Texas Syndromic Surveillance

User Guide

Department of State Health Services

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TEXAS
Health and Human Services

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1. Introduction

What is Syndromic Surveillance?

The purpose of syndromic surveillance is to protect the health of the community through public health interventions based on enhanced surveillance of emerging public health conditions and consolidation of health-related data statewide. Syndromic surveillance allows for early detection of abnormal disease patterns that could result in high morbidity and mortality. The basic functions of syndromic surveillance include early event detection, situational awareness, and retrospective analysis.

What is ESSENCE?

ESSENCE stands for Electronic Surveillance System for the Early Notification of Community-based Epidemics. It is a web-based disease surveillance information system developed to alert health authorities of infectious disease outbreaks, including possible bioterrorism attacks. It is the system Texas uses for syndromic surveillance.

History of ESSENCE

On September 11th, 2001 ESSENCE went from being a research project to a live operational system in Maryland. It began as a biosurveillance program, a collaborative project between Johns Hopkins University/Applied Physics Laboratory, the Maryland Emergency Management Agency and the Maryland Department of Health and Mental Hygiene. It is now used by the Centers for Disease Control and Prevention (CDC) and has iterations in more than 25 states and regions.

History of Syndromic Surveillance in Texas

In April 2011, Texas Department of State Health Services conducted a survey of existing syndromic surveillance systems in Texas. At that time, there were at least six different analysis systems being used in various parts of the state with no data sharing between them. Currently, only one of these syndromic surveillance systems remain in Texas: a system hosted by Tarrant County Public Health covering Public

Health Region 2/3. The Houston Syndromic Surveillance System began production in 2016 and covers Public Health Region 6/5S. The former Texas Association of Local Health Officials (TALHO) system was maintained by DSHS, but once the TALHO connections were successfully transferred to the Texas Syndromic Surveillance System (TxS2), the former TALHO system was turned off in 2019. TxS2 began production in 2017. In August 2019 TxS2 added EMS data and Poison Control data to the system.

The systems in Tarrant County, the City of Houston, and TxS2 work together to provide data and analysis to all hospitals, LHDs, and the public when appropriate. All hospitals in PHR 2/3 and 6/5S report to Tarrant and Houston, respectively. Tarrant and Houston send data to TxS2 for a full state view of data, and all three systems send data to the CDC's National Syndromic Surveillance Program (NSSP).

Strengths & Limitations

A major strength of syndromic surveillance is that the data are timely, near real-time data. Hospitals in production with TxS2 are required to submit data at least once every 24 hours. Syndromic surveillance systems are also highly sensitive because laboratory confirmation is not needed. In addition, because the data are de-identified and patient consent is not necessary, it can allow for unobtrusive research.

In order to make accurate interpretations of the data, users must understand the limitations. This is particularly important with syndromic surveillance data because the focus of the surveillance is not necessarily on the specificity and completeness of the data. For example, the chief complaint may state "sick" or "feels bad" without mentioning any symptoms such as fever or vomiting. Variability in the chief complaint across health care facilities can sometimes make it difficult to measure the exact burden of illness or injury in a population. Similarly, when utilizing the free-text query feature, misspellings and variant terminology may prevent the user from finding all of the cases related to that chief complaint.

Best practices include getting to know your data. Free text query usefulness relies on your familiarity of the data, which can differ by hospital/location. It is also important to monitor the data quality daily for missing or incomplete data and to remain cognizant of the limitations of syndromic surveillance data.

EMS records contain no free-text fields, and are only available to LHD and DSHS users. The data available to LHD users encompasses their county, and immediately adjacent counties. However, this data provides a look at what condition patients are in when they are picked up by EMS, and information on patients that may never go to an emergency room, building on the ED information of the rest of TxS2.

Poison Control data is only available on an aggregate level, and therefore can only provide users with an overall, statewide view of trends. Additionally, it is only available to DSHS and LHD users. However, it provides a valuable metric to see how many people may have complications due to certain substances.

Overview

This User Guide supports ESSENCE v.1.21 and helps you access and navigate the system's main features. There is no one "correct" method for using ESSENCE. The user is encouraged to further explore additional functions embedded within ESSENCE features. With frequent use and familiarity, over time, individuals often establish their preferred path(s) for viewing ESSENCE visualization and analysis outputs of interest.

It should be noted that access to certain features described in this guide are not available to all users. For example, hospital users may only view data for their hospital or hospital system and do not have access to the Event List.

2. Logging into ESSENCE

The secure website can be assessed at the following link:
https://txessence.dshs.texas.gov/

ESSENCE - Texas (1.21)

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Click the ESSENCE-Texas hyperlink.

Enter your user ID and password and click the Log In button. After logging in for the first time you are prompted to change your password. Passwords should contain at least 5 characters, including at least one numeral, two capital letters, and 2 special characters. The box outline turns from red to green when the password meets all requirements.

Instructions for users to change their own password:

1. Once you are logged in to ESSENCE, in the top right corner there is a link to **Edit Profile**. This option is available for both Administrators and General Users.
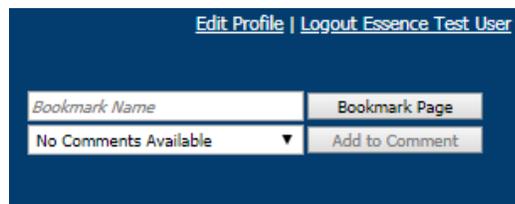
2. After you select **Edit Profile**, the following box appears.

3. Select **Change Password** and the following box appears. Enter the current password, and then the new password twice and click **Save**.

NOTE: Create a new password each time the password is changed. You will be unable to log on using a previous password even if it appeared to change successfully.

3. Home

The homepage provides access to the System Information section, which can contain announcements and information posted by the system administrators.

4. Alert List

The Alert List gives users the ability to drill down into ER data. The Summary Alert List is made up of 2 rows of asterisks in each Region Group/Syndrome Cell. The stars represent the last 9 days and are color coded. The top row represents the mathematical alerts from the Region/Syndrome Temporal Alerts page and the bottom row represents concern levels discussed by users in the Event List. To modify dates or the summary detector in the Summary Alert List chose **Configuration Options** in the right-hand corner.

NOTE: A gray star does not mean there are zero alerts. It means there was either not enough or none strong enough to create a Summary Level alert.

Clicking on an asterisk takes you to the Region/Syndrome Based Temporal Alerts page with a line listing of the data that make up the alert.

To modify dates or the summary detector in the Summary Alert List choose **Configuration Options** in the right-hand corner.

Data Configuration			
Summary Detector:	FDR / FDR-Major / Regression/EWMA	**Display Style:**	By DatasourceGroup ▼
Start Date:	14 ▼ Mar ▼ 17 ▼	**End Date:**	22 ▼ Mar ▼ 17 ▼
	Change Configuration		

Alert List: Region/Syndrome Temporal Alerts

Region/Syndrome Based Temporal Alerts												
Links	**Date**	**Data Source**	**District**	**Age**	**Sex**	**Syndrome**	**Detector**	**Level**	**Count**	**Expected**	**Observed / Expected**	**Time Resolution**
Time Series	22Feb17	ER by Patient	Chambers	All	All	Resp	Regression/EWMA 1.2	0	40	3.464	11.546	Daily
Time Series	22Feb17	ER by Patient	Galveston	All	All	Resp	Regression/EWMA 1.2	0.022	26	3.714	7	Daily
Time Series	22Feb17	ER by Patient	Harris	05-17	All	Resp	Regression/EWMA 1.2	0.005	27	4.607	5.86	Daily
Time Series	22Feb17	ER by Patient	Harris	Unknown	All	Resp	Regression/EWMA 1.2	0.044	2	0.627	3.191	Daily
Time Series	22Feb17	ER by Patient	Harris	65+	All	Resp	Regression/EWMA 1.2	0.008	169	94.286	1.792	Daily
Time Series	22Feb17	ER by Patient	Harris	All	All	Resp	Regression/EWMA 1.2	0.022	269	216.286	1.244	Daily
Time Series	22Feb17	ER by Patient	Jefferson	05-17	All	Resp	Regression/EWMA 1.2	0.015	148	52.679	2.809	Daily
Time Series	22Feb17	ER by Patient	Jefferson	18-44	All	Resp	Regression/EWMA 1.2	0.023	145	63.115	2.297	Daily

This page provides a listing of all data slices that are alerting over the past 7 days (or on the day you chose from the Summary Alert List).

The **Level** column contains the p-value and each column can be sorted.

If you would like to investigate an alert further click the **Time Series** link.

Alert List: Time of Arrival

Data Configuration			
Hospital:	All 2920 ER LLC ABILENE REGIONAL MEDICAL CENTER ACCEL REHABILITATION HOSPITAL OF PLANO ACUITY HOSPITAL OF SOUTH TEXAS	**SubSyndrome:**	All AbdominalPain AcuteBloodAbnormalities AcuteBronchitis AcuteRespDistress
Time Interval:	All 12-12:30 AM 12:30-1 AM 1-1:30 AM 1:30-2 AM		
Start Date:	20Mar17	**End Date:**	22Mar17
Change Configuration		**Reset Defaults**	**Save Defaults**

To view Time of Arrival alerts, first choose your hospitals and subsyndromes of

interest, then choose **Change Configuration**. All ToA alerts are then shown as red

squares on the grid. If you click on any red square, a details table is created to

show all ToA alerts that fell into that Hospital/Time window. From there you can

click on **Data Details** or **Time Series** for more information.

5. myAlerts

The myAlerts function allows users to customize which stratifications of the ESSENCE ER or EMS data they are interested in monitoring for routine daily surveillance. It also enables users to set criteria for alerting that include statistical thresholds, minimum counts and consecutive days of alerting. Alerts can be created for the standard syndrome and subsyndrome categories, free text queries of the emergency department data as well as for any of the other data sources available in ESSENCE.

myAlerts includes two primary functions:

A. Enables the creation of custom alerts for syndromes, subsyndromes, or free-text queries by various stratifications or threshold criteria.
B. Enables creation of Records of Interest. The purpose of Records of Interest is to return any encounter details that match the query criteria.

1. To create a myAlert, run a query for your outcome of interest.

2. Go to **Query Options** and choose a name for the query.

3. After typing in a name select **Create myAlert.** A dialog box pops up and you are able to create the alert for **Records of Interest** or **Detection.**

4. To create a Detection alert, check the Detection box and choose the stratification and detector you want used, if desired.

   a. For Detection alerts you have the option to choose a minimum count, number of alerts in the past X days, or consecutive alerts.

5. If you would like to share your myAlerts with others, check the box next to their name.

6. Select **Save myAlert** after changes have been made.

Alerts

Alert Definition	Stratifications	Date	Data Source	Level	Count	Expected	Timeseries
Daily Fever	Use Original	04Oct06	ER by Patient	0.005	420	363.36	Timeseries
Daily Fever	Use Original	05Oct06	ER by Patient	0.001	424	363.96	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	04Oct06	ER by Hospital	0.049	70	60.50	Timeseries
Daily Fever	Use Original	07Oct06	ER by Patient	0.013	415	366.39	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	05Oct06	ER by Hospital	0.006	78	60.14	Timeseries
Daily Fever	Use Original	08Oct06	ER by Patient	0.006	419	368.32	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	06Oct06	ER by Hospital	0.006	75	60.36	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	07Oct06	ER by Hospital	0.032	67	60.86	Timeseries
Daily Fever	Use Original	10Oct06	ER by Patient	0.029	415	371.36	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	08Oct06	ER by Hospital	0.014	76	61.14	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	09Oct06	ER by Hospital	0.014	75	61.86	Timeseries
Daily Hosp Fever w Fairfax Patients	Use Original	10Oct06	ER by Hospital	0.047	67	62.29	Timeseries
Daily Hosp Fever w Fairfax Patients	Age Group: 5-17	04Oct06	ER by Hospital	0.043	15	10.82	Timeseries

Alerts Messages / Records of Interest Messages / Manage Alert Definitions Subscribe / Alerts | Records of Interest

Records of Interest

Alerts Messages / Records of Interest Messages / Manage Alert Definitions Subscribe / Alerts | Records of Interest

