Outbreak Management System
User Guide

Version 1.0

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Description

The Outbreak Management System (OMS) is a robust system that is designed to support State and Local Health Departments in the centralized, electronic management of outbreak events. OMS is sufficient in scope to support routine health investigations and flexible enough to accommodate wide-ranging and dynamic public health responses, including special and emergent pathogens.

The OMS framework was designed and built based on public health needs identified during pandemic influenza and Ebola traveler monitoring in Michigan. Whereas the Michigan Disease Surveillance System (MDSS) supports surveillance of individual cases of reportable conditions, OMS is designed to facilitate outbreak responses where multiple individuals may have been exposed to a communicable disease or biological agent. In OMS, outbreaks can be classified as Investigation or Monitoring events. For Investigation outbreaks, OMS supports the administration of detailed, outbreak-specific questionnaires. For Monitoring outbreaks, OMS supports repeated symptom assessment (see Data Points in Terminology, below) of potentially exposed individuals. For both types of responses, OMS can aggregate these outbreak-specific data for a range of purposes, including: contact tracing, root cause analysis, epidemiological descriptions of the event, and outbreak trend analyses to support public health interventions.

Terminology

In OMS, many terms that may otherwise carry a generic meaning are being used with a very strict definition. These terms are explained, below:

Condition – Conditions are only represented by a set of corresponding symptoms. The purpose of OMS is to potentially identify, monitor, and/or track those individuals who are at risk, as represented through the OMS-defined symptomatology. Its purpose is not to identify whether those sets of symptoms meet any clinical or surveillance case definition for such a condition. Therefore, OMS maintains an uncomplicated, straightforward representation of conditions relative to the associated symptoms.

Contact – Contacts are individuals who are being investigated or monitored because of a suspected or confirmed exposure during an outbreak or a significant public health response.

Data Points – Within a Monitoring outbreak, data points are snapshots of health information collected on a contact. The frequency of these data points are based on the outbreak's condition, but are modifiable at the contact level. Each time a contact is reached, health information can be entered into a data point. Each individual data point can be later modified. A summary of data points can be accessed by clicking the View All button within the Data Points tab for a contact (see Helpful Hints). This can also be accessed through the Monitoring Summary Report.

Investigation – When creating a new outbreak, select Investigation when the intent is to manage outbreaks using questionnaires to collect information on potentially exposed individuals (including well individuals for case control or other studies). Data can be exported for further descriptive or analytic studies. The investigation category is most useful when the exposed population can be identified and contacted (e.g., when administering a food history questionnaire to all individuals who attended a wedding reception), but may also be used in other situations.

Jurisdiction Type – This refers to the jurisdiction(s) leading and/or participating in the outbreak. This setting determines a user's viewing and editing privileges for the outbreak and associated contacts.

Monitoring – When creating a new outbreak, select Monitoring when there are contacts who need to be monitored after an actual or potential exposure. In this type of outbreak, there is a place to collect health information on a periodic basis (e.g., daily) and to identify potential secondary contacts. Future versions of OMS will allow the contact to become a case in MDSS if it is determined the individual meets the appropriate case definition. This can readily be used during significant public health responses when individual contact information is supplied (e.g., Ebola traveler monitoring) to monitor health outcomes and potentially prevent further transmission, but may also be used in other situations.

Monitoring Period – The monitoring period is the length of time (in days) that public health will follow an individual considered at risk, typically determined by incubation period.

Outbreak – Outbreaks are unique events defined by temporal and geographic parameters (e.g., event year and jurisdiction(s) affected), the condition in question, and the outbreak event type (monitoring or investigation). Each outbreak in OMS must carry a unique outbreak name. The suggested format is the condition, plus the year, plus the location of the event.

Outbreak Entry Date – This is auto-populated and represents the date the outbreak is being entered into the OMS.

Outbreak Onset Date – This is the onset date of the outbreak's first case (if known).

Outbreak Referral Date – This is the date the outbreak was referred to MDHHS/LHD. For large-scale monitoring events, this would be the date that monitoring is initiated by Michigan Public Health.

Questionnaire – Questionnaires are defined sets of survey questions used during investigations that can be formatted by system and LHJ administrators relative to the outbreak in question, soliciting specific pieces of information. These responses can then be exported and analyzed. Questionnaires are not used during a monitoring event.

What Can Be Done in OMS

- Import a list of contacts individually or in aggregate using a CSV file
- Manage key information about contacts, including
  - Contact information (e.g., address, phone number, email)
  - Basic demographics (e.g., age, race, ethnicity, occupation)
- Assign contacts to specific users to perform follow-up activities
- Share data across jurisdictions for multijurisdictional outbreaks
- Export a linelist of contacts
- Upload and store outbreak-related documents. Examples include site visit pictures, community notification letters, copies of Health Alert messages, and after-action reports.
- Keep track of questionnaire data (Investigation-type Outbreak)
  - View existing outbreak questionnaires and modify them to fit your needs
  - Upload customized questionnaires
  - Record questionnaire data within the module and export data for analytic use
- Keep track of monitoring data (Monitoring-type Outbreak)
  - Define what symptoms should be monitored, how often, and how long
  - Enter and save each monitoring event in the database
  - Run reports that describe and summarize monitoring data (e.g., number of individuals monitored, person-days monitored, by time, age, sex, or geography)

Access OMS through the MDSS

While OMS is hosted by the State of Michigan and is accessed through MDSS, it is functionally separate from MDSS and the data in these two systems are not linked at this time. It also has many functional and semantic distinctions from MDSS. These system similarities and distinctions are discussed in detail, below.

Roles and Responsibilities

There are three user roles in OMS, which are similar to the MDSS user roles. OMS access will be provided to selected MDSS users. OMS is not currently available for use by laboratory and healthcare provider MDSS users.

- Selected MDHHS users of MDSS will have access to all OMS role assignment options, including: OMS Admin; LHJ Admin; and LHJ User functions.
- Selected local health jurisdiction users with an 'Admin' job function within MDSS will be granted access to the LHJ Admin and LHJ User functions in OMS.
- Selected local health jurisdiction users with a non-admin job function within MDSS will be granted access to the LHJ User functions in OMS.

Functional Similarities to MDSS

The menu functions within OMS largely function in the same way that MDSS menu options function. While the actual options may differ, the overarching structure is as follows:
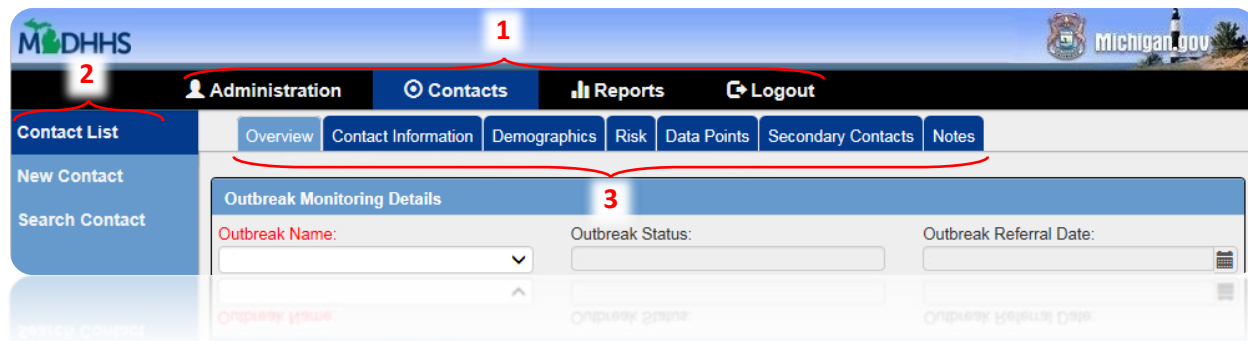
1.) **The Upper Tab Menu** – This menu includes the "Administration," "Contacts," "Reports", and "Logout" tabs. Not all options are available for all users – for example, the administration tab is only available to MDHHS system administrative users and LHJ administrative users.

2.) **The Left-Hand Navigation Menu** – This menu is dynamic and dependent on the tab selection in the Upper Tab Menu. The Options are as follows:

Upper Tab Menu	Administration	Contacts	Reports
Left-Hand Navigation Menu	Outbreak List	Contact List	Aggregate Monitoring Summary
	New Outbreak	New Contact	Questionnaire Data
	Import Contacts	Search Contact	Monitoring Data
	Condition Management		Line Listing
	Questionnaire Management		

3.) **The Left-Hand Navigation Menu Sub-Tabs** – This menu is dynamic and dependent on both the left-hand navigation tab selection *and* the process for which it is being used – for example, the number and type of sub-tabs available for entering new contact information is more limited than those that support editing, review, monitoring and investigation of a contact who has already been created in OMS.

- An example view of the sub-tabs can be seen in the image at the top of the page, called out at bracket #3.

Very Important: If any changes are made within any tab or sub-tab, click save or submit before navigating to another page. Failure to save changes will result in the loss of the entered information.

Functional Distinctions from MDSS

2.) **Wildcard Searches**: Users who are familiar with MDSS are accustomed to conducting wildcard searches through the addition of an asterisk (*) to the beginning or end of any textual search parameter.

- For example, searching for 'Mar*' in the patient first name field of MDSS will include all of the following in the search results: Mary, Maria, Martin, Marguerite, Mark, Marjorie, Marvin, etc.

All searches in OMS, however, default to wildcard searches. Adding an asterisk (or other common search modifiers) will not result in a wider set of results.

3.) **Jurisdiction Settings** – In MDSS, jurisdiction is used to assign the case based on the investigation address. In OMS, three different types of jurisdictions can be set at the outbreak level: Local; Multijurisdictional; and, State-level. The outbreak jurisdiction is used to describe where the outbreak is occurring and how the investigation is being led.

- **Local** = When the outbreak investigation is locally led and primarily affects one jurisdiction.
- **Multijurisdictional** = When the outbreak investigation is locally led, but affects more than one jurisdiction. The specific jurisdictions can be added at any point of the outbreak investigation.
- **State-level** = When the investigation is being managed or led by MDHHS, including multistate outbreaks or international monitoring events.

