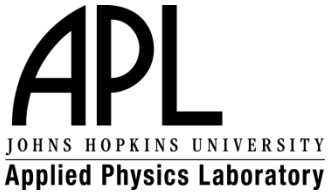
OpenESSENCE Quick Start Guide

For the OpenESSENCE demo site

Prepared by The Johns Hopkins University Applied Physics Laboratory for the Armed Forces Health Surveillance Center, Division of GEIS Operations



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GETTING STARTED

OpenEssence is a web-based multi-user data entry, analysis, and visualization tool for electronic disease surveillance. Features include demographic characterization, temporal and spatial analysis, display of patient level information, geographic information system mapping, anomalous event detection, and dynamic query capability.

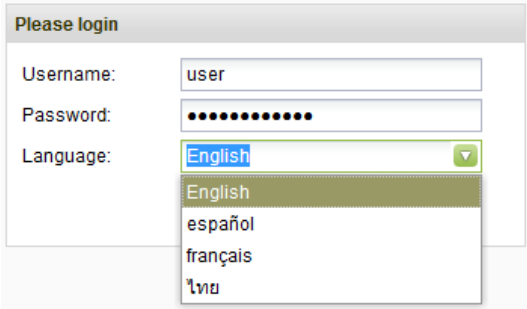
OpenESSENCE is highly flexibly and customizable. This Quick Start Guide is based on the OpenESSENCE demo site. An actual installation of OpenESSENCE will likely appear different from the demo site. However, the data entry, analysis, and visualization features and concepts remain the same.

Log in to the OpenEssence Demo Site

1. Using a web browser, go to the following web address: https://128.244.178.159/openessence
2. In the **Username** field, type the username.
3. In the **Password** field, type the password.

   NOTE: The username and password will be provided to you separately.

4. Select the appropriate language from the **Select Language** list.
5. Click **Login**.



DATA ENTRY AND MANAGEMENT

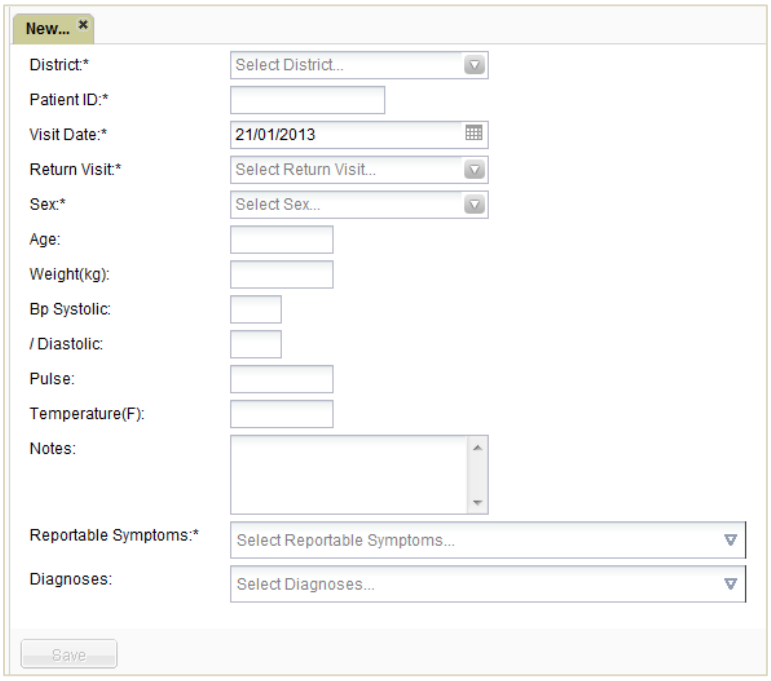
The OpenESSENCE Demo site supports two input data types: Individual Patient Data and Aggregate Patient Data. The Individual Patient Data input type lets you enter case-by-case data; the Aggregate Patient Data input type lets you enter aggregate data (the number of patients seen with a particular complaint).

