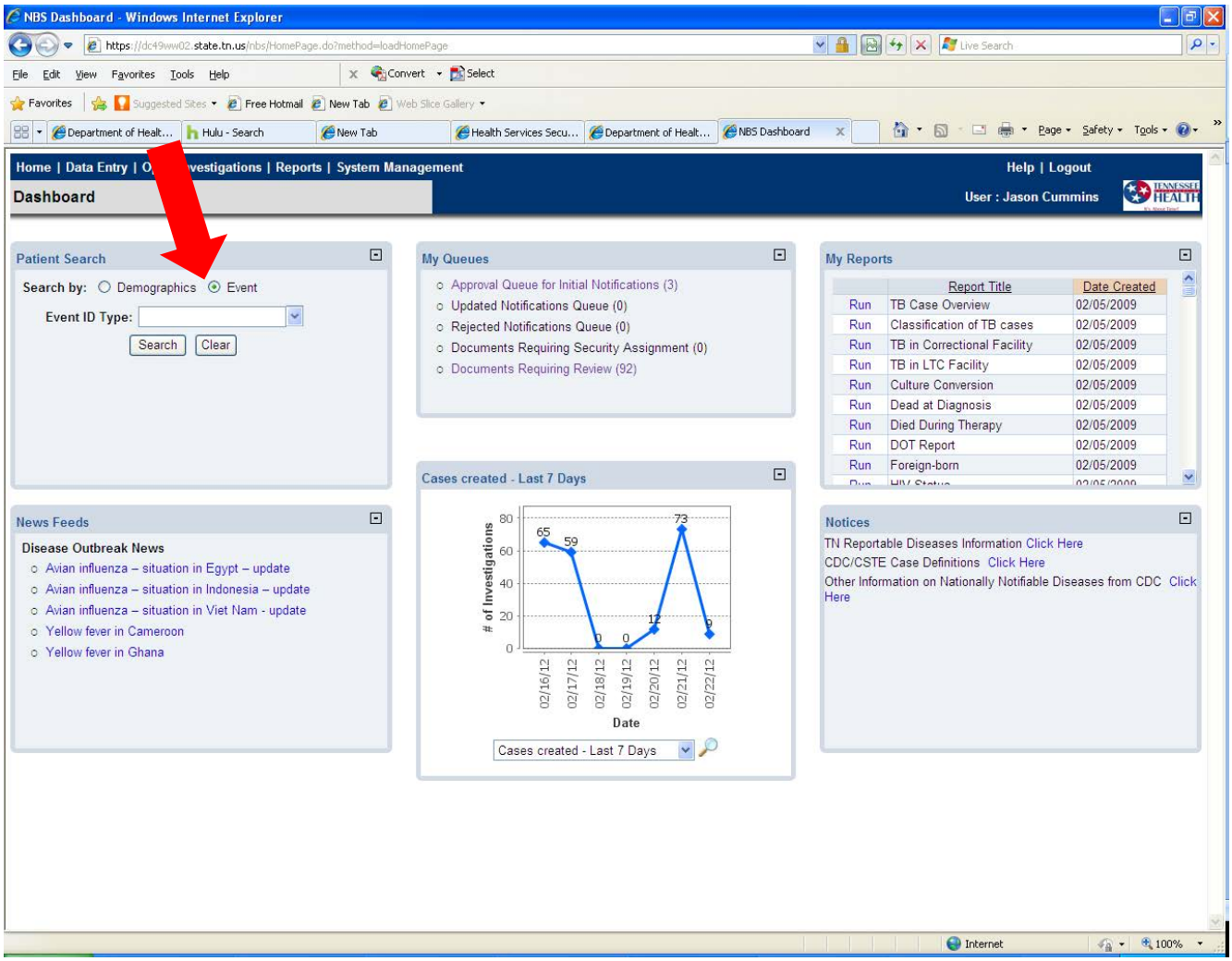
1. From the Home Page select **DATA ENTRY**. The following screen should be displayed:



2. Under most circumstances, you will be searching for/adding a patient either by demographics or State or County Case Number. To search by demographics enter as much or as little information into the **PATIENT SEARCH** box



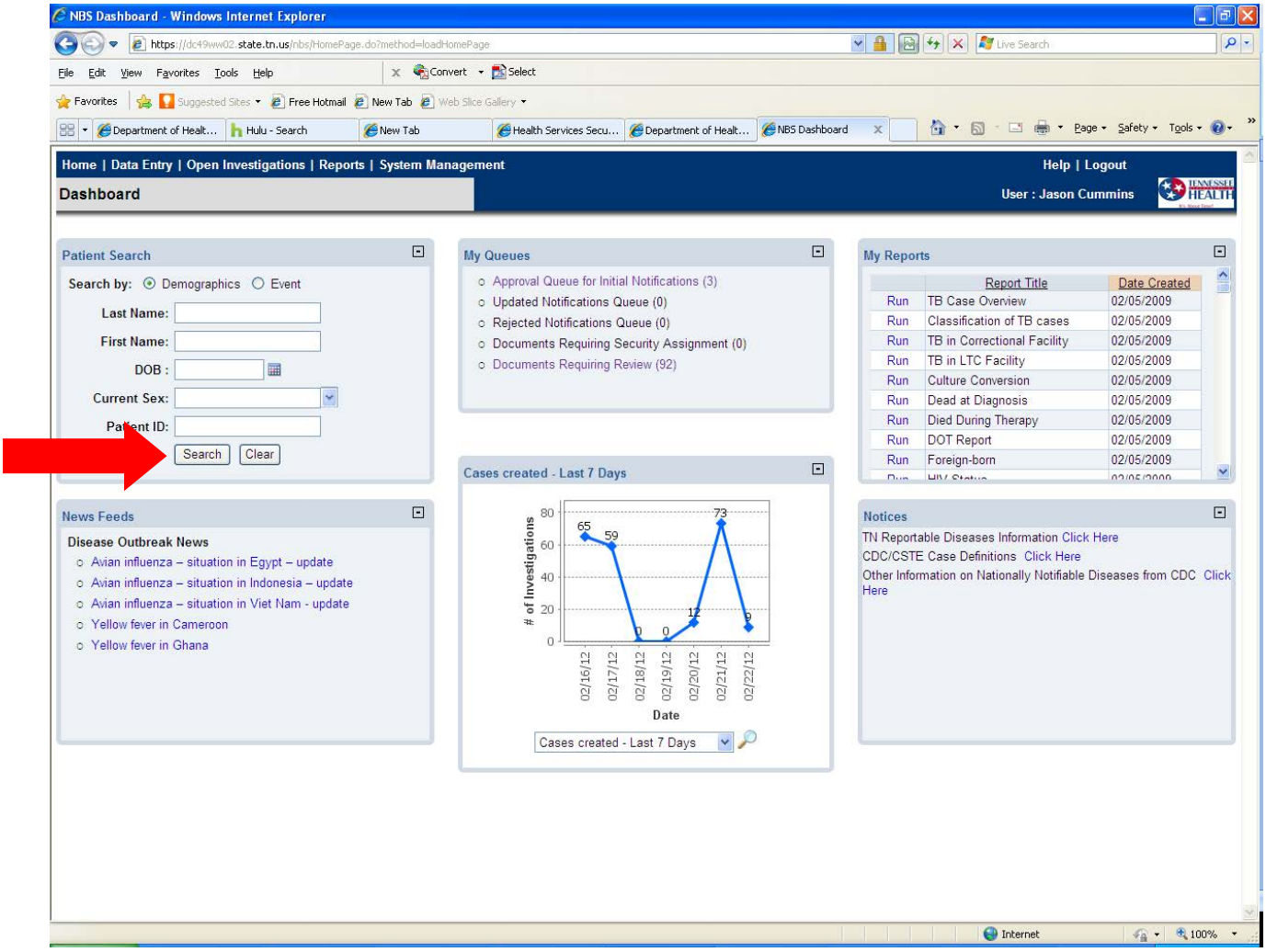
To search by State or County Case Number click the **EVENT** button:



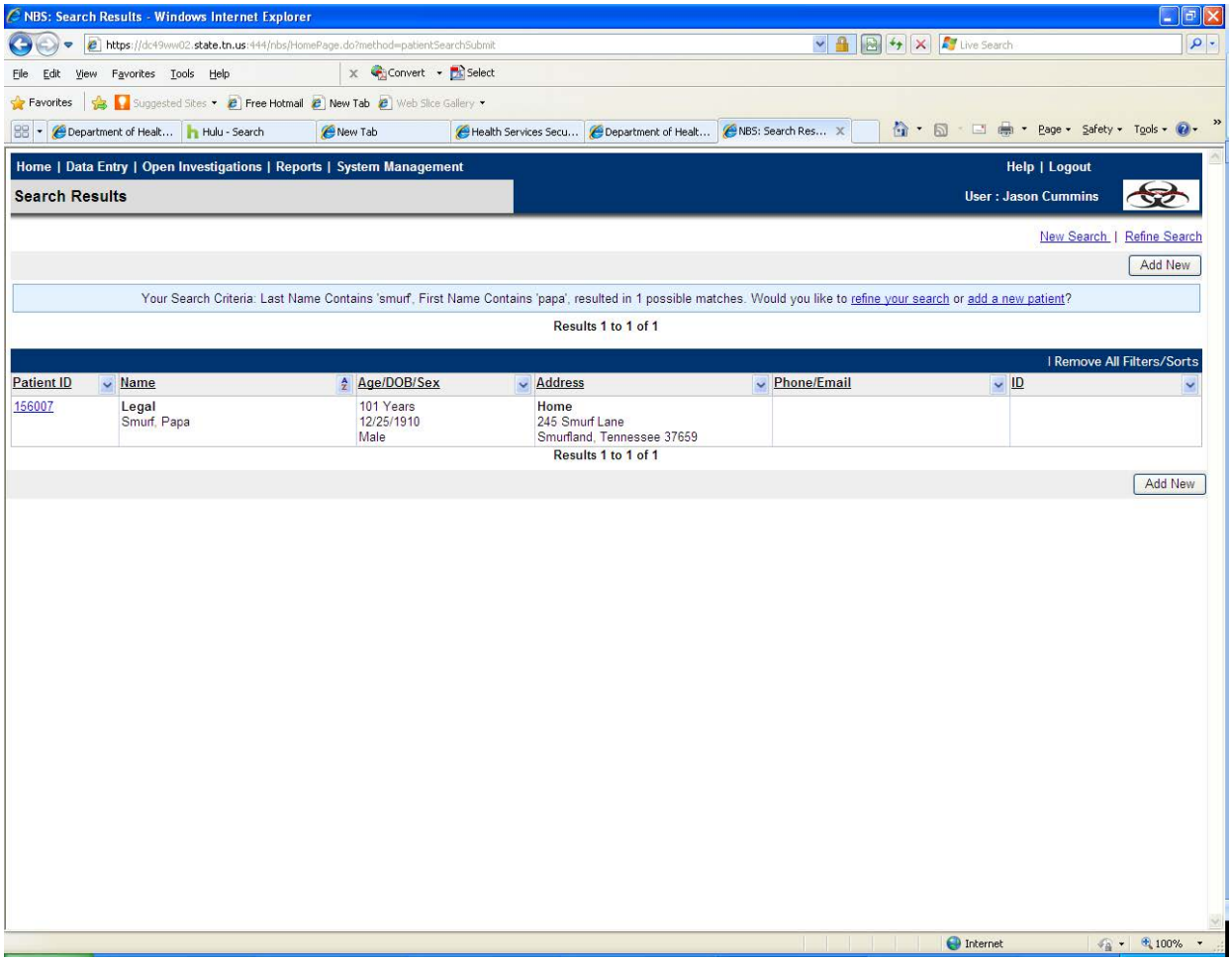
On the **EVENT ID TYPE:** select either **City/County Case ID (this is the same as City/County Case Number)** or **State Case ID (this is the same as State Case Number)**

<u>NOTE: When searching by City/County Case ID or State Case ID, you must use the correct format:</u>
YYYY-TN-TNYYYY### for State Case ID where YYYY= year and ### = case count number (assigned by Central Office)
YYYY-TN-RRYYYY### for City/County Case Number where YYYY = year, RR = region code, and ### you number assigned

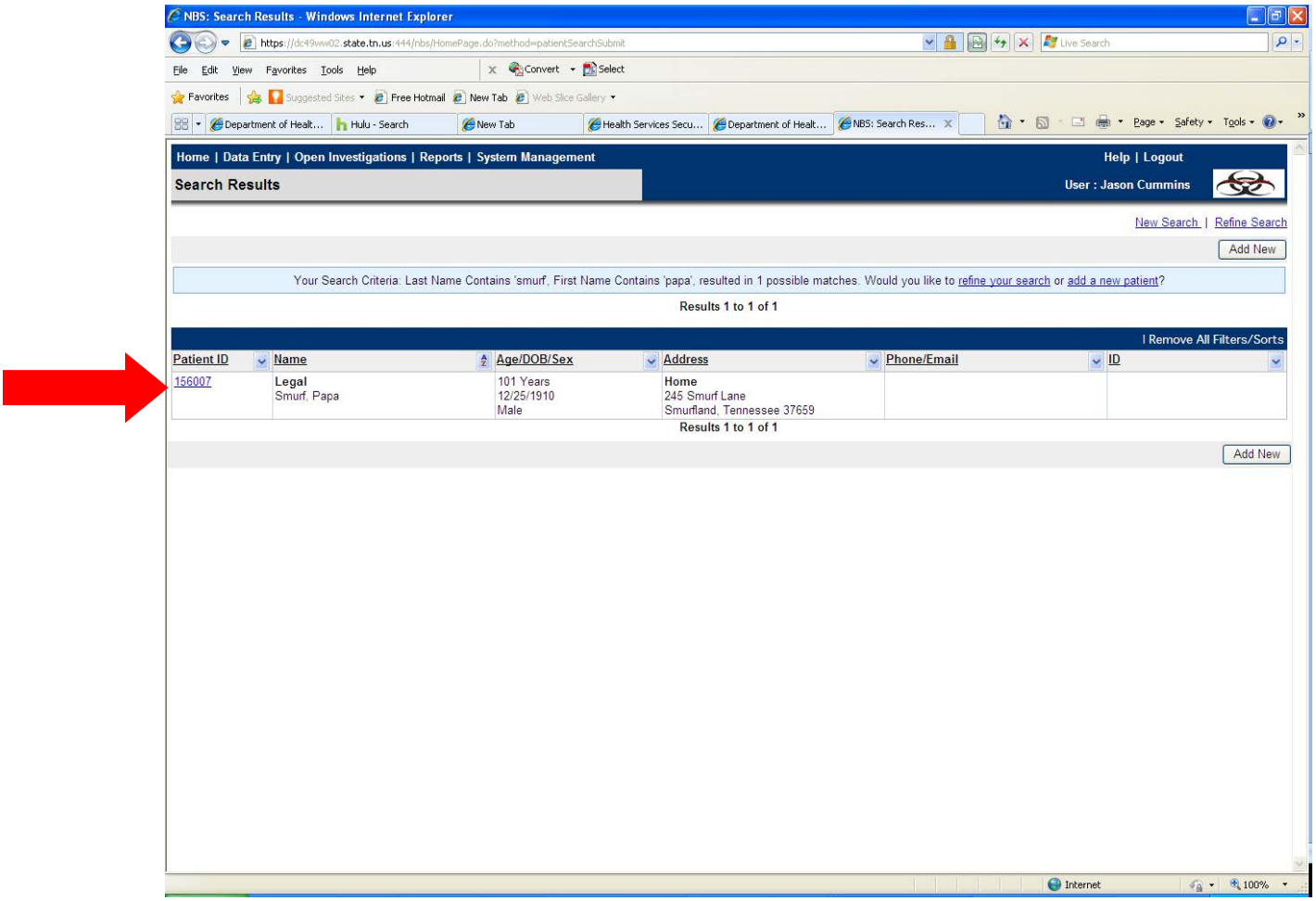
3. Click **SEARCH**:



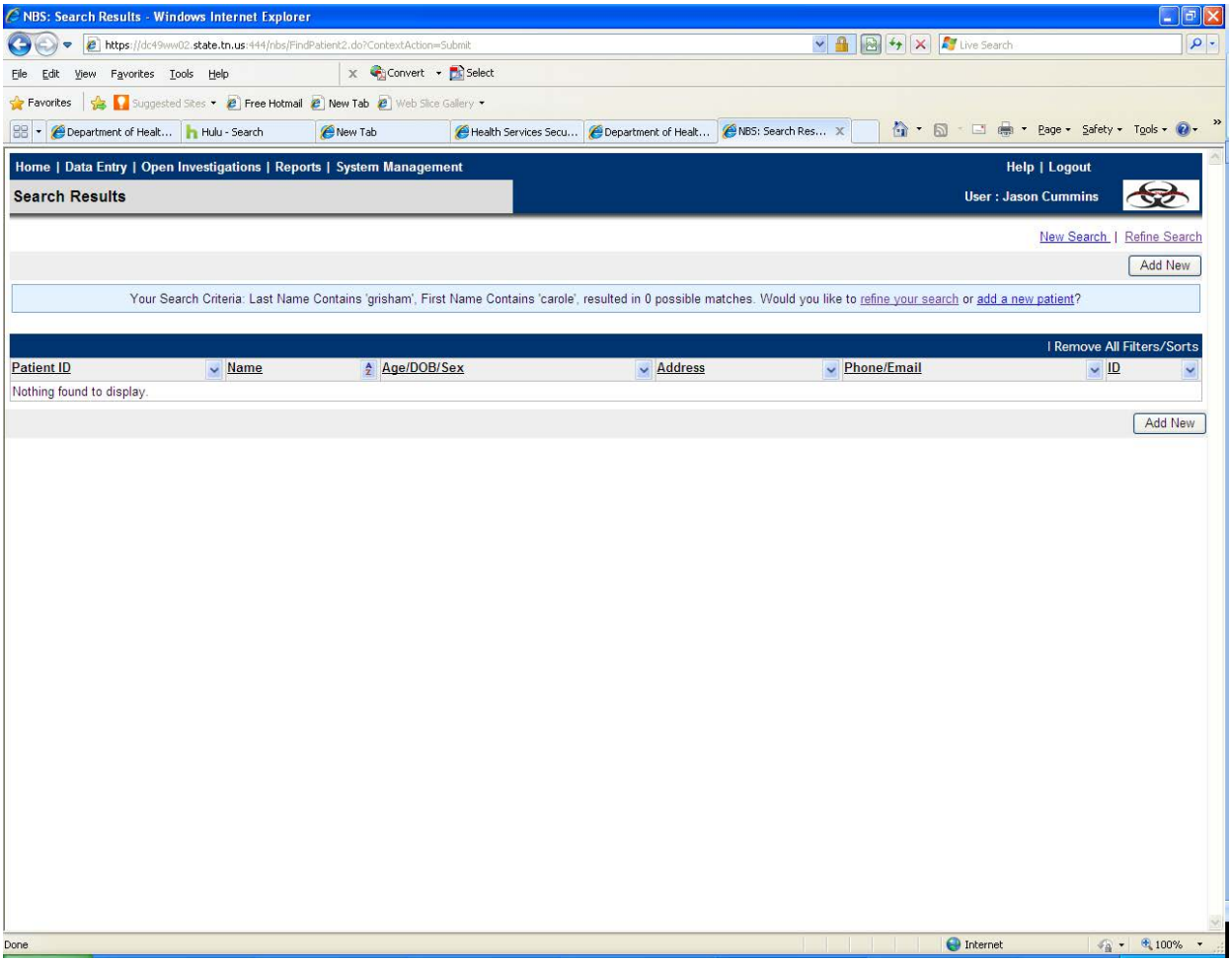
If the patient is already in the system, a similar screen will be displayed:



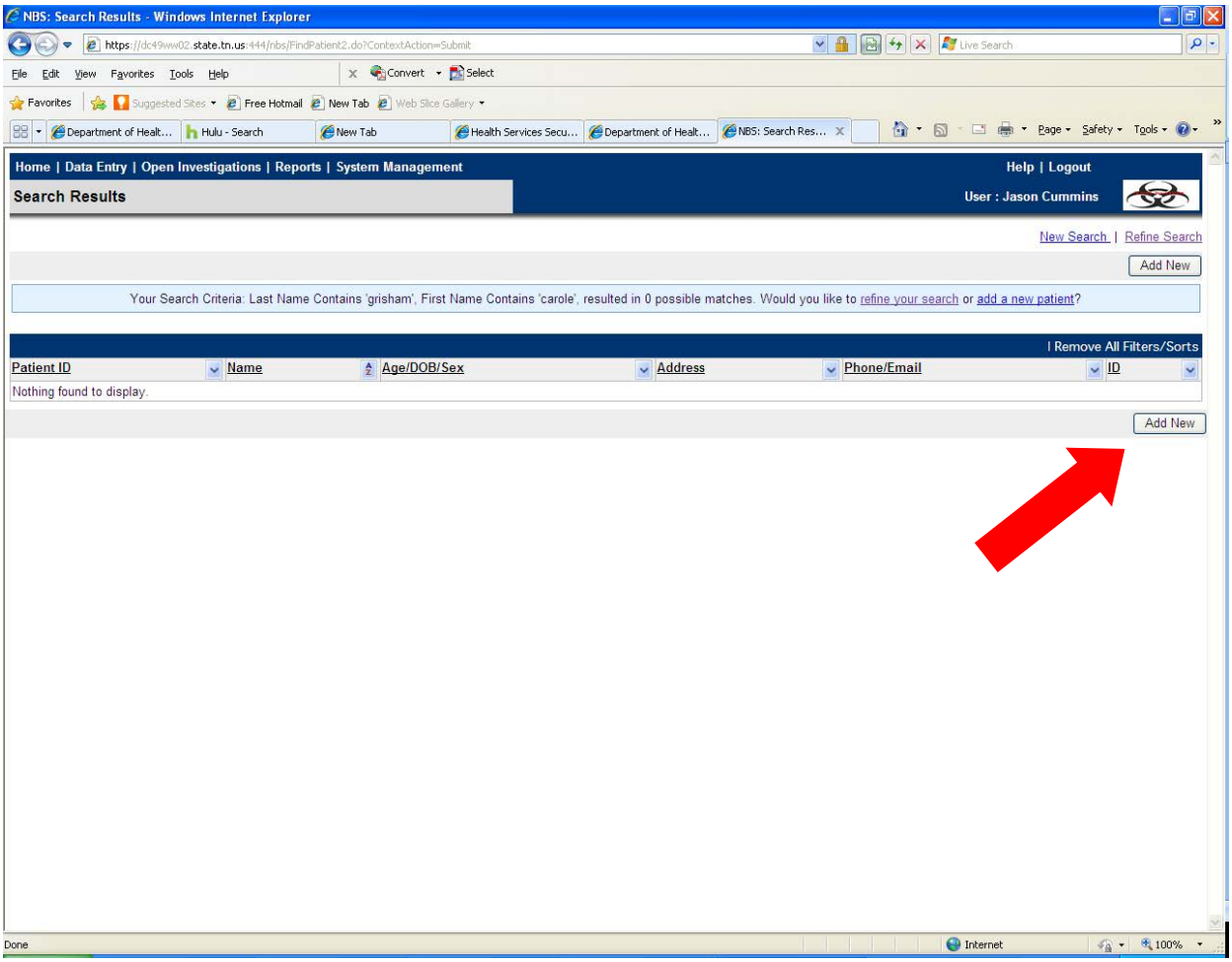
To access the patient, click on the **PATIENT ID number**



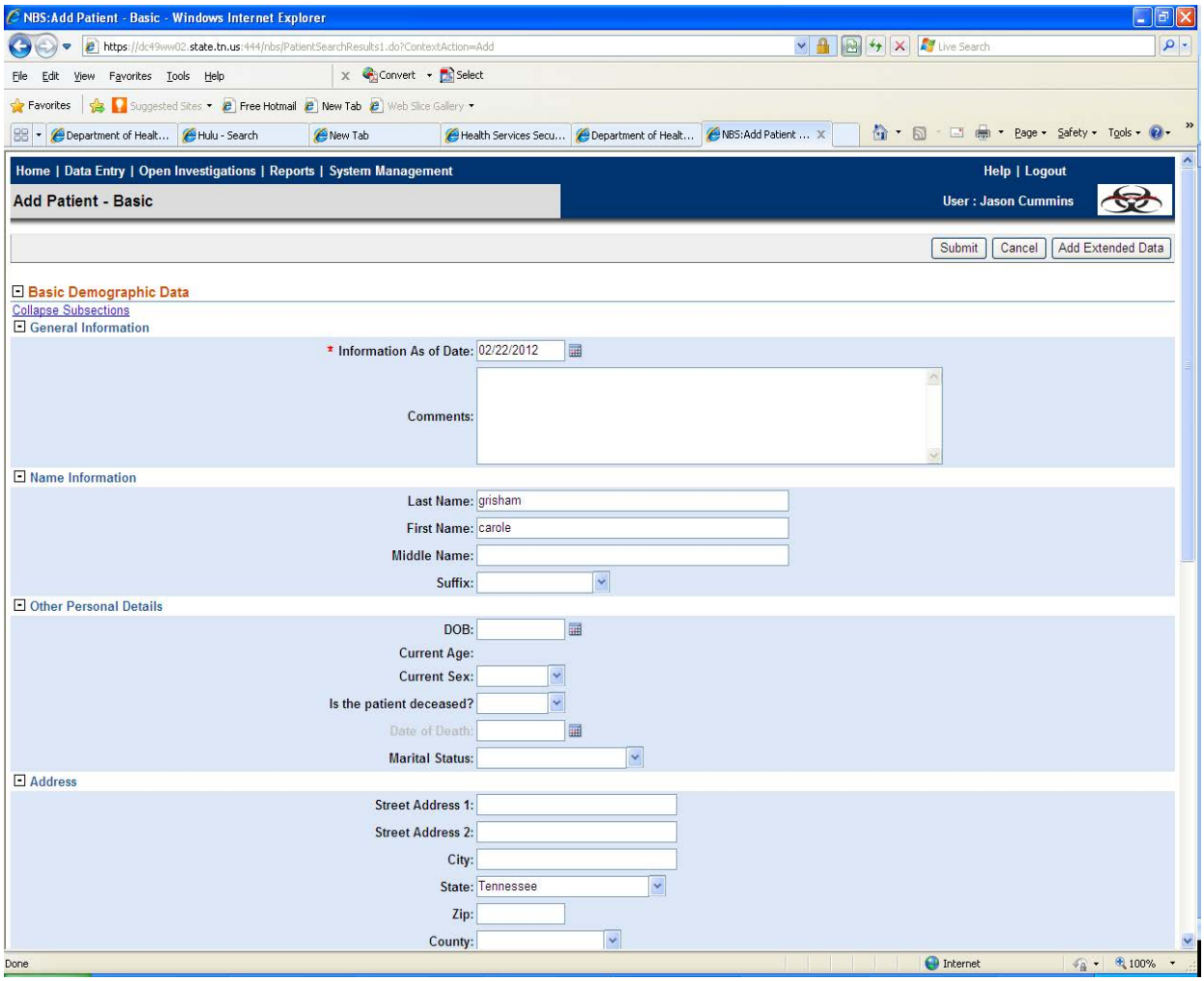
<u>If the patient is not already in the system, the following screen will be displayed:</u>



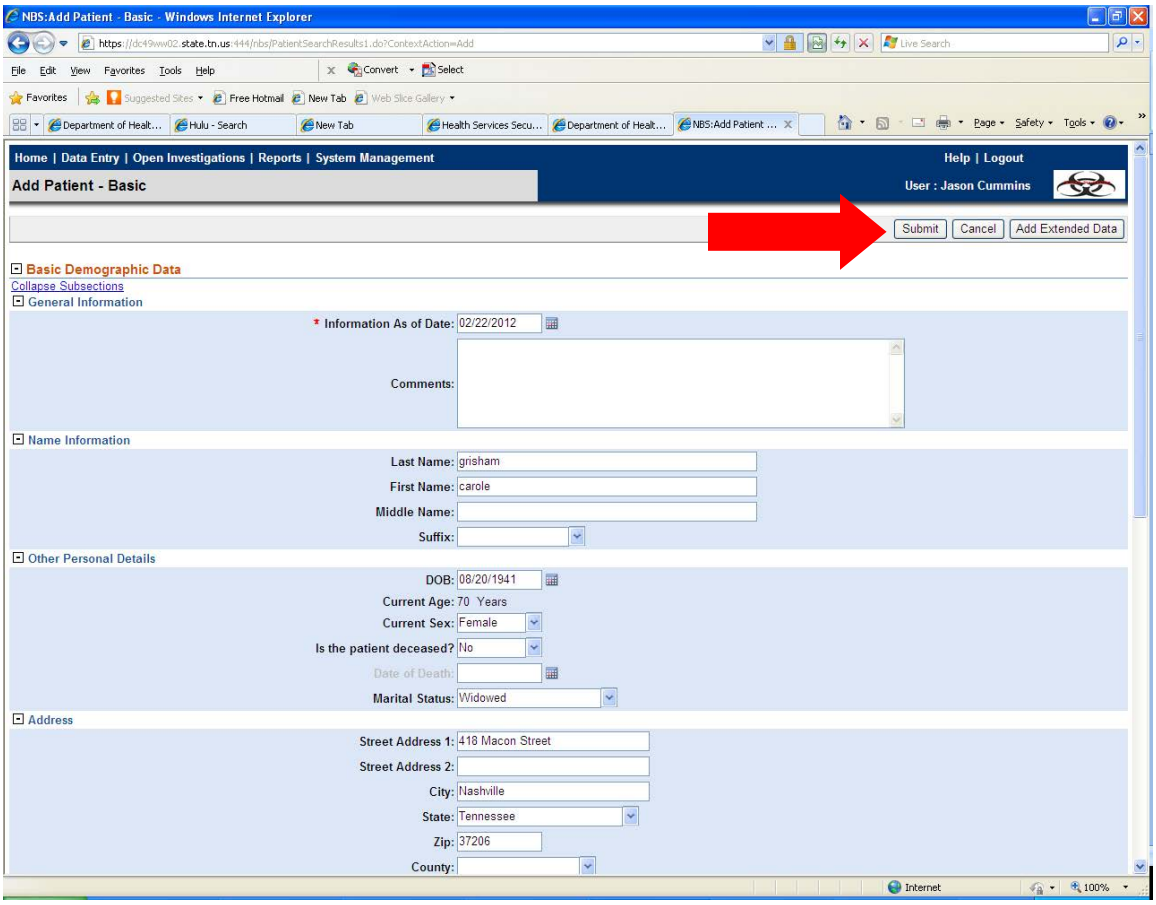
To add a patient to the system, click the **ADD NEW** button:



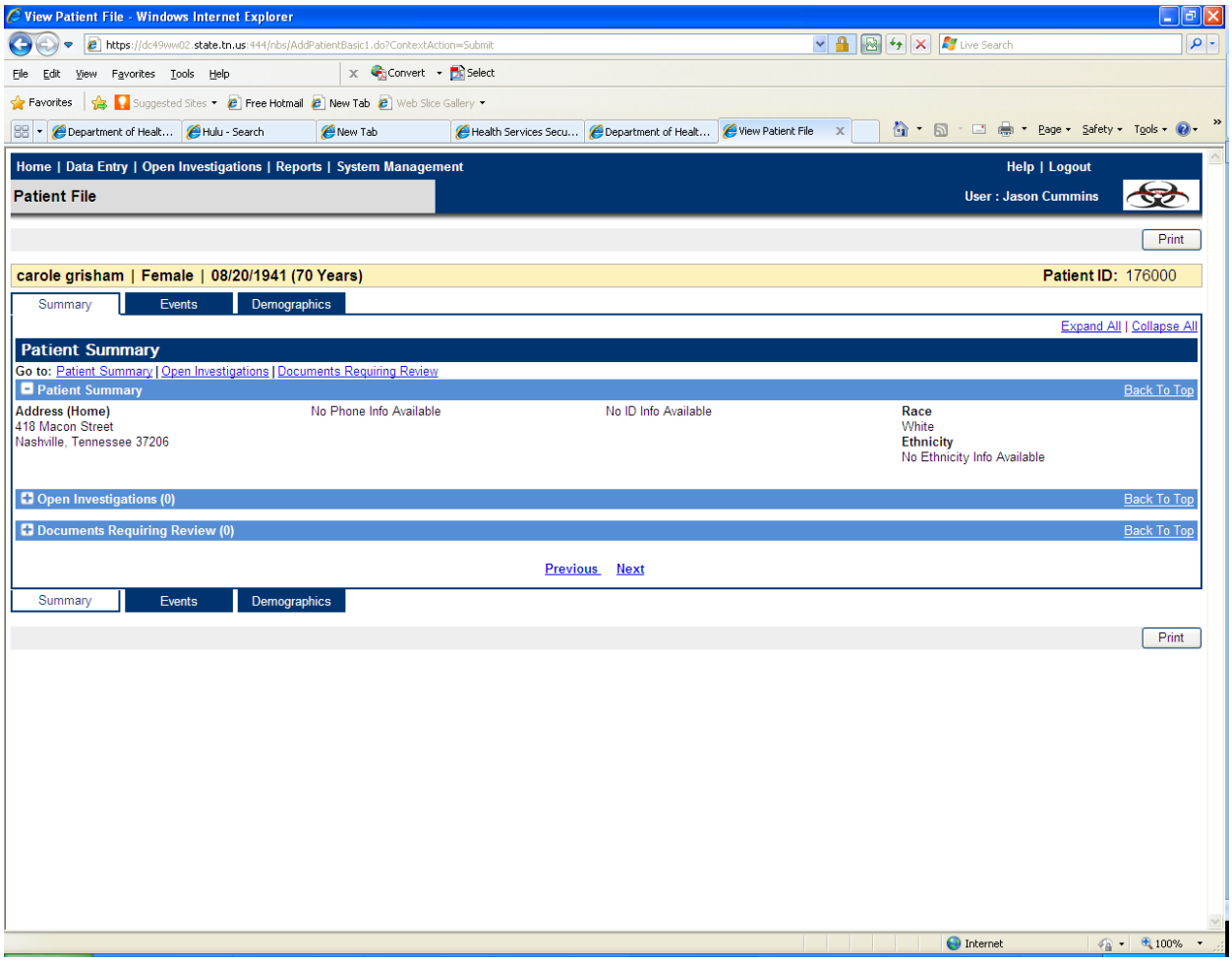
4. Now you will be able to enter data on the **ADD PATIENT-BASIC** screen:



Enter what information is known about the patient on this screen and click the **SUBMIT** button:



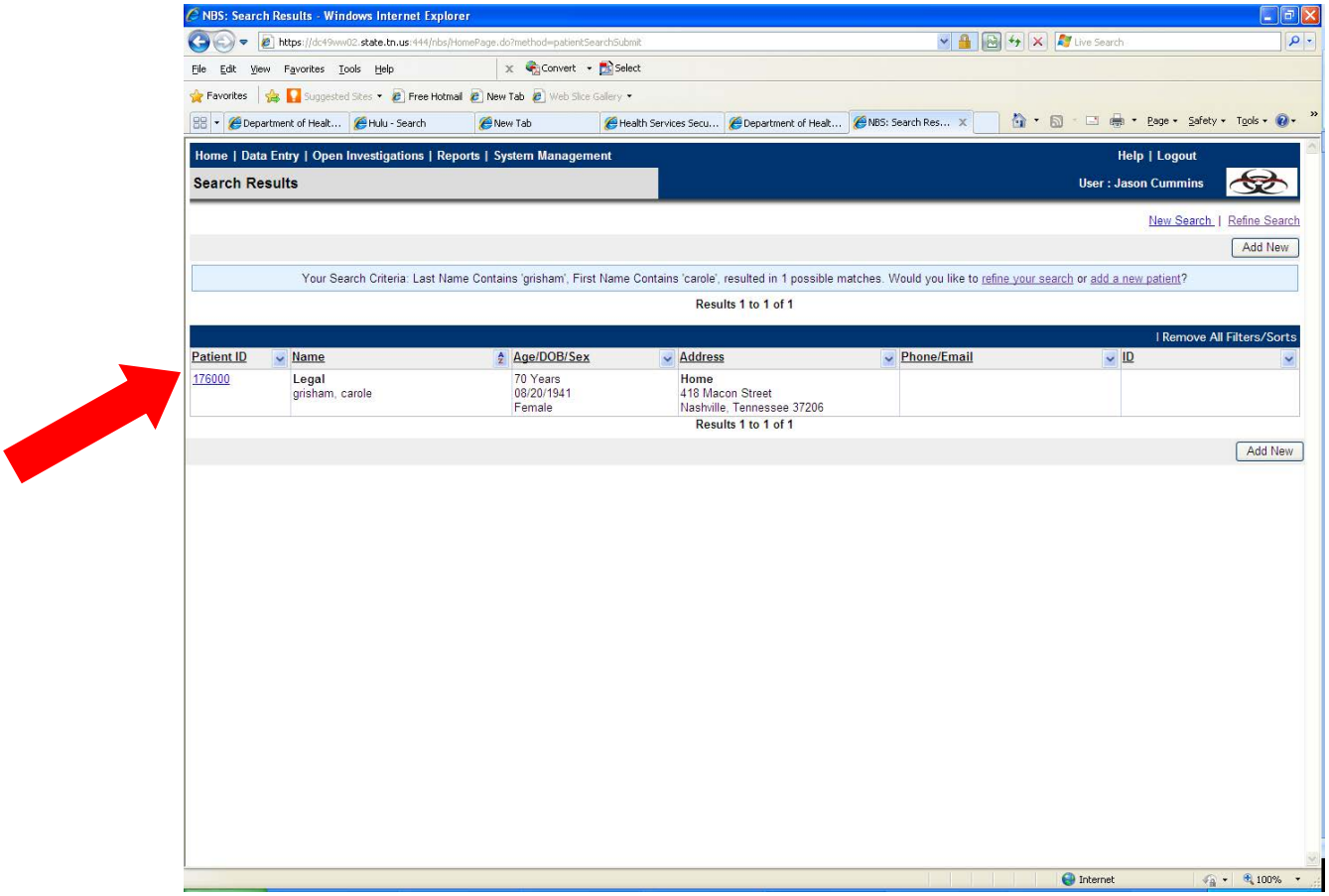
The **PATIENT FILE** screen will be displayed:



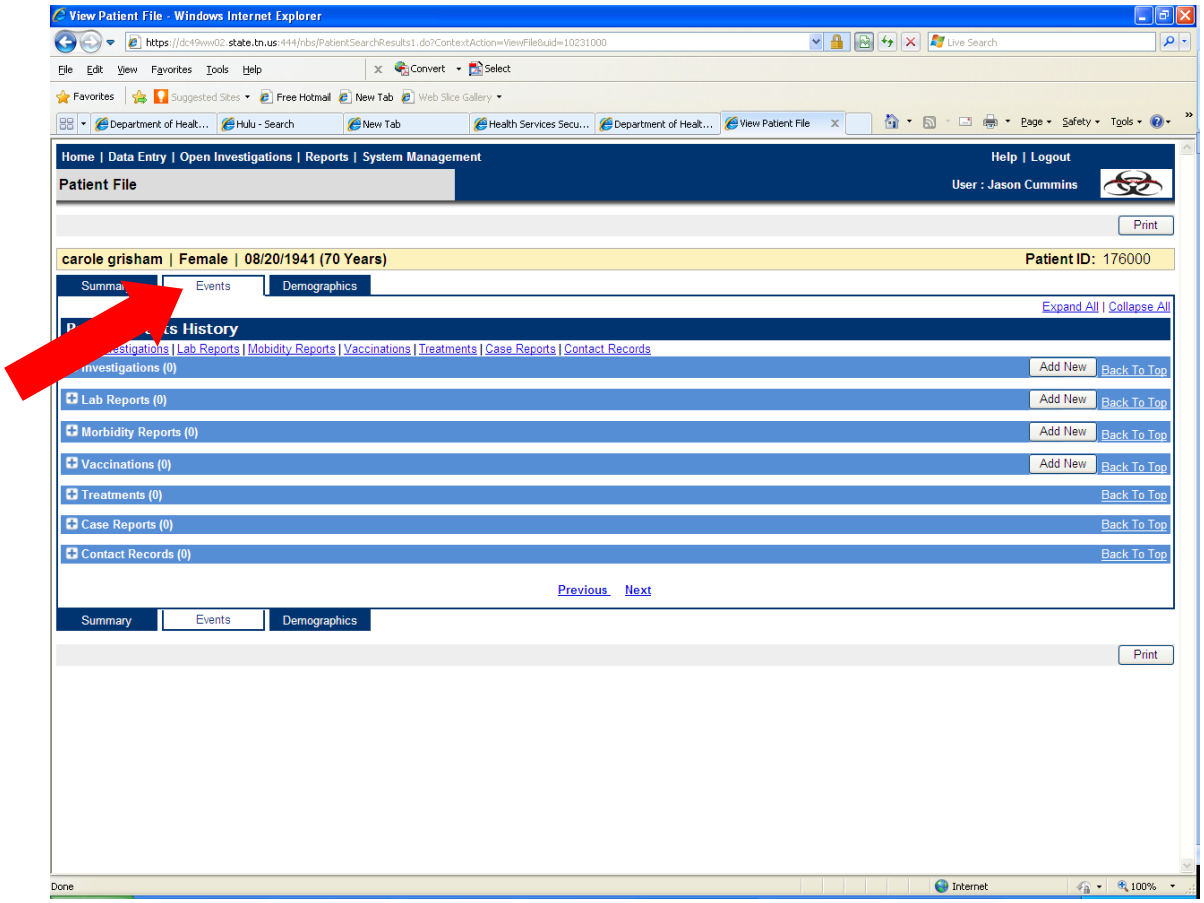
Creating an TB Investigation

1. From the **DASHBOARD**, search for the patient (see section **Finding a Patient, Adding a Patient)**

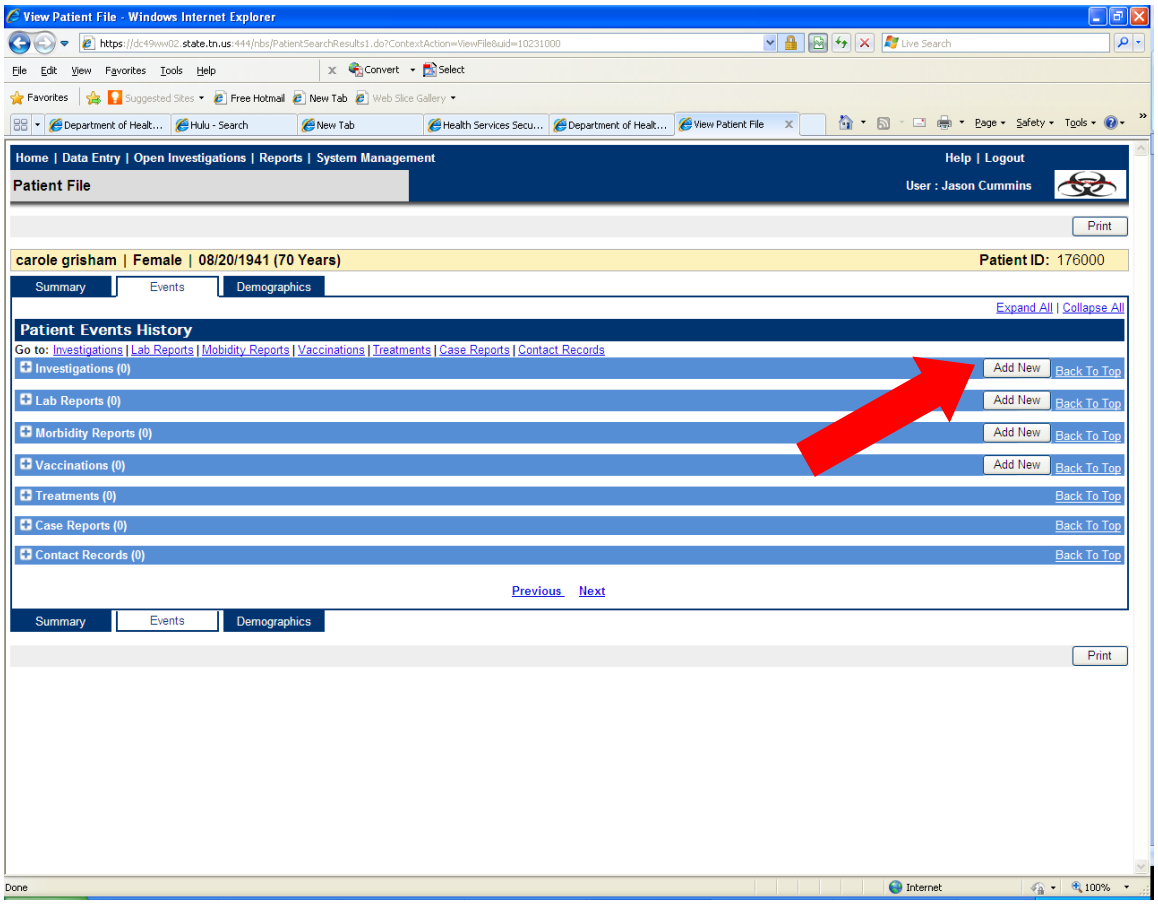
2. If the patient you searched for is the correct patient, click the **PATIENT ID** number**:**



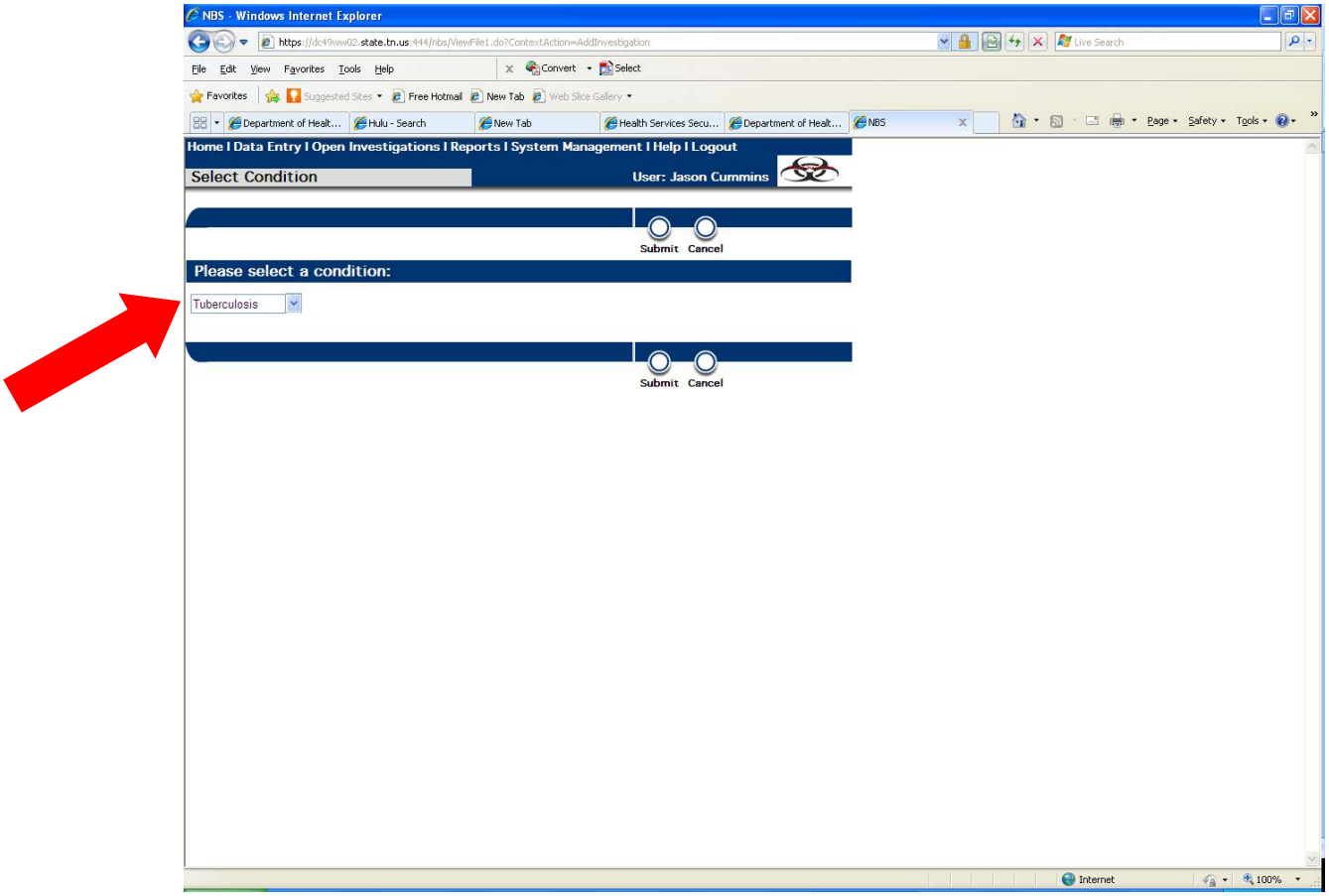
3. The **PATIENT FILE** screen will be displayed. Click the **EVENTS** tab:


View Patient File - Windows Internet Explorer
Home | Data Entry | Open Investigations | Reports | System Management
Help | Logout
Patient File
User : Jason Cummins
Print
carole grisham | Female | 08/20/1941 (70 Years)
Patient ID: 176000
Summary
Events
Demographics
Expand All | Collapse All
Lab Reports | Mobidity Reports | Vaccinations | Treatments | Case Reports | Contact Records
Lab Reports (0)
Morbidity Reports (0)
Vaccinations (0)
Treatments (0)
Case Reports (0)
Contact Records (0)
Add New
Back To Top
Previous
Next
Done
Internet
100%

4. Under the **INVESTIGATIONS** subsection, click **ADD NEW:**



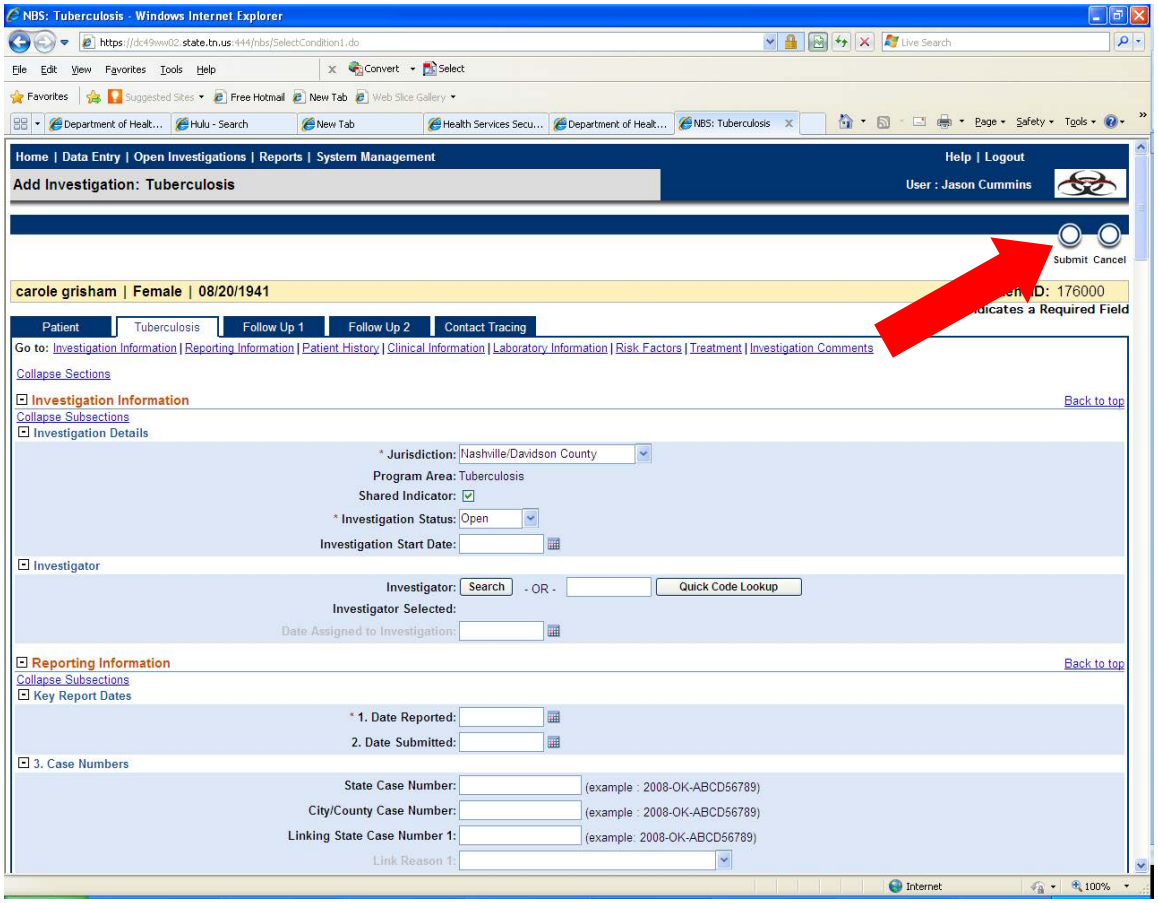
5. On the **SELECT CONDITION** screen, select **TUBERCULOSIS**



Click the **SUBMIT BUTTON**

6. On the **ADD INVESTIGATION: TUBERCULOSIS** screen, enter information on the tabs (as available). **<u>Do not enter any information on the Contact Tracing Tab</u>**

7. Once data is entered, click the **SUBMIT** button:

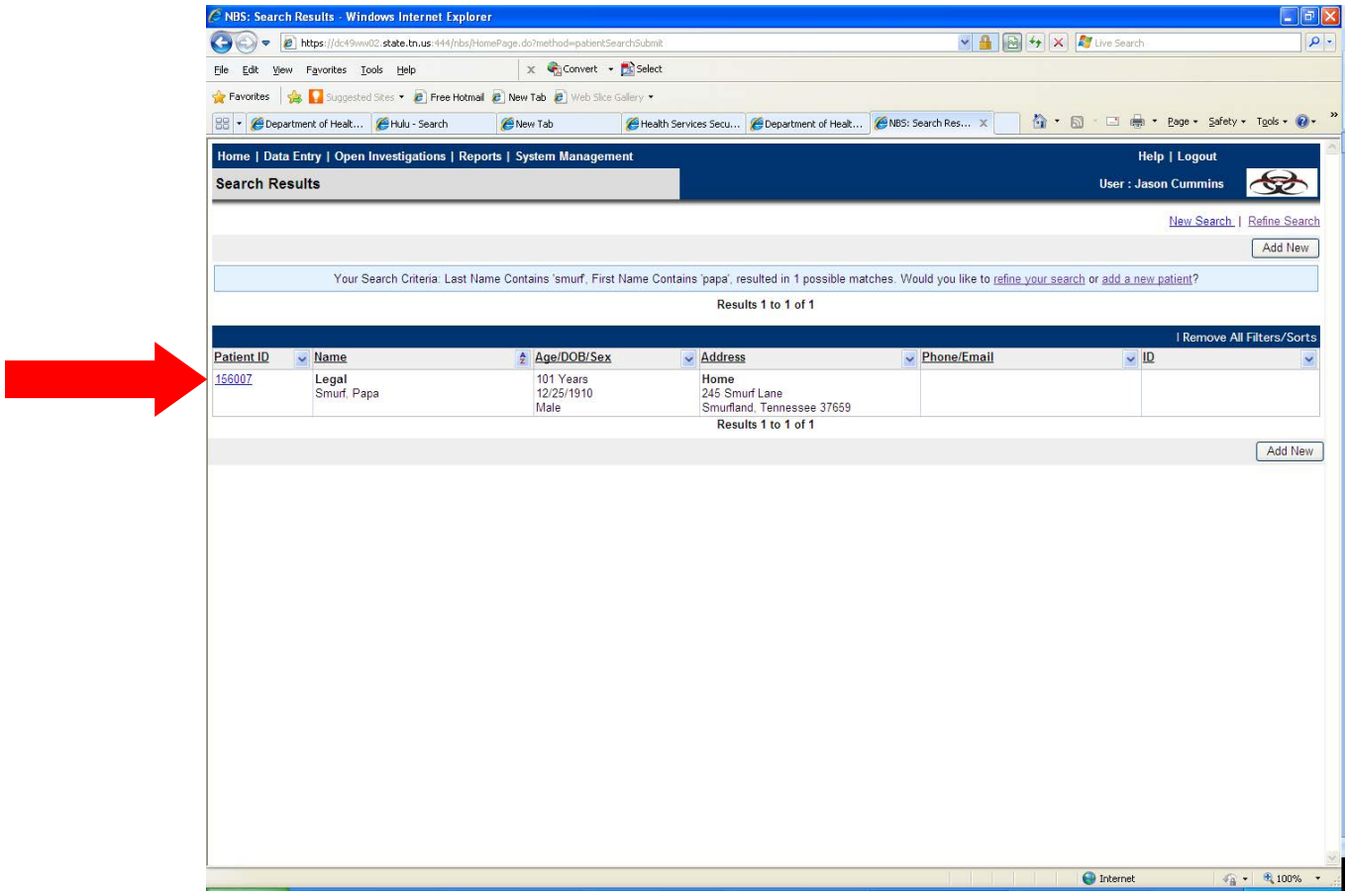


<u>NOTE: DEMOGRAPHIC INFORMATION SHOULD BE ADDED/UPDATED ON THE "PATIENT" TAB WITHIN THE INVESTIGATION AND NOT THE PATIENT'S FILE.</u>

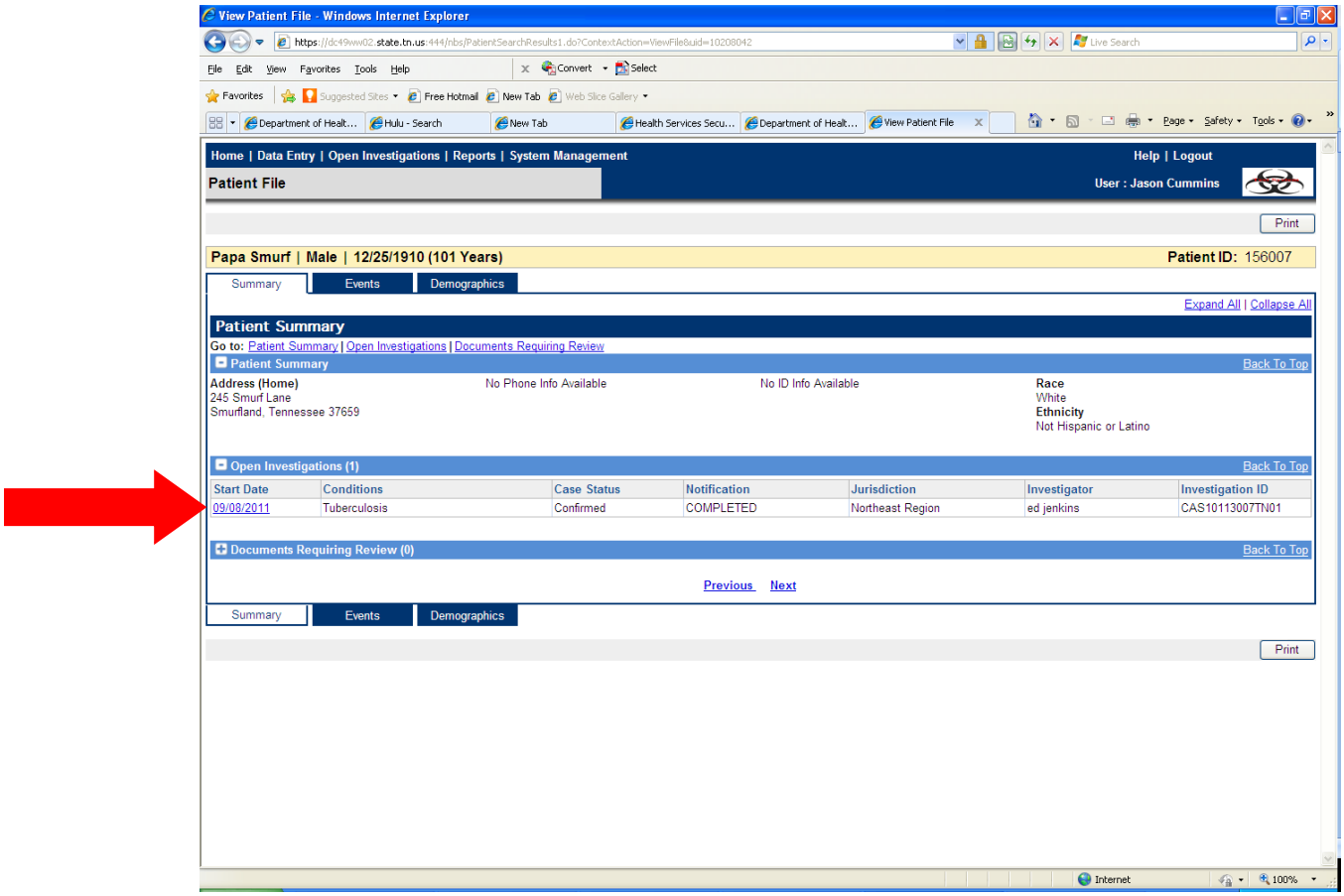
Editing Case Information

1. From the **DASHBOARD**, search for the patient:

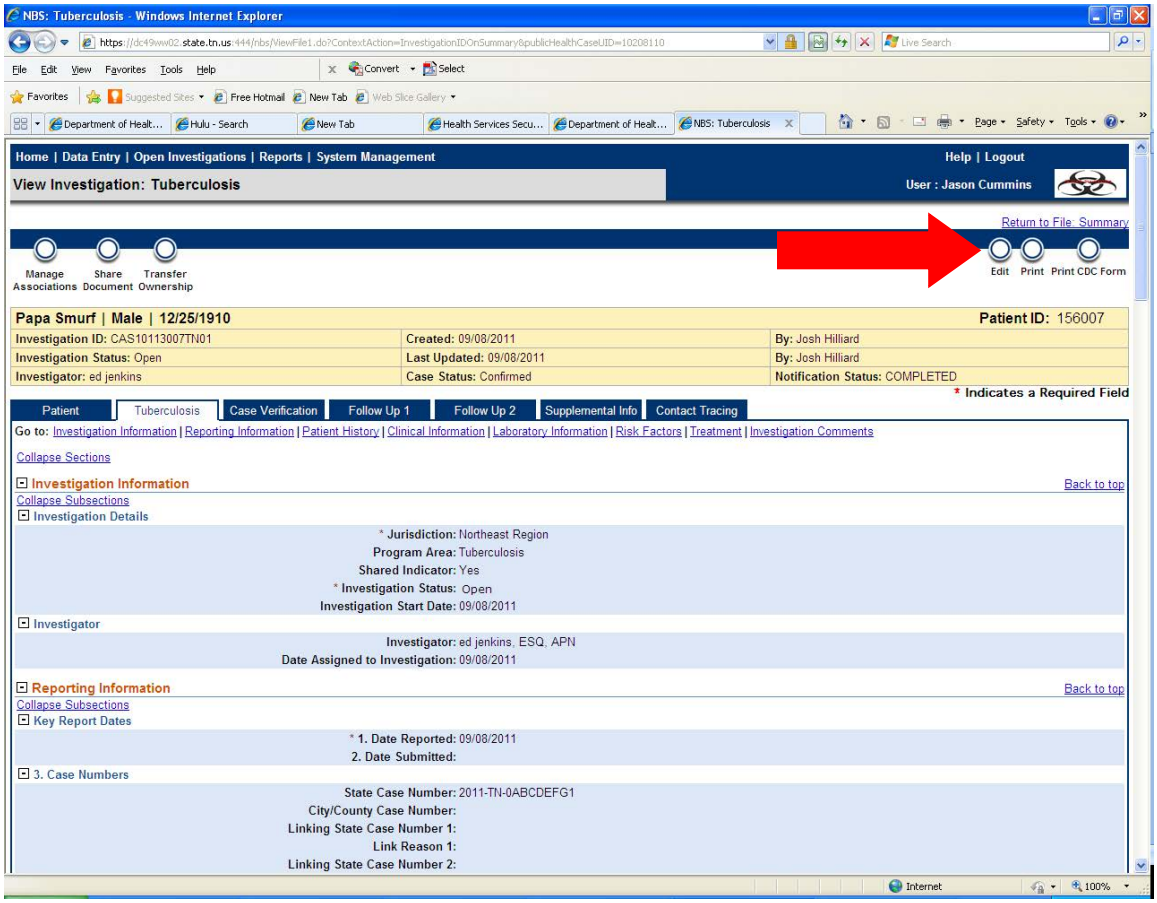
2. Click on the **PATIENT ID** to access the investigation:



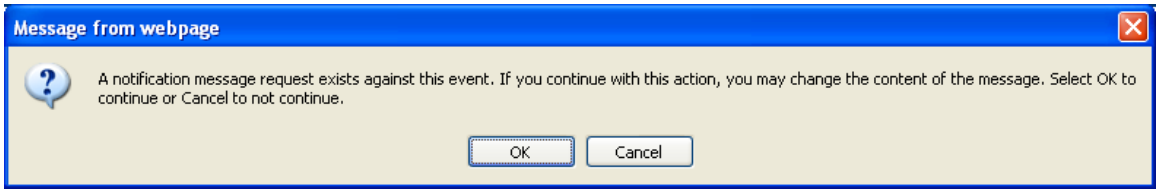
3. On the **PATIENT FILE** screen, click on the **START DATE** under the **OPEN INVESTIGATIONS** subsection:



4. On the **VIEW INVESTIGATION: TUBERCULOSIS** screen, click the **EDIT** button to begin editing the investigation information:

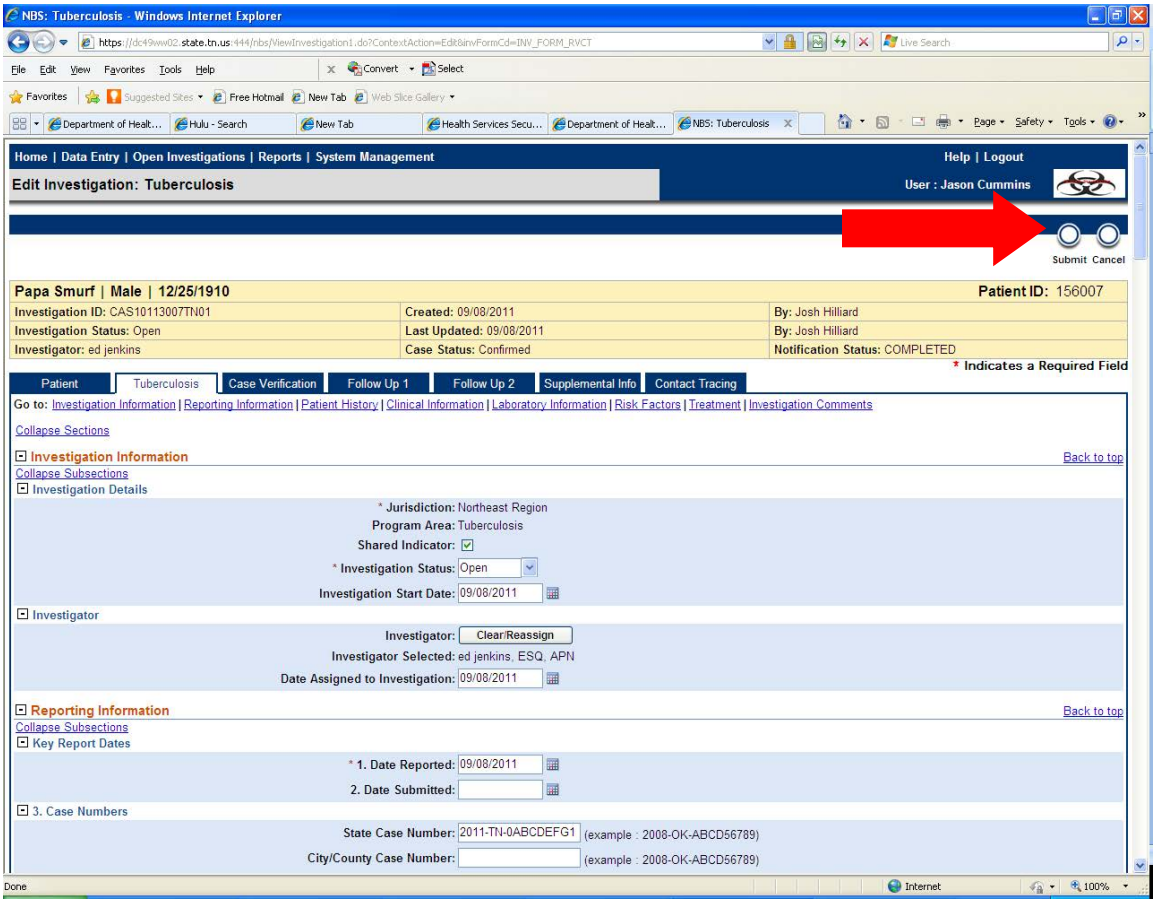


The following screen may appear:



Click **OK**

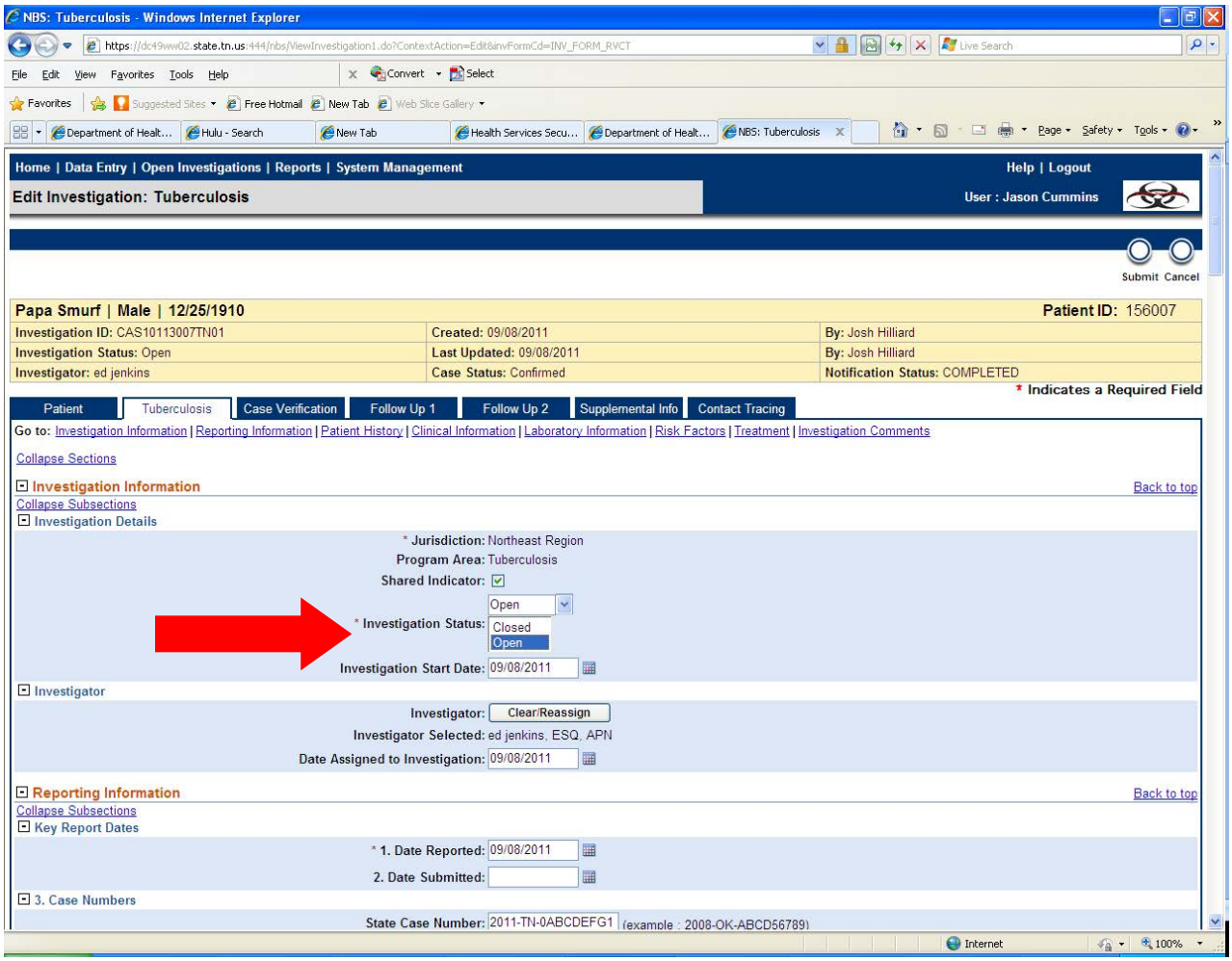
5. After you have updated/edited the information, click the **SUBMIT** button



<u>NOTE: DEMOGRAPHIC INFORMATION SHOULD BE ADDED/UPDATED ON THE "PATIENT" TAB WITHIN THE INVESTIGATION AND NOT THE PATIENT'S FILE.</u>

Closing an Investigation

1. Edit the patient's investigation (See **Editing Patient Information** section).
2. Change the **INVESTIGATION STATUS** from **OPEN** to **CLOSED:**



Changing Case Verification to "Not a Verified Case"

The following will lead you through the steps to change a "Suspect" to "Not a Verified Case"

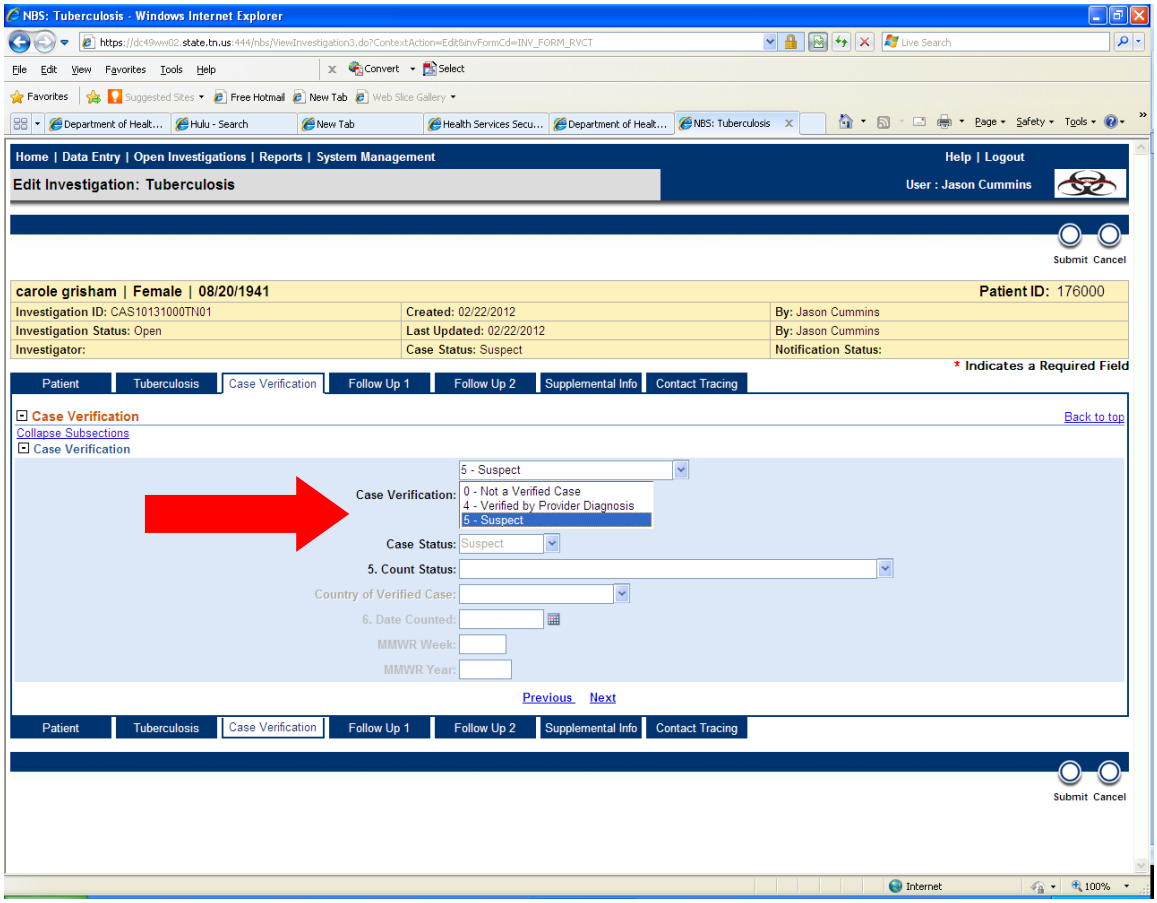
Assumptions:

1. You have created an investigation and entered information regarding a suspect and submitted the case.
2. The Case Verification = "5—Suspect"

IF THE SUSPECT HAS NOT BEEN STARTED ON TREATMENT

1. Search for the patient and edit the investigation (**See previous sections).**

2. On the **CASE VERIFICATION** tab, change the **Case Verification** from **"5-Suspect"** to **"0-Not a Verified Case."**

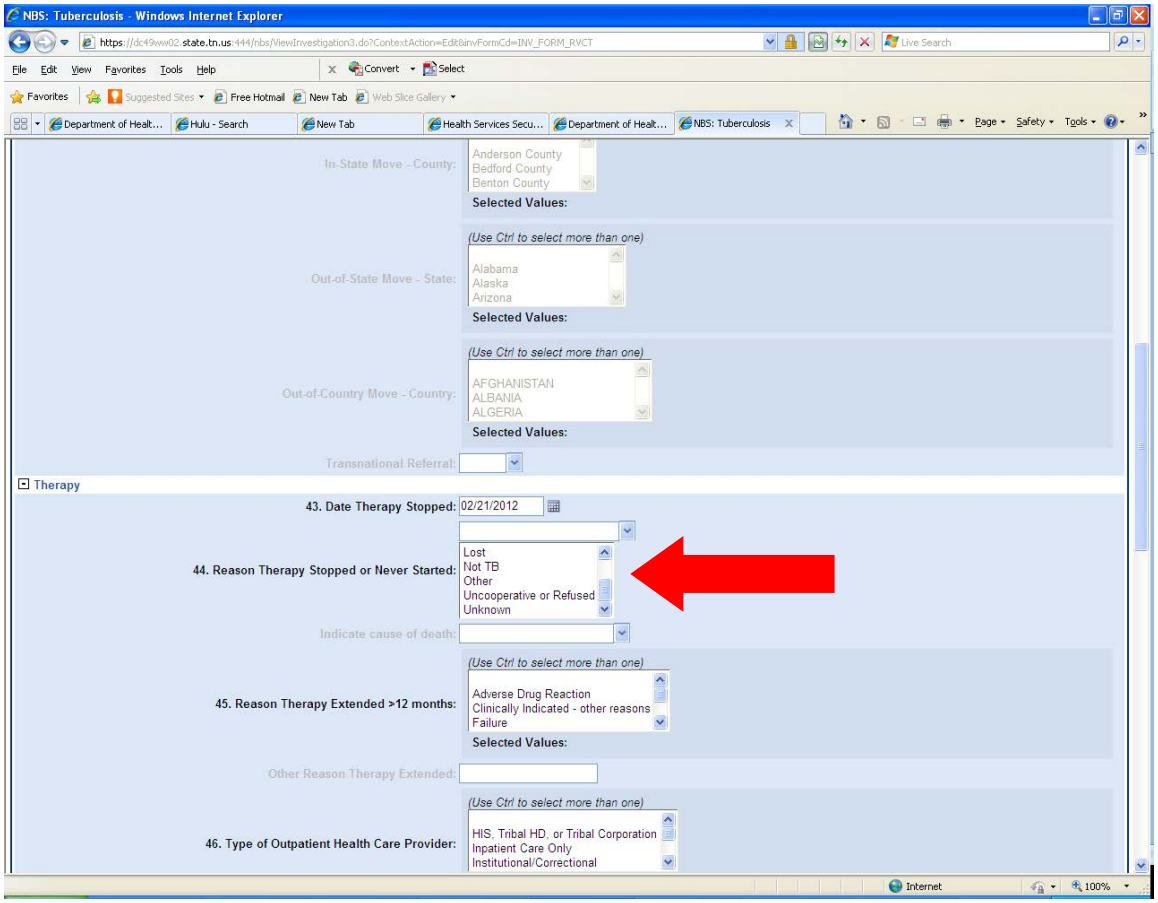


3. Close the investigation (see **Closing an Investigation** section). Click **SUBMIT.**

IF THE SUSPECT HAS BEEN STARTED ON TREATMENT

1. Search for the patient and edit the investigation (**See previous sections).**

2. On the **FOLLOW UP 2** tab, enter the **DATE THERAPY STOPPED** and enter the **REASON THERAPY STOPPED OR NEVER STARTED** as **"Not TB."**



3. Close the investigation (see **Closing an Investigation** section). Click **SUBMIT.**

Building a Case
What Information to Enter and When

Submit to Central Office within one week of determining final disposition

In most cases this should be no more than 12 months of starting therapy

Follow-up 2
Case Completion Report

No later than 1 week after last dose of medication was provided to the patient

Patients that are lost: assign disposition ASAP and finalize ASAP but no later than 3 months after the last does of medication was provided

Final Disposition of TB Case (i.e., lost, died, completed treatment)

No later than 4 weeks after the case has been culture confirmed

FU 1 should be completed for <u>culture-positive cases only</u>

Follow-up 1
Initial Drug Susceptibility Report

Within 8 Weeks of Notification

<u>Case Verification (Disposition)</u>
1—Positive Culture
1a—Positive NAA
2—Positive Smear/Tissue
3—Clinical Case Definition
4—Verified by Provider Diagnosis
0—Not a Verified Case

<u>Any Missing RVCT information</u>

One – Two Weeks Later

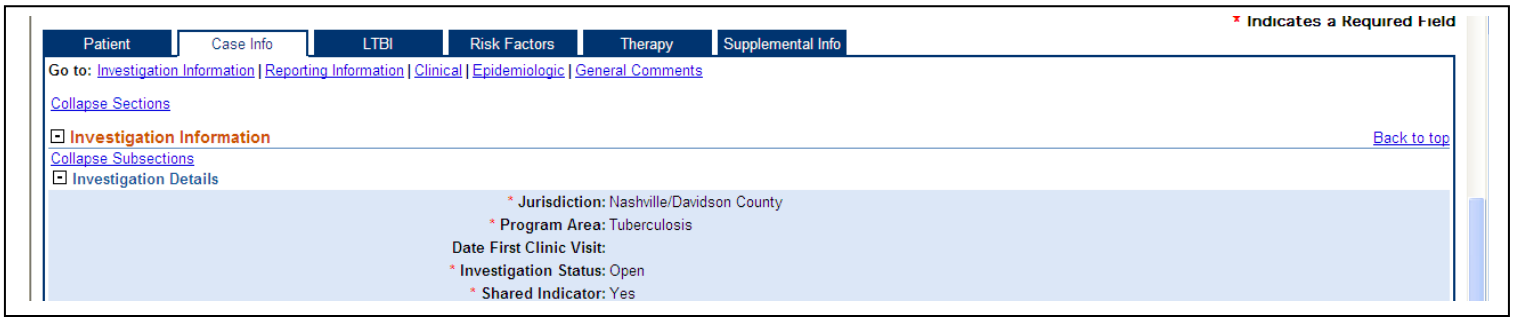
- TST
- Initial CXR
- Initial CT Scan (if done)
- Add'n Risk Factors
- Occupation
- Date Tx Started
- Drug Regimen
- HIV status (if known)
- Correctional Fac
- Homeless
- LTC Facility
- Non Inj. Drug Use
- Inj. Drug Use
- Alcohol Use
- Date Tx Started
- Smear Results

Within 1 Business Day of Notification

- Patient Name
- Patient Address
- Date Reported
- Reporting Address for Case Counting
- Previous Dx of TB
- DOB
- Sex
- Race
- Ethnicity
- Country of Birth
- Month/Year Arrived in US
- Peds TB Patient Info
- Status at TB Diagnosis
- Site of TB
- Primary Reason Evaulated for TB

Case Verification = 5--Suspect

TAB: Case Info **SECTION: Inv Information** **SUBSECTION: Inv. Details**



Jurisdiction

This is the jurisdiction based on the patient address entered. This field is pre-populated based on basic information entered when the case is first entered into NEDSS.

Program Area

This is the program area for the investigation. This will always be pre-populated as "Tuberculosis."

Date of First Clinic Visit

This is the date of the patient's first clinic visit. Date must be entered as MM/DD/YYY. You may also use the calendar function to select the date.

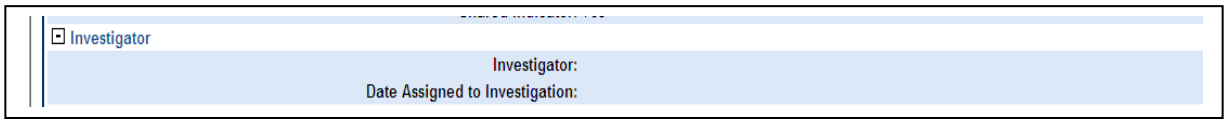
Investigation Status

An investigation should remain open for the duration that the patient is on LTBI therapy. An investigation should be closed when the patient completes therapy or when a patient stops therapy for one of the reasons listed.

Shared Indicator

This box should always be checked.

TAB: Case Info **SECTION: Inv Information** **SUBSECTION: Investigator**



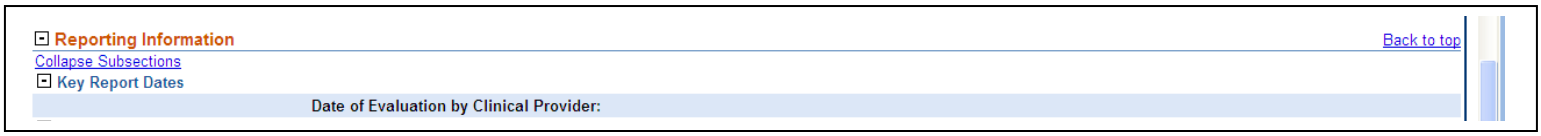
Investigator

This is the person assigned to this LTBI investigation. You may search for the investigator by using the "Search" button or if the investigator has a quick code, enter the quick code in the field and press "Quick Code Lookup."

Date Assigned to Investigation

This is the date that the investigator was assigned to this LTBI investigation. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

TAB: Case Info **SECTION: Reporting Info** **SUBSECTION: Key Report Dates**



Date of Evaluation by Clinical Provider

This is the date that the patient was evaluated in the clinic by a clinical provider. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

TAB: Case Info **SECTION: Reporting Info** **SUBSECTION: Case Numbers**

Linking State Case Number 1

If the LTBI patient is a contact to a known case of TB, enter the TB case's state case number in this field. State Case Number should be entered as YYYY-TN-TNYYYY###. If you do not know the case's state case number please contact Central Office.

Link Reason 1

The only link reason that would be used for the LTBI page is "2—Epidemiologically Linked Case."

Linking State Case Number 2

If the LTBI patient has been named a contact to more than one case of active TB, please list the 2nd case's state case number in this field. State Case Number should be entered as YYYY-TN-TNYYYY###. If you do not know the case's state case number please contact Central Office.

Link Reason 2

The only link reason that would be used for the LTBI page is "2—Epidemiologically Linked Case."

TAB: Case Info SECTION: Reporting Info
SUBSECTION: Reporting Organization

Reporting Organization

Reporting Source Type:
Other Medical Clinic:

Reporting Source Type

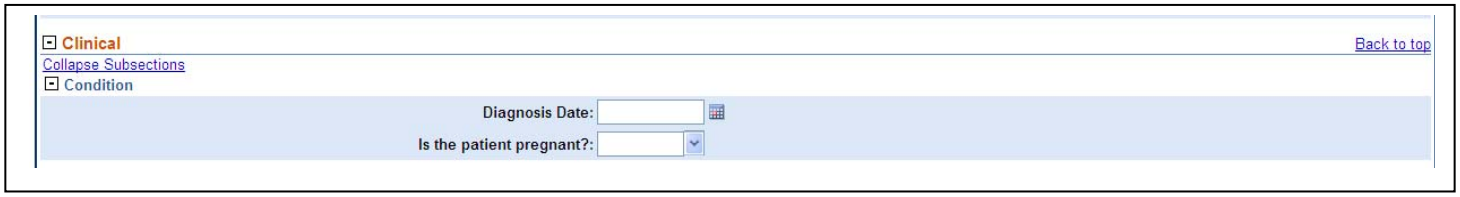
Select the option that best describes how the LTBI patient was "referred" to the clinic.

Other	Description	Comment
Correctional Facilities	LTBI patient was referred from a correctional facility to be tested for LTBI or as a result of a positive TST or IGRA	See **"Resident of a Correctional Facility at Time of Diagnosis"** section for what constitutes a correctional facility
Day Care Center	LTBI patient was referred from a day care center to be tested for LTBI or as a result of a positive TST or IGRA	
Drug Treatment Facility	LTBI patient was referred from a drug treatment facility to be tested for LTBI or as a result of a positive TST or IGRA	See **"Resident of a Long-Term Care Facility at Time of Diagnosis"** section for what constitutes a drug treatment facility
Emergency Room/Emergency Department (ER/ED)	LTBI patient was referred from an ER/ED to be tested for LTBI or as a result of a positive TST or IGRA	
Family Planning Facility	LTBI patient was referred from a family planning facility facility to be tested for LTBI or as a result of a positive TST or IGRA	This does not include family planning clinic in the health department
Hospital	LTBI patient was referred from a hospital to be tested for LTBI or as a result of a positive TST or IGRA	
Laboratory	Lab result on a positive IGRA was received and patient received follow-up evaluation because of the lab result	Usually comes through Electronic Lab Reporting (ELR)

Medical Clinic	LTBI patient was referred from a medical clinic to be tested for LTBI or as a result of a positive TST or IGRA	This includes outpatient clinics within a hospital setting as well as dialysis clinics and HIV comprehensive care centers. Does not include private physicians' offices. If this option is selected, list the type of medical clinic in the **"Other Medical Clinic"** field
Military	LTBI patient was referred to health department after receiving LTBI testing as part of a military screening program	
Nursing Home	LTBI patient was referred from a nursing home to be tested for LTBI or as a result of a positive TST or IGRA	See **"Resident of a Long-Term Care Facility at Time of Diagnosis"** section for what constitutes a nursing home
Other Federal Agencies	LTBI patient was referred from a federal agency that may not be listed in this table	
Other State and Local Agencies	LTBI patient was referred from a state or local agency that may not be listed in this table	
Other Treatment Facilities	LTBI patient was referred from other treatment facilities that may not be listed in this table	
Prenatal/Obstetrics Facility	LTBI patient was referred from a prenatal/obstetrics facility	This does not include prenatal clinics located within the health department
Private Physicians' Group Office	LTBI patient was referred from a private physician's office to be tested for LTBI or as a result of a positive TST or IGRA	
Public Health Clinic—HIV	LTBI patient was referred from an HIV clinic within a health department setting to be tested for LTBI or as a result of a positive TST or IGRA	

Public Health Clinic—STD	LTBI patient was referred from an STD clinic within a health department setting be tested for LTBI or as a result of a positive TST or IGRA	
Public Health Clinic—Other	LTBI patient was referred from another clinic within a health department setting (not listed in this table) be tested for LTBI or as a result of a positive TST or IGRA	This may include Child Health Clinic, Adult Health Clinic, etc.
Public Health Clinic—TB	LTBI patient was referred from a TB clinic within a health department setting (not listed in this table) be tested for LTBI or as a result of a positive TST or IGRA	

TAB: Case Info **SECTION: Clinical** **SUBSECTION: Condition**



Diagnosis Date

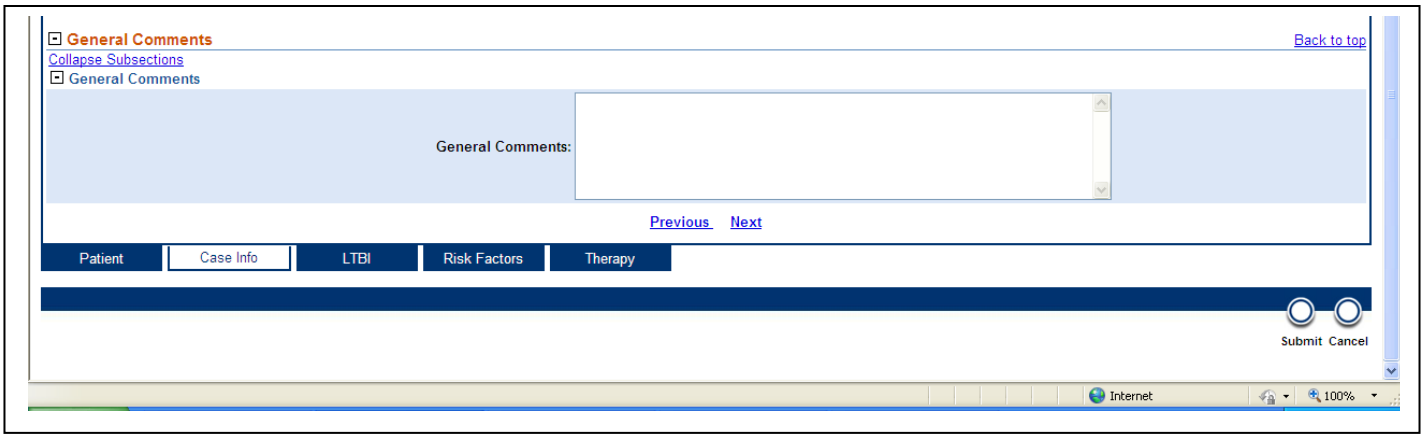
This is the date the patient was diagnosed with LTBI. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

Is the patient pregnant?

