

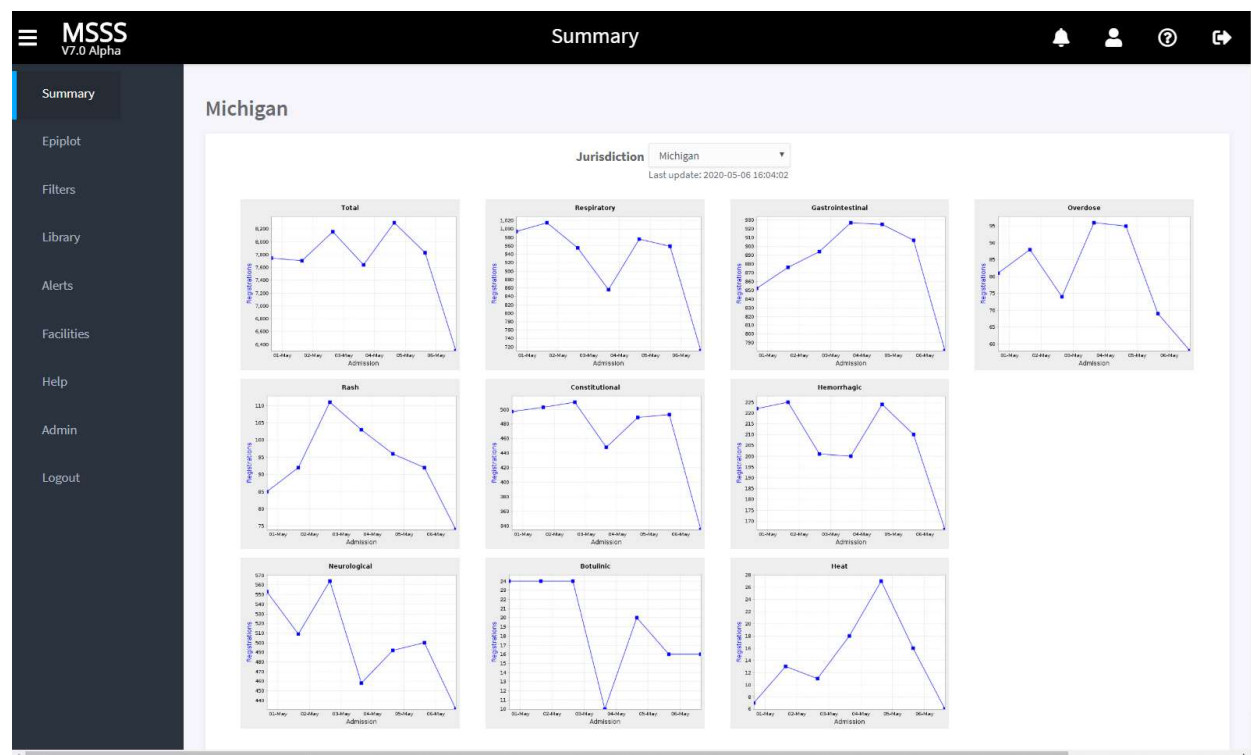
# MSSS v7 Reference Guide for MDHHS—August 4

## Getting Started

You must use **Google Chrome** with the new MSSSv7 at the current time. It does not work with **MS Internet Explorer** (which is being replaced by MS Edge and has limited support from MS). Future versions may be browser agnostic but currently Google Chrome must be used.

Go to MiLogin and enter your userID and password. Click on the **Michigan Syndromic Surveillance System** link.

The MSSSv7 Summary page provides the seven-day summary charts for Michigan and individual counties. Switch your view in the Jurisdiction drop-down at the top of the page. This page should look familiar to MSSS users except that the menu is on the left and there is now a chart for a new Overdose Syndrome.



This reference guide does not describe the Facilities and Admin pages because they are nearly identical to MSSSv6. The Help system will be available in a future release.

## What's New in MSSSv7?

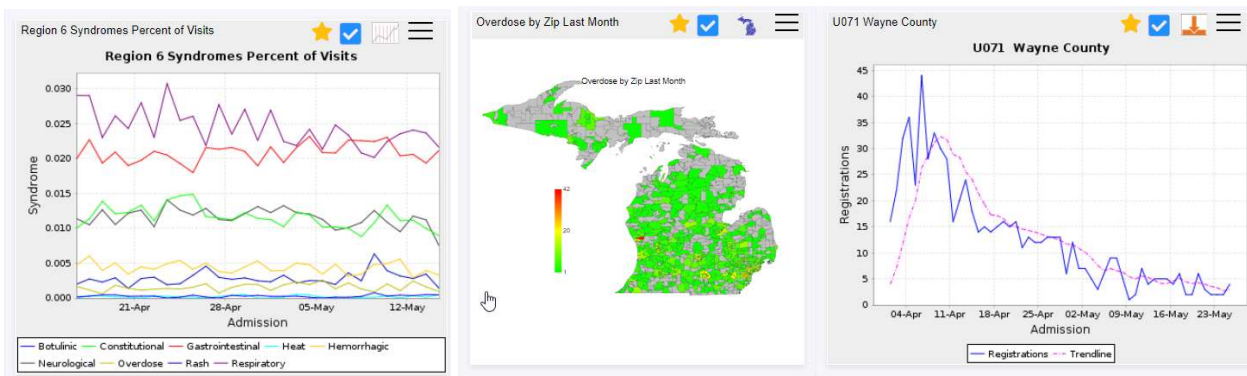
Aside from the Summary, Facility, and Admin pages, which should look familiar to those with access rights, everything else is new and redesigned. Some featured enhancements include:

- Search for visits classifying into a new Overdose Syndrome
- Retain, reuse, and re-access multiple charts/downloads instead of just two at the Epiplot page
- Create complex filters that search chief complaint, diagnosis code, diagnosis text, encounter reason code, and encounter reason text
- Schedule jobs to run and recur so they are available when needed
- Customize chart display axis scales and add measures such as number of facilities sending data and when facilities transitioned from legacy to HIE data
- Compare time period data (e.g., Jan-April) from multiple years in one chart or download
- Break out data by age groups, genders, regions, and syndromes and chart them individually
- Specify which data elements and files are included in downloads
- Share charts, downloads, and maps with coworkers within MSSS and assign privileges
- Map data by region, county, or Zip code
- Normalize data in new ways, for instance by filter results or syndrome(s) as a percentage of visits in jurisdictions or at facilities
- See a full list of resident facilities when jurisdictions are selected
- View alerts with new tools for dealing with batch submitters or delayed data

## What are “Resources”?

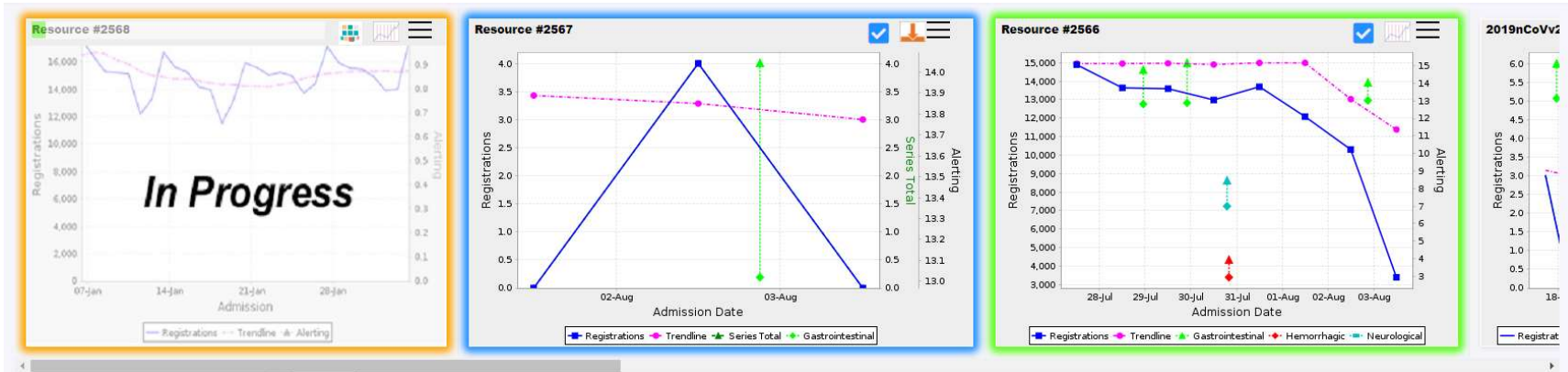
Resources are the individual chart or download queries you create or chronology charts you view in Epiplot. In MSSSv7, you can also create map resources and other resource types may be added in the future. In MSSSv7, resources are “durable” in that you can access them later, save them as favorites, schedule them to refresh with current data on a recurring timeline, and share them with others in MSSS.

Resources include the chart or map, legends, and a title and icons along the top in the “resource tray.” The icons indicate the resource type, its status, and if saved as a favorite, as well as a menu icon (three line) that gives you controls for the resource. Here are a few example resources.