Select a Data Input Type

1. On the OpenESSENCE Demo screen, locate the **Navigation Menu** on the left.
2. Under **Data Entry**, select a data input type: **Enter Individual Patient Data** (case-based) or **Enter Aggregate Patient Data** (aggregate).
3. A new tab corresponding to the input type will appear in the right hand window of the Demo screen.

Create a New Individual Patient Data Record

1. From the toolbar in the **Enter Individual Patient Data** tab, click **New**. A new tab will appear below the list of existing records.
2. Fill in the appropriate information in the data fields. Required fields are marked with an asterisk.
3. Click **Save** to save the new Individual Patient Data record. The **Save** button is disabled until all required fields are filled in.

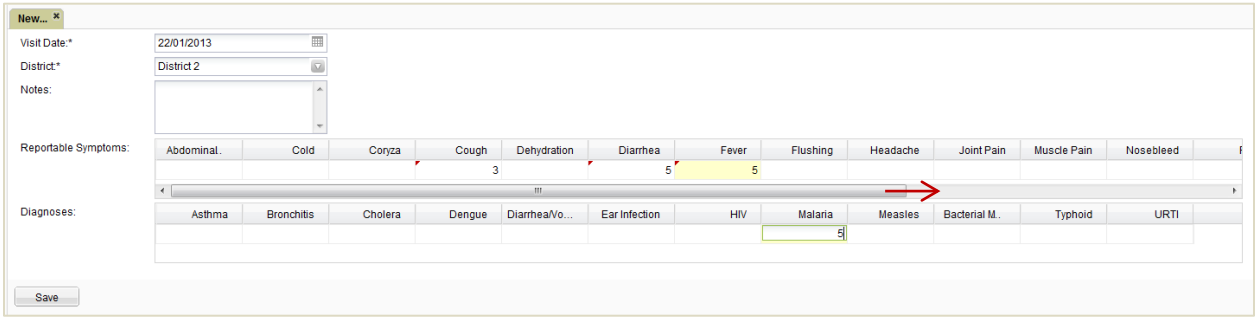


Create a New Aggregate Patient Data Record

1. From the toolbar in the **Enter Aggregate Patient Data** tab, click **New**. A new tab will appear below the list of existing Aggregate Patient Data records.
2. Fill in the appropriate information in the data fields. Required fields are marked with an asterisk. For Reportable Symptoms and Diagnoses, enter the count for each symptom or diagnosis as necessary.

   NOTE: Use the scroll bar to see the complete list of reportable symptoms and diagnoses.

3. Click **Save** to save the new Aggregate Patient Data record. The **Save** button is disabled until all required fields are filled in.



Edit a Record

1. Select the record from the list of existing Individual Patient Data or Aggregate Patient Data records.
2. From the toolbar, click **Edit**. A new tab will appear below the list of existing records, showing the unique record identifier for that record.
3. Modify the data fields as needed.
4. Click **Save** to save the changes to the record.

   NOTE: You can select multiple records at one time for editing. Use the Shift key to select sequential records, or the CTRL key to select multiple non-sequential records.

Delete a Record

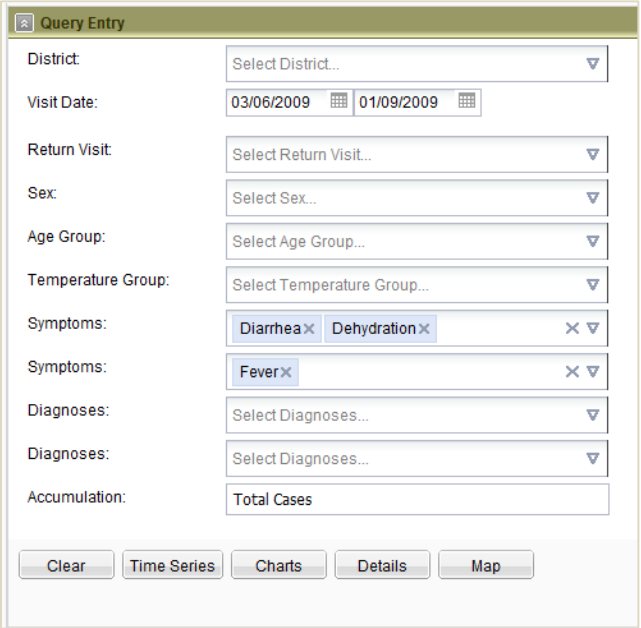
1. Select the record from the list of existing Individual Patient Data or Aggregate Patient Data records.
2. From the toolbar, click **Delete**.
3. A confirmation window appears. Click **Yes** to delete the record, or click **No** to cancel deletion.