4.) **Sorting vs. Filtering** – In overview pages (i.e., Outbreak List and Contact List) users have the option to either sort data or filter data:

- Data can be filtered and/or sorted. If data are filtered and 'sort' is selected, the action will only be executed on the previously filtered data. However, if data are sorted and then a filter is applied, the sort is removed in order to execute the filter function.
- Sorting data reorganizes all of the data in the current list relative to the sorting parameter selected. For example, sorting all contacts by 'Contact Last Name' will re-order all of the contacts alphabetically, by last name.
- Filtering data restricts the view of the information in respective list relative to the filtering parameters(s) selected.
  - Please note that more than one parameter may be selected at a time. For example, users may want only to view contacts associated with their jurisdiction. In this case, users would filter by the 'Jurisdiction' filtering parameter. If users wanted to see contacts who are associated with a particular outbreak within a specific jurisdiction (if it is a multi-jurisdictional outbreak in a jurisdiction that is experiencing more than one outbreak at a time), then the user may filter by *both* 'Jurisdiction' *and* 'Outbreak'.

5.) **Edit Access Permissions**

- All counties involved in an outbreak can access and edit the associated contacts; the LHJ administrators within these counties can also edit the outbreak profile.
- The individual contact's primary jurisdiction will be based on the geo-coded residential address within OMS. In multijurisdictional outbreaks, all involved jurisdictions can view/edit the contact's information.
- For more information on who can view and edit outbreaks and contacts, see Access and Jurisdiction Determination, below.

Outbreak Types: Investigation vs Monitoring

Outbreaks in OMS are classified as either Investigation or Monitoring, depending on the type of follow-up work that needs to be performed. The chart below highlights the differences between the two types.

	Investigation	Monitoring
Description	To collect information about exposed individuals (well or ill) using questionnaires	To actively and repeatedly monitor individuals for symptoms of illness following a potential exposure
Examples of Use	• Interview potluck attendees about food history during a Hepatitis A outbreak and record who received PEP • Record student vaccination status and school exclusions during a varicella outbreak at a school • Record who was offered tuberculosis testing during a contact investigation	• Monitor travelers who returned from West Africa during the Ebola epidemic for symptoms • Monitor fair attendees for influenza-like symptoms following a potential swine flu exposure
Data Source	Contacts and/or Cases	Contacts
Data Collected	Outbreak-defined questionnaire(s) data	Condition-specific symptoms
Collection Frequency	Once, although additional questionnaires can be uploaded and administered	Repeated measure of the same symptoms over time
Output	Questionnaire data responses in a CSV file	Aggregate Monitoring Summaries or Individual Monitoring Data in a CSV or PDF file
Further Studies	Exported data allows for descriptive and analytical (e.g., to test for an association) studies	Exported data allows for descriptive studies
Features common to both	• Import contact information individually or in aggregate using a CSV file • Maintain and export a line list of contacts • Upload documents related to the outbreak or an individual • Applicable to any condition	

Access and Jurisdiction Determination

All OMS users can view all contacts in the contact list, regardless of jurisdiction. Only users associated with the outbreak's jurisdiction should be able to edit contacts associated with that particular outbreak.

Who has Edit Access to a Contact

All OMS users in all of the following jurisdictions have edit privileges to a contact:

1) Outbreak jurisdictions AND
2) Jurisdiction of the Contact's primary residence address AND
3) Jurisdiction of the Contact's secondary residence address AND
4) Jurisdiction of the LHJ user assigned to the Contact (if the LHJ user jurisdiction does not meet above parameters 1-3, e.g., a monitored contact temporarily visits another jurisdiction during their monitoring period)

Rationale: The outbreak jurisdictions will likely be assigned early in the outbreak by the OMS Admin. During the outbreak, more jurisdictions may become involved (for example, it is determined that contacts reside in counties outside of the Outbreak Jurisdictions). Rather than expanding the outbreak jurisdiction so that the new county can edit the contact, updating the address or reassigning the LHJ user will automatically allow the new jurisdiction access.

Display in Jurisdiction column in Contact List (in Contact list table and in any report outputs)

1) Jurisdiction of the LHJ user assigned to the contact. If blank, THEN
2) Jurisdiction of the contact's address of residence. If blank, THEN
3) Statewide

Rationale: Jurisdiction should reflect who has primary responsibility for following up with the Contact, which is the Jurisdiction of the assigned LHJ User. However if the LHJ User is unassigned (it is not a required field) then the Jurisdiction is blank. When Users filter the Contact List by their Jurisdiction, that contact will not appear in anyone's filtered list and risks not being followed up. Therefore, in the absence of an assigned LHJ User, the Jurisdiction should default to the Jurisdiction of the Contact's residence (primary, if blank then secondary). If address is blank, the Jurisdiction defaults to Statewide. One of the cons of this approach is that the user will not necessarily know by looking at the Jurisdiction column whether that represents the LHJ User or the contact's residence. However, in the Reports, the County of Residence is also exported and the User could look at that for comparison.

Search Criteria for Report

When Jurisdiction is selected for any of the report outputs, the system will use the same Jurisdiction as what is displayed as Jurisdiction in the Contact List.

Outbreak Jurisdictions

Contact's Residence (Primary and Secondary)

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Assigned LHJ User

Jurisdiction in Contact List

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Examples of Jurisdiction in Reports

Questionnaire Data Report

	A	B	C	D	E	F	G	H	I	J	K
1	Outbreak: CAMPY-2017-INGHAM										
2	Questionnaire(s): All										
3	Date Report Generated: 10/27/2017										
4	ContactId	Last Name	First Name	Address	County of Residence	Investigation Jurisdiction	Age	Age Unit	DOB	Race	Ethnicity Sex
5	24431	MOUSE	MINNIE		State-Level	State-Level	46	Y	########	Asian	Not Hispa Mal
6	24402	SMITH	LITTLE JOEY	333 S GRAND AVE	Ingham	Ingham County	1	Y	########	Caucasian	Not Hispa Mal
7	24431	MOUSE	MINNIE		State-Level	State-Level	46	Y	########	Asian	Not Hispa Mal
8	24444	Mouse	Mickey		State-Level	State-Level			########		

Monitoring Data Report

	A	B	C	D	E	F	G	H	I	J
1	Outbreak: SWINE FLU-2017-STATEWIDE									
2	Date Report Generated: 10/27/2017									
3	ContactId	First Name	Last Name	County of Residence	Investigation Jurisdiction	Referral Date	Start Monitor Date	End Monit	Monitorin	Period Un
4	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
5	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
6	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
7	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
8	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
9	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
10	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
11	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
12	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
13	24051	RODERICK	PATTERSON	Wayne	Wayne County	8/27/2017	8/27/2017	9/6/2017	10	DAYS
14	24055	ANNIE	JONES	Ottawa	Grand Traverse County	9/1/2017	9/1/2017	########	10	DAYS
15	24055	ANNIE	JONES	Ottawa	Grand Traverse County	9/1/2017	9/1/2017	########	10	DAYS
16	24055	ANNIE	JONES	Ottawa	Grand Traverse County	9/1/2017	9/1/2017	########	10	DAYS
17	24055	ANNIE	JONES	Ottawa	Grand Traverse County	9/1/2017	9/1/2017	########	10	DAYS
18	24055	ANNIE	JONES	Ottawa	Grand Traverse County	9/1/2017	9/1/2017	########	10	DAYS