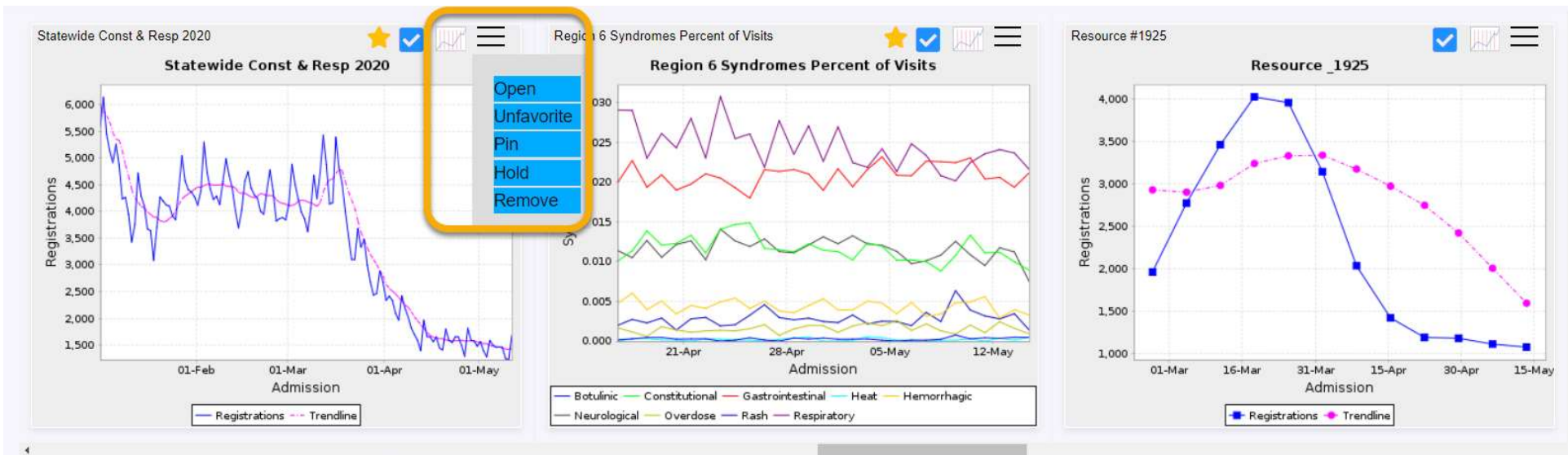


Resources can be outlined in different colors:

- Orange when a resource is processing,
- Blue when processing is complete, and
- Green when you click on a resource to select it.



If you click a menu icon for a resource, you get the options as shown below and any actions taken are specific to that resource only. Click the menu icon again to close it.



<b>Open</b> menu item	Click to open the chart or map in a separate browser window or—for downloads—to begin the download. This is the same as double-clicking a resource. For downloads, it opens the Zip file. For charts and maps, it opens a larger chart and details in a separate browser tab.
<b>Open Image</b> menu item	Only available for Download resources, click this to open the chart image in a separate browser tab.
<b>Favorite/Unfavorite</b> menu item	Click to toggle favoriting on and off for the resource. Favoriting a resource can make it easier to find in the Library since it appears on your Favorites tab there (as well as in your library page).
<b>Pin/Unpin</b> menu item	Click Pin to keep the resource “pinned” in your display panel or Unpin to allow it to be removed on schedule
<b>Hold/Unhold</b> menu item	Click Hold to stop a scheduled resource refresh—for instance if critical data feeds are delayed and you want to wait until they arrive—or Unhold to allow the scheduled refresh to proceed.
<b>Remove</b> menu item	Click Remove to discard the resource from your display panel. The resource is not deleted, just removed from view.

You are no longer restricted to just one left chart, one right chart, and a single download. The Epiplot page **display panel**, sometimes referred to as the “sandbox” or “carousel,” can contain many active resources on your Epiplot page and you can scroll to see previous ones. You can also drag and drop resources to change their position in the display panel, for example, to move two charts created at different times to be side-by-side for easier comparison.

You also have a **Library page** where you can see your older resources, or those created by others and shared with you, for activation in your Epiplot display panel. You can also save resources as favorites and view them on your Library page.

Why access old resources? You can “activate” old resources in your library, which loads them into your Epiplot page, where you can update them with new parameters, refresh them with current data, share them with others, or use them as a template for a new resource. You can also update the presentation settings, such as changing the axis scales, or change them to update on a single-time or recurring schedule.

## Page Basics

Use the Main Menu at the left to navigate through MSSSv7 pages. You can collapse the Main Menu by clicking the menu icon (sometimes called the “three-line” or “hamburger” icon) at the upper left. Doing this gives you more screen space. Click again to unhide the Main Menu.

Menu icon to hide/unhide Main Menu

Header bar

Page name

Access to menu for each resource

Main Menu

Resource Display Panel

Selection for creating charts, downloads, or maps

Tabs to customize your resource

Selected resource

Resource scroll bar

Facility Names obscured in this document

The header bar at the top provides the MSSS page name and some general controls:

- Menu icon Click here to hide or restore the Menu bar at the left side of the page.
- Message icon **To be added in a future release**—Click here to see notifications, reminders, and warnings for MSSS users.
- User icon **To be added in a future release**—Click here to view, change, and save your default values.
- Help icon **To be added in a future release**—Click here to open online Help for the current page and the entire Help system.
- Logout icon Click here to log out of MSSS.



## Epiplot Page—Defining Resources (Charts/Downloads/Maps)

The Epiplot page lets you view, create, and share charts, downloads, and maps, called “resources” as described above. You can also update, refresh, and remove existing resources.

The Definition Panel has up to six tabs—depending on which resource type you are creating—to help you define each resource. Your selections at these tabs pertain to the current resource being defined and do not carry forward to the next one automatically. You can use existing resource definitions as a starting point for new resources, but you create resources one at a time.

- **Selection** tab—has the controls for creating a basic chart or download as in legacy MSSS. You can also define basic map parameters.
- **Presentation** tab—lets you add data series and customize how the results are shown in your finished resource.
- **Advanced** tab—has additional options for selecting data inputs and controls for scheduling the resource creation and recurrence.
- **Sharing** tab—lets you choose to share the resource with specific users, groups, or everyone. A confirmation pop-up appears if you update a shared resource without reviewing the Sharing tab settings—this is to ensure you have know who the new resource will be shared with in case you want to revise the permissions.
- **User Notes** tab—provides a text field for comments about the resource. If a Chronology resource is selected in Epiplot, this tab shows the most recently saved comments from the alert (as seen in the Alerts page).
- **Download** tab—lets you select which data elements and files to include in your download (but is only visible when defining a download resource).

To the left of the Definition Panel is the Control Panel, where you select the resource type you will create, name the resource, and click buttons to perform actions on a resource or reset the page and clear all selections.

The screenshot shows the Epiplot interface. On the left is the Control Panel, which includes a 'Resource Type' dropdown menu set to 'Download'. Below this are buttons for 'Create', 'Reset', 'Update', 'Revise', 'Refresh', and 'Cancel'. There are also fields for 'Name (optional)' and 'Resource ID'. On the right is the Definition Panel, which has six tabs: 'Selection', 'Presentation', 'Advanced', 'Sharing', 'User Notes', and 'Download'. The 'Selection' tab is active, showing various filters and options. The 'Facility' section on the right has a text overlay that reads 'Facility Names obscured'.

**Resource Type** drop-down

Select the type of resource you want to create—a chart, download, or map. Download must be selected for the Download tab to be visible.

<b>Name (optional) field</b>	Enter a name you wish to use for the resource being defined. The system will generate a name if one is not provided. Note that the resource name will be used as the title in charts or maps you create.
<b>Create button</b>	Click Create to generate a resource with the parameters you defined. The button is unavailable if you select a resource and don't make any changes. Once you change the name, the button is available. The button is also available if you change the selected resource's definition, but you will not be able to create a new resource until you edit the name also. To update a resource with changed definition but keep the name unchanged, use Update.
<b>Update button</b>	Click Update to regenerate a resource selected in the display panel with new or changed parameters. The button is unavailable until you select a resource and make a parameter change. It is also unavailable if you select a resource that is still in progress (processing).
<b>Refresh button</b>	Click Refresh to regenerate a resource selected in the display panel with the same parameters but for the present time. The button is unavailable until you select a resource. If you edit a resource definition or name the button is also unavailable since it is meant to run the same resource again. To change the resource or create a new one based on a selected resource, use Update or Create.
<b>Reset button</b>	Click Reset to clear all selection and return the page to its default settings. <b>This also de-selects any resource that is selected in the Resource Display.</b>
<b>Revise button</b>	The Revise button lets you change some resource settings—such as sharing rights, user notes, the processing schedule, and expiration timeline—without reprocessing the entire resource. Select a completed resource and edit the sharing rights, user notes, resource schedule, or durable resource settings to make the Revise button available. Update these fields as needed and then click Revise. The Revise button is unavailable until at least one of these eligible parameters are changed.
<b>Cancel button</b>	Click Cancel to end a resource request. The button is only available if you select a resource that is in progress (processing). The button is unavailable when no resource is selected or if you select a completed resource that can't be cancelled.
<b>Resource ID field</b>	This field displays a system-assigned ID for the selected resource. It is read-only.

## Epiplot Page—Selection Tab

The Selection tab provides the basic options for creating charts and downloads available in the previous version of MSSS.

The first tab section lets you choose the resource time period, select how the data will be aggregated, and choose normalization if desired. Note that **normalization** options are only available after selections are made in other areas of the tab, such as selecting a syndrome, jurisdiction, facility, gender, age or filter.

<b>Period</b> drop-down	Choose the timeframe of the resource being defined. Choose a preset timeframe from the list or select Custom Dates to enter start and end dates.
<i>(Custom Dates)</i> <b>Start</b> field	Click in the field (or on the calendar icon) to choose a calendar date for the beginning of your resource timeframe.
<i>(Custom Dates)</i> <b>End</b> field	Click in the field (or on the calendar icon) to choose a calendar date for the end of your resource timeframe.
<b>Aggregation</b> drop-down	Choose how your dates are aggregated. Daily Aggregation uses full calendar days whereas Rolling 24-Hour Aggregation lets you define any 24-hour period you choose. Weekly Aggregation creates a rolling 7-day aggregation of the preceding seven calendar days. More aggregation options are defined below.
<i>(Rolling 24-Hour Aggregation)</i> <b>Interval</b> drop-down	If you choose Rolling 24-hour, you must choose the ending time of the rolling 24-hour day you are defining. You are limited to the 30 minute intervals shown in the list and the system truncates to the selected interval.
<b>Normalize</b> drop-down	If desired, choose to normalize the data in the resource being generating. <b>Normalization</b> options are only available after you make selections elsewhere on this tab, so you will need to return to this drop-down after defining other parameters. Classic normalization provides the number of visits assigned to a particular syndrome divided by the total number of visits (Statewide or County-level, depending on jurisdictions selected). The option is unavailable when all syndromes are selected. More normalization options are defined below.

