

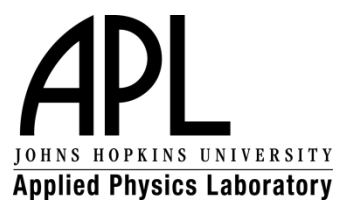
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# OpenESSENCE User Guide

*For the OpenESSENCE demo site*

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Health Surveillance Center, Division of GEIS Operations



February 2013

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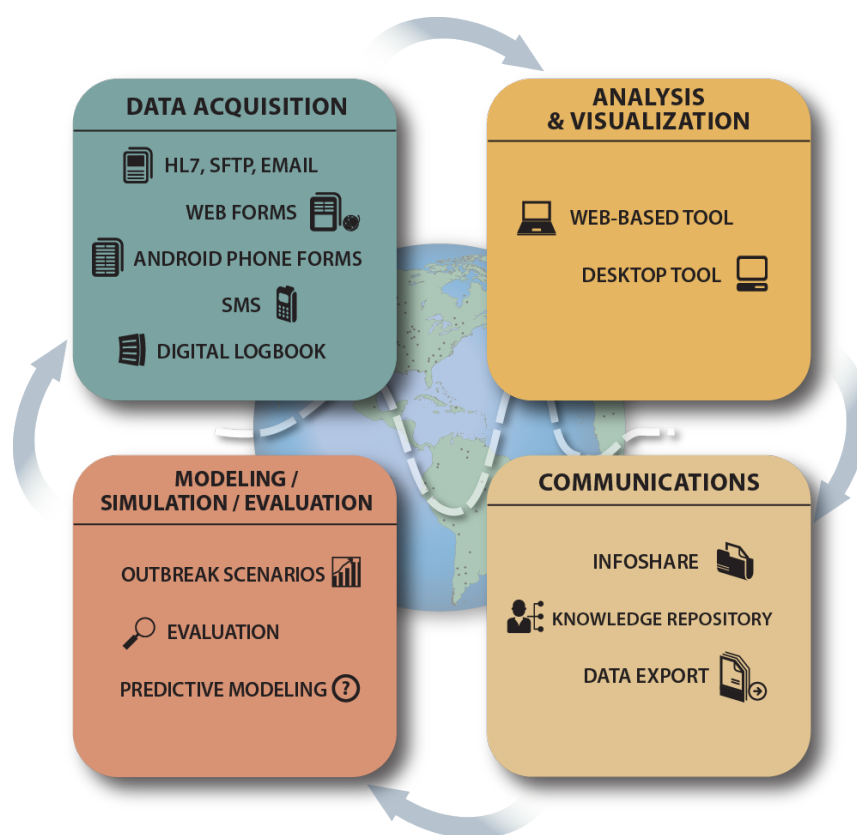
## INTRODUCTION

### History of ESSENCE and SAGES

ESSENCE is the acronym for the Electronic Surveillance System for the Early Notification of Community-based Epidemics. It is a web-based system used by state and city public health authorities throughout the United States to monitor disease trends in their communities. The system was conceived to help public health authorities rapidly identify disease outbreaks possibly associated with bio-terrorist attacks. Epidemiologists using the system quickly determined, however, that the technology was as useful—or more useful—in monitoring trends and outbreaks of naturally occurring diseases. The enterprise ESSENCE system requires a high speed internet connection, relies on automated data streams, and uses proprietary software for the display of data. It became clear over time that an ESSENCE-type system would be useful in geographic areas and situations where the existing technology infrastructure is limited and cannot support enterprise ESSENCE.

SAGES (Suite for Automated Global Electronic bioSurveillance) leverages the experience gained in the development of ESSENCE by the US Department of Defense and the Johns Hopkins University Applied Physics Laboratory (JHU/APL), and applies that experience to enhancing disease surveillance capacity in resource-limited settings around the world.

SAGES tools are organized into four categories: 1) data collection, 2) analysis and visualization, 3) communications, and 4) modeling/simulation/evaluation (Figure 1). Within each category, SAGES offers a variety of tools compatible with surveillance needs and different types or levels of information technology infrastructure.