Alert Definition	Date	Geography	Facility	Medical Grouping	Age Group	Sex	Data Details
Daily Fever and Blood	09Oct06	PRINCE GEORGES	Hospital 19	CHEST PAIN FEVER BLOOD VMT	18-44	Female	Data Details
Daily Fever and Blood	06Oct06	PRINCE GEORGES	Hospital 19	CHEST PAIN FEVER BLOOD VMT	18-44	Female	Data Details
Daily Fever and Blood	03Oct06	PRINCE GEORGES	Hospital 19	CHEST PAIN FEVER BLOOD VMT	18-44	Female	Data Details
Daily Fever and Blood	10Oct06	OTHER_REGION	Hospital 35	FEVER LOW BLOOD PRESSURE	45-64	Female	Data Details
Daily Fever and Blood	07Oct06	OTHER_REGION	Hospital 35	FEVER LOW BLOOD PRESSURE	45-64	Female	Data Details
Daily Fever and Blood	04Oct06	OTHER_REGION	Hospital 35	FEVER LOW BLOOD PRESSURE	45-64	Female	Data Details
Daily Fever and Blood	08Oct06	PRINCE WILLIAM	Hospital 38	COUGHING BLOOD FEVER	5-17	Female	Data Details
Daily Fever and Blood	05Oct06	PRINCE WILLIAM	Hospital 38	COUGHING BLOOD FEVER	5-17	Female	Data Details
Daily Fever and Blood	05Oct06	WASHINGTON	Hospital 42	FEVER SPITTING BLOOD	65+	Male	Data Details
Daily Fever and Blood	05Oct06	WASHINGTON	Hospital 42	FEVER SPITTING BLOOD	65+	Male	Data Details
RKim_FL_Long_CC_Query	08Oct06	OTHER_REGION	Hospital 02	EVALUATION FOR RABIES	45-64	Male	Data Details
RKim_FL_Long_CC_Query	05Oct06	OTHER_REGION	Hospital 02	EVALUATION FOR RABIES	45-64	Male	Data Details
RKim_FL_Long_CC_Query	09Oct06	WASHINGTON	Hospital 05	MENINGITIS	18-44	Female	Data Details
RKim_FL_Long_CC_Query	06Oct06	WASHINGTON	Hospital 05	MENINGITIS	18-44	Female	Data Details

6. myESSENCE

In myESSENCE users can create new tabs and add widgets from the Time Series, Data Details, and Overview pages. This feature allows users to copy and share dashboards with other users. Widgets can be reorganized by drag and drop.
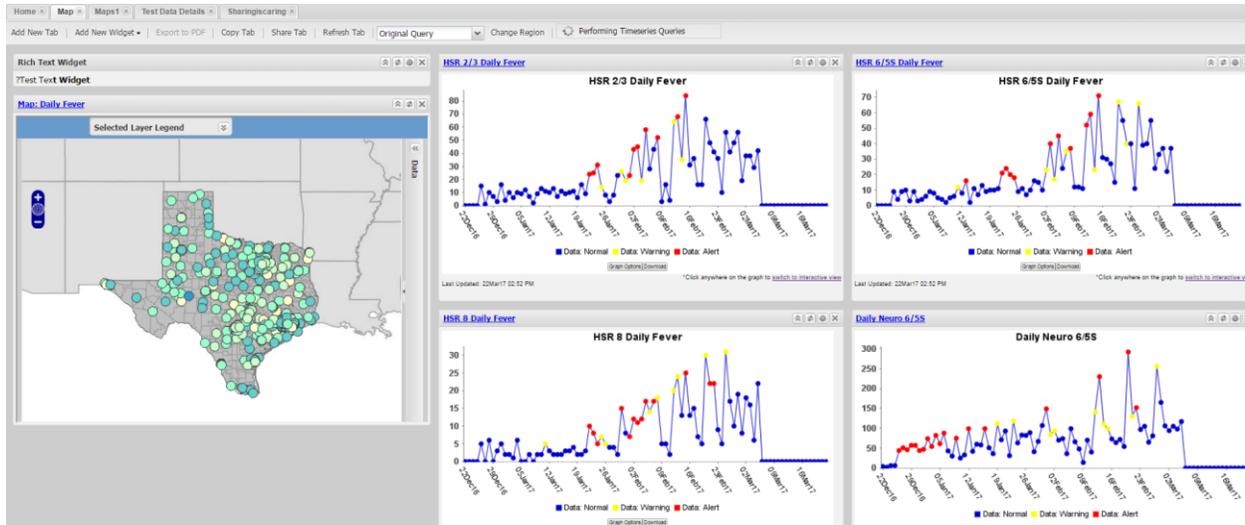
1. To add a new widget from the myESSENCE page select **Add New Widget**.

TIP: It is recommended to keep the first or 'Home' tab of myESSENCE blank. Each time you open myESSENCE, any widget located on the first tab will run and refresh which can be a load on the servers.
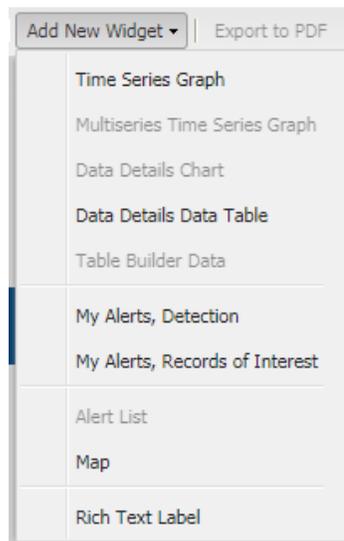
2. Choose the widget you would like to add.

3. A Widget Options dialog box appears that includes all of your saved queries.

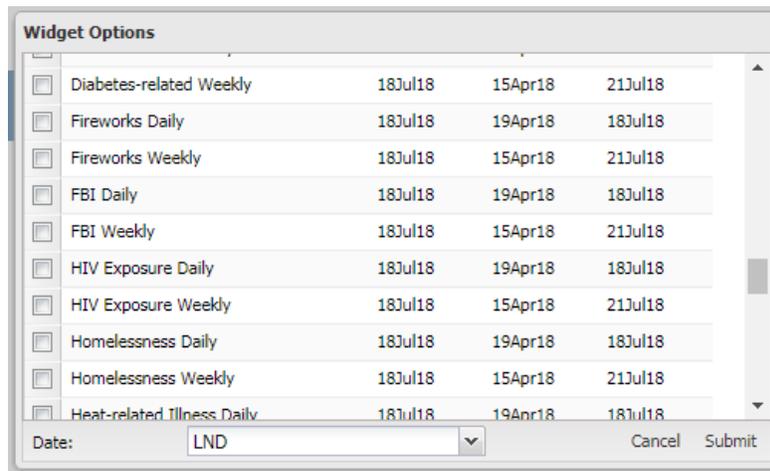|				
Diabetes-related Weekly	18Jul18	15Apr18	21Jul18	
Fireworks Daily	18Jul18	19Apr18	18Jul18	
Fireworks Weekly	18Jul18	15Apr18	21Jul18	
FBI Daily	18Jul18	19Apr18	18Jul18	
FBI Weekly	18Jul18	15Apr18	21Jul18	
HIV Exposure Daily	18Jul18	19Apr18	18Jul18	
HIV Exposure Weekly	18Jul18	15Apr18	21Jul18	
Homelessness Daily	18Jul18	19Apr18	18Jul18	
Homelessness Weekly	18Jul18	15Apr18	21Jul18	
Heat-related Illness Daily	18Jul18	19Apr18	18Jul18	

Date: LND   Cancel   Submit

4. Check the queries you would like to add as widgets and change the date if desired. Click **Submit.**

5. Refresh the page and your new widget appears.

Tabs can be shared by giving a copy to another user or "managed" sharing, which shares a read-only version of the tab that you remain in control of. A highlighted myESSENCE tab distinguishes tabs you share from tabs shared with you.

Add New Tab | Add New Widget ▾ | Export to PDF | Copy Tab | Share Tab | Refresh Tab
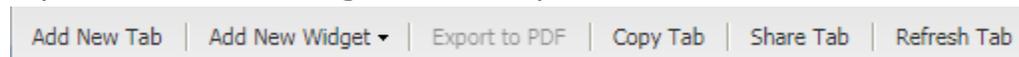
7. Event List

The Event List allows users to describe their findings or recommendations on alerts or other information that may warrant further attention. When this feature is utilized, users can view events within the Summary Alerts feature in the Alert List. These events show up in the second row of asterisks. As events are user created and not tied to actual data, clicking on any of these asterisks does not return data that can be analyzed. It can, however, provide a more accurate view of "actual" health events occurring at the state and regional level and individuals can monitor this to determine if they should be on heightened alert in their jurisdiction. It also provides a forum for discussing potential health events using the comment feature.

1. To create an Event select **Create Event.**
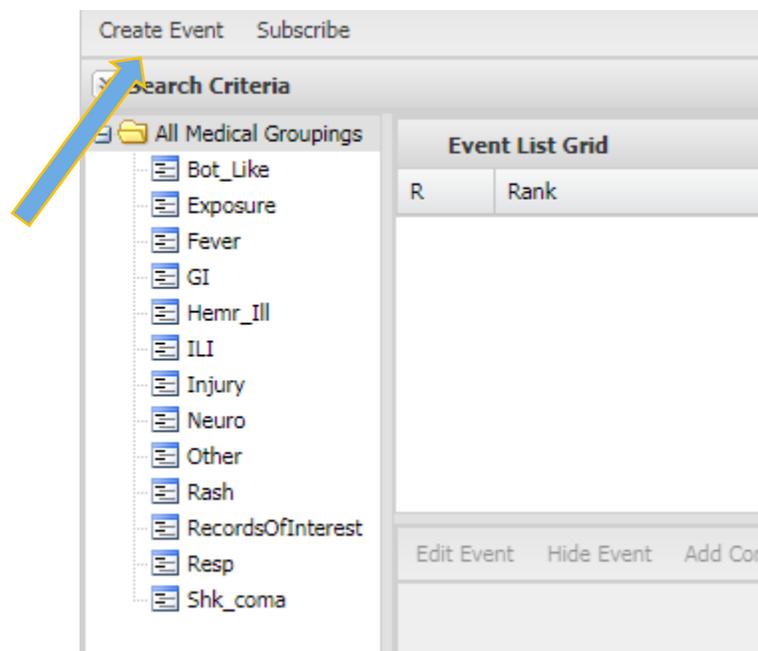
2. A dialog box appears.
   a. Select your data source of choice and the status of the event.
   b. Choose the region of the event and the category.
   c. Rank the event, select the medical grouping the event falls under, and select the age affected if necessary.
   d. Choose a start and end date and give the event a title. In the message box, type in the details of the event.

3. Select **Preview** to see if the information is correct. If so, select **Commit** and your event is posted.

Users have the capability to hide and edit events they create. After hiding an event it is no longer accessible so it is essentially deleted. Users can add comments or hide details to any event.

Benefits of the Event List

- Provides a great way to organize communications regarding TxS2 findings among users and a forum for discussing potential health events
- Most flags do not require public health investigation or intervention. However, the second tier of asterisks on the Summary Alerts page shows those flags that other TxS2 users have determined warrant further attention
- Provides a way for DSHS to track how TxS2 is used and can be improved
- Hospital users cannot view the Event List so public health officials can communicate freely without the possibility of hospitals reading notes about each other's patients.

8. Query Portal

To run a basic query click on the **Query Portal** tab.

