Michigan Disease Surveillance System

MDSS Training For Local Health Departments

updated June 2024

MDHHS
Michigan Department of Health & Human Services

Michigan Disease Surveillance System
A tool for public health surveillance in Michigan

- Makes reporting of diseases/conditions easier, more efficient, and closer to real-time so public health interventions can be implemented

- Reduces delays in initiation of public health follow-up by correctly reporting to county of residence rather than county of diagnosis

- Allows reporting 24 hours/day from any computer with an internet connection

- Clarifies whether the case reported involves multiple providers/facilities

- Provides documentation of a facility's role in reporting for regulatory and accreditation agencies

- Allows instantaneous retrieval of summary reports of diseases

- Reduces the volume of necessary telephone communications for additional information between LHD and facility-based ICP

MDSS User Responsibilities

- **Confidentiality**

  - MDSS contains confidential public health information on reported individuals. Data are protected by system security and role-defined access, but participants will continue to be bound by rules of confidentiality while accessing system information

  - **MDSS does comply with HIPAA regulations**

- **Participation**

  - To realize the goals of this system, patient information must be entered in a timely manner

  - HCP reporting responsibilities remain unchanged
    (Communicable Disease Rules R325.171 *et al.*)

    - 2024 Health Care Professional's Guide to Disease Reporting in Michigan (Brick Book)

  - Your enthusiastic support helps make MDSS a more productive and effective method of communicable disease surveillance

MDSS User
Rights and Privileges

User Privileges Assigned Based on Four Areas

- **Roles**

  - Based on the organization type of the user

- **Geography**

  - Statewide vs. county/jurisdiction

- **Program Area**

  - Limits the user based on diseases that can be viewed

- **Job Function**

  - Based on the level of access to the system, i.e., administrator vs. edit only

Roles

- **MDCH – BOE**

  - Access to statewide data

- **LHJ**

  - Primary jurisdictions + access to statewide data

- **HCP**

  - Access to data from assigned facility or facilities

- **Lab**

  - Access to data from the assigned laboratory or entered by the user

- **Hub**

  - Used for those that need access to other modules (e.g., CSV uploader) without access to MDSS; LHDs will typically not use/need this role

Geography

- LHJ users are assigned to their Primary Jurisdiction for case assignment, user permissions and approvals

- LHJ users can see and edit cases that their Program group allows for all other jurisdictions in the system

Program Area

Limits the disease groups a user can access, intended to increase confidentiality and privacy

Program: **All**

Select '**All**' if the **HIV/AIDS** module is approved for user
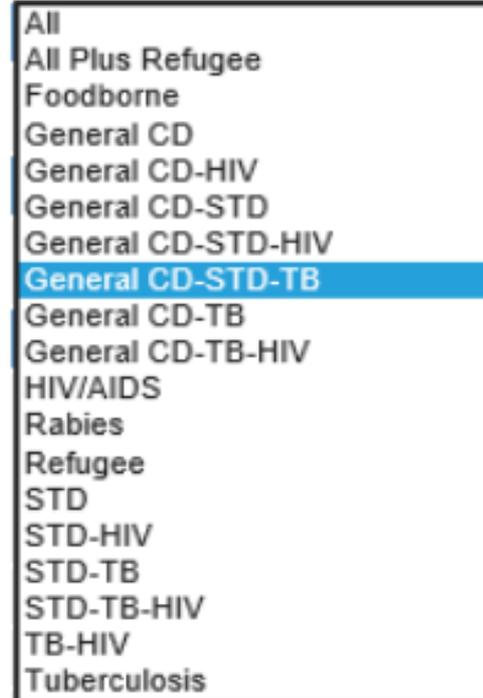
All
All Plus Refugee
Foodborne
General CD
General CD-HIV
General CD-STD
General CD-STD-HIV
General CD-STD-TB
General CD-TB
General CD-TB-HIV
HIV/AIDS
Rabies
Refugee
STD
STD-HIV
STD-TB
STD-TB-HIV
TB-HIV
Tuberculosis

Job Function

- System Administrator – MDHHS Level User

- Administrator

- Epi Staff – CD Nurse

- General – Data Entry

- Limited Access

- View Access

- Reports Only

- No Access – Default for new registrants

Job Function Privileges

	Administrator	Epi Staff/CD Nurse	General/ Data Entry Staff	Limited Access	View Access	Reports Only
View Case Listing	X	X	x	X	X	
View/Edit Case Details	X	X	X	X		
Export Cases	X	X	X			
Assign Investigator	X	X	X			
Aggregate Cases	X	X	X	X		
View Reports	X	X	X	X		X
Complete Cases	X	X				
Entry De-duplication	X	X	X			
Pending Work Que	X	X				
Create Alerts for Self	X	X	X			
Create Alert for Others	X					
Manage Users	X					
Review Replaced Patients	X					
Run Admin Reports	X					
View Unassigned Cases				X	X	

How to access, navigate in, and exit the MDSS

Entering MDSS

- MILogin for Non-Michigan.gov emails

  - https://milogintp.michigan.gov/

- MILogin for Michigan.gov emails

  - https://miloginworker.michigan.gov/

- Log in with your MILogin User ID and Password

System Use Notification

- Before accessing the MDSS, and other MILogin applications, users must acknowledge a set of system use requirements regarding secure access, data use, and system monitoring

- Click **I agree to the Terms & Conditions** to continue

- Complete the third-party authentication verification via the phone method of your choice (call or text).

Part of System User Agreement

- After choosing "Michigan Disease Surveillance System" the following text below heads the System Use Message Box

- Michigan Disease Surveillance System (MDSS) is a communicable disease reporting system developed for the state of Michigan to national data standards. The system facilitates coordination among local, State, and Federal Public Health agencies. The system provides for secure transfer, maintenance and analysis of communicable disease surveillance information. Access to MDSS is to a variety of stakeholders including public health, health care providers, and medical laboratories. System users are charged with supporting public health surveillance activities. **All users agree to only use the MDSS for appropriate purposes and will not disclose information contained in it for unauthorized reasons. Use of data in support of research/publication shall not be conducted without cooperation and agreement between impacted public health agencies.**

Terms & Conditions – Part of System User Agreement

- After agreeing to the Michigan Disease Surveillance System header Use
- Read Terms & Conditions Box for additional information for system user agreement

Please accept the Terms and Conditions to continue:

Terms & Conditions

The Michigan Department of Health & Human Services (MDHHS) computer information system (systems) are the property of the State Of Michigan and subject to state and federal laws, rules and regulations. The systems are intended for use only by authorized persons and only for official state business. Systems users are prohibited from using any assigned or entrusted access control mechanisms for any purposes other than those required to perform authorized data exchange with MDHHS. Logon IDs and passwords are never to be shared. Systems users must not disclose any confidential, restricted or sensitive data to unauthorized persons. Systems users will only access information on the systems for which they have authorization. Systems users will not use MDHHS systems for commercial or partisan political purposes. Following industry standards, systems users must securely maintain any

☐ I agree to the Terms & Conditions

Launch service

MDSS Portal Page

- The Portal Page is the initial landing page for users

- The user can choose which component to enter (only components that the user has access to, or has requested access to, will be displayed)

- Components include: Disease Surveillance, Outbreak Management (OMS), MiCelerity (overdose and poisonings) and Syringe Service Program (SSP) Utilization Platform (SUP)

  - *Note: OMS allows for outbreak management and contact tracing – access is available from your regional epidemiologist*

- Click on 'MDSS' to continue on to MDSS

Initial MDSS Screen

The Top Navigation Bar

The Top Navigation Bar links to different modules:

- **Case Investigation:** contains functions to add, edit, and search for cases

- **Administration** (*only visible for Administrative Level Users):* Provides the functions to manage MDSS user accounts, perform administrative tasks such as *De-duplication,* and assess administrative and completeness reports

- **Messages:** system maintenance notifications

- **Reports:** contains most of the reports available on MDSS. Allows user to assess disease trends in a variety of ways

- **Logout:** terminates your session and returns you to the MDSS Dashboard

The Side Navigation Bar

The Side Navigation Bar displays links to available functions within the current module

Case Investigation

- Cases
- New Case
- New Aggregate Cases
- Searches
- New Search
- New Aggregate Search
- Disease Specific Search
- Search Field Records
- Case Definitions
- Alert Rules
- Blank Forms
- User Profile
- User Directory

Administration

- Users
- User Audit Search
- Admin Searches
- Pending Work Queue
- Lab Holding Area
- Unmerge Patients
- Administrative Reports
- Field Record Report
- Interview Record Report
- Completeness Report
- STD Supplemental Exports

Reports

1. Line Listing
2. Diseases by Demographics
3. Diseases YTD
4. Diseases - 5 Year History
5. Diseases YTD by Geography
6. Disease History by Geography
7. Diseases by Geography
8. Epi Curve
- Aggregate Case Report
- Audit Report
- GIS Map of Diseases by Geography
- TB Reports
- Disease Trends

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Online Help

- The <u>User Guide</u> is accessible online. Search by the table of contents, by index, or by keyword

- The **HELP** button is available throughout the application for assistance relative to the current screen
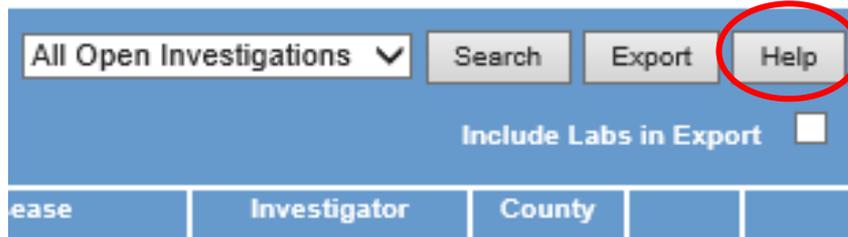
- I recommend using the many tipsheets/help guides available at

  - www.Michigan.gov/mdss

    - User guides and references

  - Or contacting your Regional Epidemiologist ☺
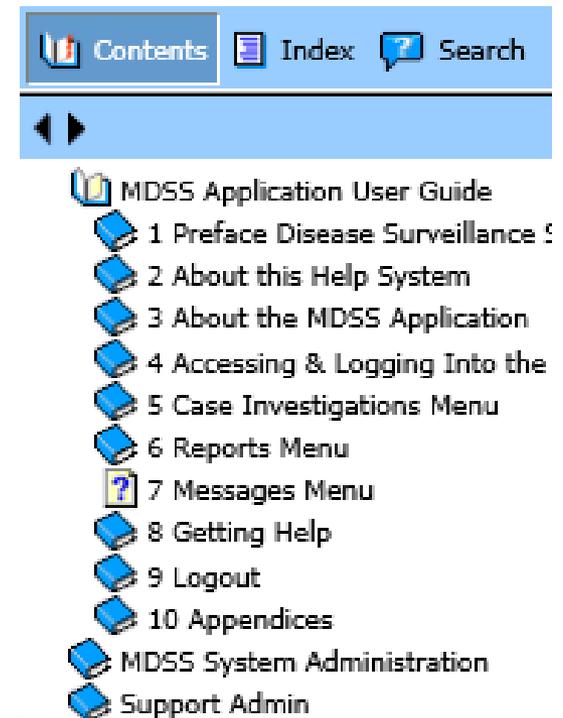
MDSS Security

- <u>Browser buttons (Back, Forward, Refresh, etc.) are not available for use in MDSS</u>

- For security, MDSS and MILogin Portal will automatically log you out if your session remains inactive for more than 30 minutes

  - Save your work frequently

  - You will lose unsaved work if you're automatically logged out

  - Always save your work and log out of MDSS and the MILogin portal if you leave your computer

Clearing Your Browser's Temporary Internet Cache

- A full memory (cache) can interfere with uploading the case investigation data

- We recommend that you periodically empty this cache
  - Open your internet browser
  - Select 'Tools' then 'Internet Options'
  - Select 'Temporary internet files,' 'Delete files,' and check 'Delete all offline content'

- Click OK

- This process is sometimes slightly different depending on what browser you use – just google it!

Logging Out

1) **Logout** of disease surveillance application of MDSS

2) **Logout** of the MDSS Portal Page

3) **Logout** of the the MILogin Portal

*Logging out of the system properly helps keep the servers from being unnecessarily burdened.

The Message Function

- Allows MDHHS Administrators to create messages that are displayed for all users

- The Messages module will display all System Messages from the past several months

- The 'New Messages Waiting' link displayed on bottom of case listings page indicates that a new message has been added since your last login

- These messages are rare and likely important

- Messages are seen by ALL MDSS users

- Messages cannot be edited or created by LHJ users

New Message Waiting

Link indicates that there is a new message waiting to be viewed in Messages tab. The link disappears when the user logs out.

Messages

Administration   System Administration   Messages   Reports   Logout

Messages List

Date	User Name	Subject	Active	
Thu Apr 12 17:07:58 EDT 2012	HARTWICKE	SAMPLE MESSAGE	false	View
Thu Apr 12 17:07:54 EDT 2012	HARTWICKE	SAMPLE	false	View
Thu Apr 12 17:07:47 EDT 2012	HARTWICKE	MDSS Version 2.3	false	View
Thu Apr 12 17:07:37 EDT 2012	HARTWICKE	New message feature	false	View
Thu Apr 12 17:07:32 EDT 2012	HARTWICKE	Important Announcement	false	View
Thu Apr 12 17:07:28 EDT 2012	HARTWICKE	MDSS Training	false	View
Thu Apr 12 17:07:23 EDT 2012	HARTWICKE	New Message Waiting	false	View
Thu Apr 12 17:07:16 EDT 2012				

Download Case Listings

Date Requested

View Message   Print Message

Date	Thu Apr 12 17:07:16 EDT
UserID	HARTWICKE
Subject	Welcome to MDSS Train

Message Text

This message is really here to not only welcome you, but also show off the message feature inside of the MDSS.

Cancel   Help

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Entering a New Case

New Case Entry

Cases

New Case

New Aggregate Cases

Searches

New Search

New Aggregate Search

Disease Specific Search

Search Field Records

Case Definitions

Alert Rules

Blank Forms
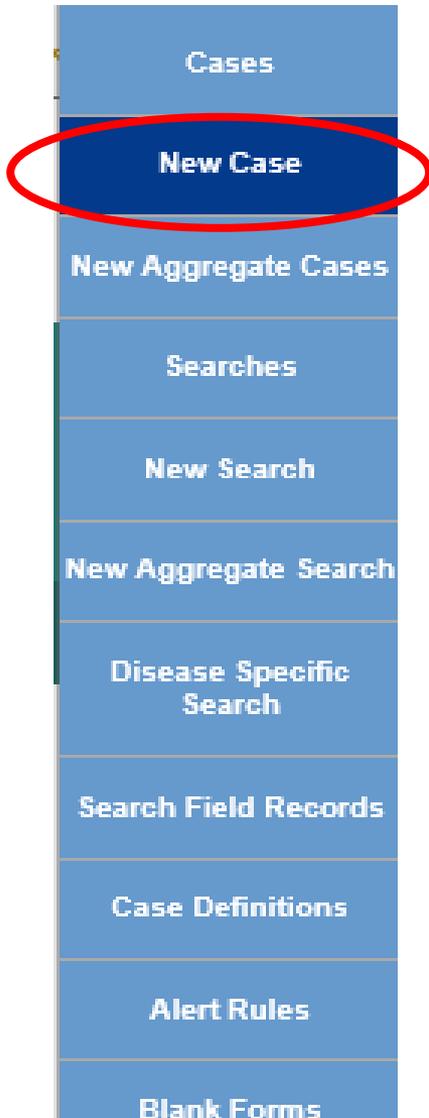
- The New Case function allows new cases to be manually added to MDSS

- The New Case entry process is divided into three sections

New Case Entry – Screen One

Investigation Information

Reportable Condition*:
- SELECT - [Detail]

Case Status*:
- SELECT -

☐ State Prison Case

Patient Information

Patient Status* : Alive   Patient Status Date* (mm/dd/yyyy) : 11/05/2019   Case Disposition* : - SELECT -

First* :   Last* :   Middle :

Street :

City :   County :   State :   Zip :

Home Phone (###-###-####):   Ext: Other Phone (###-###-####):   Ext:

Onset Date (mm/dd/yyyy) :   Referral Date (mm/dd/yyyy) :

Diagnosis Date (mm/dd/yyyy) :

*indicates required items

[Continue] [Cancel] [Help]

Besides required fields, make sure address fields are also complete

This allows case to be sent to the proper health department

Validation

- Clicking **CONTINUE** initiates a validation process

- You must correct errors prior to proceeding

Example error message

Screen One Key Field Definitions

- Fields in Red with * are required fields. Case entry will not proceed unless they are complete ('unknown' is generally an option)

- **Case Status** – refers to the case definition criteria (Confirmed, Confirmed-Non Resident, Not a Case, Probable, Suspect, Unknown)

- **Patient Status** – refers to whether the patient is alive or dead

- **Patient Status Date** – automatically set to current date during case entry and updated when a change is made to the "Patient Status" *Note: date can also be entered manually*

- **Case Disposition –** refers to inpatient/outpatient status

- **Referral Date** – is an editable field generally indicating the date the case was referred to the LHD

New Case Entry – Screen Two

Demographics

Race* :
American Indian or Alaska Native
Asian
Black/African American
Caucasian
Hawaiian or Pacific Islander
Other
Unknown

Sex* : - SELECT -

Hispanic Ethnicity* : - SELECT -

Arab Ethnicity : Unknown

Date of Birth / Age

Date of Birth (mm/dd/yyyy):

Age at Onset (if DOB unknown) :

Age Unit :

Parent/Guardian (required if under 18)

First :   Last :   Middle :

Work / Occupation or School / Grade

Worksites / School :

Occupations / Grade :

Patient Identifiers

MDOC ID :

*indicates required items

[Continue] [Back] [Cancel] [Help]

Date of Birth/Age Information Reminder Box

If **Date of Birth**, **Age**, and **Age Units** is not complete, a Reminder Box will display when you continue to the next entry screen

Message from webpage ✕

❓ Neither Date of Birth nor Age were entered.
Please enter Date of Birth or Age Information, if you have that information available.