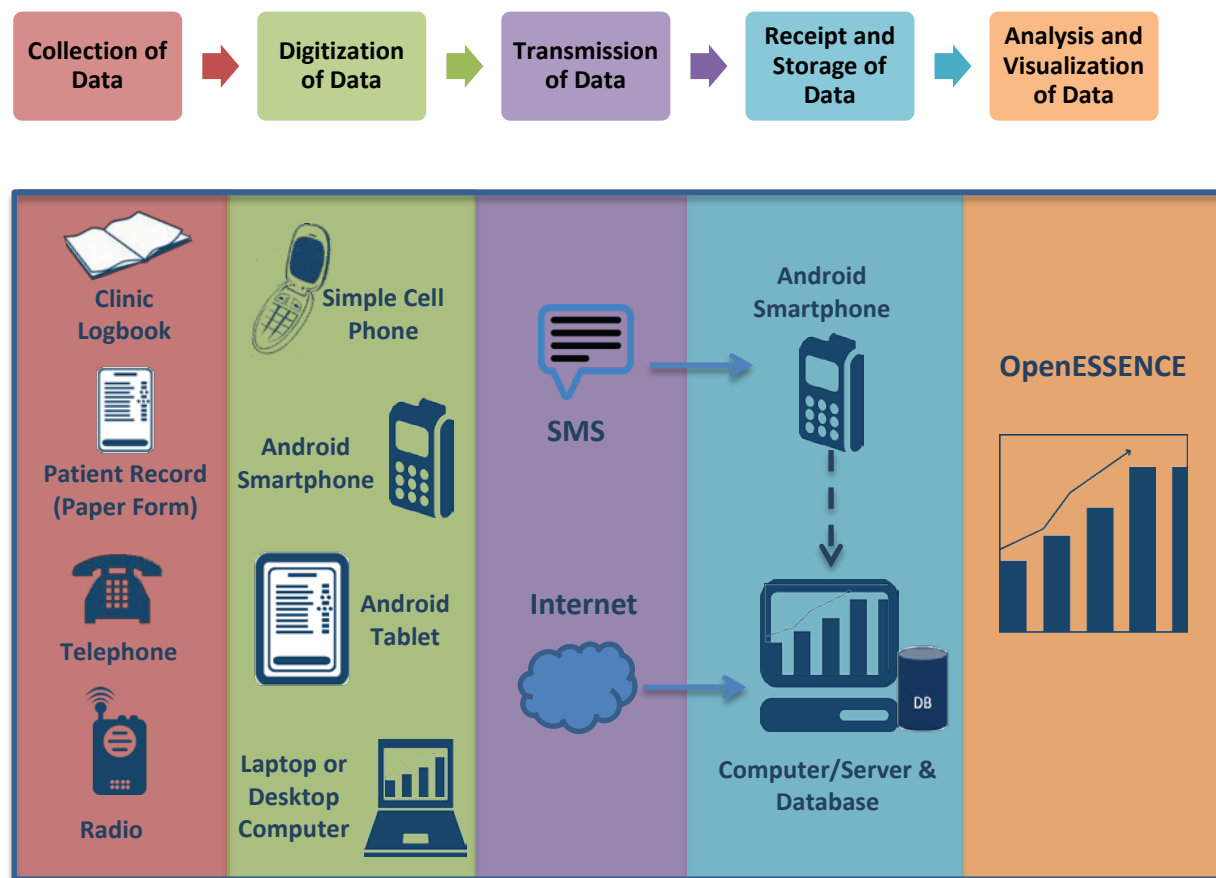
**Figure 1: SAGES Suite of Tools**

OpenESSENCE is a part of the SAGES suite of tools. It is a freely-available, web-based, multi-user, data entry, analysis, and visualization tool for electronic disease surveillance. Although it includes many of the features and much of the functionality of the more mature enterprise ESSENCE system, it does not require a high speed internet connection or automated data streams. Features include demographic characterization tools, temporal and spatial analysis, patient level information display, geographic information system mapping, anomalous event detection, and dynamic query capability.

### **SAGES/OpenESSENCE System Architecture Example**

In resource-limited settings, it is imperative to select technology that is both easy to incorporate into existing health services and sustainable with little or no additional financial investment. Each implementation of SAGES is designed to fit the needs of the environment into which it is being installed, and to use the existing infrastructure. The system can be scaled up to meet changing needs and increased availability of resources.

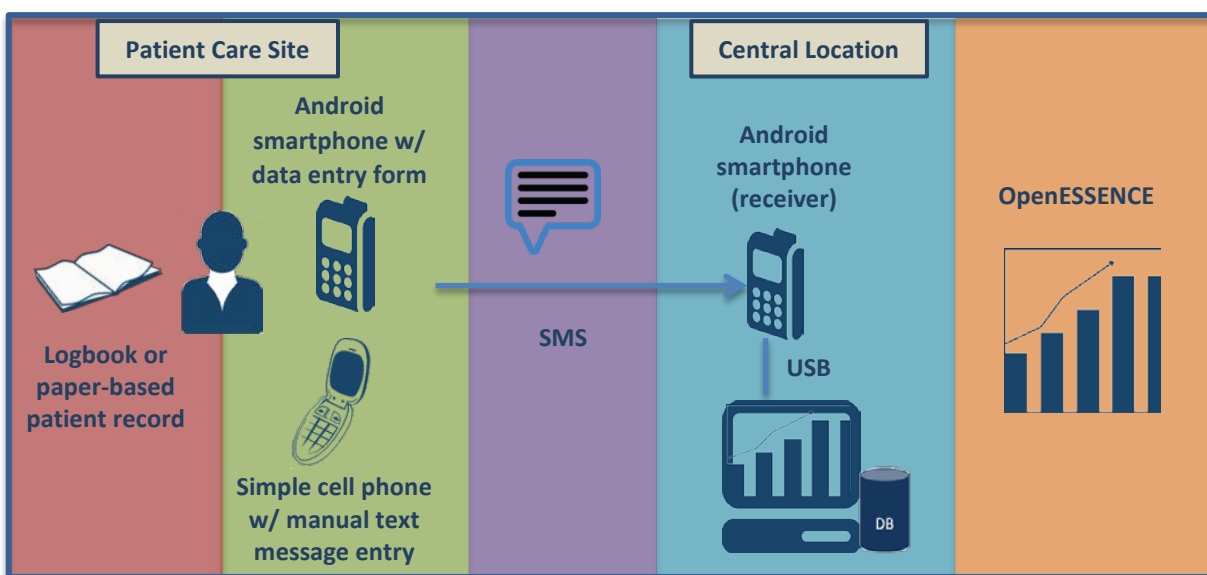
There are five basic processes in the SAGES framework (Figure 2). Within each process, several different component options are available.



**Figure 2: SAGES Processes and Components**

OpenESSENCE is a web-based tool. The basic OpenESSENCE system architecture includes a central server (depending upon the data volume, the machine can be an actual server class computer, a desktop, or laptop) which hosts the database and the OpenESSENCE web application. Any computer with an internet connection can log in to the OpenESSENCE server using a web browser, and perform data analysis and data entry.

A basic SAGES system architecture example is shown in Figure 3. One or more patient care sites can be incorporated into this architecture, creating a regional or national surveillance architecture.

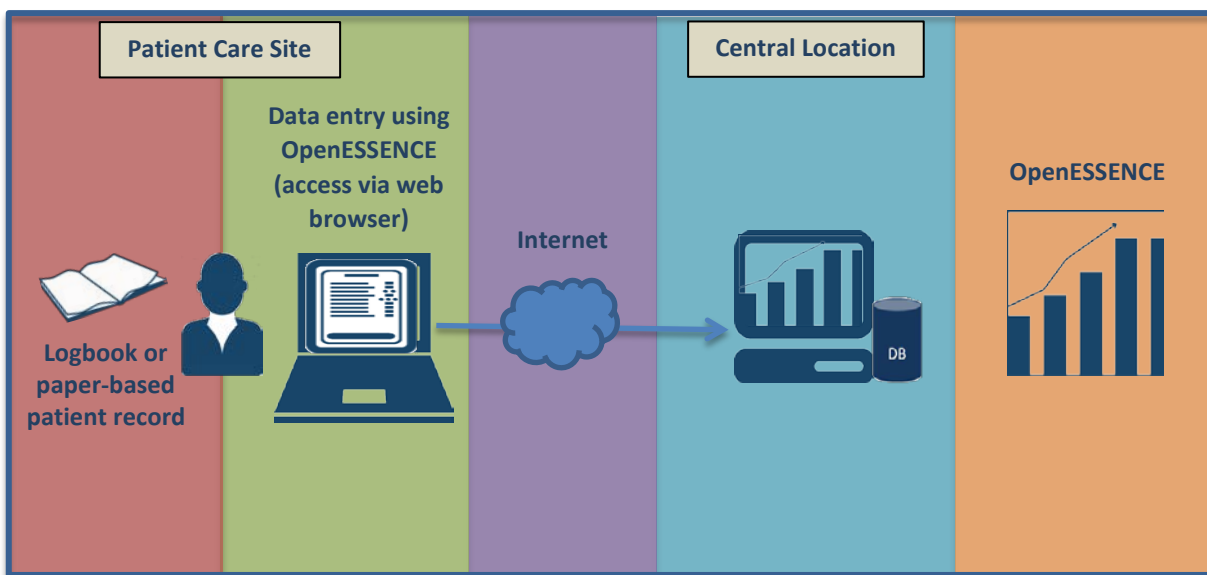


**Figure 3: SAGES System Architecture Example**

At the patient care site (such as a clinic or hospital), information from existing paper records or logbook entries is digitized by manually entering the information into Short Message Service (SMS) text messages using simple cell phones or Android smartphones. A data collection form can be used on the Android smart phone for ease of data entry; if using a simple cell phone, the SMS text messages would adhere to a pre-defined format. Having the option to use a smartphone or a simple cell phone illustrates the flexibility of the SAGES framework. Smartphones are a higher cost resource that may not, initially, be available at all locations. As additional resources become available (tablets, computers, internet service), they can be incorporated into the architecture.