Aggregation options:

- **Daily Aggregation** is the same aggregation available in MSSSv6 that aggregates by calendar day. So it creates “buckets” of 24-hour result sets based at midnight, which is equal to Rolling 24-hour aggregation with an interval of 0:00. This is the default selection.
- **Rolling 24-hour (R24) Aggregation** creates buckets of 24-hour result sets based at the interval (hour:minute) specified.
- **Weekly Aggregation** creates buckets of 168-hour (7 day) result sets based at Sunday 00:00 of each week.
- **Monthly Aggregation** creates buckets of result sets based on each calendar month, so 28 –31 days wide depending on the month.
- **Matrix Aggregation** is Rolling 24-hour Aggregation with buckets at every hour in every day.



- The Download points file data will not match the number of records in the case file. This is normal.
- The “Totals” row in the Download points file is disabled because these values would be very misleading.
- **Tracking Aggregation** is the same as Rolling 24-hour Aggregation except that the interval tracks the current time, whereas in R24 the interval is fixed at a 30-minute time of the day (3:30, 4:00, etc.).
  - A resource with Tracking Aggregation will set the interval to be on the half-hour that has just passed. So if it is 16:25, then the interval will be 16:00 (or 960 in minutes).
  - The Tracking Aggregation is important for use in repeating resources that require R24 aggregation that cannot have a fixed interval, the primary example of this being the Summary Page charts.
  - Repeating R24 charts (with fixed interval) are still of value and are unaffected by the presence of this new aggregation type.

#### Normalization Options:

- **None** is used to get the raw visit count results (same as an unchecked "normalize" in MSSSv6).
- **Classic** is the normalization that existed in MSSSv6 PROD and is available when you select one or more—but not all—syndromes.
- **All Visits** lets you compare your selections against all visits and defines the two sets as:
  - Numerator: Exactly as defined by the Selection tab settings.
  - Denominator: Eliminates all of the Selection tab settings except period and aggregation, so the values will include every visit.
- **Custom** lets you define the settings to be included in the creation of the denominator.
  - The numerator will be exactly as defined by the Selection tab values.
  - You are presented with a vertical list of checkbox options; one for each setting in the Selection tab. They are available only when you select a subset of the corresponding parameter. For example, select jurisdictions that are not “Michigan” to enable selection of the Jurisdiction checkbox.
  - The options are: Filter, Gender, Age, Syndrome, Facility Type, Jurisdictions, and Facilities.
  - If an option is checked, then its setting will be included in the creation of the denominator.
  - A checked option whose paired setting is its default has no effect.

You can normalize data in new ways, for instance by filter results or syndrome(s) as a percentage of visits in jurisdictions or at facilities. To use Custom normalization, a data element is only available for selection if you choose one or more—but not all—of that data element. In the example below, the user can do custom normalization by Jurisdiction and Facility because Alcona County and a facility are selected. If the defaults of “Michigan” and “All Facilities” were still selected, normalizing by Jurisdiction and Facility would not be available.

The screenshot shows the MSSSv7 Reference Guide for MDHHS interface. It features a top navigation bar with tabs: Selection, Presentation, Advanced, Sharing, and User Notes. The main content area is divided into several panels:

- Period:** Includes dropdowns for 'Last Week' and 'Daily Aggregation', and a 'Normalize' section with a 'Custom' dropdown.
- Filter:** Includes a 'Select an option' dropdown, a 'Gender' dropdown (with options: All, Male, Female, Other), and an 'Age (Calculated)' dropdown (with option: All Ages).
- Syndrome:** Includes a list of syndromes (All Healthcare Visits, Botulinic, Constitutional, Gastrointestinal, Heat, Hemorrhagic, Neurological) and a 'Facility Types' dropdown (with options: All Facility Types, Emergency Care, Urgent Care).
- Jurisdiction:** Includes a list of jurisdictions (Michigan, Entire City, Detroit City, Entire County, Alcona County, Alger County, Allegan County, Alpena County, Antrim County, Arenac County, Baraga County, Barry County). 'Alcona County' is circled in green.
- Facility:** Includes a list of facilities (All Facilities). 'All Facilities' is circled in green.

In the 'Normalize' section, the 'Jurisdictions' checkbox is circled in green.

Additional normalization examples to address specific questions:

#### COVID-19 visits made up what percentage of Wayne County visits in June?

- Time Period: June 2020
- Filter: COVID-19
- Jurisdiction: Wayne County
- **Normalization: Custom with Jurisdiction selected only**
- Explanation: Only Jurisdiction would be selected so that the numerator is COVID-19 filter results in Wayne and the denominator is every visit in Wayne. if you also selected the Filter checkbox it would create a flat line at one because the numerator and denominator are identical.

#### COVID-19 visits in Wayne County made up what percentage of Statewide COVID-19 visits in June 2020?

- Time Period: June 2020
- Filter: COVID-19
- Jurisdiction: Wayne County
- **Normalization: Custom with Filter selected only**

- Explanation: Only Filter would be selected so that the numerator is COVID-19 filter results in Wayne and the denominator is Statewide COVID-19 visits. If you also selected the Jurisdiction checkbox it would create a flat line at one because the numerator and denominator are identical.

#### **COVID-19 visits made up what percentage of Statewide visits in June 2020?**

- Time Period: June 2020
- Filter: COVID-19
- Jurisdiction: Michigan
- **Normalization: All Visits**
- Explanation: Using All Visits will divide the filter results by all healthcare visits statewide.

#### **Youth COVID-19 visits made up what percentage of Statewide COVID-19 visits in June 2020?**

- Time Period: June 2020
- Filter: COVID-19
- Age (Calculated): Youth (0-17)
- Jurisdiction: Michigan
- **Normalization: Custom with Filter selected only**
- Explanation: Only Filter would be selected so that the numerator is youth COVID-19 filter results and the denominator is every COVID-19 result statewide. If you also selected the Age checkbox it would create a flat line at one because the numerator and denominator are identical.

The next section of the Selection tab lets you add an existing filter and select genders and calculated ages. Filters in MSSSv7 are created by users in advance on the Filter Page available from the side menu. Filters you create there (“personal”) and filters created and shared with you by others (“shared”) are available in the drop-down list. Note that “Age (Calculated)” means that this is the patient’s age calculated from the provided date of birth, not the age reported (“reported age”) in the Observation segments of syndromic messages.

The screenshot shows the 'Selection' tab of the MSSSv7 interface. On the left, there's a 'Resource Type' sidebar with buttons like 'Create', 'Update', 'Refresh', 'Reset', 'Revise', and 'Cancel', along with fields for 'Name (optional)' and 'Resource ID'. The main area has tabs for 'Selection', 'Presentation', 'Advanced', 'Sharing', 'User Notes', and 'Download'. The 'Filter' dropdown is highlighted with an orange box. Below it, there are sections for 'Gender' (All, Male, Female, Other) and 'Age (Calculated)' (All Ages). To the right, there are lists for 'Syndrome' (All Healthcare Visits, Botulinic, Constitutional, Gastrointestinal, Heat, Hemorrhagic, Neurological), 'Facility Types' (All Facility Types, Emergency Care, Urgent Care), 'Jurisdiction' (Michigan, Entire City, Detroit City, Entire County, Alcona County, Alger County, Allegan County, Alpena County, Antrim County, Arenac County, Baraga County, Barry County), and 'Facility' (All Facilities). The 'Facility' list has the text 'Facility Names obscured' in orange.

<b>Filter</b> drop-down	You can assign up to one filter to each resource definition. New filters are created at the Filter page and once created appear in the drop-down list below. Choose a filter from your Personal or Shared filter list. Shared means that another user has given you access rights to a filter they created.
<b>Gender</b> list box	You can choose to include All or select one or more in the list. All includes all gender options and is selected by default.
<b>Age (Calculated)</b> drop-down	Choose the patient ages to include in the resource parameters. Ages here are calculated from the patient's date of birth rather than the age that was reported. You can choose to include All Ages or select one of the groupings in the list. Select Custom to specify a minimum and maximum age. Note that any ages or age groups you exclude here will be excluded from data that can be plotted as Age Series at the Presentation tab.

The remainder of the Selection tab should look familiar to MSSS users. The Syndrome list now includes Overdose and if you select one or more jurisdictions, the Facility list will show all facilities that belong to the selected jurisdiction(s) at the top under the header “Jurisdictions.” This may be helpful in finding renamed facilities.

<b>Syndrome</b> list box	Choose which Syndromes will be included in your resource parameters. Select All healthcare Visits to include all Syndromes or select one or more individually. You cannot select all Syndromes if you plan to use Classic normalization. Note that Syndromes you exclude here will be excluded from data that can be plotted as Syndrome Series at the Presentation tab. For example, if you select on Rash syndrome here and try to add Syndrome series for all syndromes, there will only be data for Rash—the other syndromes will have no data to chart.
<b>Facility Types</b> list box	Choose which facilities will be included. You can include only Emergency Department data, only Urgent Care facility data, or data from all sender types.
<b>Jurisdiction</b> list box	Choose which Jurisdictions will be included in your resource parameters. Select Michigan (at the top) to include the entire State.
<b>Facility</b> list box	You can choose to include all participating Michigan facilities or select one or more in the list. “All Facilities” is selected at the top of the list by default. If you selected counties, regions, or other non-statewide jurisdictions, the facilities within the selected jurisdiction(s) are displayed in the facility list under “Jurisdictions.” After the jurisdiction list, facilities are listed alphabetically by organization or health system name.

