



Texas Syndromic Surveillance

ESSENCE User Guide

Department of State Health

Services

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TEXAS
Health and Human
Services

Table of Contents

Table of Contents	1
1. Introduction	3
What is Syndromic Surveillance?	3
What is ESSENCE?	3
History of ESSENCE	5
History of Syndromic Surveillance in Texas	5
Strengths & Limitations	5
Overview	6
Data Sources	7
2. Accessing the System	8
3. Changing your Password	9
4. Home Page.....	10
Tabs	10
5. Alert List	12
Alert List: Region/Syndrome Temporal Alerts	13
Alert List: Time of Arrival	13
Alert List: Word Alert	14
6. myAlerts	15
Alerts	17
Records of Interest	17
7. myESSENCE	18
8. VoI (Visits of Interest) Status	20
Benefits of VOI Status	20
9. Event List.....	22
Benefits of the Event List	23
10. Query Portal	24
Free Text Queries	25
Explain Query	27
Query Builder	27
Time Series	28
Data Series Options	29
Overlay	32
Add Event	33

Weather and Environmental Data	34
Weather Overlay	35
Air Quality Overlay.....	37
Summary Statistics	40
Data Details.....	41
Map View.....	43
Advanced Query Tool.....	45
ESSENCE API Functionality.....	46
11.Overview Portal	47
12.Report Manager	48
13.Query Manager	49
Multi-Series Time Series Graphs.....	49
Intersecting Time Series Graphs	50
14.Stat Table	51
15.Data Quality	52
How to Check Data Quality	52
Monitoring Changes in Data Quality	54
16.More	55
17.Appendix	56
Free Text Query Examples	56
Syndromes and Subsyndromes.....	59
Data Elements	60
Chief Complaint and Discharge Diagnosis Categories	61
18.Glossary	62
19.References	64
Revision History	65

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 (Electronic Surveillance System for the Early Notification of Community-based Epidemics) is a web-based syndromic surveillance system originally designed for the early detection of disease outbreaks, suspicious patterns of illness, and public health emergencies. However, ESSENCE also incorporates several features suitable for situational awareness and seasonal injuries.

Based on data rights held by a specific ESSENCE installation, ESSENCE collects, processes, and analyzes data sources such as chief complaints from hospital emergency departments, poison control calls, and air quality estimates statewide. Regardless of the data source, the underlying data can be queried, analyzed, and visualized both temporally and spatially by the end user, using data-specific fields.

For many data sources, ESSENCE provides classification principally based on syndrome groups, a set of symptoms from chief complaints, ICD (International Classification of Diseases) based claims, or other reference data, are mapped to pre-determined syndrome groups. Example syndrome groups include Respiratory or Rash. In addition to syndromes, data and alerts may be viewed by a characterization unique to that data set. As an example, Emergency Room visits may be free-text queried by a chief complaint or discharge diagnosis to build a very specific case definition.

ESSENCE provides three main functions: data ingestion/enrichment, alerting, and analysis and visualization.

Data Ingestion

Data records are electronically received by ESSENCE and mapped to syndrome groupings. During the ingestion process, data are cleansed (e.g., duplicate records removed, invalid characters removed, etc.) prior to populating the database.

Alerting

Multiple temporal and spatial alerting algorithms are applied to each data set to develop a list of alerts or flags for further investigation by public health officials. In addition to algorithms developed by JHU/APL and Walter Reed Army Institute of Research (WRAIR), ESSENCE can incorporate algorithms required by the jurisdiction where the system is deployed.

Analysis and Visualization

Data and alerts can be analyzed and visualized in multiple ways in ESSENCE, both spatially and temporally. The Query Portal, Time Series View, Data Details, Map View, and Alert Lists are the primary views for analyzing and visualizing ESSENCE data and alerts.

- The Query Portal allows the user to create queries to look for specific information. This includes choosing date ranges, time resolutions, temporal detectors, and specific filters.
- The Time Series View provides a graphical display of the temporal behavior of the data, as well as the ability to drill down to the line listings of the summarized data.
- The Data Details provides line listings and pie/bar chart representations of a query.
- The Map View, which can be accessed from both the Time Series View and the Map Portal, allows the user to view both data and alerts on a geographical display of the region.
- The Alert List provides a tabular view of the alerts that have been generated by the alerting algorithms, as well as a link to the Time Series View.

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 Poison Control data to the system. Death Records data provided by the Texas Center for Vital Statistics was recently added in June 2021. Weather data observations collected from the National Weather Service; Air Quality data collected from AirNow are also hosted within TxS2.

The systems in Tarrant County, the City of Houston, and TxS2 work together to provide data and analysis to facilities, Local Health Departments (LHD), and the public when appropriate. Eligible and participating 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. Although, it is important to implement safeguard measures for these data, as it is identifiable.

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 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.

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.1.22 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 functionality.

Data Sources

Several sources feed data to ESSENCE. These data sources allow you to view data by either patient location or hospital location. Below are the names of the data sources and the views associated with them.

- **ER Data by Patient Location:** Use is typically limited to users associated with sites. Enables a query of data based on where the patient lives. Will return a complete list of available patient details. All binned patient syndromes are returned in a query (e.g., fever, GI).
- **ER Data by Hospital Location:** Use is typically limited to users associated with sites. Enables a query of data based on the hospital location where a patient sought treatment. Will return a complete list of available patient details. Patient's chief complaint can be binned into multiple categories.
- **Poison Control Data:** Data from calls made to Texas Poison Control registries regarding exposure to poisonous or hazardous substances, adverse reactions related to food, animals, insects, or drugs.
- **Death Records Data:** Mortality data reported to the Texas Center for Vital Statistics.
- **Air Quality Data:** All users will have access to this data source. Data are provided via a web service that compiles various air quality metrics (e.g., ozone, particulate matter, air quality index) across the United States. More information is available at this link: [AirNow.gov](https://www.airnow.gov)
- **Weather Data:** All users will have access to this data source. Various weather variables (e.g., total precipitation, snowfall, wind speed) collected from the National Weather Service Form 6 are provided in this dataset across all weather stations throughout the United States. More information is available at this link: [Climate \(weather.gov\)](https://www.weather.gov)

2. Accessing the System

Logging into ESSENCE

1. The secure website can be assessed at the following link: [ESSENCE](#)
2. **Click** the ESSENCE – Texas (1.22) hyperlink.

NOTE: Mozilla Firefox or Chrome are the recommended web browsers for use with ESSENCE. Compatibility is not guaranteed with other browsers.

ESSENCE Texas Site



[ESSENCE – Texas \(1.22\)](#)

WARNING: THIS IS A TEXAS HEALTH AND HUMAN SERVICES INFORMATION RESOURCES SYSTEM THAT CONTAINS STATE AND OR U.S. GOVERNMENT INFORMATION. BY USING THIS SYSTEM YOU ACKNOWLEDGE AND AGREE THAT YOU HAVE NO RIGHT OF PRIVACY IN CONNECTION WITH YOUR USE OF THE SYSTEM OR YOUR ACCESS TO THE INFORMATION CONTAINED WITHIN IT. BY ACCESSING AND USING THIS SYSTEM YOU ARE CONSENTING TO THE MONITORING OF YOUR USE OF THE SYSTEM, AND TO SECURITY ASSESSMENT AND AUDITING ACTIVITIES THAT MAY BE USED FOR LAW ENFORCEMENT OR OTHER LEGALLY PERMISSIBLE PURPOSES. ANY UNAUTHORIZED USE OR ACCESS, OR ANY UNAUTHORIZED ATTEMPTS TO USE OR ACCESS, THIS SYSTEM MAY SUBJECT YOU TO DISCIPLINARY ACTION, SANCTIONS, CIVIL PENALTIES, OR CRIMINAL PROSECUTION TO THE EXTENT PERMITTED UNDER APPLICABLE LAW.

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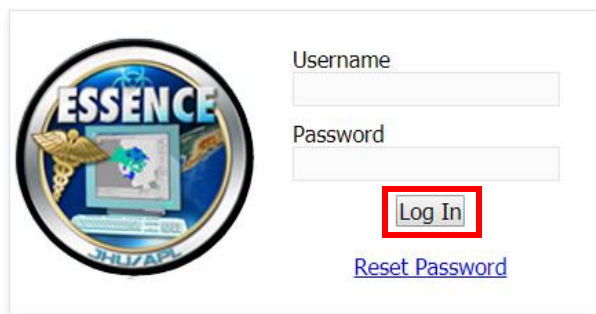
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3. **Log in** by using your Texas – provided user ID and password.



Username

Password

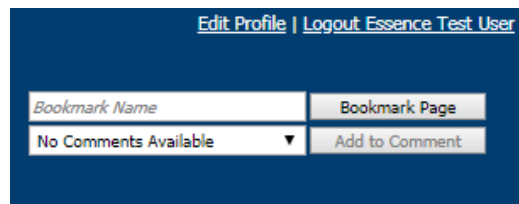
[Reset Password](#)

3. Changing your Password

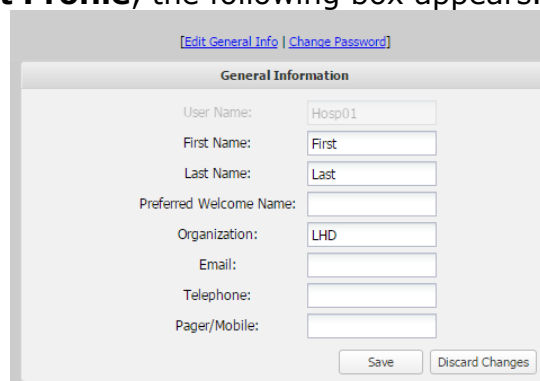
After logging in for the first time, you are prompted to change your password.

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.

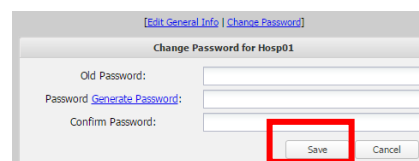


2. After you select **Edit Profile**, the following box appears.

A screenshot of the "General Information" profile editing form. The form has a light gray background and a title bar with "[Edit General Info | Change Password]". The form contains several input fields: "User Name" (Hosp01), "First Name" (First), "Last Name" (Last), "Preferred Welcome Name" (empty), "Organization" (LHD), "Email" (empty), "Telephone" (empty), and "Pager/Mobile" (empty). At the bottom right, there are "Save" and "Discard Changes" buttons.

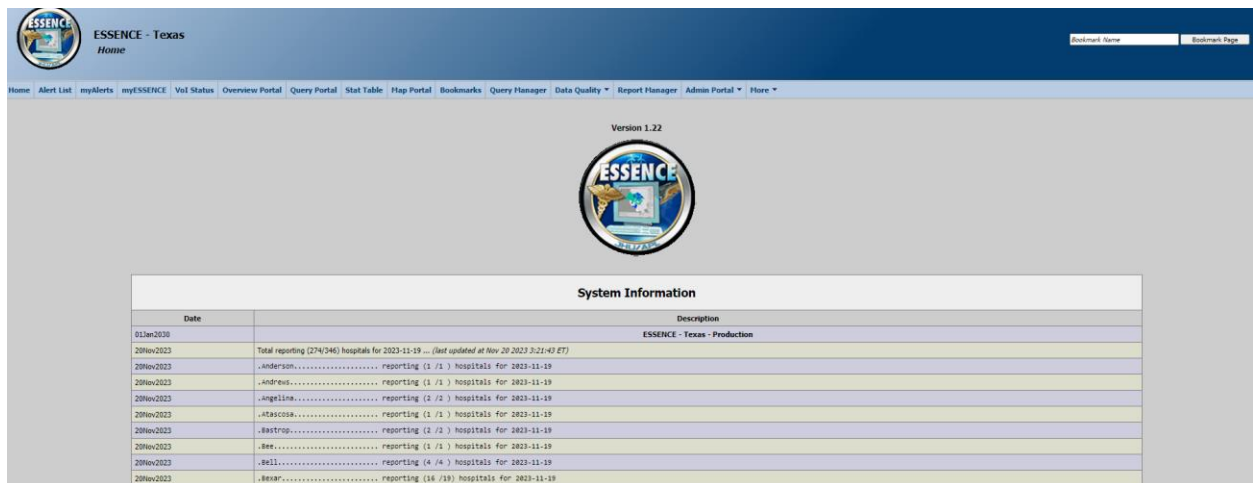
3. Select **Change Password** and the following box appears. Enter the current password, and then the new password twice and click **Save**.

NOTE: Passwords should contain at least 8 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.

A screenshot of the "Change Password" form. The form has a light gray background and a title bar with "[Edit General Info | Change Password]". The form is titled "Change Password for Hosp01" and contains three input fields: "Old Password:", "Password" (with a "Generate Password" link), and "Confirm Password:". At the bottom right, there are "Save" and "Cancel" buttons. The "Save" button is highlighted with a red border.

4. Home Page

The ESSENCE home page has multiple tabs. Each tab and a brief description of its function(s) are provided for quick reference. The homepage provides access to the System Information section, which can contain announcements and information posted by the system administrators.