The SMS messages are received at a central point on an Android smartphone, which is attached via USB to a computer running OpenEssence. The SMS messages are automatically pulled from the Android smartphone through a scheduled batch process that parses and writes the data into the OpenESSENCE database. The data is now ready to be analyzed using the analysis and visualization capabilities of OpenESSENCE. The OpenESSENCE web application is accessible by any computer that can connect to the central OpenESSENCE web server over the internet/intranet.

If a computer with internet access is available at the patient care site, data can be entered directly into OpenESSENCE (Figure 4). Data analysis can also be performed from that computer (time series, charts, maps).



**Figure 4: SAGES System Architecture Example with Computer and Internet at Patient Care Site**

## GETTING STARTED

OpenESSENCE is highly flexible and customizable. Components such as data elements, data types, record types, column names, language and font are all customizable. Each implementation of the system will be unique. The best way to start learning about the tool is to use the OpenESSENCE demonstration (or 'demo') site, which is hosted by JHU/APL. This site contains sample data and also supports entry of both cased-based and aggregate data. All of the OpenESSENCE analysis and visualization tools are available on the demo site. The site is meant to be a representation of an actual instance of OpenESSENCE that would be implemented in a country, region, or geographic area.

This User Guide is based on the OpenESSENCE demo site. An actual implementation of OpenESSENCE will likely be 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

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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**.



**OpenESSENCE Demo**


Please login

Username:

Password:

Language:

Login

**APL** 

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**NOT FOR PUBLIC DISCLOSURE**

A typical OpenESSENCE installation has two types of accounts or user roles (a general user and an administrator). For example, a user account can provide data entry, modification, deletion, and analysis capability; or, a user account can be configured to allow only data entry capability. Multiple accounts can be created, so that each user has a unique user name and password. An administrator account allows for maintenance of reference tables and creation of additional user accounts and is generally limited to personnel who maintain the OpenESSENCE system.

## Navigation Menu

The initial OpenESSENCE screen contains a Navigation Menu on the left, and a **Welcome** tab which is open by default. The **Welcome** tab can be closed by clicking the **X** next to the tab name. At the top right corner of the screen, the name of the user currently logged in is displayed (in our example, the user name is 'user').



The Navigation Menu provides access to the data entry and analysis functions in OpenESSENCE. New tabs will open in the center pane when items are selected from the Navigation Menu.

The **Data Entry** option allows for the entry of individual patient data and aggregate patient data. The following options are available for data entry:

- Enter Individual Patient Data – enter, modify, or delete case-based data records
- Enter Aggregate Patient Data – enter, modify, or delete aggregate data records

The Analysis and Visualization option enables the use to analyze and generate reports using time series graphs, pie/bar charts, geographic maps, and tabular grids. The following options are available for analysis and visualization:

- Individual Patient Sx/Dx – view selected individual patient records by symptom and/or disease (pie/bar charts and tabular data only)

- 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, , or details in tabular form
- Aggregate Data Latency – view reporting latency 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, using time series graphs, pie/bar charts, or details in tabular form

These options are explained in detail in the subsequent sections of this User Guide.

## DATA ENTRY

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 data for each unique patient visit; the Aggregate Patient Data input type lets you enter aggregate data, or the number of patients with a particular complaint or symptom during a pre-defined time period.

### Create a New Individual Patient Data Record

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1. On the OpenESSENCE Demo screen, locate the **Navigation Menu** on the left.
2. Under **Data Entry**, select **Enter Individual Patient Data** (case-based). A new tab called **Enter Individual Patient Data** appears in the right hand window of the Demo screen.
3. From the toolbar in the **Individual Patient Data** tab, click **New**. A new tab will appear below the list of existing Individual Patient Data records.
4. Fill in the appropriate information in the data fields. Required fields are marked with an asterisk (fields are described below).
5. Click **Save** to save the new Individual Patient record. The **Save** button is disabled until all required fields are filled in.

The screenshot shows a web form titled "New..." with a close button (X). The form contains the following fields:

- District\*:** A dropdown menu with the text "Select District..."
- Patient ID\*:** A text input field.
- Visit Date\*:** A date picker showing "05/02/2013".
- Return Visit\*:** A dropdown menu with the text "Select Return Visit..."
- Sex\*:** A dropdown menu with the text "Select Sex..."
- Age:** A text input field.
- Weight(kg):** A text input field.
- Bp Systolic:** A text input field.
- / Diastolic:** A text input field.
- Pulse:** A text input field.
- Temperature(F):** A text input field.
- Notes:** A large text area with a vertical scrollbar.
- Reportable Symptoms\*:** A dropdown menu with the text "Select Reportable Symptoms..."
- Diagnoses:** A dropdown menu with the text "Select Diagnoses..."

At the bottom left of the form is a "Save" button, which is currently disabled (grayed out).

District (required)	Geographic location of patient; geographic areas on the demo site are called districts; use pull-down list to select
Patient ID (required)	Unique ID for the patient; manual text entry (alphanumeric)
Visit Date (required)	Date of visit (click calendar icon to select date)
Return Visit (required)	Indicate if a return visit is required (Y/N)
Sex (required)	Select sex of patient (Female/Male/Unknown)
Age	Age of patient in years; manual text entry (numeric)
Weight (kg)	Weight of patient in kilograms; manual text entry (numeric)
Bp Systolic	Systolic blood pressure; manual text entry (numeric)
Diastolic	Diastolic blood pressure; manual text entry (numeric)
Pulse	Pulse; manual text entry (numeric)
Temperature (F)	Temperature in degrees Fahrenheit; manual text entry (numeric)
Notes	Additional notes as needed; manual text entry (alphanumeric)
Reportable Symptoms (required)	Symptom(s); select one or more from pull-down list
Diagnoses	Diagnoses; select one or more from pull-down list

## Create a New Aggregate Patient Data Record

1. On the OpenESSENCE Demo screen, locate the **Navigation Menu** on the left.
2. Under **Data Entry**, select **Enter Aggregate Patient Data**. A new tab called **Enter Aggregate Patient Data** appears in the right hand window of the Demo screen.
3. 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.
4. Fill in the appropriate information in the data fields. Required fields are marked with an asterisk (fields are described below). 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.