## Epiplot Page—Presentation Tab

Use this tab to customize how the data results are presented in your completed resource. You can add series to your chart and download resources, define mapping displays, and customize your axis and scaling for charts. Nothing on this tab is required—you can skip it if no specific presentation selections are needed. By default, charts will show the trendline (formerly known as the moving average), whether any facilities sending new format messages (i.e., transitioned from legacy messages to the more robust format), and alerts for the jurisdiction, but the defaults may change in updates.



Resource Type

Download

Create

Reset

Update

Revise

Refresh

Cancel

Name (optional)

Optional Name

Resource ID

Resource ID

Selection

Presentation

Advanced

Sharing

User Notes

Download

Series Type

Syndrome

Additional Series

☐ Series Total
 ☐ State Levels
 ☐ Facility
 ☒ Trendline
 ☒ Transition
 ☒ Alerting
 ☐ Alert Counts

Chart Adjustments

☐ All series on one axis
 ☒ Adaptive Example Charting

Chart Scaling

☒ Minimize Range
 

Min

Max

Syndrome

Botulinic  
 Constitutional  
 Gastrointestinal  
 Heat  
 Hemorrhagic  
 Neurological  
 Overdose  
 Rash  
 Respiratory  
 Default  
 Other

Example Layout

<b>Series Type</b> drop-down	Options here depend on your resource type. For charts and downloads, select to add a Time, Syndrome, Region, Age, or Gender series. The Time series is unavailable when the resource timeframe is more than one year. For maps, select whether to create a Snapshot (total results shown in one chart) or Animation (results changing over time). You will need to define parameters depending on which you select.
(Time) <b>Numbers of Years in the collection</b> field	Enter the number of years to include as series lines on the presentation. For example, to include 2019 and 2018 you would enter "2".
(Time) <b>Most Recent Year in the Collection</b> field	Enter the most recent year to include. If you enter "2018" and had entered "3" as number of years to add, the system will add series lines for 2018, 2017, and 2016 to the time period of the resource definition. Note that year-to-year comparisons are subject to changing variables like new facility senders and new data types (urgent care), values (ICD-9 vs ICD-10), and formats (legacy VPN vs "HIE" data).
(Syndrome) <b>Syndrome</b> list box	Choose which Syndromes you want to add as individual lines on the presentation. The list is limited to Syndromes you chose for this resource at the Selection tab. If you selected the default "All Healthcare Visits" then all syndromes will be in the data pull and available as series on the chart.

(Region) <b>Region</b> list box	Choose which regions you want to add as individual lines on the presentation. The list is limited to regions you have defined for this resource. if you selected the default “Michigan” then all regions will be in the data pull and available as series on the chart.
(Age) <b>Age</b> list box	Choose the age ranges from the list to add them as individual lines on the presentation. The list is limited to age ranges you have defined for this resource. if you selected the default “All Ages” then all age groups will be in the data pull and available as series on the chart.
(Gender) <b>Gender</b> list box	Choose genders from the list to add them as individual lines on the presentation. The list is limited to genders you defined for this resource. if you selected the default “All” then all age gender values will be in the data pull and available as series on the chart.
(Map Resource) <b>Map Type</b>	Select to create a map based on zip codes, counties, or regions.
(Snapshot/Animation) <b>Low Level</b>	Set a color for lowest level. This interface will change, but you can leave the default or enter “.5” to use green. See below for more details on the colors available.
(Snapshot/Animation) <b>Medium Level</b>	Set a color for medium level. This interface will change, but you can leave the default or enter “-1” to use yellow.
(Snapshot/Animation) <b>High Level</b>	Set a color for highest level. This interface will change, but you can leave the default or enter “-1” to use red.
(Animation) <b>Cumulative Mapping</b>	Select to have the animation build to an aggregate total of results over time. Deselect to simply animate the daily results (or whatever your selected aggregation is).
(Animation) <b>Seconds between frames</b>	Select how fast the animation moves. Adding seconds between frames slows the changes and lengthens the animation.
<b>Example Layout</b> image	Adding multiple series can result in a complicated chart. The example layout shows an approximation of the final result before you create the resource with real data.

There are currently five colors for mapping:

- Gray is **No Data**
- Green is **one**
- Yellow is the **Low Level**
- Red is the **Medium Level**
- Black is the **High Level**

A gradation is created between each of these colors (except gray). A percentage ( $> 0$  and  $< 1$ ) is used to calculate the breakpoint from the cardinality of the frame or map. Minus one (-1) matches the highest cardinality. All other positive numbers indicate a fixed breakpoint.

If Animation is the selected Series Type:

- The aggregation control is active and will aggregate the data per its definition and also dictate how the frames of the animation are formed:
  - Daily and R24 will cause one frame per aggregated day of data.
  - Weekly will cause one frame per aggregated week of data.
  - Monthly will cause one frame per aggregated month of data.

- You will have a Map Type control that allows the creation of Zip code, county, or region maps.
- You will see the same low, medium, and high Level controls, and they operate identically to a Snapshot.
- The Cumulative Mapping checkbox is available and selected by default.
  - When selected, the created map will be "additive" such that an entity (zip, county, region) will only move toward higher colors because each aggregated unit is adding to its current total.
  - When not selected, the created map will have frames that show the cardinalities for each entity in each aggregated unit (so color demotion is possible).
- Seconds between frames sets the number of seconds that each frame (one per aggregated unit) is paused before moving to the next frame. This is a fractional number, so 2.5 means two-and-a-half seconds.

The next section of this tab lets you add additional series like the number of facilities submitting data, State levels, series totals, and alerts. You can also modify the chart scaling to fit your needs.

**Resource Type**

Download

Create Reset

Update Revise

Refresh Cancel

**Name** (optional)

Optional Name

**Resource ID**

Resource ID

Selection Presentation **Advanced** Sharing User Notes Download

**Series Type**

Syndrome

**Additional Series**

☐ Series Total

☐ State Levels

☐ Facility

☒ Trendline

☒ Transition

☒ Alerting

☐ Alert Counts

**Chart Adjustments**

☐ All series on one axis

☒ Adaptive Example Charting

**Chart Scaling**

☒ Minimize Range

Min

Max

**Syndrome**

Botulinic

Constitutional

Gastrointestinal

Heat

Hemorrhagic

Neurological

Overdose

Rash

Respiratory

Default

Other

**Example Layout**

#### Additional Series selection

You can choose to add other series to your presentation, including totals, state levels, trendlines (i.e., moving averages), and the number of facilities contributing. Some are disabled based on selections elsewhere.

<b>Series Total</b> checkbox	Select Total to add totals to your presentation. This will be the total of all series type elements selected and is unavailable when the Time series or None are selected.
<b>State Levels</b> checkbox	Select State Levels to add a series for Michigan in addition to the selected jurisdiction. Values will be normalized if the resource is defined with that parameter. The option is unavailable when Michigan is the selected jurisdiction.
<b>Facility</b> checkbox	Select Facility to add a series showing the number of unique facilities that submitted data during each time period interval. The values are added as background bars on the finished chart, with emergency facilities and urgent care facilities differentiated by color. A data drop may be due to facility feed outages or surges by new facility submitters—this feature can help explain those changes.
<b>Trendline</b> checkbox	Select Trendline to add a series for the moving average. The trendline is generated from the average of the values from each series and is added as a dashed magenta line—the same color as in MSSSv6.
<b>Transition</b> checkbox	Select Transition to display if any selected facilities transitioned from legacy feeds to the new format feeds during the timeline. The transitions are shown as a vertical line touching the top and bottom borders of charts. The transitions may explain sudden changes in feed volume, timeliness, or data. The facility names are shown in the legend of the large chart (in downloads and by opening a chart or download in a new tab).
<b>Chart Adjustments</b>	You can choose how series are added to your chart and displayed.
<b>All series on one axis</b>	Select to put all additional series (except facility series) onto the same Y axis scale. Leave unselected to let MSSS create additional axis scales for each series.
<b>Hyper View</b>	Selecting this option creates a single chart with both normalization and visit counts plotted together, thus juxtaposing the numerator and denominator with the normalization they create. It is unavailable unless normalization is selected for the resource.
<b>Adaptive charting</b>	This selection <b>affects the example layout only</b> and optimizes the preview to help you visualize the chart before the resource is created.
<b>Chart Scaling</b> selection	Set the desired minimum and maximum chart scaling for the left axis. The defaults are set to auto, meaning that the system determines the optimal scaling.
<b>Min.</b> field	Leave as auto (zero) to allow the system to determine the optimal chart scaling. Change to select the lowest value on the left axis, but the minimum must be numeric and less than the maximum value.
<b>Max</b> field	Leave as auto to allow the system to determine the optimal chart scaling. Change to select the highest value on the left axis, but the maximum must be numeric and more than the minimum value.

## Epiplot Page—Advanced Tab

The Advance tab provides additional settings that may not be needed for most resource development, but offer different views of data and ways to possibly improve your work flow. By default, resource data is all emergent data (which excludes poison control data) with periods set by visit admission date/time and jurisdiction set by the patient’s assigned ZIP code (i.e., patient’s reported home ZIP if valid Michigan ZIP or the facility’s ZIP if invalid or non-Michigan). This tab has controls to let you choose other ways to look at data. In addition, this tab lets you define the current resource as a durable resource to “live” beyond the default timeline (30 days currently) and create a refresh schedule to automatically update the resource with current data on a timeline you define.