- Press Cancel to enter the Date of Birth or Age information.
- Press OK to continue to the next page.

OK   Cancel

- If information is available, click CANCEL to return to the New Case Entry screen and enter the information

- If information is not available, click the OK button to continue to the next screen

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Screen Two Key Field Definitions

- **Age** - Reflects the age at illness onset by subtracting Onset Date from Date of Birth (when available). Referral Date is used if onset is unavailable

- **Age Unit**: Pertains to the measurement of the age of the patient at illness onset (in days, months, or years). If **Date of Birth** is not available, Age and Age Units can be entered directly. Age units should be:

  - **Days** if Age is less than or equal to 30 days

  - **Months** if Age is less than 2 years

  - **Years** if Age is greater than or equal to 2 years

New Case Entry – Screen Three

- Enter your information under the "Person Providing Referral"

Note: Use the "User Profile" and your information will be auto-populated for each new case – we will discuss this on slide 77!

- Enter Primary Physician Information: <u>Name</u> and <u>Phone Number</u> at minimum

- Enter lab data by clicking the "Enter Lab Data"

1. Click Create New Lab Report
2. Add Lab Order info with pull-down menu or manually by choosing 'Other'
3. Add Ordering Provider info
4. Enter Lab info with pull-down menu or manually by choosing 'Other'
5. Add Specimen info
6. Click New Result

Lab Reports

Create New Lab Report   Help

Date Received	Ordered Test Name	Electronic

Save & Finish   Back   Cancel

Lab Order Information

Filter Test List By: [   ]   Filter   Clear

Select Ordered Test* : Chlamydia sp DNA [Presence] in Unspecified specimen by Probe & target amplification method ▼

Test Name* : Chlamydia sp DNA [Presence] in Unspecified specimen by Probe & target amplification method

Lab Report Date (mm/dd/yyyy) : [   ]   A pop-up reminder will display if lab report date is left blank

Ordering Provider

First : Physician   Last : Physician

Affiliation : Bronson   Street : [   ]

City : Kalamazoo   County : Allegan ▼   State : Michigan ▼   Zip : 49080

Phone number : [   ]   Ext : [   ]

Laboratory Information

Select Lab* : Bronson Hospital Laboratory ▼   Filter Lab List By: [   ]   Filter   Clear

Lab Name* : Bronson Hospital Laboratory

Street : 601 John Street   Geocode Source :

City : Kalamazoo   County : [   ]   State : Michigan   Zip : 49007

Phone number : 269-341-6440

Specimen Information

Specimen Collection Date (mm/dd/yyyy) : [   ]

Specimen Source : Urethral swab ▼

Specimen Site : [   ] ▼

Specimen Site Text : [   ]

Specimen ID : [   ]

Results   New Result

Add New Lab   Cancel   Help

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7. Add Lab Result info and relevant information

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New Result

Reported Test Name :	Filter Test List By: [ ] Filter Clear Select Test: Chlamydia sp DNA [Presence] in Unspecified specimen by Probe & target amplification method ▾ Chlamydia sp DNA [Presence] in Unspecified specimen by Probe & target amplification method
Coded Result :	Filter Result List By: [ ] Filter Clear Select Result: Chlamydia ▾ Chlamydia
Text Result :	
Numeric Result :	▾ [ ] ▾ [ ] ▾
Comments :	8/14/2019 1g Zithromax
Relevant Clinical Information :	Also notified partner

Add Result Cancel Help

9. Review lab result info that was added to bottom of lab report

10. Click Add New Lab

Specimen Information	
Specimen Collection Date (mm/dd /yyyy) :	
Specimen Source :	
Specimen Site :	
Specimen Site Text :	
Specimen ID :	

Results	New Result

Reported Test Name : Chlamydia trachomatis+Neisseria gonorrhoeae rRNA [Presence] in Unspecified specimen by DNA probe   Edit   Delete

Coded Result :	Chlamydia species
Numeric Result :	
Reference Range :	
Comments :	8/14/2016 1g Zithromax
Relevant Clinical Information :	Also notified partner

Add New Lab   Cancel   Help

11. Click Save & Finish

Lab Reports		Create New Lab Report	Help
Date Received	Ordered Test Name	Electronic	
08/18/2016	Chlamydia trachomatis+Neisseria gonorrhoeae rRNA [Presence] in Unspecified specimen by DNA probe	No	Edit Delete

Save & Finish   Back   Cancel

Background Processing

Once a case is entered, the following processes occur behind the scenes:

- **Geocoding**: Validates the address and assigns coordinates to map it, supports referral to correct LHJ

- **De-Duplication**: identifies duplicate patients and case reports. If a case must be de-duplicated it will not be immediately available for editing

- **Case Referral**: Determines the referral LHJ based on the Investigation Address and assigns the case to the LHJ Administrator

More information about these processes can be found in the section *Background Processing* in *Chapter 5* of the User Guide or by viewing Online Help.

Geocoding:
Determining the Investigation Address

- The Investigation Address is set by address availability in the following order:

    1. Patient Address

    2. Provider Address (on Referral or Lab Report)

    3. Laboratory Address (for electronic laboratory reports only)

- **Investigation address determines LHJ referral**

Geocoding – Multiple Address Matches

If the investigation address matches multiple coordinates returned by the Geocoder, the matching addresses are presented to the user for mandatory selection:

Possible Address Matches - Choose one from each set of addresses		
Patient Addresses		
Possible Patient Address 1	○	200 E HOLMES RD LANSING, MI 48910 Ingham County
Possible Patient Address 2	○	200 W HOLMES RD LANSING, MI 48910 Ingham County

Continue Back Cancel

- Choose the correct address by selecting the appropriate radio button and click the CONTINUE button

- If uncertain: select the address in your LHJ, click the CONTINUE button and investigate further by contacting the patient or provider

- If no address is offered within your LHJ: click the BACK button, remove zip code and city, enter one of your LHJs Counties and investigate further

Geocoding - Geocode Source

The "Geocode Source" indicates how the address was mapped

Geocode Source Values

- **SAP** – The address, county and LHJ could be mapped by SAP Business Objects Data Services. The case map will show case. This is the most accurate information

- **MDSS City** – A match was not identified but the county and LHJ was assigned based on the City. The case map will not show case

- **MDSS ZIP Code** – A match was not identified but county and LHJ was assigned based on ZIP code. The case map will show the case in the ZIP code center***

- **Blank** – No match, the case is referred to State personnel
  - Out of State Addresses
  - Address so incomplete cannot determine county

*** Important for Jurisdiction Assignment

Case Referral to Other LHJs

- Patients and cases entered with an address outside of the submitting LHJ will automatically be referred to appropriate LHJ

- Can refer paper lab reports without mail or fax using Case Notes field and patient information

- Cases will be removed from referring LHJ Case Listings and placed in receiving LHJ Case Listings

- Courtesy call or e-mail with Investigation ID(s) to referring LHJ is appropriate if current business practice

  - If you do not have contact information to LHJ you are referring a case to, please reach out to your Regional Epidemiologist to make the referral – we're happy to help!

More About Referrals

- **Health Care Providers**

  Physicians and ICPs can refer patients through MDSS

  - Providers can add updated information to their cases

  - All changes to cases are tracked in **Audit** tab

- **Laboratory Referrals**

  Laboratory reports will initiate a case or match to existing cases

  - Viewable within the Case Detail Form and in the **Lab** tab

De-Duplication

- MDSS finds potential duplicate patient or case records and places the case into the de-duplication queue
- De-Duplication allows the user to determine
  - if *persons* entered with similar names and/or demographics are the same person or different
  - if two separate *case reports* from the same person are the same case or different

De-Duplication Overview

- De-duplication - Identifying and merging duplicate patient **and** case information***

    – Associate one patient's CD medical history

    – Avoid/Remove duplicate reported conditions

- Cases are de-duplicated at the time of case entry except:

    – Health Care Provider and Laboratory reports deferred to LHJ or State Administrator if cannot be resolved automatically

- Notes from the notes tab are kept during a case merge

*** Note: this is a 2-step process →
de-duplication of patient AND case information

Enhanced De-Duplication
Patient Dedup Screen 1

Merge	Score	First Name	Middle Name	Last Name	Date of Birth	Gender
	Case Status	Investigation Status	Disease	Referral Date	Investigator	Jurisdiction
X	100.0%	AMELIA		BEDELIA	03/13/1963	FEMALE
◯	100.0%	AMELIA		BEDELIA	03/13/1963	FEMALE
	Confirmed	Active	Salmonellosis	11/15/2010	HENDERSON, TIFFANY A	Livingston County
	Confirmed	Completed	Chlamydia (Genital)	12/01/2010	HENDERSON, TIFFANY A	Livingston County
◯	92.06749%	AMELIA		BEDELIA	04/12/2006	FEMALE
	Confirmed	New	Chickenpox (Varicella)	12/15/2010	HENDERSON, TIFFANY A	Ingham County

Patient Deduplication

Please select the records to merge with the data entered.

[Cancel] [Continue] [Defer] [No Merge] [Help]

- Use the radio button in the "Merge" column to select a potential patient to merge

- Click the CONTINUE button to see more patient information

- Click the No Merge button if the patient does not match to an existing patient

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Enhanced De-Duplication
Patient Dedup Screen 2

- Uncheck address box if current residency has not changed

- Click Continue to review before merging

- Click Back to try another patient

- Click Defer to send to Administrator

- Click No Merge to create new patient

Patient Record Merge

Source		New Data		Existing
Patient Record ID				6033297
Created Date		12/15/2010		12/15/2010
Last Modified Date		12/15/2010		12/15/2010
First Name	○	AMELIA	◉	AMELIA
Middle Name	○		◉	
Last Name	○	BEDELIA	◉	BEDELIA
Date of Birth	○	03/13/1963	◉	03/13/1963
Gender	○	FEMALE	◉	FEMALE
Race	◉	[CAUCASIAN]	○	[AMERICAN INDIAN OR ALASKA NATIVE] [CAUCASIAN]
Ethnicity	○	UNKNOWN	◉	UNKNOWN
Arab Ethnicity	○	UNKNOWN	◉	NON-ARAB
Home Phone	○		◉	734-555-5555
Other Phone	○		◉	
Parent/Guardian First Name	○		◉	
Parent/Guardian Middle Name	○		◉	
Parent/Guardian Last Name	○		◉	
Patient Status	○	OUTPATIENT	◉	INPATIENT

Patient Addresses

Addresses	☐ MAKE CURRENT ADDRESS MI	12356 MAIN ST WHITMORE LAKE, MI LIVINGSTON COUNTY

Patient Case Information

Case Status	Confirmed
Investigation Status	Active
Disease	Salmonellosis
Referral Date	11/15/2010
Investigator	HENDERSON, TIFFANY A
Jurisdiction	Livingston County

Patient Case Information

Case Status	Confirmed
Investigation Status	Completed
Disease	Chlamydia (Genital)
Referral Date	12/01/2010
Investigator	HENDERSON, TIFFANY A
Jurisdiction	Livingston County

[Continue] [Back] [Defer] [No Merge] [Help]

Enhanced De-Duplication
Patient Dedup Notes

- Options default to data from existing patient unless it is blank or unknown; then it defaults to new data

- Patient Status will automatically select 'Alive' if available

- The bottom of the page shows information on previously reported cases of disease for this person

- When two home phone numbers are listed, the MDSS will leave the selected phone number as the home number and move the second phone number to 'Other Phone' during the merge

Enhanced De-Duplication
Patient Record Merge Confirmation

Patient Record Merge Confirmation	
Patient Record #6033297 will be replaced with the merged Patient Record. A new patient record will be created with the following merged patient data.	
Merged Record Details	
Status	INPATIENT
First Name	AMELIA
Middle Name	
Last Name	BEDELIA
Date of Birth	03/13/1963
Gender	FEMALE
Race	[CAUCASIAN]
Ethnicity	UNKNOWN
Arab Ethnicity	NON-ARAB
Home Phone	734-555-5555
Other Phone	
Parent/Guardian First Name	
Parent/Guardian Middle Name	
Parent/Guardian Last Name	
Address(es)	12356 MAIN ST WHITMORE LAKE, MI LIVINGSTON COUNTY

Complete Merge | Back | Defer | No Merge | Help

Enhanced De-Duplication
Automatic person De-Duplication

- For incoming ELR messages, patients will be automatically de-duplicated when there is a 100% match for an existing patient record, following a standardized algorithm

- A banner message will appear at top of screen

Enhanced De-Duplication
Case Dedup Screen 1

- Make sure to review "Case Status" and "Onset Date" to help determine whether to merge a case or create a new case when deduping

Case Deduplication for AMELIA BEDELIA

Select an existing AMELIA BEDELIA case as a match or choose to create a new case from the entered data.

Investigation Status	Case Status	Disease	Referral Date	Onset Date	Investigator	Jurisdiction	
New		Salmonellosis	12/15/2010		TBD	TBD	Create
Active	Confirmed	Salmonellosis	11/15/2010	11/12/2010	HENDERSON, TIFFANY A	Livingston County	Matches Existing
Completed	Confirmed	Chlamydia (Genital)	12/01/2010	12/01/2010	HENDERSON, TIFFANY A	Livingston County	Matches Existing

Place in Queue   Help

Enhanced De-Duplication
Case Dedup Screen 2

Allows you to view and print associated case detail forms and pick which one you want to keep.

Case Record Merge		
Case	New Data	Existing
Investigation Status	New	Active
Case Status		Confirmed
Condition	Salmonellosis	Salmonellosis
Referral Date	12/15/2010	11/15/2010
Onset Date		
Investigator	TBD	TIFFANY A,HENDERSON
Jurisdiction	TBD	Livingston County
Case Details	View PDF	View PDF
Case to Keep	○	◉

Merge   Back   Defer   Help

Enhanced De-Duplication
Case Dedup Notes

- If you choose to merge two cases with different conditions you will be warned with a popup when you press the merge button

- Regardless of which case you decide to keep the following fields will be kept from the existing MDSS Case:
  - Case & investigation status
  - MMWR week & year
  - Referral, completion, and diagnosis dates

Enhanced De-Duplication
Dedup Option from Case Report Tab

- The 'Dedup' button in the case reporting tab sends the case back to de-duplication

- Case will go through de-duplication in same manner as if just entered as a new case

Enhanced De-Duplication
Dedup Option

Important Notes about the Dedup Button

- If the Dedup button is clicked and there are **no** potential matches identified, the user is returned to the case reporting tab

- If the Dedup button is clicked and there **are** potential matches identified, a popup appears notifying the user that the existing case will be deleted and that attached documents will be lost

mdss-test.state.mi.us:8443 says

By sending this case back for deduplication the existing case will be deleted and any attached documents will be lost. Do you want to continue?

OK   Cancel
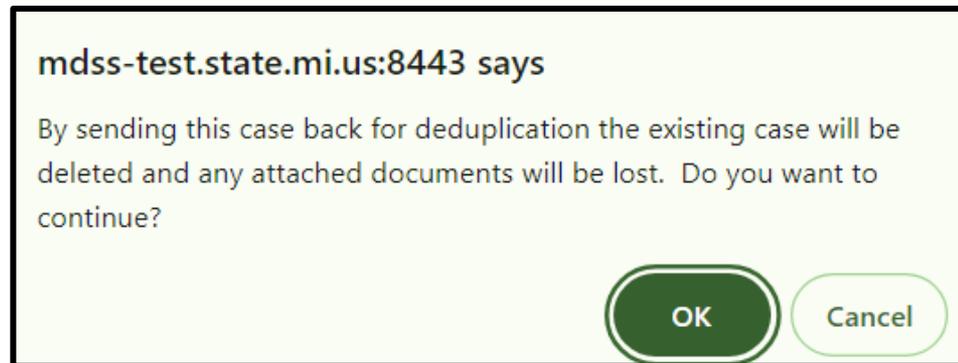
- Attached documents will not make it through the de-duplication process. If needed, save or print the documents or case detail form before sending the case to de-duplication

Enhanced De-Duplication
Dedup Option

Important Notes about the Dedup Button *Continued*

- The dedup button is only available to those who have access to the pending work queue (i.e. Admins and Epi/CD Nurse job functions)

- ***CAUTION -*** Sending existing cases back for de-duplication is intended for recently added cases on MDSS (those less than 90 days old). *Sending older cases back for de-duplication will allow you to merge duplicate patients effectively but will result in revised Case Entry Dates that correspond to the date the case was sent for de-duplication*

Enhanced De-Duplication
Dedup Option

- Dedup can be overwhelming and intimidating at first, please feel free to reach out for additional training or guidance if you need help!

- In collaboration with **SHARP**, **ERIE,** and **EZID** at MDHHS, we have developed a tip sheet for some of the more difficult diseases to deduplicate, but you can always **defer** any cases that you are uncomfortable deduping and contact your **Regional Epidemiologist** for assistance.

The following conditions are included in the **Disease Specific Deduplication Tip Sheet:**

- COVID-19
- Gonorrhea & Chlamydia
- Syphilis
- Hepatitis B
- Hepatitis C
- Mycobacterium
- Carbapenemase-Producing Organisms (CPO)
- *Candida auris*

- Campylobacteriosis
- Salmonellosis
- Shiga toxin-producing *E. coli* (STEC)
- Shigellosis
- Vibriosis-non cholera
- Lyme Disease
- Blastomycosis
- Histoplasmosis

Assigning a Condition

If there is no existing link between a lab report and a reportable condition, a condition must be assigned

Note: labs can and should be viewed before assigning a condition

- MDHHS will assign conditions for cases that may fall outside your jurisdiction

- Click on Cancel to send the case to the Pending Work Queue

Unassigned Cases for HCP & Lab Roles

- HCP and Lab users cannot view the de-duplication queue, therefore, any cases that are potential duplications will be listed in "Unassigned Cases" until de-duped

- "Unassigned Cases" is in the "Case investigation" module for HCPs and Lab roles

Unassigned Cases Listing

HCP-entered cases awaiting de-duplication in the pending work queue are visible to the HCP in the unassigned cases view.