   NOTE: You can select multiple records at one time for editing. Use the Shift key to select sequential records, or the CTRL key to select multiple non-sequential records.

ANALYSIS AND VISUALIZATION

Select the Data or Report Type

1. On the OpenESSENCE Demo screen, locate the **Navigation Menu** on the left.
2. Under **Analysis and Visualization**, select the type of data or report you want to view:
    - **Individual Patient Sx/Dx**: View selected individual patient records by symptom and/or disease. Only pie/bar charts and details in tabular form are available in this view (no time series or geographic mapping).
    - **Individual Patient Data**: View selected individual patient data, using time series graphs, pie/bar charts, geographic mapping, or details in tabular form.
    - **Aggregate Patient Data**: View selected aggregate patient data by symptom(s) accumulation, using time series graphs, pie/bar charts, geographic mapping, or details in tabular form.
    - **Aggregate Data Latency**: View reporting latency for aggregate data by district, using time series graphs, pie/bar charts, or details in tabular form.
    - **Aggregate Site Report**: View the number of aggregate patient data reports that have been created by district and date.
3. A new tab corresponding to the data or report type will appear in the right hand window of the Demo screen. The tab contains a query form containing data fields which are used as filters for time series graphs, charts, and maps.
4. Select or type the values in the data fields. Most list fields allow for multiple selections. Within a single field, multiple selections are treated as a logical OR. Between fields, selections are treated as a logical AND. For example, the **Individual Patient Data** query form shown below will look for records that contain symptoms of diarrhea or dehydration, and records that contain a symptom of fever. Once the query form entries are complete, the results of the query can be viewed using time series graphs, charts, maps, and tabular view.

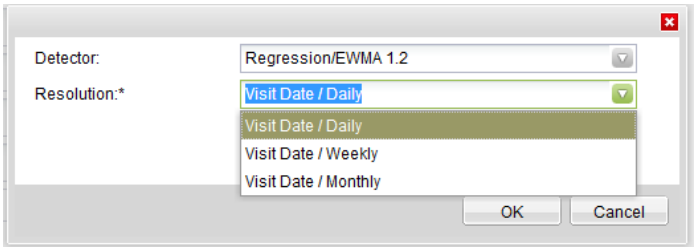


NOTE: The query forms for the other data and report types will differ in terms of data fields available in the form, but the functionality will be similar.