Resource Type

Download

Create

Reset

Update

Revise

Refresh

Cancel

Name (optional)

Optional Name

Resource ID

Resource ID

Selection

Presentation

Advanced

Sharing

User Notes

Download

Date Type

☒ Admission
☐ Reception

Data Source

☒ All Emergent
☐ ED
☐ UC
☐ Poison

Durable Resource

☒ Default
☐ One Month
☐ One Quarter
☐ Half Year
☐ One Year
☐ Disabled

☒ Clairvoyance

Zipcode Type

☒ Assigned
☐ Reported
☐ Facility

Resource Schedule

Initial Creation

Date

Time

Refresh Schedule

Days

Hours

Minutes

Repeat Count

Repeat Until

Resource Properties

Created By:

Date Created:

Last Refreshed:

TTL:

Resource Type:

User Access:

Required Space:

Processing Time:

Resource Status:

<b>Data Type</b> selection	By default, the time periods for data are determined by date/time of patient admissions, but you can also create resources based on data reception date/time. This may be useful to look at why alerts were generated.
<b>Data Source</b> selection	Select the data that will populate your resource. All Emergent, which includes all emergency department and urgent care visits but excludes poison control data, is selected by default. Select Poison to include Poison Control data that has been submitted to MSSS historically.
<b>All Emergent</b> radio button	All Emergent includes all emergency department and urgent care visits and is the default selection. It excludes poison control data.
<b>Poison</b> radio button	Poison includes only poison control data and excludes ED and UC visits.
<b>Durable Resource</b> selection	Choose how long before this resource expires in MSSS and is removed. The default is 30 days but may differ by user group. Refreshing or updating a resource resets its expiration date.
<b>Default</b> radio button	Set the resource to expire in 30 days, which is the current default for all user groups. This value may change depending on user feedback.
<b>One Month</b> radio button	Set the resource to expire and be removed after one month (i.e., 30 days).
<b>One Quarter</b> radio button	Set the resource to expire and be removed after three months (i.e., 90 days).
<b>Half Year</b> radio button	Set the resource to expire and be removed after six months (i.e., 180 days).
<b>One Year</b> radio button	Set the resource to expire and be removed after twelve months (i.e., 360 days).
<b>Disabled</b> radio button	Set the resource to never expire and remain in MSSS unless deleted manually.



Resource scheduling can be helpful if you have weekly, monthly, quarterly, or other charts that you need on a predetermined schedule. You can simply create the resource once and set it to refresh automatically on a schedule. For this to work properly, your selected time period should be one of the defaults like last week, last month, or last year. If you set a specific time period using custom, the results will not change unless new data has arrived for that historical time period.

Once the scheduled resource is created, you can click Hold to pause its creation or refresh, if needed. The Hold control is on the menu icon at the upper right of each resource.

Please note that disk space is constrained on State of Michigan systems for MSSS, so please be a good steward of disk space.

- We recommend only changing durability settings (to extend the “life” of a resource) in cases where it is necessary. In MSSSv6, charts existed until you reused the left, right, or download buttons again, so this new functionality is powerful but creates a new situation where disk space usage can grow quickly.
- Also note that pinning and favoriting resources disables resource retirement, so please unpin and unfavorite resources when you are done using them. Doing so will allow the system to reclaim their space.

<b>Resource Schedule</b>	If desired, choose to specify when the resource is generated, rather than the moment you click the Create button, and to set a refresh schedule for updates with current data.
<b>Initial Creation date selector</b>	Choose when MSSS will first generate the resource being defined. Click in the field (or on the calendar icon) to choose a calendar date for creating your resource.

<b>Initial Creation time selector</b>	Enter the time you want MSSS to create the resource on the scheduled date. Enter time in a 24-hour clock format (i.e., as <b>22:30</b> for 10:30PM).
<b>Refresh Schedule</b>	Choose whether the current resource will be updated with current data on a fixed schedule. You set the timetable and when the refresh schedule ends.
<b>(Refresh Schedule) Days</b>	Set the number of days between the resource refresh. You can also use the hour and minute fields to add schedule precision.
<b>(Refresh Schedule) Hours</b>	Set the number of hours between the resource refresh. You can also use the day and minute fields to increase the time interval.
<b>(Refresh Schedule) Minutes</b>	Set the number of minutes between the resource refresh. You can also use the day and hour fields to increase the time interval. Please be careful when specifying only minutes; “30 minutes” should be considered an extremely aggressive schedule and only used for a short period of time, as long-term, frequent resource creation like this may affect system performance for you and other users.
<b>Repeat Count</b>	Set the number of times the resource will be refreshed automatically. Leave it blank to let the Repeat Until calendar determine the number.
Repeat Count field	Enter a whole number or leave it blank to let the Repeat Until calendar determine the number. Your entry may change here if constrained by your calendar end date selection.
<b>Repeat Until</b>	Set an end date for the refresh schedule.
Repeat Until field	Click in the field (or on the calendar icon) to choose an end date for refreshing your resource.

The Resource Properties section is view-only and shows information about the selected resource. It is blank when you are creating a new resource.

Resource Type

Download

Create

Reset

Update

Revise

Refresh

Cancel

Name (optional)

Optional Name

Resource ID

Resource ID

Selection

Presentation

Advanced

Sharing

User Notes

Download

Date Type

☒ Admission
☐ Reception

Data Source

☒ All Emergent
☐ ED
☐ UC
☐ Poison

Durable Resource

☒ Default
☐ One Month
☐ One Quarter
☐ Half Year
☐ One Year
☐ Disabled

☒ Clairvoyance

Zipcode Type

☒ Assigned
☐ Reported
☐ Facility

Resource Schedule

Initial Creation

Refresh Schedule

Days

Hours

Minutes

Repeat Count

Repeat Until

Resource Properties

Created By:

Date Created:

Last Refreshed:

TTL:

Resource Type:

User Access:

Required Space:

Processing Time:

Resource Status:

<b>Resource Properties</b> summary	This section provides view-only details on the current resource.
<b>Created By:</b> value	The user who created the current resource.
<b>Date Created:</b> value	The timestamp when the current resource was initially created.
<b>Last Refreshed:</b> value	The timestamp when the current resource was last refreshed.
<b>TTL:</b> value	The time-to-live (TTL) or "expiration" timestamp of the current resource. "Disabled" means that it is not set to expire.
<b>Resource Type:</b> value	The resource type (i.e., chart, download, chronology).
<b>User Access:</b> value	The access rights the current user has with this resource. This can be any combination of view, refresh, update, and delete.
<b>Required Space:</b> value	The storage space required to persist the current resource on the server.
<b>Processing Time</b>	The amount of time used to processed the resource.
<b>Resource Status</b>	Current status of the resource, such as Processing, Pending, Cancelled, and Ready.

## Epiplot Page—Sharing Tab

You can share resources with others so they can see and use them in MSSS. Rights within your shared resources can be from limited control (view only) to more powerful control including the ability to remove them. **Note that these rights—Refresh, Update, and Remove—allow other users to change your version of the shared resource, so you may want to limit how much control you share.** In general, the higher the access you are allowing, the narrower the group who should be receiving it. Rights can be specified for each resource and for any user or user group. You can create multiple rows of rights with each row tailored to a specific user or group.

The screenshot displays the 'Resource Sharing' tab in the MSSSv7 interface. On the left sidebar, the 'Resource Type' is set to 'Download'. Below this are buttons for 'Create', 'Update', 'Refresh', 'Reset', 'Revise', and 'Cancel'. There are also input fields for 'Name (optional)' and 'Resource ID'. The main content area shows a tabbed interface with 'Sharing' selected. A 'Resource Sharing' modal is open, featuring a table with three columns: 'Share with', 'Rights', and 'Users'. The table contains two rows, each starting with a green plus icon for adding new entries. The first row shows 'Group' under 'Share with', 'View' under 'Rights', and 'MDHHS' under 'Users', with a red X icon for removal. The second row shows empty dropdowns for the first two columns and a red X icon for removal.

Green + (Add Row) button	Click the + button to add a new row of sharing rights. You can add as many rows as you need to set up privileges for each resource being defined.
Share with drop-down	Choose to share with a Group, a User, or Everyone. This selection changes values available in the subsequent drop-downs. Select Group to share this resource with a specific user group. Select Users to select specific individual users. Select Everyone to share with all, but <b>note that this includes facility and LHD users</b> . Note that sharing with MDHHS will not include all MDHHS users because some are Administrators. Therefore you would require two lines one for each group to get all MDHHS users.
Rights drop-down	Select the privileges you want to share with the user(s) being defined by this row. The top option (View) gives view-only rights and is the minimal possible. The rights increase as you move down the list with Remove being the most powerful privileges you can share. <b>Note that these rights—Refresh, Update, and Remove—allow other users to change your version of the shared resource, so you may want to limit how much control you share.</b>
(Users) Users list box	Select users IDs from the alphabetized list. You can give rights to multiple users but each must be added individually on their own row. Once added, remove them by clicking the x.

When you create a resource from one that was shared with you, if you have not already clicked the Sharing tab to review it, MSSS will ask you to confirm the sharing parameters. This is a precaution to make sure you know who the new resource is shared with in case you need to edit the rights shared.

## Epiplot Page—User Notes Tab

The User Notes tab provides an area for you to add comments or notes about a resource. If you are adding comments to a new resource being created, there is no saving required at this tab, simply enter the desired text and when you click Create your notes will be saved in the resource. If you are viewing a chronology chart with saved comments in Epiplot, this tab will contain the comments that were saved with the alert. Likewise, if you update the comments in the Alerts page, the Chronology resource "user notes" will be updated to match. In a future release there may be a date/timestamp associated with saved comments.

The screenshot displays the MSSS User Notes tab. On the left sidebar, under 'Resource Type', there is a 'Download' dropdown menu. Below it are buttons for 'Create', 'Update', 'Refresh', 'Reset', 'Revise', and 'Cancel'. Further down are input fields for 'Name (optional)' and 'Resource ID'. The main content area features a tabbed interface with 'User Notes' selected. The 'User Notes' tab contains a large, empty text area for entering notes.