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

Visit Date (required)	Date of visit (click calendar icon to select date)
District (required)	Geographic location of patient; geographic areas on the demo site are called districts; use pull-down list to select
Notes	Additional notes as needed; manual text entry (alphanumeric)
Reportable Symptoms	Enter count (numeric) under the relevant symptom(s)
Diagnoses	Enter count (numeric) under the relevant diagnoses

## Edit an Existing Record

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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 an Existing Record

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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

The **Analysis and Visualization** option allows the user to analyze and visualize the data by creating queries for data from the database. The queries are performed using query forms containing data fields which are used as filters to define the subset of data that you want to analyze. The results of the query can then be used to create time series graphs, charts, maps, and tabular data.

### Create a Time Series Chart

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The OpenESSENCE time series visualization feature displays data by aggregating and plotting data on a line chart. The tool also has the capability to run detection algorithms on the plotted data. This example will describe how to create time series charts for Individual Patient Data and Aggregate Patient Data.

1. To generate a time series chart, select either **View Individual Patient Data** or **View Aggregate Patient Data** from the **Navigation Menu**. A new tab corresponding to the data type will appear. The tab contains a query form containing data fields which are used as filters for time series charts, pie/bar charts, and maps.

The screenshot shows the 'Query Entry' form for 'View Individual Patient Data'. The form includes the following fields and controls:

- Tab Headers:** 'View Individual Patient Data' (active) and 'View Aggregate Patient Data'.
- Section Headers:** 'Saved Queries' and 'Query Entry'.
- Fields:**
  - District: Select District...
  - Visit Date: 06/03/2009 to 09/01/2009 (with calendar icons)
  - Return Visit: Select Return Visit...
  - Sex: Select Sex...
  - Age Group: Select Age Group...
  - Temperature Group: Select Temperature Group...
  - Symptoms: Select Symptoms... (two instances)
  - Diagnoses: Select Diagnoses... (two instances)
  - Accumulation: Total Cases
- Buttons:** Clear, Time Series, Charts, Details, Map.



View Individual Patient Data \* View Aggregate Patient Data \*

Saved Queries

Query Entry

Report Date: 06/03/2009 09/01/2009

District: Select District...

Symptom Accumulations: Select Symptom Accumulations...

Clear Time Series Charts Details

2. 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 cough or cold, and records that contain a symptom of fever.

Query Entry

District: Select District...

Visit Date: 07/10/2009 09/01/2009

Return Visit: Select Return Visit...

Sex: Select Sex...

Age Group: Select Age Group...

Temperature Group: Select Temperature Group...

Symptoms: Cough Cold Fever

Diagnoses: Select Diagnoses...

Diagnoses: Select Diagnoses...

Accumulation: Total Cases

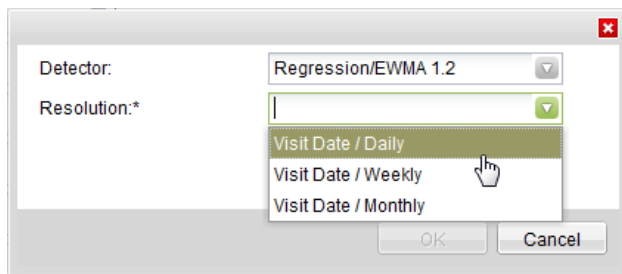
Clear Time Series Charts Details Map

NOTE: You are not required to enter filter values on the query form. The resulting time series chart would only be filtered by the date range.

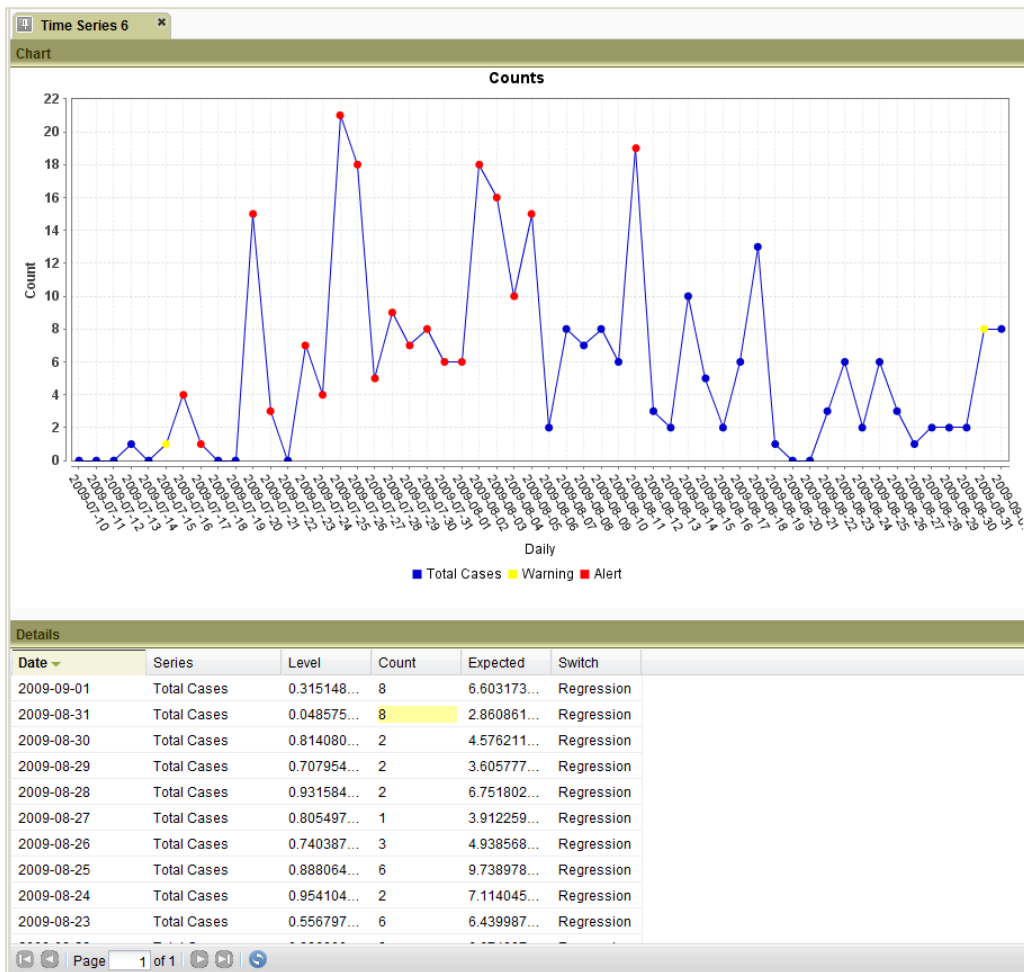
3. Click **Time Series**.
4. (Optional) Select a detection algorithm from the **Detector** list.