Create a Time Series Graph

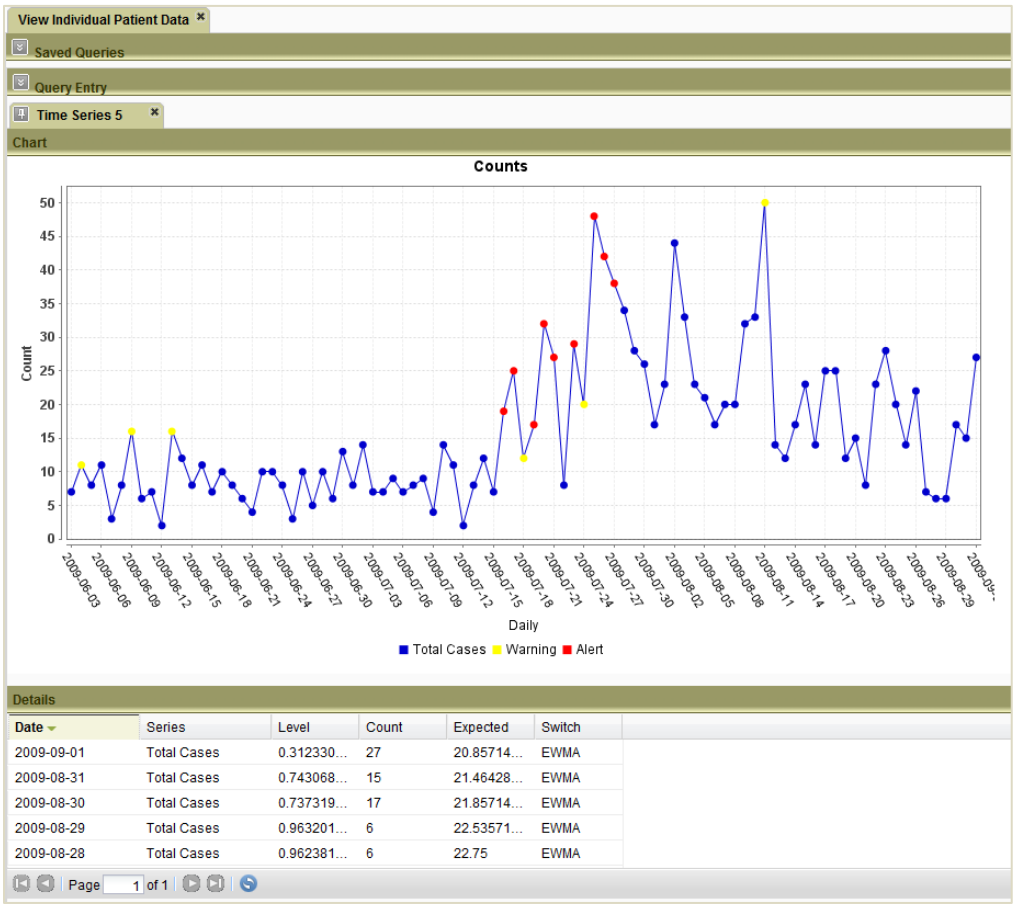
The OpenESSENCE Time Series visualization feature displays data by aggregating and plotting data on a line graph. The tool also has the capability to run detection algorithms on the plotted data.

1. To generate a time series graph, click **Time Series** from the query form tab (as described in the previous section).
2. (Optional) Select a detection algorithm from the **Detector** list.
3. From the **Resolution** list, select **Daily**, **Weekly**, or **Monthly**. These resolutions will aggregate the data by day, week, or month, respectively.



4. Click **OK.** A new tab appears displaying the time series chart. The time series tab is divided into three panels. The upper panel displays the selected parameters. The middle

panel displays the time series chart. The lower panel displays details, including detection results, for the time series.



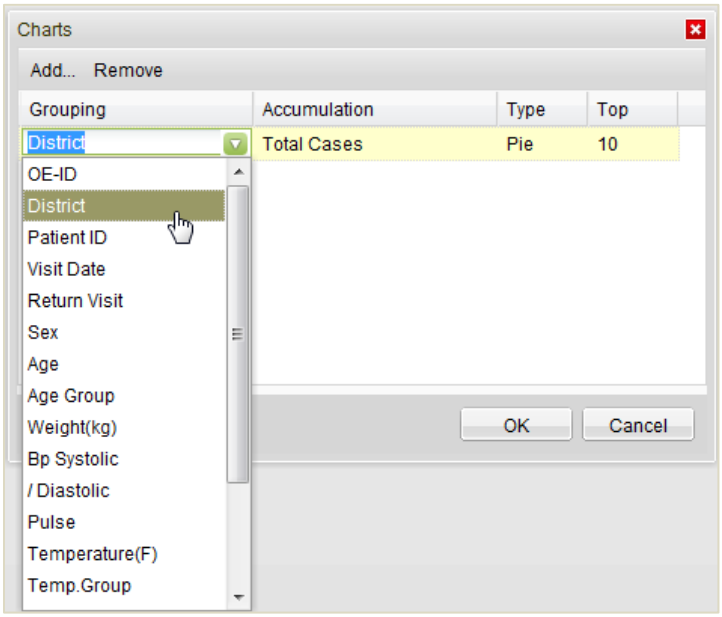
5. Use the toolbar buttons at the top right of the chart panel to resize, edit, or download the chart.