Please indicate whether the patient is pregnant at the time of diagnosis.

Option	Description
Yes	Patient is confirmed to be pregnant at the time of diagnosis
No	Patient is not pregnant at the time of diagnosis
Unknown	It is not known whether or not the patient is pregnant at the time of diagnosis

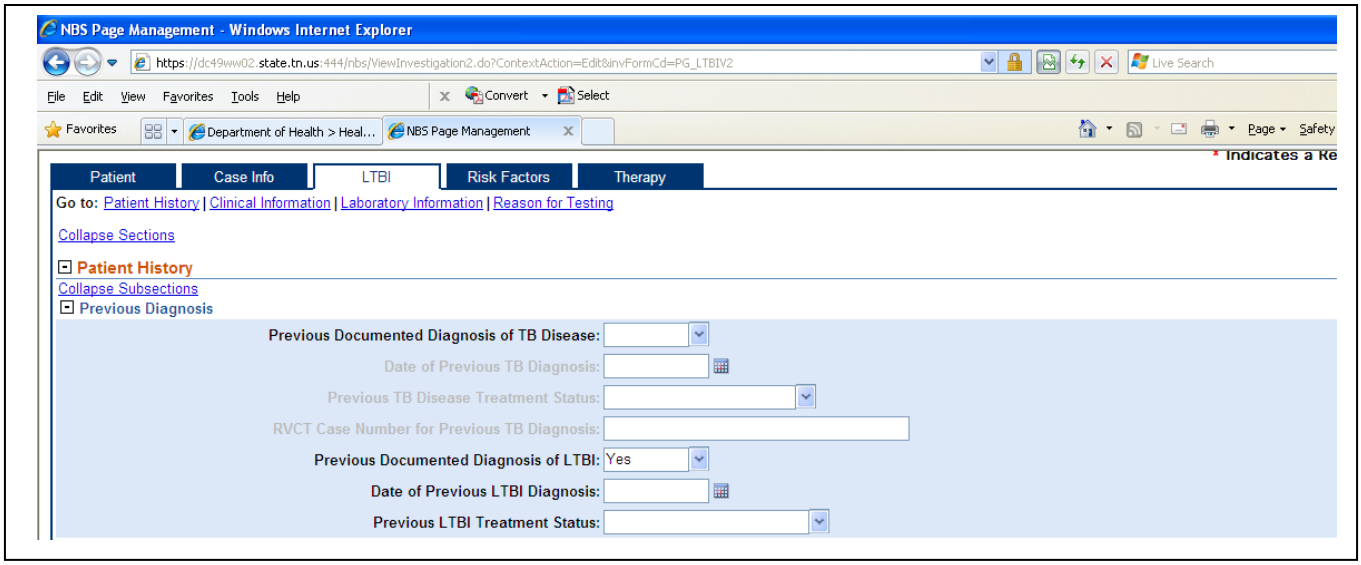
TAB: Case Info SECTION: General Comments SUBSECTION: General Comments



General Comments

Please enter any additional comments in this field.

TAB: LTBI SECTION: Patient History SUBSECTION: Previous Diagnosis



Previous Documented Diagnosis of TB Disease

Please indicate whether the patient has had a previous documented case of TB in the past.

Option	Description	Comment
Yes	Patient has received a previous diagnosis of TB disease	If the patient has had more than 1 previous episode of TB disease, enter the year of the most recent previous episode
No	Patient has not received a previous diagnosis of TB disease	
Unknown	It is not known whether or not the patient has had TB in the past	

Date of Previous TB Diagnosis

Enter the date of the most recent previous TB episode. It is not critical that the exact month and day be known; however, the year should be. If the exact month and day are not known enter 01 for the month and 01 for the day. For example, if a patient was diagnosed with TB in 1999 but the exact date was not known, enter **"01/01/1999."** You may also use the calendar function to select the date.

Previous TB Disease Treatment Status

If the patient has received a previous diagnosis of TB disease, please enter the treatment status for that episode of TB.

Option	Description
Complete TB Treatment	It is documented that the patient completed TB treatment in the past
Incomplete TB Treatment	It is documented that the patient started treatment for the previous episode of TB treatment but did not complete
No TB Treatment	The patient had a previous episode of TB but received no treatment for the disease
Unknown TB Treatment	It is not known whether the patient ever received treatment for the previous TB disease

RVCT Case Number for Previous TB Diagnosis

Please enter the state case number of the patient for the most recent previous episode of TB disease. State Case Number should be entered as YYYY-TN-TNYYYY###. If you do not know the case's state case number please contact Central Office.

Previous Documented Diagnosis of LTBI

Please indicate whether the patient has had a previous documented diagnosis of LTBI.

Option	Description	Comment
Yes	Patient has received a previous diagnosis of LTBI disease	If the patient has had more than 1 previous episode of LTBI disease, enter the year of the most recent previous episode
No	Patient has not received a previous diagnosis of LTBI disease	
Unknown	It is not known whether or not the patient has had LTBI in the past	

Date of Previous LTBI Diagnosis

Enter the date of the most recent previous LTBI episode. It is not critical that the exact month and day be known; however, the year should be. If the exact month and day are not known enter 01 for the month and 01 for the day. For example, if a patient was diagnosed with LTBI in 1999 but the exact date was not known, enter **"01/01/1999."** You may also use the calendar function to select the date.

Previous LTBI Treatment Status

If the patient has received a previous diagnosis of TB disease, please enter the treatment status for that episode of LTBI.

Option	Description
Complete LTBI Treatment	It is documented that the patient completed LTBI treatment in the past
Incomplete LTBI Treatment	It is documented that the patient started treatment for the previous episode of LTBI treatment but did not complete
No LTBI Treatment	The patient had a previous episode of LTBI but received no treatment for the disease
Unknown LTBI Treatment	It is not known whether the patient ever received treatment for the previous LTBI disease

TAB: LTBI **SECTION: Patient History** **SUBSECTION: Origin**

U.S.-born (or born abroad to a parent who was a U.S. citizen)
Please indicate whether the person is U.S.-born

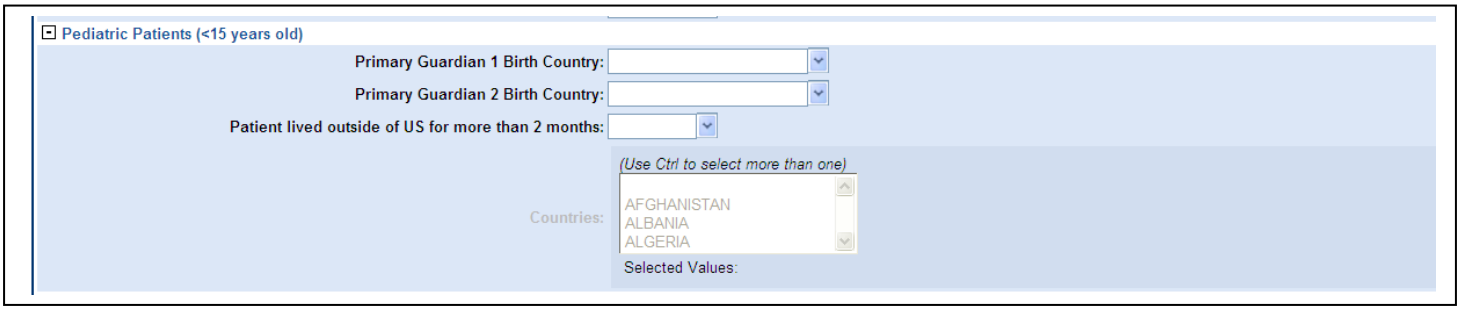
Option	Description	Comments
Yes	If the person was born • In 1 of the 50 U.S. states or the District of Columbia **OR** • Abroad to a parent who was a U.S. citizen	"U.S.-born" does **not** mean the same as U.S. citizen, and it does not necessarily mean that the person was born in the United States.
No	If the person was born • Abroad **AND** • Neither parent was a U.S. citizen	

Country of Birth
Please specify the patient's country of birth. This field has to be marked even if the patient was born in the United States.

Date Arrived in the U.S.
This field is only applicable when "U.S.-born" = "No." This is the date that the patient first arrived in the United States. The month and year should be known (the specific day is not as important). The date should be entered as MM/DD/YYYY. If the month and year are known but not the day enter **"01"** for the day. For example if a patient arrived in August 2010 enter **"08/01/2010."** If the month is not known, enter **"01"** for the month as well.

Comment: If the patient was born abroad to a parent who was a U.S.-citizen, you still should enter the date that the patient arrived in the United States. For example, if the patient was born in Germany and his/her father was a U.S.-citizen and arrived in the United States in July 2001, **"U.S.-born" = "Yes;" "Country of Birth" = "Germany;" and "Date Arrived in the U.S." = "07/01/2001."**

TAB: LTBI SECTION: Patient History
SUBSECTION: Pediatric Patients (<15 years old)



Note: This section should be completed for <u>ALL</u> pediatric LTBI patients who are <15 years old

<u>Primary Guardian 1 Birth Country</u>
Enter the name of the country where the primary guardian was actually born.

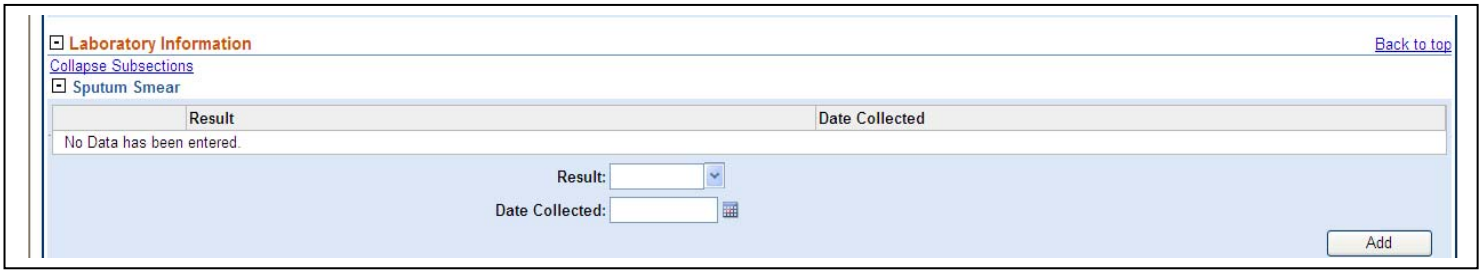
<u>Primary Guardian 2 Birth Country</u>
Enter the name of the country where the primary guardian was actually born.

<u>Patient lived outside of the US for more than 2 months</u>
Please indicate if the patient has lived outside of the United States for an uninterrupted period of more than 2 months.

Option	Description	Comment
Yes	Pediatric patient lived outside of the United States (1 of the 50 states or the District of Columbia) for an **uninterrupted** period of more than 2 months	Although it may be difficult to determine the exact amount of uninterrupted time that a patient lived outside the United States, chose Yes and enter the names of the countries if the period is believed to be more than 8 consecutive week (2 months)
No	Pediatric patient did not live outside the United States for an uninterrupted period of more than 2 months.	
Unknown	It is not known whether the pediatric patient lived outside the United States for an uninterrupted period of more than 2 months.	

<u>Countries</u>
Enter the names of the countries where the pediatric patient lived. Enter as many as 3 non-U.S. countries in which the patient most recently lived for a total of more than 2 uninterrupted months.

TAB: LTBI **SECTION: Lab Information** **SUBSECTION: Sputum Smear**



Result

If sputum specimens were collected, enter the smear result.

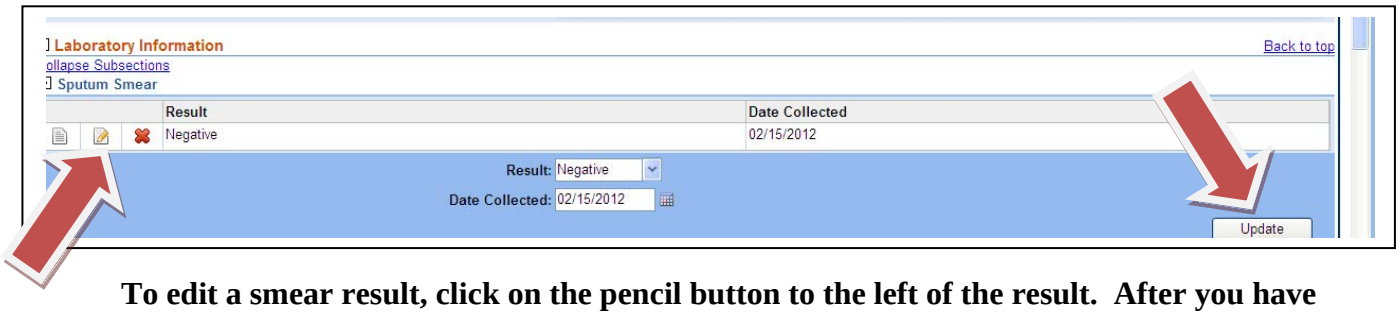
NOTE: You may enter multiple sputum smear results but you have to click the "Add" button after each one to save it

Option	Description	Comment
Positive	The result of the sputum examination was positive for acid-fast bacilli (AFB)	If the sputum smear result is positive, the LTBI investigation should be closed and a TB investigation should be opened
Negative	The result of the sputum examination was negative for acid-fast bacilli (AFB)	
Not done	Sputum smear examination is not known to have been done.	
Unknown	The sputum smear examination is pending	

Date Collected

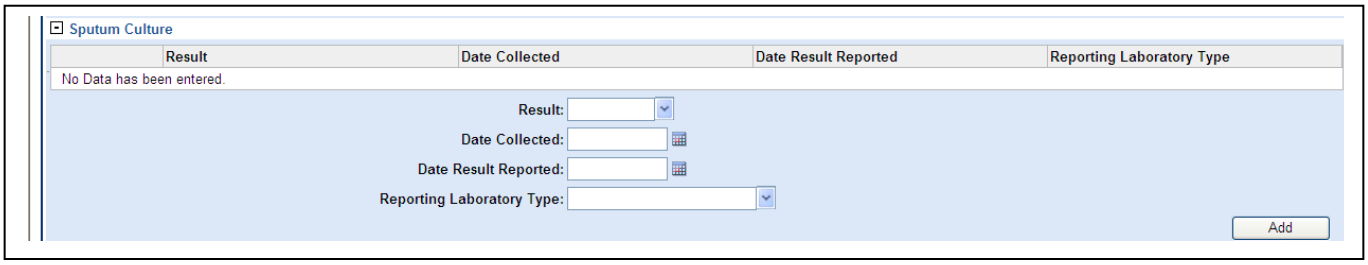
Enter the date that the sputum specimen was collected. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

EDITING A SPUTUM SMEAR RESULT



To edit a smear result, click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: LTBI **SECTION: Lab Information** **SUBSECTION: Sputum Culture**



Result

If sputum specimens were collected, enter the culture result.

NOTE: You may enter multiple sputum culture results but you have to click the "Add" button after each one to save it

Option	Description	Comment
Positive	The result of the sputum culture was positive *M. tuberculosis* complex.	If the sputum culture result is positive, the LTBI investigation should be closed and a TB investigation should be opened
Negative	The result of the sputum examination was negative for *M. tuberculosis* complex	
Not done	Sputum culture is not known to have been done.	
Unknown	The sputum culture is pending	

Date Collected

Enter the date that the sputum specimen was collected. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

Date Reported

Enter the date that the sputum culture was reported. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

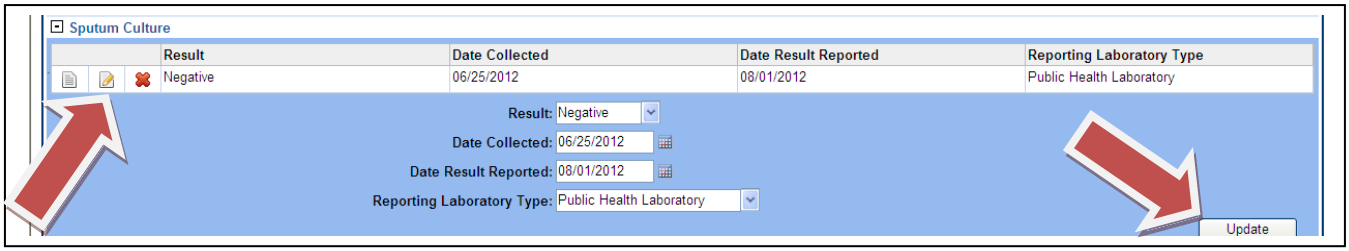
Reporting Laboratory Type

Select the option that best describes the reporting laboratory type.

Option	Description	Comment
Public health laboratory	Any laboratory associated with a local or state health department	
Commercial laboratory	Any laboratory that charges a fee for each specimen processed or test performed	

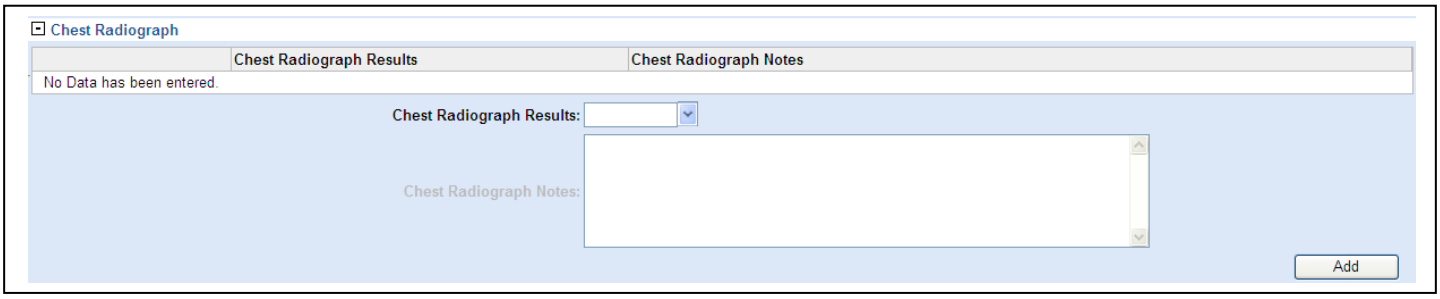
Other	Any other laboratory that is not considered a public health laboratory or a commercial laboratory	Hospital laboratories (e.g., National Jewish Health hospital laboratories) or laboratories associated with federal public health agencies.

EDITING A SPUTUM CULTURE RESULT



To edit a culture result, click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: LTBI **SECTION: Lab Information** **SUBSECTION: Chest Radiograph**



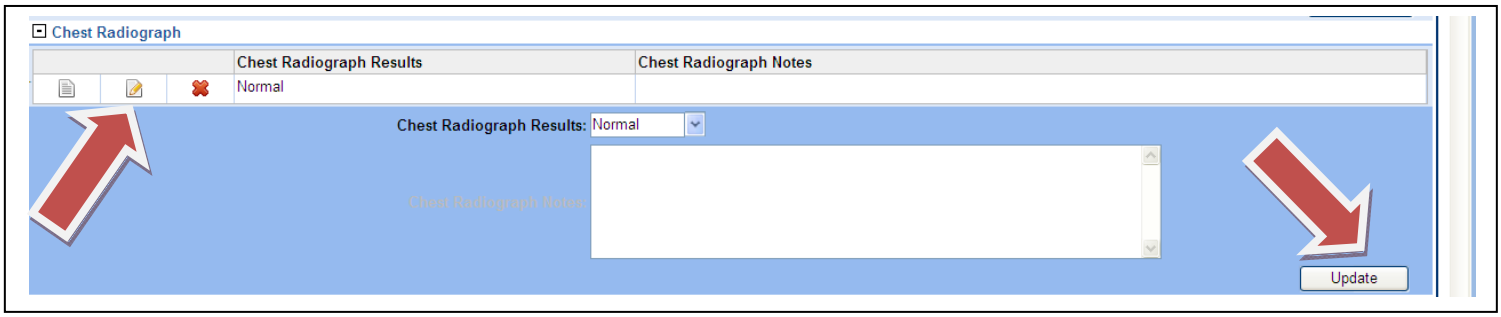
Chest Radiograph Results

Select the result of the chest radiograph performed during the LTBI evaluation.

NOTE: You may enter multiple chest radiograph results but you have to click the "Add" button after each one to save it

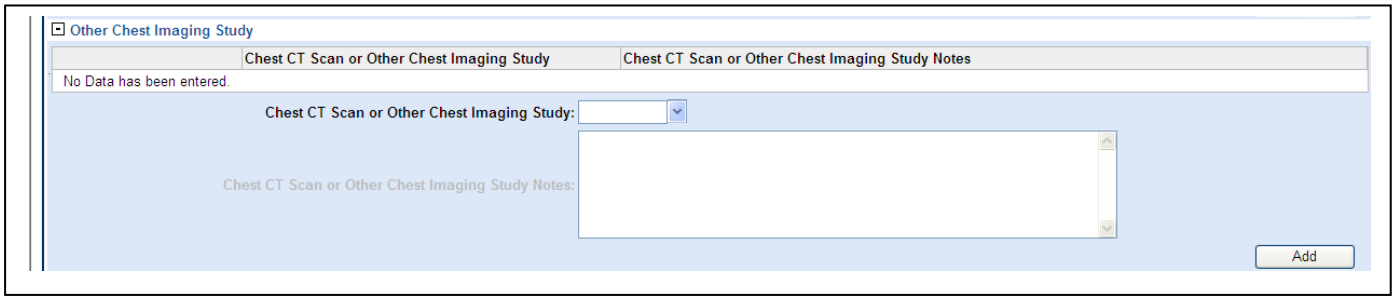
Option	Description	Comment
Normal	Chest radiograph shows no abnormalities.	
Abnormal	Chest radiograph shows abnormalities.	If the abnormalities are consistent with TB, the LTBI investigation should be closed and a TB investigation should be opened. If the abnormalities are due to any reason other than TB, enter comments in the **"Chest Radiograph Notes"**
Not Done	It is known that the chest radiograph was not done.	
Unknown	It is not known whether a chest radiograph was done.	

EDITING A CHEST RADIOGRAPH RESULT



To edit a chest radiograph result, click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: LTBI **SECTION: Lab Information**
SUBSECTION: Other Chest Imaging Study

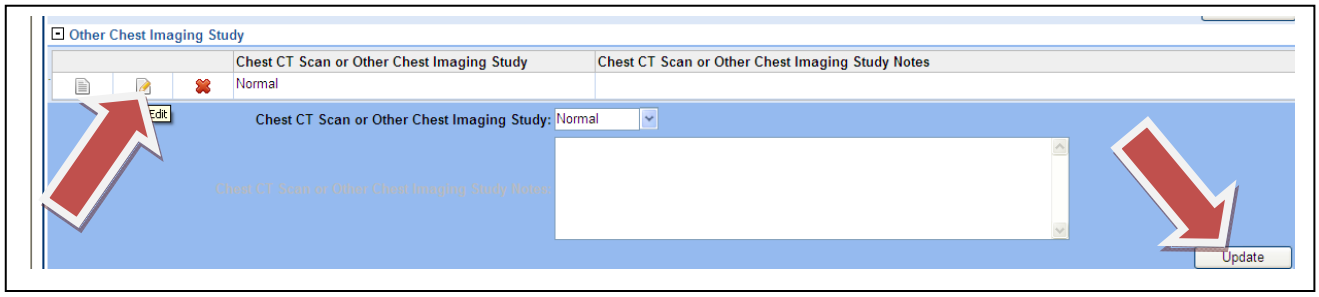


<u>Chest CT Scan or Other Chest Imaging Study</u>
If a chest CT or other chest imaging study was done, select the result of the chest radiograph performed during the LTBI evaluation.

NOTE: You may enter multiple chest CT scan or other chest imaging study results but you have to click the "Add" button after each one to save it.

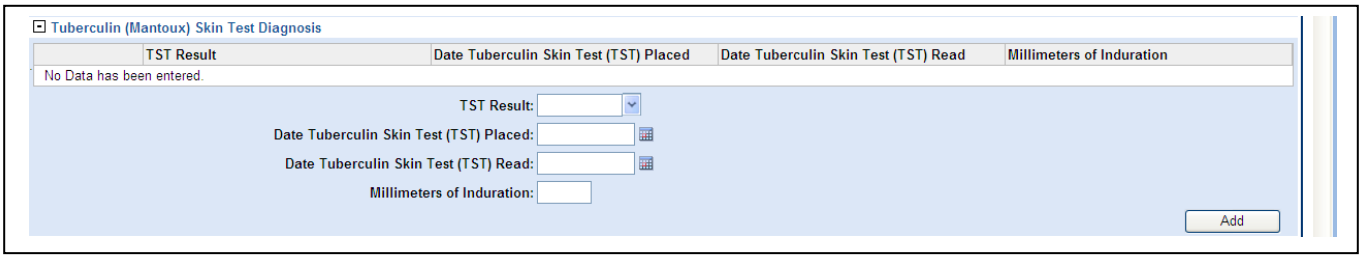
Option	Description	Comment
Normal	Chest CT or other chest imaging study shows no abnormalities.	
Abnormal	Chest CT or other chest imaging study shows abnormalities.	If the abnormalities are consistent with TB, the LTBI investigation should be closed and a TB investigation should be opened. If the abnormalities are due to any reason other than TB, enter comments in the **"Chest CT Scan or Other Chest Imaging Study Notes"**
Not Done	It is known that the chest CT or other chest imaging study was not done.	
Unknown	It is not known whether a chest CT or other chest imaging study was done.	

EDITING A CHEST CT SCAN OTHER CHEST IMAGING STUDY RESULTS



To edit a chest CT or other chest imaging study result, click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: LTBI **SECTION: Lab Information**
SUBSECTION: Tuberculin (Mantoux) Skin Test at Diagnosis



TST Result
If a skin test was placed, select the results of that test.

NOTE: You may enter multiple TST results but you have to click the "Add" button after each one to save it (This would be applicable for LTBI patients who were contacts to a case and received an initial and follow-up TST).

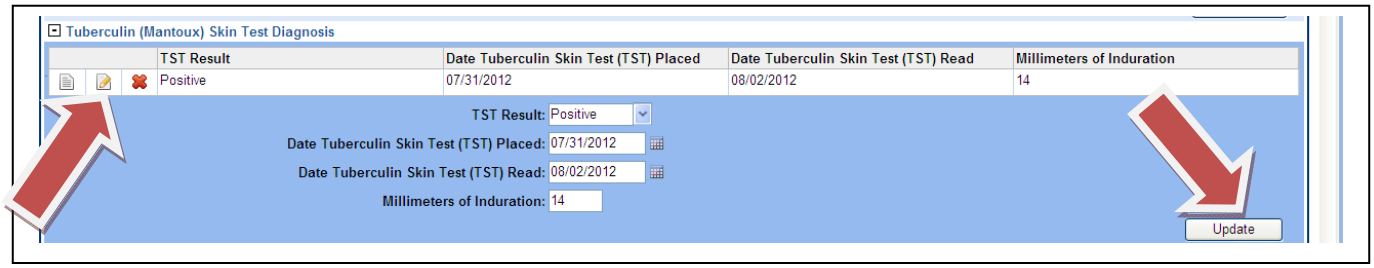
Option	Description
Positive	Meets the criteria for a positive TST result.
Negative	Result of TST did not meet current criteria for a positive test result.
Not Done	TST was not performed **or** Patient reports a positive result of an earlier TST, but it cannot be documented, **and** now the patient refuses a TST.
Unknown	It is **not** known whether a TST was performed **or** result is pending

Date Tuberculin Skin TST (TST) Placed
Enter the date that the TST was placed. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

Date Tuberculin Skin Test (TST) Read
Enter the date that the TST was read. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

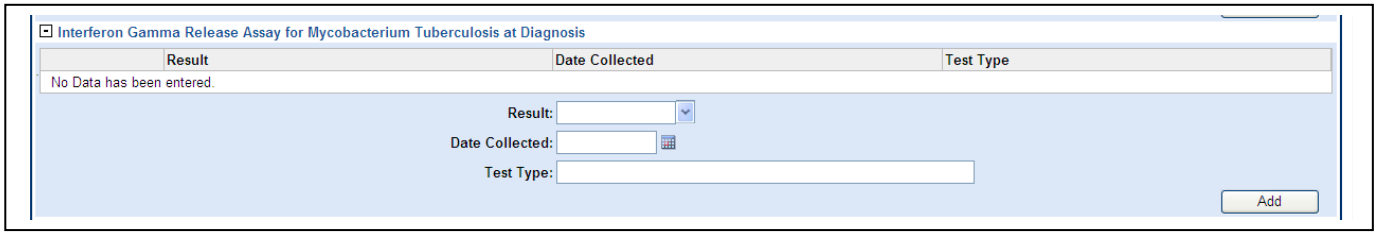
Millimeters of Induration
Enter the measurement (in mm) of the induration (e.g., 05)

EDITING A TST RESULT



To edit a TST result, click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: LTBI SECTION: Lab Information SUBSECTION: Interferon Gamma Release Assay for Mycobacterium Tuberculosis at Diagnosis



Result

If an Interferon Gamma Release Assay (IGRA) was done, select the result of that test.

Option	Description	Comment
Positive	The result of the IGRA is positive for *M. tuberculosis* infection.	
Negative	The result of the IGRA is negative for *M. tuberculosis* infection.	
Not Done	An IGRA test was not performed.	
Unknown	It is not know whether an IGRA test was performed **or** the results of the IGRA are pending	
Indeterminate	The result is reported out **Indeterminate**	Seen with QuantiFERON®-TB Gold In-Tube (QFT™). Test should be repeated if possible.
Borderline	The result is reported as **Borderline**	Seen with T-Spot®.TB. Consider repeating the test if possible.

Date Collected

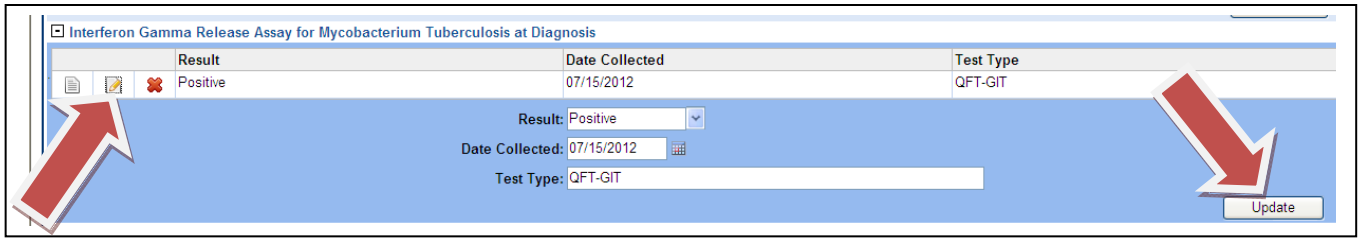
Enter the date that the blood sample was collected. Date must be entered as MM/DD/YYYY. You may also use the calendar function to select the date.