Electronic Lab Reports (ELR)

- Many commercial and public health laboratories around the state enter disease reports electronically into MDSS

- Reporting is generally automatic and happens once the lab enters the results into their computer system

- This is the fastest form of reporting as it is entered into the MDSS as soon as the lab result is complete

ELR and the HCP

- If a lab enters a case before an HCP, the case will need de-duplication

THUS:

- HCPs can see cases that have already been entered by ELR using the "Unassigned Cases" queue

- Once the case is deduplicated, the HCP will have access to it

More About ELR

- Laboratories using ELR are likely to report cases into the MDSS prior to an HCP

- If a case is to be merged during the case de-duplication process, only one Case Detail Form can be selected. The other will be discarded

- **Recommendation:** HCPs who work in facilities that regularly use ELR labs should enter only minimal information upon initial case entry. If the case is immediately available in the "All Open Cases" search, then enter the remaining data. If the case is found in the "Unassigned Cases" queue, wait until de-duplication is complete

Electronic Case Reporting (eCR) into MDSS

- Electronic Case Reporting (eCR) is the automated, real-time exchange of case report information between electronic health records (EHR) within healthcare facilities and MDSS.

How does eCR Work?

| Patient is diagnosed with a reportable condition, such as COVID-19 | Healthcare provider enters patient's information into the electronic health record (EHR) | Data in the EHR automatically triggers a case report that is validated and sent to the appropriate public health agency if it meets reportability criteria | The public health agency receives the case report in real time and a response about reportability is sent back to the provider | State or local health department reaches out to patient for contact tracing, services, or other public health action |

cdc.gov/eCR

Electronic Case Reporting (eCR) into MDSS

What happens when eCRs enter MDSS?

- Incoming eCRs are processed just like ELRs. <u>At the moment, only **COVID** and **Mpox** is being reported via eCR.</u> MDSS will search to see if the patient matches existing persons and cases within the system. If not, a new case will be created based on the disease reported in the eCR. If there are potential matches, the eCR will be sent to the dedup (Pending Work Queue) for a user to resolve. When an eCR creates a case or is merged into an existing case, the demographic and condition information is added to the case and the remainder of the eCR data is attached to the case in the Notes tab to be viewed.

How do I dedup eCRs in MDSS?

- It will be very similar to regular deduping and you will see eCR in the "type" field and "ECR USER" in the "Added By" field.

- For further guidance, please review this eCR MDSS Tip Sheet!

Electronic Death Registry System (EDRS) into MDSS

- MDSS receives EDRS for:

  - Individuals with cases in MDSS who have died regardless of the cause of death AND

  - Individuals who have died and ICD-10 Cause of Death code(s) specifies a reportable communicable disease. These individuals may or may not have an existing case in MDSS.

If there is not an existing case, a new case will be created. If there is an existing case in MDSS, it will either be auto-merged or deduplication will be necessary.

More information about MDSS and the EDRS (including deduplication) is available here.

Case Definitions

Cases
New Case
New Aggregate Cases
Searches
New Search
New Aggregate Search
Disease Specific Search
Search Field Records
Case Definitions
Alert Rules
Blank Forms
User Profile

- MDSS provides a link to the available CDC Case Definitions

- LHDs should use definitions to determine how to report a case (i.e., confirmed, probable, suspect)

- Helpful for HCPs to know what laboratory and clinical criteria are required to confirm a case

Aggregate Case Entry

Aggregate Case Reports

- Aggregate case entry provides a method to enter aggregate case information for conditions such as influenza-like illness (ILI), gastrointestinal-like illness, scabies, etc.

- Aggregate count entry is like individual case entry

- Aggregate reports can be submitted from multiple sources like schools or long-term care facilities and by multiple users

- Counts can be entered on a daily or weekly basis. Counts can be added up to 90 days prior to the current date by changing the referral date to a date from the correct MMWR week

- Aggregate counts can be searched and exported in a manner like individual case reports

- The aggregate report may be relied on heavily in the event of a pandemic or other large-scale epidemic when individual case reporting becomes impossible or unnecessary

Aggregate Case Entry – Screen One

•In left panel, click on "New Aggregate Cases"
•Red* are required fields:
- Reportable Condition
- Total Number ill (Cases)
- Reporting Period (Weekly/Daily)
- Case Status (leave "Confirmed")

Aggregate Case Entry
Screen One Details

- LHJs with more than one county will need to enter an aggregate report for each county in their jurisdiction

- The Reportable Condition shows this condition being entered in aggregate. Additional conditions can be added on an as needed basis

- It is important to enter at least one aggregate report each week for 'flu-like disease' reporting.

  - **The case count can be 0 and can be edited at a later point in time**

- 'Daily' or 'Weekly' refers to the time-period in which the case counts have occurred

Aggregate Case Entry
Screen One Details – Cont.

- A single LHJ or reporting site can have multiple entries of information on either a daily or weekly basis

- During a typical flu season, aggregate reports of 'Flu Like Disease' should be assigned a 'weekly' reporting period

- Multiple aggregate reports from the same weekly reporting period will be aggregated together in the reports

- 'Daily' reporting of 'Flu Like Disease' should generally only be used during a pandemic

Aggregate Case Entry – Screen Two

- Required Fields:
  - County
  - Reporting Source (school, LTC, hospital)
- Once all information is filled in, select Continue

Aggregate Case Entry
Screen Two Details

- **Person Providing Referral**: Contact information for person entering the report into the MDSS. *Note: Information will auto-populate if User Profile is utilized*

- **Case Notes**: Same notes field that is on all case reports - stamped with time, date, and User ID

- **Reporting Source (Required):** Drop down field listing local public health, physician, hospital, etc.

- **Reporting Source Description**: Free text field to enter name of reporting source (i.e., LHD or Hospital name)

- **Address Information (Only County is Required):** Complete address information for the reporting source. *Note: Information will auto-populate if User Profile is utilized*

Aggregate Case Entry – Screen Three

- The third screen of the aggregate case report form can be used to capture information from outbreaks

- This screen does not need to be completed for routine weekly reporting

- Click 'Save & Finish' when complete

Aggregate Case Entry
Screen Three Details – for Outbreak Reporting

- **Facility Name**: Include the facility name and the type of congregate setting (day care, event, college, etc.)

- **Epidemiology Section**: Complete the onset date of the first case, the number of ill individuals and the total number of residents or employees

- **Symptom Presentation**: It is important to include a count of cases reporting each type of symptom

- **Specimen Testing**: indicate whether any testing was done or if specimens are being collected

- **Consultation Provided**: Check all options that were completed for this outbreak

New Aggregate Search

- Use the 'New Aggregate Search' to find an aggregate case report

- This search will only find aggregate reports – it does not search individual case reports

New Aggregate Search

- A New Aggregate Search will return all aggregate reports according to the selected criteria in the format shown below

- To edit the information in a specific report click edit

Investigation Status	Case Status	Investigation ID	Referral Date	Patient Name	Date of Birth	Disease	Investigator	County		
Completed	Confirmed	10893189	01/01/2019	AGGREGATE, SCHOOL		Flu Like Disease*	HERINGHAUSEN, JAYNE	Saginaw	Edit	View
Completed	Confirmed	10894952	01/16/2019	MIDLAND HOSPITAL, FACILITY		Rabies: Potential Exposure & PEP(Pre-2019)*	COLLINS, JIM	Midland	Edit	View
Completed	Confirmed	10903417	01/18/2019	AUBURN AREA CATHOLIC SCHOOL, FACILITY		Norovirus	COLLINS, JIM	Bay	Edit	View
Active	Confirmed	10883008	01/22/2019	ENTRY, AGGREGATE		Flu Like Disease*	HENDERSON, TIFFANY A	Bay	Edit	View
Active	Confirmed	10888093	01/22/2019	ENTRY, AGGREGATE		Flu Like Disease*	HERINGHAUSEN, JAYNE	Saginaw	Edit	View
Active	Confirmed	10898228	01/22/2019	2019 SAGINAW NEWS, FACILITY		Norovirus	HERINGHAUSEN, JAYNE	Saginaw	Edit	View
Active	Confirmed	10901601	01/22/2019	ASCENSION ST. MARY"S, FACILITY		Flu Like Disease*	HERINGHAUSEN, JAYNE	Saginaw	Edit	View
Active	Confirmed	10884694	01/22/2019	COVENANT HEALTHCARE, FACILITY		Head Lice	HERINGHAUSEN, JAYNE	Saginaw	Edit	View
Active	Confirmed	10888249	01/22/2019	BAY CITY CENTRAL HIGH SCHOOL, FACILITY		Head Lice	COLLINS, JIM	Bay	Edit	View
Active	Confirmed	10891530	01/22/2019	COVENANT HEALTHCARE, FACILITY		Flu Like Disease*	HERINGHAUSEN, JAYNE	Saginaw	Edit	View

Case Listings — Investigation Status — Sort — Temporary — Search — Export — Help

Include Labs in Export ☐

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Notes on Editing Aggregate Reports

- Case Status is pre-set at Confirmed and should not be edited

- Investigation Status defaults to 'Completed'

    - In order to edit an entry, status must be changed to "Active" or "Completed-Follow up"

    - Only administrators can open an aggregate report for editing

> Don't forget to change the aggregate report to 'Completed' again after editing is complete!

Time Saving Step - The User Profile

- The User Profile allows users to set default setting to case entry fields that are repeated with each new case, such as referrer, physician, and lab

- When complete, the fields will automatically populate during case entry

- These fields are modifiable, in case changes are needed

The User Profile
Auto-populated Information

- Example of Screen 3 of New Case Entry

- All saved profile information is auto-populated

Person Providing Referral

First : Jane   Last : Doe

Phone (###-###-####): 586-555-1212   Email : jane.doe@anyhospital.com
Ext:

Primary Physician

First : Doc   Last : Baker

Affiliation : Walnut Grove ER

Phone (###-###-####):   Email :
Ext:

Street :

City : Mt. Clemens   County : Macomb   State : Michigan   Zip :

Case Notes

Save & Finish | Enter Lab Data | Back | Cancel | Help

How to Work With Your Case

Case Listings - Sort Option

Investigation Status	Case Status	Investigation ID	Referral Date	Patient Name	Date of Birth	Disease	Investigator	County		

- The default display option for Case Listings is to show the cases in order of Referral Date, in ascending (oldest to newest) order

- To select a different Sort Order click the header for the field that you wish to sort by

  - First click will sort ascending (oldest to newest)

  - Second click will sort descending (newest to oldest)

- Note: Investigator and Patient Name are sorted on *last* name

- See the section *Cases* in *Chapter 5* of the <u>User Guide</u> or view Online Help for more details

Case Listings - Search Option

All Open Investigations ▼   Search

ACTIVE/NEW CT
All Open Investigations
My Open Investigations
Nov Cases
STD Cases
VPD search
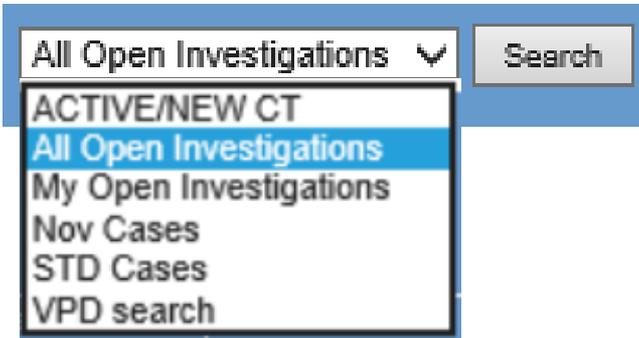
- The cases that initially display are based on your default search criteria <u>and your jurisdiction, role and permissions</u>

- 'All Open Investigations' and 'My Open Investigations' are saved searches in MDSS

- Users can create and save new searches (see Searches Section)

- Changing the Case Listings search option, changes the cases displayed for the duration of the session or until another search option is selected

Accessing the Case Details

1. Locate the specific case you want to access

2. Click the EDIT button. The "Case Detail" screen appears

Displaying results **1-10** of **3284** found
[|< First] **1** 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 [Next >>] [Last >|]

Case Listings					Investigation Status ⌄	Sort	All Open Investigations ⌄	Search	Export	Help
								Include Labs in Export ☐		

Investigation Status	Case Status	Investigation ID	Referral Date	Patient Name	Date of Birth	Disease	Investigator	County		
Completed - Follow Up	Confirmed	7215	08/13/2004	EASTER, MIKE	07/26/1954	Dengue Fever	CARLSON, BRAD	Oakland	Edit	View
Active	Not a Case	21996	08/16/2004	SQUIRREL, ROCKY	05/18/1966	Meningitis - Aseptic	CARLSON, BRAD	Washtenaw	Edit	View
New	Confirmed	6789748	08/16/2004	FIELDS, SALLY	01/01/1999	Meningitis - Bacterial Other	COLLINS, JIM	Muskegon	Edit	View
New	Confirmed	10588946	08/16/2004	STEIN, FRANK N	06/27/1979	Hemorrhagic Fever	LUTZKE, MARY	Kent	Edit	View
Active	Probable	39913	08/17/2004	BENNN, GEORGE W		Meningitis - Bacterial Other	DOGAN, DELILAH D.	Wayne	Edit	View
Active	Confirmed	8931102	08/18/2004	BOOP, BETTY	12/10/1955	Shigellosis	COLLINS, JIM	Washtenaw	Edit	View
New	Confirmed	52936	08/25/2004	BOLONEY, JOE		Botulism - Foodborne	COLLINS, JIM	Livingston	Edit	View
New	Confirmed	54245	08/31/2004	OUT, TIME	04/03/1968	Cryptococcosis	CARLSON, BRAD	Oakland	Edit	View
Completed - Follow Up	Confirmed	59063	09/02/2004	DOE, JANE M	05/03/1960	Influenza, Novel	COLLINS, JIM	Jackson	Edit	View
Completed - Follow Up	Confirmed	63920	09/02/2004	KENT, CLARK S	05/01/1943	Hepatitis A	COLLINS, JIM	Jackson	Edit	View

[|< First] **1** 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 [Next >>] [Last >|]

Case Locking

- When a case is selected for editing, all cases linked to the associated patient are *locked* by the user accessing the record

- This lock remains in effect until the user cancels, saves, or navigates away from the record

- If the user's MDSS session terminates before the lock is released, the lock will be released automatically when the user's session times out

- When 'View' is selected, the case will be un-editable and will not be locked to other users

Case Locking

- All screens within "Case Details" will indicate that the case is locked and by which user

- Only the user locking the case can make edits

Viewing a Locked Case

- While a case is locked, other users will be able to view the case information but will not be able to edit any of the field values

- All the fields appear "grayed out." This indicates that all the fields are disabled to the user until the case is unlocked

- This lock remains in effect until the user navigates away from the record

The "Case Reporting" Tab

- The Case Reporting tab contains basic information about the case

- The Case Detail form is available on this tab

Case Reporting Key Field Definitions

- **Investigation Status**: refers to the stage of the investigation (Active, Canceled, Completed, Completed – Follow Up, New, Review, Superceded)

  - Case Status should be set according to case definition (confirmed, probable, suspect, not a case) and then marked as "Completed" for Investigation Status

  - If duplicate cases are entered, all but one should be marked "Superceded" for Investigation Status with one case investigated to resolution. The dedup button can also be used to merge duplicate cases

  - Select "Canceled" if the case was entered by error (there is no way to delete a case in MDSS).

Investigation Status
Review

- The "Review" status identifies a case that is ready for final review by an LHD supervisor or MDHHS staff

- After the case is reviewed the investigation status should be changed appropriately

- "Review" should also used for all TB cases so that MDHHS TB Program can review cases before marking them "Complete"

Example:

An LHD CD supervisor would like to review cases that are investigated by a new staff member before they are marked as 'completed.' The new staff member marks the case investigation status as 'review' and the CD supervisor then reviews the investigation information and changes the investigation status appropriately.

Investigation Status
Completed-Follow Up

Allows users to identify a case as 'completed' but needing additional information

1) mark the investigation status as "Completed"

2) then change the status to "Completed-follow up" to make edits;

3) when edits are complete, change the status back to "Completed"

Example:

An LHD completes the investigation for a Salmonellosis case, the only information still needed is the salmonella serotype. The LHD marks the case as "Completed" and then as "Completed-follow up" to indicate that additional information is needed. Once serotype information is received, the information is added to the case detail form and the investigation status is changed back to "Completed"

Case Status
Confirmed-Non Resident

- Created for use by the TB program to indicate that a case is being managed in MI, but is the resident of another state

- Only TB cases can be assigned as Confirmed-Non Resident

  An error message will appear if the status is used with a non TB case

Patient SQUIRREL, ROCKY Locked by MDSSTEST0004 (TEST MDSSTES)

Error: You must correct the following error(s) before proceeding:

- Patient Case Status cannot be set to Confirmed Non-Resident unless this is a TB case.