Line Listing

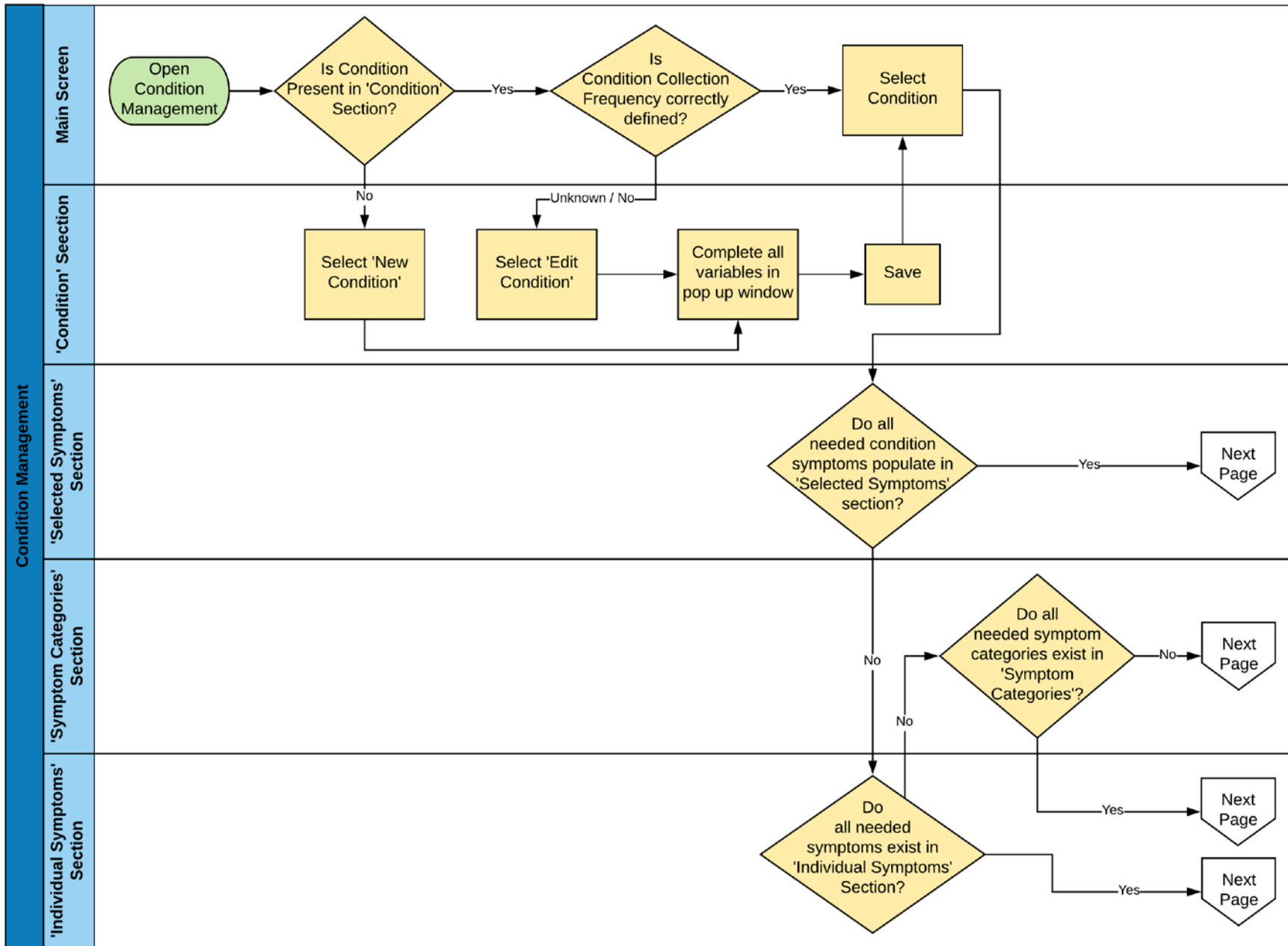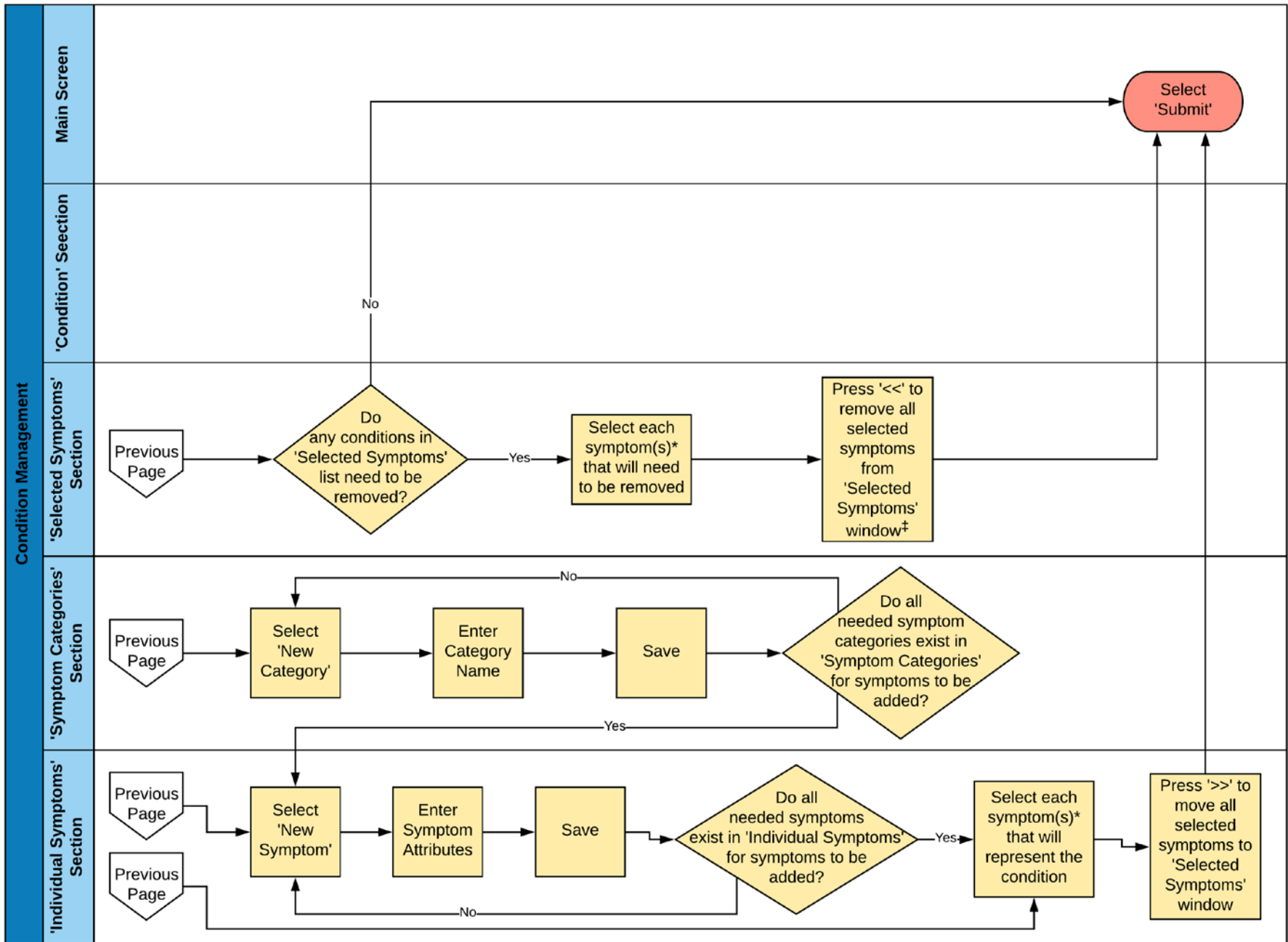|	A	B	C	D	E	F	G	H
1	Line Listing Report							
2	Report Generated Date: 10/27/2017 15:49:50							
3	Time Period: ALL							
4	Outbreak: SWINE FLU-2017-STATEWIDE							
5	Condition: Influenza							
6	County: ALL							
7	State: MI							
8	Outbreak Type: ALL							
9	Total Contacts: 16							
10								
11	ContactId	Contact Name	Address	County of Residence	Investigation Jurisdiction	Age	DOB	Race
12	24051	PATTERSON, RODERICK S	2027 Ripple Street Kingston MI 48741	Wayne	Wayne County	73 Y	3/16/1944	Caucasi
13	24055	JONES, ANNIE D	2998 PERRY ST HUDSONVILLE MI 49426	Ottawa	Grand Traverse County	54 Y	10/9/1963	
14	24059	PORTER, KEITH	4652 PINEWOOD DR MIDLAND MI 48640	Midland	Midland County	58 Y	3/17/1959	Caucasi
15	24063	LONG, SHAWN F	2288 Robinson Court Saginaw MI 48601	Midland	Midland County	32 Y	11/20/1985	
16	24067	DEYO, AARON HENRY	5609 W SAGINAW HWY LANSING MI 48917	Eaton	Grand Traverse County	49 Y	3/9/1968	Caucasi
17	24071	BEST, NEAL S	5120 28TH ST SE CASCADE MI 49512	Kent	Wayne County	77 Y	11/1/1940	Black
18	24075	MCCLARY, ANTHONY	5455 CLYDE PARK AVE SW WYOMING MI 49509	Kent	Kent County	37 Y	10/31/1980	Hawaii
19	24079	HAYES, KERRY	3130 44TH ST SW GRANDVILLE MI 49418	Kent	Wayne County	27 Y	12/1/1990	Black
20	24083	HOWARD, DELORIS T	6820 EASTMAN AVE MIDLAND MI 48642	Midland	Wayne County	17 Y	10/11/2000	Asian
21	24087	CARLUCCI, RANDALL	155 University Dr E Granger IN 46530	State-Level	State-Level	84 Y	9/19/1933	
22	24091	DOTY, CHRISTINA C	3250 US HIGHWAY 41 W MARQUETTE TOWNSHIP MI 49855	Marquette	Marquette County	22 Y	8/23/1995	
23	24095	OWENS, HENRY M	28800 DEQUINDRE RD WARREN MI 48092	Macomb	Macomb County	50 Y	5/31/1967	
24	24099	GILMORE, VERA FRANCIS	1201 COOLIDGE HWY TROY MI 48084	Oakland		20 Y	8/6/1998	

Helpful Hints

- Outbreak creation and questionnaire development are admin functions.
- If a list of contacts is already available in excel, you can input that list by selecting Import Contacts under the Administration tab. Download the template. Do not change row 1. Enter the contact information for each variable in columns A-M. Save the file as a CSV with a new name (e.g., Ebola2017_051917). Select the appropriate outbreak and select browse to find the file.
- Once outbreak data are associated with a symptom or questionnaire, the symptoms or questionnaire cannot be removed from the outbreak profile.
- When adding Yes, No, Unknown options, always add in that order; Yes, No, Unknown.
- Exiting a contact or outbreak by clicking on an upper or left-hand menu option, without cancelling or submitting changes in the outbreak or contact, will result in the outbreak or contact profile being locked by the user. To fix this, the same user should re-open the contact or outbreak profile and select an appropriate action (update, submit, cancel, etc.).
- To View All data points within a contact (Data Points tab), data points must be saved first by selecting the Submit button at the bottom of the page.
- When creating a Questionnaire, if using the multi-select data type, it must read exactly as **multiSelect** in the CSV or the file will not import. If **multiselect** (in all lowercase) is used, the import will fail.

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Information Context Overview

New Outbreak → **New Outbreak Created** → Outbreak List

Condition Assignment (New Outbreak → Condition Management)

Condition Management → **Condition Assignment** → Active Outbreak

Outbreak List → **Outbreak Selected for Edit** → Active Outbreak

Active Outbreak → **Outbreak Edits Submitted** → Outbreak List

Symptoms → Condition Management

Survey Upload → Questionnaire Management

Questionnaire Management → **Questionnaire Assigned to Outbreak*** → Active Outbreak

Aggregate Monitoring Summary Report

Questionnaire Data Report

Line Listing

Alerts & Communications

Outbreak Closure

Intervention

Individual Contact Information

Contact Assigned to Outbreak

Contacts Assigned to Outbreak

Potential Case Identified / Entry into MDSS

Non-Case / End Monitoring Date‡

Questionnaire Administered*

Data Points Collected‡

Secondary Exposure Identified → Secondary Contact(s)

Contact → **Contact Selected for Edit/Data Entry** → New Contact

New Contact → **Contact Added to Contact List** → Contact List

Import Contacts → **All Contacts Added to Contact List** → Contact List

Contact List Import → Import Contacts

Contact → **Contact Edits Submitted** → Contact List

Secondary Contact(s) → **Create Primary Contact** → Contact List

Legend

- - - - ► = Input
- - - - ► = Output
———► = Outcome
———► = Information Flow

* 'Investigation' Outbreaks ONLY
‡ 'Monitoring' Outbreaks ONLY

Condition Management

Main Screen

Select 'Submit'

'Condition' Seection

Condition Management

'Selected Symptoms' Section

Previous Page

No

Do any conditions in 'Selected Symptoms' list need to be removed?

Yes

Select each symptom(s)* that will need to be removed

Press '<<' to remove all selected symptoms from 'Selected Symptoms' window‡

'Symptom Categories' Section

Previous Page

No

Select 'New Category'

Enter Category Name

Save

Do all needed symptom categories exist in 'Symptom Categories' for symptoms to be added?

Yes

'Individual Symptoms' Section

Previous Page

Previous Page

Select 'New Symptom'

Enter Symptom Attributes

Save

No

Do all needed symptoms exist in 'Individual Symptoms' for symptoms to be added?