1. In the Query Wizard select your data source, dates, and syndrome or chief complaint.
   a. Datasource
      i. *ER data by Patient Location* – categorizes ED visits by the patient's location. This option only displays ED data for patients who provided a ZIP code or county of residence within Texas when they visited the ED.
      ii. *ER Data by Hospital Location* – provides information on all ED visits regardless of patient ZIP code or county of residence. The option provides more complete data than the first.
      iii. *ER Limited View Data by Hospital Location (Aggregate)*
      iv. *EMS PreHospital Transport-* only available to public health staff
      v. *Poison Control-* only available in aggregate form
      vi. *Weather Data*
      vii. *Air Quality Data*
   b. Dates
      i. If dates are not selected, ESSENCE defaults to the previous 90 days with the end date being today.
   c. Geography System
      i. A region is a collection of ZIP codes that normally represent a county. As ZIP codes can cross county boundaries, this may not always be accurate.
      ii. Each Texas county is assigned to one of 11 public health regions. For administrative purposes there are eight regional public health offices.
   d. Medical Grouping Syndrome (ER Data Only)
      i. Syndrome – 13 preset syndromes, group of associated symptoms
      ii. Subsyndromes – a smaller, more specific group of associated symptoms
      iii. Chief Complaints – free text from data-provider Electronic Health Record
   e. EMS Datasource Grouping
      i. Many query-able fields in the EMS data can be used depending on the symptoms the user is looking for
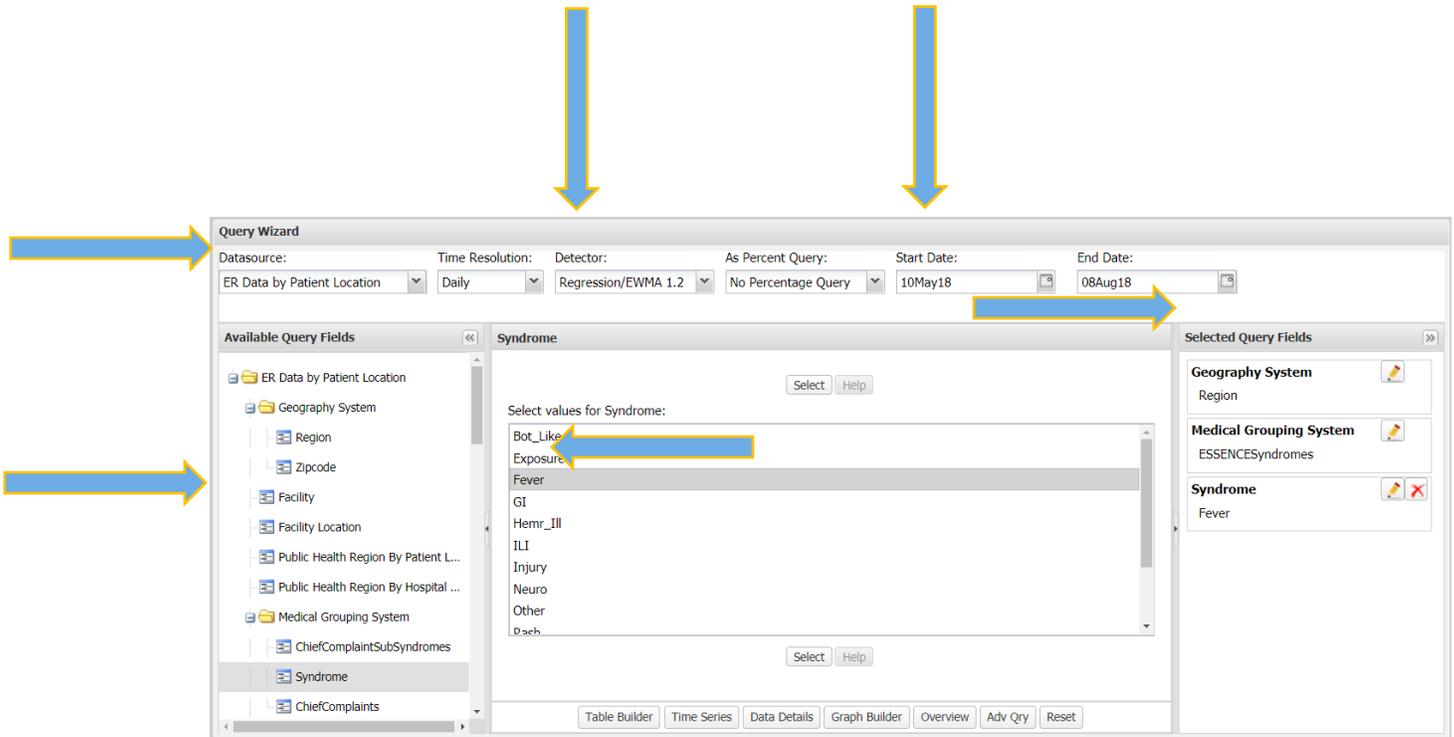
1. Select the **Datasource** of choice.
2. Select the **Detector** of choice.
3. Select the desired **Date Range**
4. Select desired **Available Query Fields**
   a. Once the selections have been made they appear on the right side of the page.
5. Once you have all of your parameters, choose the ESSENCE feature you want to use your query definition in: **Table Builder, Time Series, Data Details, Graph Builder, Overview**, or **Explain Qry**. If a more complex query is required using and/or logic between parameters, you can choose the **Advanced Query Tool** option from this menu at any time.

MyFilter allows users to create and save a set of filter parameters. To create a MyFilter, select the specified parameters, put a name in the MyFilter box and select **Create**.


To apply the filter, select MyFilters under available query fields and use the drop down arrow or type in the saved filter name and press **Select**.

The saved filter automatically populates under the selected query fields.

Free Text Queries

Free text queries are only available for ER data and EMS data. To perform free text queries, choose the chief complaints parameter under the medical grouping system folder. The syntax for a chief complaint query is described in the help popup.
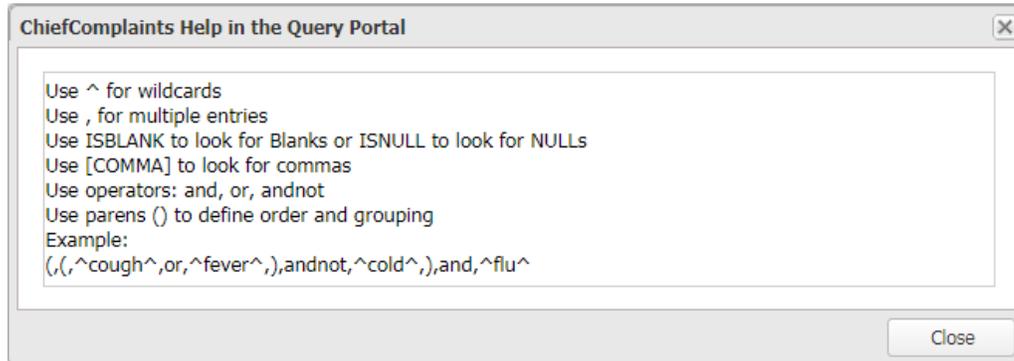
In addition to the help popup, you can also use a subset of regular expressions in the queries. For example:

- alpha: ^hea[a-z]^
  - results can include hea**t** and hea**d** and hea**r**
- numeric: ^H[0-9]N[0-9]^
  - results can include H**1**N**1** or H**3**N**2**
- specific characters: ^her[oi][oi]n^
  - results can include her**oi**n or her**io**n

Type in your free text query, then choose the **Select** button to move it into the query definition. A free text query behaves like any other query. Examples of free text queries can be found in the Appendix.
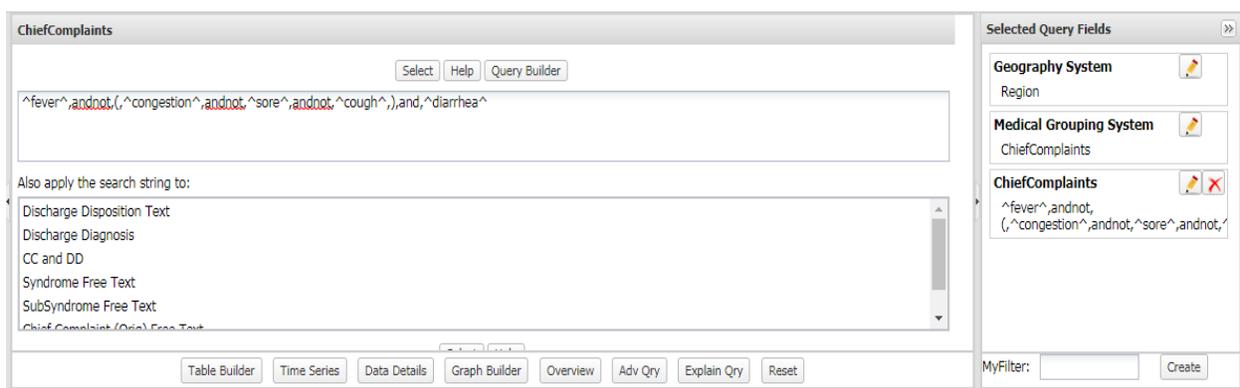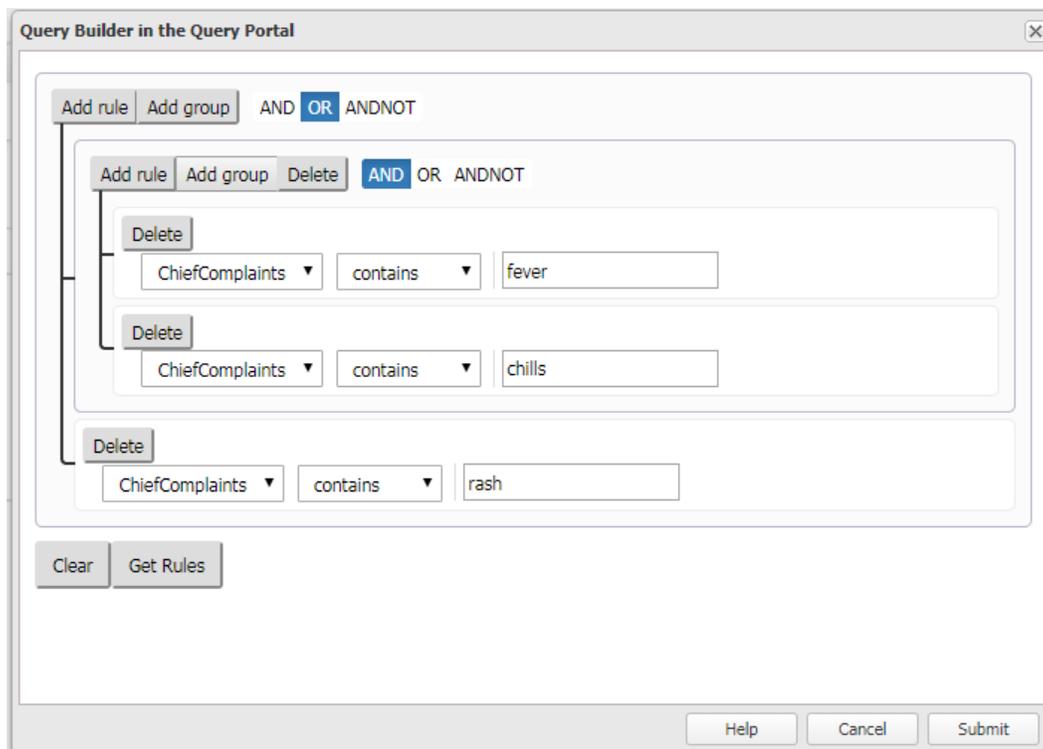
Explain Query

The Explain Query button is a feature that explains a query in more detail for users to better understand what filters are being applied and how.
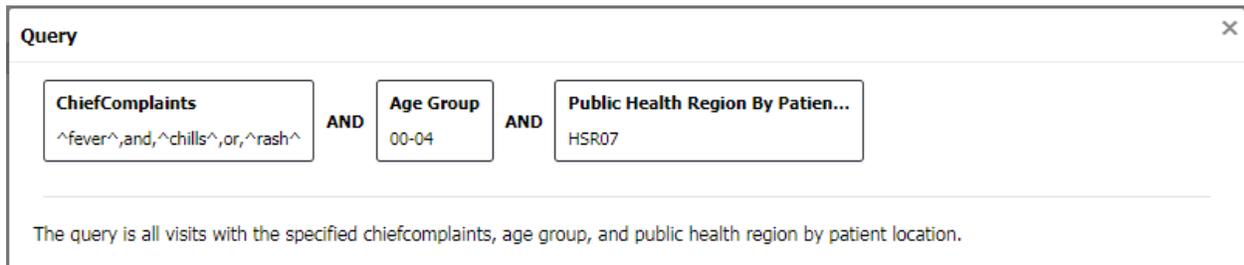
Query Builder

The Query Builder is a function that builds a graphical user interface to help create free text queries. It has the ability to add new groups and rules and automatically arranges the query in the correct format and paste in the free text window.

Time Series

From the Time Series page you can also can view the data from the query in the Data Table including the count, expected value from the detector, and detector output. You can view popup graphs showing stacked graphs, weekly views, and detector comparisons plots. The Time Series image allows you to mouse over each data point to get more information on a specific day.

In addition, users can perform an overlay query and apply it directly to an existing graph. The query/time series can be saved for use in myAlerts, myESSENCE, or the Query Manager.

Data Series Options

The stratification option allows users to stratify queries under the **Data Series Options** to view a breakdown of parameters, such as age group or geographic region.