Detector refers to the mathematical algorithm used to identify statistically significant increases in temporal data, often called alerts. The default value for this variable is no detection, so you must select an algorithm to display detection. The algorithms available in OpenESSENCE include Regression/EWMA 1.2 Switch, Regression 1.2, EWMA 1.2, CDC-C1, CDC-C2, and CDC-C 3. All anomaly detectors have pros and cons and their utility and validity are associated with the volume and distribution of data being examined. The Regression/EWMA 1.2 Switch algorithm developed by JHU/APL examines the data available for analysis and automatically selects the most appropriate algorithm for the dates being considered, and thus works well with most data sets.

5. From the **Resolution** list, select **Visit Date / Daily**, **Visit Date / Weekly**, or **Visit Date / Monthly**. These resolutions will aggregate the data by day, week, or month respectively.



6. 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 (the last panel only appears if a detection algorithm has been selected).



- Use the toolbar buttons at the top right of the chart panel to resize the chart to fit the window; edit chart properties such as graph title, X/Y axis labels, and Y axis scale; or download the chart to a PNG file.



Resize the chart to fit the window



Edit chart properties such as graph title, X/Y axis labels, and Y axis scale



Download the chart

- Click a point in the time series chart to view details for the selected group/resolution. The details will appear in a new tab. To return to the time series chart, click the **Time Series: Results** tab.

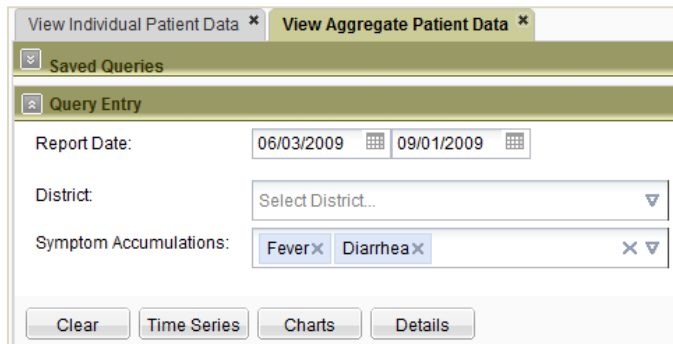
Alerts are shown on the time series graph as yellow or red date markers (dots). An alert marks a day or time period when the detection algorithm indicates that the record count is statistically significantly greater than expected based on recent data. Alerts marked on the time series as red dots indicate that the increase is statistically significant with a p-value of  $\leq 0.01$ , while the yellow alert corresponds to a p-value of  $\geq 0.05$ . When the cursor is placed on a red or yellow dot, a pop-up window shows the date, the count, and the p-value of the point on which the cursor is sitting.

## Create a Multi-Series Time Series Chart

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The View Aggregate Patient Data option supports the creation of a time series chart containing multiple symptom accumulations. Here is an example:

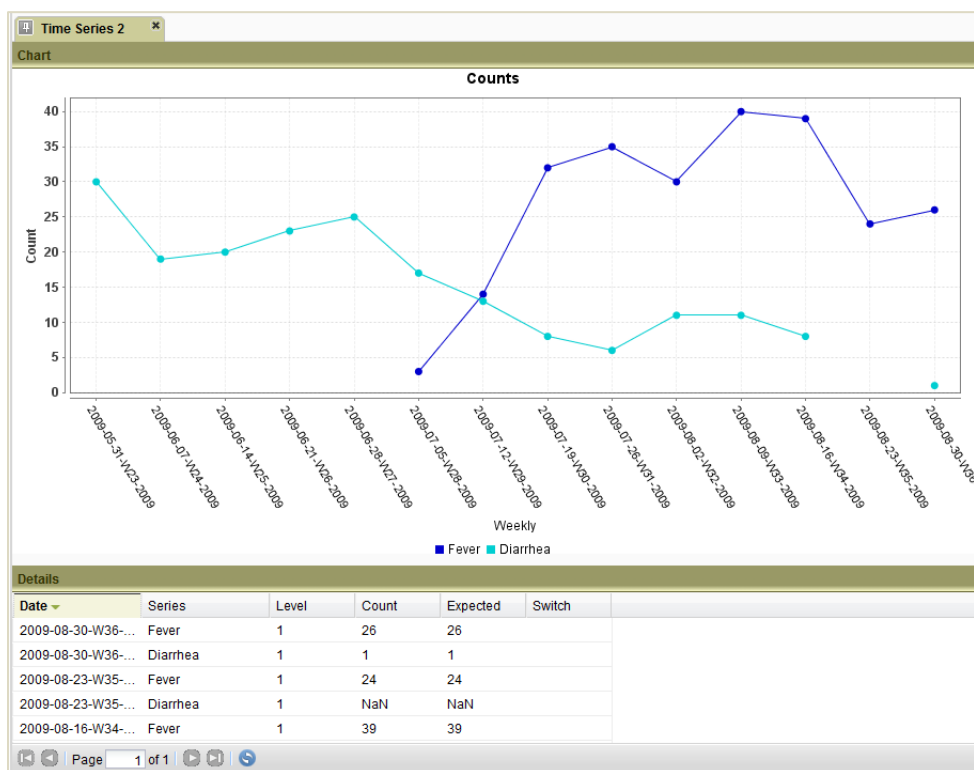
1. From the **Navigation** menu, select **View Aggregate Patient Data**. A new tab appears containing the **View Aggregate Patient Data** query form.



The screenshot shows a web interface with two tabs: 'View Individual Patient Data' and 'View Aggregate Patient Data'. The 'View Aggregate Patient Data' tab is active. Below the tabs is a 'Saved Queries' section with a dropdown arrow. Below that is a 'Query Entry' section. The 'Query Entry' section contains the following fields and controls:

- Report Date:** Two date pickers showing '06/03/2009' and '09/01/2009'.
- District:** A dropdown menu with the text 'Select District...'.
- Symptom Accumulations:** A field containing two selected items, 'Fever' and 'Diarrhea', each with a small 'x' icon to remove it. There is also a dropdown arrow to the right of the field.
- Buttons:** At the bottom of the form are four buttons: 'Clear', 'Time Series', 'Charts', and 'Details'.