Test Type

Enter the type of IGRA that was done.

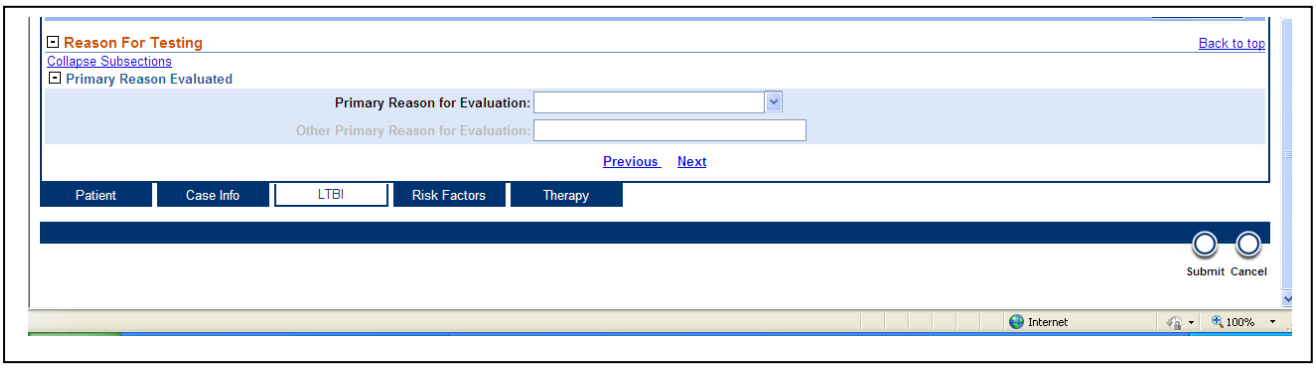
Test Name	Name to be Entered
QuantiFERON®-TB Gold In-Tube (QFT™)	QFT-GIT
T-Spot®.TB	T-spot.TB

EDITING AN IGRA RESULT



To edit an IGRA result, click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: LTBI **SECTION: Reason for Testing**
SUBSECTION: Primary Reason Evaluated



Primary Reason for Evaluation

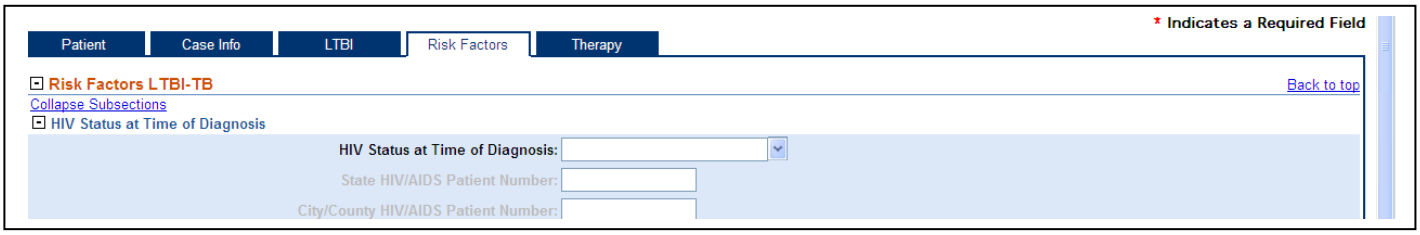
Select the primary reason this patient was evaluated for LTBI.

NOTE: There are more options in NEDSS that on the LTBI Worksheet.

Option	Description	Comment
Chronic Kidney Disease	Select if the patient was tested for TB because of a chronic kidney disease	
Contact Investigation	Select if this LTBI patient was initially tested as part of a contact investigation	
Employment/Administrative Testing	Results from routine physical examination before or periodically during employment, TST or IGRA required by employer, or primary or secondary school program for routine TST	
Foreign-born	Select if being foreign-born was the primary reason this person received a TST or IGRA	
Health Care Worker	Positive result of TST or IGRA administered because the patient was a health care worker	Refers to all paid and unpaid persons working in health care settings who have the potential for exposure to *M. tuberculosis*

Immigration Medical Exam	Findings of a medication examination that was part of the immigration application process	A medical examination is mandatory for specific categories of persons seeking admission to the U.S. These medical exams may be performed overseas or in the U.S.
Immunocompromised	Patient received a TST or IGRA because he/she is immunocompromised	
Immunosuppressed	Patient received a TST or IGRA because he/she has an immunosuppressive condition	
Incidental Lab Result	Incidental lab report was received indicating *M. tuberculosis* infection	Most likely seen when IGRAs are performed by outside providers and received electronically
Occupational Risk	Patient received a TST or IGRA due to increased risk of infection with *M. tuberculosis* infection as part of his/her occupation	e.g., correctional facility employees
Other	Patient received a TST or IGRA for another reason not previously mentioned	e.g., diabetic If **"Other"** is marked please enter the **"Other Primary Reason Evaluated"**
Refugee	Patient received a TST or IGRA as part of a refugee screening	
Substance Abuse	Patient received a TST or IGRA as part of a substance abuse program or because infection with *M. tuberculosis* is greater due to substance abuse	
Targeted Testing	Positive TST or IGRA administered because the patient was specifically considered as high risk for infection with *M. tuberculosis* or as part of a testing program focused on specific groups at risk	
Unknown	The primary reason for evaluation is not known.	

TAB: Risk Factors **SECTION: Risk Factors LTBI-TB**
SUBSECTION: HIV Status at Time of Diagnosis



HIV Status at Time of Diagnosis

Select the HIV status of the patient at the time of LTBI diagnosis.

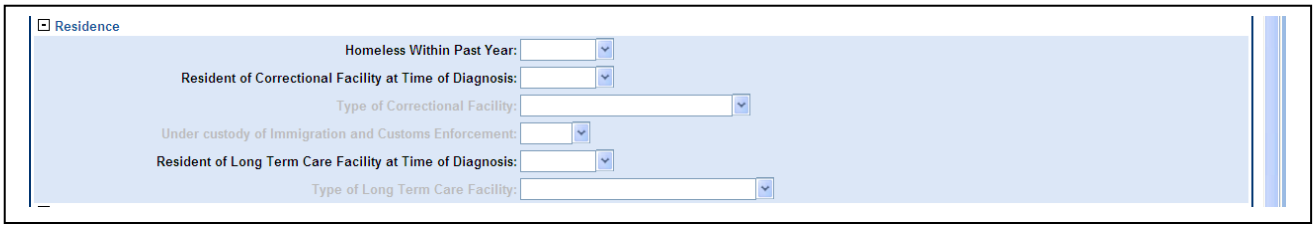
Option	Description	Comment
Negative	Documented negative result of HIV test at the time of LTBI diagnostic evaluation or LTBI diagnosis or earlier, but not exceeding 1 year	Undocumented report is not acceptable
Positive	Laboratory result interpreted as positive according to published criteria **or** Documented positive result of an earlier HIV test or documented earlier diagnosis of HIV infection or AIDS	Undocumented report is not acceptable
Indeterminate	Documented indeterminate result of an HIV test at the time of LTBI diagnostic evaluation or LTBI diagnosis	Undocumented report is not acceptable
Refused	HIV testing offered but declined at the time of the LTBI diagnostic evaluation or LTBI diagnosis	
Not offered	HIV testing not offered at the time of LTBI diagnostic evaluation or LTBI diagnosis	
Test done, results unknown	HIV test performed at the time of the LTBI diagnostic evaluation or LTBI diagnosis but the results are not known to the TB program	

Unknown	It is not known whether the patient has had an HIV test, has ever been offered an HIV test **or** HIV test results are pending	

State HIV/AIDS Patient Number
Enter the Tennessee state HIV/AIDS patient number.

City/County HIV/AIDS Patient Number
If applicable, enter the city/county HIV/AIDS patient number.

TAB: Risk Factors SECTION: Risk Factors LTBI-TB SUBSECTION: Residence



Homeless within Past Year

Select whether the patient has been homeless within the past year.

Option	Description
No	Not homeless during the past 12 months before the LTBI diagnostic evaluation was performed or initiated.
Yes	Homeless at any time during the 12 months before the LTBI diagnostic evaluation was performed or initiated.
Unknown	Not known whether the patient was homeless during the 12 months before the LTBI diagnostic evaluation was performed or initiated.

NOTE: There are many definitions for homeless. A homeless person may be an individual who has:

1. No fixed, regular, and adequate nighttime residence

   or

2. A primary nighttime residences that is
   a. A supervised publicly or privately operated shelter designed to provide temporary living accommodations, including welfare hotels, congregate shelters, and transitional housing for the mentally ill

      or

   b. An institution that provides a temporary residence for individuals intended to be institutionalized

      or

   c. A public or private place not designated for, or ordinarily used as, a regular sleeping accommodation for human beings

A homeless person may also be defined as a person who has no home (e.g., is not paying rent, does not own a home, and is not steadily living with relatives or friends). Persons in unstable housing situations (e.g., alternating between multiple residences for short stays of uncertain duration) may also be considered homeless.

Resident of a Correctional Facility at Time of Diagnosis
Select whether the patient was a resident of a correctional facility at the time the LTBI diagnosis.

Option	Description
No	Not an inmate when the LTBI diagnostic evaluation was performed or initiated
Yes	An inmate of a correctional facility when the LTBI diagnostic evaluation was performed or initiated
Unknown	Not known whether the patient was an inmate when the LTBI diagnostic evaluation was performed or initiated

Type of Correctional Facility
Only applicable if **"Resident of a Correctional Facility at Time of Diagnosis" = "Yes."**
Select the type of correctional facility where the patient was an inmate.

Option	Description
Federal prison	Confinement facility administered by a federal agency; includes privately operated federal correctional facilities
State prison	Confinement facility administered by a state agency; includes privately operated state correctional facilities
Local jail	Confinement facility usually administered by a local law enforcement agency, intended for adults but sometimes also containing juveniles; holds persons detained pending adjudication and/or persons committed after adjudication, typically for sentences of 1 year or less
Juvenile correctional facility	Public or private residential facility; includes juvenile detention centers, reception and diagnostic centers, ranches, farms, boot camps, residential treatment centers, and halfway houses or group homes designated specifically for juveniles.
Other correctional facility	Includes Immigration and Customs Enforcement (ICE) detention centers, Indian reservation facilities, military stockades and jails, federal park police facilities, police lockups, or other correctional facilities that are not included in other specific choices.
Unknown	Inmate when the LTBI diagnostic evaluation was performed, but the type of correctional facility is not known.

Under Custody of Immigration and Customs Enforcement
Only applicable if **"Resident of a Correctional Facility at Time of Diagnosis" = "Yes."**
Select whether the patient was under the custody of Immigration and Customs Enforcement.

Option	Comment
No	Response indicates whether the patient was under the custody of ICE at the time of LTBI diagnosis.
Yes	

Resident of Long Term Care Facility at Time of Diagnosis
Select whether the patient was a resident of a long-term care facility at the time the LTBI diagnosis.

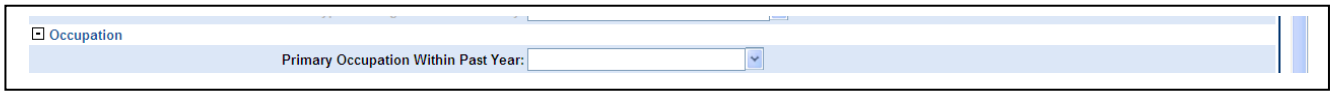
Option	Description
No	Not a resident of a long-term care facility when the LTBI diagnostic evaluation was performed.
Yes	Resident of a long-term care facility when the LTBI diagnostic evaluation was performed.
Unknown	Not known whether the patient was a resident of a long-term care facility when the LTBI diagnostic evaluation was performed.

Type of Long Term Care Facility
Only applicable if **"Resident of a Long Term Facility at Time of Diagnosis" = "Yes."** Select the type of long-term care facility where the patient was an inmate.

Option	Description	Comment
Nursing home	Freestanding facility with 3 or more beds that provides nursing care services	Facilities may be certified by Medicare or Medicaid or may be licensed by the state as a nursing home
Hospital-based facility	Distinct unit with 3 or more beds that is physically attached to, or managed by, a hospital	Facilities may be certified by Medicare or Medicaid or may be licensed by the state
Residential facility	Facility with 3 or more beds and meets both of the following criteria: 1. Not classified as a nursing home or hospital-based facility **and** 2. Provides personal care or supervision to its residents in additional to room and board	This might be an assisted living facility

Mental health residential facility	Facility that provides 24-hour care in a hospital, residential treatment, or supportive setting	Include state and local mental hospitals, private psychiatric hospitals, residential treatment facilities for emotionally disturbed children, and multiservice mental health organizations with residential treatment programs
Alcohol or drug treatment facility	Only long-term rehabilitation or residential facilities designed for 30 days or longer.	Exclude all ambulatory or outpatient facilities, detoxification units, and facilities designed for fewer than 30 days of treatment.
Other long-term care facility	A facility not mentioned above that is designated for 30 days or longer and facility type is not unknown.	
Unknown	Patient known to be a resident of a long-term care facility, but the type of facility is not known.	

TAB: Risk Factors **SECTION: Risk Factors LTBI-TB**
SUBSECTION: Occupation

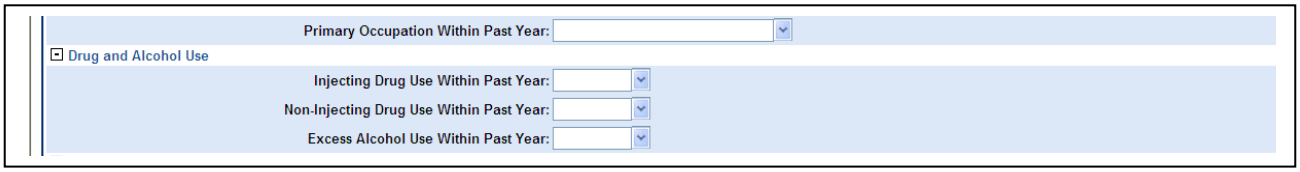


Primary Occupation within Past Year

Select one option that best describes the patient's occupation with the 12 months before the diagnostic LTBI evaluation. If the patient held more than 1 occupation during that period, select the longest-held occupation or the occupation to which the patient devoted more time.

Option	Description
Health care worker	Refers to all paid and unpaid persons working in health care settings who have the potential for exposure to *M. tuberculosis*
Correctional facility employee	Persons working in a correctional facility; not a health care worker
Migrant/seasonal worker	Person who is required to be absent from a permanent place of residence for the purpose of seeking employment, or who may vary their employment for the purpose of remaining employed while maintaining a permanent place of residence
Other occupation	Person employed for pay or income in any other occupation not included in this table
Retired	Person who was retired during the 12 months before the LTBI diagnostic evaluation
Unemployed	Person not employed during the 12 months before the LTBI diagnostic evaluation
Not seeking employment	Person not seeking employment, such as infant, child, student, homemaker, person receiving permanent disability benefits, or person who was institutionalized
Unknown	Person whose employment status is not known

TAB: Risk Factors **SECTION: Risk Factors LTBI-TB**
SUBSECTION: Drug and Alcohol Use



Injecting Drug Use within Past Year

Select whether the patient has used injecting drugs within the past 12 months.

Option	Description
No	Patient has not injected drugs within the past 12 months.
Yes	Patient is known to have injected drugs within the past 12 months
Unknown	It is not known whether the patient injected drugs within the past 12 months

Non-Injecting Drug Use

Select whether the patient has used non-injecting drugs within the past 12 months.

Option	Description
No	Patient has no history of non-injecting drug use within the past 12 months
Yes	It is known that the patient has used non-injecting drugs within the past 12 months
Unknown	It is not known whether the patient used non-injecting drugs within the past 12 months

Examples of non-injecting drugs

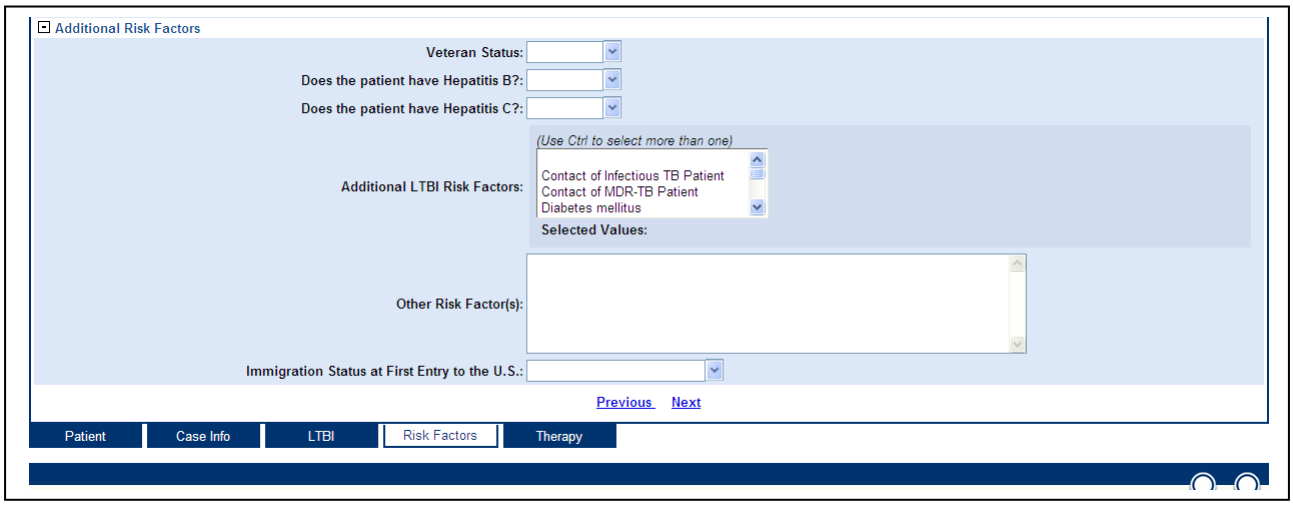
- Heroin or other opiates
- Cocaine
- Ingested amphetamines
- Zanex, Ativan, valium, or other benzodiazepams
- Phencyclidine (PCP), ketamine, LSD, or other hallucinogens
- Barbituates
- Marijuana
- Inhalents
- Steroids

Excess Alcohol Use within Past Year

Select whether the patient has used alcohol to excess within the past 12 months.

Option	Description
No	Patient has not used alcohol to excess within the past 12 months
Yes	Patient has used alcohol to excess within the past 12 months
Unknown	It is not known whether the patient has used alcohol to excess within the past 12 months

TAB: Risk Factors **SECTION: Risk Factors LTBI-TB**
SUBSECTION: Additional Risk Factors



Veteran Status

Select whether the patient has ever served in the armed services.

Option	Description
No	Patient has not ever served in the armed forces
Yes	Patient has served in the armed forces
Unknown	It is not known whether the patient has ever served in the armed forces

Does the Patient have Hepatitis B?

Select whether the patient has documentation of having Hepatitis B.

Option	Description	Comment
No	It is documented that the patient does not have Hepatitis B	Undocumented report is not acceptable
Yes	There is documentation that states the patient has Hepatitis B according to published criteria	Undocumented report is not acceptable
Unknown	It is not known whether or not the patient has Hepatitis B	

Does the Patient have Hepatitis C?

Select whether the patient has documentation of having Hepatitis C.

Option	Description	Comment
No	It is documented that the patient does not have Hepatitis C	Undocumented report is not acceptable
Yes	There is documentation that states the patient has Hepatitis C according to published criteria	Undocumented report is not acceptable
Unknown	It is not known whether or not the patient has Hepatitis C	

Additional LTBI Risk Factors

Select all additional risk factors that the patient may have.

Option	Description	Comment
Contact of Infectious TB Patient	Select if the LTBI patient was identified as a contact to an infectious TB patient	If this risk factor is selected, please complete the **"Linking State Case Number" and "Link Reason"** fields
Contact of MDR-TB Patient	Select if the LTBI patient was identified as a contact to an MDR-TB patient	If this risk factor is selected, please complete the **"Linking State Case Number" and "Link Reason"** fields
Diabetes mellitus	Patient has a diagnosis of diabetes mellitus (Type I or Type II) either before or at the time of LTBI diagnosis	
End stage renal disease	Patient had end-stage renal disease or chronic renal failure at the time of LTBI diagnosis	
Foreign-born	Patient was identified as being foreign-born	See definition of foreign-born vs. U.S.-born
Immunosuppression (not HIV/AIDS)	Patient had immunosuppression due to either a medical condition or medication, such as hematologic or reticuloendothelial malignancies, or immunosuppressive therapy, such as prolonged use of high-dose adrenocortocosteroids	

Incomplete LTBI Therapy	Patient had a previous diagnosis of LTBI and did not complete treatment for LTBI	If this is selected, complete the **"Previous Documented Diagnosis of LTBI"** section located on the LTBI tab
Missed Contact	Patient is a contact of a known TB patient, but was not evaluated or diagnosed with LTBI or TB at that time	
None	No LTBI risk factors could be identified	
Other	Patient had a risk factor not included in the choices in the table (e.g., undernutrition due to intestinal bypass surgery for obesity, gastrectomy, jejunoileal bypass, chronic malabsorption syndromes, silicosis, travel to a TB-endemic country)	If this is selected, please indicate the other risk factors in the text box labeled **"Other Risk Factor(s)"**
Post-organ Transplantation	Patient has received a solid organ transplant	
Recent Converter	Patient has a documented recent conversion of a negative TST or IGRA to a positive TST or IGRA upon last testing	
Smoking	Patient reports a history of smoking	
TNF Antagonist Therapy	Patient had recently received, or was receiving, TNF-α antagonist therapy at the time of LTBI diganosis	

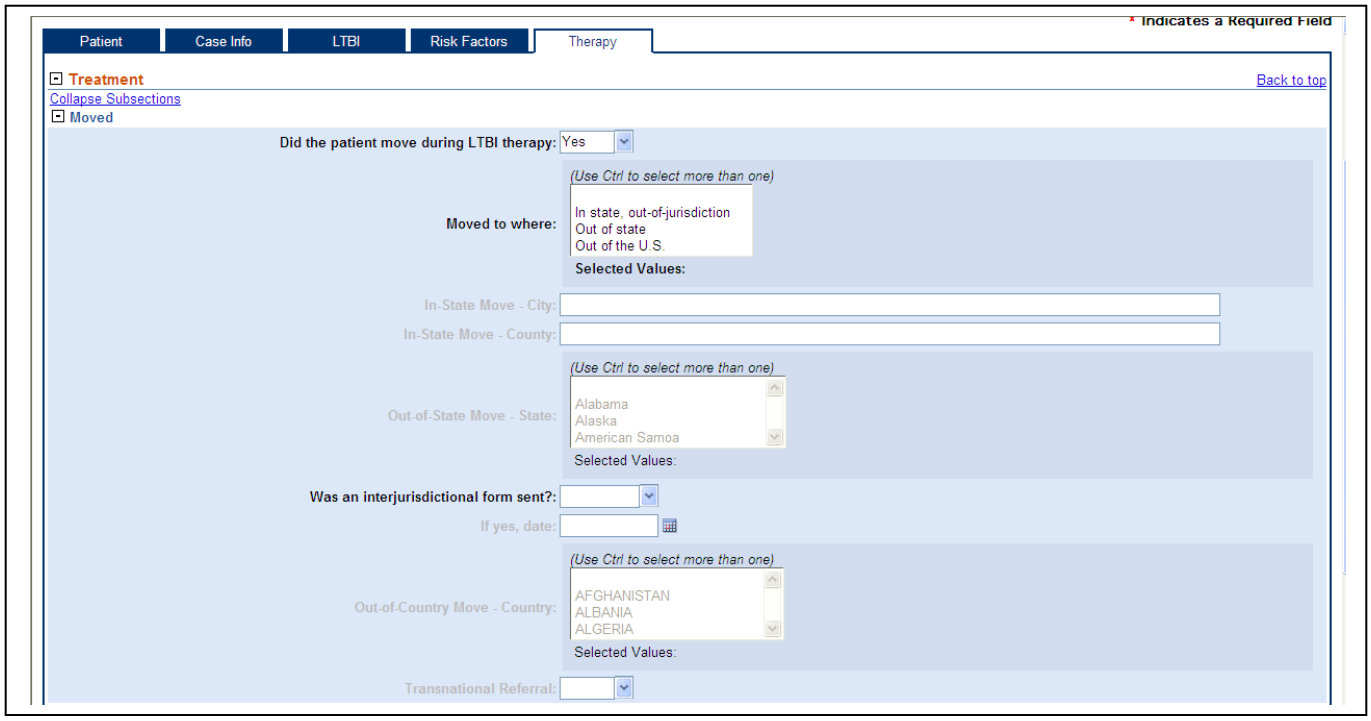
Immigration Status at First Entry to the U.S.

Select the option that describes the patient's immigration status when he/she first entered the U.S.

NOTE: Only one of two answers should be selected (even though there are more answers on the page)

Option	Description
Not Applicable	Select for all U.S.-born patients
Unknown	Select for all foreign-born patients

TAB: Therapy **SECTION: Treatment** **SUBSECTION: Moved**



Did the Patient Move during LTBI Therapy

Select whether the patient moved at any point during his/her LTBI therapy.

Option	Description
No	Patient did not move **or** Patient moved within the same regional/local health department jurisdiction
Yes	Patient moved to an area where another jurisdiction must now provide or coordinate LTBI care

Moved to Where

If the patient, moved during LTBI therapy, indicate where he/she moved.

Option	Description	Comment
In state, out-of-jurisdiction	Patient moved within the state, but out of the regional/local health department jurisdiction, such as moved to a different county or city	If this is selected, enter the city and county in the **"In-State Move—City"** and **"In-State Move—County"** fields If the patient moved more than twice, enter the first 2 moves

<table>
<tr><td rowspan="2">Out of state</td><td>Patient moved from 1 of the 50 U.S. states or the District of Columbia to
• Another state
or
• A U.S. Territory, U.S. Island Area, or U.S. Outlying Area</td><td rowspan="2">If the patient moved more than twice, enter the first 2 moves

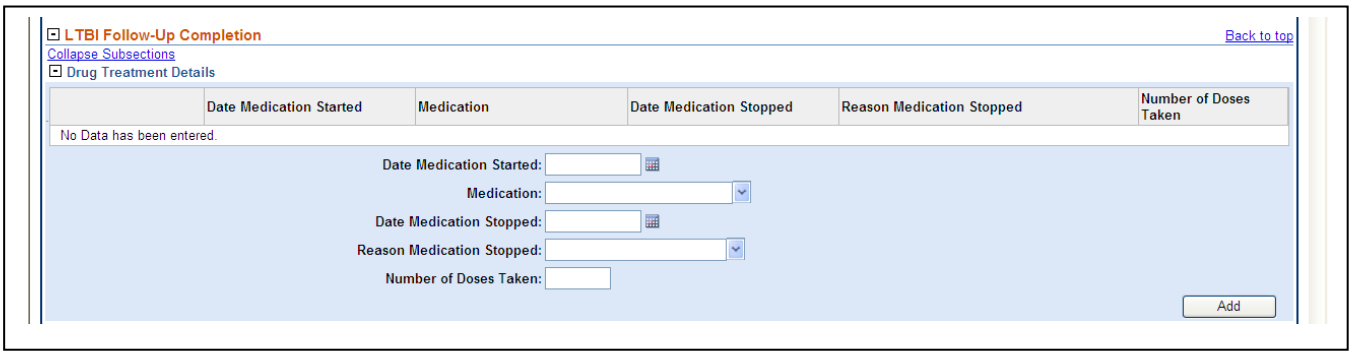
If this is selected, chose the state(s) that the patient moved to in the “Out-of-State Move—State” field

If this is selected, chose whether or not an Interjurisdictional form was sent and if the form was sent, enter the date in the format of MM/DD/YYYY (you may also use the calendar function to select the date)</td></tr>
<tr><td>Patient moved from a U.S. Territory, U.S. Island Area, or U.S. Outlying Area to
• One of the 50 U.S. states or the District of Columbia
• or
• A U.S. Territory, U.S. Island Area, or U.S. Outlying Area</td></tr>
<tr><td rowspan="2">Out of the U.S.</td><td>Patient moved from the United States to
• Another country (other than a U.S. Territory, U.S. Island Area, or U.S. Outlying Area)</td><td rowspan="2">If the patient moved more than twice, enter the first 2 moves

If this is selected, chose the country(ies) that the patient moved to in the “Out-of-Country Move—Country” field

Also select whether a transnational referral was sent</td></tr>
<tr><td>Moved from a U.S. Territory, U.S. Island Area, or U.S. Outlying Area to
• Another country (other than the United States or another U.S. Territory, U.S. Island Area, or U.S. Outlying Area)</td></tr>
</table>

TAB: Therapy **SECTION: LTBI Follow-up Completion**
SUBSECTION: Drug Treatment Details



Date Medication Started

Enter the date the medication (this individual drug) was started. Date must be entered in the format MM/DD/YYYY. You may also use the calendar function to select the date.

Medication

Select the individual medication that the patient was started on.

NOTE: There are more medications listed on the page than would be used for LTBI treatment

Date Medication Stopped

Enter the date the medication (this individual drug) was stopped. Date must be entered in the format MM/DD/YYYY. You may also use the calendar function to select the date.

Reason Medication Stopped

Select the option that best describes why the medication (this particular drug) was stopped.

Option	Description	Comment
Adverse Treatment Event	Therapy was permanently stopped because of an adverse treatment even due to LTBI medication.	
Completed Therapy	Patient completed the prescribed course of therapy per the medical record	
Active TB Developed	The patient developed active TB	If this is selected, the LTBI investigation should be closed and a TB investigation should be opened
Died	Patient was alive at diagnosis but died before the state or completion of treatment	

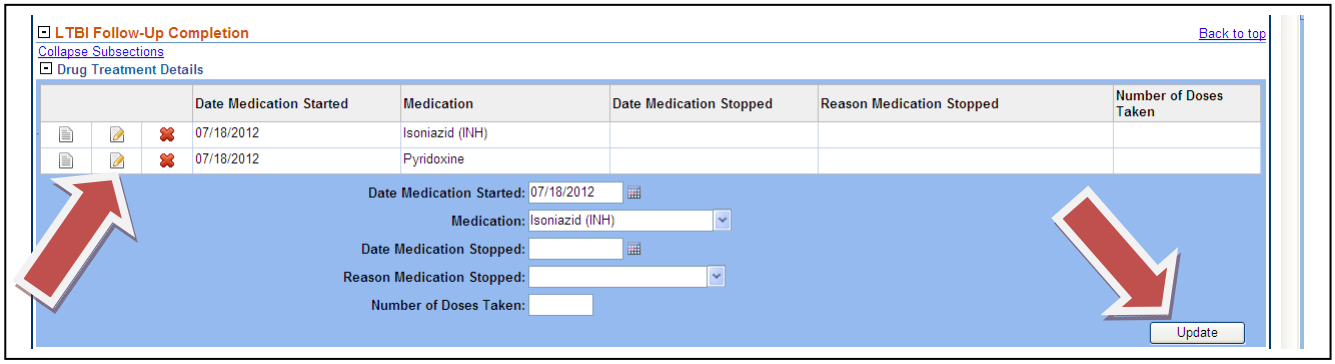
Lost	Patient could not be located before the state or the completion of treatment	
Not LTBI	Based on clinical evidence the patient was determined not to have LTBI	
Other	Therapy was discontinued for a known reason not included in the choices in the table and is not unknown.	
Pregnant	Patient was pregnant before or became pregnant during treatment	
Uncooperative or Refused	Patient refused to begin therapy or refused to complete therapy (if started)	
Unknown	Reason therapy was stopped or never started is unknown	

Number of Doses Taken

Enter the number of doses that was taken at the time the medication (this individual drug) was stopped.