Date	Description
01Jan2020	ESSENCE - Texas - Production
20Nov2023	Total reporting (274/346) hospitals for 2023-11-19 ... (last updated at Nov 20 2023 3:21:43 ET)
20Nov2023	.Anderson..... reporting (1 /1) Hospitals for 2023-11-19
20Nov2023	.Andrews..... reporting (1 /1) Hospitals for 2023-11-19
20Nov2023	.Anglin..... reporting (2 /2) Hospitals for 2023-11-19
20Nov2023	.Atascosa..... reporting (1 /1) Hospitals for 2023-11-19
20Nov2023	.Bastrop..... reporting (2 /2) Hospitals for 2023-11-19
20Nov2023	.Bee..... reporting (1 /1) Hospitals for 2023-11-19
20Nov2023	.Bell..... reporting (4 /4) Hospitals for 2023-11-19
20Nov2023	.Bexar..... reporting (16 /19) hospitals for 2023-11-19

Tabs

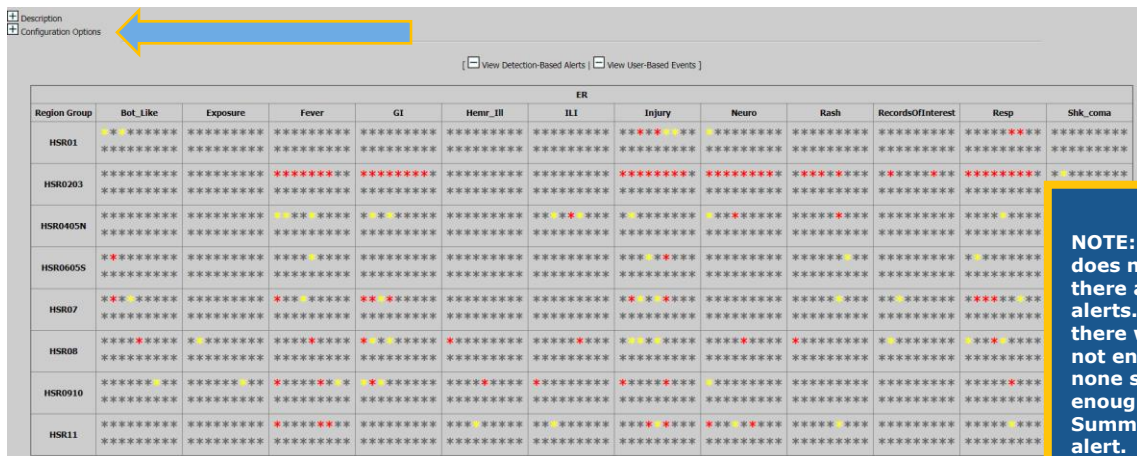
- 1. Home:** Returns user to the home page; contains authorization/disclaimer information.
- 2. Alert List:** Provides a tabular view of alerts for the 12 syndromes in ESSENCE.
- 3. myAlerts:** Includes two primary functions.
 - a.** Enables creation of custom alerts for syndromes, subsyndromes, or free-text queries by various stratifications or threshold criteria.
 - b.** Enables creation of Records of Interest. The purpose of Records of Interest is to return encounters details that match your query criteria.
- 4. myESSENCE:** Allows dashboard customization of frequently used graphs, maps, myAlerts results, rich text boxes, and data details pages.

- 5. VoI (Visits of Interest Statistics) Status:** Allows users to flag pre-designated visits of interest in their jurisdiction for further public health follow-up.
- 6. Overview Portal:** Allows stratification of data to produce time series graphs for a variable of interest.
- 7. Query Portal:** Allows users to perform various searches of their data.
- 8. Stat Table:** Produces weekly and monthly epidemiologic reports in a tabular form.
- 9. Map Portal:** Allows geographic representation of data by alert type.
- 10. Bookmarks:** Allows user to save a page for quick access.
- 11. Query Manager:** Allows time series queries to be saved to prevent user from rerunning a query each time ESSENCE is accessed.
- 12. Data Quality:** Allows assessment of multiple data quality metrics, including completeness of data (by variable, by location, etc.), whether data are mapped to known values, and status of data processing by facility.
- 13. Report Manager:** Produces reports including time series graphs and maps in MS Word; allows the user to add text for interpretation of data and visualizations.
- 14. More:** Provides useful information such as the history of ESSENCE, definitions of syndromes, detector algorithms, Frequency Answered Questions (FAQs), user's guide, etc.

5.Alert List

The Alert List gives users the ability to drill down into ER data. To monitor for public health events, users can review the alert list and assess syndromes of interest. Each table will summarize the analysis of alerts either by region, hospital, geography, spatial, or by time of arrival.

The Summary Alert List is made up of 2 rows of asterisks (*) in each Region Group/Syndrome Cell with the current day being on the far right. The asterisks represent the last 9 days and are color coded. A yellow carat (^) indicates a warning and a red hashmark (#) indicates an alert that may warrant further investigation. 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 choose **Configuration Options** in the right-hand corner.



Region Group	Bot_Like	Exposure	Fever	GI	Hemr_III	ER				RecordsOfInterest	Resp	Shk_coma
						ILI	Injury	Neuro	Rash			
HSR01	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR0203	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR0405N	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR0605S	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR07	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR08	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR0910	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
HSR11	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

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:	08 Dec 23	End Date:	16 Dec 23
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 (ToA) 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.

Alert List: Word Alert

The Word Alert feature parses out words from a record's chief complaint to display key terms and the frequency at which they are featured. ESSENCE users have the option to select the geography system of interest and the information can be displayed as a word cloud or in a tabular form.

Data Configuration	
Display as:	Word Cloud
Geography System:	Select geography
Show 1 - 2 Character Terms:	<input type="checkbox"/>
Show Numerical Terms:	<input type="checkbox"/>
Show Stop Words:	<input type="checkbox"/>
Show Syndromic Terms:	<input type="checkbox"/>
Show User Ignored Words:	<input type="checkbox"/>
Hide Cluster Alerts:	<input type="checkbox"/>
Start Date:	15Nov23
End Date:	30Nov23
<input type="button" value="Submit"/>	

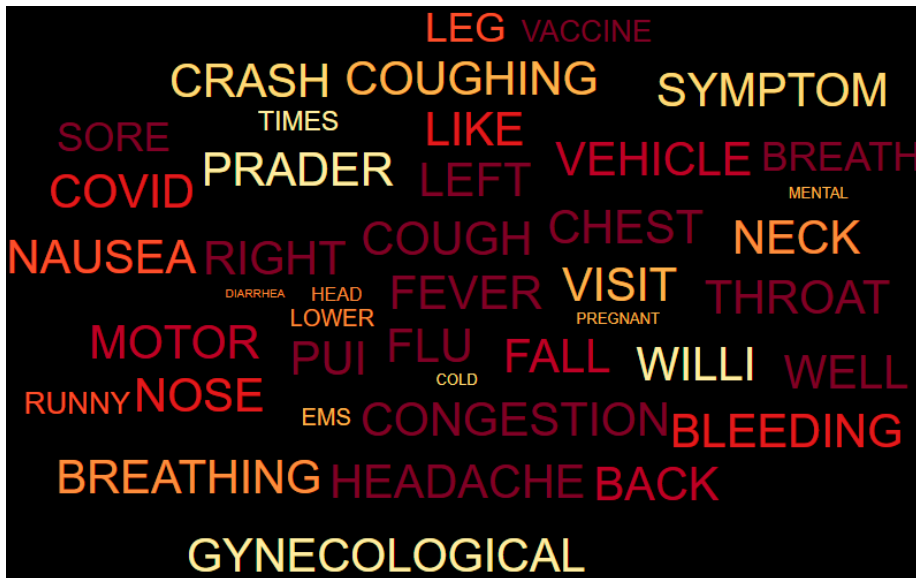


Figure: Word Cloud Sample, Patient Region: Harris, TX

6. myAlerts

The myAlerts function allows users to customize which stratifications of the ESSENCE ER 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.

ESSENCE - Texas
myAlerts

Bookmark Name: ID: 5 - Test | Bookmark Page: Add to Comment

Home | Alert List | myAlerts | myESSENCE | Event List | Overview Portal | Query Portal | Stat Table | Map Portal | Bookmarks | Query Manager | Data Quality | Report Manager | More

Alerts Messages

There are no myAlerts. This could be due to one of two reasons:
1) You have not defined any myAlerts. To create a myAlert definition either go to the Query Manager and choose a query on which to base a new myAlert definition, or create a new query through the Query Portal and then on the Timeseries page give the new query a name and click the 'Create myAlert' button.
2) None of your myAlerts definitions are currently detecting any alerts. You can click the 'Manage Alert Definitions' button above to make sure they are configured the way you want (e.g. make sure they are set to do Detection).

Records of Interest Messages

There are no Records of Interest. This could be due to one of two reasons:
1) You have not defined any myAlerts. To create a myAlert definition either go to the Query Manager and choose a query on which to base a new myAlert definition, or create a new query through the Query Portal and then on the Timeseries page give the new query a name and click the 'Create myAlert' button.
2) None of your myAlerts definitions are currently detecting any Records of Interest. You can click the 'Manage Alert Definitions' button above to make sure they are configured the way you want (e.g. make sure they are set to display Records of Interest).

Manage Alert Definitions | Subscribe

Alert Definition	Stratifications	Date	Data Source	Level	Count	Expected	Timeseries
------------------	-----------------	------	-------------	-------	-------	----------	------------

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.

+ Description

- Query Options

Query name: Save Query Create myAlert Save Report Query

Add to myESSENCE Share URL Show SQL Query

+ Configuration Options

+ Data Series Options

- Graph

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**.

Stratifications:

First Name	Last Name	Organization
<input checked="" type="checkbox"/>		Texas DSHS
<input type="checkbox"/>		DSHS HSR 8
<input type="checkbox"/>		DSHS EAIDB
<input type="checkbox"/>		DSHS HSR 1
<input type="checkbox"/>		DSMC HSR A/E

NOTE: To create a Records of Interest myAlert, simply check Records of Interest and select Save myAlert.

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

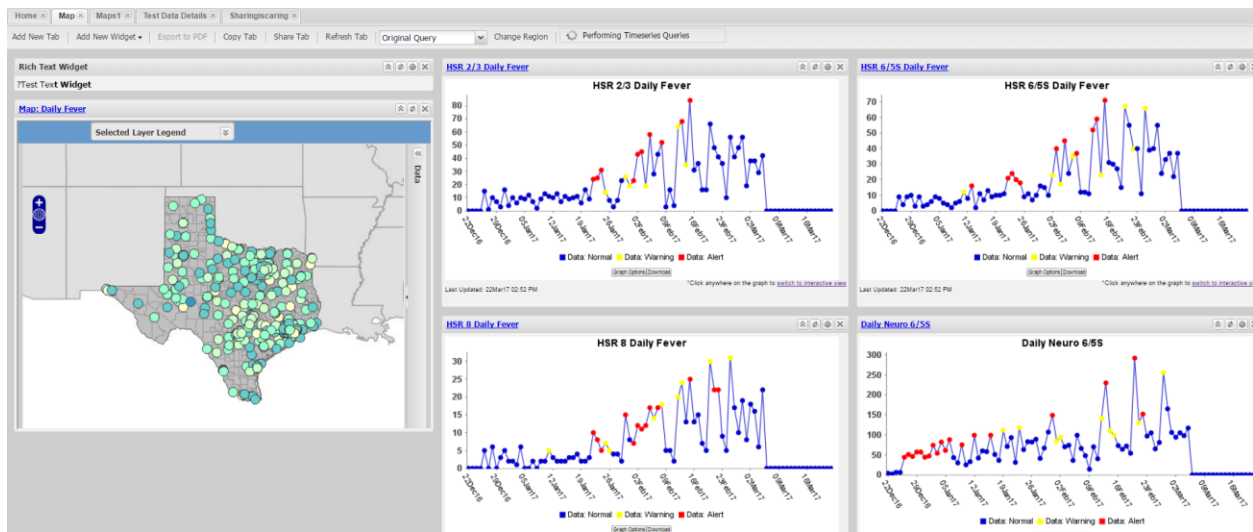
Alerts Messages							
Records of Interest Messages							
Manage Alert Definitions Subscribe							
Alerts	Records of Interest						
Alert Definition	Stratifications	Date	Data Source	Level	Count	Expected	Timeseries
Daily Fever	Use Original	04Oct06	ER by Patient	0.005	420	363.36	Timeseries
Daily Fever	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

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

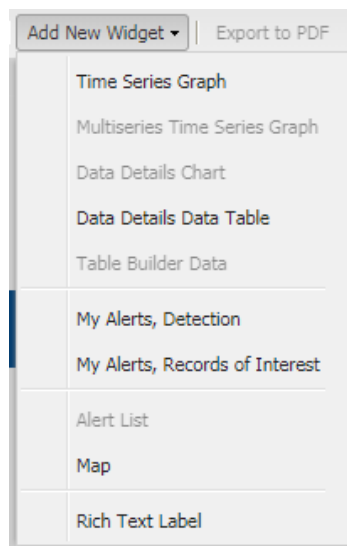
7. myESSENCE

In myESSENCE, users can customize dashboards of frequently used graphs, maps, myAlerts results, rich text boxes, and data details pages. This feature allows users to copy and share dashboards with other users. Widgets can be reorganized by drag and drop.