2. Enter the desired date range in the **Report Date** field.
3. If desired, select one or more districts (geographic areas) to filter by. If no district is selected, then data from all districts will be returned.
4. In the **Symptom Accumulations** field, select the symptom accumulations you wish to see. In the example, we selected fever and diarrhea.
5. Click **Time Series**.
6. Select the **Detector** and **Resolution**. In the example, we selected no detection and weekly resolution. The weekly counts for fever and diarrhea appear as separate plotted lines on the chart.



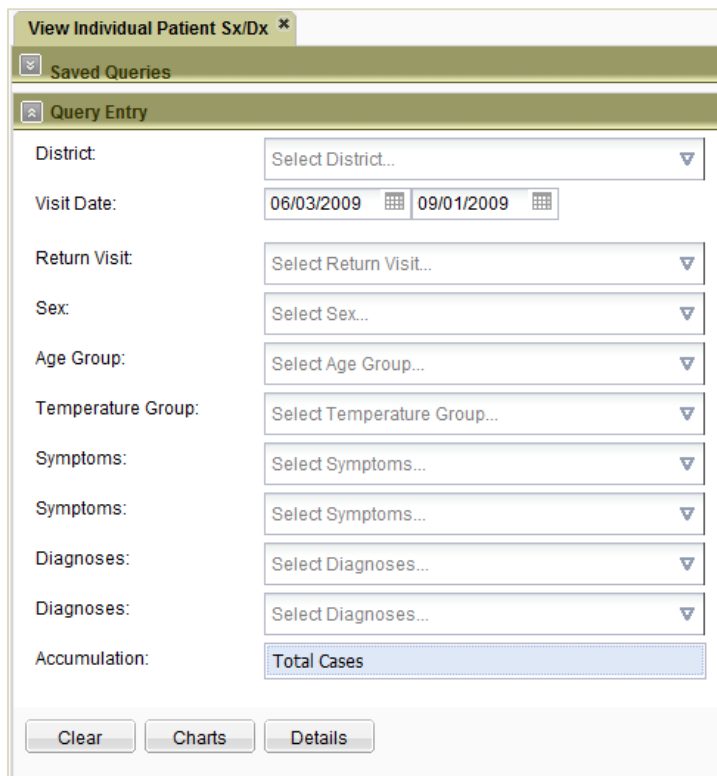
## Create a Pie or Bar Chart

We will use the **View Individual Patient Sx/Dx** option to describe the pie/bar chart feature in OpenESSENCE. Multiple charts can be created at once by selecting multiple grouping and accumulation combinations. Charts can be downloaded in PNG (Portable Network Graphics) file format for use in other applications.

The **View Individual Patient Sx/Dx** allows you to view total cases by symptom and diagnosis based on individual patient data.

1. On the OpenESSENCE Demo screen, locate the **Navigation Menu** on the left.
2. Under **Analysis and Visualization**, select **View Individual Patient Sx/Dx**. A new tab appears in the right hand window of the Demo screen. The tab contains a query entry form, containing data fields which are used as filters.
3. Select or type the values in the data fields.

**NOTE:** **Accumulation** is set to **Total Cases** by default and is not changeable.

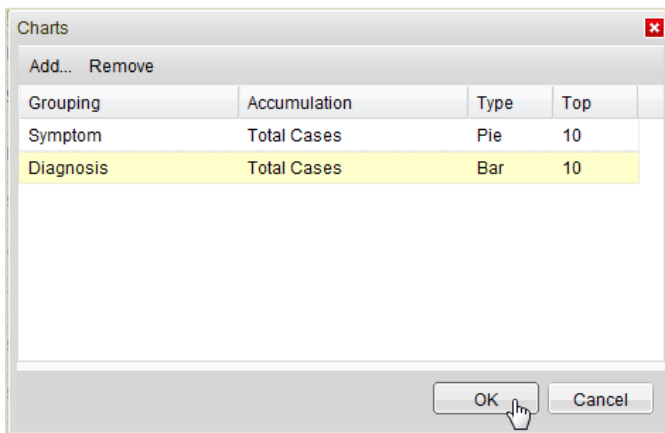


The screenshot shows a web application window titled "View Individual Patient Sx/Dx". It features a "Query Entry" section with several dropdown menus and date pickers for filtering data. The fields are: District (Select District...), Visit Date (06/03/2009 to 09/01/2009), Return Visit (Select Return Visit...), Sex (Select Sex...), Age Group (Select Age Group...), Temperature Group (Select Temperature Group...), Symptoms (two instances of Select Symptoms...), Diagnoses (two instances of Select Diagnoses...), and Accumulation (Total Cases). At the bottom are buttons for "Clear", "Charts", and "Details".

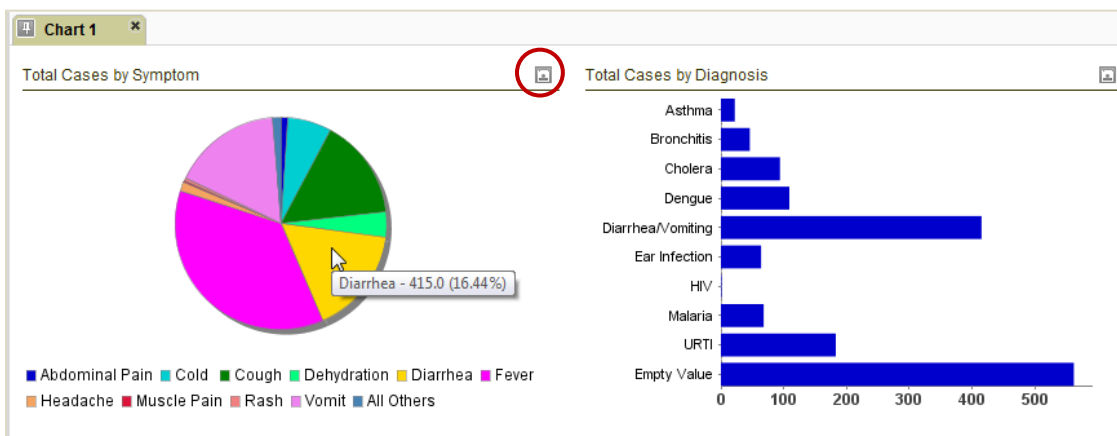
4. Click **Charts**.

5. In the **Charts** dialog box, under **Grouping**, select the variable to be displayed in the chart. For our example, we will select **Symptoms**.
6. **Accumulation** is fixed at **Total Cases**.
7. Under **Type**, select the type of chart to create (**Pie** or **Bar**).
8. (Optional) Under **Top**, select the number of groupings (slices or bars) to show in the chart. In the example below, we have selected to show only the top 10 symptoms and diagnoses.