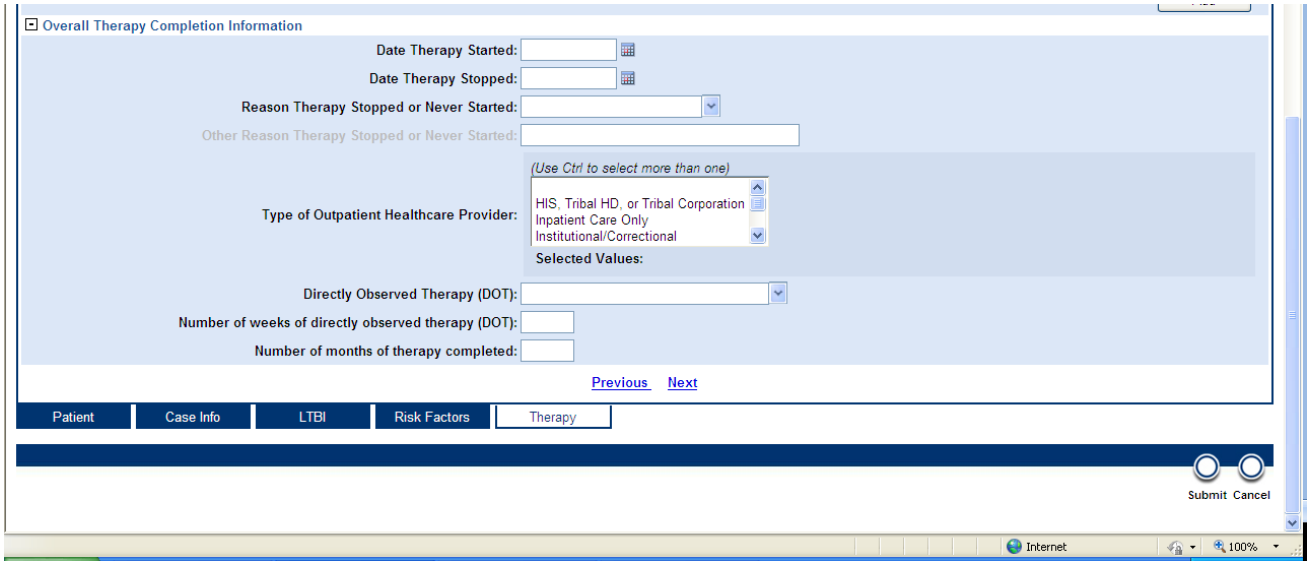
NOTE: If the patient was started on more than one drug (e.g, INH and B6) you must enter the individual drug information and click the "Add" button.

EDITING DRUG TREATMENT DETAILS



To edit the drug treatment details (this would be done when the "Date Medication Stopped," "Reason Medication Stopped," and "Number of Doses Taken" needs to be entered), click on the pencil button to the left of the result. After you have edited the result, click the "Update" button.

TAB: Therapy **SECTION: LTBI Follow-up Completion**
SUBSECTION: Overall Therapy Completion Information



Date Therapy Started

Enter the date that the final drug regimen (i.e., the regimen that the patient was started on and considered to finish on) was started. Date must be entered in the format MM/DD/YYYY. You may also use the calendar function to select the date.

Example: If the patient initially began treatment in INH but the medication was stopped due to an adverse treatment event and RIF was started and completed, enter the RIF therapy information in this section.

Date Therapy Stopped

Enter the date that the final drug regimen (i.e., the regimen that the patient was started on and considered to finish on) was stopped. Date must be entered in the format MM/DD/YYYY. You may also use the calendar function to select the date.

Reason Therapy Stopped or Never Started

Select the best option that describes the reason the overall therapy regimen was stopped or never started.

Option	Description	Comment
Adverse Treatment Event	Therapy was permanently stopped because of an adverse treatment even due to LTBI medication.	
Completed Therapy	Patient completed the prescribed course of therapy per the medical record	

Active TB Developed	The patient developed active TB	If this is selected, the LTBI investigation should be closed and a TB investigation should be opened
Died	Patient was alive at diagnosis but died before the state or completion of treatment	
Lost	Patient could not be located before the state or the completion of treatment	
Not LTBI	Based on clinical evidence the patient was determined not to have LTBI	
Other	Therapy was discontinued for a known reason not included in the choices in the table and is not unknown.	If this option is selected, enter the other reason on the **"Other Reason Therapy Stopped or Never Started"** field
Pregnant	Patient was pregnant before or became pregnant during treatment	
Uncooperative or Refused	Patient refused to begin therapy or refused to complete therapy (if started)	
Unknown	Reason therapy was stopped or never started is unknown	

Directly Observed Therapy (DOT)

Directly observed therapy (DOT), or supervised therapy, involves the direct visual observation by a health care provider or other reliable trained person of the patient's ingestion of medication.

Option	Description	Comment
No, Totally Self-Administered	No doses of medication were given under direct supervision	This will apply to most LTBI patients
Yes, Totally Directly Observed	Ingestion of medication was directly observed for all doses of medication	Applicable for pediatric LTBI patients and patients receiving 3HP
Yes, Both Directly Observed and Self-Administered	Ingestion of medication was a combination of directly observed and self-administration by the patient or guardian	

Number of Weeks of Directly Observed Therapy (DOT)

If the patient received directly observed therapy (DOT) or a combination that included DOT, enter the number of weeks the patient received DOT.

Number of Months of Therapy Completed

Enter the number of months of therapy completed by the patient. This may be based on the number of bottles of medication that the patient picked up from the health department.

Vector-borne and Zoonotic Diseases

Morbidities Include:

- Anthrax (*Bacillus anthracis*)
- Babesiosis
- Brucellosis (*Brucella* species)
- *Burkholderia* species infection*
- California/LaCrosse Serogroup Virus Infection
- Chagas Disease
- Chikungunya
- Dengue Fever
- Eastern Equine Encephalitis Virus Infection
- Ehrliciosis/Anaplasmosis-Any
- Francisella Species*
- Hantavirus Species
- Legionellosis (*Legionella* species)
- Leprosy [Hansen Disease] (*Mycobacterium leprae*)
- Lyme Disease (*Borrelia burgdorferi*)
- Malaria (*Plasmodium* species)
- Melioidosis (*Burkholderia pseudomallei*)
- Plague (*Yersinia pestis*)
- Powassan virus infection
- Prion disease- Creutzfeldt Jakob Disease
- Prion disease- variant Creutzfeldt Jakob Disease
- Psittacosis (*Chlamydia psittaci*)
- Q Fever (*Coxiella burnetii*)
- Rabies: Animal
- Rabies: Human
- St. Louis Encephalitis Virus Infection
- Spotted Fever Rickettsiosis (including Rocky Mountain Spotted Fever)
- Trichinosis
- Tularemia (*Francisella tularensis*)
- Venezuelan Equine Encephalitis Virus Infection
- Viral Hemorrhagic Fever
- West Nile Virus Infections- Encephalitis
- West Nile Virus Infections- Fever
- Western Equine Encephalitis Virus Infection
- Yellow Fever

***Denotes morbidities not currently using NBS for surveillance**

CEDS Reporting Procedure

Process: Reporting Vector-borne or Tick Diseases

Procedure: All cases of Rocky Mountain Spotted Fever, Lyme, Anaplasmosis, Ehrlichiosis, Brucellosis, Q Fever and Tularemia are to be reported. Q Fever and Tularemia are also on the possible bioterrorism indicator list and should be investigated promptly.

Method: Electronic Reports: When reports are received via electronic laboratory reporting, into NBS, an investigation should be created. Generally, the case status should be entered as "suspect" until the investigation is complete. The case status should then be changed to reflect the results of the investigation.

Paper Reports: When paper reports of Vector-borne diseases are received, they should be promptly entered into NBS. The case status should be entered as suspect pending the results of the investigation. The case status should then be changed to reflect the results of the investigation.

Paper case report forms for Brucellosis, Q Fever, Tick-borne Diseases (RMSF, Ehrlichiosis, and Anaplasmosis), and Lyme disease should be completed and sent to the central office for all investigated cases.

NBS Data Entry Guide

Required- This information is necessary to move forward in NBS
Critical- This information is essential and all efforts should be made to obtain 'Critical' information.
Important- Attempt to obtain this as all information is helpful

ADD PATIENT

NOTE: ALL information you have should be entered into NBS

	Required	Critical	Important
Information As of Date	X		
Last Name		X	
First Name		X	
Middle Name			X
Suffix			X
DOB		X	
Current Sex		X	
Is the patient deceased?		X	
If so, Date of Death		X	
Marital Status			X
Street Address			X
City		X	
State		X	
Zip			X
County		X	
Country		X	
Home Phone			X
Work Phone			X
Cell Phone			X
Email			X
Ethnicity			X
Race			X
Identification Type			X

ADD LAB REPORT

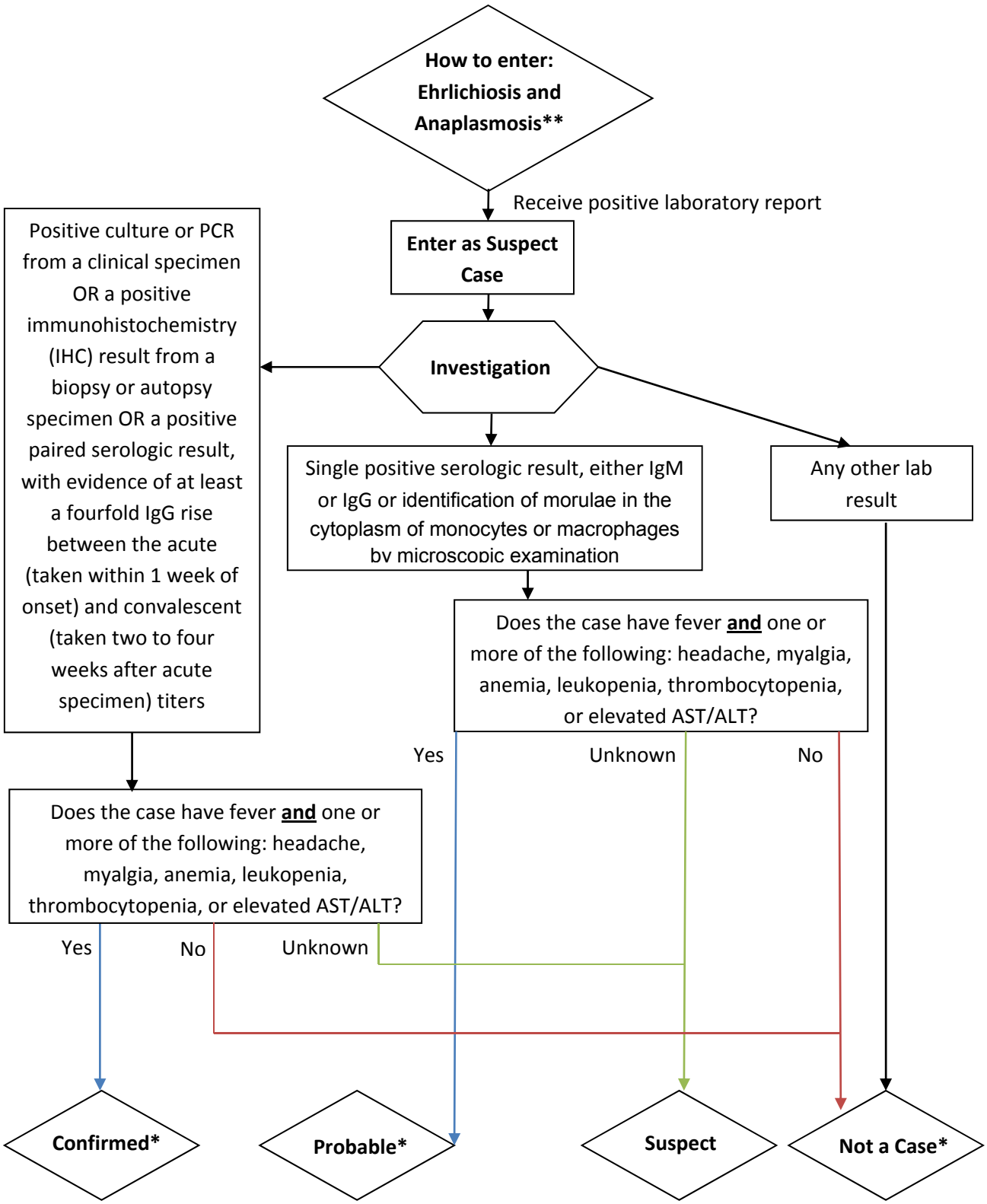
NOTE: ALL information you have should be entered into NBS

	Required	Critical	Important
Reporting Facility	X		
Ordering Facility			X
Ordering Provider			X
Program Area	X		
Jurisdiction	X		
Lab Report Date			X
Date Received by Public Health	X		
Ordered Test			X
Accession Number		X	
Specimen Source		X	
Specimen Site		X	
Date Specimen Collected		X	
Patient Status at Collection			X
Resulted Test	X		
Coded Result		X	
Numeric Result		X	
Text Result		X	
Reference Range			X
Result Status			X
Result Comments			X
Administrative Comments			X

CREATE INVESTIGATION

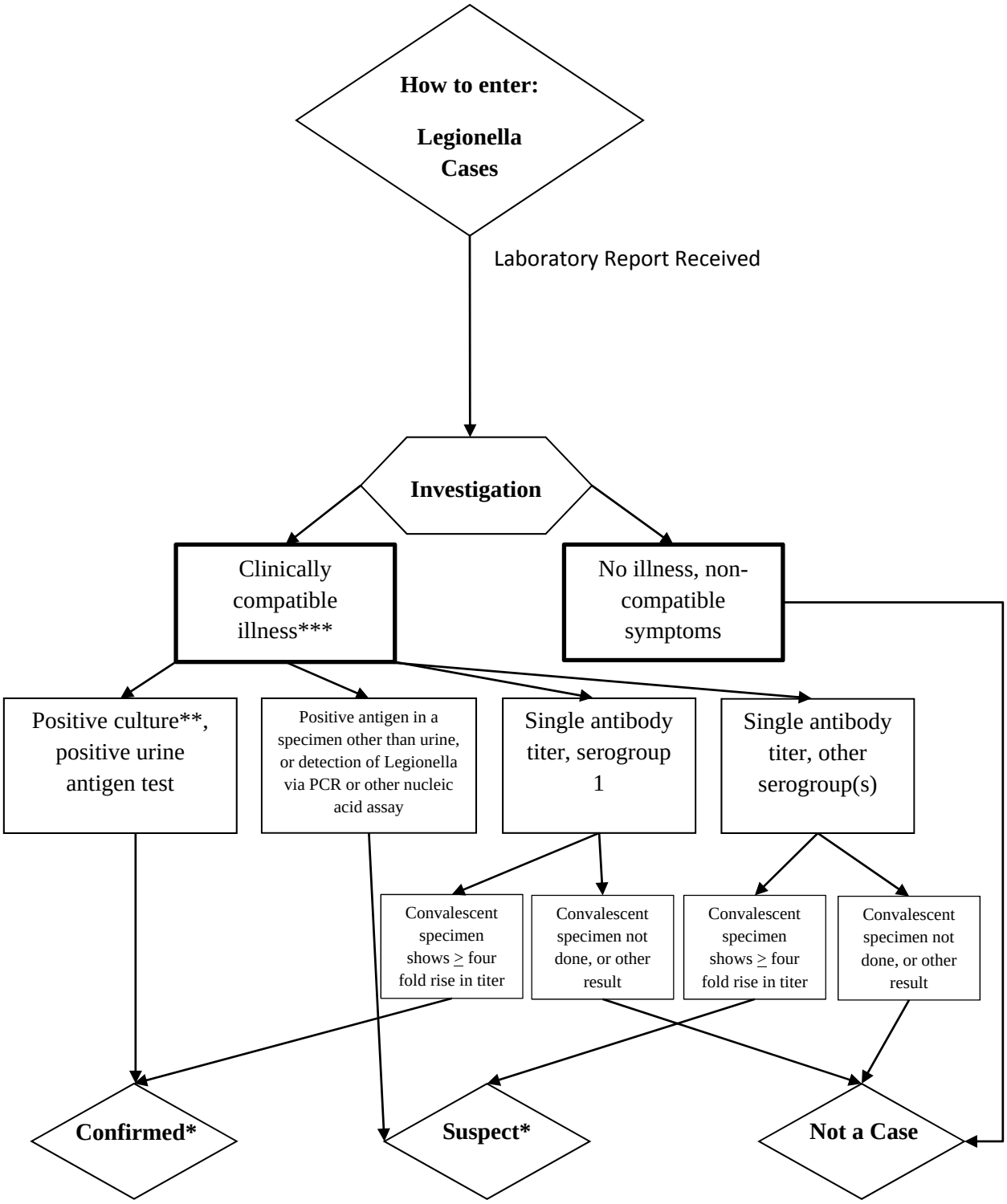
NOTE: ALL information you have should be entered into NBS

	Required	Critical	Important
Jurisdiction	X		
Program Area	X		
State Case ID			X
Investigation Start Date		X	
Investigation Status		X	
Investigator		X	
Date of Report	X		
Reporting Source			X
Earliest Reported to County			X
Earliest Reported to State			X
Reporter			X
Physician			X
Hospitalized?		X	
If yes, Hospital		X	
Admission Date		X	
Discharge Date		X	
Diagnosis Date			X
Illness Onset Date		X	
Illness End Date			X
Illness Duration			X
Age at Onset			X
Is patient pregnant?		X	
Does patient have PID?			X
Did the patient die?			X
Is patient associated with a day care facility?		X	
Is patient a food handler?			X
Is case part of an outbreak?		X	
Where was disease acquired?		X	
Transmission Mode			X
Detection Method			X
Confirmation Method			X
Confirmation Date			X
Case Status		X	
MMWR Week		X	
MMWR Year		X	
General Comments			X
Did patient travel?		X	



*: Case Report Form should be faxed to CEDS

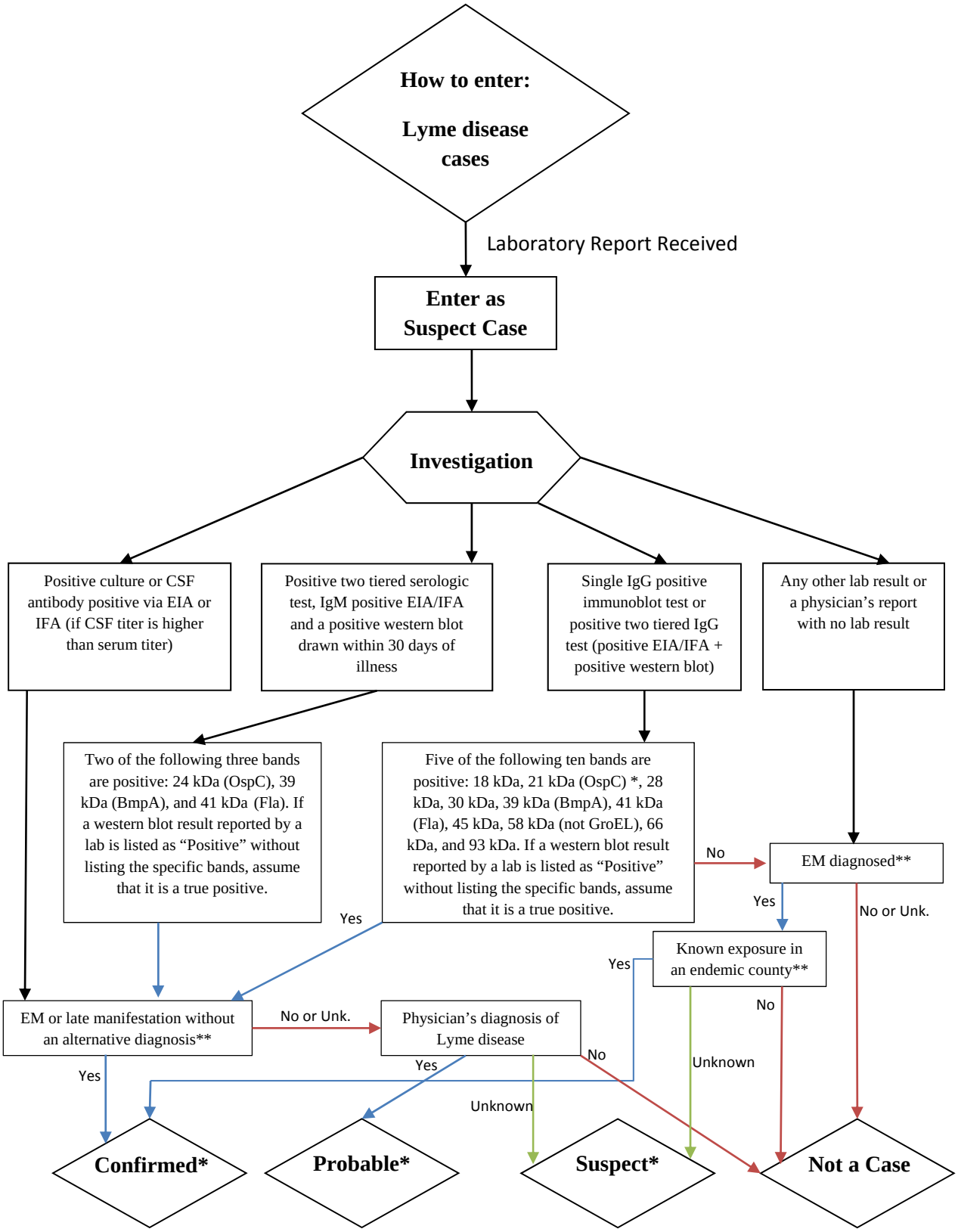
**: Labs should indicate the organism being tested for. *Ehrlichia ewingii* is only detectable by PCR. If two positive "supportive" lab results are reported with the same titer strength or if the species name is not given (i.e. Ehrlichiosis PCR), the condition should be reported as "Ehrlichiosis/ Anaplasmosis Unknown". If a case is positive for both Ehrlichia (or Anaplasma) and Rocky Mountain spotted fever, and meets the case definition for both conditions, it should be reported as both Ehrlichia (or Anaplasma) and RMSF, regardless of which titer is stronger.



* Submit case report form to CEDS

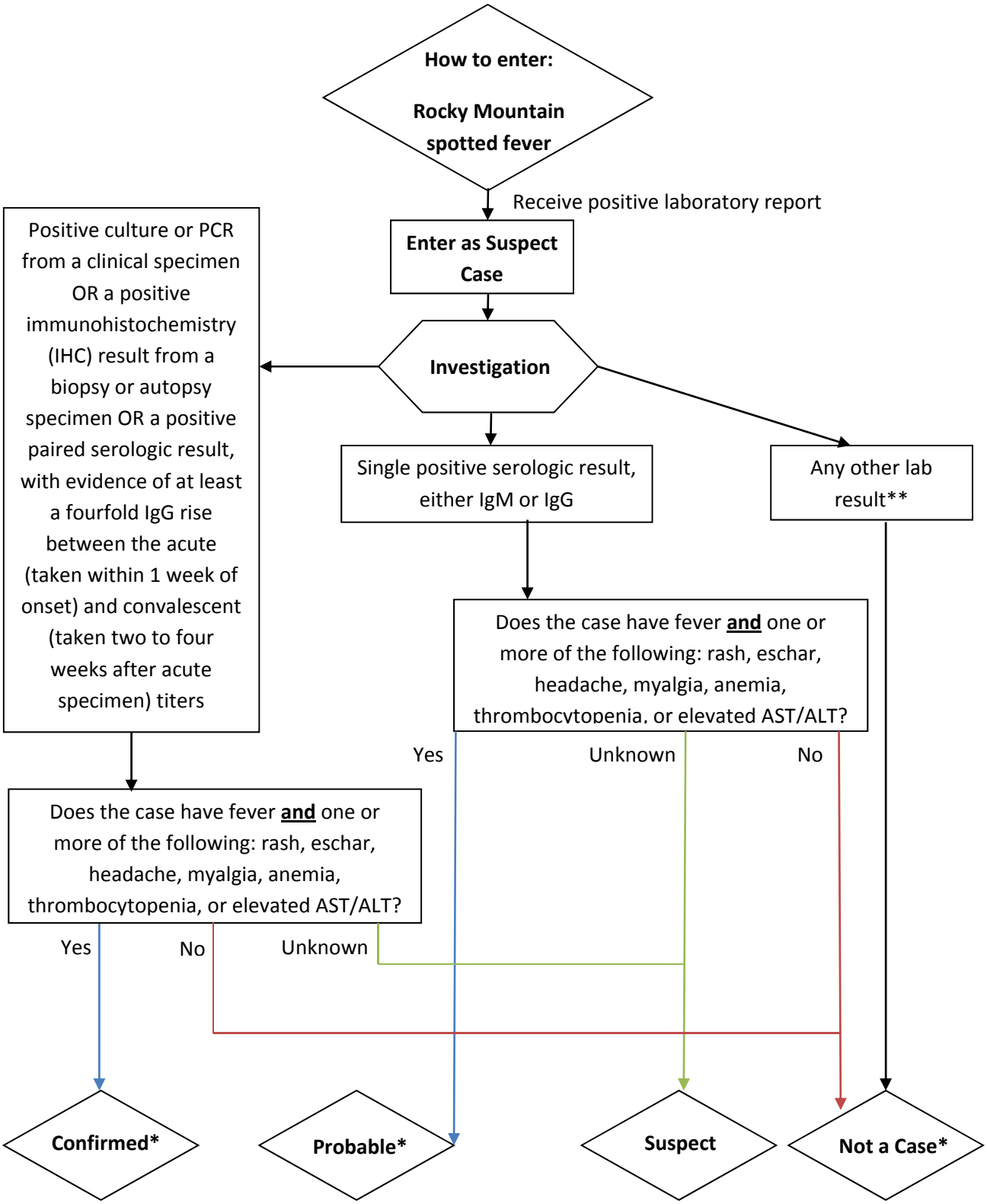
** Organism must be isolated from respiratory secretions, lung tissue, pleural fluid, or other normally sterile fluid

*** Consult case definition



* Submit case report form to CEDS

** Consult the case definition for potential late manifestations, surveillance definition of EM, and what qualifies as a 'known exposure' for surveillance purposes. Contact CEDS for the current list of endemic counties.



*: Case Report Form should be faxed to CEDS

**: Physicians submitting clinically compatible reports without supporting lab evidence should be encouraged to obtain additional testing.

CEDS Reporting Procedure

Process: Reporting Arboviral and Dengue Fever Diseases

Procedure: All cases of California/LaCrosse Serogroup virus, Dengue Fever, Eastern Equine Encephalitis, Powassan Infection, St. Louis Encephalitis virus infection, Venezuelan Equine Encephalitis, West Nile virus, and Western Equine Encephalitis are to be reported.

Method: Electronic Reports: When reports are received via electronic laboratory reporting, into NBS, an investigation should be created. Generally, the case status should be entered as "suspect" until the investigation is complete. The case status should then be changed to reflect the results of the investigation. A notification should be created and sent to CDC for every case reported in NBS, even non-cases.

Paper Reports: When IgM-positive paper lab reports are received, they should be promptly entered into NBS. The case status should be entered as suspect pending the results of the investigation. The case status should then be changed to reflect the results of the investigation. IgG-Positive only labs should be kept for thirty days to see if another lab report is received. If so, the "Guidance on following IgG-Positive Laboratory Report" should be followed. If not, it is considered not a case.

Paper case report forms for Arboviral and Dengue Fever diseases should be completed and sent to the central office for all investigated cases.

Guidance on Entering Arbovirals into NBS

Lab Reports:

This table lists arboviruses most commonly tested for in Tennessee, the most frequently ordered/resulted testing methodologies for each virus, major labs that perform the testing methodology, and the proper selection for data entry into NBS regarding the ordered test and resulted test.

Pathogen	Ordered/Resulted Test Methods	Major Labs that Perform the Test	Data Entry into NEDSS	
			Selection for 'Ordered Test'	Selection for 'Resulted Test'
Dengue virus	EIA/ELISA	ARUP Laboratories LabCorp	Dengue virus Antibodies	Dengue virus antibody, IgG Dengue virus antibody, IgM
Eastern equine encephalitis virus	Arbovirus IFA	TDH Laboratories	Arbovirus IgG and IgM panel in Serum by Immunofluorescence	Eastern equine encephalitis virus antibody, IgG Eastern equine encephalitis virus antibody, IgM
La Crosse virus	Arbovirus IFA	TDH Laboratories	Arbovirus IgG and IgM panel in Serum by Immunofluorescence	La Crosse virus antibody, IgG La Crosse virus antibody, IgM
St. Louis encephalitis virus	Arbovirus IFA	TDH Laboratories	Arbovirus IgG and IgM panel in Serum by Immunofluorescence	Saint Louis encephalitis virus antibody, IgG Saint Louis encephalitis virus antibody, IgM
West Nile virus	EIA/ELISA	Warde Medical Laboratory PathGroup Quest Medical Diagnostic Laboratories, L.L.C. Solstas Laboratory LabCorp	West Nile virus antibody	West Nile virus antibody, IgG West Nile virus antibody, IgM
West Nile virus	PCR	LabCorp	West Nile virus, PCR (DNA or RNA)	West Nile virus, RNA
Western equine encephalitis virus	Arbovirus IFA	TDH Laboratories	Arbovirus IgG and IgM panel in Serum by Immunofluorescence	Western Equine Encephalitis Virus Antibodies, IgG Western Equine Encephalitis Virus Antibodies, IgM

IFA = immunofluorescence assay

EIA = enzyme immunoassay

ELISA = enzyme-linked immunosorbent assay

PCR = polymerase chain reaction

This table lists the data fields that are required, critical, and important when entering an arboviral lab result.

NOTE: All information you have should be entered into NBS.