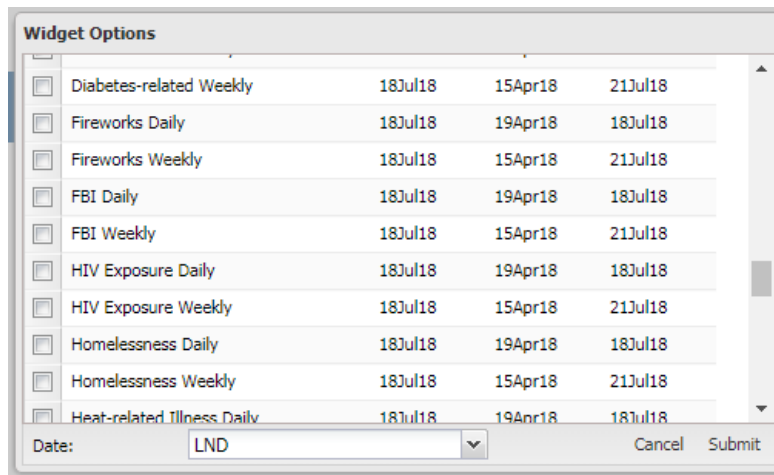
1. To add a new widget from the myESSENCE page, select **Add New Widget**.

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.

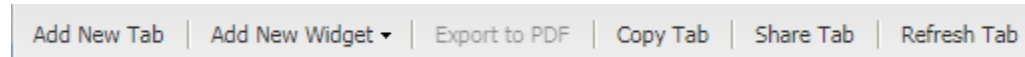
3. A Widget Options dialog box appears that includes all of your saved queries.



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.



8. VoI (Visits of Interest) Status

The Visits of Interest (VOI) status feature serves as a tool to provide users a snapshot of "Visits of Interest" in their jurisdiction. The system operates to support users with flagging pre-designated visits of interest and for further public health follow-up if deemed necessary. The VOI query utilizes a combined chief complaints and discharge diagnosis field to identify potential cases of notifiable conditions or visits of public health concern.

The screenshot displays the 'Visits of Interest Status' web application. At the top, there are two date pickers for 'Start Date' (15Nov23) and 'End Date' (22Nov23). Below these are two main selector panels: 'Regions Selector' and 'CCDD Categories Selector'. Each panel includes a search string input field with 'Apply' and 'Clear' buttons. The 'Regions Selector' shows an 'Available' list with counties like Anderson, TX and Andrews, TX, and an empty 'Selected' list. The 'CCDD Categories Selector' shows an 'Available' list with categories like 'Air Quality-related Respiratory Illness v1' and 'All Traffic Related v1', and an empty 'Selected' list. At the bottom of the interface are three buttons: 'Submit', 'Data Details', and 'Export to Excel'.

Benefits of VOI Status

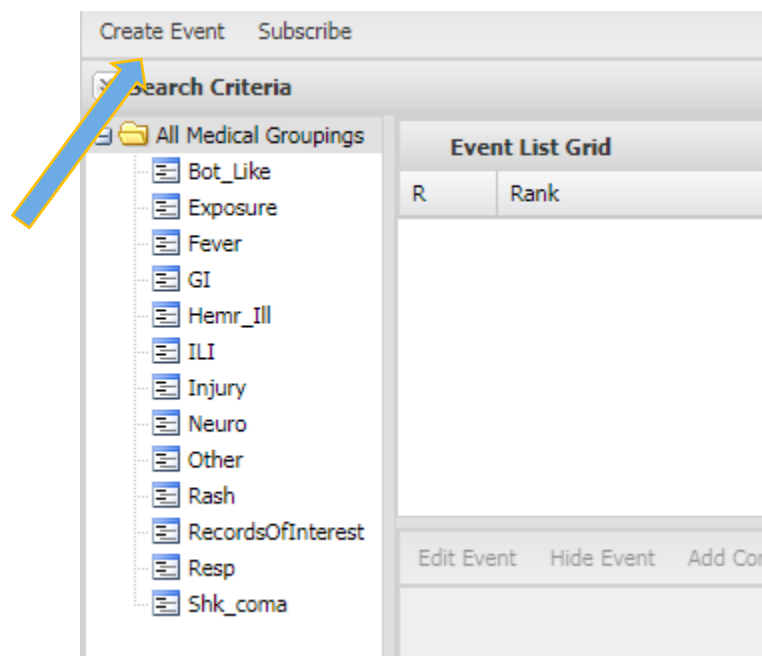
- The VOI Status feature allows for tracking of specific reportable conditions. Once the CCDD category and facility county is selected, records populated will contain limited information to prevent re-identification of records. To protect confidentiality, the records will contain visit date, patient location, facility name, facility location, CCDD category, and subcategory information. The VOI status offers the case investigators or epidemiologists the capability to track the investigation status for the facility visit. As the investigation progresses, users are able to update the status to determine whether investigation is "Not Concerning", "Investigating", or "No Action Yet".

Date	RecView	Status	Edited By	Patient Location	Facility Location
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
05/04/2024	View	No Action Yet		Dallas, TX	Tarrant, TX
05/04/2024	View	No Action Yet		Tarrant, TX	Tarrant, TX
05/04/2024	View	Not Concerned		Tarrant, TX	Grayson, TX
05/04/2024	View	CHD Already Knew About It		Tarrant, TX	Tarrant, TX
05/04/2024	View	Investigating		Tarrant, TX	Tarrant, TX
05/04/2024	View	Investigated - Is A Case		Johnson, TX	Tarrant, TX
05/04/2024	View	Investigated - Ruled Out		Wise, TX	Tarrant, TX

9. 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.

The screenshot shows a 'Create Event' dialog box with the following fields and options:

- Datasource:** ER Data by Patient Location, ER Data by Hospital Location, ER Data by Patient Location and Visit
- Status:** Open, Closed
- Geography:** Anderson, TX, Andrews, TX, Angelina, TX
- Category:** General, Multi-Syndrome, Bot_Like
- Rank:** Info, Investigating, Monitoring
- Medical Grouping:** Bot_Like, Exposure, Fever
- Age:** 00-04

Buttons at the bottom: Preview, Cancel

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.

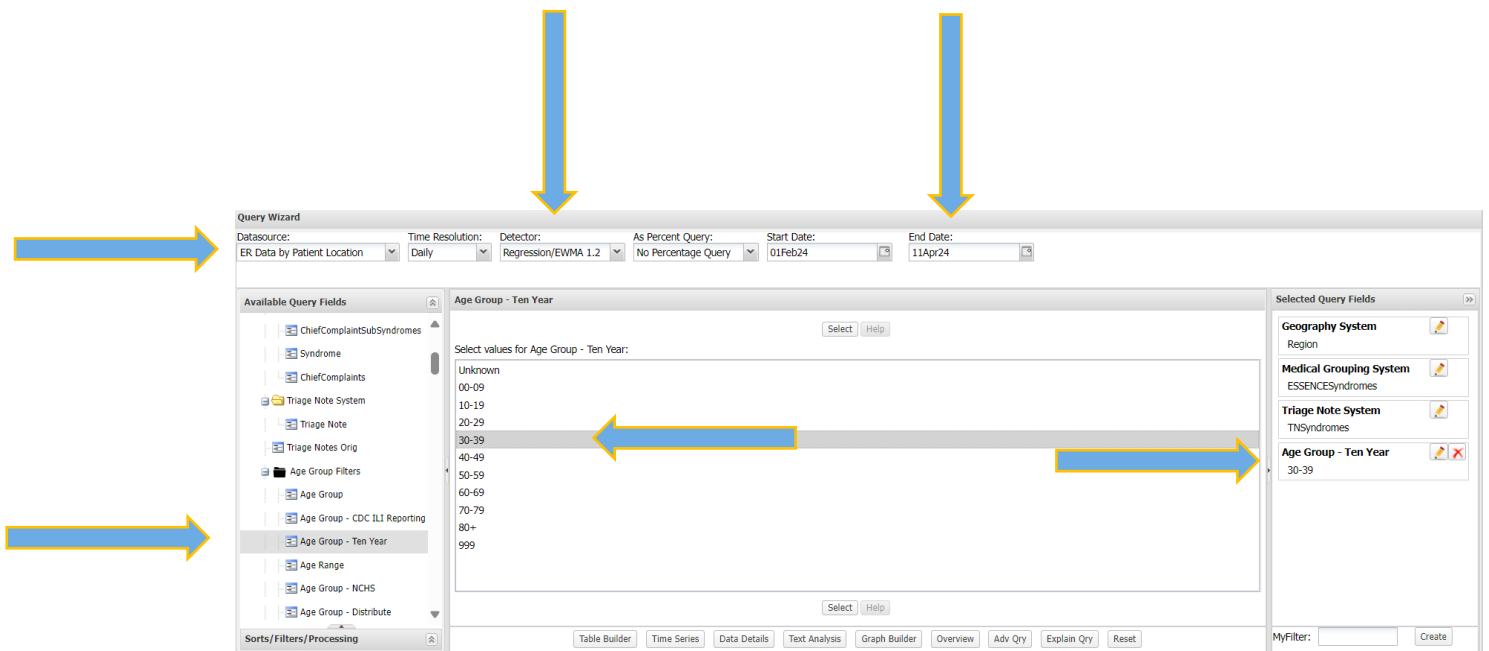
Benefits of the Event List

- Provides a great way to organize communications regarding TxS2 findings among users and a forum for discussing potential health events.
- Most flagged events do not require public health investigation or intervention. However, the second tier of asterisks on the Summary Alerts page shows those flagged events 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.

10. Query Portal

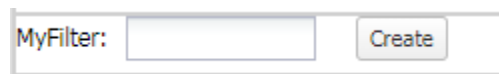
To run a basic query, click on the **Query Portal** tab.

1. In the Query Wizard select your data source, dates, and syndrome or chief complaint.
 - a. Datasource
 - i. *ER data by Patient Location*
 - ii. *ER Data by Hospital Location*
 - iii. *Poison Control*
 - iv. *Death Records Data*
 - v. *Weather Data*
 - vi. *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 (see reference: page 53)
 - ii. Subsyndromes – a smaller, more specific group of associated symptoms (see reference: page 53)
 - iii. Chief Complaints – free text from data-provider Electronic Health Record



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**.

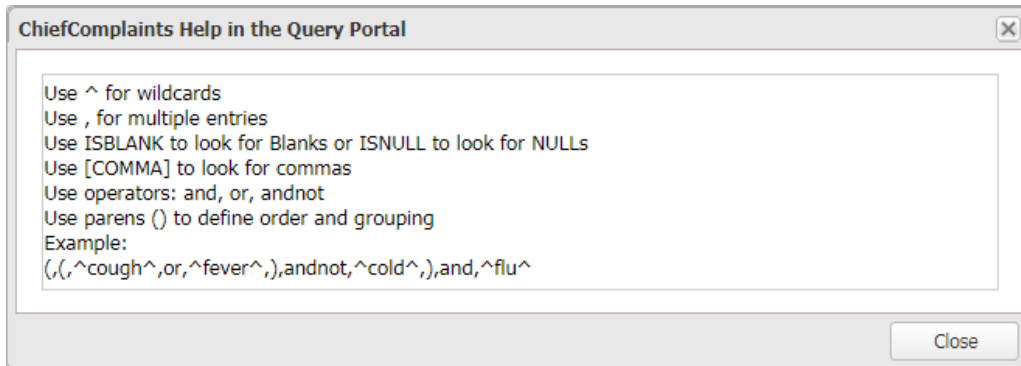


To apply the filter, select MyFilters under available query fields and use the drop-down arrow or type in the saved filter name and press **Select**.

The saved filter automatically populates under the selected query fields.

Free Text Queries

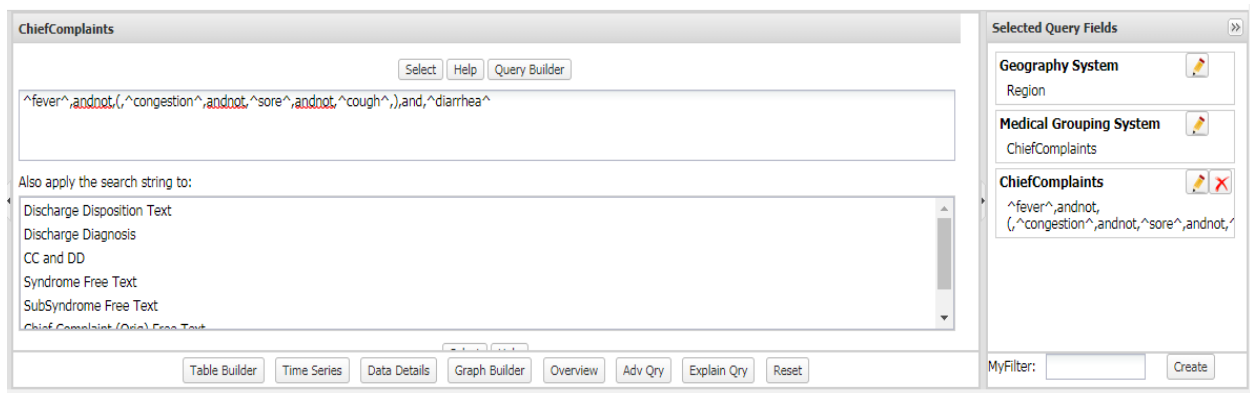
Free text queries are only available for the ER data. To perform free text queries, choose the chief complaints parameter under the medical grouping system folder. The syntax for a chief complaint query is described in the help popup.