1. Select **Data Series Options** from the Time Series page
2. Choose your options for **Within** and/or **Across Graph(s) Stratification**
3. Select Multiple Graphs for each stratifications on a different graph or Single Graph for all stratifications on one graph.
   a. There are also options for composite detection, removing zero series and putting each year as its own series. The composite feature runs detection on the sum of the data from each series based on a predefined stratification. It removes any series from the sum that contains one or more zero values. This includes any zero in the entire baseline plus the additional time prior to the start date used to warm up the detectors (~40 days).
4. Select **Update.**

Single Graph
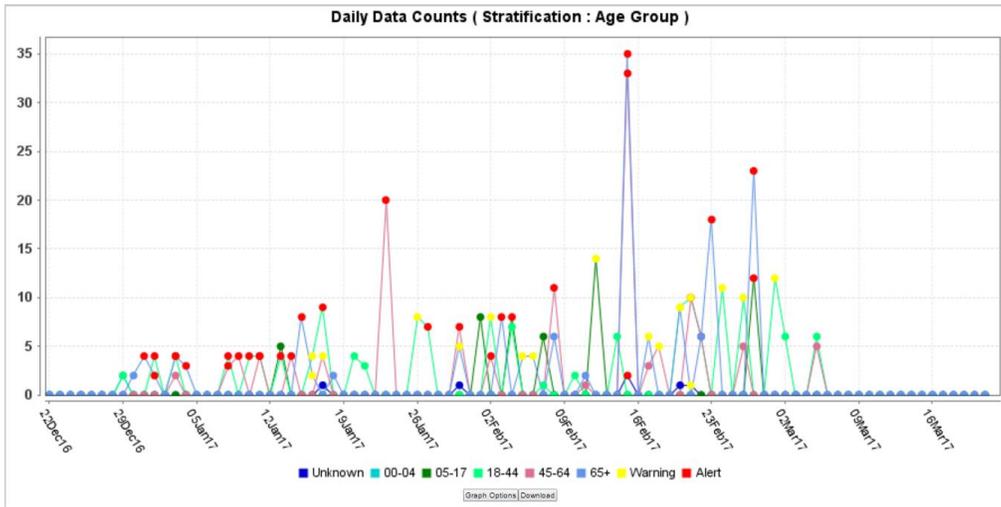
Multiple Graphs
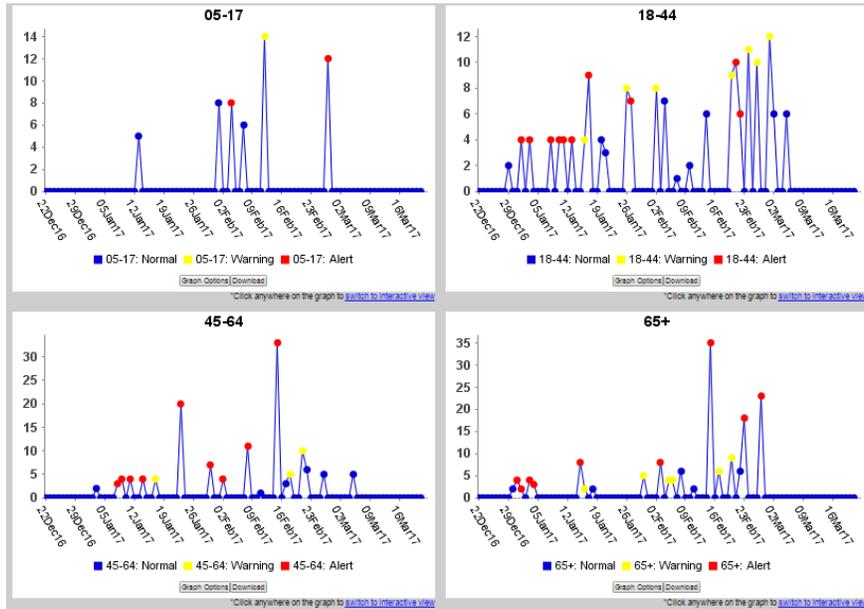
Overlay

The overlay option allows you to create a new query and overlay it on top of the existing original query that was performed. More detail on how to perform an overlay can be found in the Weather and Environmental Data section.
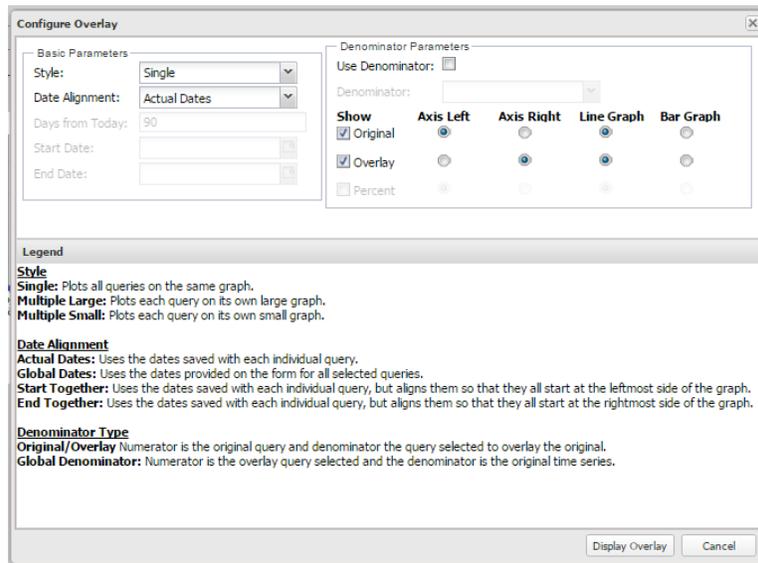
In the overlay configuration window, you can choose single or multiple graphs and date alignment. Under the denominator parameters sections, you can decide if you want to have one of the queries divided by the other.

You can also display the overlay and/or the original query on the same or different axis. Multiple overlay graphs can be added onto the same time series graph. Currently the data table below the graph only represents the original query. This may be updated in the future to include both the original and the overlay.
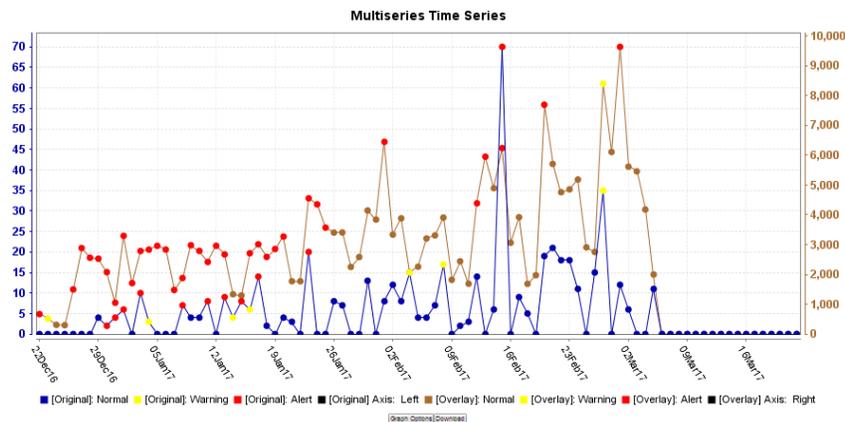
Add Event

The Add Event button gives the option to choose either a date or a threshold to highlight on the time series based on the date(s) or threshold(s) chosen.
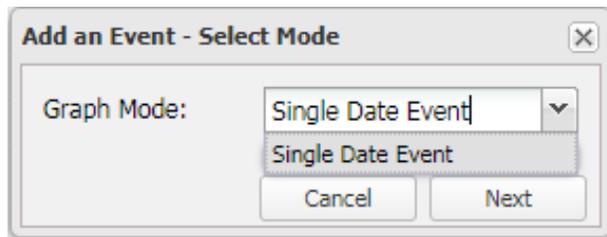
Event

1. To create an Event, select **Add Event** on the Time Series graph.
2. Choose either Single Date Event or Ranged Date Event and click **Next.**
3. Choose an Event Name, a date/date range and color.
4. Click **Submit.**
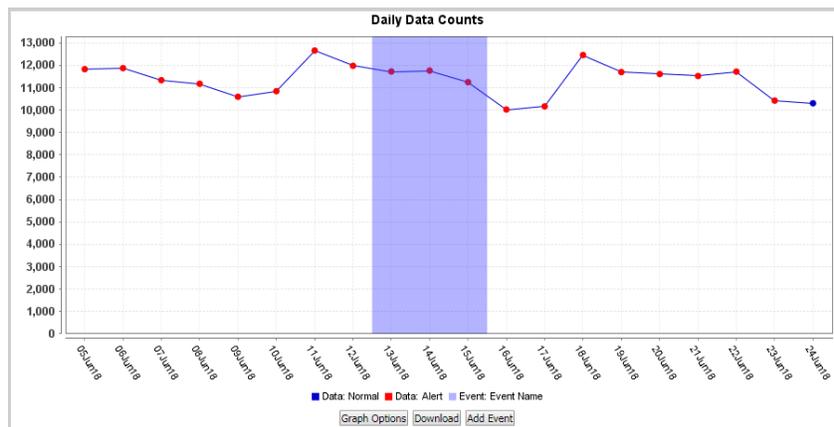
Threshold

1. To create an Event, select **Add Event** on the Time Series graph.
2. Choose either Single Threshold or Ranged Threshold and click **Next.**
3. Choose an Event Name, a threshold start/end range and color.
4. Click **Submit**.
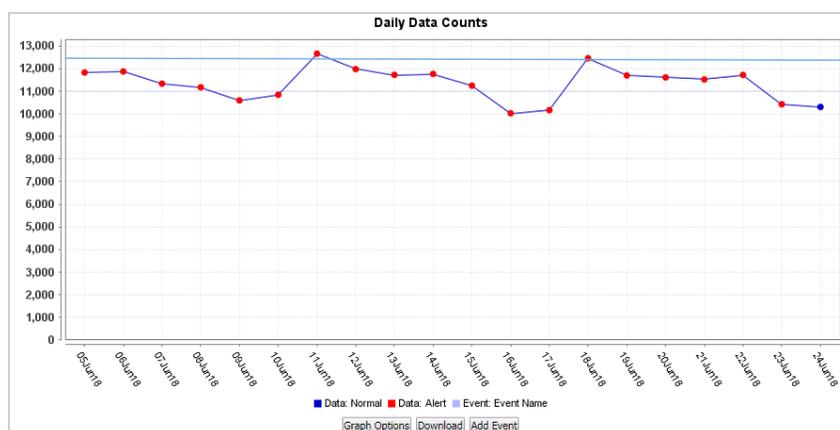
Weather and Environmental Data

Air quality observations from AirNow and weather observations from the National Weather Service are integrated in the Texas Syndromic Surveillance as additional data sources. Weather and air quality monitors are not always placed in ideal locations for public health surveillance purposes. It is not recommended to aggregate values from multiple monitors in ESSENCE; users should select a station that is closest to their population of concern.

Weather Factors			
Category	**Factor**	**Definition**	**Measure**
Temperature	Min	Lowest temp recorded	Degrees Fahrenheit
	Max	Highest temp recorded	
Precipitation	Water Equivalent	Amount of liquid precipitation	Inches
	Snowfall	Amount of snow before being converted to water equivalent	
Wind	Average	Wind speed averaged	Miles Per Hour
	Maximum Two Minute	Max wind speed sustained for more than two minutes	
	Peak	Max wind speed reached	

Air Quality Parameters				
Pollutant	**Definition**	**Health Effects & Examples**	**Measure**	**Time**
PM2.5	Fine inhalable particles with diameters that are generally 2.5 micrometers and smaller	combustion particles, organic compounds, metals, emissions from vehicles and industrial facilities etc.	microgram per cubic meter (µg/m3)	24 hour
PM10	Coarse inhalable particles with diameters that are generally 10 micrometers and smaller	Pollen, mold, dust from roads, farms, dry riverbeds, constructions sites and mines	microgram per cubic meter (µg/m3)	24 hour
Ozone	Composed of three atoms of oxygen (O3), bad ozone is created by chemical reactions between oxides of nitrogen and volatile organic compounds (VOC)	main ingredient of urban smog; harmful to breathe and damages crops, trees and other vegetation	parts per billion	1 or 8 hour

ESSENCE contains air quality observations. These values are **not** equivalent to Air Quality Index (AQI) values.