Field	Required	Critical	Important
Reporting Facility	X		
Ordering Facility			X
Ordering Provider			X
Program Area	X		
Jurisdiction	X		
Lab Report Date		X	
Date Received by Public Health	X		
Ordered Test		X	
Accession Number			X
Specimen Source		X	
Date Specimen Collected		X	
Patient Status at Specimen Collection			X
Resulted Test	X		
Coded Result		X	
Numeric Result		X	

Required – Information is necessary to move forward in NBS

Critical – Information is essential and all efforts should be made to obtain the data

Important – Information is helpful so an attempt to obtain the data should be made

Investigation:

The following arboviral disease conditions are available for selection when opening an investigation in NBS:

- Cache Valley virus neuroinvasive disease
- Cache Valley virus non-neuroinvasive disease
- California serogroup virus neuroinvasive disease
- California serogroup virus non-neuroinvasive disease
- Chikungunya Virus
- Colorado tick fever
- Dengue Fever
- Dengue hemorrhagic fever
- Eastern equine encephalitis neuroinvasive disease
- Eastern equine encephalitis non-neuroinvasive disease
- Jamestown Canyon virus, neuroinvasive disease
- Jamestown Canyon virus, non-neuroinvasive disease
- Japanese encephalitis virus, neuroinvasive disease
- Japanese encephalitis virus, non-neuroinvasive disease
- La Crosse Virus
- Other Arbovirus
- Powassan virus, neuroinvasive
- Powassan virus, non-neuroinvasive
- St. Louis Encephalitis, neuroinvasive
- St. Louis Encephalitis, non-neuroinvasive
- Venezuelan equine encephalitis, neuroinvasive
- Venezuelan equine encephalitis, non-neuroinvasive
- West Nile virus neuroinvasive disease
- West Nile virus non-neuroinvasive disease
- Western equine encephalitis, non-neuroinvasive
- Western equine encephalitis, neuroinvasive
- Yellow fever

For the majority of the arboviral disease conditions, it is beneficial to know if the illness is neuroinvasive or non-neuroinvasive at the time the investigation is created.

Neuroinvasive disease is defined as a patient with meningitis, encephalitis, or acute flaccid paralysis (with or without meningitis or encephalitis) and laboratory evidence of recent arboviral infection.

If the severity of illness is not known at the time the investigation is created, then create the investigation as non-neuroinvasive. As more information is obtained and it is determined that the patient has neuroinvasive disease, then click the 'Change Condition' button and select the appropriate arbovirus neuroinvasive disease condition.

The below fields should be completed for all arboviral investigations. Required fields are in red text and marked with an asterisk (*); these fields MUST be completed in order to move forward in NBS.

'Patient' Tab

'Patient Information' Section

- First Name
- Last Name
- Date of Birth
- Reported Age
  - If Date of Birth is populated, then the patient's age is automatically calculated.
- Reported Age Units
  - If Date of Birth is populated, then the patient's age is automatically calculated.
  - If Reported Age is manually entered, then the age units MUST be entered. Choose the appropriate option from the list (Days; Hours; Minutes; Months; Unknown; Weeks; or Years).
- Current Sex
  - Choose the appropriate option from the list (Female; Male; and Unknown).
- Street Address 1
- City
- State
- Zip
- *County
  - Choose the appropriate county of residence option from the list.
- Home Phone
- Ethnicity
  - Choose the appropriate option from the list (Hispanic or Latino; Not Hispanic or Latino; if unknown, leave blank).
- *Race
  - Choose the appropriate option from the list (American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White; or Unknown).
  - Multiple races cannot be selected. If the person is of multiple races, select Unknown and type the person's race in the Comments box located at the top of the 'Patient Information' section.

'Case Info' Tab

'Investigation Information' Section

- *Jurisdiction
  - The selection is carried over from the lab report.
- *Program Area
  - The selection is carried over from the lab report.
- Investigation Start Date
- *Investigation Status
  - Choose the appropriate option from the list (Closed or Open).
- *Shared Indicator
  - Must always be checked to indicate 'Yes'.
- Investigator

'Reporting Information' Section

- Date of Report
  - This is the date the lab report was received by public health. This date is carried over from the lab report.
- Earliest Date Reported to County

'Clinical' Section

- Physician
- Was the patient hospitalized for this illness?
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - If 'Yes' is selected, additional fields will be displayed.
    - Hospital
    - Admission Date
    - Discharge Date
    - Total duration of stay in the hospital (in days)
      - If Admission Date and Discharge Date are both populated, then the total duration of stay in the hospital (in days) is automatically calculated.
- Diagnosis Date
  - This is the first date of a positive lab result obtained on the patient for the disease being investigated. Depending on the lab result received, this may be the date the

result was finalized or verified. If the date the result was finalized or verified is unknown, use the lab report date.

- *Illness Onset Date
  - This is the first date the patient started feeling ill.
  - If the patient is an asymptomatic blood donor, enter the date of their blood donation as their illness onset date.
- Illness End Date
  - This is the last date the patient felt ill.
- Is the patient pregnant?
  - This question is only activated if 'Female' was selected as the patient's Current Sex in the 'Patient' tab. Choose the appropriate option from the list (No; Unknown; or Yes).
- Did the patient die from this illness?
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - If 'Yes' is selected, an additional field will be displayed.
    - Date of Death
- Arboviral Symptoms
  - Select all applicable symptoms.
- Other Arboviral Symptoms
  - This field is only activated if 'Other' is selected as an arboviral symptom.
  - Enter any additional symptoms that are not a part of the Arboviral Symptoms list.
- Arbo Fever Temp
  - This field is only activated if 'Fever' is selected as an arboviral symptom.
  - Enter the patient's maximum temperature recorded in degrees Fahrenheit.

'Arboviral Questions' Section

- *Type of Arbovirus
  - Choose the appropriate option from the list. This list is sorted alphabetically and the selection should be as specific as possible. For example, if the disease being investigated is West Nile, then choose 'West Nile virus' from the list.
- *Clinical Syndrome
  - Select the clinical syndrome which best describes the patient's current clinical illness according to the following guidelines:
    - **Asymptomatic**: Infected tissue or blood donor who does not develop any symptoms.

- **Dengue Fever**: For dengue cases only. An acute febrile illness defined by the presence of fever and two or more of the following: retro-orbital or ocular pain, headache, rash, myalgia, arthralgia, leukopenia, or hemorrhagic manifestations (i.e., positive tourniquet test, petechiae, purpura/ecchymosis, epistaxis, gum bleeding, blood in vomitus, urine, or stool; or vaginal bleeding) but not meeting the case definition of dengue hemorrhagic fever (see below). Anorexia, nausea, abdominal pain, and persistent vomiting may also occur but are not case-defining criteria for dengue fever.
- **Dengue Hemorrhagic Fever/Dengue Shock Syndrome**: For dengue cases only. Dengue hemorrhagic fever (DHF) is characterized by all of the following:

  1.) Fever lasting from 2–7 days;

  2.) Evidence of hemorrhagic manifestation or a positive tourniquet test;

  3.) Thrombocytopenia (≤100,000 cells per mm^3); and

  4.) Evidence of plasma leakage shown by hemoconcentration (an increase in hematocrit ≥20% above average for age or a decrease in hematocrit ≥20% of baseline following fluid replacement therapy), or pleural effusion or ascites or hypoproteinemia.

  Dengue shock syndrome (DSS) has all of criteria for DHF plus circulatory failure as evidenced by rapid and weak pulse, and narrow pulse pressure (≤20mm Hg), or age-specific hypotension and cold, clammy skin and restlessness.
- **Dengue with Hemorrhage**: For dengue cases only. Fulfill criteria for dengue fever and demonstrated hemorrhagic manifestations (i.e., petechiae, purpura/ecchymosis, epistaxis, gum bleeding, blood in vomitus, urine, or stool, or vaginal bleeding) or had a positive tourniquet test.
- **Encephalitis – Including Meningoencephalitis**: For non-dengue cases only. Fever with new onset altered mental status, seizures (excluding simple febrile seizures), and/or focal neurologic deficits (e.g. cranial nerve palsies, aphasia, sensory deficits, abnormal reflexes, or abnormal movements).
- **Hepatitis/Jaundice**: For non-dengue cases only. Inflammation of the liver resulting in elevated liver function enzymes and/or elevated bilirubin. The elevated bilirubin can lead to yellowish discoloration (jaundice) of whites of eyes, skin, and mucous membranes. This condition tends to be seen with infections to due hemorrhagic viruses like yellow fever.

        - **Meningitis**: For non-dengue cases only. Fever with CSF pleocytosis, stiff neck, or other meningeal signs.
        - **Multi organ failure**: For non-dengue cases only. Failure or insufficiency of two or more systems or organs in the body, such as heart, liver, and kidney. This condition tends to be seen with infections due to hemorrhagic viruses like yellow fever.
        - **Other Clinical**: Symptoms or clinical syndrome that is not consistent with uncomplicated fever, dengue fever, dengue fever with hemorrhage, dengue hemorrhagic fever/dengue shock syndrome, meningitis, encephalitis, hepatitis/jaundice, or multi-system organ failure. For example, if the clinical record indicates acute flaccid paralysis without encephalitis or meningitis, choose 'Other Clinical'.
        - **Uncomplicated Fever**: Febrile illness without neurologic involvement or without fulfilling the clinical criteria for dengue fever, dengue fever with hemorrhage, or dengue hemorrhagic fever/dengue shock syndrome. This may include headache without accompanying neurologic symptoms.
        - **Unknown**: Insufficient information to assign a clinical syndrome to a case. You can change this at a later date if more information is obtained.
- Lab Testing By
    - Choose the appropriate option from the list (Commercial laboratory only, Public health and commercial laboratory, Public health laboratory (state or CDC) only, or Unknown).
- *CDC Publish Indicator
    - Must always be marked 'Yes'.
- *Acute Flaccid Paralysis (AFP)
    - Choose the appropriate option from the list (No; Unknown; or Yes).
    - AFP is characterized by a loss of skeletal muscle function resulting in a 'flaccid' tone to the affected area. AFP may result from anterior ('polio') myelitis, peripheral neuritis, or post-infectious peripheral demyelinating neuropathy (i.e., Guillain-Barré syndrome).
    - If the clinical record indicates AFP without encephalitis or meningitis, choose 'Other Clinical' for the clinical syndrome and AFP 'Yes'. Uncomplicated fever and AFP are mutually exclusive for national surveillance purposes.
    - AFP, with or without meningitis or encephalitis, will be classified as 'neuroinvasive disease'.

- Occupationally lab acquired
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient was possibly infected while working in a laboratory setting.
- Non-occupationally lab acquired
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient was possibly infected in a laboratory setting but they do not work in the laboratory.
- Blood Donor
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient donated a blood product within 30 days of illness onset.
- *Identified by Blood Donor Screening
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient's donated blood tested RNA-positive for an arbovirus by a single nucleic acid amplification test (NAAT) with a signal-to-cutoff ratio (S/CO) ≥17 or by repeated NAATs.
- Date of Donation
  - You do not need to enter a value unless either 'Blood Donor' or 'Identified by Blood Donor Screening' are marked as 'Yes'.
- *Blood Transfusion Received
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient received a blood product within 30 days of illness onset.
- *Organ Donor
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient donated an organ within 30 days of illness onset.
- *Organ Transplant Received
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient received an organ transplant within 30 days of illness onset.
- *Breast Fed Infant
  - Choose the appropriate option from the list (No; Unknown; or Yes).
  - 'Yes' indicates that the patient was a breastfed infant at the time of illness onset.

- *Infected In Utero
    - Choose the appropriate option from the list (No; Unknown; or Yes).
    - 'Yes' indicates that the patient is an infant that may have been infected in utero.

'Epidemiologic' Section

- Did the patient travel outside home county in the past two weeks?
    - Choose the appropriate option from the list (No or Yes).
- Where to
    - If the patient traveled outside their home county in the past two weeks, enter the name of the location the patient traveled to.
- Where was the disease acquired
    - Choose the appropriate option from the list (Indigenous, within jurisdiction; Out of country; Out of jurisdiction, from another jurisdiction; Out of state; Unknown).
- Imported Country
    - This field is only activated if anything other than Unknown or Indigenous, within jurisdiction is selected for the question 'Where was the disease acquired'.
- Imported State
    - This field is only activated if anything other than Unknown or Indigenous, within jurisdiction is selected for the question 'Where was the disease acquired'.
- Imported City
    - This field is only activated if anything other than Unknown or Indigenous, within jurisdiction is selected for the question 'Where was the disease acquired'.
- Imported County
    - This field is only activated if anything other than Unknown or Indigenous, within jurisdiction is selected for the question 'Where was the disease acquired'.
- *Case Status
    - Choose the appropriate option from the list (Confirmed; Not a Case; or Probable).
    - For blood donors - asymptomatic blood donors should be classified as Not a Case; symptomatic blood donors should be classified as either Confirmed or Probable.
- *Create a notification to CDC
    - A notification must be sent for all cases entered into NBS.

Single IgG-Positive Lab Report Only:

When a single IgG-positive lab report is received, you can do one of two things:

1. Create an investigation as non-neuroinvasive disease (if applicable) and wait 30 days to see if you receive a second IgG-positive lab result from a specimen collected at a later date or another non-IgG-positive lab result before closing out the investigation.

2. Create an investigation and close it out as non-neuroinvasive disease (if applicable) knowing that, if you receive a second IgG-positive lab result from a specimen collected at a later date or another non-IgG-positive lab result, the investigation will have to be re-opened and completed.

If an additional positive lab result is received, a full investigation of the illness must be completed.

If no additional positive lab results are received, you must still open and close an investigation that includes the following minimum information:

'Patient' Tab

'Patient Information' Section

- *County
  - Choose the appropriate county of residence option from the list.
- *Race
  - Choose the appropriate option from the list (American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White; or Unknown).
  - Multiple races cannot be selected. If the person is of multiple races, select Unknown and type the person's race in the Comments box located at the top of the 'Patient Information' section.

'Case Info' Tab

'Investigation Information' Section

- *Jurisdiction
  - The selection is carried over from the lab report.
- *Program Area
  - The selection is carried over from the lab report.

- *Investigation Status
  - Choose the appropriate option from the list (Closed or Open).
- *Shared Indicator
  - Must always be checked to indicate 'Yes'.

'Clinical' Section

- *Illness Onset Date
  - This is the first date the patient started feeling ill.
  - If this information is unknown, you may use the specimen collection date as a surrogate for the illness onset date. This is only acceptable for non-cases in which a full investigation is not completed (e.g., instances in which medical records are not requested and/or the patient has not been spoken to regarding their illness). This is not acceptable for probable or confirmed cases.

'Arboviral Questions' Section

- *Type of Arbovirus
  - Choose the appropriate option from the list. This list is sorted alphabetically and the selection should be as specific as possible. For example, if the disease being investigated is West Nile, then choose 'West Nile virus' from the list.
- *Clinical Syndrome
  - Select the clinical syndrome which best describes the patient's current clinical illness.
  - If you have insufficient information to assign a clinical syndrome, select Unknown.
- *CDC Publish Indicator
  - Must always be marked 'Yes'.
- *Acute Flaccid Paralysis (AFP)
  - Choose the appropriate option from the list (No; Unknown; or Yes).
- *Identified by Blood Donor Screening
  - Choose the appropriate option from the list (No; Unknown; or Yes).
- *Blood Transfusion Received
  - Choose the appropriate option from the list (No; Unknown; or Yes).
- *Organ Donor
  - Choose the appropriate option from the list (No; Unknown; or Yes).
- *Organ Transplant Received
  - Choose the appropriate option from the list (No; Unknown; or Yes).

- *Breast Fed Infant
    - Choose the appropriate option from the list (No; Unknown; or Yes).
- *Infected In Utero
    - Choose the appropriate option from the list (No; Unknown; or Yes).

'Epidemiologic' Section

- *Case Status
    - Choose Not a Case.
- *Create a notification to CDC
    - A notification must be sent for all cases entered into NBS.

'General Comments' Section

- General Comments
    - State that this is not a case due to a single IgG-positive lab result only and provide an 'as of' date. Example: 'Single IgG-positive lab result only as of 10/5/2013 therefore not a case.'

Tennessee Department of Health

Arboviral Disease Form

Please fill out this form as completely as possible. ***Answers must be entered into NBS for text in red.** Once complete, send or fax the from to:

Revised: 6/2014

Tennessee Department of Health, Vector-Borne Diseases
630 Hart Lane, Nashville, TN 37216
Phone: 615.262.6456 **Fax:** 615.262.6324

DEMOGRAPHICS

CASE ID#:_____(internal)

Last Name: _____ **First:** _____ **Middle:** _____ **DOB:** _____/_____/_____

Reported Age: _____ ☐ Days ☐ Months ☐ Years **Sex:** ☐ Male ☐ Female ☐ Unknown

Street Address: _____

City: _____ **State:** _____ **Zip:** _____ ***County:** _____

Phone - Home: _____ **Work:** _____ **Cell:** _____

Ethnicity: ☐ Hispanic or Latino ☐ Not Hispanic or Latino

***Race:** ☐ American Indian / Alaskan ☐ Asian ☐ Black / African American ☐ Hawaiian / Pacific Islander ☐ White ☐ Other

LABORATORY

ORDER INFO.

***Reporting Facility:** _____ **City, State:** _____

Ordering Facility: _____ **City, State:** _____

Ordering Provider: _____ **City, State:** _____

Lab Report Date: ____/____/____ ***Date Received by Public Health:** ____/____/____ **Ordered Test:** _____

Specimen Source: _____ **Accession Number:** _____ **Patient Status:** ☐ Hospitalized ☐ Outpatient ☐ Unk.

TEST RESULT(S)

*Resulted Test	Patho-gen	Coded Result 1	Numeric Result 1	Date Collected 1	Coded Result 2	Numeric Result 2	Date Collected 2
IFA IgG		☐ Pos ☐ Neg		___/___/___	☐ Pos ☐ Neg		___/___/___
IFA IgM		☐ Pos ☐ Neg		___/___/___	☐ Pos ☐ Neg		___/___/___
EIA/ELISA IgG		☐ Pos ☐ Neg		___/___/___	☐ Pos ☐ Neg		___/___/___
EIA/ELISA IgM		☐ Pos ☐ Neg		___/___/___	☐ Pos ☐ Neg		___/___/___

CSF: ☐ Pos ☐ Neg (Collected: ___/___/___) **PCR:** ☐ Pos ☐ Neg (Collected: ___/___/___) **PRNT:** ☐ Pos ☐ Neg (Collected: ___/___/___)

INVESTIGATION SUMMARY

INVESTIGATION

***Disease:** ☐ Dengue Fever ☐ Dengue Hemor. Fever ☐ Chikungunya ☐ Other _____ ☐ West Nile Neuro. ☐ West Nile Non-Neuro. ☐ La Crosse

***Jurisdiction:** _____

Investigation Start Date: ____/____/____

***Investigation Status:** ☐ Open ☐ Closed

HOSPITAL

Physician: _____

Was the patient hospitalized for this illness? ☐ Yes ☐ No ☐ Unknown

If yes, Hospital: _____

Diagnosis Date: ____/____/____

***Illness Onset Date:** ____/____/____ **Illness End Date:** ____/____/____

Is the patient pregnant? ☐ Yes ☐ No ☐ Unknown

Did the patient die from this illness?

☐ Yes (Date of death: ____/____/____) ☐ No ☐ Unknown

CLINICAL INFORMATION

SYMPTOMS

☐ Aphasia
☐ Behavioral Changes
☐ Confusion
☐ Cough
☐ Diarrhea
☐ Epistaxis
☐ Eye Pain
☐ Fever (max. temp.: _____)
☐ Fever lasting 2 - 7 days
☐ Headache
☐ Hematuria
☐ Jaundice
☐ Joint Pain
☐ Leukopenia
☐ Loss of consciousness
☐ Muscle aches
☐ Nausea
☐ Photophobia
☐ Plasma leakage
☐ Profound Weakness
☐ Purpura/Echymosis
☐ Rash
☐ Seizures
☐ Sore Throat
☐ Stiff Neck
☐ Thrombocytopenia
☐ Vomiting

OTHER

Sources of Infection (select all that apply — Y=Yes, N=No, U=Unknown):

Y N U
☐ ☐ ☐ Occupationally Lab Acquired
☐ ☐ ☐ *Blood Transfusion Received
☐ ☐ ☐ *Identified by Blood Donor Screening
☐ ☐ ☐ *Organ Donor
☐ ☐ ☐ *Breastfed Infant

Y N U
☐ ☐ ☐ Non-Occupationally Lab Acquired
☐ ☐ ☐ Blood Donor
Date of Blood Donation: ____/____/____
☐ ☐ ☐ *Organ Transplant Received
☐ ☐ ☐ *Infected in Utero

Did the patient travel outside home county in the two weeks before symptom onset?

☐ Yes (Where/Date: _____) ☐ No

Was the patient part of a Group Trip?

☐ Yes (What group: _____) ☐ No

Group Coordinator (Name/phone:_____)

Any known ill Contacts (Name/phone:_____)

***Clinical Syndrome (must choose one)**

— See 'Arboviral Clinical Syndrome Guidelines' for details. —

Neuroinvasive Clinical Syndromes:

☐ Acute Flaccid Paralysis (AFP) without Encephalitis or Meningitis†
☐ Encephalitis—Including Meningoencephalitis (with or without AFP)
☐ Meningitis (with or without AFP)

† If patient has AFP without encephalitis or meningitis, choose 'Other Clinical' as the clinical syndrome in NBS.

Non-Neuroinvasive Clinical Syndromes:

☐ Asymptomatic (for tissue and blood donors with no symptoms)
☐ Hepatitis/Jaundice
☐ Multi organ failure
☐ Other Clinical
☐ Uncomplicated fever (fever without neuro. involvement)
☐ Unknown

Dengue Clinical Syndromes:

☐ Asymptomatic
☐ Dengue Fever
☐ Dengue with Hemorrhage
☐ Dengue Hemorrhagic Fever/Dengue Shock Syndrome
☐ Uncomplicated fever (fever without criteria for above dengue syn.)
☐ Unknown

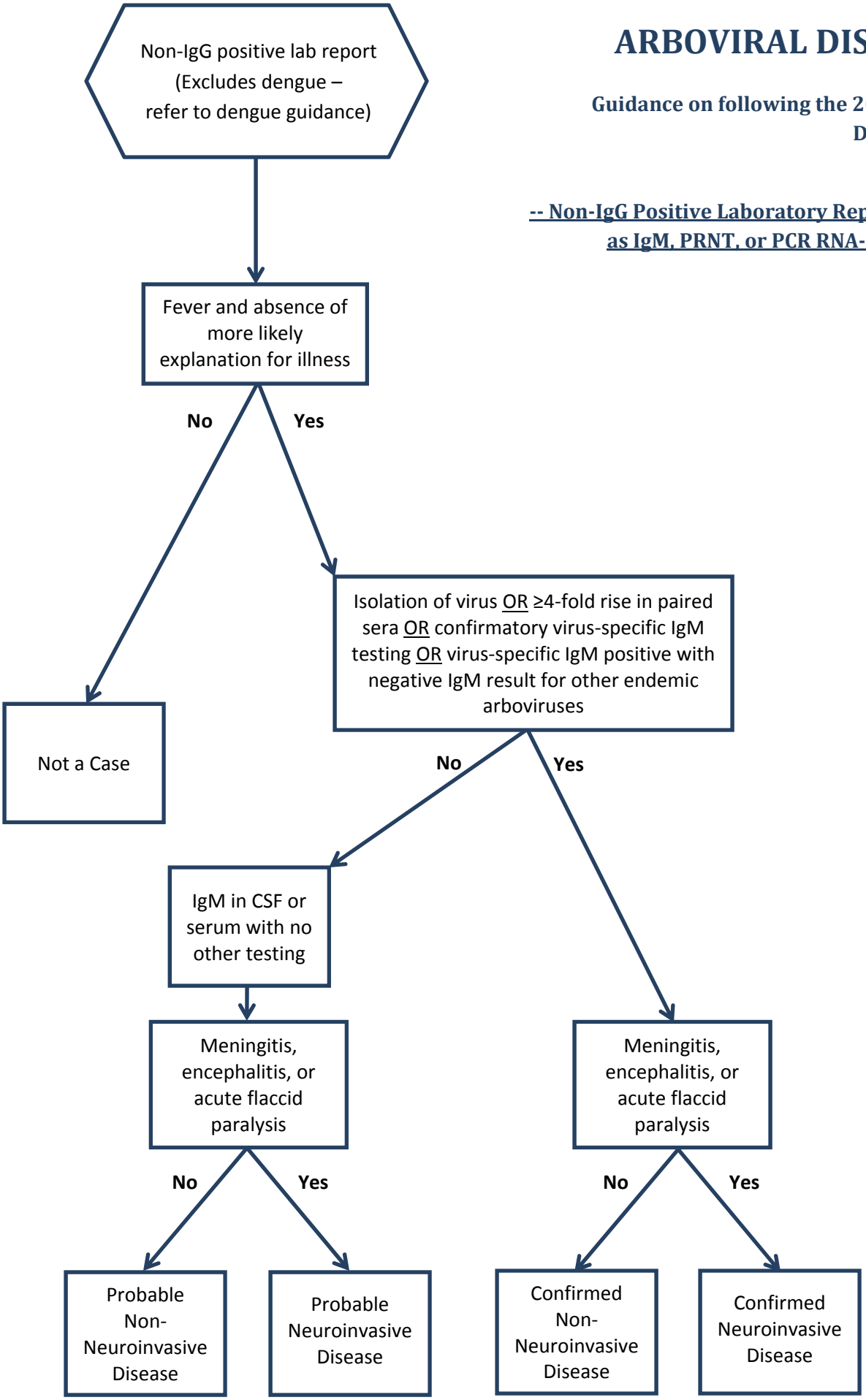
*CASE STATUS (SEE CASE DEFINITION FOR DETAILS)

☐ **Confirmed** ☐ **Suspect**
☐ **Probable** ☐ **Not a Case**

ARBOVIRAL DISEASES

Guidance on following the 2011 Case Definition

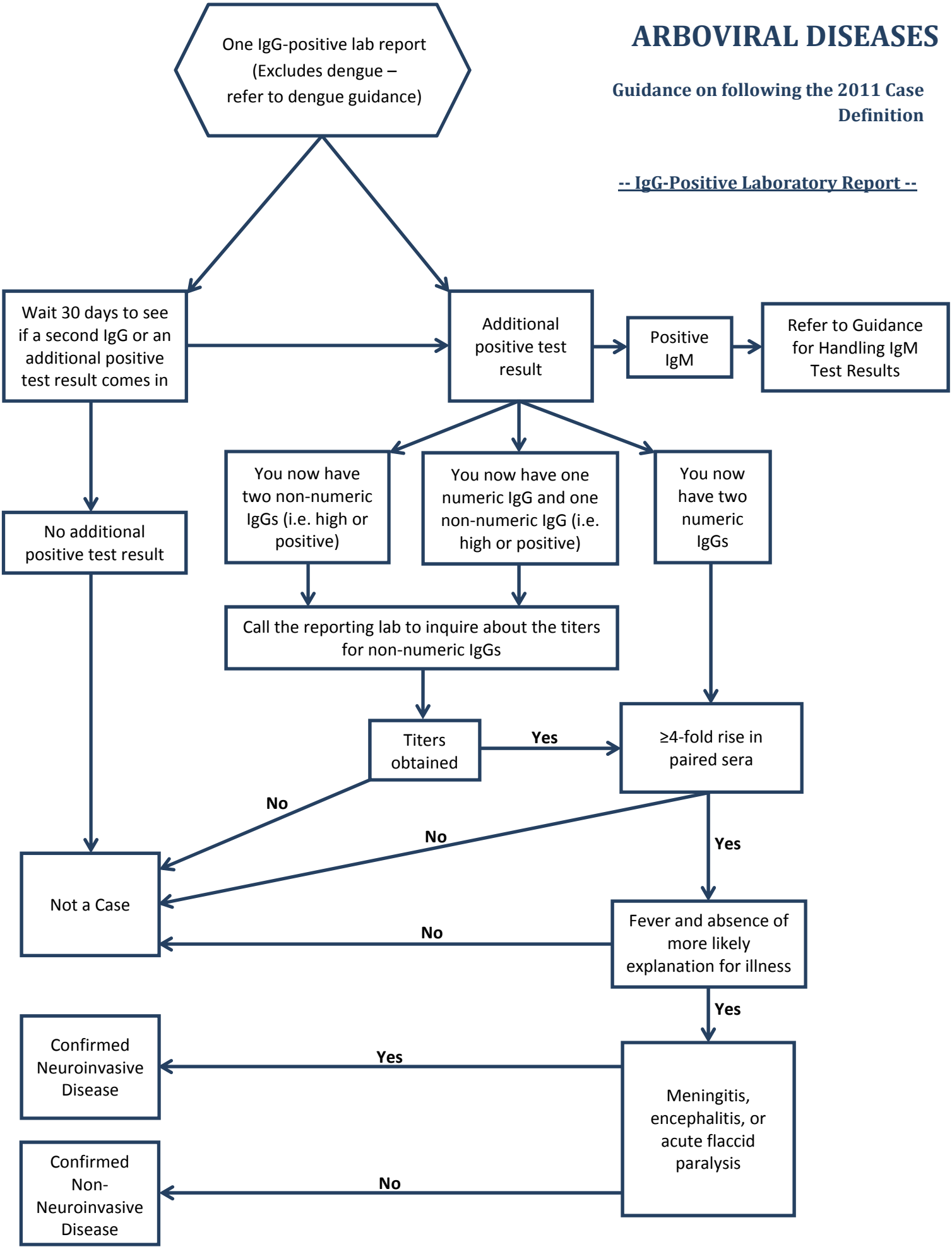
-- Non-IgG Positive Laboratory Report such as IgM, PRNT, or PCR RNA--



ARBOVIRAL DISEASES

Guidance on following the 2011 Case Definition

-- IgG-Positive Laboratory Report --



Dengue Case Classification Algorithm 2015 Case Definition

Note – we must determine both **clinical subtype** (Severe dengue, dengue, dengue-like illness) (this page) AND **case status** (C/P/S) (next page).

A positive dengue lab report is received OR a person is identified as being epi-linked to a case.

Does the patient have fever (as reported by themselves or their provider) AND at least 1 of the following?

- Nausea/vomiting
- Rash
- Aches and pains (e.g., headache, retro-orbital pain, joint pain, myalgia, arthralgia)
- Tourniquet test positive
- Leukopenia (total WBC count < 5,000/mm^3)
- Any warning sign for severe dengue:
  - Abdominal pain or tenderness
  - Persistent vomiting
  - Extravascular fluid accumulation
  - Mucosal bleeding at any site
  - Liver enlargement > 2 cm
  - Increasing hematocrit concurrent with rapid decrease in platelet count

No → Does the patient have fever (as reported by themselves or their provider)?

- **No** → Not a case
- **Yes** → **Dengue-like Illness** (go to next page to determine case status)

Yes →

ANY of the following?

- Severe plasma leakage evidenced by hypovolemic shock and/or extravascular fluid accumulation (e.g., pleural or pericardial effusion, ascites) with respiratory distress. A high hematocrit value for patient age and sec offers further evidence of plasma leakage.
- Severe bleeding from the gastrointestinal tract (e.g., hematemesis, melena) or vagina (menorrhagia) as defined by requirement for medical intervention including intravenous fluid resuscitation or blood transfusion.
- Severe organ involvement, including any of the following:
  - Elevated liver transaminases: aspartate aminotransferase (AST) or alanine aminotransferase (ALT) ≥ 1,000 per liter (U/L)
  - Impaired level of consciousness and/or diagnosis of encephalitis, encephalopathy, or meningitis
  - Heart or other organ involvement including myocarditis, cholecystitis, and pancreatitis.