In addition to the help popup, you can also use a subset of regular expressions in the queries. For example:

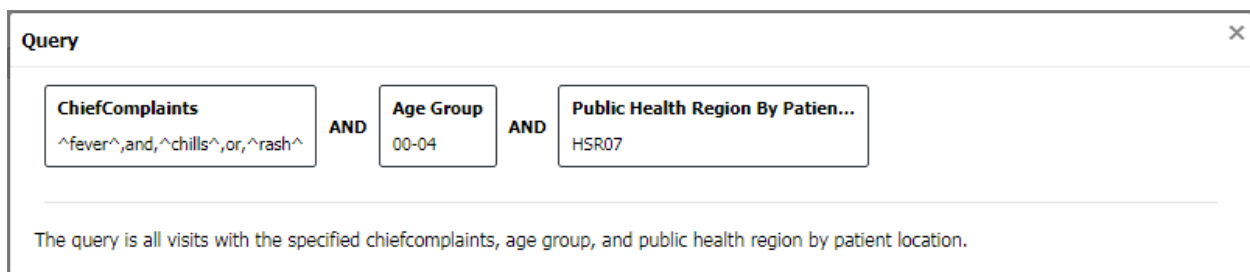
- wildcard: ^
 - A wildcard is a character that can match any character or sequence of characters in a search.
 - ^head^
 - results can include **head**
- brackets: []
 - Brackets are placeholders that specify items that can be present in a position.
 - numeric: ^H[0-9]N[0-9]^
 - results can include **H1N1** or **H3N2**
 - specific characters: ^her[oi][oi]n^
 - results can include **hero**i**n** or **heroin**
- underscores: _
 - ^Fall_^
 - An underscore is a placeholder indicating that something must be present in the position.
 - An underscore at the end of a text string means something must follow the text. Results can include **Falling out with friends** or **Feels crestfallen**.
- Use **AND** when you want to search for ALL search terms TOGETHER
 - A visit will only get flagged if all search terms are included.
- Use **OR** when you want to search for EITHER search term.
 - A visit with one or BOTH search terms will be flagged for inclusion.
- USE **ANDNOT** when you want to exclude a term from your search.

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.



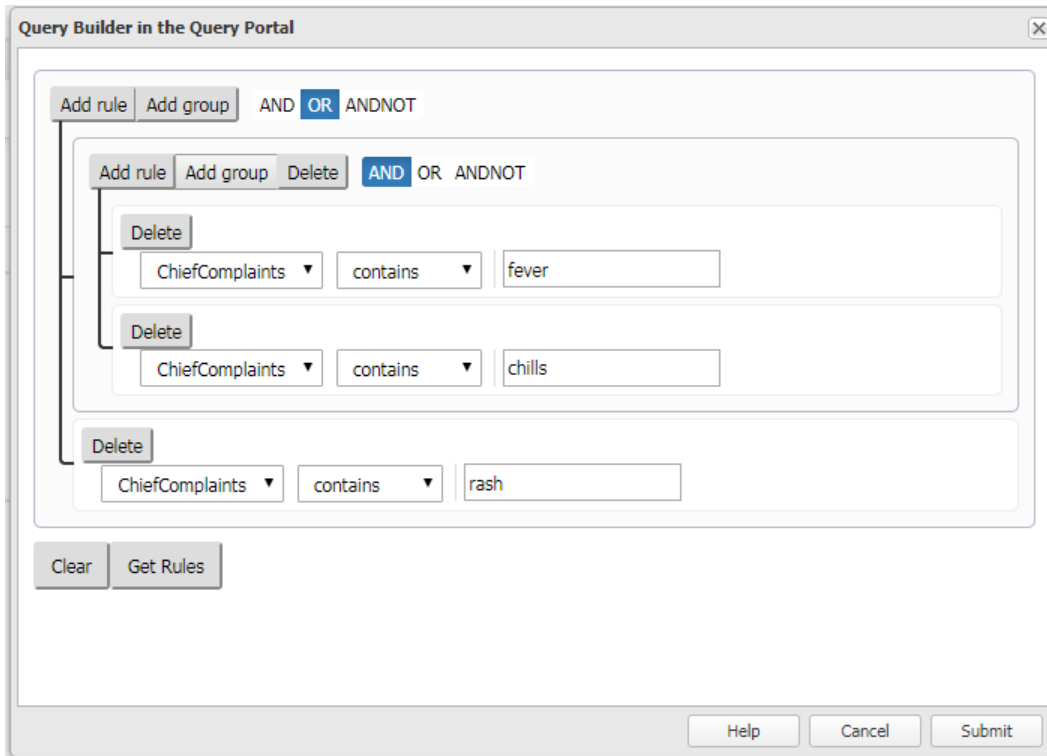
Explain Query

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.

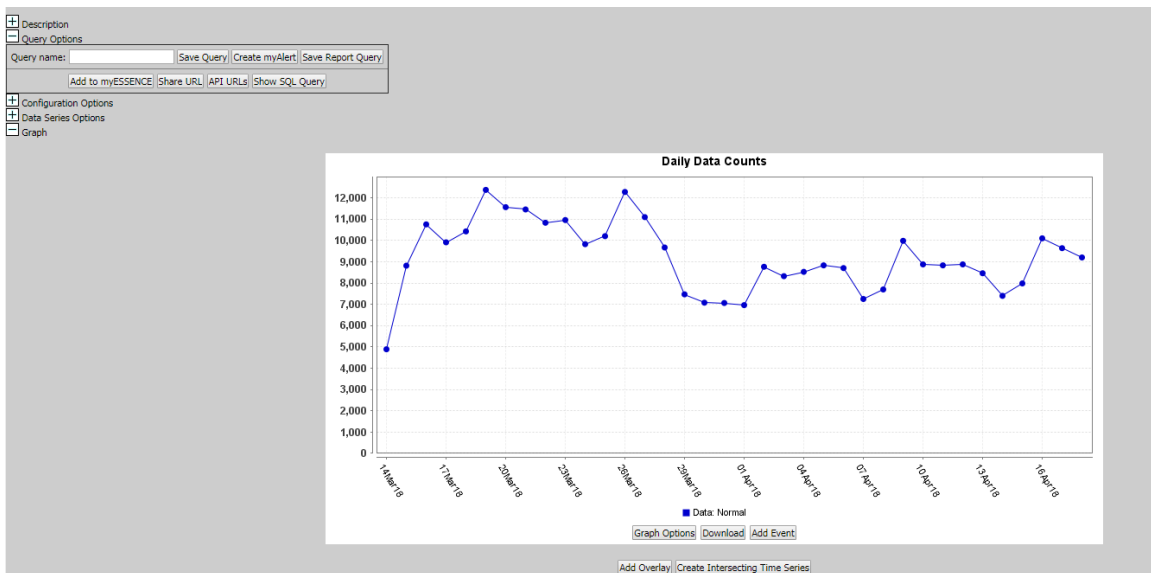


Query Builder

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 view the data from the query 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 get more information from a specific day by hovering over any data point.

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 Link	Map Link	Date	Data	Expected	Detection
Data Details	Map View	25Jun18	0	17.857	0.5
Data Details	Map View	24Jun18	0	18.107	0.5
Data Details	Map View	23Jun18	11	17.964	0.721
Data Details	Map View	22Jun18	17	18	0.356
Data Details	Map View	21Jun18	27	17.929	0.104
Data Details	Map View	20Jun18	15	17.607	0.617
Data Details	Map View	19Jun18	14	17.714	0.504
Data Details	Map View	18Jun18	26	18.357	0.125
Data Details	Map View	17Jun18	20	18.179	0.459
Data Details	Map View	16Jun18	8	17.429	0.856
Data Details	Map View	15Jun18	8	16.821	0.424
Data Details	Map View	14Jun18	29	16.25	0.028
Data Details	Map View	13Jun18	22	15.536	0.119

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.

Configuration Options
Data Series Options

Data Series Options

Within Graph Stratification:

Across Graphs Stratification:

Graph Options: Single Graph Multiple Graphs (Small) Multiple Graphs (Large) Micro Graphs

Composite with Zero Series Removed: [Help](#)

Remove Zero Series: [Help](#)

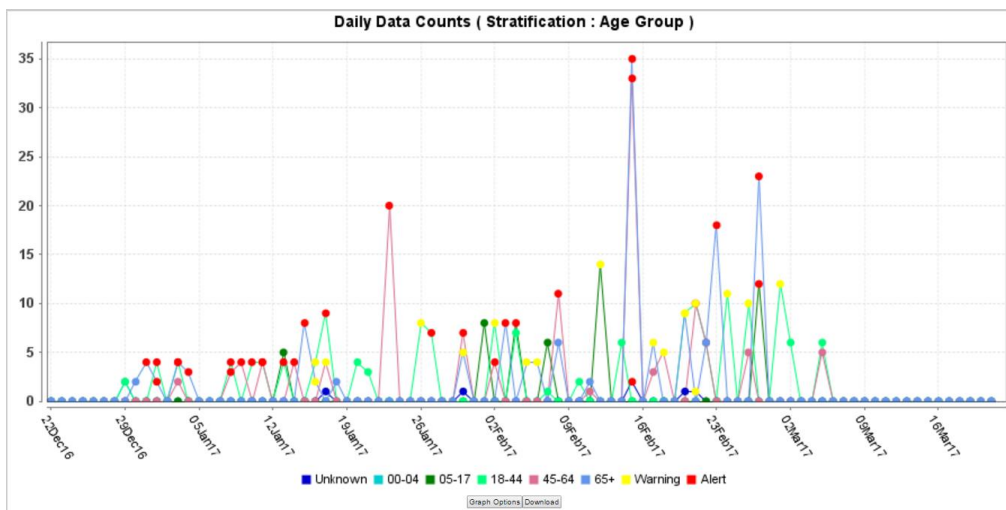
Graph Start Month:

[Update](#)

Daily Data Counts

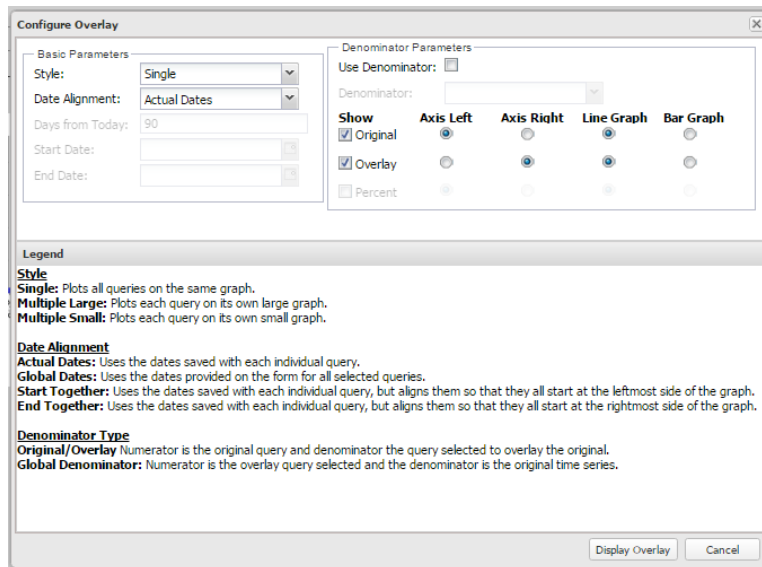
1. Select **Data Series Options** from the Time Series page.
2. Choose your options for **Within** and/or **Across Graph(s) Stratification**
3. Select Multiple Graphs for each stratification on a different graph or Single Graph for all stratifications on one graph.
 - a. There are also options for composite 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



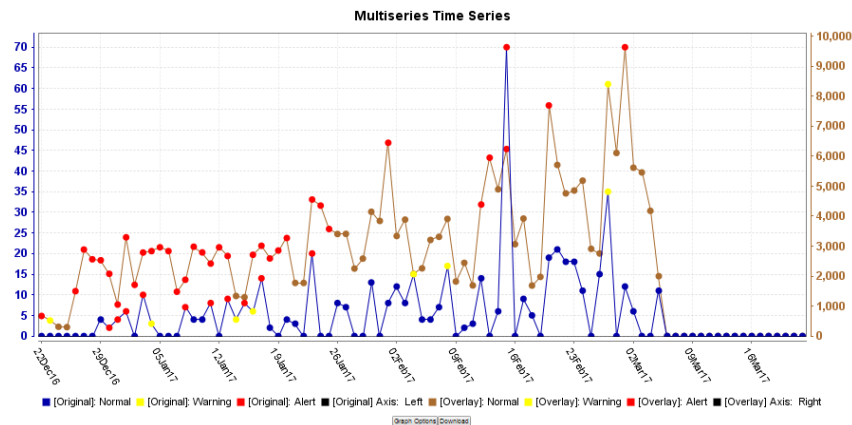
Overlay

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.