Category	AQI	Ozone (ppb)		Particulate Matter (µg/m3)	
		[8 hour]	[1 hour]	PM$_{2.5}$ [24 hour]	PM$_{10}$ [24 hour]
Good	Up to 50	0-54	-	0-12	0-54
Moderate	51-100	55-70	-	12.1-35.4	55-154
Unhealthy for Sensitive Groups	101-150	71-85	125-164	35.5-55.4	155-254
Unhealthy	151-200	86-105	165-204	55.5-150.4	255-354
Very Unhealthy	201-300	106-200	205-404	150.5-250.4	355-424
Hazardous	301-500	201+	405-604	250.5-500.4	425-604

Weather Overlay

1. Run a query and create a Time Series graph for the outcome of interest.
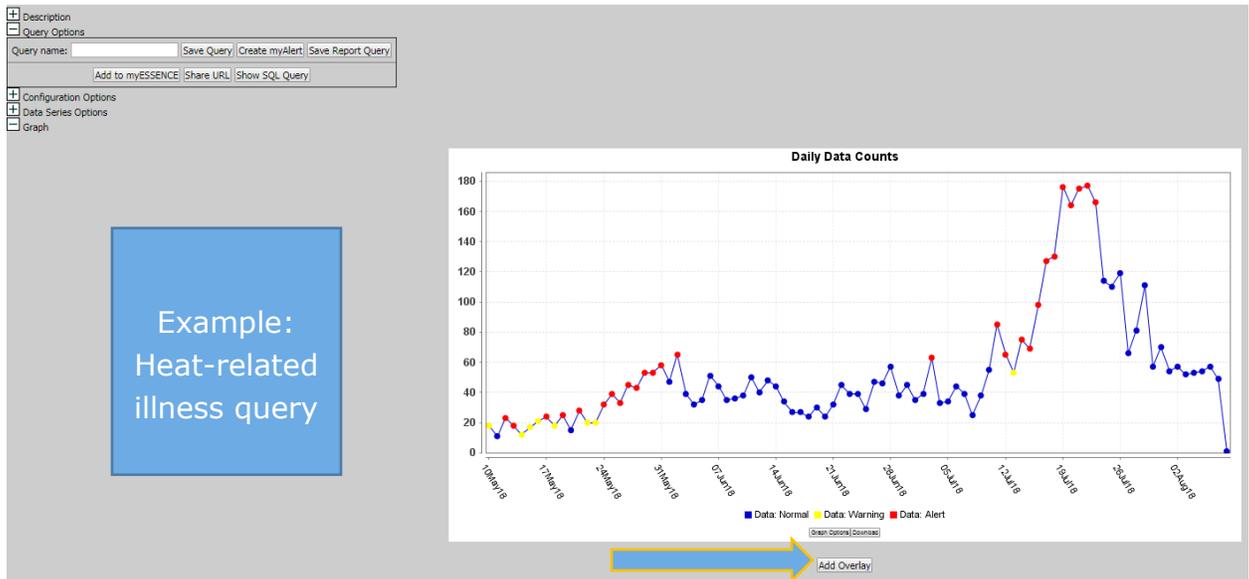
Example:
Heat-related
illness query

2. Select the **Add Overlay** button below the graph and this prompts a new Query Wizard to appear.

Example: Max
Temp using
Austin
Bergstrom
weather monitor

3. Select **Datasource**: Weather Data
4. Select **Detector** = No Detection
   a. It is recommended that "No Detection" is chosen as none of the available detectors in ESSENCE can display reliable alert information for weather.
5. Selected desired **Dates**
   a. It is recommended to match the overlay timeframe with the timeframe used on the initial query.
6. Select **Weather Factor** (Weather Factor Table)

7. Select appropriate **Weather Monitor**
8. Select **Add Overlay**
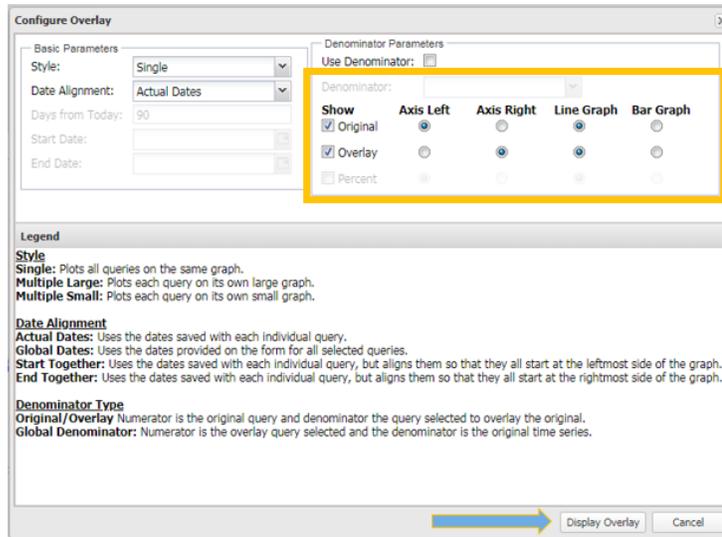
9. Configure overlay display
   a. Select **Denominator Parameters**
      i. Selecting the same axis makes the y-axis measurement the same for both the original query and the overlay graph. This is not recommended for a weather overlay.
   b. Select **Date** Alignment
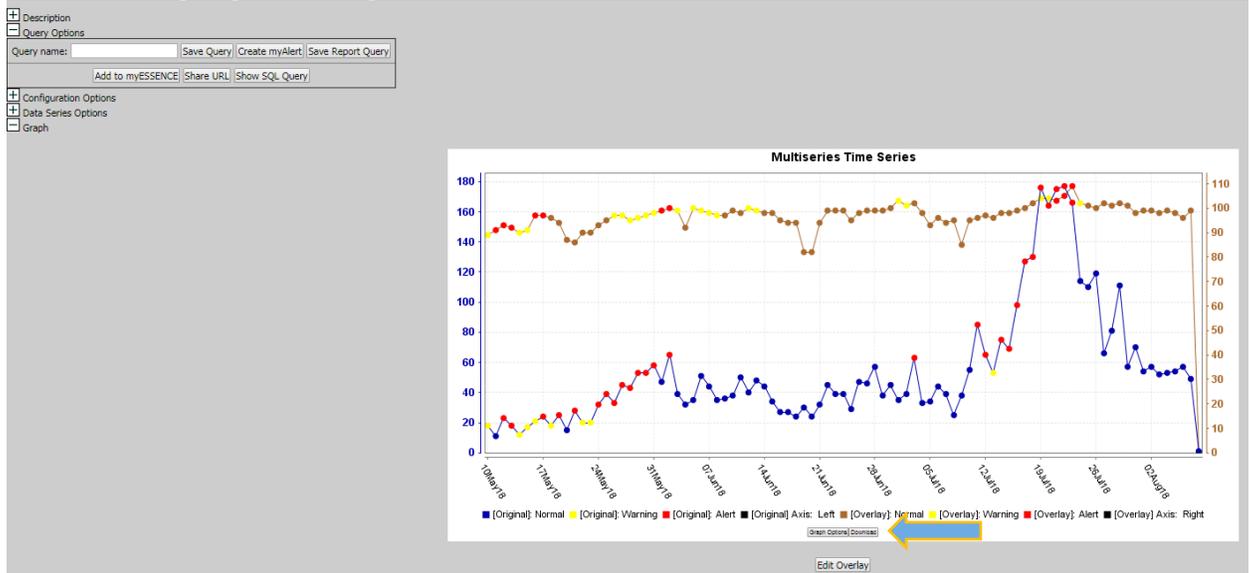
10. Select **Display Overlay**

11. Save Visualization
   a. Select **Download** to save as a PNG file or save the Time Series to myESSENCE.

Air Quality Overlay

1. Run a query and create a Time Series graph for the outcome of interest.
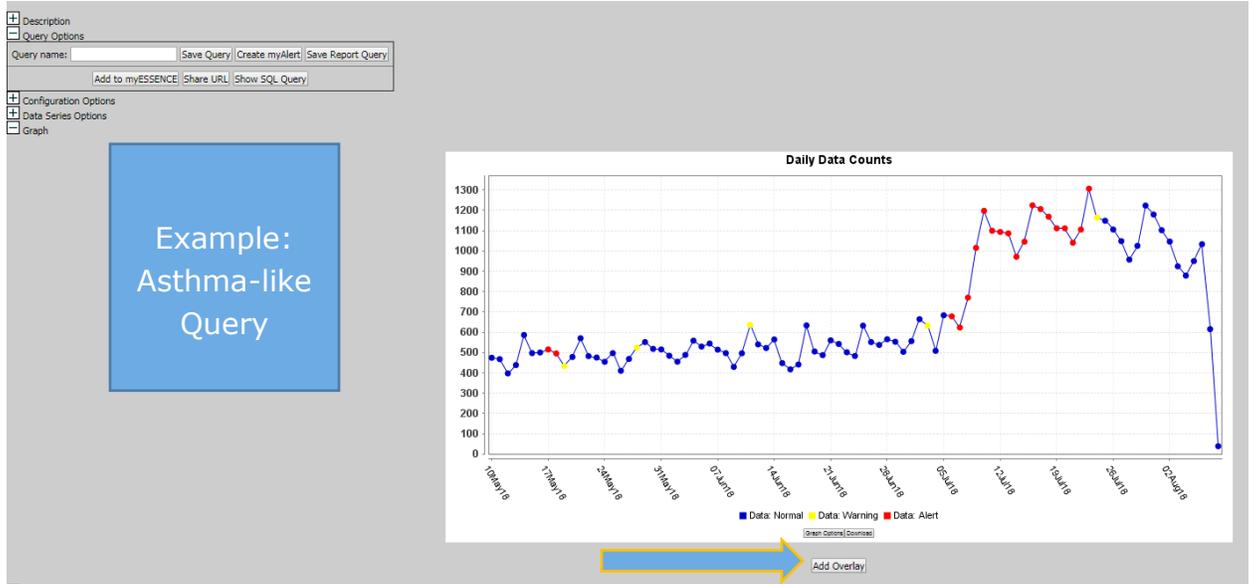
2. Select the **Add Overlay** button below the graph and this prompts a new Query Wizard to appear.

3. Select **Datasource**: Air Quality Data
4. Select **Detector** = No Detection
   a. It is recommended that "No Detection" is chosen as none of the available detectors in ESSENCE can display reliable alert information for air quality.
5. Select desired **Dates**

a. It is recommended to match the overlay timeframe with the timeframe used on the initial query.
6. Select **Air Quality Parameter** (see Air Quality Parameters Table)
7. Select appropriate **Air Quality Monitor**
8. Select **Add Overlay**
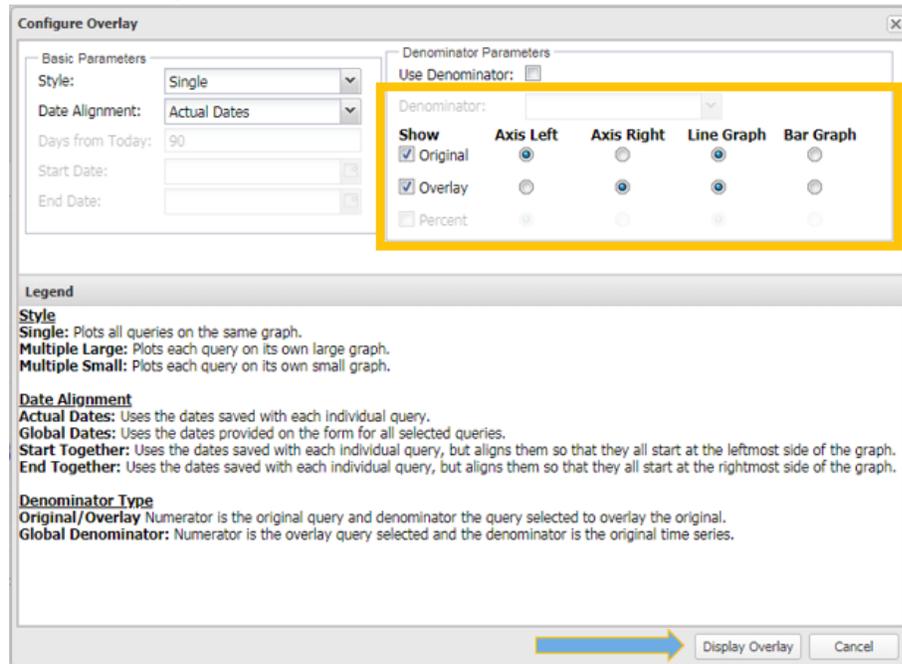
9. Configure overlay display
   a. Select **Denominator Parameters**
      i. Selecting the same axis makes the y-axis measurement the same for both the original query and the overlay graph. This is not recommended for an air quality overlay.
   b. Select **Date** Alignment
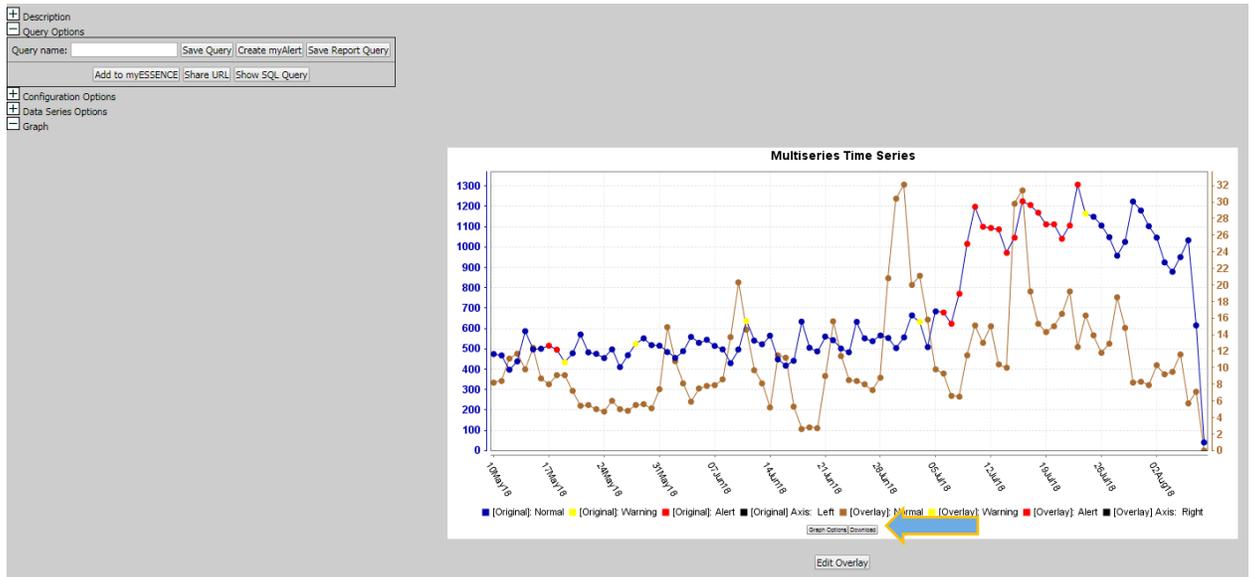
10. Select **Display Overlay**

11. Save Visualization
    a. Select **Download** to save as a PNG file or save the Time Series to myESSENCE.

Summary Statistics

Summary Statistics is a feature that displays the statistics of the query performed.