- **No** → **Dengue** (go to next page to determine case status)
- **Yes** → **Severe Dengue** (go to next page to determine case status)

Dengue Case Classification Algorithm 2015 Case Definition

Note – we must determine both **clinical subtype** (Severe dengue, dengue, dengue-like illness) (previous page) AND **case status** (C/P/S) (this page).

Clinically compatible case of dengue-like illness, dengue or severe dengue (see previous page) AND any of the following?

- Detection of DENV nucleic acid in serum, plasma, blood, cerebrospinal fluid (CSF), other body fluid or tissue by validated RT-PCR, or
- Detection of DENV antigens in tissue by a validated IFA or immunohistochemistry assay, or
- Detection in serum or plasma of DENV NS1 antigen by a validated immunoassay; or
- Cell culture isolation of DENV from a serum, plasma, or CSF specimen; or
- Detection of IgM anti-DENV by validated immunoassay in a serum specimen or CSF in a person living in a dengue endemic or non-endemic area of the United States without evidence of other flavivirus transmission (e.g., WNV, SLEV, or recent vaccination against a flavivirus (e.g., YFV, JEV)); or
- Detection of IgM anti-DENV in a serum specimen or CSF by validated immunoassay in a traveler returning from a dengue endemic area without ongoing transmission of another flavivirus (e.g., WNV, JEV, YFV), clinical evidence of co-infection with one of these flaviviruses, or recent vaccination against a flavivirus (e.g., YFV, JEV); or
- IgM anti-DENV seroconversion by validated immunoassay in acute (i.e., collected <5 days of illness onset) and convalescent (i.e., collected >5 days after illness onset) serum specimens; or
- IgG anti-DENV seroconversion or ≥4-fold rise in titer by a validated immunoassay in serum specimens collected >2 weeks apart, and confirmed by a neutralization test (e.g., plaque reduction neutralization test) with a >4-fold higher end point titer as compared to other flaviviruses tested.

Yes → **Confirmed**

No ↓

Clinically compatible case of dengue-like illness, dengue or severe dengue (see previous page) AND either of the following?

- Detection of IgM anti-DENV by validated immunoassay in a serum specimen or CSF in a person living in a dengue endemic or non-endemic area of the United States with evidence of other flavivirus transmission (e.g., WNV, SLEV), or recent vaccination against a flavivirus (e.g., YFV, JEV).
- Detection of IgM anti-DENV in a serum specimen or CSF by validated immunoassay in a traveler returning from a dengue endemic area with ongoing transmission of another flavivirus (e.g., WNV, JEV, YFV), clinical evidence of co-infection with one of these flaviviruses, or recent vaccination against a flavivirus (e.g., YFV, JEV).

Yes → **Probable**

No ↓

Clinically compatible case of dengue-like illness, dengue or severe dengue (see previous page) AND either of the following?

- Travel to a dengue endemic country or presence at location with ongoing outbreak within previous two weeks of onset of an acute febrile illness or dengue, OR
- Association in time and place (e.g. household member, family member, classmate, or neighbor) with a confirmed or probable dengue case.

Yes → **Suspect**

Guidance on Laboratory Criteria for an Arboviral Infection

This document is intended to help clarify laboratory criteria for an arboviral infection such as West Nile virus (WNV), La Crosse virus (LACV), and Dengue virus (DENV). You may see patients who actually contracted the virus last year or earlier. Several points should be kept in mind when interpreting arboviral test results:

- An acute case of an arboviral illness will usually have a positive IgM antibody test in cerebrospinal fluid (CSF) and serum within a day after severe symptom onset. The IgG also rises quickly and will generally be present 5-7 days after symptom onset.
- IgG for arboviruses is long lasting with a great deal of cross-reactivity between flaviviruses such as WNV, St. Louis Encephalitis (SLE), DENV, and Yellow Fever (including Yellow Fever vaccines). [NOTE: LACV is not a flavivirus; it is a California serogroup bunyavirus.]
- IgM can also persist for many months after acute infection.

Current Arboviral Infection

CSF: The only practical way to definitively confirm an arboviral infection with a single test is demonstration of IgM in CSF. A single positive IgM test result in CSF with negative IgM results for other arboviruses endemic in the region where exposure occurred would therefore be classified as a confirmed case.

Serum: A positive IgM test result from a laboratory is "suggestive" of infection. A single positive IgM test result in serum (or in CSF if other arboviruses are endemic in the region but testing for these other arboviruses was not performed) would therefore be classified as a probable case.

In order to classify a case as being confirmed based on serology, a ≥ 4-fold rise in titers between acute and convalescent specimens is required. With commonly available tests, a serologic diagnosis of acute infection cannot be confirmed with a single serum specimen.

Past Arboviral Infection

CSF and/or Serum: Positive IgG with negative IgM is most likely due to a past infection or a low level non-specific cross-reaction.

Guidance on Interpreting Arboviral Test Results

NOTE: Samples collected <7 days after illness onset may not have detectable IgM. Testing should be repeated on a convalescent-phase sample to rule out an arboviral infection.

IgM (either serum or CSF)	IgG (either serum or CSF)	PCR to detect RNA (serum)	PCR to detect RNA (CSF)	Interpretation
Any result or Not Submitted	Any result or Not Submitted	Positive	Any result or Not Submitted	Confirmed Case Viral RNA is present in blood.
Any result or Not Submitted	Any result or Not Submitted	Any result or Not Submitted	Positive	Confirmed Case Viral RNA is present in CSF.
Not Submitted	Not Submitted	Not Submitted	Negative	Infection Cannot be Ruled Out Even though viral RNA is not detected in CSF, the test's low sensitivity (i.e., the test's poor ability to identify positive results) does not rule out infection.
Positive	Negative	Negative or Not Submitted	Negative or Not Submitted	Probable Case IgM response normally occurs at the time of acute infection and is typically detectable at time of initial presentation (unless the sample was drawn <7 days after illness onset). IgM antibodies generally remain detectable for at least 1 to 2 months after infection.
Positive	Positive	Negative or Not Submitted	Negative or Not Submitted	Probable Case IgM response normally occurs at the time of acute infection and is typically detectable at time of initial presentation (unless the sample was drawn <7 days after illness onset). IgM antibodies generally remain detectable for at least 1 to 2 months after infection. IgG antibodies may be detectable as early as 7 days after illness onset and within 3 weeks of exposure in most infected individuals. IgG antibodies take approximately 3 months to rise to high levels and they persist indefinitely.
Negative	Positive	Negative or Not Submitted	Negative or Not Submitted	Not a Case Past infection – IgG antibodies persist indefinitely.
Negative	Negative	Negative or Not Submitted	Negative or Not Submitted	Not a Case As long as the sample was drawn ≥7 days after illness onset. If the sample was drawn <7 days after illness onset, a convalescent-phase sample must be drawn. Lack of antibodies 21 days after illness onset is highly unlikely.

PCR = polymerase chain reaction; RNA = ribonucleic acid; CSF = cerebrospinal fluid

Guidance on Interpreting Arboviral IgG/IgM Acute and Convalescent Test Results

NOTE: Samples collected <7 days after illness onset may not have detectable IgM. Testing should be repeated on a convalescent-phase sample to rule out an arboviral infection.

Acute	Convalescent	Interpretation
IgM-negative IgG-negative	IgM-positive IgG-negative ≥4-fold rise in titer	Confirmed Case Seroconversion with a ≥4-fold rise in IgM titer confirms recent infection.
IgM-positive IgG-negative	IgM-positive IgG-negative ≥4-fold rise in titer	Confirmed Case IgM response normally occurs at the time of acute infection and is typically detectable at time of initial presentation (unless the sample was drawn <7 days after illness onset). A ≥4-fold rise in IgM titer confirms recent infection.
IgM-positive IgG-positive	IgM-positive IgG-positive ≥4-fold rise in titer	Confirmed Case A ≥4-fold rise in IgG and/or IgM titer confirms recent infection.
IgM-positive IgG-negative	IgM-positive IgG-positive ≥4-fold rise in titer	Confirmed Case A ≥4-fold rise in IgG and/or IgM titer confirms recent infection.
IgM-negative IgG-negative	IgM-positive IgG-negative No ≥4-fold rise in titer	Probable Case Seroconversion indicates recent infection.
IgM-positive IgG-negative	IgM-positive IgG-negative No ≥4-fold rise in titer	Probable Case IgM response normally occurs at the time of acute infection and is typically detectable at time of initial presentation (unless the sample was drawn <7 days after illness onset).
IgM-positive IgG-positive	IgM-positive IgG-positive No ≥4-fold rise in titer	Probable Case IgM response normally occurs at the time of acute infection and is typically detectable at time of initial presentation (unless the sample was drawn <7 days after illness onset). IgG antibodies may be detectable as early as 7 days after illness onset and within 3 weeks of exposure in most infected individuals.
IgM-positive IgG-negative	IgM-positive IgG-positive No ≥4-fold rise in titer	Probable Case IgM response normally occurs at the time of acute infection and is typically detectable at time of initial presentation (unless the sample was drawn <7 days after illness onset). Rising IgG titers indicate recent infection.
IgM-negative IgG-negative	IgM-negative IgG-negative	Not a Case As long as the convalescent-phase sample was drawn ≥7 days after illness onset. Lack of antibodies 21 days after illness onset is highly unlikely.

Guidance on Selecting a Clinical Syndrome for an Arboviral Infection

Select the clinical syndrome which best describes the patient's current clinical illness according to the following guidelines:

- **Neuroinvasive Clinical Syndromes**
  - **Encephalitis – Including Meningoencephalitis)**: Fever with new onset altered mental status, seizures (excluding simple febrile seizures), and/or focal neurologic deficits (e.g. cranial nerve palsies, aphasia, sensory deficits, abnormal reflexes, or abnormal movements).
  - **Meningitis**: Fever with CSF pleocytosis, stiff neck, or other meningeal signs.

- **Non-Neuroinvasive Clinical Syndromes**
  - **Asymptomatic**: Infected tissue or blood donor who does not develop any symptoms.
  - **Hepatitis/Jaundice**: Inflammation of the liver resulting in elevated liver function enzymes and/or elevated bilirubin. The elevated bilirubin can lead to yellowish discoloration (jaundice) of whites of eyes, skin, and mucous membranes. This condition tends to be seen with infections due to hemorrhagic viruses like yellow fever.
  - **Multi organ failure**: Failure or insufficiency of two or more systems or organs in the body, such as heart, liver, and kidney. This is condition tends to be seen with infections due to hemorrhagic viruses like yellow fever.
  - **Other Clinical**: Symptoms or clinical syndrome that is not consistent with encephalitis, meningitis, hepatitis/jaundice, multiple organ failure, or uncomplicated fever. For example, if the clinical record indicates acute flaccid paralysis* without encephalitis or meningitis, choose 'Other clinical symptoms'.
  - **Uncomplicated Fever**: Febrile illness without neurologic involvement. This may include headache without accompanying neurologic symptoms.
  - **Unknown**: Insufficient information to assign a clinical syndrome to a case. Can be changed at a later date if more information is obtained.

* **Acute flaccid paralysis (AFP)**: Acute flaccid paralysis (AFP) is characterized by a loss of skeletal muscle function resulting in a 'flaccid' tone to the affected area. AFP may result from anterior ("polio") myelitis, peripheral neuritis, or post-infectious peripheral demyelinating neuropathy (i.e., Guillain-Barré syndrome). If the clinical record indicates AFP without encephalitis or meningitis, choose 'Other clinical' for the clinical syndrome and mark 'Yes' for AFP. Uncomplicated fever and AFP are mutually exclusive for national surveillance purposes.

- NOTE: AFP, with or without meningitis or encephalitis, will be classified as neuroinvasive disease.

- **Dengue Clinical Syndromes**
  - **Asymptomatic**: Dengue virus infection in a patient who did not develop any symptoms (e.g., blood or tissue donors).
  - **Dengue Fever**: An acute febrile illness defined by the presence of fever and two or more of the following: retro-orbital or ocular pain, headache, rash, myalgia, arthralgia, leukopenia, or hemorrhagic manifestations (i.e., positive tourniquet test, petechiae, purpura/ecchymosis, epistaxis, gum bleeding, blood in vomitus, urine, or stool; or vaginal bleeding) but not meeting the case definition of dengue hemorrhagic fever (see below). Anorexia, nausea, abdominal pain, and persistent vomiting may also occur but are not case-defining criteria for dengue fever.
  - **Dengue with Hemorrhage**: Fulfill criteria for dengue fever and demonstrated hemorrhagic manifestations (i.e., petechiae, purpura/ecchymosis, epistaxis, gum bleeding, blood in vomitus, urine, or stool, or vaginal bleeding) or had a positive tourniquet test.
  - **Dengue Hemorrhagic Fever/Dengue Shock Syndrome**: Dengue hemorrhagic fever (DHF) is characterized by all of the following:

    1.) Fever lasting from 2–7 days;

    2.) Evidence of hemorrhagic manifestation or a positive tourniquet test;

    3.) Thrombocytopenia (≤100,000 cells per mm^3); and

    4.) Evidence of plasma leakage shown by hemoconcentration (an increase in hematocrit ≥20% above average for age or a decrease in hematocrit ≥20% of baseline following fluid replacement therapy), or pleural effusion or ascites or hypoproteinemia.

    Dengue shock syndrome (DSS) has all the criteria for DHF plus circulatory failure as evidenced by rapid and weak pulse, and narrow pulse pressure (≤20mm Hg), or age-specific hypotension and cold, clammy skin and restlessness.
  - **Uncomplicated fever**: Febrile illness without fulfilling the clinical criteria for dengue fever, dengue fever with hemorrhage, or dengue hemorrhagic fever/dengue shock syndrome.
  - **Unknown**: Insufficient information to assign a clinical syndrome to a case. Can be changed at a later date if more information is obtained.

Guidance on Selecting Possible Sources of an Arboviral Infection

Select any possible sources of infection, either to the patient or to others who may receive blood or organs from the patient, based on the following guidelines:

- **Occupationally Lab Acquired**: Indicates that the patient was possibly infected in a laboratory setting due to their occupation.
- **Non-Occupationally Lab Acquired**: Indicates that the patient was possibly infected in a laboratory setting but it was not due to their occupation.
- **Blood Transfusion Received**: Indicates that the patient received a blood product within 30 days of illness onset.
- **Blood Donor**: Indicates that the patient donated a blood product within 30 days of illness onset.
- **Identified by Blood Donor Screening**: Indicates that the patient's donated blood tested RNA-positive for an arbovirus by a single nucleic acid amplification test (NAAT) with a signal-to-cutoff ratio (S/CO) ≥17 or by repeated NAATs.
- **Date of Blood Donation**: You do not need to enter a value unless either 'Blood Donor' or 'Identified by Blood Donor Screening' are marked 'Yes'.
- **Organ Donor**: Indicates that the patient donated an organ within 30 days of illness onset.
- **Organ Transplant Received**: Indicates that the patient received an organ transplant within 30 days of illness onset.
- **Breast Fed Infant**: Indicates that the patient was a breastfed infant at the time of illness onset.
- **Infected in Utero**: Indicates that the patient is an infant that may have been infected in utero.

Guidance on Reporting West Nile Virus Infection in Blood Donors

CDC encourages state and local health departments to report West Nile virus (WNV) infections in blood donors. These infections may be identified in two ways:

1) A WNV disease case-patient may notify public health authorities that he or she donated blood in the 30 days prior to the onset of illness.

2) A blood donor may be identified as a presumptively viremic donor (PVD) by nucleic acid-amplification test (NAAT) screening of his or her donation by a blood collection agency.

   A PVD is a person with a blood donation that meets at least one of the following criteria:
   a) One reactive NAAT with a signal-to-cutoff (S/CO) ratio ≥ 17.
   b) Two reactive NAATs.

Reporting of donors who do not meet these criteria should wait until follow-up testing is completed.

Consider the following examples. When reporting donors like these, please use the guidelines provided in the table:

- **Blood Donor A:** A WNV illness case-patient who reports that he or she donated blood in the 30 days prior to the onset of illness *(self-reported; symptomatic)*

- **Blood Donor B:** A PVD identified by blood donor screening who never develops WNV illness *(reported by blood collection agency; asymptomatic)*

- **Blood Donor C:** A PVD identified by blood donor screening who develops WNV illness and becomes a case-patient *(reported by blood collection agency; symptomatic)*

Blood Donor	Onset Date	Case Status	Blood Donor	ID'd by Blood Donor Screening	Donation Date	Clinical Syndrome
Blood Donor A	Date of illness onset	Confirmed or Probable	Yes	No	Date of donation	Meningitis, encephalitis, or uncomplicated fever
Blood Donor B	Date of donation	Not a Case	Yes	Yes	Date of donation	Asymptomatic
Blood Donor C	Date of illness onset	Confirmed or Probable	Yes	Yes	Date of donation	Meningitis, encephalitis, or uncomplicated fever

NOTE: Disease Condition, Clinical Syndrome, and Case Status – All PVDs should be entered as "West Nile non-neuroinvasive" with a clinical syndrome of 'Asymptomatic' and a case status of 'Not a Case' unless illness is documented. If illness develops after the PVD is first reported, please revisit NBS to update the patient's status. Changes should include updating the disease condition if neuroinvasive illness develops as well as the 'Clinical Syndrome' field to reflect the nature of illness and the 'Case Status' field to either 'Confirmed' or 'Probable'.

Vaccine Preventable Diseases

Morbidities Include:

- **Congenital Rubella Syndrome**
- **Diptheria (*Corynebacterium diphtheriae*)**
- **Haemophilus influenza Invasive Disease**
- **Hepatitis, Viral-HbsAg positive infant**
- **Hepatitis, Viral-HbsAg positive pregnant female**
- **Influenza-associated deaths, age <18 years**
- **Influenza-associated deaths, pregnancy associated**
- **Measles- Imported**
- **Measles- Indigenous**
- **Meningococcal Disease (*Neisseria meningitidis*)**
- **Mumps**
- **Novel Influenza A**
- **Pertussis (Whooping Cough)**
- **Poliomyelitis- Nonparalytic**
- **Poliomyelitis- Paralytic**
- **Rubella**
- **Tetanus**
- **Varicella deaths**

CEDS Reporting Procedure for Vaccine Preventable Diseases

Procedure: All cases of congenital rubella syndrome, diphtheria, *Haemophilus influenzae* invasive disease, acute viral hepatitis A, pediatric influenza-associated deaths (age <18 years), pregnancy-associated influenza-associated deaths, measles, meningococcal disease (invasive *Neisserria meningitidis*), mumps, novel influenza A, pertussis (whooping cough), poliomyelitis, rubella and varicella death should be investigated promptly. **The epidemiologist or the medical director for the Tennessee Immunization Program should be contacted as soon as a suspect case of any Category 1A or 1B vaccine preventable disease is identified.** After hours reports should be reported to the State Epidemiologist, designee or the on-call CEDS staff.

Category: **1A**
measles
meningococcal disease (invasive *Neisserria meningitidis*)
mumps
novel influenza A

1B
congenital rubella syndrome
diphtheria
Haemophilus influenzae invasive disease
acute viral hepatitis A
pediatric influenza-associated deaths (<18 years of age)
pregnancy-associated influenza death (up to 6 weeks post-partum)
pertussis (whooping cough)
poliomyelitis
rubella

2
varicella death

Category:
1A: Requires immediate telephonic notification (24 hours a day, 7 days a week), followed by a written report using the PH-1600 within 1 week.
1B: Requires immediate telephonic notification (next business day), followed by a written report using the PH-1600 within 1 week.
2: Requires written report using form PH-1600 within 1 week.

Method: Electronic Reports: When reports of vaccine preventable diseases are received via electronic laboratory reporting into NBS, an investigation should be created and followed up on quickly. Depending on the case definition (http://www.cdc.gov/osels/ph_surveillance/nndss/phs/infdis2011.htm) and the known clinical information, the case status should be entered as "suspect" until

the investigation is complete. The case status should then be changed to reflect the results of the investigation.

Paper Reports: When paper reports of vaccine preventable diseases are received, they should be promptly entered into NBS. An investigation should be started and the case definition determined promptly. The case status should be entered into NBS as "suspect" pending the results of the investigation and should then be changed to reflect the results of the investigation.

Condition-specific tips for NBS:

Haemophilus influenzae:

- Follow-up with reporting lab to ensure submission of isolate to TDH Laboratory Services for serotyping
- Enter serotype result into NBS (typically reported out >1 week after NBS investigation is closed).

Meningococcal disease

- Follow-up with reporting lab to ensure submission of isolate was to TDH Laboratory Services for serogrouping
- Notify Immunization Program epidemiologist or medical director, or State Epidemiologist, designee or CEDS on-call staff if suspect case.
- Enter serogroup into NBS

Hepatitis A

- Notify Immunization Program epidemiologist or medical director, or State Epidemiologist, designee or CEDS on-call staff if patient is symptomatic and has positive laboratory result.

Influenza-associated deaths, pediatric or pregnancy-associated

- Positive PCR, viral culture, or commercial rapid test are considered diagnostic.
- Death of a live-born child following the death of a mother within 6 weeks of delivery would be reported separately, one pediatric and one pregnancy-associated. Death of an unborn fetus and pregnant female would be reported as a single pregnancy-associated death (and a pediatric death, if mother was <18 years of age).

Novel influenza A

- Immediately notify Immunization Program epidemiologist or medical director, or State Epidemiologist, designee or CEDS.
- Work with reporting lab to ensure specimen(s) can be forwarded to TDH Laboratory Services.

How to enter Hepatitis B positive pregnant women into NBS

All pregnant women must be serologically screened for hepatitis B virus (HBV) infection for every pregnancy. Screening should be for the presence of hepatitis B surface antigen (HBsAg), which indicates an active infection with hepatitis B (either acute or chronic).

CEDEP reportable disease (or Event) Category 2 – Hepatitis, Viral-HBsAg positive pregnant female

1. The steps that need to be followed when you receive a report of a reportable-disease (Hepatitis Viral-HBsAg-positive pregnant female)by one of the methods listed:

    a. Electronic laboratory report *see NBS Procedures (Section 3)*
    b. Paper laboratory report *see NBS Procedures (Section 3)*
    c. Paper report from a provider *see NBS Procedures (Section 3)*

    When you come to "create an investigation" follow the steps listed below to enter an HBsAg-positive or DNA-positive pregnant female.

2. Create an investigation - select a Condition "Hepatitis" in NBS - sub-classify the viral type within the investigation pages under "Diagnosis" and select: hepatitis B virus infection, chronic; or hepatitis B acute infection
   NOTE: each pregnancy with an HBsAg-positive serology is a new event; create the investigation from the lab report (example; if a women is pregnant 5 times, she should have a lab for each pregnancy and a new investigation created for each pregnancy)

3. Fill in everything about the case for which there are fields in NBS, and critically mark the pregnancy indicator field "Yes"

4. Marking yes for pregnancy will create a question on the screen asking for the EDD (expected date of delivery)

   NOTE: answering "yes" for pregnancy status and documenting the EDD will allow the system to capture the reportable-disease Hepatitis Viral-HBsAg-positive pregnant female and report it on the CEDEP weekly report.

5. Enter case status as "confirmed"

6. Create a "Notification" (those with supervisor rights can approve the notification upon verifying the case status)

7. When the investigation is complete, the status should be changed to "closed" in NBS.

LabCorp's Prenatal Panel

In order to detect which of the HbsAg tests LabCorp is performing for pregnant females, LabCorp has created a prenatal panel of tests. In addition, LabCorp is putting the word "Prenatal" in the clinical information section of the lab report and populating the reason for test section. These panels can be ordered for male patients or for women who are not pregnant, so this is more of a "potentially pregnant" indicator meant to aid in identifying all pregnant women with an active hepatitis B infection.

Lab Reports (1) — Add New — Back To Top

Date Received	Provider/Reporting Facility	Date Collected	Test Results	Associated With	Event ID
02/27/2013 8:13 AM E	**Reporting Facility:** LABCORP **Ordering Provider:** JENNY WANG	02/25/2013	• **Hepatitis B virus surface Ag:** (NEGATIVE) - (Final) Positive	CAS10887017TN01 **Hepatitis B virus infection, Chronic**	OBS13293478TN01

Test Results

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Ordered Test: PRENATAL Prenatal Profile I
Codes: 202945(L Local)
Status: Final

Resulted Tests and Results

Resulted Test: Hepatitis B virus surface Ag
Result(s): Positive(SNOMED)

Reference Range: NEGATIVE
Interpretation: A
Result Method:
Date/Time: 2013-02-26 15:55:16.0
Performing Facility: LabCorp Dallas
Facility ID: 45D0480381 (FI CLIA)

Status: Final
Test Code(s): 7905-3 (LN LOINC) /016105 (L LOCAL)
Result Code(s): G-A200 (SNM SNOMED) /POS (L Local)
Result Comments: Positive
.
MSH-10: 20130227020434369149

Other Information

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Patient's Birth Place:
Multiple Birth:
Alternate Contact:
Alternate Contact Phone:
Alternate Contact Relationship:
Collection Volume:
Clinical Information: PRENATAL
Reason for Test: [Supervision of other normal pregnancy (V22.1)]
Danger Code:
Message Control ID: 20130227010034369149
Priority Code:
Order Comments:
Receiving Facility: TN(Offices of Misc. Health Providers 621399)

Other Examples of LabCorp's Reason for Test and Clinical Information:

Other Information

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Patient's Birth Place:
Multiple Birth:
Alternate Contact:
Alternate Contact Phone:
Alternate Contact Relationship:
Collection Volume:
Clinical Information:
Reason for Test: [Previous cesarean delivery, antepartum condition or complication (654.23)]
[Unspecified high-risk pregnancy (V23.9)]
Danger Code:
Message Control ID: 20130212010013976823
Priority Code:
Order Comments:
Receiving Facility: TN(Offices of Misc. Health Providers 621399)

Other Information

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Patient's Birth Place:
Multiple Birth:
Alternate Contact:
Alternate Contact Phone:
Alternate Contact Relationship:
Collection Volume:
Clinical Information: PRENATAL
Reason for Test: [Other specified antenatal screening (V28.89)]
Danger Code:
Message Control ID: 20130308010023789477
Priority Code:
Order Comments:
Receiving Facility: TN(Offices of Misc. Health Providers 621399)

Other Information

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Patient's Birth Place:
Multiple Birth:
Alternate Contact:
Alternate Contact Phone:
Alternate Contact Relationship:
Collection Volume:
Clinical Information: PRENATAL
Reason for Test: [Unspecified high-risk pregnancy (V23.9)]
Danger Code:
Message Control ID: 20130301010021620010
Priority Code:
Order Comments:
Receiving Facility: TN(Offices of Misc. Health Providers 621399)

Hepatitis

Morbidities Include:

- Hepatitis
  - Viral-Type B acute
  - Viral-Type C acute

Best Practices for Managing Hepatitis B and C Investigations in NBS

Updated April 4, 2014

Background

Within NBS, there are a variety of ways to handle investigations and lab reports (manual and electronic) for hepatitis investigations (both B and C). Different regions have different preferences based on their needs and resources. Within this document, examples will be provided of best practices related to management of acute and chronic viral hepatitis case investigations and labs. For both Hepatitis B and C, only acute cases are reportable in Tennessee. However, laboratories are required to report positive viral hepatitis markers and have no way to distinguish acute versus chronic infection. In addition, laboratories are required to report negative hepatitis markers if one or more markers are positive (e.g. If HBsAg is positive, labs should report all tests performed for Hep A, B, and C).

Acute Cases

Below is a list of several scenarios that may be encountered related to acute cases for both Hepatitis B and C.

An Acute Case is Identified

- An investigation should be created in NBS and any related lab reports (manual or electronic) should be associated with the investigation. This applies to positive and negative labs. Example for negative lab results: an acute Hep B case is reported with a positive HBsAg. A negative anti-HCV and Hep A IgM are also reported. All three should be associated with the acute hepatitis B investigation. In this scenario, there should be no additional investigations created in NBS for Hep A or C.

Additional Labs Received on an Acute Case

- If additional lab reports are received related to the acute infection, those reports should be associated with the existing investigation for acute hepatitis infection. A second acute investigation should not be created.
- If additional lab reports are received on the patient that are not related to the acute infection under investigation (examples below), create an investigation appropriately.
    - Example 1: a lab report is received for another viral hepatitis infection (B if the original was C, C if the original was B). In this case, create an investigation for the additional viral hepatitis infection, acute or chronic as appropriate.

- Example 2: a lab report is received with collection date greater than 6 months from the date of collection of the first specimen, indicative of chronic infection. In this case, refer to the sections below related to chronic infections.

Chronic Cases

Below is a list of several scenarios that may be encountered related to chronic cases for both Hepatitis B and C.

A Chronic Case is Identified

As mentioned previously, chronic cases are not reportable. However, NBS can serve as a registry for chronic hepatitis cases, which can cut down of the amount of work required to follow-up on positive lab reports (particularly for Hepatitis B). There are 2 primary options for handling chronic cases in NBS. The region can decide based on available resources.

- Option 1 (preferred): When a chronic case is identified (regardless of case classification), an investigation should be created for chronic infection. Lab reports should be associated with the investigation.
- Option 2: When a known chronic case is identified, the lab reports can be marked as reviewed. The lab reports will be orphaned, but this is acceptable if resource constraints prevent Option 1.

Additional Labs Received on a Chronic Case

- If following Option 1: If additional labs are received related to the chronic case, those labs should be associated with the existing chronic investigation. A second chronic investigation should not be created.
- If following Option 2: Mark the labs as reviewed.

Acute Cases that Become Chronic

In the event that an acute case is reported to public health that patient later becomes a chronic case, the steps below may be followed. Option 1 applies to regions choosing to create chronic investigations to use NBS as a chronic hepatitis registry. Option 2 applies to regions choosing not to create chronic investigations.

Option 1: NBS Used as a Chronic Registry

- When the patient is reported as an acute case, create an acute investigation and associate all labs with the acute investigation. Any subsequent labs received related to the acute investigation should also be associated with the same investigation. Case classification for the acute case (confirmed, suspect, not a case, etc.) should be updated as appropriate. This applies to both hepatitis B and C.
- If positive lab reports continue to be received beyond the acute phase, create a chronic investigation. Any subsequent labs received related to the chronic investigation should also be associated with the same investigation. Case classification for the chronic case (confirmed,

probable, not a case, etc.) should be updated as appropriate. This applies to both hepatitis B and C.

Option 2: NBS NOT Used as a Chronic Registry

- When the patient is reported as an acute hepatitis case, create an investigation for acute hepatitis infection and associate all related lab reports with the investigation. Any subsequent labs received related to the acute case investigation should also be associated with the same investigation. Case classification (confirmed, suspect, not a case, etc.) should be updated as appropriate. This applies to both hepatitis B and C.
- If positive lab reports continue to be received beyond the acute phase indicating that the patient is a chronic case, mark the labs as reviewed.

Note Regarding Investigations

Patients should have no more than 1 investigation for acute infection and 1 investigation for chronic infection for any particular condition (hepatitis B or C). Creating multiple investigations for acute or chronic affects case counts, which interferes with use of the data. If in doubt about whether or not to create an investigation, please contact central office.