Reportable Condition* :
Meningitis - Aseptic   [Detail]

Case Status* :
Confirmed-Non Resident

Re-Assigning Cases to a Different User

The Re-assign button allows the case to be assigned to a different investigator

Re-Assigning a Case

- By default, only users within the investigation jurisdiction will appear in user list

- The list can be expanded by unchecking the 'Primary Jurisdiction' checkbox

  1. Click the name of the person you wish to assign the case to

  2. Click the **SUBMIT CHANGES** button

Re-assign Investigation

Investigation Jurisdiction : Washtenaw County   Primary Jurisdiction ☑

Re-assign to :

MDSSTES, TEST / Washtenaw County

Re-assign Investigation

Investigation Jurisdiction : Washtenaw County   Primary Jurisdiction ☐

Re-assign to :

ANDREWS, SHANNON M / Statewide
ARENDS, KATIE / Statewide
ATLURI, LAKSHMI P / Statewide
BACHELDER, KIMBERLY J / Statewide
BAUMAN, LAURA / Statewide
BEGGS, JENNIFER / Statewide
BENSLEY, KARA M / Statewide
BIDOL, SALLY / Statewide
BIGGS, THERESA / Statewide
BLOSTEIN, JOEL / Statewide
BOHM, SUSAN / Statewide
BOLEN, TIM / Statewide
BRENNAN, BRENDA / Statewide
BROWN, CRYSTAL / Statewide

Reset   Submit Changes   Cancel   Help

Case Detail Forms

- Each disease has an associated case investigation form called a <u>Case Detail Form</u>

- Forms are accessed through the Case Reporting tab

- Forms can be saved to MDSS and printed out at any time during the investigation

- Most diseases have unique forms, but some use a "basic" form

- All the fields required to report to MDHHS and/or CDC are contained on the Case Detail Form

- All data from the basic case entry is auto-populated into the Case Detail Form

Case Detail Forms

- Provide a common format for handwritten and computer data entry

- Use a web interface for basic intake information

- Allow for supplemental data for reportable conditions requiring detailed information

- Eliminate the need for mailing case investigation forms

Case Detail Forms

To access the form, click the "detail" button on the case reporting tab

Case Detail Forms

Gastrointestinal Illness Case Investigation
Salmonellosis
Michigan Department of Health and Human Services
Communicable Disease Division

Investigation ID: 13928107657
Investigation Status: New
Case Status: Confirmed
Case Disposition: OutPatient

Patient ID: 13928107655
First: TOM
Last: TURKEY
Patient Status: Alive

Expand all

Click to see all sections or click each heading to open one at a time

- Investigation Information
- Patient Information
- Demographics
- Referral Information
- Referral Information Continued
- Hospital Information
- Clinical Information
- Laboratory Information
- Epidemiologic Information
- Contact Information
- Food Purchased Information

Working with Case Detail Forms

1. Clicking the 'Details' button opens the HTML disease specific form, retrieving the data from the database

2. Add or edit data to the form as needed or required

3. Click **SAVE** at top of screen to save changes

   Note: Save changes frequently – this is key as your session may time out before you return to the MDSS

4. Click **EXIT** to exit without saving

   Note: If you make changes to the form, a pop-up window will appear asking if you are sure you don't want to save changes

5. Click **PRINT** at the top of the screen to print the form at any point of data entry

Details are provided in the section *Disease Specific Forms* in *Chapter 5* of the User Guide or by viewing Online Help

Case Detail Form: Basic Information

Each form contains basic information applicable to all diseases . . .

Case Detail Form: Supplemental Information

…as well as specific information only pertaining to the specific disease

For example:
Clinical data
Laboratory data
Epidemiological data

Hospital Information

Patient Hospitalized ○ Yes ○ No ○ Unknown	Hospital	Hospital City	Hospital Record No.

Admission Date *mm/dd/yyyy*	Discharge Date *mm/dd/yyyy*	Days Hospitalized	Patient Died ○ Yes ○ No ○ Unknown	Date Of Death *mm/dd/yyyy*

Clinical Information

Date Recovered: *mm/dd/yyyy*

Symptoms *(Check all that apply)*

☐ No Symptoms ☐ Abdominal Pain ☐ Body Ache ☐ Chills ☐ Diarrhea ☐ Diarrhea w/blood
☐ Fatigue ☐ Headache ☐ Nausea ☐ Vomiting

Fever? ○ Yes ○ No ○ Unknown	If yes, specify highest fever:	Scale ○ F ○ C
Other Symptoms? ○ Yes ○ No ○ Unknown	If yes, please specify:	

Laboratory Information

Please insert the first positive lab report date for this illness (for metrics analyses) *(mm/dd/yyyy)*

Specimen Collected	Collection Date *(mm/dd/yyyy)*	Test Result	Test Name	Laboratory Name
Blood				
Stool				
Urine				
Other				

Salmonella serotype:

○ Typhimurium	○ Enteritidis	○ Newport	○ Heidelberg
○ Javiana	○ Montevideo	○ Muenchen	○ Oranienburg
○ Saintpaul	○ Infantis	○ Thompson	○ Paratyphi B var.L (+)tartrate+ (Formerly Java)
○ Braenderup	○ Agona	○ Hadar	○ Mississippi
○ Berta	○ I 4,[5],12:i:-	○ Poona	○ Other, specify:

The Address History Screen

- Addresses are associated with a patient, not a case, thus a *patient* can have multiple addresses, but a *case* is only associated with one

- Date ranges, based on onset (or referral if onset is unavailable) are used to define which address a certain *case* is affiliated with

- When viewing the Address History on a *case*, the *patient's* entire address history is shown, but only the official *case* address has an "X"

| Case Reporting | Address History | Demographics | Referrer | Lab Reports | Notes | Map | Audit |

Patient COPPALLA, FRANCIS Locked by MARTENC (CARLA J MARTEN)

Addresses [Create New Address] [Help]

Street	City	State	Case Address	From Date	To Date	
201 TOWNSEND	LANSING	MI		01/01/1900	01/01/1910	Edit
1200 N TELEGRAPH	PONTIAC	MI		01/02/1910	12/31/1919	Edit
210 QUINCY ST	HANCOCK	MI		01/01/1920	12/31/1979	Edit
300 E MICHIGAN AVE	LANSING	MI	X	01/01/2000	12/16/2008	Edit

Change of Jurisdiction Warning

The *Change in Jurisdiction Warning* occurs if you change date variables or address information that would impact the case address and therefore LHD jurisdiction

Adding a New Address

Before you add a new address, each existing address must have a "To Date"

1. Use the EDIT button to modify an existing address

2. Click the CREATE NEW ADDRESS button

Adding a New Address

3. The "Create New Address" window appears

4. Enter the new address

5. Click the CREATE ADDRESS button to save changes

If multiple addresses exist for the patient, use the "From" and "To" date fields to indicate dates when the addresses were valid

Adding a New Address
Tips

- Make sure all prior addresses have To and From dates prior to adding a new address

- If the case is not sticking in the right jurisdiction, double check that the To and From dates of your address lines up with the onset date (if no onset date, referral date)

- If the address does not want to stick (e.g. it keeps auto-changing to a different county), add spaces between each letter/# and then select the County, for example:
  - 1 2 3 C R A Y O L A   L A N E,   S A G I N A W

Demographics and Referrer Screens

Lab Reports

- Electronic Laboratory Reports (ELR) and/or manually entered Laboratory Reports can be viewed in the Lab Report tab

- Lab results are also available at the bottom of the Case Detail Form

- Laboratory results can be entered into MDSS three ways:

    1) Manually upon case entry, in the 3rd screen

    2) Manually using the "Lab Reports" tab after it is already in the system

    3) Electronically via *Electronic Laboratory Reports*

- MDHHS Bureau of Laboratories and many commercial and public health laboratories are using electronic reporting

Lab Reports Screen

- Click CREATE NEW LAB REPORT button to add a lab report

- Click EDIT to view or edit an existing lab report

- Laboratory reports are associated to the patient, not the case

  – Multiple cases can be associated with a single patient

  – Any changes or additions of laboratory reports will be associated with that patient

Lab Report - ELR Example

Case Reporting | **Address History** | **Demographics** | **Referrer** | **Lab Reports** | **Notes** | **Map** | **Audit** | **Person History**

Patient BUNNY, BUGS Locked by HENDERSONT1 (TIFFANY A HENDERSON)

Lab Order Information

Test Name* : SALMONELLA TYPING – HUMAN

Lab Report Date (mm/dd/yyyy) : 09/18/2007

Ordering Provider

First : JOANNE   Last : MORRIS

Affiliation : WILLIAM BEAUMONT HOSPITAL-TROY   Street : 44201 DEQUINDRE ROAD

City : TROY   County : Oakland   State : Michigan   Zip : 48098

Phone number :   Ext :

Laboratory Information

Name* : MDCH REGIONAL LAB LANSING

Street : 3350 N. Martin Luther King, Jr. Blvd.   Geocode Source :

City : Lansing   County : Ingham   State : Michigan   Zip : 48909

Phone number : 517-335-8471

Specimen Information

Specimen Collection Date (mm/dd/yyyy) : 09/08/2007

Specimen Source :

Specimen Site :

Specimen Site Text : FECES

Specimen ID : M07ST001012

Results

Reported Test Name : GENUS (BACT),SPECIES (BACT),SEROTYPE (BACT)

Coded Result :	Salmonella
Alternate Coded Result :	Salmonella,sp.,Newport
Numeric Result :	

Reported Test Name : RESULT PRE-COMMENT (BACT)

Coded Result :	CULTURE IDENTIFICATION :
Numeric Result :	

Reset | Cancel | Help

Notes Screen

- The Notes tab works like nursing notes – saved notes cannot be edited so a new note must be added to update information

- Each note is time and date stamped with the User' ID

- Documents can be attached to a case using the "Attach New Document" function

The order of the notes can be reversed (default is ascending)

Map Screen

- MDSS displays the location of the case on an interactive map, as indicated by the green marker

- Only cases with valid ZIP Codes or Addresses are mapped
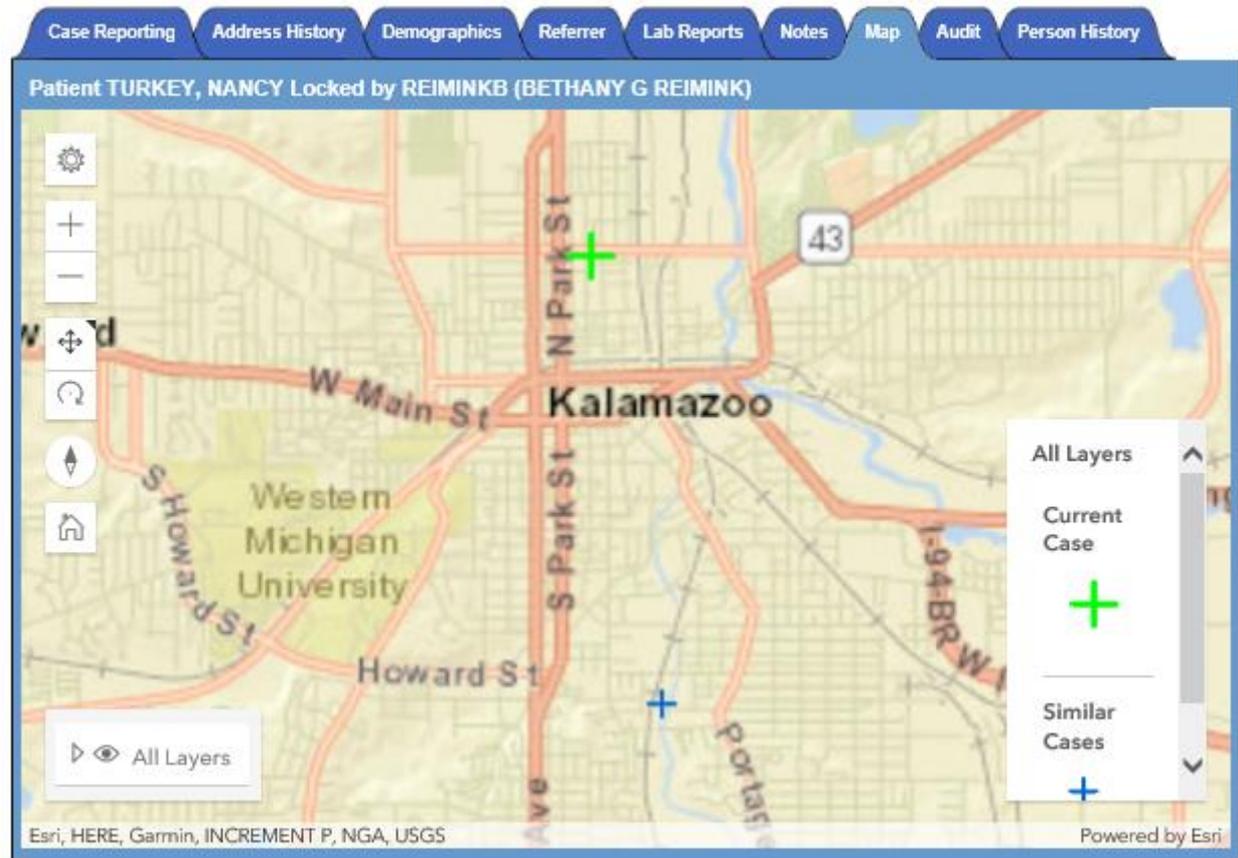
Other cases with the same disease or condition within the last 7 days are also visible on the map - these cases are indicated by the blue marker

Using the Map
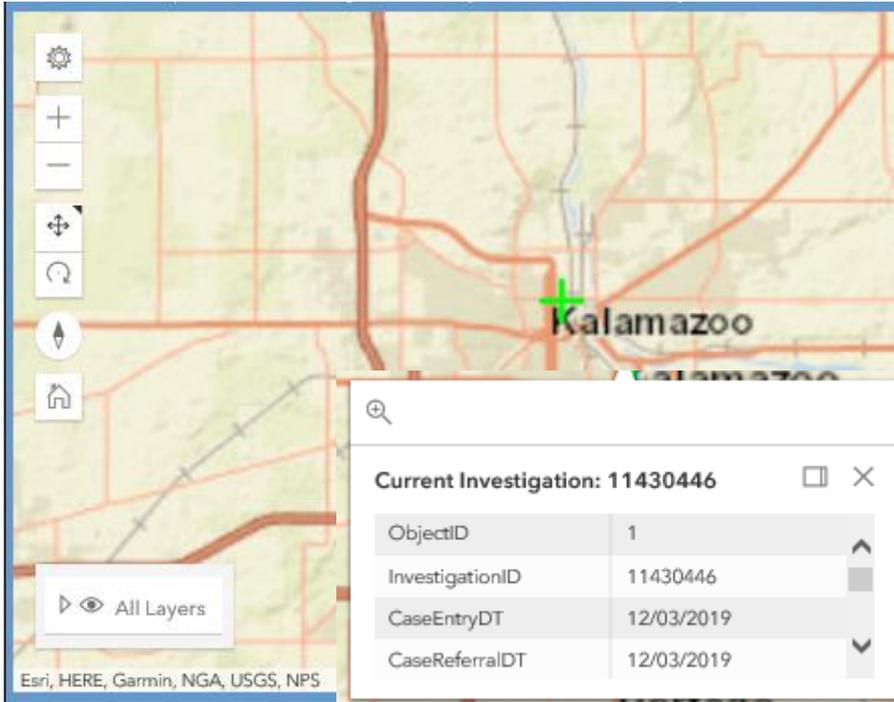
- Select "+" (Zoom In) and click on the marker for more detail

- Zoom to Selected Rectangle allows you to select your zoom area

- Select "-" (Zoom Out) and click on the marker for less detail

- Select ⊕ (Navigation Toggle) and click on map to shift map center

Map - Layers

- Map layers are like overlay transparencies

- The more map layers you select, the longer it takes to re-draw the map

- To add or remove layers:

1) Click on the arrow next to 'All Layers'

2) Click on the arrow next to 'Background Layers'

3) Select radio button next to each layer

Audit Screen

Case Reporting	Address History	Demographics	Referrer	Lab Reports	Notes	Map	Audit	Person History
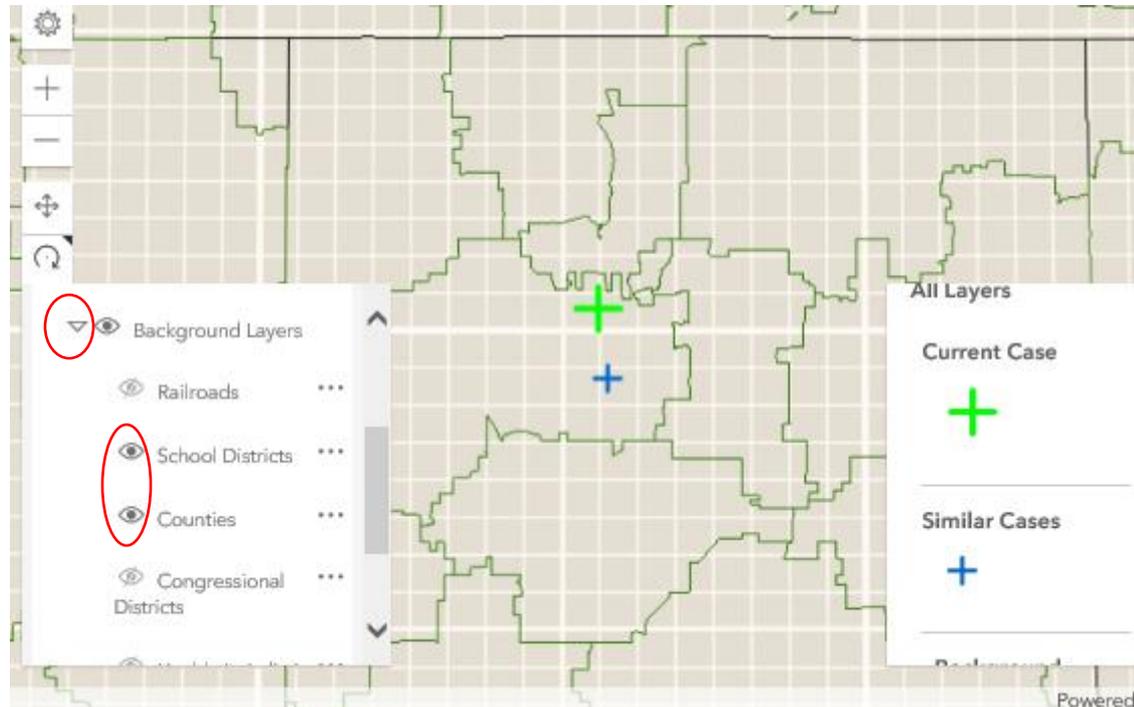
Patient CHEESEY, JOHN Locked by LAIJ (JOYCE LAI)

Date Changed	User Name	Jurisdiction	Role	Inv Status	Action Performed
08/08/2016 01:14:58 PM	MDSS TEST	Wayne County	LHJ	New	Add Case
08/08/2016 01:14:59 PM	MDSS TEST	Wayne County	LHJ	New	Lab Added With New Case
08/08/2016 01:16:46 PM	JOYCE LAI	Statewide	MDCH-BOE	New	Update Address
08/08/2016 01:18:05 PM	JOYCE LAI	Statewide	MDCH-BOE	New	Add Note
08/08/2016 01:22:16 PM	JOYCE LAI	Statewide	MDCH-BOE	New	Add Note

Help

- Changes to cases are tracked in the audit trail

- The audit trail includes the user ID, jurisdiction, the investigation status of the case (at time of audit), and the action performed

Person History Screen

- Recommend checking this tab at the start of every investigation to see if the individual has more than 1 New or Active report of communicable disease in the system.