Stats Across Time Series

Total	591226
Mean	6496.989
Std Dev	4269.835
Median	7810
Min	0
Max	12767
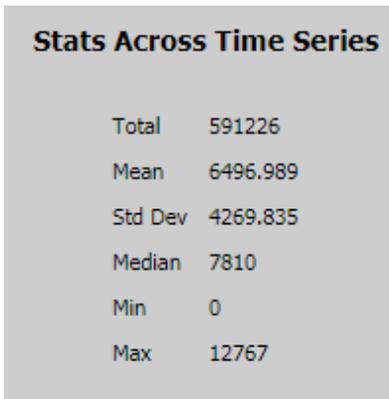
It displays the number of hospitals and the total number of counties/regions reporting each day.

	04Apr18	05Apr18	06Apr18	07Apr18	08Apr18	09Apr18	10Apr18	11Apr18	12Apr18	13Apr18	14Apr18	15Apr18	16Apr18	17Apr18	18Apr18	19Apr18	20Apr18	21Apr18	22Apr18	23Apr18	24Apr18	25Apr18	26Apr18	27Apr18	28Apr18	29Apr18	30Apr18	01May18	02May18	03May18	04May18	05May18	06May18	07May18	08May18	09May18
Hospital	84	85	86	85	85	86	85	86	84	84	82	83	80	84	88	83	84	83	85	86	86	86	85	83	83	89	83	49	43	47	49	46	45	52	47	48
Region	120	119	123	112	111	115	123	103	112	113	117	109	107	118	118	108	116	112	111	119	114	112	118	106	116	114	118	72	67	75	46	50	54	64	67	70

The most common 50 words in the Chief Complaint Parsed field of the query are also shown.

Top 50 Words in ChiefComplaintParsed

Reached the limit on the number of rows that can be analyzed.*
Analyzed 30000 rows.

Rank	Word	Count	Rank	Word	Count
1	PAIN	9337	26	HEAD	627
2	PATIENT	2641	27	COMPLAINS	614
3	ABDOMINAL	2533	28	ARM	595
4	CHEST	1962	29	SWELLING	587
5	FEVER	1733	30	2	552
6	RIGHT	1655	31	EAR	541
7	LEFT	1618	32	PRESSURE	524

Data Details

The data details table provides the line listing information for the query performed. What a user can see is dependent upon user type. Hospitals users can only see line listing information from their facility and Local Health Department users can only see line listing information from their region or jurisdiction for ER data, as well as line listing information for their county and contiguous counties for EMS data. All users can see aggregate statewide data via a time series graph.

Scroll left or right to view all the information provided by a data source and select pie or bar charts to view a breakdown of individual parameters. The data details user interface allows frozen column headers, multi-level sorting, per-column filtering, and row and multi-row section with copy options.

Hospital	Date	Time	ChiefComplaintOrig	Sex ↓
	14Jun18	05:24 AM	^^^^^^^^^sore throat and fever since yesterday, tylenol at 0230 ...	Male
	14Jun18	08:25 AM	^^^^^^^^^" i am sleepy and i cannot get up , seen here on nigh...	Male
	14Jun18	04:25 PM	^^^^^^^^^patient c/o headache, fever, vomiting, chills, dehydrat...	Male
	14Jun18	07:07 PM	^^^^^^^^^fever which broke today, now has rash;	Male
	14Jun18	11:08 PM	^^^^^^^^^fever;	Male
	14Jun18	11:09 PM	^^^^^^^^^fever, diarrhea, abdominal pain x 1 weej;	Male
	14Jun18	06:23 PM	^^^^^^^^^insect bite on sunday, Went to cypress creek ER was ...	Male
	14Jun18	02:21 PM	^^^^^^^^^fever for 2 days. ibuprofen every 10am;	Male
	14Jun18	04:41 AM	^^^^^^^^^fever, shaking, chest pain, legs aching, knee pain, blur...	Male
	14Jun18	11:59 PM	^^^^^^^^^Fever, cough, pt reports left ear pain, given cough an...	Male
	14Jun18	05:18 AM	^^^^^^^^^Vomiting, fever.;	Male
	14Jun18	02:07 AM	^^^^^^^^^Sore throat, fever. Pt took Aleve at 1700; states out of...	Male
	14Jun18	01:49 PM	^^^^^^^^^fever and headache for 2 days;	Male

Users can control which columns are visible to the account in the data details table configuration and sort by clicking the column header.
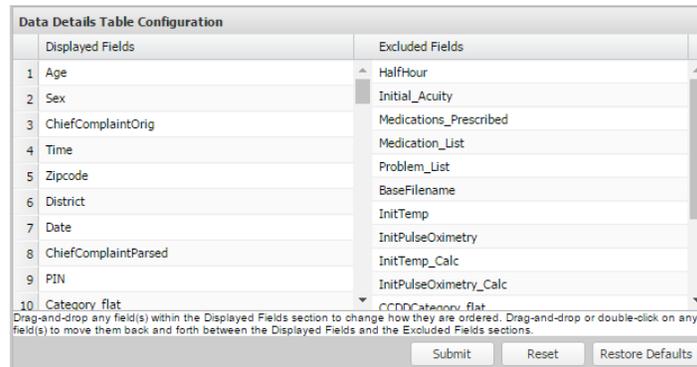
The data details table can be downloaded to CSV and Excel formats.

Map View

After clicking **Map View** from the Time Series page, a Map Options dialog box appears. The Map View can also be accessed from the Map Portal tab but the most common way to access the mapping feature is through the Time Series page. This is because the default map from the Map Portal displays statistical alerts, not counts by region.
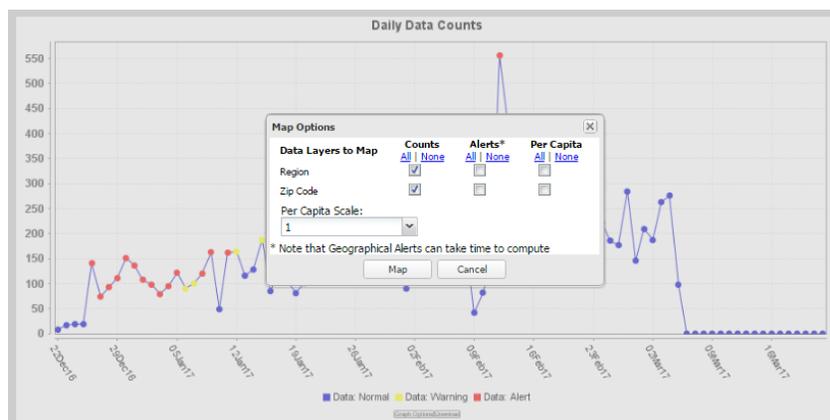
The map view allows you to zoom in on any part of the map. You can make layers visible by checking the Show box next to the layer's name. You can do the same with labels. The active layer is the layer that will be selected if using any selection tools. If you cannot see a layer it may be hidden underneath another already visible layer. Click the active button to bring it to the top.
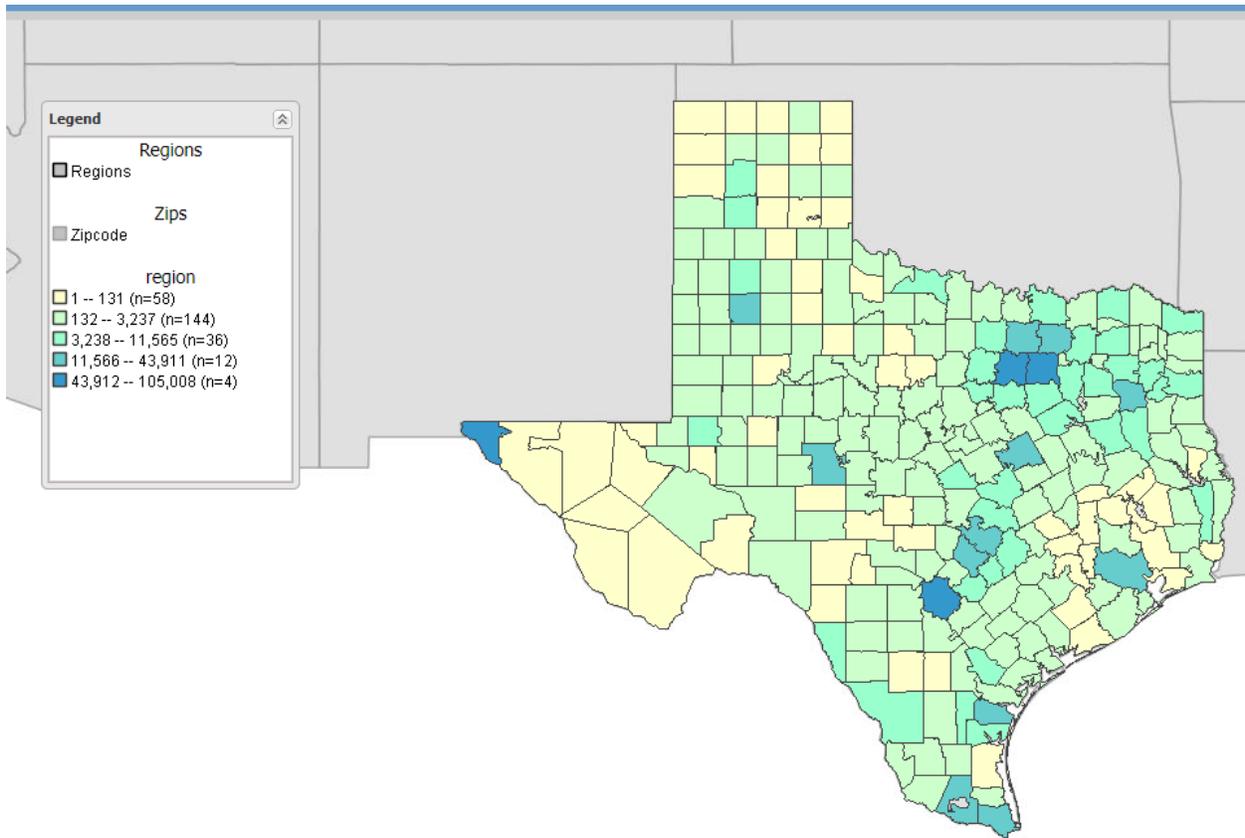
The tools in the upper right corner allow you to save a map to be used in a report. There is also a tool to allow you to create an animated movie of the map over time.
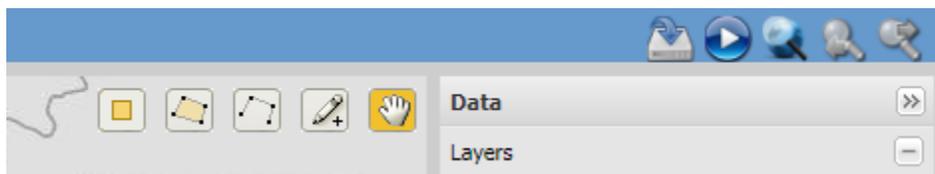
The bottom of the map displays information about the query or what is currently selected.

Name	Value	Name	Value
Layer Name	region	Zipcode - Race American Indian Percentage	All
Trigger Event History	All	SubSyndrome Free Text	All
Age Range	All	Zipcode - Predominant Race	All
Public Health Region By Patient Location	All	Patient Class History	All
Discharge Disposition History	All	Start Date	11May18
Calculated Patient Class History	All	Public Health Region By Hospital Location	All
Chief Complaint History	All	MedicalSubGrouping	All

Information

Advanced Query Tool

The Advanced Query Tool allows you to create very complex queries. You can use the forms at the bottom to choose variables, operators, and values. Once chosen, you can add the expression to put the expression into the query window or type your query directly into the window.

You can save your expression privately with the **Save Private Expression** option or publicly with the **Save Public Expression** option. At the bottom of the variable list, you can choose private, public and administrator saved expressions.

Once you choose the execute button, your query is performed as a time series.

Data Source	ER Data by Patient Location ▼	Start Date	23Dec2016	End Date	23Mar2017	Detector	Regression/EWMA 1.2 ▼

Message Area

Query

Example: [AGEGROUP = "00-04"] OR ([SUBSYNDROME = "ACUTE BLOOD ABNORMALITIES"] AND [ZIPCODE = "21043"])   More...