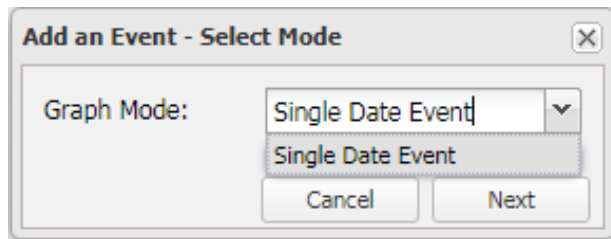


Add Event

■ Data: Normal ■ Data: Warning ■ Data: Alert

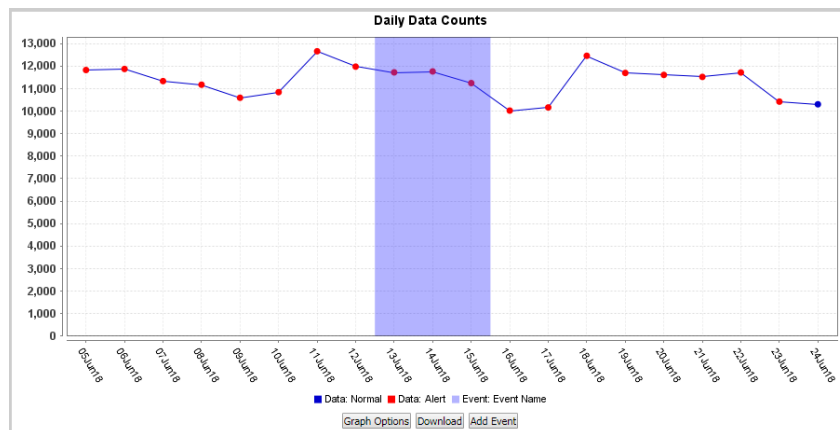
Graph Options Download Add Event

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.



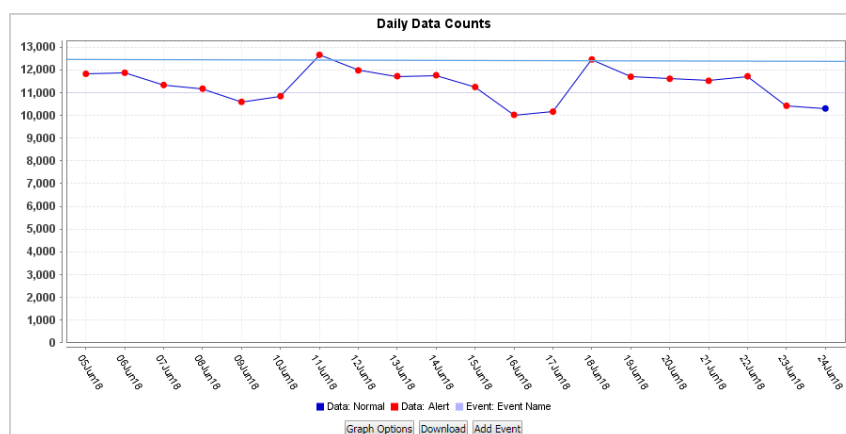
Event

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 provided 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	

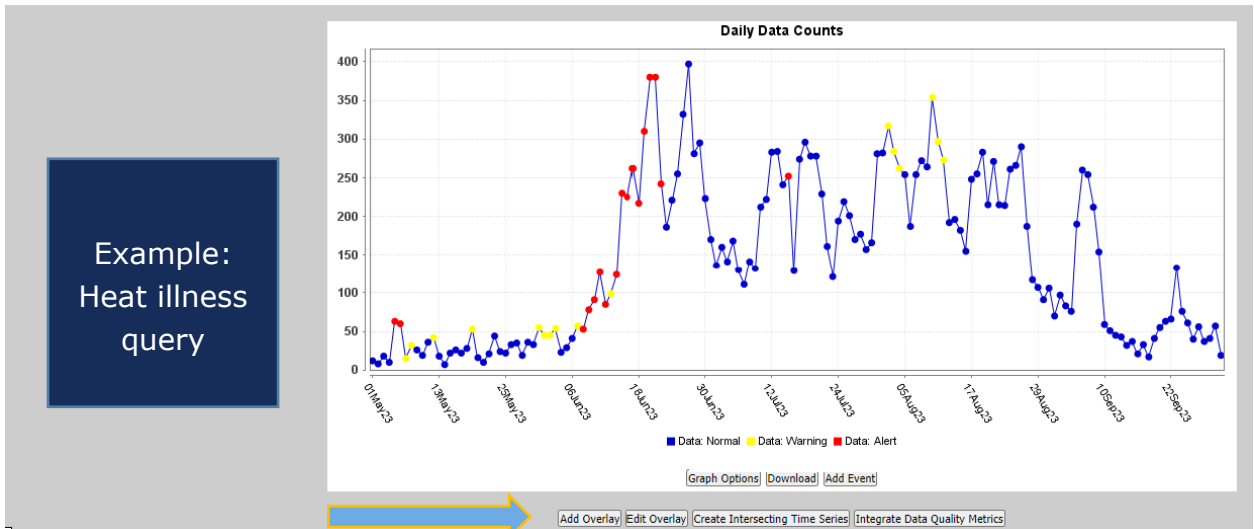
Air Quality Parameters				
Pollutant	Definition	Health Effects & Examples	Measure	Time
PM2.5	Fine inhalable particles with diameters that are generally 2.5 micrometers and smaller	combustion particles, organic compounds, metals, emissions from vehicles and industrial facilities etc.	microgram per cubic meter ($\mu\text{g}/\text{m}^3$)	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 ($\mu\text{g}/\text{m}^3$)	24 hour
Ozone	Composed of three atoms of oxygen (O_3), 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 ($\mu\text{g}/\text{m}^3$)	
		[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

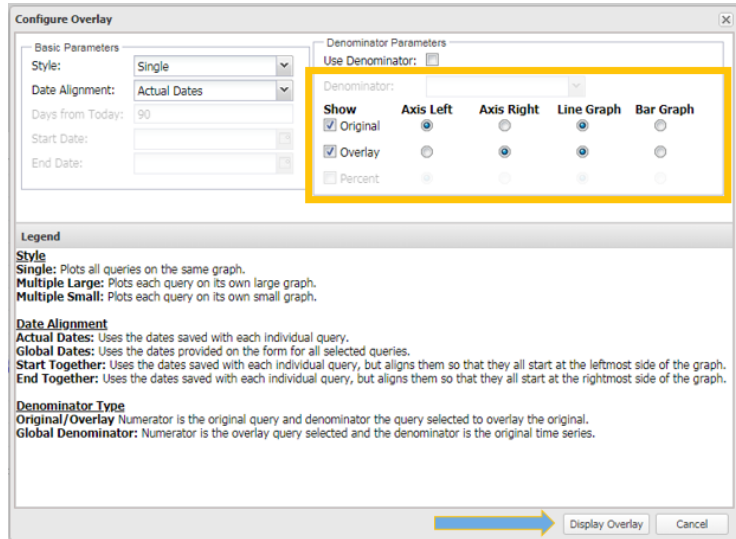
Weather Overlay

1. Run a query and create a Time Series graph for the outcome of interest.



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

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**

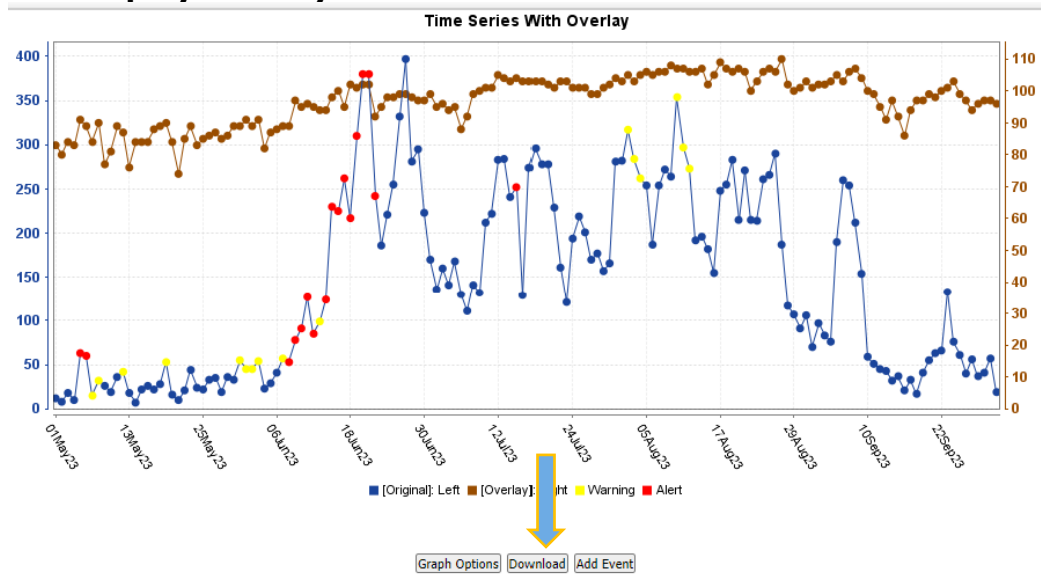


9. Configure overlay display

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.

10. Select **Display Overlay**

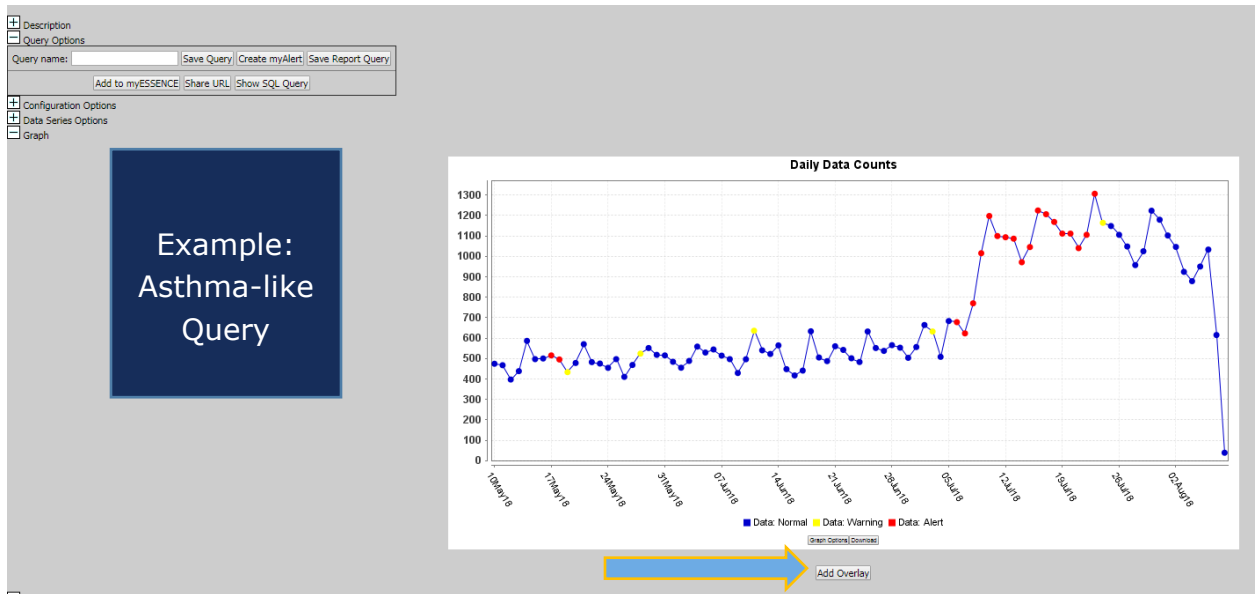


11. Save Visualization

- 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.

Add Overlay

Datasource: Air Quality Data Time Resolution: Daily Detector: Regression/EI/MA 1.2 As Percent Query: No Percentage Query Start Date: 10May18 End Date: 08Aug18

Available Query Fields: Air Quality Data, Air Quality Parameter, Air Quality Station, Country, State, Reporting Agency, Time Aggregation Function, Station Aggregation Function

Air Quality Parameter: PM2.5-24hr

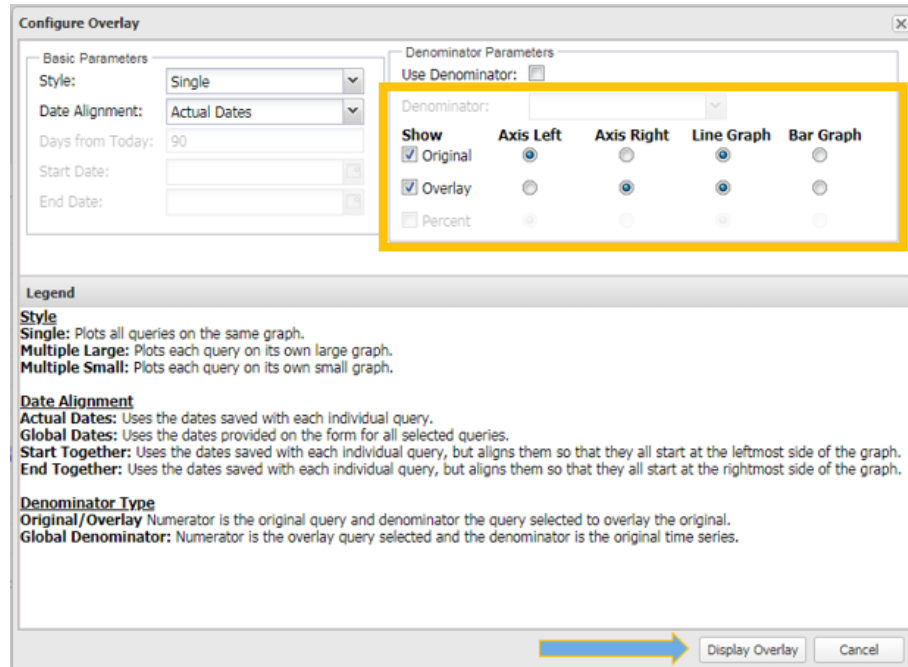
Selected Query Fields: Air Quality Parameter (PM2.5-24hr), Air Quality Station (TX - TRAVIS - Austin North Interstate 35 CT106), Time Aggregation Function (Max), Station Aggregation Function (Max)

Example:
Daily PM_{2.5}
using Austin
air quality
monitor.