  - Assigning the same investigator to all New or Active cases in the system can help with case compliance and provide one point of contact for medical records requests to Healthcare Providers

- If a person has more than one case associated with him or her, it will be shown in the Person History tab

- Cases for the person can be viewed by clicking 'View'

| Case Reporting | Address History | Demographics | Referrer | Lab Reports | Notes | Map | Audit | Person History |

Patient TURKEY, TOM Locked by REIMINKB (BETHANY G REIMINK)

Person Case History | Referral Date ▼ | Sort

Investigation Status	Investigation ID	Disease	Subject	Referral Date	Investigator	Jurisdiction	
New	11404221	Salmonellosis	TURKEY, TOM	11/26/2019	HENDERSON, TIFFANY A	Kalamazoo County	View
New	11431499	Cyclosporiasis	TURKEY, TOM	12/03/2019	WILSON, NICOLE	Kalamazoo County	View

Help

User Directory

	Case Investigation	
Cases		
New Case		
New Aggregate Cases		
Searches		
New Search		
New Aggregate Search		
Disease Specific Search		
Search Field Records		
Case Definitions		
Alert Rules		
Blank Forms		
User Profile		
User Directory		

User Directory					Help
Userid	Name	Jurisdiction	Email	Phone	Active

- The MDSS User Directory provides each user's UserID, name, jurisdiction, email, and phone number

- It is available in the case investigation tab

- The directory can be used in conjunction with the audit trail to contact individuals who have edited a case

Closing a Case

- To close a case:

  - Set Case Status to the correct case definition (refer to case definition link or www.cdc.gov/nndss)

    - Cases may be completed as confirmed, probable, suspect, not a case, depending on definitions

  - Set Investigation Status to "Completed"

  - Click **Submit Changes**

  Note: A closed case cannot be edited until a user changes the Investigation Status from "Completed" back to "Active" or "Completed-Follow Up" and clicks ***Submit Changes***

Reporting Closed Cases to CDC

- Only cases with Case Status "Confirmed" or "Probable" and Investigation Status "Completed" or "Completed Follow-Up" are reported to the CDC

  - Please note the CDC Case Definition for acceptable options. Certain diseases will only be reported if marked Confirmed/Completed, only select cases can be closed with a Probable or Suspect

- Changes made to cases that have been reported to the CDC will be resolved during annual data cleaning

- Efforts should be made to minimize changes to core data elements on closed cases

MDSS Searches
"Where did my case go?"

New Searches

- If you need to find a case or set of cases, you will need to create a new search

- The *New Search* function is under the 'Case Investigation' module

- There are two levels of search options:

  - Basic

  - Advanced
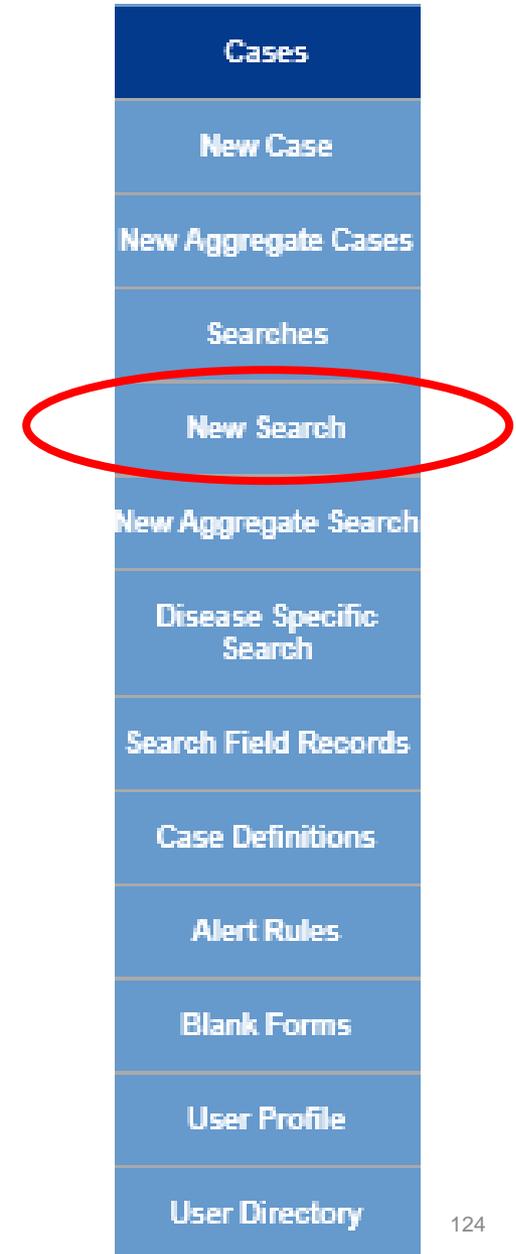
Cases

New Case

New Aggregate Cases

Searches

New Search

New Aggregate Search

Disease Specific Search

Search Field Records

Case Definitions

Alert Rules

Blank Forms

User Profile

User Directory

Basic Search

Clicking **New Search**, opens the "Basic Search" screen

Search by:

- Patient Name

- Investigator Name

- Disease or

- Disease Group

- Dates

- Geographic or

- County

- Etc.

Basic Search
Searching Case Notes

- You can search case notes in the basic search screen!

Some tips:

- Can use a wildcard search here by using an "*"

  – Searching "Luckys" will only give results with "Luckys," but searching "Luc*" will search for all words that start with "Luc*" and will yield more results

Advanced Search

Click on the 'Advanced' button at the bottom of the screen

Additional Options With Advanced Searches

Search by:

- Demographics

- Type of lab result

- Physician or

- Reporting Lab

- MDOC ID

- Geography

- Coordinates

- Etc.

Advanced Search
Key Field Definitions

- **Age and Age Unit**: "Age" provides a numeric range search, while "Age Unit" works in conjunction with the "Age" field to determine the correct measurement for the age provided.
  - *Note: the patient's reported age is not converted to days/months/years during the comparison*

- **Zip**: Searches the "Investigation Address." The "Zip" search allows single, multiple, and range selection

- **City:**   Searches the "Investigation Address." The "City" search allows single, multiple and wildcard (*) selection

- **Include Aggregate**: Determines whether the search will include only individual case reports or both individually reported cases and aggregate reports

Advanced Search
Key Field Definitions

- **Investigation Closure Date:** Searches the system generated value of "Investigation Closure Date." This search automatically limits the results to "closed" cases

- **Outcome, Hospitalized:** Compares the values entered in the appropriate fields ("Patient Died" or "Patient Hospitalized") on the Case Detail Form. Using these fields as search criteria will automatically limit the results to reportable conditions that request this information on the Case Detail Form

- **ELR**: Allows the user to select cases based on how lab results were added to the case. Default includes both ELR and non-ELR cases

- **Laboratory Name**: Compares against the values entered in the Lab Reports screen (basic case entry) *not* the information provided on the Case Detail Form

Existing Advanced Search

- Aggregate Reports can be included in case listings with individual case reports by utilizing the 'Include Aggregates' checkbox on the Advanced Search page

- *Example: User wants to display a listing of individually reported influenza cases and aggregate reports of flu like disease*

Geographic Map Search

- The Geographic Extent icon on the Advanced Search Screen allows the user to search for cases within a geographic boundary using the GIS Map to select the coordinates

- Click on the [icon] icon to select an area on the map

Geographic Criteria

Geographic Extent: [icon]   x: [   ]   y: [   ]   to   x: [   ]   y: [   ]

Saving & Creating a Default Search

1. To save a search for future use, enter a name for the search

2. Select all criteria

3. Click on Save & Finish

4. Check the Default Search box prior to saving to make it your default search (what you see when you first open MDSS)

Notes on Searching

- **Wild Card** searches allow the user to perform searches when the complete term is not known

    - Use asterisks "*" to signify unknown strings

    - For example: L* gives all entries that start with L

- **Date** searches:

    - If no date criteria are specified, the search will default to searching cases with referral dates in the last month

    - Enter only "From Date" to find all cases after and including that date

    - Enter only "To Date" to find all cases before and including that date

- The Search button will be greyed out until a search parameter has been chosen

Search | Save & Finish | Clear | Help   Grayed out until a selection is made

Notes on Searching

- Each **new variable** added operates like an "and"…the search becomes more restrictive (male **and** 2-6 years **and** Salmonella)

- Each selection **within a variable** operates like an "or"… that is less restrictive (Barry **or** Eaton)

- Try to limit the size of searches - extracting large datasets can be time consuming and may tax the system

- If large searches are needed, split them up into multiple small searches and merge them later or perform them only during off peak hours such as first thing in the morning or last thing at night

  - For example – larger searchers, break them up by dates if you do not want to do an overnight download

Tricks of the Trade

Selecting Multiple Variables:

- The easiest way is to use your mouse + keyboard!

- First use your mouse cursor to click on the first variable on the list you want selected, then:

- Hold down the CTRL key on your keyboard and use the ↓↑ arrows on your keyboard to navigate to the other variables you want to select for your search.

- Once the variable you wish to select is highlighted, continue to hold down the CTRL key and press the space bar on your keyboard to select.

- Continue the process until all variables are selected **holding the CTRL key down the entire time**

To **de-select** variables, repeat the process above
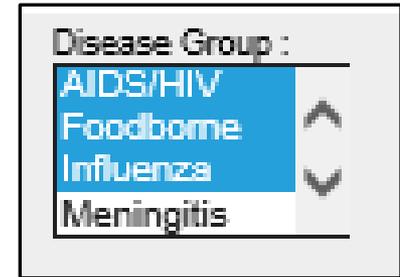
Executing a Saved Search

There are two ways to execute a saved search:

1) From case listings

2) From saved searches

Executing a Temporary Search

- When creating a New Search, you can click the Search button to execute the search immediately

- The search criteria will NOT be saved

Editing and Deleting Searches

The **Searches** function provides access to your saved searches
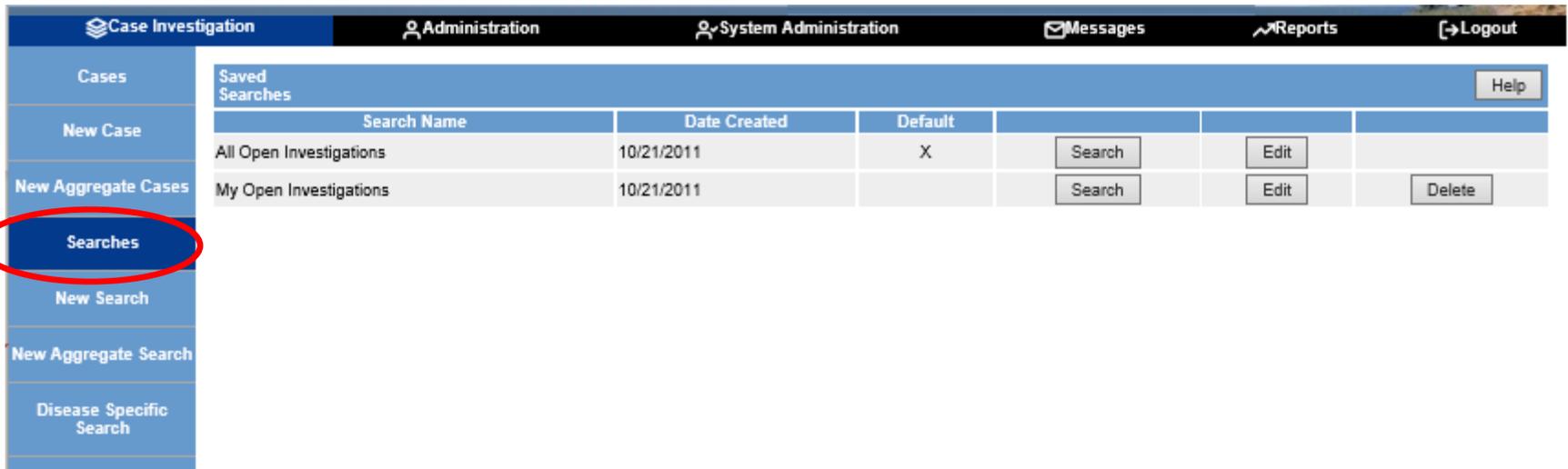
- Searches can be executed, edited, or deleted

- You cannot delete your default search, but **EDIT** allows you to select a new default search

- The **EDIT** Search screen looks just like the New Search screen but pre-selects that searches existing search criteria

Exporting Your Data for Analysis
"Now that I've found it how can I use it?"

Basic Exports

Exporting Selected Cases

- Data can be exported and saved to a comma separated values file (.csv), which can then be viewed or imported into other data analysis programs

- Cases can be exported 4 ways (select method with the drop-down arrow):
  - Standard Export without labs (default): line list of all cases in current search with no labs
  - Standard Export with labs: line list of all cases in current search and five most recent labs
  - Lab Driven Export – Person Centric: list of all labs associated with every person in search, regardless of whether labs are associated with cases not shown in search
  - Lab Driven Export – Case Centric: list of labs only associated with cases shown in current search

- Click on the "Export" button

Exporting the File

- After you click Export you will receive the pop-up box message (may look differently based on internet browser)

- Click OPEN or SAVE

Viewing the Export File

Example of an export file as viewed with Microsoft Excel®

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	R
1	Reportabl	Case_Stat	State_Pris	Investigat	Investigat	NETSS_ID	Investigat	Investigat	Investigat	Onset_Da	MMWR_W	MMWR_Y	Completic	Updated_C	Diagnosis_	Re
2	Salmonell	Confirmed		New	10850356		COLLINS	JIM	Statewide		4	2019		1/22/2019		1/
3	Salmonell	Confirmed		New	10850670		HERINGHA	JAYNE	Saginaw C	########	4	2019		1/22/2019	1/22/2019	1/
4	Salmonell	Confirmed		New	10852222		HENDERSC	TIFFANY A	Statewide	########	3	2019		1/22/2019	1/22/2019	1/
5	Salmonell	Confirmed		New	10853432		COLLINS	JIM	Statewide		4	2019		1/22/2019		1/
6	Salmonell	Confirmed		New	10855251		HERINGHA	JAYNE	Saginaw County		4	2019		1/22/2019		1/
7	Salmonell	Confirmed		New	10857983		HERINGHA	JAYNE	Saginaw County		4	2019		1/22/2019		1/
8	Salmonell	Confirmed		New	10859858		UPPER	CORI R	District 2	########	4	2019		1/22/2019	1/22/2019	1/
9	Salmonell	Confirmed		New	10859920		HERINGHA	JAYNE	Saginaw County		4	2019		1/22/2019		1/
10	Botulism -	Confirmed		New	10867878		HENDERSC	TIFFANY A	Statewide	########	4	2019		1/22/2019		1/
11	Botulism -	Suspect		New	10871361		HERINGHA	JAYNE	Saginaw County		4	2019		1/22/2019		1/
12	Botulism -	Suspect		New	10871964		HERINGHA	JAYNE	Saginaw County		4	2019		1/22/2019		1/

Your Exported Data

- Once the file has been opened in excel it can be formatted and saved as an excel file

- Over 80 variables are exported including: patient name, investigator, demographics, address, Investigation and Cases status, Referring persons contact information, and more

- A data dictionary is available at www.michigan.gov/mdss click on the Guides and References link

NOTE: older versions of excel can handle fewer rows/number of cases - make sure that exports are not too large for excel. If your analysis requires many cases, consider breaking up the exports

Disease Specific Searches and Exports

Disease Specific Search

- The **Search** and **New Search** functions limit the selectable criteria to **basic case information** - information that is common to all diseases such as the patient's last name

- The **Disease Specific Search** expands the selectable criteria to include all the data collected for a particular reportable condition from the Case Detail Form

Performing a Disease Specific Search

- Click **Disease Specific Search**

- Select the reportable condition. **Note: you may only search one condition at a time**

- Click the **SELECT** button and the Disease Specific Search form will open

NOTE: Select the 'Include Historic Forms' checkbox to include case detail forms that are no longer used in the drop-down menu of conditions

Disease Specific Search

- The **Disease Specific Search** forms look like the case detail form

- The form has been modified to accommodate ranges and wildcards

- Users can create a saved Disease Specific search by providing a name for the search, selecting their search criteria, and then selecting Save & Finish

  - The saved search will be accessible via the drop down on the Cases page or the Searches area of MDSS

Disease Specific Search

Possible Search Criteria:
- Person
- Place
- Time
- Symptoms
- Labs
- Treatment
- Risk Factors
- Vaccine History

Disease Specific Search Criteria

To match all of the data stored for the particular field, leave the form field empty

To match all data that has the exact value of the particular word or phrase, enter the word or phrase