## Epiplot Page—Download Tab

This tab appears when Download is selected as Resource Type at the Selection tab or when an existing download resource is selected. It is only relevant to downloads so it only appears when they are being viewed, changed, or created. You can choose which files and data elements are included in the download. A basic set of data elements are selected by default and others can be selected as needed. Note that some extended data elements can increase processing time significantly if added. By default, the Cases file will have “Tidy Complaints” selected, which means that MSSS will remove any special characters (such as tildes), extra spaces, and replace double quotation marks with single quotes. Deselecting this will download chief complaint values as they are stored in the MSSS database.

**Resource Type**  
Download

**Name (optional)**  
Resource #2566

Create Reset  
Update Revise  
Refresh Cancel

**Resource ID**  
2566

**Selection** **Presentation** **Advanced** **Sharing** **User Notes** **Download**

**Files**

- ☒ Alerts
- ☒ Cases
  - ☒ Tidy Complaints
  - ☒ All in One
- ☒ Points
- ☒ Chart
- ☒ Debug
- ☒ Transitions

**Basic Data Elements**

- ☒ Admitted
- ☒ Facility
- ☒ Source
- ☒ Date of Birth
- ☒ Assigned Zip
- ☒ Reported Zip
- ☒ Valid
- ☒ Assigned County
- ☒ Region
- ☒ Gender
- ☒ Calculated Age
- ☒ Reported Age
- ☒ Age Units
- ☒ Initial Syndrome
- ☒ Current Syndrome
- ☒ Provider
- ☒ Provider ID
- ☒ Organization
- ☒ Org ID
- ☒ Current Complaint
- ☒ Initial Complaint

**Extended Data Elements**

- ☐ Date of Death
- ☐ Discharged
- ☐ Reported County
- ☐ Disposition
- ☐ Class
- ☐ Encounter Reason
- ☐ Date of Onset
- ☐ Ethnicity
- ☐ Race
- ☐ Diagnosis
- ☐ Initial Temperature
- ☐ Temperature Units
- ☐ Initial Pulse Oximetry
- ☐ Oximetry Units
- ☐ Height
- ☐ Height Units
- ☐ Weight
- ☐ Weight Units
- ☐ Blood Pressure Diastolic
- ☐ Blood Pressure Systolic
- ☐ Initial Acuity Code
- ☐ Initial Acuity Name
- ☐ Smoking Status Code
- ☐ Smoking Status Name
- ☐ Visit Type Code
- ☐ Visit Type Name
- ☐ Clinical Impression
- ☐ Triage Notes



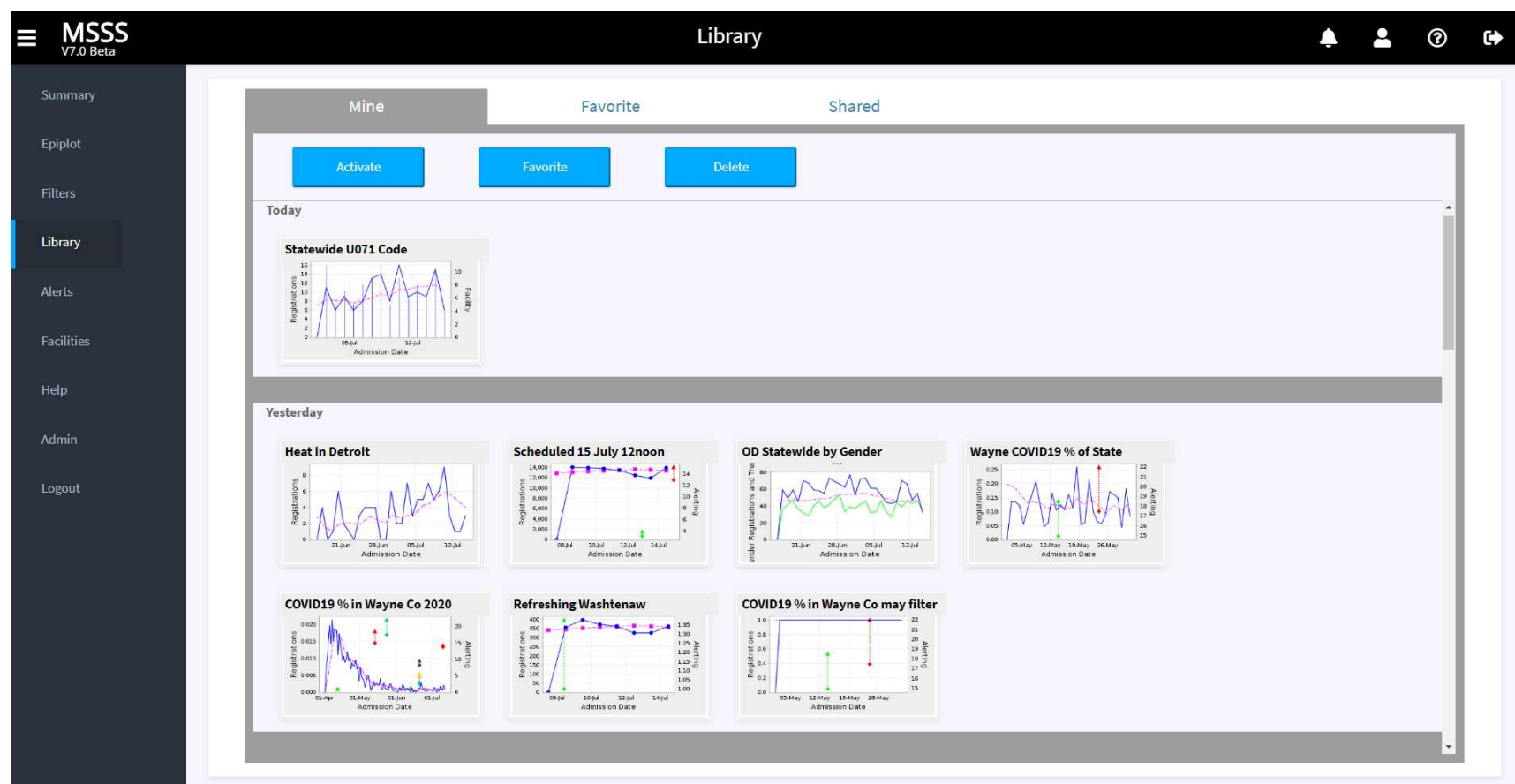
<b>Files selection</b>	Choose the files to be included in the current download. All are selected initially by default.
<b>Alerts checkbox</b>	Select to download a file listing the alerts that occurred during the requested timeframe.
<b>Cases checkbox</b>	Select to download a file with patient encounter data for the selected parameters.
<b>(Cases) Tidy Complaints checkbox</b>	Selected by default, this option “cleans” chief complaint values to remove special characters (such as tildes that exist when two values are concatenated), extra spaces, and replaces double quotation marks with single quotes. Deselecting this will download chief complaint values as they are stored in the MSSS database.
<b>(Cases) All in One checkbox</b>	The All in One checkbox appears when the resources includes additional series (e.g., individual syndromes defined at the Presentation tab) and lets you choose to have the data co-mingled in one cases file (selected) or have the data in separated in individual files (de-selected). If you choose separate files, the files bear the names of the individual series (e.g., Gastrointestinal, Rash, Constitutional for additional syndrome series).
<b>Points checkbox</b>	Select to download a file of the daily patient visit counts used to create the chart. MSSSv7 expands this file to include columns for any series type definitions, trendline, totals, etc.
<b>Chart checkbox</b>	Select to download a chart created from the patient encounter data. This is called the “large chart” and gives additional detail not seen on “small” charts displayed in the resource display panel.
<b>Debug checkbox</b>	Select to download a file with error logs for developer investigation. This is primarily for use during testing and debugging.
<b>Transitions checkbox</b>	Select to download a file that shows if and when any facilities in the dataset transitioned from legacy feed to new format (i.e., HIE) feed during the selected timeframe. This can help explain data surges or format changes that can happen during transitions.
<b>Basic Data Elements selection</b>	Choose the basic data elements to be included in the Cases file. All are selected by default.
<b>Admitted</b>	Admit date/time for the encounter.
<b>Facility</b>	Abbreviated name of the treatment facility.
<b>Date of Birth</b>	The patient's date of birth.
<b>Assigned Zip</b>	The Zip code of record—either the patient's home Zip (if a valid Michigan Zip) or the treatment facility's Zip if not.
<b>Reported Zip</b>	The patient's home Zip as sent.
<b>Valid</b>	Indicates if the reported Zip code is a valid Michigan Zip code: Yes (Y) or No (N).
<b>Assigned County</b>	The FIPS county code associated with the Assigned Zip, so either the county code of the patient’s home address (if a valid Michigan Zip) or the county code of the treatment facility (in the absence of a valid Michigan Zip for the patient).
<b>Gender</b>	The patient's gender: Male (M), Female (F), Other (O), or Unknown (U).
<b>Calculated Age</b>	The patient's age calculated from date of birth.
<b>Reported Age</b>	The patient's age as sent.
<b>Age Units</b>	The age units, typically in years, months, or unknown.
<b>Initial Syndrome</b>	The syndrome of the encounter based on the patient's initial chief complaint text. This will be “Default” if the first message had a blank/NULL Chief Complaint.
<b>Current Syndrome</b>	The syndrome of the encounter based on the patient's current chief complaint text or diagnosis codes (in the case of overdose-related diagnoses only).
<b>Provider</b>	The treatment facility name for the encounter.
<b>Provider ID</b>	The treatment facility ID for the encounter.
<b>Organization</b>	The organization that the treatment facility belongs to.