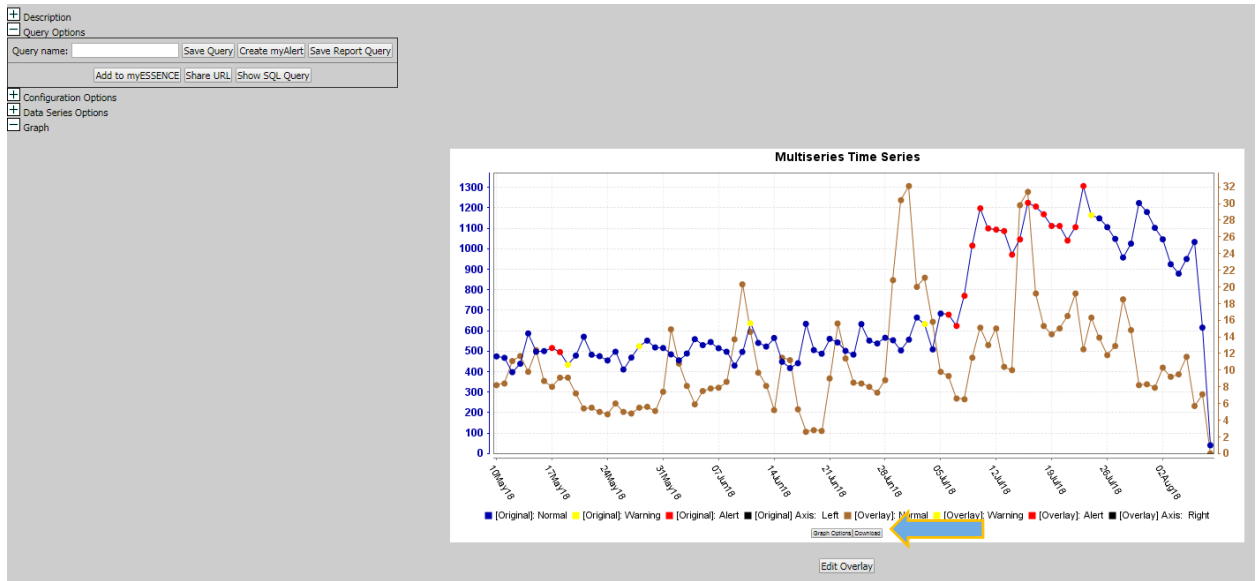
Add Overlay Cancel

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**

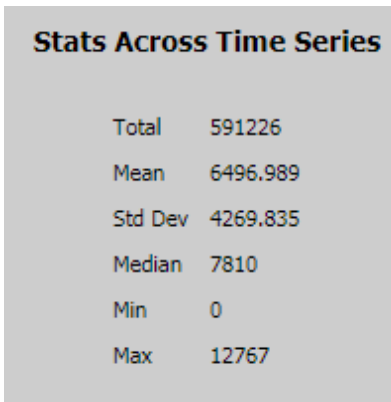


11. Save Visualization

- 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.



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

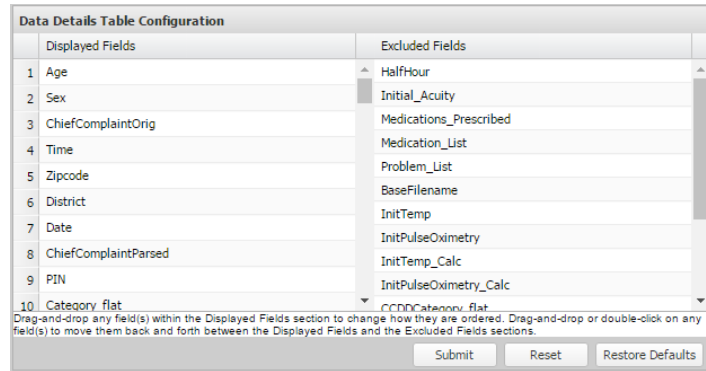
Data Details

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. Local Health Department users can only see line listing information from their region or jurisdiction for ER 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.

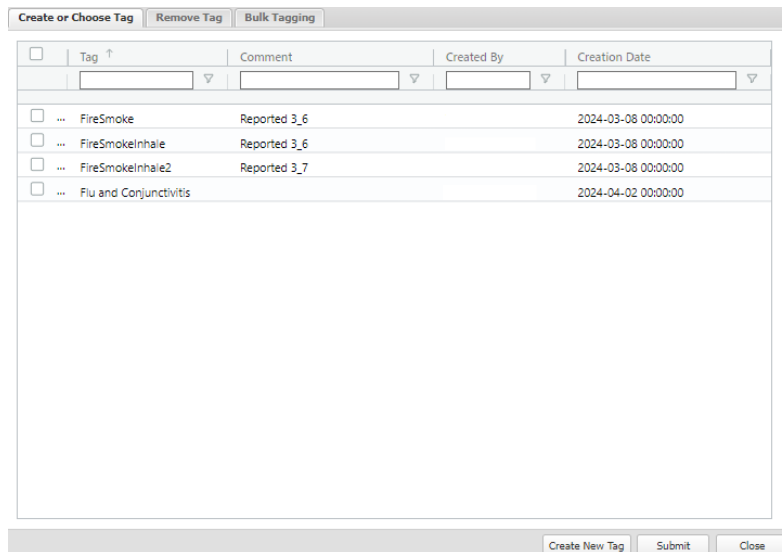
Date 1 ↓	Time 2 ↓	ChiefComplaintOrig	Sex
07Jun2023	11:53 PM	LEFT 5TH DIGIT CUT;	Male
07Jun2023	11:41 PM	FEVER;	Male
07Jun2023	11:32 PM	CROUPY COUGH;	Male
07Jun2023	10:42 PM	EMS/LEFT HIP PAIN;	Female
07Jun2023	09:26 PM	EMS/ VERTIGO;	Female
07Jun2023	08:19 PM	ASTHMA;	Female
07Jun2023	08:00 PM	COUGH, CONGESTION;	Female
07Jun2023	07:46 PM	LFT SIDE PAIN;	Female
07Jun2023	06:49 PM	TROUBLE WITH VISION IN RT EYE;	Male
07Jun2023	06:49 PM	left arm injury;	Female
07Jun2023	06:36 PM	V/D ABD PAIN;	Female
07Jun2023	06:34 PM	FEVER;	Female
07Jun2023	06:32 PM	Per police officer pt hx of asthma and felt SOB right before going to jail;	Male
07Jun2023	04:16 PM	FELL DOWN STAIRS;	Female
07Jun2023	03:48 PM	^^^^^^Cough;	Female
07Jun2023	03:44 PM	UNCONTROLLED BLEEDING, CHEST PAIN, SOB;	Female
07Jun2023	03:11 PM	CHEST PAIN/PRESSURES X3 HOURS;	Female
07Jun2023	03:03 PM	asthma,chest tightness;	Male
07Jun2023	02:10 PM	SOB,ASTHMA,PNEUMONIA;	Female
07Jun2023	02:02 PM	^^^^^^Well Child;	Male
07Jun2023	01:53 PM	Asthma Attack (Adult);	Female

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.

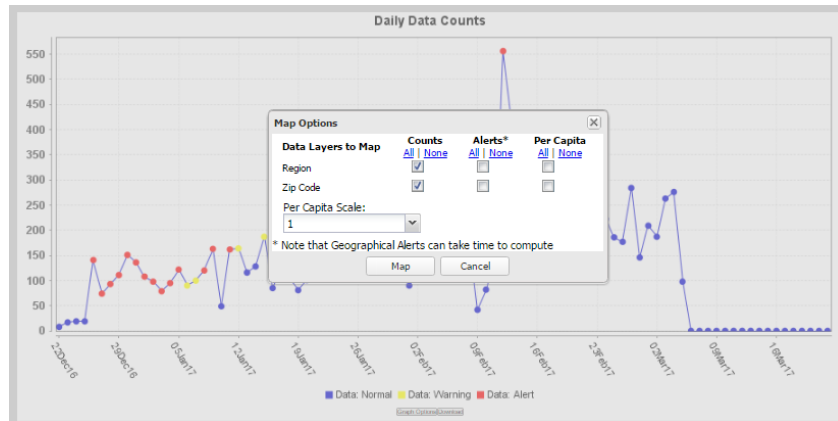
Users can additionally tag records by name and retrieve that a later date.



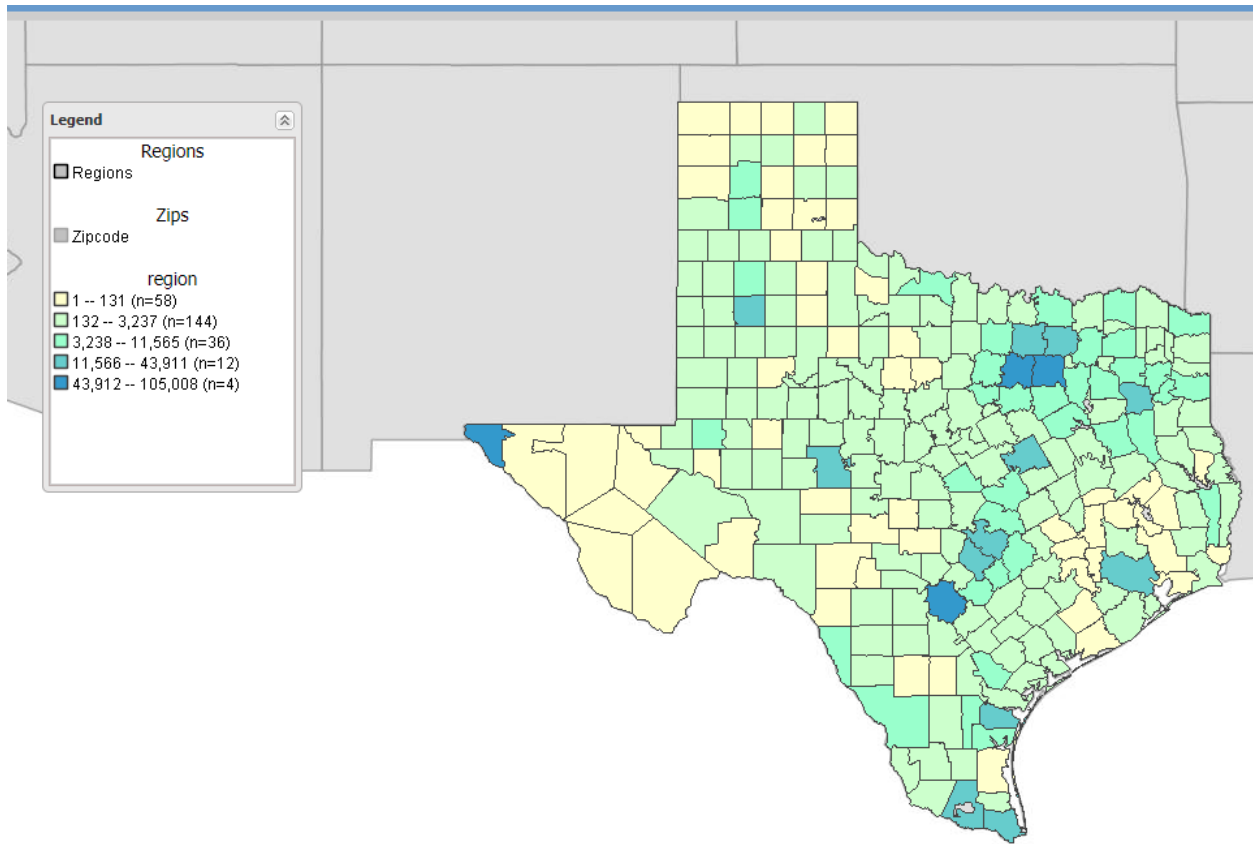
1. In order to create an alert, the user must select the checkbox in the first column of the data details section.
2. Select the column header for **Tag** in the subsequent column and select **Create a New Tag**. You will then be prompted to Name your Tag and add comments related to reasoning for tagging the record.