To match all data that starts with a particular word or phrase, enter the word or phrase followed immediately by the wildcard (*)

Person Providing Referral

First

Last
Smith-Jones

Phone
###-###-####

Primary Physician

First
La*

Last

Phone
###-###-####

Street Address

City

County

St

Date and Numeric Search Criteria

Selecting a range of values

Enter the beginning range in the space preceding the 'to' label
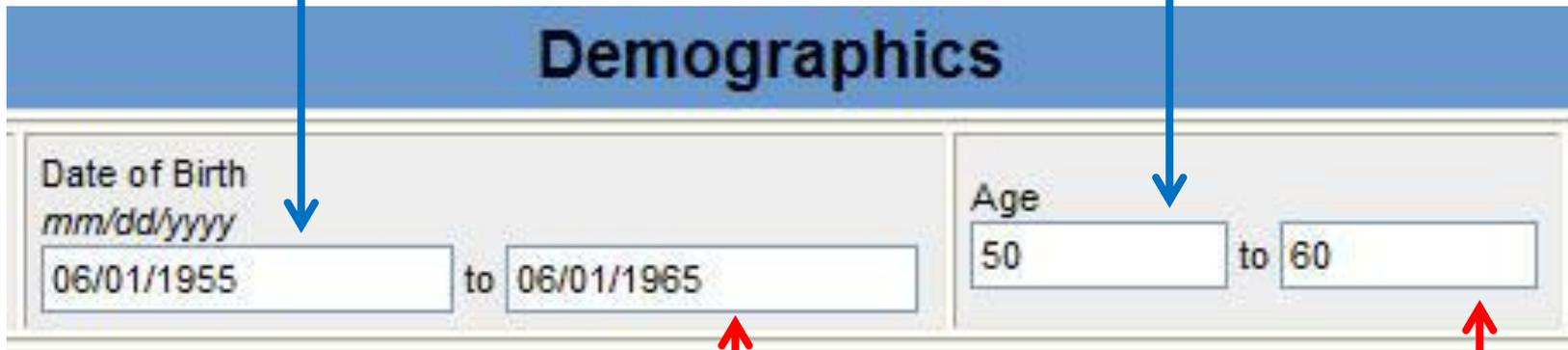
Demographics

Date of Birth
mm/dd/yyyy
06/01/1955 to 06/01/1965

Age
50 to 60

Enter the ending range in the space following the 'to' label

Checkbox Search Criteria

If one or two values are checked, only cases with those selected values will be returned

Case Status
☑ Confirmed ☐ Not a Case ☑ Probable ☑ Suspect ☐ Unknown

Part of an outbreak?	Outbreak Name	Case Updated Date *mm/dd/yyyy*
		to

If none or all of the values are checked, cases with <u>any</u> value for that field will be returned

In this example, all Confirmed, Probable, or Suspect cases will be returned, regardless of whether a case was part of an outbreak

Drop-Down Box Search Criteria

If none or all the values are selected from the drop-down option list, cases with any value for that field will be returned

County

State

Michigan

If one or more values are selected, only cases with those selected values will be returned

NOTE: The blue background indicates that a drop-down option is available or has been selected

Table Search Criteria

- Search criteria fields can be represented in a table format as a string, phone number, date, or as drop-down boxes

- Drop-down box options are listed in the column

- To select a drop-down option within a table, click the option you wish to select

Animal Contacts		
Type of Animal	Contact?	Specify
()	(Y=Yes N=No UNK=Unknown)	()
Reptiles (snake, turtle, lizard, etc.)	Yes	
Livestock (cattle, sheep, etc.)		

Table Search Limitations

Table searches are limited to searching
for the data as it was entered on a given row

- If you are looking for cases where the patient was in contact with "John Doe" you must supply the name "John Doe" to the exact row within the contact table where it was entered

- Specifying "John Doe" as the search criteria on the first row of the table will only return cases where "John Doe" was listed as the first contact during case entry, it will not return cases where "John Doe" was listed as the second, third, or fourth contact. Similarly entering "John Doe" on each line will only return cases where "John Doe" was entered on each line

- **For efficiency, do not place selection criteria in these fields; you can export and view the data in a spreadsheet**

Batch ID Search

- A file containing a list of known MDSS IDs of the same disease can be saved as a .csv file and used to execute a disease specific search
  - Please note, 1000 Investigation IDs can be searched via this 'batch upload' at a time
- Known MDSS IDs can also be typed into the Batch IDs field separated by a comma

Disease Specific Search Results

- When finished entering search criteria, click **SUBMIT QUERY** at the top of the page

- Disease Specific Searches can be saved to your Searches and/or made your Default Search by selecting Save and Finish

- The search executes and launches the "Case Listings" to display the search results

Name of Saved Search | Default Search ☐

Submit Query | Save & Finish | Batch Update | Case Assignments | Cancel

STEC Case Investigation Search

Michigan Department of Health and Human Services

Communicable Disease Division

Displaying results 1-10 of 40 found
[|< First] 1 2 3 4 [Next >>] [Last >|]

Case Listings						Investigation Status ▼	Sort	Temporary ▼	Search	Export

Investigation Status	Case Status	Investigation ID	Referral Date	Patient Name	Date of Birth	Disease	Investigator	County	
Completed	Confirmed	51081	08/19/2004	GIBSON, MEL 184578	01/01/1999	Shiga toxin-producing Escherichia coli --(STEC Pre-2019)*	COLLINS, JIM	Gogebic	Edit
Completed	Suspect	5776951	06/03/2005	SMITH, BETTY	11/20/1980	Shiga toxin-producing Escherichia coli --(STEC Pre-2019)*	COLLINS, JIM	Ingham	Edit
New	Confirmed	5474104	04/29/2010	DELL, JENN		Shiga toxin-producing Escherichia coli --(STEC Pre-2019)*	HENDERSON, TIFFANY A	Ingham	Edit

Performing a Disease Specific Export

1. Following a **Disease Specific Search**, from the "Case Listings" screen, click the **EXPORT** button

2. The Disease Specific Export form appears

Selecting Fields to Export

3. Either click the SELECT ALL button located at the top of the form OR click the individual checkboxes next to the fields desired - only the selected fields will be exported

Disease Specific Export

4. You may supply alternate export column titles by overwriting the column title that appears next to the *"export as"* label within each field

5. Click the EXPORT button

Note: On certain computer systems, the user must click and hold down the Ctrl button until the export is COMPLETE

Exporting the File

6. A pop-up will appear asking if you want to export the search immediately or let it run overnight (it is preferred to run large data exports overnight so that they do not tax the system). Click "Continue" or "Postpone"

Disease Specific Export

This export can be run now or postponed as part of a batch to be done overnight. If batched, an email will be sent when the export is ready for download. Would you like to Continue the export now or Postpone for later?

Postpone   Continue
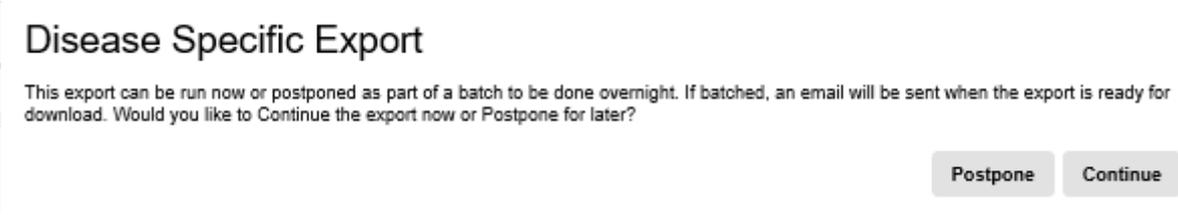
7. When you click Continue you will receive another pop-up message. Click OPEN or SAVE to proceed
If your system requires the Ctrl Button method continue to hold it down here

File Download

Some files can harm your computer. If the file information below looks suspicious, or you do not fully trust the source, do not open or save this file.

File name: Temporary.csv
File type: Microsoft Office Excel Comma Separated Values Fil
From: mdss-devel.stchome.com

Would you like to open the file or save it to your computer?

Open   Save   Cancel   More Info

☑ Always ask before opening this type of file

Do you want to open or save **STEC Export.csv** from **milogintpqa.michigan.gov**?   Open   Save ▼
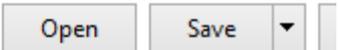
Viewing the Disease Specific Export File

This is an example of an export file
as viewed with Microsoft Excel®

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
	A1			InvestigationID														
1	Investigat	NETSSID	JURISDICT	Onset_Dat	Diagnosis	Referral_Da	Case_Entry	Case_Com	Investigat	Case_Stat	State_Pris	Patient_S	Patient_S	Case_Disp	Part_of_a	Outbreak_	Case_Upd	Patient
2	51081	42	Western L	8/19/2004		8/19/2004	8/19/2004	4/2/2014	Complete	Confirmed	MDOC	A	########	O	U		4/2/2014	76484
3	1746053	1324	Delta-Mer	2/15/2012		2/20/2012	2/20/2012	########	Complete	Confirmed		A	########	I	U		########	17460
4	5474104	3449	Ingham County			4/29/2010	4/29/2010		New	Confirmed		A	########	O	U		########	54741
5	5474965	3450	Ingham County			4/29/2010	4/29/2010		New	Confirmed		A	########	O	U		########	57196
6	5475810	3451	Ingham County			4/29/2010	4/29/2010		New	Confirmed		A	########	O	U		########	54758
7	5541473	3477	Kent Cour	1/1/2004		6/8/2010	6/8/2010		New	Unknown		A	6/8/2010	O	U		6/8/2010	55414
8	5542137	3478	Kent Cour	6/7/2010		6/8/2010	6/8/2010		New	Unknown		A	6/8/2010	O	U		6/8/2010	55421
9	5542801	3479	Kent Cour	6/7/2010		6/8/2010	6/8/2010		New	Unknown		A	6/8/2010	O	U		6/8/2010	55427
10	5543541	3480	Kent County			6/8/2010	6/8/2010		New	Unknown		A	6/8/2010	O			6/8/2010	55435
11	5721107	3509	Ingham County			6/18/2010	6/18/2010		New	Confirmed		A	########	O			########	57204

- A data dictionary is available to help interpret export results: www.michigan.gov/mdss, Click on MDSS Guides and References

- A tip sheet covering Searching and Exporting in MDSS is available

Administrative Tools

Administrative Tools

Administrative tools are available under the Administration link along the top navigation bar
- – List of all local users, public or private
- – User Audit Search + the ability to save searches (Admin Searches)
- – De-duplication queue or "pending work queue"
- – Lab holding area for negative Hepatitis C reports
- – Tool to unmerge patients
- – Administrative report (timeliness)
- – Field and interview record reports – DIS # needed
- – Completeness report
- – STD Supplemental Exports

User Registration/Approval

The [MDSS 8.0 update](#) included a [new MDSS portal](#), [updated registration process](#), new administration portal to manage requests.

User Audit Search

- Allows users to search for activities performed by a specific MDSS user

- Can be used to search for all activities performed or for specific activities such as 'Merged Case' or 'Add Case'

- Searches can be narrowed according to date, reportable condition/disease group or by case/investigation status

Lab Holding Area

- The Lab Holding Area holds negative Hepatitis C labs that have a duplicate record in MDSS* AND

- Negative COVID-19 labs that do not yet have duplicate COVID-19 cases in MDSS

*MDHHS staff typically deduplicate HCV cases in this holding area

Unmerge Patients

- Unmerge **Patients** OR **Cases** that were incorrectly merged during the deduplication process

- Search for cases by:

    - Date of merge

    - UserID

    - Patient name

    - Patient date of birth

Administrative Report

The administrative report calculates timeliness - average, median, and maximum days for:
- Onset to Referral
- Referral to Entry
- Referral to Completion
- Onset to Completion

Completeness Report

- Calculates <u>percent complete</u> for: Age, Sex, Ethnicity, Race

- STI cases will also have <u>percent complete</u> for: information source, specimen collection date, treatment date, and sex with a M/F

STD Supplemental Exports

- Supplemental export for Chlamydia, Gonorrhea, and Syphilis
- Export Field Records, Interview Records, or Interview Partner Records information
- Search by date/time range, condition, or geographic area

Batch Case Assignments and Batch Update

Batch Case Assignments

- New MDSS functionally allows an MDSS user to re-assign multiple cases to a new MDSS user by using the 'Case Assignments' option in 'New Search'.

1. Under the Case Investigation Tab, 'New Search', Select search criteria for cases that need to be re-assigned.

2. Select 'Case Assignments' at bottom of search screen.

Batch Case Assignments

3. Select all individual cases you'd like to re-assign by checking the box under the 'Re-assign' column. Note – up to 10 cases from one page can be selected at a time.

4. Select 'Select Investigator' at the bottom of the case listing.

Batch Case Assignments

5. By default, MDSS users from the primary jurisdiction (county of case residence) will be listed. To expand to other users, uncheck the 'Primary Jurisdiction' box.

6. Select the desired MDSS user from the list and then select 'Re-assign' at bottom of screen

Batch Case Assignments

7. View new investigator assigned to selected cases and select additional cases from other pages to re-assign, as needed.

There is also a great [MDSS Batch Case Assignments Tip Sheet](#) available here!

Batch Update

- New MDSS functionally allows an MDSS user to update Case Status and/or Investigation Status for multiple cases by using the 'Batch Update' in 'New Search'.

1. Under the Case Investigation Tab, 'New Search', Select search criteria for cases that need to be updated.

2. Select 'Batch Update' at bottom of search screen.

Batch Update

3. Select the desired Case Status and or Investigation Status from the drop down menus.

4. Select individual cases by checking the box in the 'Batch Update' column.

   a. Note – up to 100 cases on one page may be selected at one time.

5. Select 'Batch Update' at bottom of screen.

Batch Update

6. View cases that were updated and select additional cases to batch update, as needed.

There is also a great MDSS Batch Case Update Tip Sheet available here!

Running Reports
"What is happening around the State?"

MDSS Reports Quick Reference

In the examples shown below, settings have been chosen arbitrarily and numerous options are available for each report. Geographic breakdown includes state, region, local health jurisdiction, county, or city. Time interval includes year, month, and week. Reports #2-7 can be run for either count or rate per 100,000.
Note: Reports 3, 4, 5, 6, and Aggregate automatically use onset date if available, otherwise referral date.

Report 1: Line Listing

Invest. ID	Age	Sex	Condition	Status	Referral
230144 9136	32 Y	M	Amebiasis	Confirmed, Active	05/13/2010
230119 9035	48 Y	F	Campylobacter	Confirmed, Active	05/13/2010
228630 8585	79 Y	M	Campylobacter	Probable, New	05/05/2010

Line list of individual cases from selected disease(s) or disease group. You choose which fields/columns to display.

Report 2: Diseases by Demographics

Disease Group	Disease	<1 yr	1-4	5-9	10-14
Other	Brucellosis	0	0	0	0
	Cholera	0	0	0	0
	Coccidioidomycosis	0	0	0	0
	Creutzfeldt-Jakob Disease	0	0	0	0

Counts/rate for a selected time period stratified by sex, age, race, or ethnicity. All disease/disease groups are displayed.

Report 3: Diseases YTD*

Disease Group	Disease	Jan	Feb	Mar	Apr	May
Other	Creutzfeldt-Jakob Disease	1	0	1	0	1
	Cryptococcosis	2	4	5	1	3
	Cyclosporiasis	0	1	0	0	0

Year-to-date aggregate counts/rate for all disease/disease groups. Select geography and time interval (week or month).

Report 4: Diseases - 5 Year History*

Disease Group	Disease	2006	2007	2008	2009	2010
Other	Creutzfeldt-Jakob Disease	12	16	18	15	3
	Cryptococcosis	57	53	70	76	15
	Cyclosporiasis	0	1	2	3	1

5 year history of counts/rate for all disease/disease groups. Select geography and time interval.

Report 5: Diseases YTD by Geography*

Region	Jan	Feb	March	April	May	Total
1	364	323	440	364	183	1674
2 North	717	614	793	703	487	3314
2 South	2400	2282	2676	2189	1040	10587

Statewide year-to-date counts/rates for a selected disease or disease group. Select geographic breakdown and time interval.

Report 6: Disease History by Geography*

Region	2006	2007	2008	2009
1	4870	4848	4668	4394
2 North	6707	7244	7552	8463
2 South	24138	23523	27265	29531
3	7117	6862	6647	6833

Statewide 5 year history for a selected disease or disease group. Select geographic breakdown and time interval.

Report 7: Diseases by Geography

Disease Group	Disease	1	2 North	2 South	3
Other	Creutzfeldt-Jakob Disease	0	0	0	0
	Cryptococcosis	0	0	1	0
	Cyclosporiasis	0	0	0	0

Counts/rate for a selected time period for all disease/disease groups. Select overall geographic area and geographic breakdown.

Report 8: Epi Curve

Epi curve of case count over time for a selected disease or disease group. Select time period, time interval, and geographic area.

Aggregate Case Report*

Regions	05-2009	06-2009	07-2009	08-2009	09-2009
1	1166	995	33	16	2425
2 North	2095	3176	30	5	2241
2 South	2575	1682	58	8	3420

Statewide counts for aggregate conditions. Select time period, geographic breakdown, condition, and reporting source.

GIS Map of Diseases

Map of count or rate for selected disease or disease group. Select time period and geographic breakdown.