Yes

Select each symptom(s)* that will represent the condition

Press '>>' to move all selected symptoms to 'Selected Symptoms' window

* To select multiple conditions, press and hold 'Ctrl' while left-clicking each item to be added to the list.

‡ Symptoms for which daily data points have already been collected in any 'monitoring' event associated with that condition cannot be removed.

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Condition Management: Enter a New Condition

This is an example of adding a new condition with the intent to monitor. To enter a new condition, select Condition Management under the Administration Tab.

1. In the main screen, review the listed conditions in the 'Condition' Section to ensure the condition does not already exist in the system. This can be done by using the arrow bar to scroll through the conditions, or by typing into the search box. As you type into the search box, the system will automatically start to filter the list of visible conditions.
2. Select the New Condition button in the 'Condition' Section.
3. A popup window will appear.
    a. Type in the condition name, capitalizing the first letter of each word.
    b. If the new condition will be used in a monitoring outbreak, enter in the Collection Frequency. This field represents how frequently data will be collected for a monitored individual (e.g., monitored travelers will be contacted once a day). If collection frequency is unknown, or the condition is being entered for an investigation outbreak, leave these fields blank.
4. Select Save.

Condition Management: Edit Collection Frequency of an Existing Condition

To edit collection frequency of an existing condition, select Condition Management under the Administration Tab.

1. In the main screen, find and select the condition in the 'Condition' Section. This can be done by using the arrow bar to scroll through the conditions, or by typing into the search box. As you type into the search box, the system will automatically start to filter the list of visible conditions.
2. Select "Edit Condition".
3. A pop-up window will appear. Use the drop down menus to choose collection frequency and select save. Note: Existing data for contacts will not reflect the collection frequency change. The edit will only apply to new contacts added.

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Condition Management: Edit which Symptoms are Associated with a Condition

To edit symptoms of an existing condition, select Condition Management under the Administration Tab.

1. In the main screen, find and select the condition in the 'Condition' Section. This can be done by using the arrow bar to scroll through the conditions, or by typing into the search box. As you type into the search box, the system will automatically start to filter the list of visible conditions. Symptoms associated with the selected condition will populate in the 'Selected Symptoms' Section.
2. To add symptoms to be associated with the condition, select individual symptoms. You can use the 'Ctrl' button to multi-select.
3. You can also filter what is displayed in the 'Individual Symptoms' Section by selecting one or more symptom categories. Once you select symptom categories, the individual symptoms will automatically filter.
4. Once symptoms are selected, click the double right-pointing arrows to add them to the 'Selected Symptoms' Section.
5. To finish associating the symptoms with the selected condition, click Submit.
6. To remove symptoms associated with the condition, select the symptom you would like to remove from the 'Selected Symptoms' Section (e.g., Buggy vision highlighted below) and click the double left-pointing arrows.
    a. Note: The symptom "Temperature" cannot be removed from any condition.
    b. Note: If data already exist in the system for that condition-symptom pair, you will not be allowed to remove the symptom from the condition. A pop-up will appear that states "This symptom cannot be removed."

Condition Management: Create New Symptom

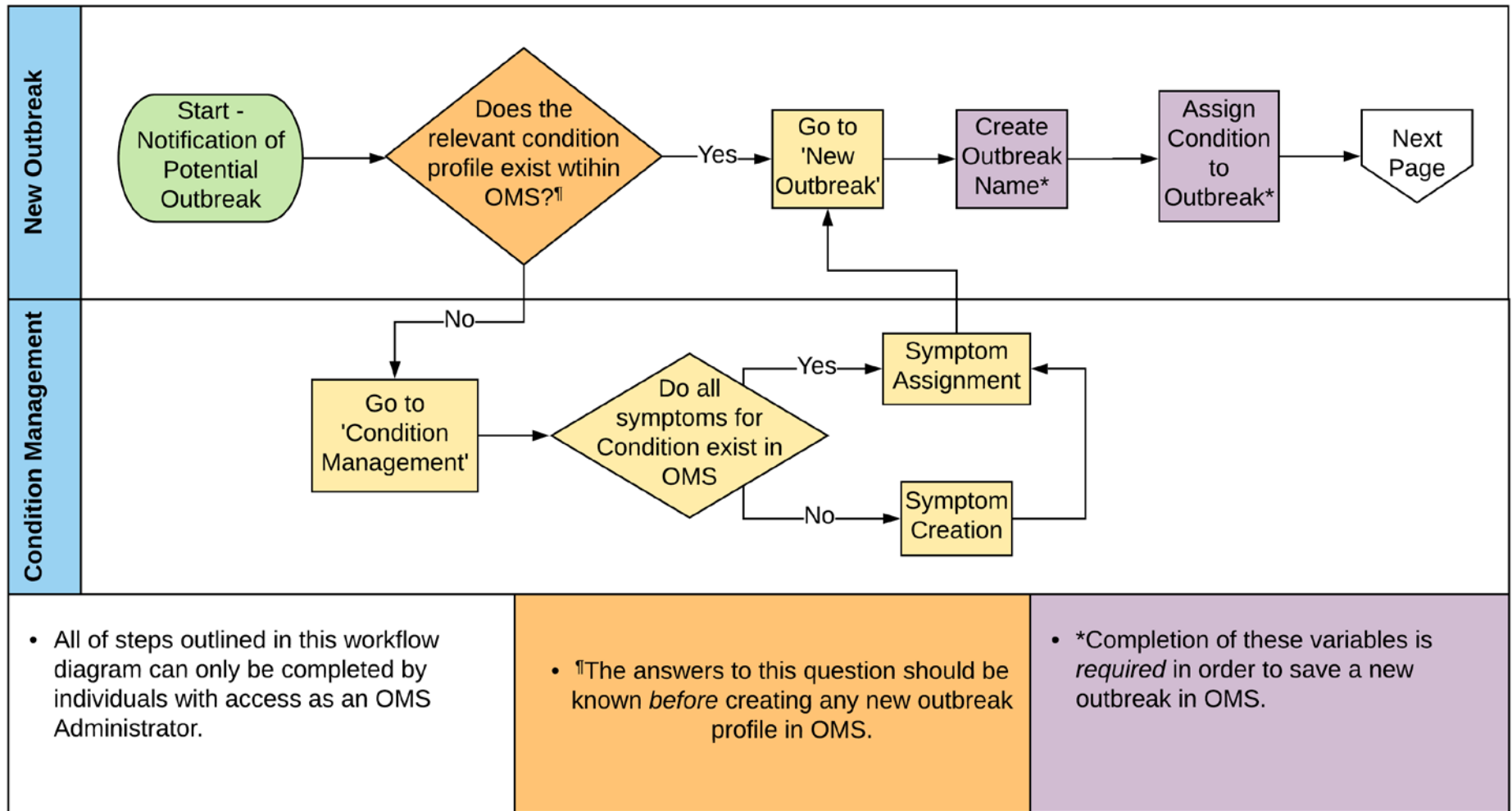To create a new symptom, select Condition Management under the Administration Tab.

1. In the main screen, select "New Symptom" under the 'Individual Symptoms' Section.
2. A pop-up window will appear. Enter the Symptom Display Name (example below is Hemoptysis).
3. Select the category of the symptom. You can select multiple categories. For the Hemoptysis example, both Respiratory and Hemorrhagic were selected.
4. Select the Data Type. The default is "Radio", but other options include text, calendar, etc.
5. Add options. The system provides a button to add a Yes and No option by selecting the Yes/No Options. It is recommended to also select the Add an Option button and type in the option "unknown". The order of options should always be Yes, No, Unknown.
6. Select Save.

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Condition Management: Edit Existing Symptom

To edit an existing symptom, select Condition Management under the Administration Tab.
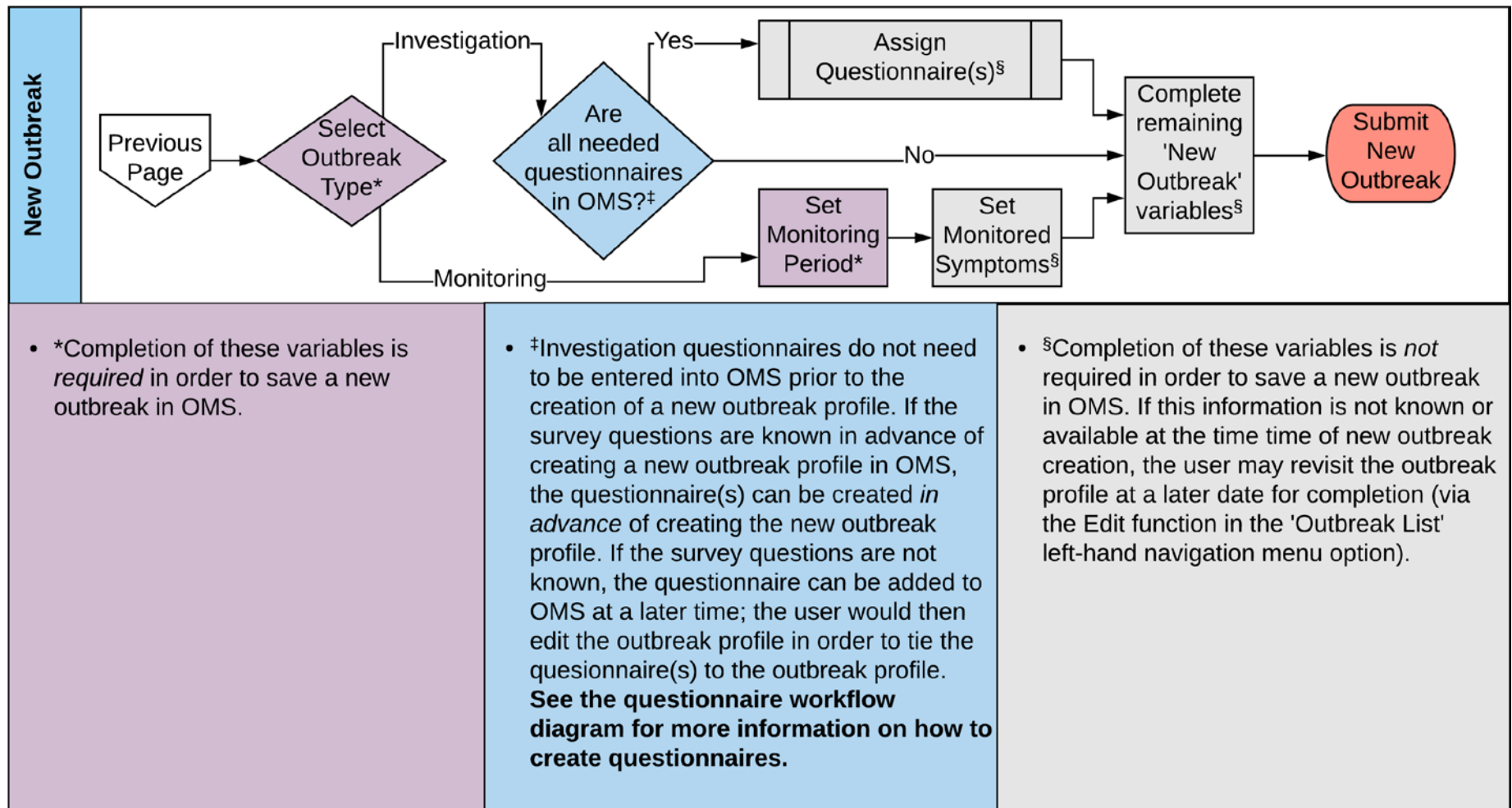
1. In the main screen, select the symptom of interest in the 'Individual Symptoms' Section. In this example, Bloody diarrhea was selected.
2. Select Edit Symptom.
3. A pop-up window will appear, allowing you to edit the Symptom Display Name, the Category, the Data Type and any response Options. In this example, "Add an Option" was selected and Item No. 1 will allow free text. This value will be in addition to previously added Yes and No options for the "Bloody diarrhea" radio type question. Select Save.