Query Builder

AND OR   ( )   Add Expression   Undo Last Change

Variable Tip	Operator	Values
AGEGROUP		
AGERANGE		
CCANDDD		
CCANDDDCATEGORY		
CDCILIREPORTINGAGEGROUP		
CHIEFCOMPLAINTSUBSYNDROMES		
CHIEFCOMPLAINTS		
CLINICALIMPRESSION		
DAYOFMONTH		
DAYOFWEEK		

Validate Query   Save Private Expression   Save Public Expression   Save Administrator Expression   Clear Query

Execute

9. Overview Portal

The Overview Portal can be accessed two ways: Overview Portal menu option or from a Query Wizard. If you enter the overview portal from the menu button you get the default options for the data source you choose. If you enter from the Query Wizard you can choose the parameters you want pre-defined before entering the overview portal.
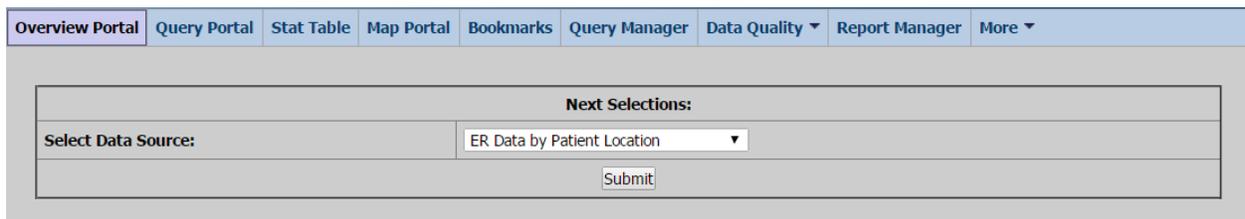
Overview Portal	Query Portal	Stat Table	Map Portal	Bookmarks	Query Manager	Data Quality ▼	Report Manager	More ▼

Next Selections:	
Select Data Source:	ER Data by Patient Location ▼
Submit	

The functionality of the overview portal has been almost entirely replaced by the stratification system on the Time Series page. The last remaining feature that has not been duplicated is the ability to add all the overview graphs to a myESSENCE dashboard with a single click. If you wish to perform an overview by hospital or region, it is best to select the parameters in the query portal first to minimize the amount of querying the system must do to create graphs for every region or every hospital across the entire state.

10. Report Manager

By viewing the sample template a Microsoft Word document is downloaded. The sample contains instructions on how to edit and save a new report.

1. In order to save a picture, right-click on the image and select the format picture. In the Alt-Text section, replace <!@@SI_Death Query@@> with the exact name of the query you want embedded. For example, <!@@Monthly Fever Query@@>.
2. Then save the MS word document which can be uploaded as a new report.
3. Choose the desired date range, then click **Submit** to run the report.

A MS word document is created with the embedded graphs or maps in the document.

11. Query Manager

Saved queries can be viewed with the originally saved dates or with the start date/end date shifted so that the end date is the same as today using the Show (Today) link.

The Query Manger allows users to save and manage queries from sessions in the query portal. This saves the user from having to rewrite chief complaint free text queries should it become necessary to rerun the same query or a similar one. Query Manager is similar to bookmarks, but it also has other useful features that are not available in bookmarks. For example, you can create your myAlerts in the Query Manager. If you choose multiple saved queries you can create a multi-series time series graph.

Multi-Series Time Series Graphs

Multi-series time series graphs allow a user to overlay trend lines from different time series graphs, including from different data sources. For example, to compare trends in influenza-like illness (ILI) activity for two counties, two separate time series graphs can be generated in ESSENCE, one for each county. From the two graphs, a single multi-series time series graph can be produced in ESSENCE to compare trends in ILI activity for the two counties.

Saved Query Manager

	Label	Link	Link (Today)	Date Created	Shared By	Start Date	End Date
	Expand All Groupings Collapse All Groupings	Multiseries Time Series	Intersecting Time Series	Create myAlert	Edit View URL	Share Delete	
☐	Grouping: unassigned (6)						
☑	Daily Fever	Show	Show (Today)	21Feb17		01Jul16	21Feb17
☑	Daily Fever (All Regions)	Show	Show (Today)	20Mar17		20Dec16	20Mar17
☐	Fever in Harris County	Show	Show (Today)	22Mar17		22Dec16	22Mar17
☐	HSR 2/3 Daily Fever	Show	Show (Today)	21Feb17		01Jan17	21Feb17
☐	HSR 6/5S Daily Fever	Show	Show (Today)	21Feb17		01Jan17	21Feb17

The chart below is an example of a multi-series time series graph comparing animal bites to other types of bites. Separate queries were run to generate two time series graphs, and the multi-series time series graph was created by going into Query Manager, selecting the queries of interest, and proceeding as described above to create the below graph.
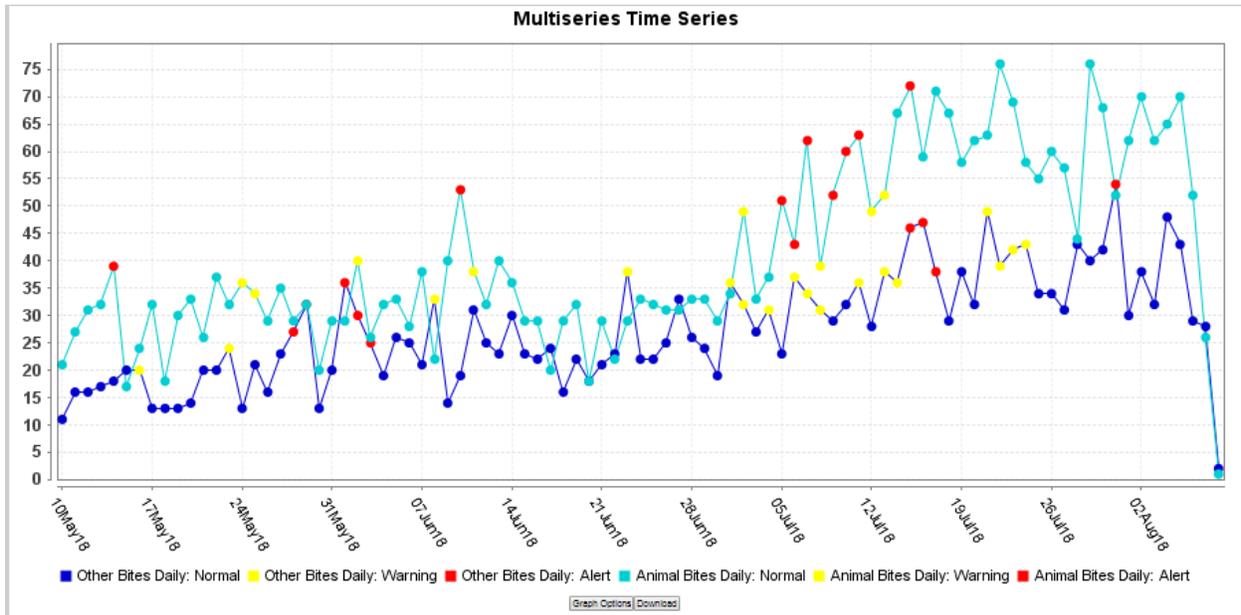
Intersecting Time Series Graphs

Intersecting time series takes two queries and finds all records that positively or negatively match between the two queries.

12. Stat Table

The Stat Table provides pre-built reporting capabilities. Choose a report and complete the required form. The stat table is then be created and available for view in Excel or in the web page.

Stat Table Configuration	
Select Region:	All Regions Anderson, TX Andrews, TX Angelina, TX Aransas, TX
Select ChiefComplaintSubSyndromes:	Search String: [____] Apply Clear Tip Filtered ChiefComplaintSubSyndromes Selected ChiefComplaintSubSyndromes Agitation >> AlcoholUse > AlteredMentalStatus < Aspiration << Assault Asthma AsthmaOrRAD
Week and Year for comparison:	Week 1 ▼ Year 2017 ▼
☐ Hide Zero Rows ⦿ View Table ◯ Export Excel	
Submit	

13. Data Quality

The Data Quality portal has a few different options, but only for ER data. These include the percent completeness, the percent mapped to known values, and the percent received within 24 hours for any data source that has been Data Quality configured.

Data Quality:				
Select Data Source:	ER Data by Patient Location ▼	**Quality Factor:**	Percent Completeness ▼	
Time Resolution:	Daily ▼			
		Submit		

Data Quality Datasource: ER Data by Patient Location **& Factor:** Percent Completeness		
SelectRegion:	All Regions ▲ Anderson, TX Andrews, TX Angelina, TX Aransas, TX ▼	
Parameter:	All Parameters ▲ Sex Medical Record Number Chief Complaint Chief Complaint Parsed ▼	
Select Start Date: 09Mar17	**Select End Date:** 23Mar17	
	Submit	

How to Check Data Quality

1. Click the **Data Quality** tab
2. Select **Data Source** — Facility Location
3. Select **Quality Factor** — Percent Completeness, Percent Mapped to Known Values, or the Percent Received Within 24 Hours
4. Select **Time Resolution** — the default is Daily
5. Select the hospitals you would like to see
6. Select **All Parameters**
7. Select start date of interest: Previous week/month
8. Select end date: typically, the current date
9. Click **Submit**

The results are displayed in a color coded table. Gray/green indicates positive results, yellow indicates caution, and orange/red indicates significant problems with completeness of the data.

Legend (Percent %)						
96 - 100	91 - 95	81 - 90	51 - 80	06 - 50	00 - 05	N/A

Data Quality

Geography	Variable	26Sep06	27Sep06	28Sep06	29Sep06	30Sep06	01Oct06	02Oct06	03Oct06	04Oct06	05Oct06	06Oct06	07Oct06	08Oct06	09Oct06	10Oct06
Hospital 01	Sex	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 01	Medical Recor...	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 01	Age	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 01	Time	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 01	Zipcode	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 01	Discharge Dia...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospital 01	Discharge Dis...	7	7	8	7	4	8	8	5	11	8	5	11	8	5	11
Hospital 01	Mode of Arrival	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospital 01	Chief Complaint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hospital 02	Sex	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 02	Medical Recor...	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 02	Age	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 02	Time	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 02	Zipcode	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 02	Discharge Dia...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospital 02	Discharge Dis...	9	7	7	10	5	7	7	9	8	7	9	8	7	9	8
Hospital 02	Mode of Arrival	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospital 02	Chief Complaint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Data Quality Alerts show any factor that has changed (+/-) 10%.

Data Quality Alerts

Date	Data Sourc	Geography	Variable	Quality Factor	Percent	Previous Day	Percent Difference	Variable	Total Count
09Oct06	ER Da...	Hospi...	Discharge Disposition	Percent Completeness	13.16	2.63	10.53	5	38
09Oct06	ER Da...	Hospi...	Discharge Disposition	Percent Mapped to Known Values	13.16	2.63	10.53	5	38
06Oct06	ER Da...	Hospi...	Discharge Disposition	Percent Completeness	13.16	2.22	10.94	5	38
06Oct06	ER Da...	Hospi...	Discharge Disposition	Percent Mapped to Known Values	13.16	2.22	10.94	5	38

Data Quality Frequencies allow you to choose a text based parameter and view the top 10 most common results.

Data Quality Frequencies

Geography	Rank	03Oct06	04Oct06	05Oct06	06Oct06	07Oct06	08Oct06	09Oct06	10Oct06
Hospital 01	1	FEVER (5)	CHEST PAIN...	ABD PAIN (5)	FEVER (5)	CHEST PAIN...	ABD PAIN (5)	FEVER (5)	CHEST PAIN...
Hospital 01	2	MVC (4)	ABD PAIN (5)	FEVER (5)	MVC (4)	ABD PAIN (5)	FEVER (5)	MVC (4)	ABD PAIN (5)
Hospital 01	3	SORE THRO...	FEVER (5)	BACK PAIN (...	SORE THRO...	FEVER (5)	BACK PAIN (...	SORE THRO...	FEVER (5)
Hospital 01	4	BACK PAIN (...	MVC (3)	CHEST PAIN...	BACK PAIN (...	MVC (3)	CHEST PAIN...	BACK PAIN (...	MVC (3)
Hospital 01	5	CONSTIPAT...	486-PNEUM...	780.2-SYNC...	CONSTIPAT...	486-PNEUM...	780.2-SYNC...	CONSTIPAT...	486-PNEUM...
Hospital 01	6	COUGH (2)	ABDOMINAL...	786.50-CHE...	COUGH (2)	ABDOMINAL...	786.50-CHE...	COUGH (2)	ABDOMINAL...
Hospital 01	7	CP (2)	BACK PAIN (...	HEMATURIA...	CP (2)	BACK PAIN (...	HEMATURIA...	CP (2)	BACK PAIN (...
Hospital 01	8	DIFF BREAT...	BLOOD IN U...	MVC (2)	DIFF BREAT...	BLOOD IN U...	MVC (2)	DIFF BREAT...	BLOOD IN U...
Hospital 01	9	MIGRAINE (2)	COUGH (2)	RT ANKLE I...	MIGRAINE (2)	COUGH (2)	RT ANKLE I...	MIGRAINE (2)	COUGH (2)
Hospital 01	10	SOB (2)	LOWER BAC...	SOB (2)	SOB (2)	LOWER BAC...	SOB (2)	SOB (2)	LOWER BAC...
Hospital 02	1	ABD PAIN (6)	ABD PAIN (9)	FEVER (6)	ABD PAIN (6)	ABD PAIN (9)	FEVER (6)	ABD PAIN (6)	ABD PAIN (9)

14. More

Provides useful information such as the history of ESSENCE, definition of syndromic surveillance, detector algorithms, FAQs, user's guide, etc.