Reports

There are several reports formats available within the MDSS Reports module:

- Report 1 - Line Listing
- Report 2 - Disease by Demographics
- Report 3 - Diseases YTD
- Report 4 - Diseases – 5 Year History
- Report 5 - Diseases YTD by Geography
- Report 6 - Disease History by Geography
- Report 7 - Diseases by Geography
- Report 8 - Epi Curve
- Aggregate Case Report
- Audit Report
- GIS Map of Diseases by Geography
- TB Reports
- Disease Trends

Case Status and Report Security

Report 1 – Line Listing:

- Patient-level data is available in Report 1

- Therefore, this report has the same security as the "Case Listings" (i.e., patient level data reports can only be viewed and exported by users with authorized roles to view that data in the system)

General Characteristics of Reports

Each report provides a report parameter screen –

The selected parameters are used to identify which cases are included in the report and to determine the format of the report

Selecting the Report Parameters

Although each report is distinct, many of the report parameters are common

Common Parameters:

- Aggregate vs. Individual Cases

- Counts vs. Rates

- Desired Time Period

- Which dates to use to select cases

Selecting the Report Parameters

Common parameters (cont.):

- What status cases to choose from

- Where should the cases be from

Beware of Report Quirks

- Radio buttons
    - Unlike some other web applications, the MDSS does not automatically highlight the radio button when a selection is made within that box
    - *You must make sure that the appropriate radio buttons are correctly highlighted.*
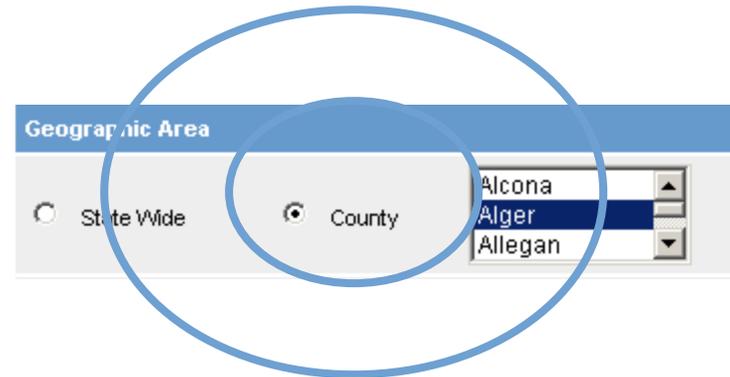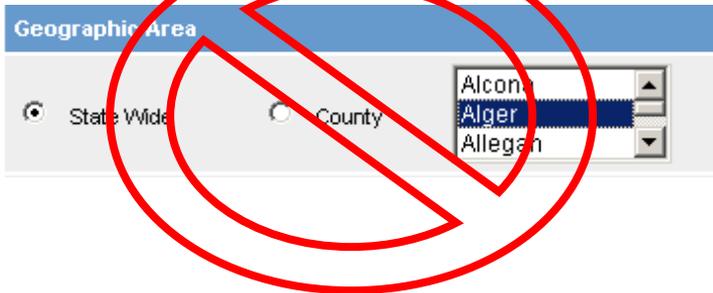
Aggregate vs. Individually Reported Cases

Aggregate / Individual Cases
The default is to include both aggregrate and individual cases

☐ Aggregate cases only   ☐ Individual cases only

- Individually reported cases are name-based cases

- Aggregate cases are generally based on weekly counts from schools or other congregate settings and may include flu-like disease or other illnesses or outbreaks

- Reports allow user to select only aggregate cases or only individually reported cases

- By default, both individual and aggregate are included

Counts vs Rates
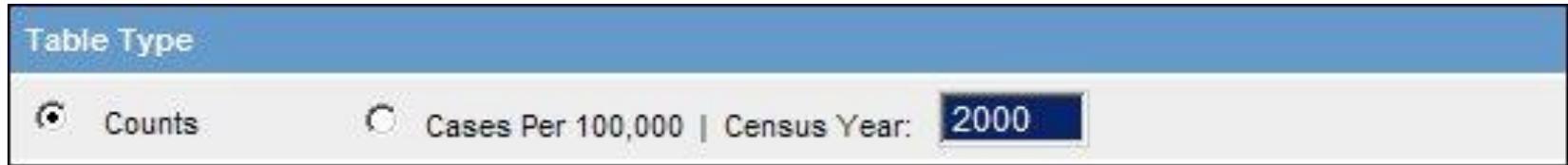
Table Type		
⊙ Counts	○ Cases Per 100,000 | Census Year:	2000

The user can select the type of information contained in the report:

- Count - the report will contain disease counts

- Rate - the report will contain rates calculated from disease counts and population data as of the Census Year* selected

    – The rates display as cases per 100,000 population

Most recent census year available is 2010

Time Period

- **Month** – includes only cases within the month selected

- **Year** – includes only cases within the year provided

- **Five-year period ending Year** – includes cases within the specified year and preceding four years (based on the provided ending date)

- **From Date / To Date** – includes cases within the date range provided

- **Week** – includes cases within the "MMWR Week" provided

- **Onset vs. Referral** – allows the user to make a report based on disease onset or referral of the case into the LHD

Beware of Report Quirks . . . (2)

Dates

- **For date ranges using the Time Period:**

    - MDSS selects cases with Onset Dates that fall within that range. If Onset Date is missing, the Referral Date will be used *(or the user can dictate this in some of the reports)*

- **For reports by Month or MMWR week:**

    - Month is determined by Onset Date (or Referral Date if Onset Date is unavailable).

    - MMWR Week is always determined by Referral Date

There can be situations where numbers can change from report to report, based on differences in the Onset Date and Referral Date

Case and Investigation Status

- **Case Status**: defines if a case is confirmed, probable, suspect or not a case, according to the appropriate case definition

- **Investigation Status:** identifies what stage of the investigation the case is in, i.e., active, new or complete, review, etc.

- The user can search cases in any combination of case status or investigation status

Geographic Area

- Only one geographic boundary at a time can be selected

- Cases will be mapped based on the "Investigation Address"

- Only cases that fall within the selected geographic boundary will be included on the report

Geographic Area

The geographic area options limit the report to the geographic area selected and may include:

- Statewide

- Public Health Preparedness Regions

- Local Health Jurisdictions

- County

- City/Township*

- Zip

- School District*

*Cases entered into MDSS that are Geocoded (*the "Geocode Source" is "CGI*") can be reported by "City/Township" and "School District." Historic data (originally entered into LHDSURV) has not been geocoded

Disease or Disease Group

- Only one of radio button can be selected at a time (you can run the report by a reportable condition **OR** by disease group)

- Only the cases of the selected reportable condition or conditions will be included on the report

- Multiple conditions **or** disease groups can be selected (by holding the Ctrl key), **except** for Report 8 – Epi Curve

- Making **no** selection indicates **ALL** conditions or disease groups will be included in the report

Running a Report

| Case Investigation | Administration | Messages | Reports |

- 1. Line Listing
- 2. Diseases by Demographics
- 3. Diseases YTD
- 4. Diseases - 5 Year History
- 5. Diseases YTD by Geography
- 6. Disease History by Geography
- 7. Diseases by Geography
- 8. Epi Curve
- Aggregate Case Report
- Audit Report
- GIS Map of Diseases by Geography
- TB Reports
- Disease Trends

1. From the Top Navigation bar click the **REPORTS** link

2. Click the Report Name link in the Side Navigation bar

Running a Report

3. The Report Parameters screen appears

4. Select the parameters needed for your search

Selecting a Report Format

- Each report (except the GIS Map & the Epi Curve reports) can be presented in three different formats:

    - HTML REPORT – displays the report as a standard web document

    - PDF REPORT – displays the report as a PDF file in Adobe Acrobat

    - CSV REPORT – creates a Comma Separated Value file. The display of this format depends on the configuration of your PC, but usually (and often best) in Excel or other spreadsheet applications. **This format is best if you wish to further analyze the data outside of MDSS.**

    5. Select the report format by clicking the appropriate button:

View HTML Report	View PDF Report	View CSV Report
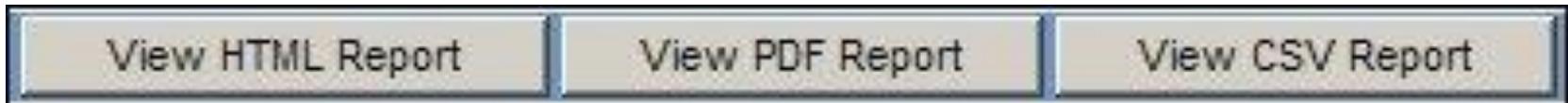
Running a Report

6. The following dialog box will appear asking you to confirm your choice of the report output file:
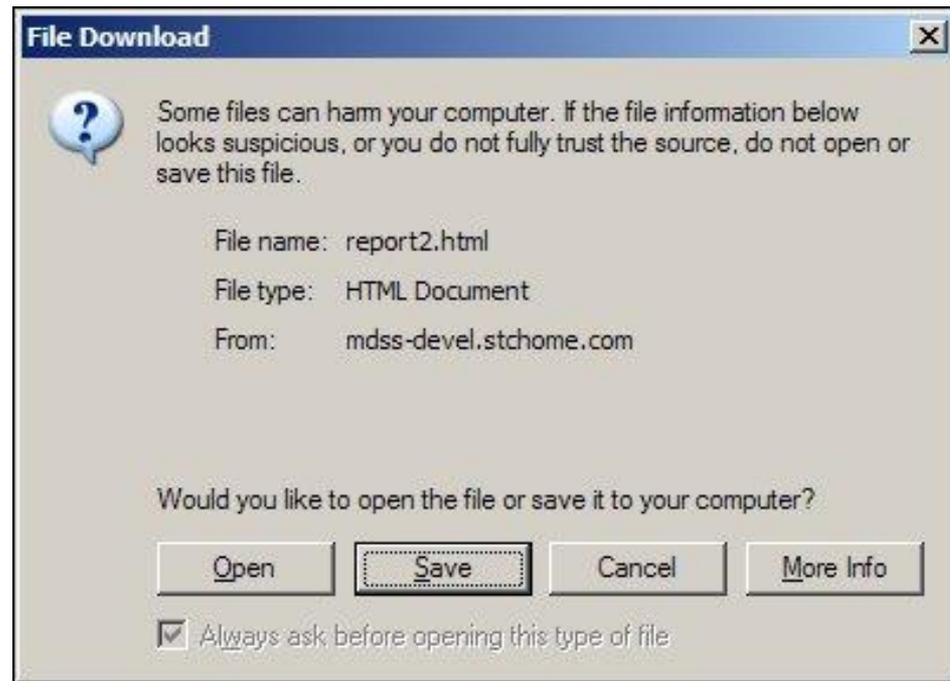
Viewing Report Output

7. Click the OPEN button

8. A new browser window will open to display the report output

Report 1: Line list of Disease Cases for a Given Timeframe and Geographic Location
Start Date: Mon Jun 7, 2004
End Date: Tue Jun 8, 2004
Reportable Conditions: All conditions
Geographic Area: The State of Michigan
There are 11 cases listed in this report.

ID	Name	Address	Age	DOB	Race	Ethnicity	Sex	Condition	Status
341934	FLINTSTONE, FREDICK		67 Y		Caucasian	Not Hispanic or Latino	M	Amebiasis	Confirmed
343725	BOOP, BETTY		59 Y	03/15/1945	Caucasian	Hispanic or Latino	F	Botulism - Foodborne	Confirmed
340554	FILBERT, JEFFREY		?		Asian	Not Hispanic or Latino	M	Campylobacter	Suspect
342530	WEYERHAEUSER, GRAYLING		68 Y	06/24/1935	Hawaiian or Pacific Islander	Hispanic or Latino	M	Animal Bite	Suspect
343127	NEWMAN, ALFRED		?		American Indian or Alaska Native	Unknown	U	Blastomycosis	Probable
341372	FILBERT, JEFFREY		?		Asian	Not Hispanic or Latino	M	Brucellosis	Probable
344324	MAY, DAISY		?		Other	Unknown	F	Brucellosis	Probable

Saving a Report

OR

- Click the SAVE button in the "File Download" box

- The "Save As" Dialog box opens

- Supply a file name and select a location on your computer to store the report
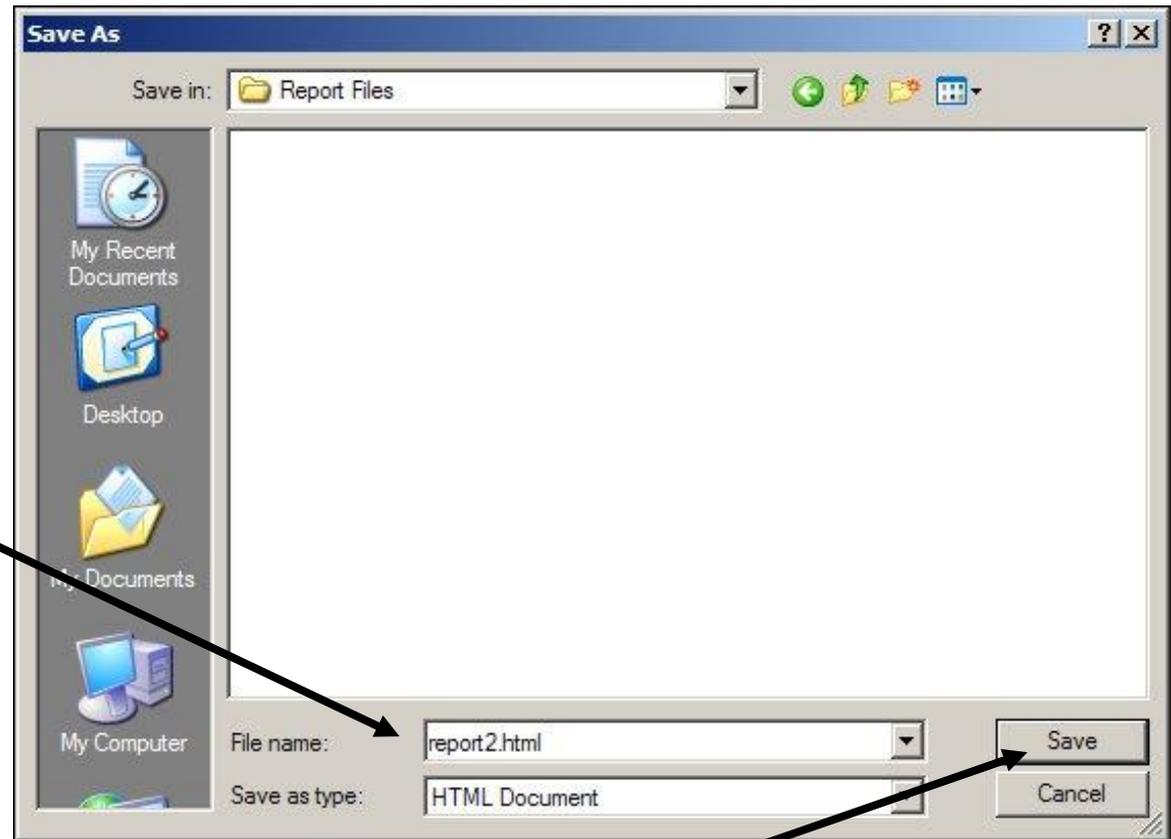
10. Click the SAVE button. Your report output file will now reside on your computer in the location that you specified

Report 1 – Line Listing

Line List of Disease Cases for A Given Timeframe and Geographic Location

- This is the only report limited based on geography because it returns identified case information. Users will be limited to cases from their primary jurisdiction

- **This report creates a patient-level list of all cases** that fall within the specified time-period, geographic area and disease selection

- **Display Columns:** select the fields to be included in the report

    - To include a field on your report, activate that field's checkbox

    - To exclude the field, remove the checkmark from the checkbox by clicking on the checkmark associated with the field you wish to exclude

Report 2 – Diseases by Demographics

Table of Diseases by Demographics for a Given Time Period

- Creates a table of counts or rates for all diseases that fall within the specified time-period and geographic area

- **Demographic Variable 1 & 2-** select up to 2 demographic variable(s) for the report:

  - **Sex** – provides a breakdown by Male, Female, and Unknown

  - **Age Group** – provides an incremental age breakdown (e.g., less than 1 year, one through four years, five through nine years, etc.)

  - **Race** – provides a breakdown by race (e.g., Caucasian, Asian, African American, etc.)