NOTE: You can create multiple charts at one time by clicking **Add** on the menu bar. Select **Grouping**, **Accumulation**, **Type**, and **Top** for each subsequent chart.



The example charts below show the top 10 total cases by symptom in a pie chart and the top 10 total cases by diagnosis in a bar chart. Click the **Download Chart** icon at the top right of any chart to save a copy of that chart in PNG format. Position the cursor over any part of a chart to see count information about that section of the chart.





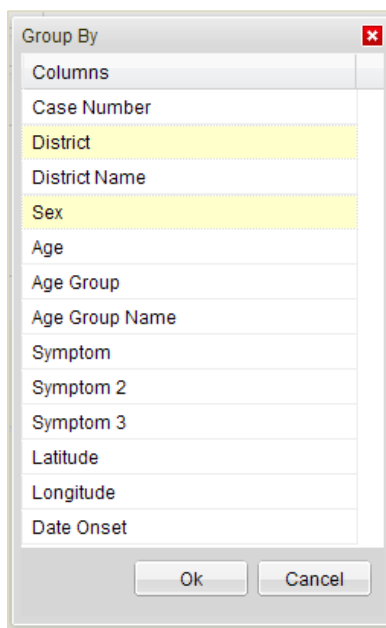
## View Details

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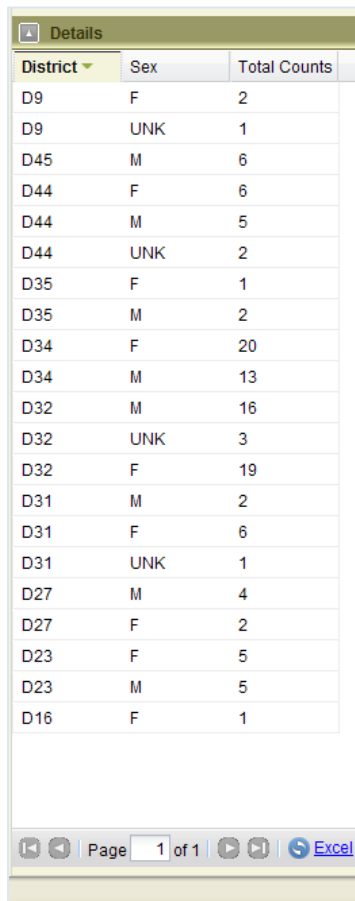
The Details feature displays records in a grid format. The records can be aggregated, or grouped, by one or more columns. For example, if the **District** and **Sex** columns are selected, the **Details** grid will provide aggregation for each District and Sex combination. The grid can be exported to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

1. From the **Navigation** menu, select **Individual Patient Data**. A new tab appears containing the **Individual Patient Data** query form.
2. If desired, enter values in the data fields to filter the data results.
3. Click **Details**.
4. 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.



5. 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.



District ▼	Sex	Total Counts
D9	F	2
D9	UNK	1
D45	M	6
D44	F	6
D44	M	5
D44	UNK	2
D35	F	1
D35	M	2
D34	F	20
D34	M	13
D32	M	16
D32	UNK	3
D32	F	19
D31	M	2
D31	F	6
D31	UNK	1
D27	M	4
D27	F	2
D23	F	5
D23	M	5
D16	F	1

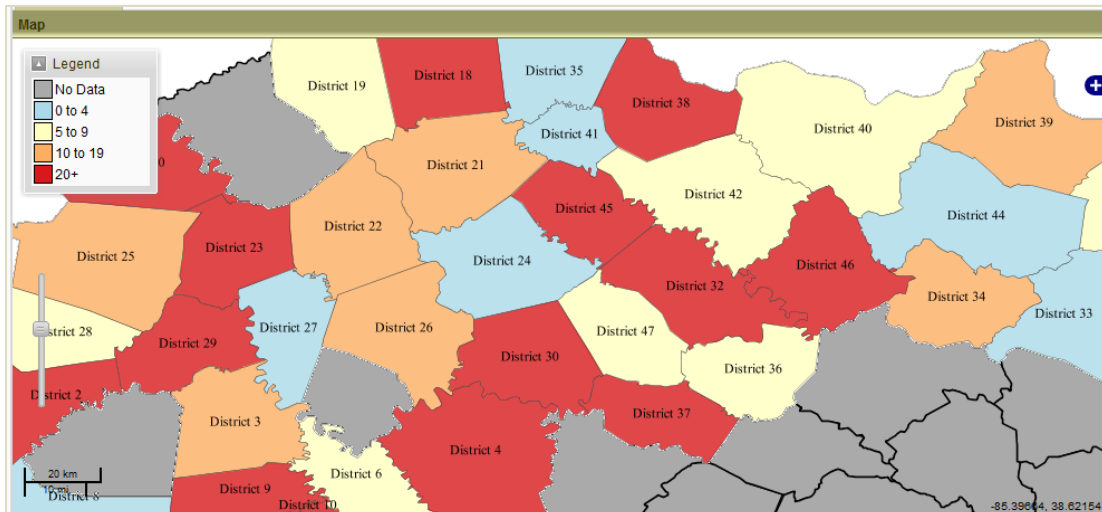
Columns can be sorted by clicking on the column headings or reordered by dragging the column heading to the desired placement. Controls at the bottom of the grid enable searching through pages of data and export of the grid data to Microsoft Excel.

## Generate a Map

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The Map feature is only available in the **Individual Patient Data** option. A region map is created by clicking **Map** from the query form.

1. From the **Navigation** menu, select **Individual Patient Data**. A new tab appears containing the **Individual Patient Data** query form.
2. If desired, enter values in the data fields to filter the data results.
3. Click **Map**. A geographic map appears in a new tab. The Legend at the top left of the map describes the meaning of the map colors in relation to case count.
4. To zoom in or out, adjust the zoom level using the control on the left.
5. Click and drag in any direction to move the map as needed.



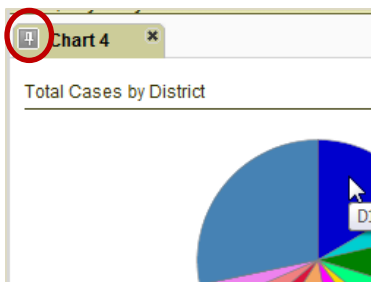
The Legend at the top left of the map describes the meaning of the map colors in relation to case count. To zoom in or out, adjust the zoom level using the control on the left. Click and drag in any direction to move the map as needed.