Outbreak Management

New Outbreak

Start - Notification of Potential Outbreak → Does the relevant condition profile exist wtihin OMS?¶ —Yes→ Go to 'New Outbreak' → Create Outbreak Name* → Assign Condition to Outbreak* → Next Page

—No→

Condition Management

Go to 'Condition Management' → Do all symptoms for Condition exist in OMS —Yes→ Symptom Assignment

—No→ Symptom Creation

- All of steps outlined in this workflow diagram can only be completed by individuals with access as an OMS Administrator.

- ¶The answers to this question should be known *before* creating any new outbreak profile in OMS.

- *Completion of these variables is *required* in order to save a new outbreak in OMS.

New Outbreak

Flowchart: Previous Page → Select Outbreak Type* → (Investigation / Monitoring) → Are all needed questionnaires in OMS?‡

- Investigation → Are all needed questionnaires in OMS?‡ → Yes → Assign Questionnaire(s)§ → Complete remaining 'New Outbreak' variables§ → Submit New Outbreak
- No → Complete remaining 'New Outbreak' variables§ → Submit New Outbreak
- Monitoring → Set Monitoring Period* → Set Monitored Symptoms§ → Complete remaining 'New Outbreak' variables§ → Submit New Outbreak

- *Completion of these variables is *required* in order to save a new outbreak in OMS.

- ‡Investigation questionnaires do not need to be entered into OMS prior to the creation of a new outbreak profile. If the survey questions are known in advance of creating a new outbreak profile in OMS, the questionnaire(s) can be created *in advance* of creating the new outbreak profile. If the survey questions are not known, the questionnaire can be added to OMS at a later time; the user would then edit the outbreak profile in order to tie the quesionnaire(s) to the outbreak profile. **See the questionnaire workflow diagram for more information on how to create questionnaires.**

- §Completion of these variables is *not* required in order to save a new outbreak in OMS. If this information is not known or available at the time time of new outbreak creation, the user may revisit the outbreak profile at a later date for completion (via the Edit function in the 'Outbreak List' left-hand navigation menu option).

Outbreak Management: Create a New Outbreak

This is an example of creating a new outbreak with an Ebola travel monitoring event. To create a new outbreak, select New Outbreak under the Administration Tab.

1. In the 'Outbreak' Section:
   a. Choose the condition. If the condition is not present, see Condition Management: Enter a New Condition.
   b. Name the outbreak by Condition-Year-Location.
   c. The outbreak status defaults to New; you may change it to Active, depending on your department's workflow.
   d. Select the outbreak type (Investigation or Monitoring). In this example, choose Monitoring.
   e. Once Monitoring is selected, the ability to choose the monitoring period will appear. Type in the appropriate monitoring period and fill in the outbreak specific dates (see Terminology).
   f. Choose an OMS Admin; it is likely to be the person creating the outbreak in OMS.
2. In the 'Jurisdiction' Section:
   a. Choose appropriate jurisdiction type. If Local or Multijurisdictional is selected, the ability to choose the County and LHJ Admin will appear.
   b. If Statewide is selected, there is still the option to choose a LHJ admin. If appropriate, choose a LHJ admin that will have administrative rights to the outbreak in OMS.
3. In the 'Monitored Symptoms' Section, all symptoms associated with the select condition will appear under default symptoms. Holding down the 'Ctrl' button, choose the symptoms that will be monitored for this outbreak and select the double right-pointing arrows to move to the Section entitled 'Current Symptoms'. Symptoms can also be selected and moved individually. Temperature will always be included. If the symptom you want to monitor is not present in the Default Symptoms list, see Condition Management: Edit which Symptoms are Associated with a Condition.
4. In the 'Description' Section, a description can be entered to discuss outbreak level details. For large-scale, National, or International outbreaks, this should include the date the outbreak was declared.
5. In the 'Attached Documents' Section, attach any appropriate documents that apply at the outbreak level using the browse button. Find the document to attach and select open. The description of the attached document can be entered in the blank field to the right of the browse button.
6. Select Submit to save data.

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This is an example of creating a new outbreak using an Investigation event of Salmonellosis associated with a potluck. To create a new outbreak, select New Outbreak under the Administration Tab.

1. In the 'Outbreak' Section
   a. Choose the condition. If the condition is not present, see Condition Management: Enter a New Condition.
   b. Name the outbreak by Condition-Year-Location.
   c. The outbreak status defaults to New; you may change it to Active, depending on your department's workflow.
   d. Select the outbreak type (Investigation or Monitoring). In this example, choose Investigation.
   e. Outbreak Entry Date will be prepopulated, but can be modified. Enter Outbreak Onset Date and Outbreak Referral Date if available.
   f. Choose an OMS Admin; it is likely to be the person creating the outbreak in OMS.
2. In the 'Jurisdiction' Section, choose appropriate jurisdiction type.
   a. If Local or Multijurisdictional is selected, the ability to choose the County and LHJ Admin will appear.
   b. If Statewide is selected, there is still the option to choose a LHJ admin. If appropriate, choose a LHJ admin that should have administrative rights to the outbreak in OMS.
3. In the 'Questionnaire' Section, all Questionnaires in OMS will appear under default Questionnaires. Holding down the 'Ctrl' button, choose the questionnaires that you would like to be available for this outbreak and select the double right-pointing arrows to move to the box entitled current questionnaires. Questionnaires can also be selected and moved individually. If you have accidently moved a questionnaire that you do not want available for this outbreak, you can select and use the double left-pointing arrows to remove. To create a questionnaire, see Questionnaire Management: Create New Questionnaire.
4. In the 'Description' Section, a description can be entered to discuss outbreak level details. For large-scale, National, or International outbreaks, this should include the date the outbreak was declared.
5. In the 'Attached Documents' Section, attach any appropriate documents that apply at the outbreak level using the browse button. Find the document to attach and select open. The description of the attached document can be entered in the blank field to the right of the browse button.
6. Select Submit to save data.

Outbreak Management: Edit an Existing Outbreak

To edit an outbreak that has already been created, select Outbreak List under the Administration Tab. If multiple outbreaks are visible, you can sort or filter the list.

1. You may filter by Condition, Type, and/or Status. Choose the criteria you would like and then click the "Filter" button to execute the filter.
2. You may also sort by Condition, Creation Date, Outbreak Name, or Outbreak Status. Once the "Sort By:" field is selected, the outbreaks will be automatically sorted. Note: You can sort a filtered list, but cannot filter a sorted list.
3. Once you identify the outbreak you would like to edit, select the edit button to the far right.

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Questionnaire Management

Questionnaire Management: Create New Questionnaire

To create a new questionnaire, select Questionnaire Management under the Administration Tab.

1. Select the Download Survey Template button. Select Open at the bottom of the page. A CSV file will open.
2. Expand columns A-C. Examples are provided in rows 2-7, but should be overwritten or deleted.
3. Enter one question per row in Column A. For each question, indicate the preferred DATA_TYPE. For radio, checkbox, dropdown, and multiSelect, provide the OPTION_VALUE(s). See examples below. Save as a CSV file using a name that describes the outbreak.
4. Enter Questionnaire Name in OMS.
5. Select Browse to navigate to your saved CSV file and select Open. Files saved as an Excel spreadsheet (.xls or .xlxs) will not import and a warning will appear.
6. Select Import to add the newly created questionnaire to OMS.

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Questionnaire Management: Edit Existing Questionnaire

There may be existing questionnaires that can be modified and used for other outbreaks. To edit or preview an existing questionnaire, select Questionnaire Management under the Administration Tab.

1. To preview, select a questionnaire under Available Questionnaires.
2. To download a selected questionnaire, click Download as CSV in the preview box. Choose Open. A CSV file will open. Expand columns A-C. Modify questions, DATA_TYPE, and OPTION_VALUE as needed. Save as a CSV file using a name that describes the outbreak.
3. Enter Questionnaire Name in OMS.
4. Select Browse to navigate to your saved CSV file and select Open.
5. Select Import to add the modified questionnaire to OMS.

Contact Management

'Overview' sub-tab

Select 'New Contact' under 'Contacts' tab → Select associated outbreak from 'Outbreak Name' drop-down list* → Enter the contact's first and last names → Complete other fields, as possible → Click 'Continue' or select the 'Contact Information' sub-tab → To Next Swim Lane

'Contact Information' sub-tab

'Demographics' sub-tab

From First Swim Lane → Complete all relevant fields → 'Contact Parent/Guardian Information' is required for any contact under the age of 18 → Click 'Continue' or select the 'Demographics' sub-tab → Complete all relevant fields → Click 'Submit'

* Prior to entering a new contact, the outbreak profile *MUST* be established in OMS

Contact Management: Add New Contact

To add a new individual contact, select New Contact under the Contacts Tab.