<b>Org ID</b>	The organization ID for the encounter.
<b>Current Complaint</b>	The patient's current reported chief complaint for the encounter. This includes updates or changes from the initial chief complaint.
<b>Initial Complaint</b>	The patient's first reported non-NULL chief complaint for the encounter.
<b>Extended Data Elements selection</b>	Choose the extended data elements to be included in the Cases file. None are selected by default and <i>these elements may increase the processing time significantly if added.</i>
<b>Date of Death</b>	The patient's date/time of death.
<b>Discharged</b>	The patient's date/time of discharge.
<b>Reported County</b>	The patient's home FIPS county code as sent.
<b>Disposition</b>	The patient's discharge disposition.
<b>Class</b>	The patient class sent for this encounter: Emergency (E) or Outpatient (O).
<b>Encounter Reason</b>	The clinical reason for treating the patient.
<b>Ethnicity</b>	The patient's ethnicity.
<b>Race</b>	The patient's race.
<b>Diagnosis</b>	The patient's diagnosis. Note that Diagnosis can override Chief Complaint for visits classifying into the Overdose Syndrome, so this element may be important to include in Overdose Syndrome downloads.
<b>Date of Onset</b>	The date of onset reported for this encounter.
<b>Initial Temperature</b>	The patient's initial temperature reported for this encounter.
<b>Temperature Units</b>	The temperature units reported for this encounter.
<b>Initial Pulse Oximetry</b>	The patient's initial pulse oximetry reported for this encounter.
<b>Oximetry Units</b>	The oximetry units reported for this encounter.
<b>Height</b>	The patient's height.
<b>Weight</b>	The patient's weight.
<b>Blood Pressure Diastolic</b>	The patient's blood pressure diastolic reported for this encounter.
<b>Blood Pressure Systolic</b>	The patient's blood pressure systolic reported for this encounter.
<b>Initial Acuity Code</b>	The initial acuity code reported for this encounter.
<b>Initial Acuity Name</b>	The initial acuity name reported for this encounter.
<b>Smoking Status Code</b>	The patient's smoking status code reported for this encounter.
<b>Smoking Status Name</b>	The patient's smoking status name reported for this encounter.
<b>Visit Type Code</b>	The visit type code reported for this encounter.
<b>Visit Type Name</b>	The visit type name reported for this encounter.
<b>Clinical Impression</b>	The clinical impression reported for this encounter.
<b>Triage Notes</b>	The triage notes reported for this encounter.

## Library Page—Activating Resources

As your Epiplot Display Panel fills up, you may want to remove (selecting “Remove” from the resource menu icon) resources that are not needed. MSSS will also automatically remove old resources from your display panel unless you pin them (selecting “Pin” from the resource menu icon), move them via drag and drop, or click on them to review, update, or refresh. The Library page is where you can find these resources and put them back in your display panel (i.e., “activate” them) if needed. There are three tabs on the Library page:

- **Mine**—resources you created and own.
- **Favorite**—resources you have marked as favorites, indicated by a yellow star at the top (“resource tray”) of each resource. Unlike non-favorites, favorited resources have no expiration date and thus do not get purged automatically from MSSS (to reclaim disk space).
- **Shared**—resources that were created by others and shared with you. Note that chronology charts are shared resources created by MSSS so they can be accessed from your Shared library tab after you open them in Epiplot.



The Mine, Favorite, and Shared tabs all look similar, with resources organized by date with most recent at the top. Scroll down to see older resources.

<b>Activate</b> button	Select one or more resources and click Activate to add the resource(s) back into your resource display panel on the Epiplot page. Press and hold CTRL to select more than one.
<b>Favorite</b> button	Select a resource and click Favorite to add it to your favorites list. This adds the resource to your Favorites tab in the library (to make it easier to find) and also turns off its automatic expiration date so it will not be removed by MSSS on the regular schedule.
<b>Delete</b> button	Select a resource and click Delete to remove it from your Library. If you delete a shared resource it will delete that resource for others as well.

## Filters Page—Defining Filters

Use the Filters page to define and manage the filters in MSSSv7. Enter a filter name and choose whether the filter will be “shared” and available to other users.

Filter criteria are defined in rows that can then be used in formulas. Click the green + button to add criteria rows. Each row is assigned a letter by which the row is known (for use in the formula box).

The screenshot shows the MSSS V7.0 Beta Filters page. The interface is divided into two main sections: Definition and Validation. The Definition section is currently active, showing a list of filters on the left and a table of criteria rows on the right. The Validation section is visible at the bottom, showing settings for the selected filter.

**Annotations:**

- Search for and load existing filters:** Points to the left sidebar where filters can be searched and loaded.
- Assign a filter name and specify personal or shared:** Points to the "Filter Name" and "Group" fields in the Definition section.
- Validate new when done defining:** Points to the "Validate" button in the Definition section.
- Click to add new criteria row:** Points to the green "+" button in the "ADD" column of the criteria rows table.
- Create a formula using criteria rows you created:** Points to the formula builder at the bottom of the Definition section.
- Enter search terms, word, phrases, or expressions for each criteria row:** Points to the "SEARCH TERMS" column in the criteria rows table.
- Define each criteria row to search Chief Complaint, Encounter Reason, and/or Diagnosis in data as needed:** Points to the "DATA ELEMENT" column in the criteria rows table.

ADD	ROW	DATA ELEMENT	RULE	CASE SENSITIVE	PHRASE	WORD TYPE	SEARCH TERMS	
+	A	Chief Complaint	Contains	ON	OFF	Phrase	Partial	Flu
+	B	Chief Complaint	Does Not Contain	ON	OFF	Any Of	Partial	stomach shot imm tamiflu vaccin inject mist
+	C	Chief Complaint	Contains	ON	OFF	Any Of	Partial	H2N2 swine
+	D	Chief Complaint	Contains	ON	OFF	Phrase	Partial	fever
+	E	Chief Complaint	Contains	ON	OFF	Phrase	Partial	cough
+	F	Chief Complaint	Contains	ON	OFF	Any Of	Partial	"sore throat" sit
+	G	Diagnosis Code	Contains	ON	OFF	Any Of	Partial	J08 J10 J11
+	H	Diagnosis Code	Matches	ON	OFF	Any Of	Partial	"sore throat" sit

Formula: (A AND B) OR C OR (D AND (E OR F)) OR G OR H

Validation Settings: Start Date: 7/2/2020, Days: 14, Max Records: 10



<b>Load</b> button	Select a filter in the list and click Load to open the selected filter's parameters for review or editing. Scroll through “Personal” to see your saved filters and “Shared” to see filters shared by others.
<b>Delete</b> button	Click to delete a selected filter. Note that deleting a Shared filter only removes it from your list.
<b>Search</b> field	Enter text to search for filters by name.
<b>Filter Name</b> field	View, edit, or enter a filter name (when creating a new one).
<b>Group</b> drop-down	Assign your filters to be Personal (available only to you) or Shared so others can see and use them both here and at the Epiplot page. Other users will not be able to delete your shared filters except from their own personal list. They can only edit and save your filters with new names, which protects your shared filters from being changed.
<b>Validate</b> button	After defining filter criteria and the formula to apply them, click to validate the definition. The system informs you if the formula cannot be processed due to equation errors that must be corrected. Only after successful validation can you create a new filter.
<b>Create</b> button	After successful filter validation, click to save it with defined parameters. The button is unavailable if no new filter is ready to be created. Initial releases may not let you create new filters by editing existing filters, but that will be resolved in updates.
<b>Update</b> button	Click to save a filter with changed parameters. This button is unavailable if the selected filter has not been edited in definition or name. Initial releases may not let you update existing filters, but that will be resolved in updates.
<b>Reset</b> button	Click to clear all filter parameters.
Add column Green + button	Click to add a new criterion row to your filter definition.
Row column letter	This letter identifies the criterion row when creating formulas and is created automatically when you generate a new row.
<b>Data Element</b> column drop-down	Select the data element to be searched for this criterion row. Options include Chief Complaint text, Diagnosis code, Diagnosis text, Encounter Reason code, and Encounter Reason text.
<b>Rule</b> column drop-down	Select a rule or operator for when the target is encountered in visit data. The available options are described below.
Case Sensitive column <b>ON/OFF</b> toggle	Select OFF to include all findings regardless of case (FLU=flu). Select ON to have MSSS match case exactly as entered in the Search Term field.
<b>Phrase</b> column drop-down	Select to have the filter match the entered phrase (multiple words), any of, or all of the search terms. Additional details are below.
<b>Word Type</b> column toggle	Choose to have the filter search for partial (PARTIAL) or full (FULL) words. Additional details are below.
<b>Search Term</b> column field	Enter search terms for this criterion.
Red X button	Click to delete the criterion row.
<b>AND</b> button	Click to add AND to the formula at the cursor location.
<b>OR</b> button	Click to add OR to the formula at the cursor location.
<b>NOT</b> button	Click to add NOT to the formula at the cursor location.
<b>(</b> button	Click to add an initial parenthesis to the formula at the cursor location.
<b>)</b> button	Click to add an ending parenthesis to the formula at the cursor location.
<b>(Row letter)</b> buttons	Click criterion row letter buttons to add them to the formula at the cursor location.

<b>Validation Settings</b> selection	Set the parameters for validating the filter. <i>Note this functionality may move to its own tab in a future update.</i>
<b>Start Date field/Calendar Button</b>	Select the start date to be used for testing the filter. This control lets you search a specific data range if you know a matching value should be found in that timeframe.
<b>Days field</b>	Enter the number of days to search while validating the filter.
<b>Max Records field</b>	Enter the maximum number of results to find in validation

Filters can use five Data Elements in Syndromic data:

- **Chief Complaint**, which is the patients’ stated complaint or the closest approximation available in the senders’ dataset. Examples include “fever”, “chest pain”, “shortness of breath.”
- **Diagnosis Code**, which can be sent as admitting, working, or final diagnoses in ICD-10, ICD-9, or SNOMED code sets. Final diagnoses can be delayed for two weeks or more by some sender workflows (billing, abstraction) and arrive in update messages. Code examples include “Z79.899”, “R07.9”, and “116290004” (SNOMED).
- **Diagnosis Text**, which is the text description of the diagnosis code. Examples include “Other long term (current) drug therapy”, “Chest pain, unspecified”, and “Acute abdominal pain” (SNOMED).
- **Encounter Reason Code**. Encounter Reason is the clinical reason for treating the patient and can be sent as either free text or coded diagnosis. Since text appears in both coded diagnosis and free text, using Encounter Reason code is limited by senders that do not sent this data element. Some percentage of visits will have a coded diagnosis (that also includes text) but many will only have free text. Encounter Reason code is often admitting or working diagnosis so it may not be delayed while waiting for final diagnoses. As with Diagnoses, it can be sent as Encounter Reason in ICD-10, ICD-9, or SNOMED code sets. Code examples include “Z79.899”, “R07.9”, and “116290004” (SNOMED).
- **Encounter Reason Text**. As described above, Encounter Reason **text** should be present in all visit records that include Encounter Reason and this is not true for Encounter Reason **code**. The values sent to vary based on senders’ workflow. Examples include: “laceration”, “Acute cystitis with hematuria”, and “Syncope and collapse”.