More ▾

History of ESSENCE

Syndrome Definitions

Detector Algorithms

Definition of Terms

FAQ

Users Guide

Version Information

System Usage
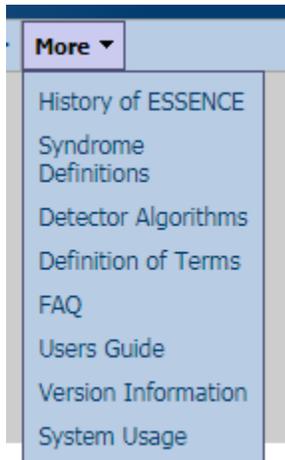
15. Appendix

Free Text Query Examples

Paste the following into the "Chief Complaint" or other free text fields to see visits related to the following topics.

Carbon monoxide query
^;T58^,or,(,^carbon^,and,(,^expos^,or,^pois^,),),),or,^carbon mon^

Rabies query (people visiting the ER for rabies shots)
^rabies^

Animal Bite query
(,^ cat ^,or,^ cat,or,cat
^or,^kitten^,or,^puppy^,or,^dog^,or,^bull^,or,^animal^,or,^raccoon^,or,^raco
on^,or,^fox^,or,^bobcat^,or,^ bat ^,or,^rodent^,or,^ rat ^,or,rat
^or,^hamster^,or,^monkey^,and,(,^bit^,),),andnot,(,^scratch^,)

Insect Bite query
(,^bug^,or,^insect^,or,^spider^,or,^bee^,or,^tick^,or,^mosquito^,or,^wasp^,o
r,^flea^,or,^recluse^,or,^hornet^,or,^ant^,or,^yellow[j
]^,),and,(,^st[ui]ng^,or,^bit^,)

Food poisoning query
^food pois^,or,^foodborne^,or,(,^food^,and,^contaminat^,)

Skin infection query
^MRSA^,or,^staph^,or,^staff infec^,or,^spider bite^,or,^skin
lesion^,or,^cellulitis^,or,^impetigo^,or,^scabies^,or,^shingles^

Fever and Rash query
(,^rash^,and,^fever^,),or,^chickenpox^,or,^chicken pox^,or,^measles^

Fireworks query
^;W39^,or,^;E9230^,or,^sparkler^,or,^roman
candle^,or,(,(,(,^fire^,),and,(,^work^,or,^cracker^,),),),andnot,(,^work[ei]^,)

Heat related illness query
^;T67^,or,^heat^,or,^haet^,or,^heet^,or,^too hot^,or,^sun^,andnot,^sunday^

Vaping related illness query

(,(,(,(,^vap[ie]^,andnot,(,^vicks^,or,^vapif^,),),),or,(,^ ecig ^,or,^ e cig^,or,e cig^,andnot,(,^cigna^,),),),or,^electronic cig^,or,^pod mod^,or,^ e liquid^,or,e liquid^,or,^eliquid^,or,^ e pipe^,or,^ e hook^,or,^ e huka^,or,e pipe^,or,e hook^,or,e huka^,or,^vape pen^,or,^weed pen^,or,^dab pen^,or,^dank pen^,or,^wax pen^,or,^ g pen ^,or,g pen ^,or,^ G pen,or,G pen,or,^shatter wax^,or,^tank system^,or,(,^ e juice^,or,^e-juice^,or,^ejuice^,andnot,(,^prune^,or,^orange^,or,^apple^,),),or,^electronic nicotine^,or,(,(,(,^smok^,or,^vap[ie]^,),),and,(,^juice^,or,^liquid^,or,^ pen ^,or,^ pen,or,Pen ^,or,pen,or,^ oil ^,or,^ oil,or,oil ^,or,^ oils,or,^ oils,or,oils^,or,^cartri^,or,^cannabinol^,or,^cannadidol^,),),or,black Magic^,or,^Black Diamond^,or,(,^ YOLO ^,andnot,^co^,),or,^Triple X^,or,^Juul^,or,^Vuse^,or,^ NJOY ^,or,NJOY^,or,^MarkTen^,or,^Eonsmoke^,or,^21st century smoke^,or,^Wismec^,or,^Vaporesso^,or,^Joyetch^,or,^Innokin^,or,^ Eleaf ^,or,Eleaf ^,or,^ Eleaf,or,eleaf,or,^Lost vape^,or,^Sigelei^,or,^Kangertech^,or,^Smoant^,or,^Suorin^,or,^ PHIX ^,or,^ phix,or,Phix ^,or,phix,or,^Pax Era^,or,(,(,(,^vap[ie]]^,),and,(,^ k2 ^,or,^ k2,or,K2 ^,or,^serenity^,or,^fake weed^,or,^fake mari^,or,^synthetic can^,or,^ spice ^,),andnot,(,^cook^,or,^for serenity^,or,^at serenity^,or,^to serenity^,or,^from serenity^,or,^serenity house^,or,^cummin spice^,or,^cumin spice^,or,^spice shop^,or,^with a spice^,or,^pumpkin^,or,^serenity called^,or,^serenity clearance^,or,^serenity doctor^,or,^old spice^,or,^requires serenity^,or,^wants serenity^,or,^serenity place^,or,^serenity rehab^,or,^by serenity^,or,^spice curry^,or,^spice bottle^,or,^tumeric^,),),),andnot,(,^bl[eo]w up^,or,explod^,or,explos^,or,^fire^,or,^broke^,or,^burns to^,or,^facial burn^,or,^ingest^,or,^sw[ao]ll^,or,^police^,or,^ police^,or,^police ^,or,^vapor rub^,or,^vaporrub^,or,^prostate^,or,^quit^,),)

Syndromes and Subsyndromes

ESSENCE Abbreviation	Syndrome	Subsyndrome
Bot_like	Botulism-like	BlurredVision or DifficultyFocusing or DifficultySpeaking or DifficultySwallowing or DilatedPupils or DoubleVision or DryMouth or MuscleWeakness or Ptosis
Exposure	Exposure	
Fever	Fever	Chills or FeverPlus or Sepsis or QFever or RockyMountain or YellowFever or Dengue or Malaria
GI	Gastrointestinal Illness	AbdominalPain or Bloating or Gastroenteritis or GIBleeding or LossOfAppetite or NVD or FoodPoisoning
Hemr_ill	Hemorrhagic Illness	FeverOrChills and (AcuteBloodAbnormalities or BleedingGums or DisseminatedIntravascularCoagulation or GIBleeding or Hematemesis orHemoptysis or Nosebleed or Petechiae or StrawberryTongue)
ILI	Influenza-like Illness	Influenza or (FeverPlus and (Cough or SoreThroat) and not NonILIFevers)
Injury	Injury	(BiteOrSting OR CutOrPierce OR DrowningOrSubmersion OR Electrocution OR ExcessiveHeat OR Fall OR FireBurnExplosives OR MotorVehicle OROccupational OR Overexertion OR Poisoning OR StruckBy OR ToolsOrMachinery OR Firearm OR NonMotorVehicle OR Suffocation OR Assault ORForeignBody OR SuicideOrSelfInflicted OR Watercraft OR SportsOrExerciseRelated)
Neuro	Neurological	AlteredMentalStatus or Dizziness or Drowsiness or Encephalitis or (Headache and FeverPlus) or ProjectileVomiting or Prostration or Seizure or SidedWeakness
Rash	Rash	Flushing or Rash or Sores or Smallpox or ChickenPox or Measles or Rubella or RockyMountain
RecordsOfInterest	Reportable Disease	Cryptosporidiosis or Cyclosporiasis or Encephalitis or Botulism or Smallpox or Shigellosis or Salmonellosis or InfectiousHepatitis orAnthrax or Ciguatera or Dengue or Malaria or Measles orMumps or ChickenPox or LeadPoisoning or Pertussis or Campylobacteriosis or Cholera orCreutzfeldtJakob or Diphtheria or Ehrlichiosis or EscherichiaColi or Glanders or Haemophilus or Leprosy or Hansen or Hantavirus or Legionnaires orLeptospirosis or Listeriosis or Lyme or Melioidosis or Meningitis or Meningococcemia or MercuryPoisoning or PesticidePoisoning or Plague orPolio orPsittacosis or QFever or Rabies or RockyMountain or Rubella or Toxoplasmosis or Trichinosis or Tularemia or Typhoid or Typhus or Vibrio or YellowFever orBrucellosis or COPoisoning or Eschar
Resp	Respiratory	AcuteBronchitis or ChestCongestion or Cough or DifficultyBreathing or Hemoptysis or Laryngitis or LowerRespiratoryInfection or NasalCongestion orOtitisMedia or Pneumonia or ShortnessOfBreath or SoreThroat or UpperRespiratoryInfection or Wheezing or AcuteRespDistress
Shk_coma	Shock/Coma	Coma or LossOfConsciousness or SepticShock or Shock

Data Elements

Summary	
Hospitals Submitting Data to TxS2	
Number of Emergency Department (ED) Visits	
Number of Heat-Related Illness ED Visits	
Percentage of Heat-Related Illness ED Visits	
Number of Heat-Related Illness Visits to Date	
Maximum Temperature Average	

Data Element Name	Description of Field	Data Element Name	Description of Field
Diagnostic and Pre-Diagnostic		**Vitals**	
Procedure Code	Procedures administered to the patient	**Initial Temperature**	Initial temperature of the patient
Triage Notes	Triage notes for the patient visit	**Initial Pulse Oximetry**	1st recorded pulse oximetry value
Clinical Impression	Clinical impression (free text) of the diagnosis		
Pregnancy Status	Whether the patient is pregnant during the encounter		
Problem List	Problem list of the patient condition(s)		
Medications List	Current medications entered as narrative		
Medications Prescribed or Dispensed	Current medications entered as standardized codes		

16. Glossary

Aggregate data – data collected from individual-level records that have been combined for statistical or analytical purposes and that are maintained in a form that does not permit the identification of individuals

Chief complaint – primary reason for seeking healthcare, as documented by caregiver e.g. abd pain

Count – actual number of visits

Data element - data content to be collected and exchanged

Drill down – access data in a detailed view from a general view

Emergency Room Data by Hospital Location – patient encounters at ER reported by location of hospital

Emergency Room Data by Patient Location – patient encounters at ER reported by ZIP code in which the patient resides

EMS Data- De-identified data from the DSHS EMS registry

ESSENCE Syndrome – clinically relevant groups into which diagnoses, chief complaints or drug classification are categorized by ESSENCE e.g. GI, Neuro, or Resp

Expected – statistically modeled expected count

Influenza like illness (ILI) – ICD 10 codes representing provider diagnosis of influenza like illness

Percent Emergency Room Data by Hospital Location – percentage of selected medical encounters as compared to all medical encounters by location of Emergency Rooms

P-value – statistical p-value output form spatial detector algorithm that indicates level of alert e.g. >0.05 = no alert; 0.01-0.05 = yellow warning; <0.01 = red alert

Poison Control Data- Data from the [Texas Poison Center Network](#)

Query - the primary mechanism for retrieving information from the database and is used to track impact in terms of time, geography and demography

Region – county or geographic area. Since ZIP codes can cross county lines, a ZIP code is included in a region based on where the centroid of the ZIP code is located

Syndrome- one of twelve predefined sets of chief complaint queries that are widely used by epidemiologists as part of syndromic surveillance

Subsyndromes - smaller groups of chief complaint terms that are grouped together to form syndromes, which define a range of symptoms

17. References

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10. Environmental Protection Agency. Particulate Matter (PM) Pollution. https://www.epa.gov/pm-pollution/particulate-matter-pm-basics.

Revision History

Date	Version	Action	Section
3/5/18	1	New guidance	
8/1/18	2	Edited to reflect changes in v1.21	All
3/26/20	3	Minor edits, added vaping query, and added EMS and Poison data streams, as well as accessibility compliance	All