  - **Ethnicity** – provides a breakdown by ethnic groups of Hispanic or Latino, Non Hispanic or Latino, and Unknown

Report 3 - Diseases YTD

YTD Table of Diseases for a Given Year

- Creates a table of year-to-date counts or rates for <u>all</u> diseases that fall within the selected year and geographic area

- **Display Interval:** select **By Month** or **By Week** (only one may be selected)

    - **By Month:** includes data from January through December of the year selected

    - **By Week:** includes data from the first to the last MMWR Publication Week of the year selected

Report 4 - Diseases – 5 Year History

Table of Diseases Comparing a selected 5 Year Period

- Creates a comparison table of counts or rates for all diseases reported for the selected year and preceding four years within the geographic area.
- **Display Interval:** select one for a breakdown of counts or rates as follows:
  - **Year:** presented with a column for each year
  - **Month:** presented in columns by month for each year, beginning with the 'From Month' and ending with the 'Through Month'
  - **Week:** presented in columns by week for each year, beginning with the 'From Week' and ending with the 'Through Week'

Display Interval				
⦿ By Year				
○ By Month	From month:	January ▼	through month:	January ▼
○ By Week	From week:	[ ]	through week:	[ ]

Report 4 - Diseases – 5 Year History

**Reported Vaccine-preventable Diseases by Month
Previous Five Years**
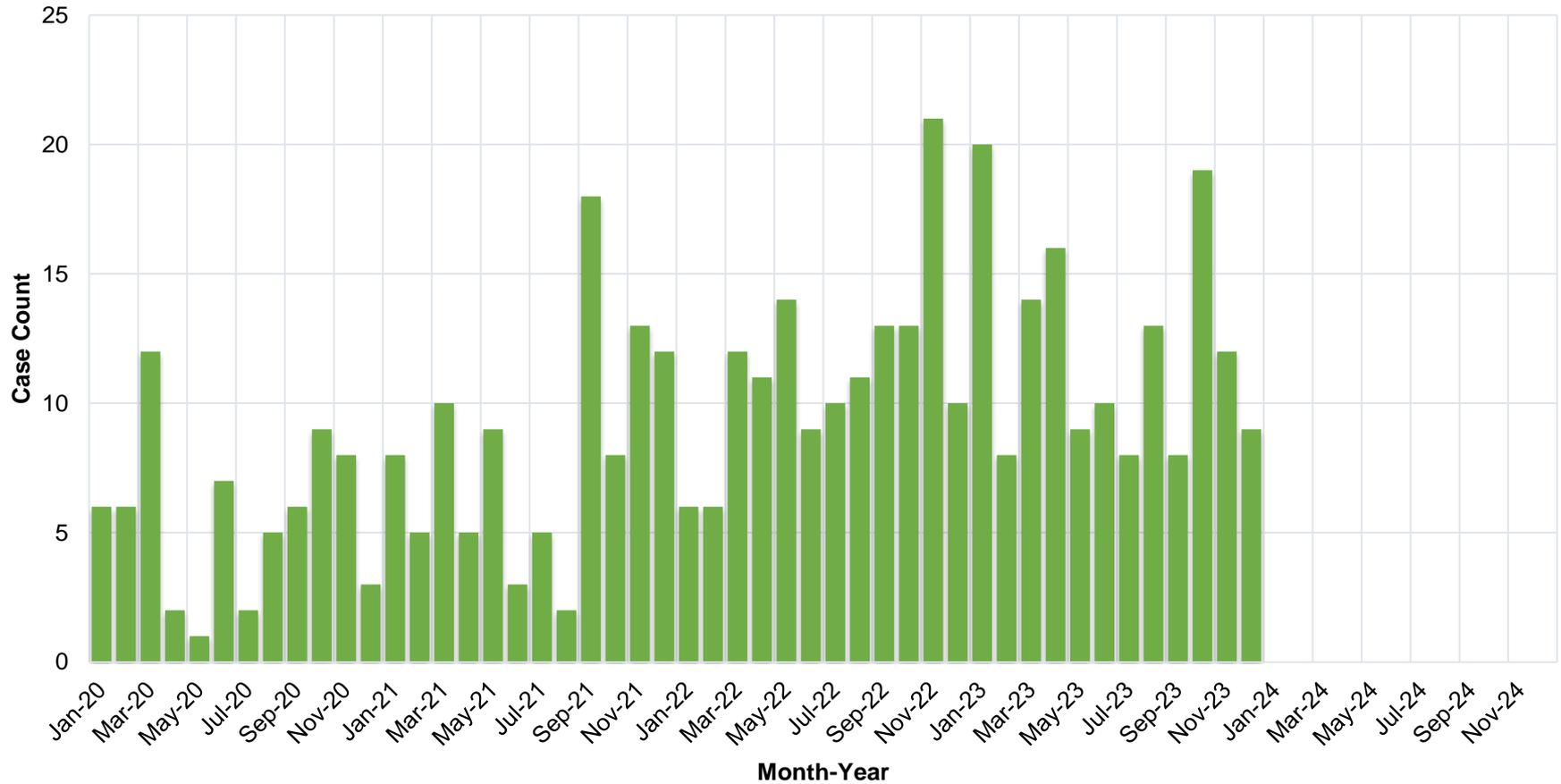
Report 5 - Diseases YTD by Geography

Year to Date Disease by Geographic Area and Timeframe for a Given Year

- Creates a table of counts or rates for all cases that fall within the selected time-period and disease information

- Data are not presented in the report for a given geographic level if the count or rate is equal to zero

- **Display Interval:** select By Month or By Week

    - **By Month:** presented in columns from January of the year selected through the selected ending month (**Through Month**)

    - **By Week:** presented in columns from the first MMWR week of the year selected through the ending MMWR week (**Through Week**)

Display Interval		
⦿ By Month	Through month:	December ▾
○ By Week	through week:	49

Report 5 – Diseases YTD by Geography

- **Geographic Breakdown:** Select one geographic location for the report
  - **Region** – data presented in columns by Public Health Preparedness Regions
  - **County** – data presented in columns by counties
  - **City** – data presented in columns by cities
  - **Zip** – data presented in columns by zip codes

Geographic Breakdown

⦿ Region   ○ County   ○ City   ○ Zip

Report 6 - Disease History by Geography

Displays selected Diseases or Disease Groups by Geographic Area and Timeframe

- Creates a comparison table of counts or rates for all cases that fall within the specified year and preceding four years

- Data are not presented in the report for a given geographic level if the count or rate is equal to zero

- **Display Interval:** select one for a breakdown of counts or rates as follows:

  - **Year:** presented with a column for each year

  - **Month:** presented in columns by month for each year, beginning with the 'From Month' and ending with the 'Through Month'

  - **Week:** presented in columns by week for each year, beginning with the 'From Week' and ending with the 'Through Week'

Display Interval				
○ By Year				
● By Month	From month:	January	through month:	December
○ By Week	From week:	01	through week:	49

Report 6 – Disease History by Geography

- **Geographic Breakdown:** Select one geographic location for the report
  - **Region** – data presented in columns by Public Health Preparedness Regions
  - **County** – data presented in columns by counties
  - **City** – data presented in columns by cities
  - **Zip** – data presented in columns by zip codes

Geographic Breakdown

⦿ Region   ○ County   ○ City   ○ Zip

Report 7 - Diseases by Geography

Table of Diseases by Geographic location

- Creates a table of counts or rates for all diseases that fall within the selected time-period and geographic area

- **Geographic Breakdown:** Select one geographic location for the report

  - **Statewide:** data presented as totals for the State

  - **Region:** data presented in columns by Public Health Preparedness Regions

  - **Local Health Jurisdiction:** data presented in columns by local health jurisdictions

  - **County:** data presented in columns by counties

  - **City:** data presented in columns by cities

  - **Zip:** data presented in columns by zip codes

  - **School District:** data presented in columns by school districts

Geographic Breakdown	
○ State Wide	○ County
⦿ Region	○ City
○ Local Health Jurisdiction	○ Zip
○ School District	

Report 8 - Epi Curve

- Creates a graph showing the number of cases over time for a selected reportable condition or disease group and time-period

- The PDF format provides both a graph and data while the CSV format only provides data and the user can prepare the graph themselves

- **Time Interval:** Select one for a breakdown of cases within the selected timeframe

  - **By Month:** cases presented by each month

  - **By MMWR Week:** cases presented by each MMWR week

  - **By Day:** cases presented by each day

- **Disease or Disease Group:** Only **one** reportable condition **OR** disease group may be selected at one time

Time Interval
● By Month
○ By Week
○ By Day

Disease or Disease Group			
● Reportable Condition	Acute Flaccid Myelitis (AFM) Amebiasis Anthrax	○ Disease Group	AIDS/HIV Foodborne Influenza

Aggregate Case Reports

- Returns aggregate report totals for selected time-period & geographic location

- Select the aggregate variables for the report (cases, deaths, isolations, hospitalizations)

- Select the condition

Audit Report

- Generates information on audited activities for users including:
  - Audit Date
  - Case ID
  - Patient Name & DOB
  - Audit Action

- The report can be run by LHJ Administrators for their jurisdiction

- HCP and Lab users can run the report for their facilities

- The reports shows all actions performed in the time period specified

GIS Map of Diseases by Geography

- Provides statewide maps of individual cases or diseases groups based on user selected time periods, case and investigation status and geographic breakdowns.

2008 Flu-Like Disease, Counts vs. Rates
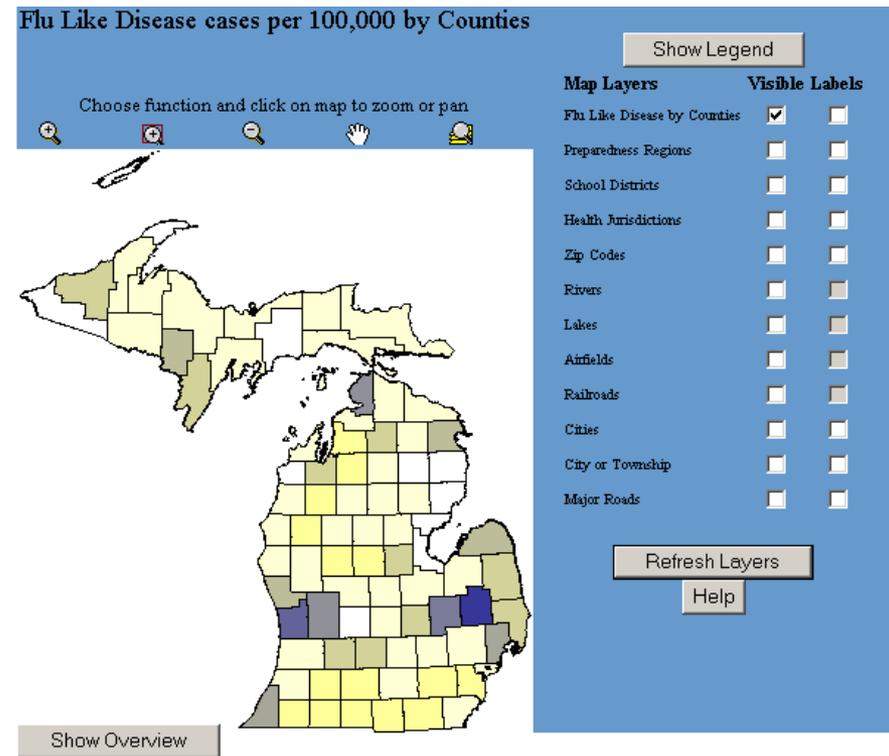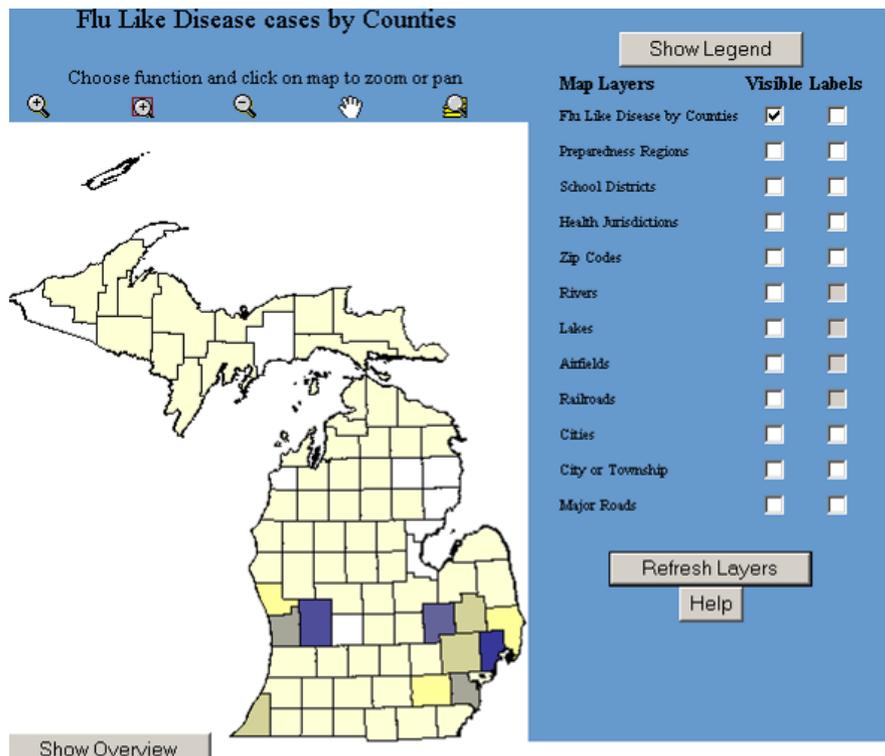
TB Reports

- The Tuberculosis Reports creates the 'Completion of Therapy' and 'Sputum Culture Conversion' reports for the TB cases that fall within the selected time frame and geographical area

- Statewide TB results are also displayed

Disease Trends

- Create a disease trend chart (for past 10 weeks) for one condition at a time

- Select criteria

- Click Generate Chart (or choose to save chart as an image)

- Displays current counts, average for that MMWR weeks for the last 5 years, moving average for previous 10 weeks, and overall five-year weekly average
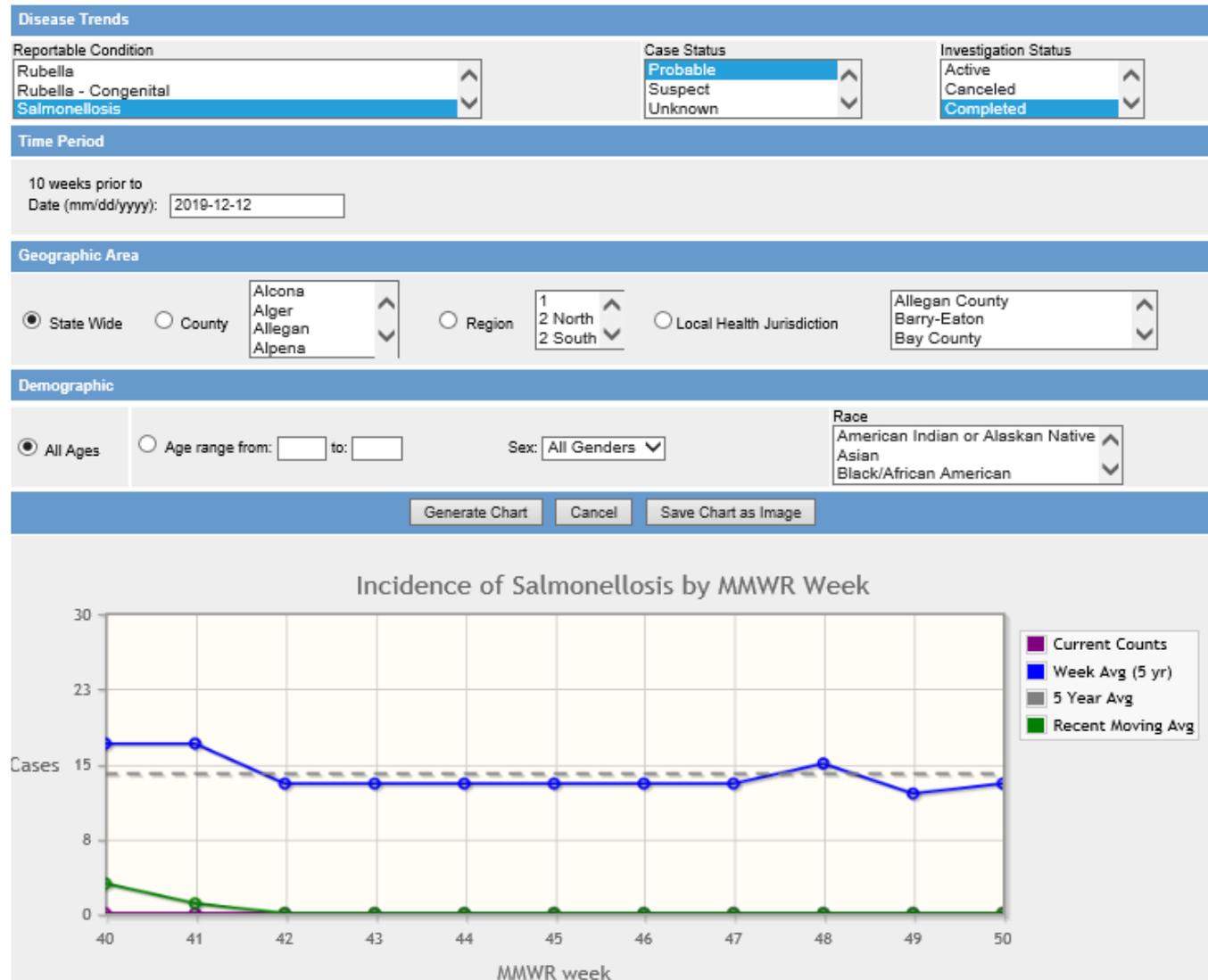
I'm having a problem . . . Who can help me?

Support and Help Contacts

- User Guides, FAQs, and Tip Sheets are available at www.michigan.gov/mdss

- For browser, adobe, or connectivity issues, contact **your** local IT support

- Contact your local MDSS administrator for general questions

- For MILogin issues, contact the help desk @:
    - (517) 241-9700 or (800) 968-2644

- Regional Epidemiologists are always available!

Regional Epidemiologists

Region	Name	Phone/Cell	E-mail	Counties Covered
1	Meghan Weinberg	517.749.2153 (Cell)	WeinbergM1@michigan.gov	Clinton, Eaton, Gratiot, Hillsdale, Ingham, Jackson, Lenawee, Livingston, Shiawassee
2N	Nicole Parker-Strobe	517.930.6906 (Cell)	ParkerStrobeN@michigan.gov	Macomb, Oakland, St. Clair
2S	Joyce Lai	734.727.7204 517.930.6958 (Cell)	LaiJ@michigan.gov	Detroit City, Monroe, Washtenaw, Wayne
3	Melanie Perry	517.582-0737 (Cell)	PerryM12@michigan.gov	Alcona, Arenac, Bay, Genesee, Gladwin, Huron, Iosco, Lapeer, Midland, Ogemaw, Saginaw, Sanilac, Tuscola
5	Bethany Reimink	269.373.5293 517.719.0407 (Cell)	ReiminkB@michigan.gov	Allegan, Barry, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, Van Buren
6	Fatema Mamou	517.204.6086 (Cell)	MamouF@michigan.gov	Clare, Ionia, Isabella, Kent, Lake Mason, Mecosta, Montcalm, Muskegon, Newaygo, Oceana, Osceola, Ottawa
7	Roger Racine	517.930.6914 (Cell)	RacineR@michigan.gov	Alpena, Antrim, Benzie, Charlevoix, Cheboygan, Crawford, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Montmorency, Oscoda, Otsego, Presque Isle, Roscommon, Wexford
8	Scott Schreiber	517.930.3089 (Cell)	SchreiberS@michigan.gov	Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon, Schoolcraft

Questions/Suggestions!

- Please reach out with topics for future trainings/needs

- Please let us know what you would like for modernization of the system!