Map View

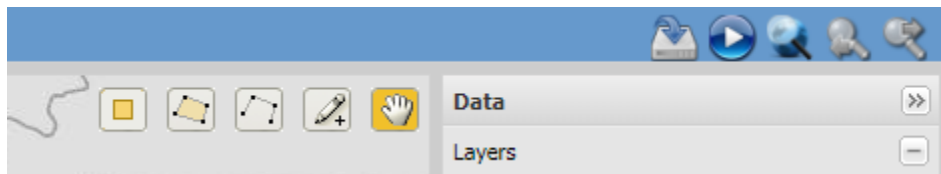
After clicking **Map View** from the Time Series page, a Map Options dialog box appears. The Map View can also be accessed from the Map Portal tab but the most common way to access the mapping feature is through the Time Series page. This is because the default map from the Map Portal displays statistical alerts, not counts by region. 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.

Information			
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

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 an 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.

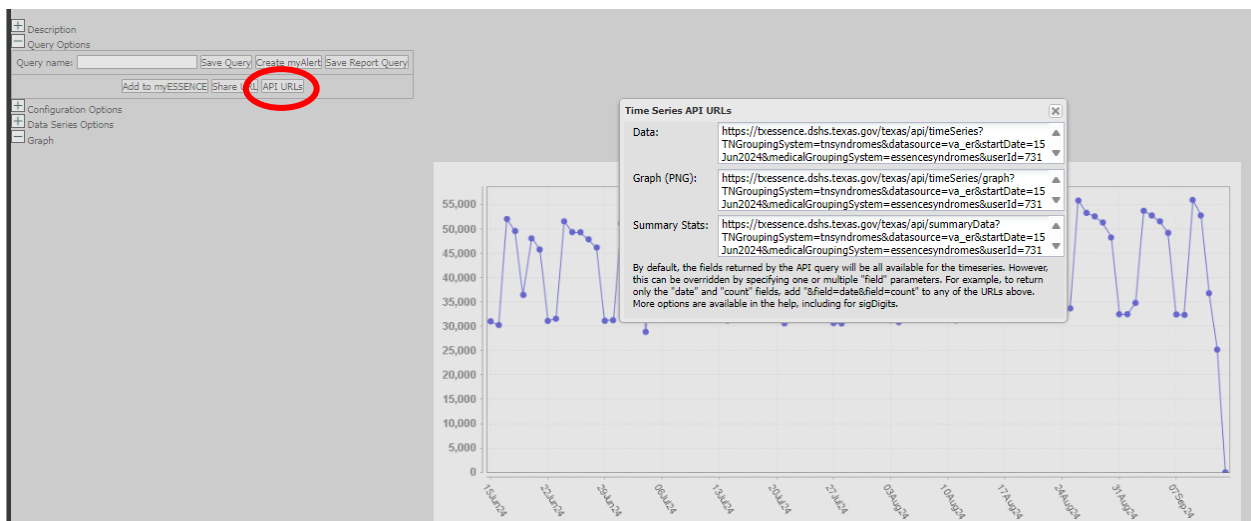
The screenshot displays the Advanced Query Tool interface. At the top, there are input fields for 'Data Source' (ER Data by Patient Location), 'Start Date' (23Dec2016), 'End Date' (23Mar2017), and 'Detector' (Regression/EWMA 1.2). Below these is a 'Message Area' with a text box. The 'Query' section contains a large text area for the query, with an example: `[AGEGROUP = "00-04"] OR ([SUBSYNDROME = "ACUTE BLOOD ABNORMALITIES"] AND [ZIPCODE = "21043"])`. The 'Query Builder' section includes buttons for 'AND', 'OR', and logical operators, along with 'Add Expression' and 'Undo Last Change'. A 'Variable Tip' list on the left shows variables like AGEGROUP, AGERANGE, CCANDDD, etc. At the bottom, there are buttons for 'Validate Query', 'Save Private Expression', 'Save Public Expression', 'Save Administrator Expression', 'Clear Query', and 'Execute'.

ESSENCE API Functionality

The ESSENCE Application Programming Interface (API) will allow users to query ESSENCE data sources and ESSENCE functionality via a REST API. An API is a way for one machine to exchange information with another machine. ESSENCE has APIs that allow you to programmatically access and further manipulate your data from outside the system and transferred to a programming environment if desired. You may select the CSV format to export data, and in some instances, JSON is also supported. Users can also write their own API URL syntax, or you can let ESSENCE create the API URL by clicking the "API URL" button on an ESSENCE page after completing a query. The API makes use an authentication schema that allows the user to use their existing username/password from the ESSENCE web application.

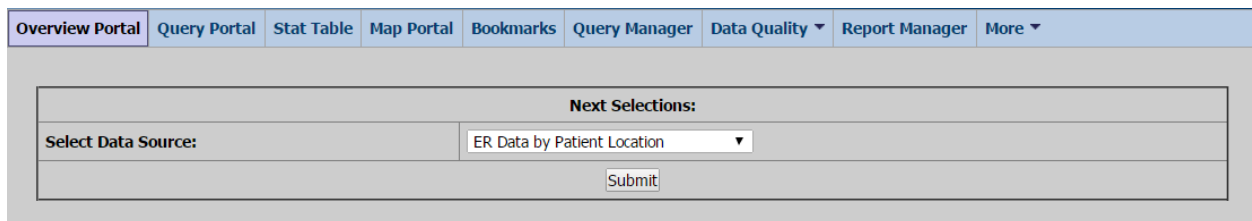
ESSENCE offers APIs for:

1. Time series data table,
2. Time series PNG image,
3. Table builder results,
4. Data details (line level)
5. Summary Statistics on the number of unique facilities or regions in your query results



11. 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.

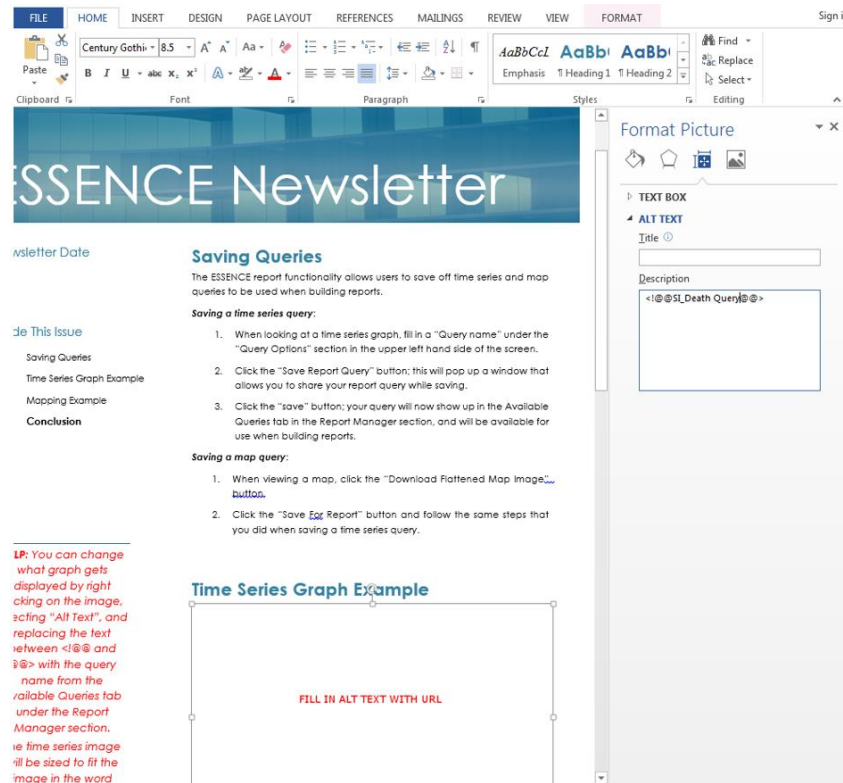


The screenshot shows a web interface with a navigation menu at the top containing the following items: Overview Portal, Query Portal, Stat Table, Map Portal, Bookmarks, Query Manager, Data Quality (with a dropdown arrow), Report Manager, and More (with a dropdown arrow). Below the menu is a form titled "Next Selections:". The form contains a label "Select Data Source:" followed by a dropdown menu currently displaying "ER Data by Patient Location". Below the dropdown is a "Submit" button.

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.

12. 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 Microsoft 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.

13. 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.

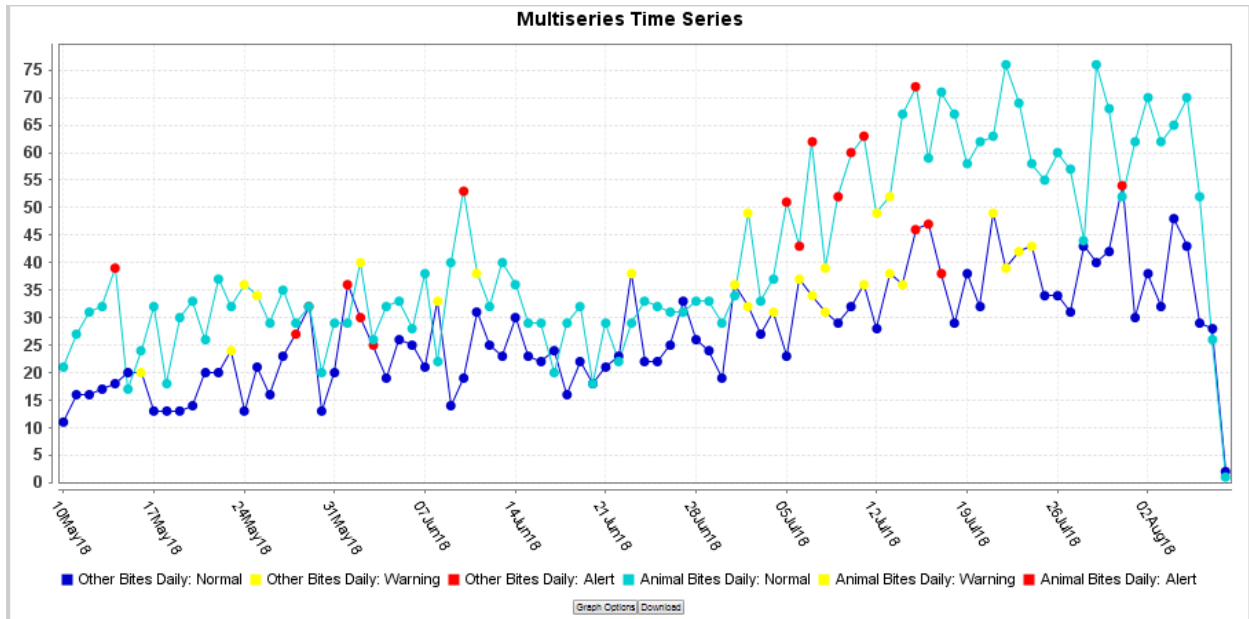
The Query Manger allows users to save and manage queries from sessions in the Query Portal. This saves the user from having to rewrite chief complaint free text queries should it become necessary to rerun the same query or a similar one. Query Manager is similar to bookmarks, but it also has other useful 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								
Expand All Groupings	Collapse All Groupings	Multiseries Time Series	Intersecting Time Series	Create myAlert	Edit	View URL	Share	Delete
<input type="checkbox"/> Label	Link	Link (Today)	Date Created	Shared By	Start Date	End Date		
<input type="checkbox"/> Grouping: unassigned (6)								
<input checked="" type="checkbox"/> Daily Fever	Show	Show (Today)	21Feb17		01Jul16	21Feb17		
<input checked="" type="checkbox"/> Daily Fever (All Regions)	Show	Show (Today)	20Mar17		20Dec16	20Mar17		
<input type="checkbox"/> Fever in Harris County	Show	Show (Today)	22Mar17		22Dec16	22Mar17		
<input type="checkbox"/> HSR 2/3 Daily Fever	Show	Show (Today)	21Feb17		01Jan17	21Feb17		
<input type="checkbox"/> 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.

Configure Intersecting Time Series Display ✕

Primary Query: Daily Fever
 HSR 2/3 Daily Fever

Date Matching Options: PrimaryQuery.Date = SecondQuery.Date
 PrimaryQuery.Date <= SecondQuery.Date <= PrimaryQuery.Date + N
 SecondQuery.Date <= PrimaryQuery.Date <= SecondQuery.Date + N
 PrimaryQuery.Date - N <= SecondQuery.Date <= PrimaryQuery.Date + N

Match: Positive
 Negative

Number of Days:

Query Description: "HSR 2/3 Daily Fever" query and "Daily Fever" query happens on the same day.