Available Rules or operators include:

- **Equals** – The target value exactly matches the data value. This can be useful for Diagnosis and Encounter Reason codes. Do not use for regular expression searches—see “Matches” below.
- **Contains** – The target value(s) exist anywhere in the data element field.
- **Matches** – The target value is a regular expression that matches the field. This **must be used for all regular expression searches**. Note that The regular expressions used must be compliant with IEEE Portable Operating System Interface (POSIX) standard draft 1003.2/D11.2, which is available here: <http://www.opengroup.org/onlinepubs/007908799/xbd/re.html>
- **Does Not Equal** – The target value does not exactly match the data element field. Use this to exclude exact matches from results.
- **Does Not Contain** – The target value does not exist anywhere in the data element field. Use this to exclude terms, partial terms, or phrases.

The Phrase control has three values:

- **Phrase** indicates that the target value is evaluated as a single string. This is the same as using quotes in MSSSv6.

- **Any Of** allows the target value to be a whitespace-separated list of values, with the selected operator being applied to each of them. If any of these comparisons is true then the criterion is true. It is **not** valid or shown for operator **Matches**.
- **All Of** allows the target value to be a whitespace-separated list of values, with the selected operator being applied to each of them. All of these comparisons must be true for the criterion to be true. **This is only valid or shown for operator Contains.**

Additional criteria definition fields include:

- The **ON/OFF** case-sensitivity toggle allows case to be considered in filter queries or ignored (default).
  - **OFF** is case-**insensitive** (capital “A” is treated the same as lowercase “a”).
  - **ON** is case-**sensitive** (capital “A” and lowercase “a” are treated as different values).
- The **Whole Word** toggle changes word boundary searching for whole word (FULL) or partial word (PARTIAL). When enabled (FULL), the value(s) taken from the target value are looked for as whole words only in the field (i.e., whitespace or BOL/EOL surround them in regular expressions).
- Enter target values for each row in the Search Term column. It can be left blank to enable searches for NULL/blank values.
- Click the Delete X button to remove a row. Note that if you delete rows you may to revisit and revise your formula if it references the deleted rows.

Once criterion rows are defined, enter the formula—referencing the rows by their assigned letters (e.g., A, B, C)—in the formula box. Note that you can type to enter the formula manually or click the corresponding buttons to create a formula.

When done, click **Validate** to check the filter in the Validation tab. The system informs you if the formula cannot be processed due to equation errors that must be corrected. Only after successful validation can you create the new filter. The Validation tab is shown below. Note that the Validation Settings that currently exist on the Definition tab will eventually move to its own validation settings tab.

[illegible]

The validation settings are repeated at the top but are view-only at this tab.

<b>Show</b> (value) <b>entries</b>	Select to view some or all results found during validation.
<b>Search</b> field	Enter terms to search validation results for specific values.
Validation Results	View validation results to confirm the filter before saving. Some values in the example above have been blurred to obscure PHI. Note there is a scroll bar at the bottom so you can view all validation result columns.
<b>Showing</b> (value) <b>to</b> (value) <b>of</b> (value) <b>entries</b>	Scroll results as needed to confirm the filter.
<b>Previous</b> button	Scroll back to previous results.
<b>Next</b> button	Scroll forward to next results.

## Alerts Page—Viewing and adding comments to Alerts

Summary

Epiplot

Filters

Library

Alerts

Facilities

Help

Admin

Logout

MSSS

V7.0.t177

Alerts

Alert Status:

Sounded

Days:

14

Locations:

All

Refresh

Show

All

entries

Search:

	Id	Discovered	Sounded	Revised	Syndrome	Location	Observed	Threshold			
+	72230	08/03/2020 17:00	08/03/2020 19:00		Respiratory	Mason	23.07692	20.00937	Plot It	Tab It	Download
+	72229	08/03/2020 17:00	08/03/2020 17:00		Gastrointestinal	Crawford	38.09524	30.1743	Plot It	Tab It	Download
+	72228	08/03/2020 15:00	08/03/2020 16:00		Respiratory	Delta	32.87671	27.27985	Plot It	Tab It	Download
+	72227	08/03/2020 14:00	08/03/2020 15:00		Respiratory	Saint Clair	22.41379	14.95864	Plot It	Tab It	Download
+	72225	08/03/2020 04:00	08/03/2020 09:00		Respiratory	Jackson	19.29825	15.91714	Plot It	Tab It	Download
+	72224	08/03/2020 02:00	08/03/2020 13:00		Gastrointestinal	Houghton	25	23.42402	Plot It	Tab It	Download
+	72204	08/02/2020 22:00	08/02/2020 22:00	08/03/2020 03:10	Respiratory	Macomb	22.44898	11.82529	Plot It	Tab It	Download
+	72211	08/02/2020 22:00	08/02/2020 23:00		Overdose	Calhoun	5.26316	3.96986	Plot It	Tab It	Download
+	72218	08/02/2020 20:00	08/03/2020 00:00		Respiratory	Shiawassee	19.17808	14.56581	Plot It	Tab It	Download
+	72210	08/02/2020 19:00	08/02/2020 19:00		Hemorrhagic	Calhoun	9.30233	5.93776	Plot It	Tab It	Download
+	72209	08/02/2020 19:00	08/02/2020 20:00		Gastrointestinal	Calhoun	22.05882	18.36489	Plot It	Tab It	Download
+	72207	08/02/2020 19:00	08/02/2020 21:00	08/03/2020 17:24	Gastrointestinal		14.04382	13.01935	Plot It	Tab It	Download
+	72206	08/02/2020 07:00	08/02/2020 07:00		Overdose	Genesee	2.44898	1.95331	Plot It	Tab It	Download
+	72194	08/01/2020 21:00	08/01/2020 22:00		Hemorrhagic	Huron	21.21212	15.80421	Plot It	Tab It	Download
+	72176	08/01/2020 20:00	08/01/2020 21:00	08/02/2020 05:14	Neurological	Macomb	9.00901	7.43048	Plot It	Tab It	Download

<b>Alert Status</b> selection	Search alerts by status. Select a specific alert status to view or choose All.
<b>Days</b> selection	Choose a timeframe for your alert search. Enter how many days back to search.
<b>Locations</b> selection	Search alerts by jurisdiction. Select a specific jurisdiction to view or choose All.
<b>Refresh</b> button	Click to update the alert search results based on values you entered for status, days, or locations.
<b>Show</b> (value) <b>entries</b> drop-down	Choose how many alerts to show. Select All to see all alerts.
<b>Search</b> field	Enter search terms to find matching values in the Alerts. Leave blank to see all.
<b>ID</b> column	The ID associated with this alert—click to sort by this column.
<b>Discovered</b> column	Date/time the alert was discovered—click to sort by this column.
<b>Sounded</b> column	Date/time the alert was sounded—click to sort by this column.
<b>Revised</b> column	Date/time the alert was revised due to new data—click to sort by this column. Red background means that the current alert comments were saved before when the alert was revised. If new data continues to arrive and revise the alert, the alert may have multiple revisions.
<b>Syndrome</b> column	Syndrome of the alert—click to sort by this column.
<b>Location</b> column	Jurisdiction of the alert—click to sort by this column.
<b>Observed</b> column	Observed value of the alert—click to sort by this column.
<b>Threshold</b> column	Threshold value of the alert—click to sort by this column.
<b>+</b> (Expand) <b>–</b> (Minimize) icons	Expand to show the Comments field associated with each alert or minimize to hide it. Each alert is minimized by default.
<b>Comments</b> field (expanded)	Enter comments in the field, which is only visible when the alert row is expanded.
<b>Save Comment</b> button (expanded)	Click to save comments for this alert.
<b>Plot It</b> button	Click to open the alert chronology and associated chart in Epiplot.
<b>Tab It</b> button	Click to open the alert chronology in a new browser tab.
<b>Download</b> button	Click to open the alert chronology and a download resource in Epiplot. The download contains a 90 day view and the chart shows both Classic-normalized and visit counts together. See the description above for more details.

There is now also a **Download** button associated with each alert. When you click Download, two resources are placed in your Epiplot display panel:

- Chronology chart (as with Plot It, but without the standard chart that accompanies it); and
- Download resource, which is for the syndrome and county (or state) of the alert, as is the case for the 7-day, punctual, matrix chart obtained by Plot It. However, the download is for 90 days and its chart is Classic-normalized with daily aggregation, and has “Hyper View” enabled. Hyper View places the normalization on the left Y axis. The alerting Y axis is on the right as is the Hyper View Y axis, which is host to the syndrome and total visit series. This unique view juxtaposes the numerator (syndrome) and denominator (total) with the normalization they create. The cases file is currently fixed to contain all of the basic download columns. The points file will contain a column for normalization, syndrome visit counts, and total visit counts. Hyper View is also an option available in the Chart Adjustments section of the Presentation tab. The layout and view may evolve as we get feedback from users.

Below is an example Alert download "Hyper View" chart showing 90-day normalized and numerator/denominator counts together.