1. Select the Outbreak Name from the dropdown. (Note: prior to entering a new contact, the outbreak profile MUST be established in OMS.) The Outbreak Monitoring Details will autopopulate.
2. Fill in the fields under Contact Details. Fields in red text are required.

Contact Management: Deduplication

When a contact is added, the system will search all existing contact (regardless of outbreak) for potential matches.

1. The contact that was just added will be in the top row. Potential matches are listed under Existing Items.

2. The newly added contact can be merged (select Dedup) or not merged (select No Merge) to an existing contact under Existing Items. This decision should be based on name spelling and date of birth.
3. If the contact will be merged, select the radio button next to the correct contact and select Dedup.

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Deduplicating Contact SMARTWICK, EDWARD

Field Name	New Value	Existing Value
Contact ID		24629
Contact Details		
First Name	○EDWARD	◉EDWARD
Middle Name	○	◉
Last Name	○SMARTWICK	◉SMARTWICK
Demographics		
U.S. Citizenship	○	◉Yes
Date of Birth	○12/01/1977	◉12/01/1977
Race	○	◉▪ Caucasian
Ethnicity	○	◉Unknown
Sex	○	◉Male

Dedup   Back

4. The radio button selections will default to "Existing Value". If a variable needs to be changed, please select the appropriate radio button. After selecting the correct values, select Dedup to merge. If the contact should not be merged, select Back.

Contact Management: Edit Existing Contact

To edit an existing contact, find the contact of interest under the Contacts tab and select Edit (far right).

1. To reduce the number of contacts that can be viewed in the Contacts tab you may filter by Jurisdiction, Outbreak, Investigator, Risk, and Outbreak Type. Choose the criteria you would like and then click the "Filter" button to execute the filter. Once you identify the contact you would like to edit, select the Edit button to the far right.
2. You may also sort by Contact First Name, Contact Last Name, Jurisdiction, Monitoring Start Date, OMS Investigator, Outbreak, Risk Status, or Status. Once the "Sort By:" field is selected, the contacts will be automatically sorted. Note: You can sort a filtered list, but cannot filter a sorted list.
3. Make desired edits on relevant tabs. Submit each page before moving to a different tab.

Contact Management: Import Multiple Contacts

To import an already created list of contacts, select "Import Contacts" under the Administration tab.

1. If contacts are not already in an OMS contact import template (ContactImport.xls), select Download Template. A dialog box will open. Select Open.
   a. Add contacts to the CSV file and save as a CSV file to your desktop.
2. Once contacts are added to the ContactImport sheet, under Outbreak Name, select the outbreak for which you would like to add the list of contacts.
3. Under Choose File to Import, click the browse button and navigate to the CSV file. Files saved as an Excel spreadsheet (.xls or .xlxs) will not import and a warning will appear.
4. After the CSV file is selected, click Import.

Contact-specific Data

Adding Data Points

To add data points to a contact assigned to a monitoring outbreak, find the contact of interest and navigate to the Data Points tab. Under the 'Monitoring Symptoms' Section, click the "Add a day +" button. Click the Edit button on the row you just added (newest row will be added to the bottom).

1. Day number will autopopulate but can be edited. This is important for contacts monitored twice a day. Select monitoring type and risk level based on available information. You can also add a summary of the encounter by choosing an Action from the dropdown menu.
2. Enter the temperature and click Yes, No, or Unknown for each of the symptoms.
3. Select Save Changes or Cancel.

After changes have been saved or canceled, notes may be added to the 'Additional Assessment' Section. To view or print a summary of all data points, select the View All button. Changes will need to be submitted before data will appear in this summary view.

Questionnaire

To fill out questionnaire data to a contact assigned to an investigation outbreak, find the contact of interest and navigate to the Investigation Data tab. Under the 'Investigation Questionnaire' Section, this data can be viewed or edited. Click Submit to save any changes to this page.

Reports

Reports: Aggregate Monitoring Summary

The Aggregate Monitoring Summary Report provides the following summaries:

- Number of Contacts by Start Monitoring Date
  - Stratifies the number of contacts by MMWR week, which is calculated by the system using the contact's start monitoring date
  - Persons without a Start Monitoring date are excluded
- Number of Contacts by Monitoring Type (Direct Active, Active, No Monitoring)
  - Based on the highest Monitoring Type recorded per person
  - Persons without a Monitoring Type assignment are excluded
- Number of Contacts by Risk Group (High, Some, Mid, Low, Zero)
  - Based on the highest Risk Group recorded per person
  - Persons without a Risk Group assignment are excluded
- Person-Days Monitored and Number of Contacts by Region
  - Person-days monitored is the total number of days monitored per person. Note it is the number of days not data points; therefore, if a person was monitored twice in one day, it is counted as one person-day.

- o All data points are included regardless of Action (Attempted, Contacted, Could Not Contact, Lost to Follow Up, No Attempt, Out of Jurisdiction, Refused) and whether symptom data were entered
  - o Region refers to the [MDHHS Public Health Preparedness Regions](#) (1, 2N, 2S, 3, 5, 6, 7, 8)
  - o Persons without an address or data points entered are excluded
- Number of Contacts by Age Group in Years (0-9, 10-18, 19-29, 30-39, 40-49, 50-59, 60-69, 70-79, ≥80)
  - o Age is calculated from date of birth and Referral Date OR if directly inputted into system as Age
  - o Persons without an age or date of birth entered are excluded
- Number of Contacts by Sex
  - o Persons with missing Sex are excluded
- Number of Contacts by Country of Travel
  - o Country of Travel is based on the Country of Exposure variable in the Contact's Risk tab
  - o Persons without a Country of Exposure assigned are excluded
- Number of Contacts by Country of Travel and Risk Group (High, Some, Mid, Low, Zero)
  - o Based on the highest Risk Group recorded per person
  - o Country of Travel is based on the Country of Exposure variable in the Contact's Risk tab
  - o Persons without a Country of Exposure are excluded. Persons without a Risk Group assigned are included in the Unknown category.

Two options for export:
- PDF Report = displays data in a fixed, graphical format (bar graph, pie chart, map)
- CSV Report = displays data in modifiable, tabular format that can be opened in MS Excel

To create an Aggregate Monitoring Summary, select Aggregate Monitoring Summary under the Reports Tab.

1. Under Outbreak Info, choose the outbreak. You can further narrow the summary down to a specific monitoring type and/or risk level. If left blank, all monitoring types and risk levels will be included in the report.
2. Under Time Period Based on Contact Referral Date, you can choose to narrow the report by month and year, week (in MMWR week-year format), or From/To Dates. If left blank, all contacts will be included in the report regardless of contact referral date.
3. Under Geographical Info, you can choose to narrow the report to include only contacts in a particular county, local health jurisdiction, state, or zipcode. If left blank, all contacts will be included regardless of residence.
4. Select either View PDF Report or View CSV Report.

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Screenshot of Aggregate Monitoring Summary Generation Page

Example of Aggregate Monitoring Summary PDF Report

Contact Evaluation and Monitoring Program, Final Summary

Time Period: All Time

Reportable Outbreak: EBOLA-WAYNE-2017

Geographic Area: State-Level

Monitoring Type: No Monitoring, Active Monitoring, Direct Active Monitoring

Risk Level: Zero, Low, Mid, Some, High

Contacts by Start Date

Contacts by Risk Group

Risk Group	Number of Contacts
High	1
Some	1
Low	1
Zero	1

Contacts by Monitoring Type

● Active Monitoring 75% ● Direct Active Monitoring 25%

Number of Contacts by Region
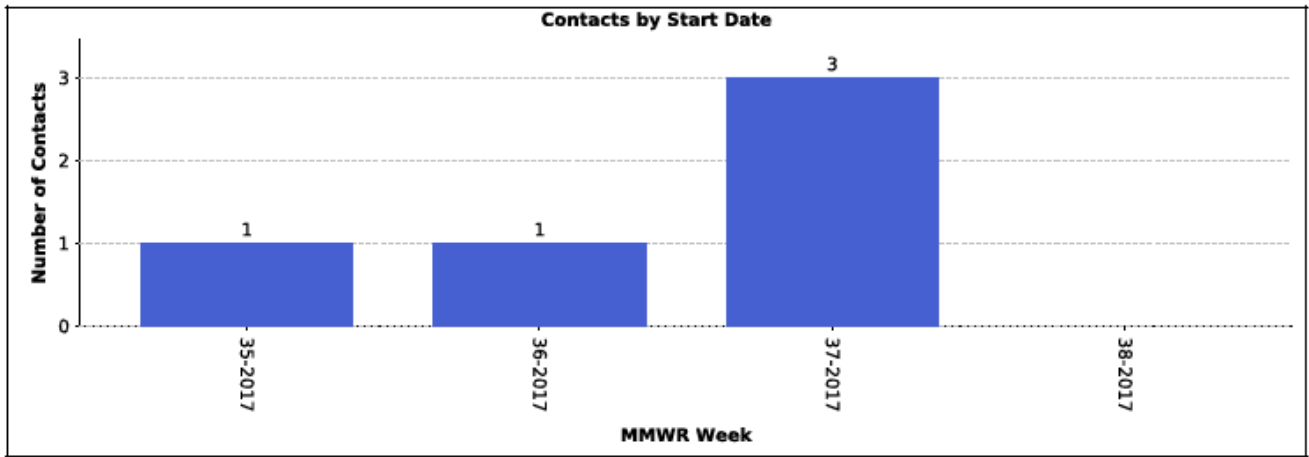
Contacts by County