6. Click a point in the time series chart to view details for the selected group/resolution. The details will appear in a new tab.

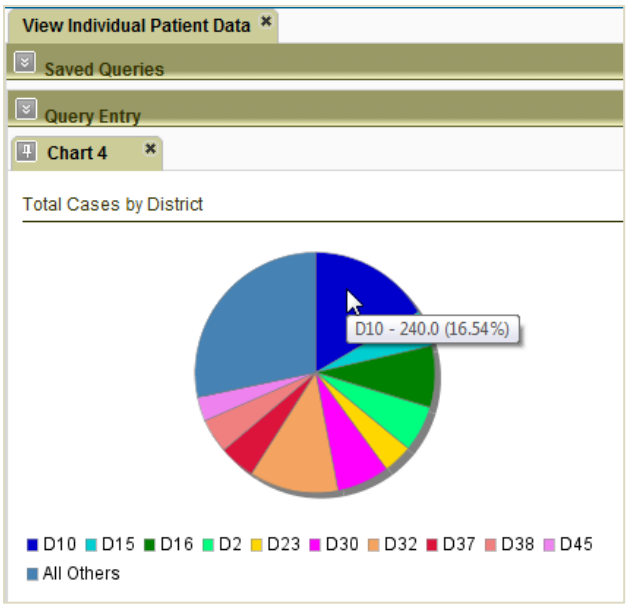
Create a Pie or Bar Chart

The OpenESSENCE Chart visualization feature displays a summary of the filtered data in pie or bar form. Multiple charts can be created at once by selecting multiple grouping and accumulation combinations.

1. To generate a pie or bar chart, click **Chart** from the query form tab.
2. Click **Add** to add a new chart.
3. In the **Grouping** drop down list, select the variable to be displayed in the chart.
4. In the **Accumulation** drop down list, select the type of accumulation for each chart definition.
5. In the **Type** drop down list, select the type of chart to create.
6. (Optional) In the **Top** drown down list, select the number of groupings (slices or bars) to show in the chart. In this example, the resulting pie chart will show the top 10 districts with the most number of cases, and all others will be grouped together.



7. Click **OK** to create the chart. Position the mouse over any part of the chart to see additional details.

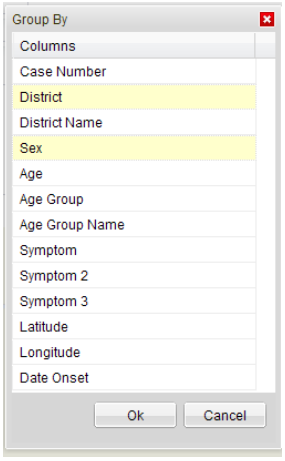


View Details

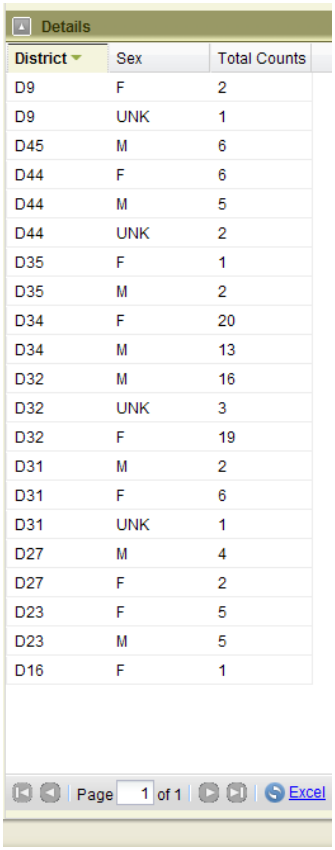
The Data Details feature displays records in a tabular or grid format. The records can be aggregated, or grouped by, one or more columns. For example, if the **District** and **Sex** columns are selected, the **Details** grid will provide aggregation for each District and Sex combination. The grid can be exported to Microsoft Excel.