## Save a Query

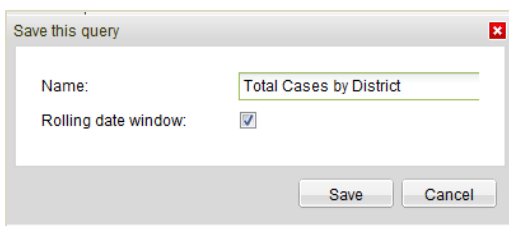
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If there is a query that you will be using frequently, you can save the query so that it can be run again without having to enter the filters again. For example, you may want to see the same time series chart every day. Rather than creating and running the query every day, you can create it once, and save it to be used again. To save a query:

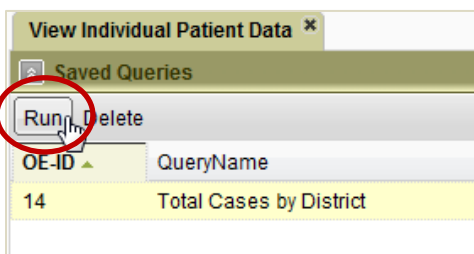
1. Click the pin icon from the query results tab of the query you wish to save. The query results tab is the tab in which your time series charts, pie/bar charts, maps, or detail grids appear.



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** (or double-click the query).



## ADMINISTRATIVE REPORTS

The OpenESSENCE demo site contains two examples of administrative reports that focus on tracking the number of reports per geographic site as well as the time between patient visit date and report date. These types of administrative reports can be useful for determining the timeliness of data being entered in OpenESSENCE.

### Aggregate Data Latency Report

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For each data record in OpenESSENCE, the following date values exist:

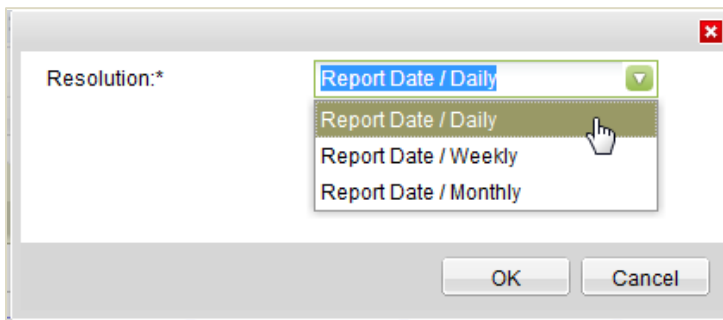
- Visit Date: User defined date indicating the date of the patient visit (or date of the aggregate daily report)
- Create Date: System defined date indicating the date the record was created in the database
- Modified Date: System defined date indicating the date the record was last modified

The Aggregate Data Latency Report analyzes the time difference (in days) between the Create Date and the Visit Date (referred to as Create Date Latency) which directly indicates the timeliness of data entry; and the difference between the Modified Date and Create Date (referred to as Modified Date Latency).

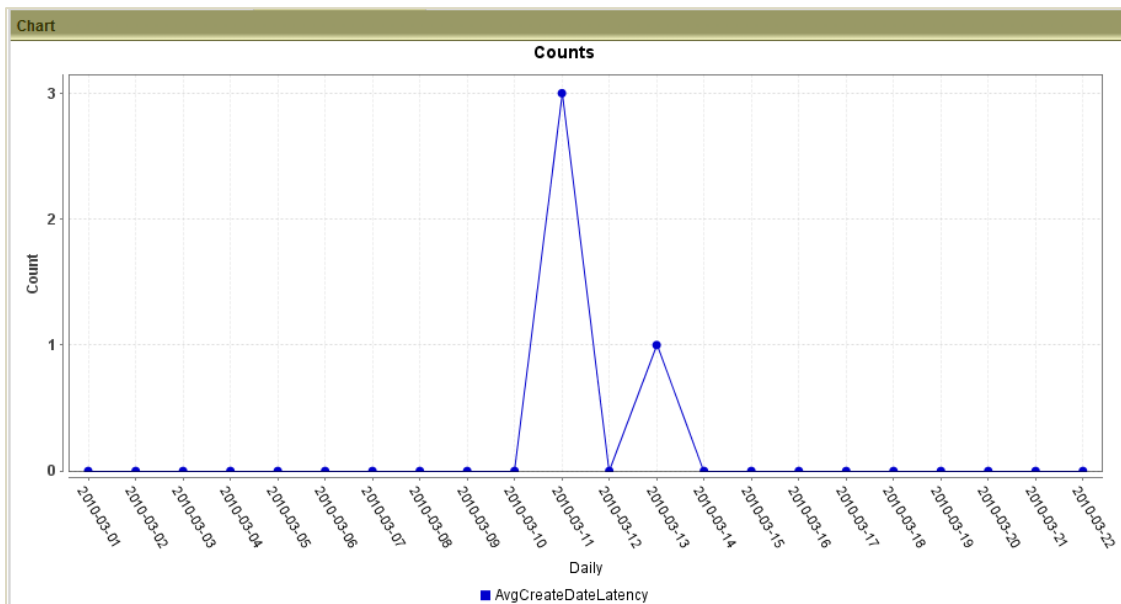
1. From the **Navigation** menu, select **View Aggregate Data Latency**.
2. In the query form, enter the geographic district, date range, and type of latency you want to see.

The screenshot shows a web-based 'Query Entry' form. It has three main input fields: 'District' with a dropdown menu showing 'District 56', 'Report Date' with two date pickers set to '03/01/2010' and '03/22/2010', and 'Accumulation' with a list box containing five options: 'AvgCreateDateLatency', 'AvgModifiedDateLatency', 'MinCreateDateLatency', 'MinModifiedDateLatency', and 'MaxCreateDateLatency'. At the bottom of the form are four buttons: 'Clear', 'Time Series', 'Charts', and 'Details'.

3. Click **Time Series**.
4. Select the **Resolution** (for our example, choose **Daily**).



5. Click **OK**. The Data Latency time series appears on a new tab. The peaks indicate days when there was a lag (latency) between the Visit Date and the Create Date for District 56 for the given date range.



## Aggregate Site Report

The Aggregate Site Report counts the number of aggregate reports created by a given district(s) on a daily, weekly, or monthly basis. For example, if a district is expected to report aggregate data once a day, then the daily count should be one. A daily count in the aggregate site report is zero indicates that the district did not enter the daily aggregate report.

1. From the **Navigation** menu, select **View Aggregate Site Report**.
2. Select the **Report Date** range.
3. In the **Accumulation** field, select the district(s) for which you want to view the report counts.

**Query Entry**

Report Date: 06/14/2009 06/20/2009

Accumulation: District 56 x District 52 x

Clear Time Series Charts Details

4. Click **Time Series**.
5. Select the **Resolution** (for our example, choose **Daily**).

Resolution:\*

Report Date / Daily

Report Date / Daily

Report Date / Weekly

Report Date / Monthly

OK Cancel

6. Click **OK**. The Aggregate Site Report appears in a new tab.