Person-Days Monitored by County
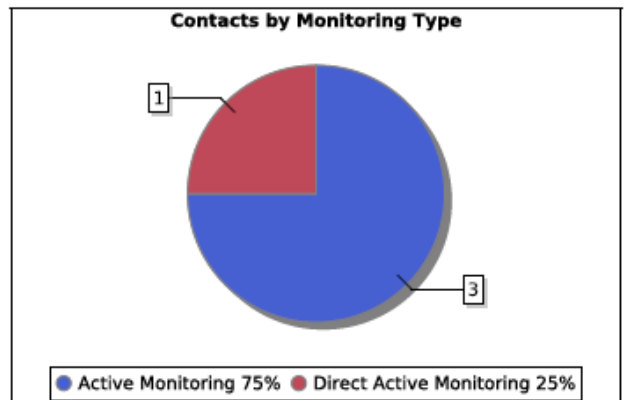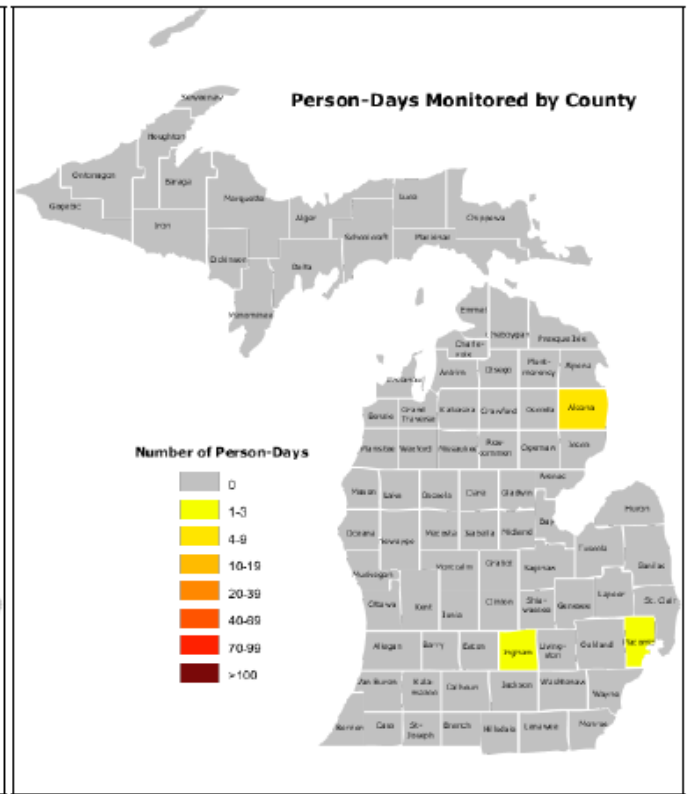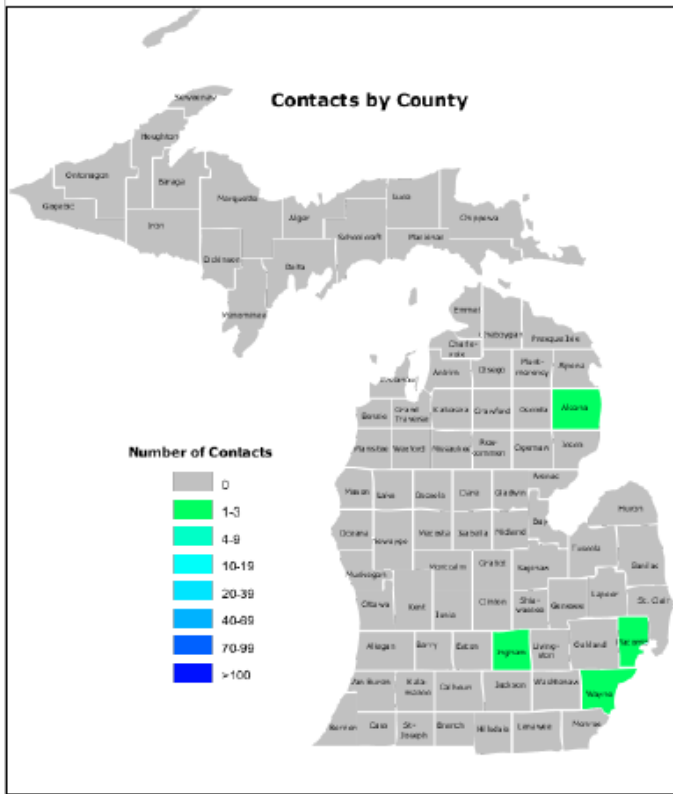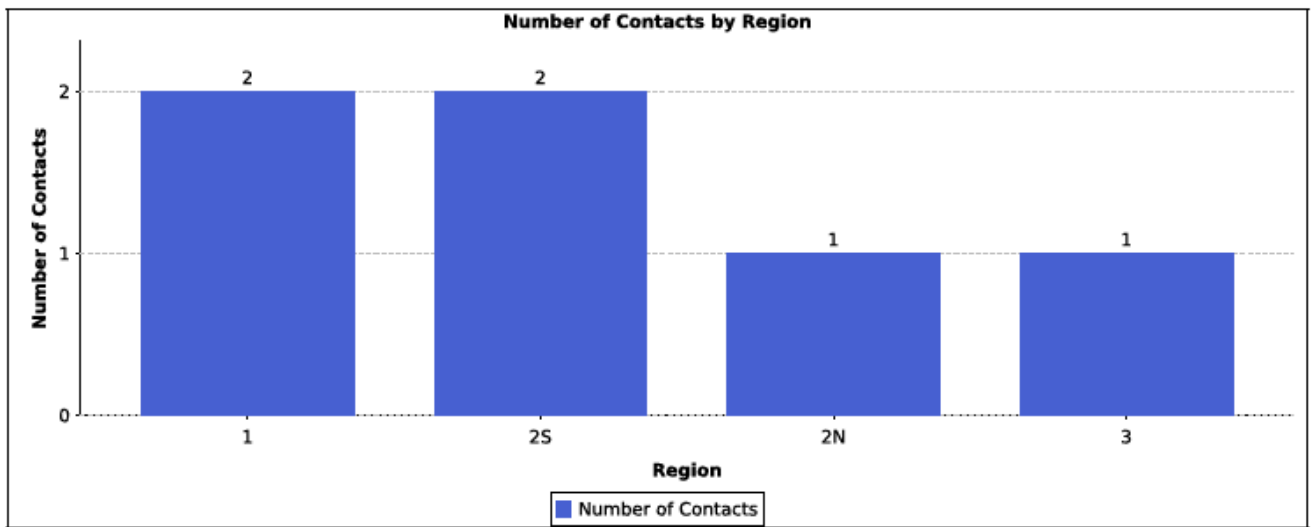
State Wide	Person-Days Monitored	Number of Contacts
State-Level	4	2
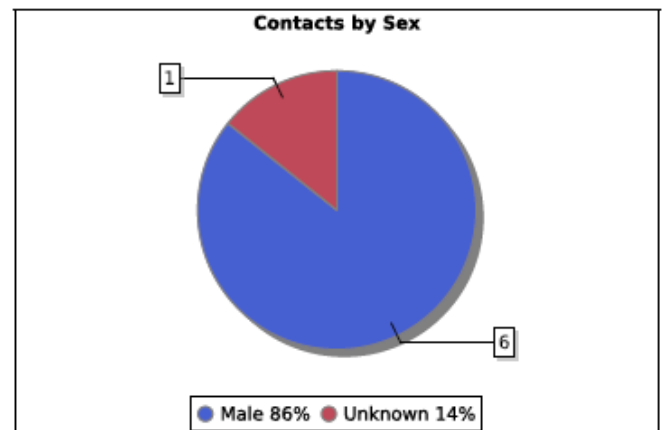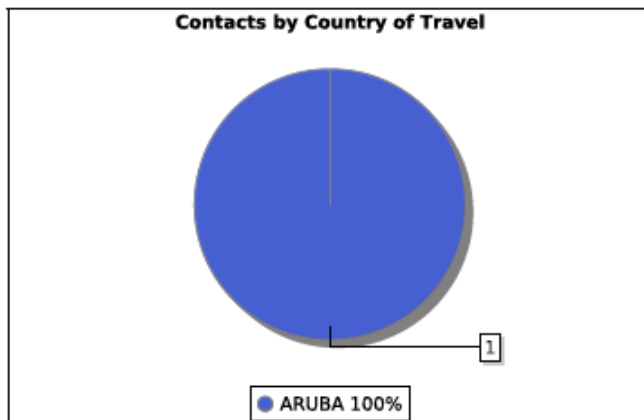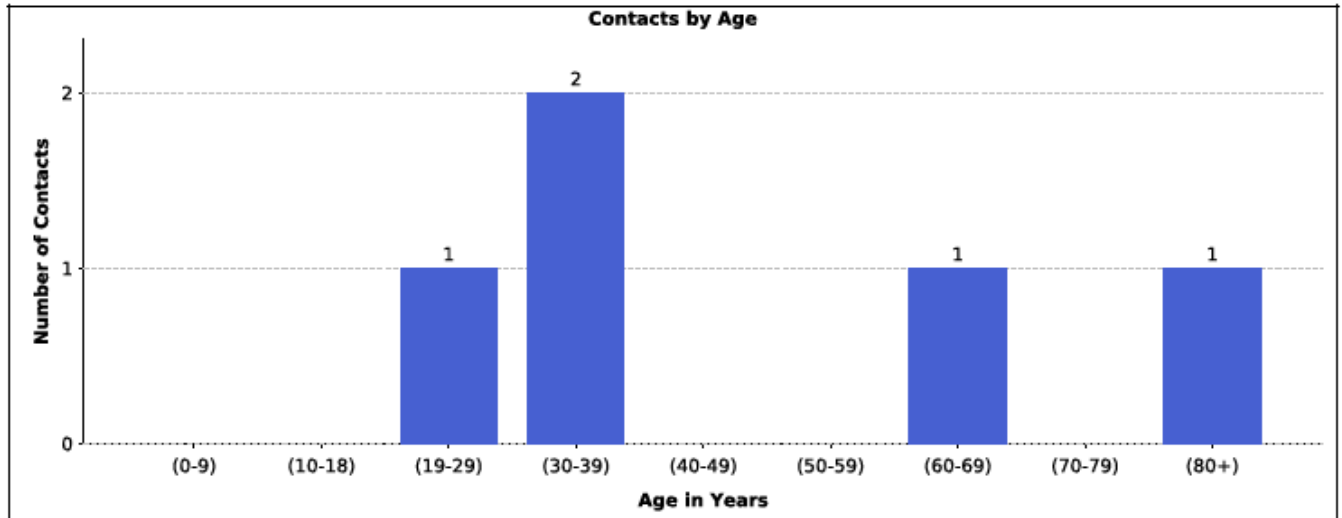
Contacts by Age

Contacts by Country of Travel

● ARUBA 100%

Contacts by Sex

● Male 86% ● Unknown 14%

Contacts by Country of Travel and Risk Group							
Country	High	Some	Mid	Low	Zero	Unknown	Total
ARUBA	1						1
Total	1	0	0	0	0	0	1

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Example of Aggregate Monitoring Summary CSV Report