1. Click **Details** from the query form tab.
2. Select the column(s) to group by.

   NOTE: To select multiple columns, press and hold CTRL while selecting the columns. To select an entire range of columns, press and hold SHIFT while selecting the columns.

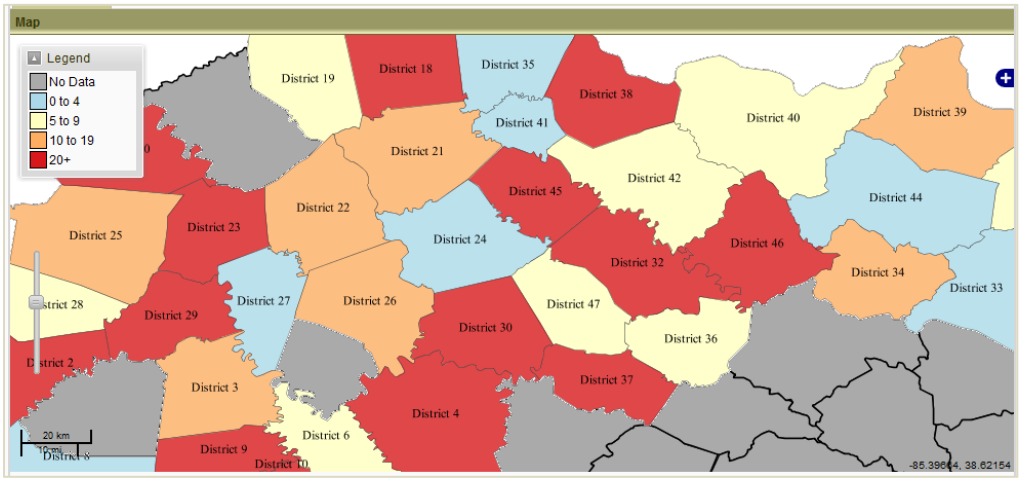


3. Click **OK**. The grid results appear in a new tab named **Details**. Columns can be sorted by clicking on the column headings or reordered by dragging the column heading to the desired placement. Controls at the bottom of the grid enable searching through pages of data and export of the grid data to Microsoft Excel.



Generate a Map

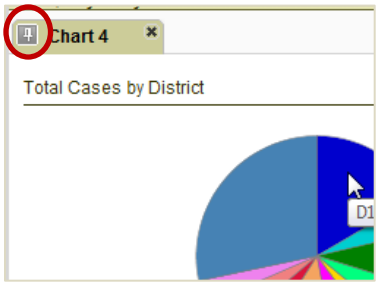
1. Click **Map** from the query form tab.
2. Click on a shaded area to investigate the data in that area.
3. Use the control at the left to zoom in or out. Click and drag in any direction to move the map as needed.



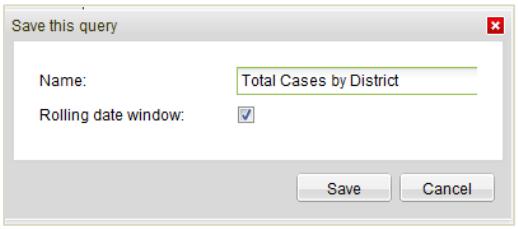
Save a Query

If there is a query that you will be using frequently, you can save the query so that it can be run again without having to enter the filters again. To save a query:

1. Click the pin icon from the query results tab (of the query you wish to save).



2. Enter a name for the saved query and select whether or not you want to use the rolling date option. If the rolling date option is selected, then the start and end dates of the query are ignored. Instead, only the query's length of time is preserved. The end date will be the date that the saved query is run. The saved query



3. To run a saved query, expand the **Saved Queries** panel, select the query, and click **Run**.