Time Period : All Time								
Outbreak Name : EBOLA-WAYNE-2017								
Monitoring Type : No Monitoring, Active Monitoring, Direct Active Monitoring								
Risk Level : Zero, Low, Mid, Some, High								
Geographical Info : "State-Level"								
Contacts by Start Date								
MMWR Week	Number of Contacts							
'35-2017'	1							
'36-2017'	1							
'37-2017'	3							
Contacts By Monitoring Type								
Monitoring Type	Number of Contacts							
Active Monitoring	3							
Direct Active Monitoring	1							
Contacts by Risk Group								
Risk group	Number of Contacts							
High	1							
Some	1							
Low	1							
Zero	1							
Person-Days Monitored and Number of Contacts								
Geography	Person-Days Monitored	Number of Contacts						
State-Level	4	2						
1	1	2						
2S	0	2						
2N	1	1						
3	5	1						
Contacts by Age								
Age Group (in years)	Number of Contacts							
(0-9)	null							
(10-18)	null							
(19-29)	1							
(30-39)	2							
(40-49)	null							
(50-59)	null							
(60-69)	1							
(70-79)	null							
(80+)	1							
Contacts by Sex								
Sex	Number of Contacts							
Male	6							
Unknown	1							
Contacts by Country of Travel								
Country	Number of Contacts							
ARUBA	1							
Contacts by Country of Travel and Risk Group								
Country	High	Some	Mid	Low	Zero	Unknown	Total	
ARUBA	1	null	null	null	null	null	1	
Total	1	0	0	0	0	0	1	

Reports: Questionnaire Data

For Investigation-type outbreaks, individual-level responses to the questionnaire(s) and demographic data can be exported as a CSV file for use in statistical or analytical packages.

How to export questionnaire data:

1. Select Questionnaire Data under the Reports Tab.
2. Under Time Period Based on Contact Referral Date, narrow the report by month and year, week (in MMWR week-year format), or From/To Dates. If left blank, all contacts will be included in the report regardless of contact referral date.
3. Under Outbreak Info, choose the outbreak by name. Only Investigation outbreaks will be displayed.
    a. Once an outbreak name is selected, a list of questionnaires assigned to that outbreak is displayed. Select which questionnaires you wish to export. If none are selected, all questionnaires assigned to the outbreak will be exported.
    b. If only a specific person's data are desired, enter the person's contact ID into the Contact ID field. Only one Contact ID may be entered.
4. Under Geographical Info, narrow the report to include only contacts in a particular county, local health jurisdiction, state, or zipcode. If left blank, all contacts will be included regardless of residence.
5. Select additional data to be exported (Contact ID, Contact Name, Address, County, Jurisdiction, Date of Birth, Age, Race, Ethnicity, Sex)
6. Select View CSV Report.

Screenshot of Questionnaire Data Page

Example of Questionnaire Data CSV Output

ContactId	Last Name	First Name	Address	County of Residence	Investigation Jurisdiction	Age	Age Unit	DOB	Race	Ethnicity	Sex	Health Status
Outbreak: CAMPY-2017-INGHAM												
Questionnaire(s): All												
Date Report Generated: 11/03/2017												
24431	MOUSE	MINNIE		State-Level	State-Level	46	Y	12/1/1970	Asian	Not Hispanic or Latino	Male	
24402	SMITH	LITTLE JOEY	333 S GRAND AVE	Ingham	Ingham County	1	Y	12/1/2015	Caucasian	Not Hispanic or Latino	Male	Well
24431	MOUSE	MINNIE		State-Level	State-Level	46	Y	12/1/1970	Asian	Not Hispanic or Latino	Male	
24444	Mouse	Mickey		State-Level	State-Level			12/1/1987				

Reports: Monitoring Data

This report exports all monitoring data collected per person (one line per person per data point entry) for a selected Monitoring-type outbreak. The user can use these data to generate their own aggregate summary reports in a program outside of OMS (e.g., Excel, Access, or SAS).

This output is only available in CSV format.

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Reports: Line Listing

For either Monitoring or Investigation-type outbreaks, individual-level data can be exported as a PDF, CSV, or HTML file.

How to export line list data:

1. Select Line Listing under the Reports Tab.
2. Under Time Period, narrow the export by month and year or by dates. Dates are based on contact referral date. If left blank, all contacts will be included in the report.
3. Under Outbreak Information, narrow the export down by Condition, Outbreak, and/or Outbreak Type. Warning: If left blank, all contacts from all outbreaks will be exported.
    a. Selecting a Condition will narrow down the export to all contacts in outbreaks of that condition. For example, all contacts associated with Salmonellosis outbreaks.
    b. Selecting an Outbreak will narrow down the export to only contacts in that specific outbreak. For example, all contacts associated with the Salmonella-2017-Statewide outbreak.
    c. Selecting an Outbreak Type (Monitoring or Investigation) will narrow down the export to only contacts in that type of outbreak. For example, all contacts associated with monitoring outbreaks.
    d. These selections can be used in combination with each other. For example, a user can select the condition Ebola and the Outbreak Type Monitoring to get a list of all Ebola Monitoring contacts from all outbreaks.
4. Under Status Information, choose a specific Outbreak status (Active, Canceled, Complete, New). If left blank, all statuses will be included.
5. Under Geographical Info, narrow the report to include only contacts in a particular city, county, local health jurisdiction, or state. If left blank, all contacts will be included regardless of residence.
6. Specify the variables to be exported. Options include Contact ID, Contact Name, Address, County, Jurisdiction, Date of Birth, Age, Race, Ethnicity, Sex, Condition, Outbreak, Onset Date, Referral Date, Health Status, Completion Date, LHJ User, Outbreak Type, Contact Status.
7. Select PDF Report, CSV Report, or HTML Report to begin export.

Screenshot of Line Listing Generation Page

Example of Line Listing PDF Output

Line Listing Report

Report Generated Date: 11/3/17 2:39 PM

Time Period:

Outbreak: HESSIAN FEVER - 2017 -

County: All

State: MI

Condition: Hessian Fever

Outbreak Type: All

There are 16 contacts listed in this report.

ContactId	Contact Name	Address	County of Residence	Investigation Jurisdiction	Age	DOB	Race	Ethnicity	Sex	Condition	Outbreak	Referral Date	Health Status	Completion Date	LHJ User	Outbreak Type	Contact Status
23921	FROMSTATEF ARM, JAKE	713 S MAIN ST FRANKENM UTH MI 48734	Saginaw	Grand Traverse County	27 Y	01/01/199 0	Other	Unknown	M	Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH	10/03/2017	Unknown		COLLINS,MIC HAEL	Monitoring	Active
23951	HAMMOND, CHARLES D	4840 Reppert Coal Road Bloomfield Township MI 48302	Wayne	Wayne County	9 Y	12/26/200 8	Black	Hispanic or Latino	M	Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH					Monitoring	
23955	PARRA, DAMON A	4772 Ritter Avenue Armada MI 48005	State-Level	State-Level	81 Y	09/26/193 6			M	Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH					Monitoring	
23959	SMITH, ELIZA G	HOWARD ST SE GRAND RAPIDS MI 49507	Kent	Kent County	58 Y	09/01/195 9				Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH					Monitoring	
23963	SNYDER, BRENDA J	1902 Haven Lane Kalamazoo MI 49007	Kalamazoo	Kalamazoo County	48 Y	08/28/196 9			F	Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH					Monitoring	
23967	GREEN, DONALD	3549 D Street Troy MI 48083	Oakland	Oakland County	11 Y	06/30/200 6			M	Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH					Monitoring	
23971	KISH, WILLIE	3170 Tuna Street Port Huron 48060	State-Level	State-Level	22 Y	03/12/199 5				Hessian Fever	HESSIAN FEVER - 2017 - FRANKENMU TH					Monitoring	

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Example of Line Listing CSV Output

Line Listing Report									
Report Generated Date: 11/03/2017 14:39:58									
Time Period: ALL									
Outbreak: HESSIAN FEVER - 2017 - FRANKENMUTH									
Condition: Hessian Fever									
County: ALL									
State: MI									
Outbreak Type: ALL									
Total Contacts: 16									
ContactId		Contact Name	Address	County of Residence	Investigation Jurisdiction	Age	DOB	Race	Ethnicity
	23921	FROMSTATEFARM, JAKE	713 S MAIN ST FRANKENMUTH MI 48734	Saginaw	Grand Traverse County	27 Y	1/1/1990	Other	Unknown
	23951	HAMMOND, CHARLES D	4840 Reppert Coal Road Bloomfield Township MI 48302	Wayne	Wayne County	9 Y	12/26/2008	Black	Hispanic or Latino
	23955	PARRA, DAMON A	4772 Ritter Avenue Armada MI 48005	State-Level	State-Level	81 Y	9/26/1936		
	23959	SMITH, ELIZA G	HOWARD ST SE GRAND RAPIDS MI 49507	Kent	Kent County	58 Y	9/1/1959		
	23963	SNYDER, BRENDA J	1902 Haven Lane Kalamazoo MI 49007	Kalamazoo	Kalamazoo County	48 Y	8/28/1969		
	23967	GREEN, DONALD	3549 D Street Troy MI 48083	Oakland	Oakland County	11 Y	6/30/2006		
	23971	KISH, WILLIE	3170 Tuna Street Port Huron 48060	State-Level	State-Level	22 Y	3/12/1995		
	23975	CRANE, CAMILLA	3314 Mount Street Saginaw MI 48601	Genesee	Genesee County	67 Y	9/10/1950		
	23979	WINTERS, JASON¿	4250 Wood Duck Drive 49913	State-Level	State-Level	54 Y	3/10/1963		
	23983	FORM, WAYNE R	45 Bee Street MI 49503	State-Level	State-Level	10 Y	1/1/2007		
	23987	HUERTAS, BARBARA R	285 Tuna Street Southfield MI 48075	State-Level	State-Level	22 Y	4/26/1995		
	23991	BROWN, TINA¿ J	4714 Andell Road Westerville 43081	State-Level	State-Level	30 Y	5/17/1987		
	24176	IRONSTAG, FLINT	360 KEINATH DR FRANKENMUTH MI 48734	Saginaw	Saginaw County	40 Y	8/23/1977	Black	Not Hispanic or Latino
	24317	GLOSS, JEREMY	MI	State-Level	State-Level				
	24321	MICHAELOPOULOS, GERALD	MI	State-Level	State-Level				
	24325	HAMMOND, JANE	MI	State-Level	State-Level				