14. Stat Table

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

Stat Tables

ER Data Weekly Sub-Syndromic Report - Compare Selected Region vs All Regions Sub-Syndrome Statistics

ER Data Monthly Syndromic Report - Compare Selected Region vs All Regions Syndrome Statistics

Reportable Disease Monthly Report - Compare County vs All Counties Statistics

Death Records 358 Monthly Report - Compare County vs All Counties Statistics

Reportable Disease (To Date) Monthly Report - Compare County vs All Counties Statistics

ER Data Weekly (To Date) Sub-Syndromic Report - Compare Selected Region vs All Regions Sub-Syndrome Statistics

NEDSS Reportable Disease (To Date) Monthly Report - Compare County vs All Counties Statistics

NEDSS Reportable Disease Monthly Report - Compare County vs All Counties Statistics

NEDSS Reportable Disease Monthly Report by Jurisdiction - Compare Jurisdiction vs All Jurisdiction Statistics

NEDSS Reportable Disease Monthly Report by District - Compare District vs All District Statistics

NEDSS Reportable Disease (To Date) Monthly Report by Jurisdiction - Compare Jurisdiction vs All Jurisdiction Statistics

Death Records 122 Cities Weekly Report - Compute the weekly 122 Cities P and I report

Death Records 122 Cities Weekly Report By P and I City - Compute the weekly 122 Cities P and I Report by P and I City

Stat Table Configuration

Select Region:	<div style="border: 1px solid gray; padding: 2px;"><p>All Regions</p><p>Anderson, TX</p><p>Andrews, TX</p><p>Angelina, TX</p><p>Aransas, TX</p></div>
Select ChiefComplaintSubSyndromes:	<div style="border: 1px solid gray; padding: 5px;"><p>Search String: <input type="text"/> <input type="button" value="Apply"/> <input type="button" value="Clear"/> Tip</p><p>Filtered ChiefComplaintSubSyndromes</p><div style="border: 1px solid gray; padding: 2px;"><p>Agitation</p><p>AlcoholUse</p><p>AlteredMentalStatus</p><p>Aspiration</p><p>Assault</p><p>Asthma</p><p>AsthmaOrRAD</p></div><div style="display: flex; align-items: center; justify-content: center; gap: 5px;"><div style="border: 1px solid gray; padding: 2px;">>></div><div style="border: 1px solid gray; padding: 2px;">></div><div style="border: 1px solid gray; padding: 2px;"><</div><div style="border: 1px solid gray; padding: 2px;"><<</div></div><p>Selected ChiefComplaintSubSyndromes</p><div style="border: 1px solid gray; height: 40px;"></div></div>
Week and Year for comparison:	<p>Week <input type="text" value="1"/> Year <input type="text" value="2017"/></p> <p><input type="checkbox"/> Hide Zero Rows <input checked="" type="radio"/> View Table <input type="radio"/> Export Excel</p> <p style="text-align: center;"><input type="button" value="Submit"/></p>

15. 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	Zpcode	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 01	Discharge Da...	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 Complai...	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	Zpcode	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Hospital 02	Discharge Da...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospital 02	Discharge De...	9	7	7	10	0	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 Complai...	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

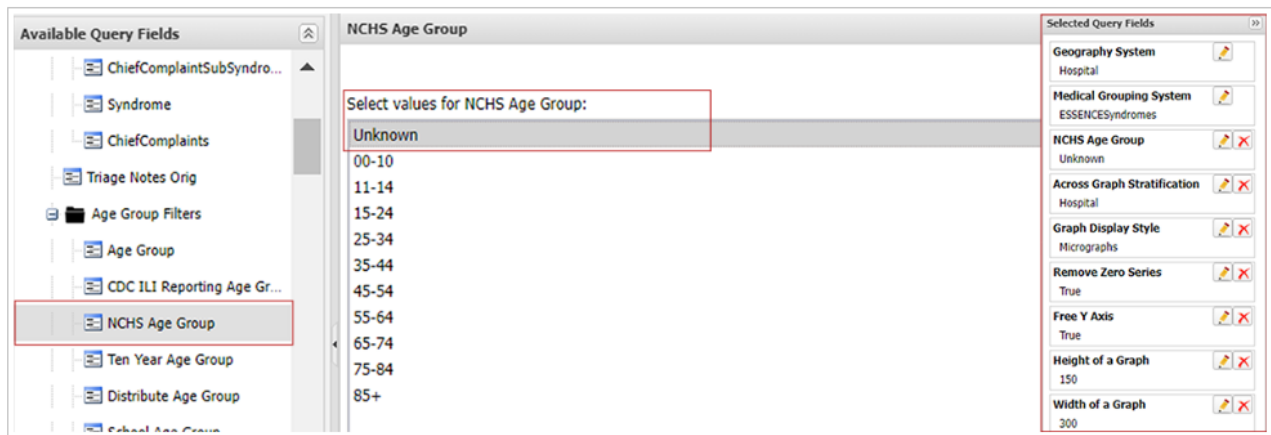
Data Quality Frequencies allow you to choose a text-based parameter and view the top 10 most common results.

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...

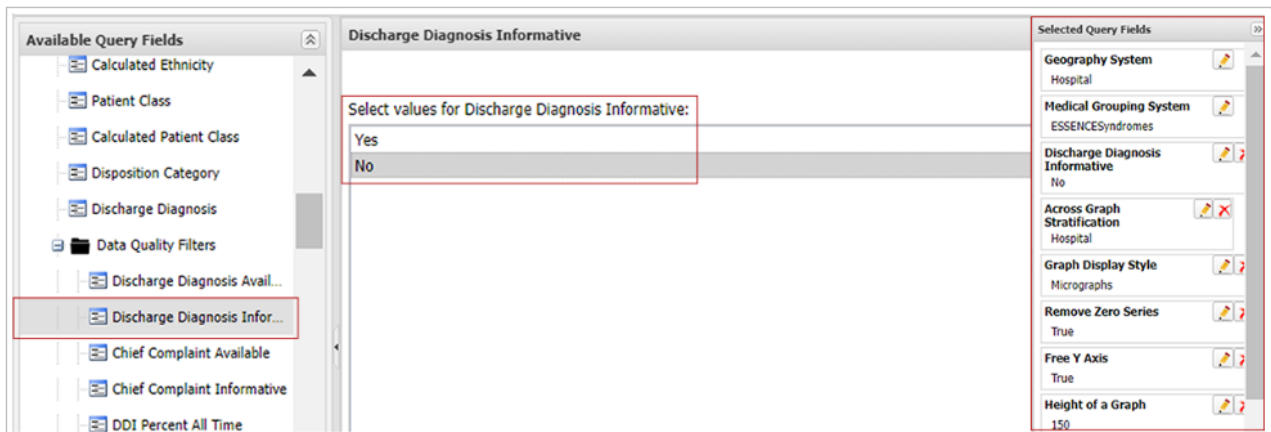
Monitoring Changes in Data Quality

Users are able to create micrograph timeseries that can be stratified across graphs to monitor changes in data quality (e.g.: Discharge Diagnosis Available/Informative, Percent of Visits with Unknown Ages Reported, etc). For example, if your site appears to be sending visits with discharge diagnoses deemed to be un-informative, you can view the micrograph timeseries to see which facility is sending incomplete information. Here are some screenshots with selected query fields:

Percent of Visits with Unknown Values for Age

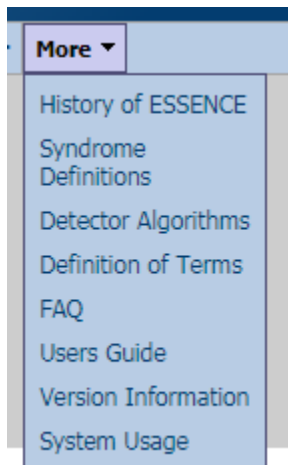


Percent of Visits Where Discharge Diagnosis is Non-informative (DDI = No)



16. More

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



17. 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 v2 query

(,^[;/]992[0-9];^,or,^[;/]992.[0-9];^,OR,^[;/]E900;^,OR,^[;/
]E900.[09];^,OR,^[;/]E900[09];^,OR,^[;/]T67^,OR,^[;/]X30.X^,OR,^[;/
]X30X^,),OR,(, (^HEAT,OR,^HEAT[-

/\.;:]^,OR,^HEATCRAMP^,OR,^HEATEX^,OR,^HEATST^,OR,^HYPERTHERM^,OR,
^SUNSTR^,OR,^SUN STROKE^,OR,^SUN-STR^,OR,^ TO HOT^,OR,^ TOO
HOT^,OR,(, (^HEET^,OR,^HOT^,),AND,(, ^EXCESSIVE^,OR,^EXHAUST^,OR,^EX
POS^,OR,^FATIGUE^,OR,^CRAMP^,OR,^STRESS^,OR,^IN
CAR^,OR,^OUTSIDE^,OR,^PROSTRATION^,)),),ANDNOT,(, ^ALLERG^,OR,^FEELI
NG HOT^,OR,^FEELS HOT^,OR,^FELT
HOT^,OR,(, ^HOT^,AND, ^SENSATION^,),OR, ^HEAT SENSATION^,OR, ^INFLAM^
,OR,(, ^PAIN^,
AND,(, ^LIMB^,OR, ^ARM^,OR, ^SHOULDER^,OR, ^ELBOW^,OR, ^WRIST^,OR, ^HA
ND^,OR, ^LEG^,OR, ^HIP^,OR, ^GROIN^,OR, ^THIGH^,OR, ^KNEE^,OR, ^ANKLE^,
OR, ^FOOT^,OR, ^FEET^,OR, ^BACK^,OR, ^NECK^,OR, ^FLANK^,OR, ^RED^,OR, ^J
AW^,OR, ^MOUTH^,OR, ^TEETH^,OR, ^TOOTH^,)),),OR, ^RADIAT^,OR, ^REDNESS
^,OR, ^SWELL^,OR, ^SWOLLEN^,OR, ^SURG^,OR, ^POST
OP^,OR, ^IBUPROFEN^,OR, ^IBUPROPHEN^,OR, ^ALIEVE^,OR, ^MOTRIN^,OR, ^TY
LENOL^,OR, ^INJUR^,OR, ^TRAUMA^,OR,(, (^HEAT,OR, ^HEAT[-/\.;:]^,),AND,(, ^
ICE^,OR, ^APPLIED^,OR, ^APPLY^,OR, ^APPLYING^,OR, ^TRIED^,OR, ^USED^,OR,
^USING^,OR, ^COLD^,OR, ^ RASH^,)),),OR, ^HEAT PACK^,OR, ^HEATING
PAD^,OR, ^LUMBAGO^,OR, ^RELIEF^,OR, ^RESOLVE^,OR, ^RELIEVE^,OR, ^RELEIV
E^,OR, ^DENTAL^,OR,(, ^HOT^,AND,(, ^COLD^,OR, ^COFF^,OR, ^SHOWER^,)),),O
R,(, ^ORAL^,AND, ^SURG^,),OR,(, ^SENSITIV^,AND,(, ^HEAT^,OR, ^HOT^,)),),OR,
^HOT DOG^,OR, ^HOT GREASE^,OR, ^HOT EPPERS^,OR, ^HOT TEA^,OR, ^HEAT
ACHE^,OR, ^HEAT CONDITION^,OR, ^HEATACHE^,OR, ^HEAT ATTACK^,OR, ^HEAT
BEAT^,OR, ^HEATBEAT^,OR, ^HEAT FAILURE^,OR, ^HEAT
BURN^,OR, ^HEATBURN^,OR, ^HEAT FLUTTER^,OR, ^HEAT RACING^,OR, ^HEAT
RATE^,OR, ^HEATRATE^,OR, ^HEATLH^,OR, ^HEATH^,OR, ^HEATTH^,OR, ^HITTIN
G
HEAT^,OR, ^PALPITATION^,OR, ^CHEAT^,OR, ^WHEAT^,OR, ^HEATER^,OR, ^HEAT
HER^,OR, ^HEATING^,OR, ^HOTEL^,OR, ^LITHOTR^,OR, ^METHOTR^,OR, ^PHOTO
^,OR, ^PSYCHOTIC^,OR, ^SHEATH^,OR, ^SHEET^,OR, ^SHOT^,OR, ^SUNDAY^,OR
, ^THEAT^,OR, ^WHEAT^,OR, ^ACCIDENT^,OR, ^ALCOHOL^,OR, ^ETOH^,OR,(, ^BU
RN^,AND, ^MOUTH^,),OR, ^DISTRESS^,OR, ^FEVER^,OR, ^GETS HOT^,OR, ^HEAT
FLASH^,OR, ^HOT FLASH^,OR, ^HIVES^,OR, ^HOT TUB^,OR, ^NO
HEAT^,OR, ^OVEN^,OR, ^SUICID^,OR, ^HEAT OF THE MOMENT^,OR, ^CONTACT
WITH OTHER HEAT AND HOT^,OR, ^W92^,),)

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 GI Bleeding or Hematemesis or Hemoptysis 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 OR Occupational OR Overexertion OR Poisoning OR StruckBy OR ToolsOrMachinery OR Firearm OR NonMotorVehicle OR Suffocation OR Assault OR ForeignBody 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 or Anthrax or Ciguatera or Dengue or Malaria or Measles or Mumps or ChickenPox or LeadPoisoning or Pertussis or Campylobacteriosis or Cholera or CreutzfeldtJakob or Diphtheria or Ehrlichiosis or EscherichiaColi or Glanders or Haemophilus or Leprosy or Hansen or Hantavirus or Legionnaires or Leptospirosis or Listeriosis or Lyme or Melioidosis or Meningitis or Meningococemia or MercuryPoisoning or PesticidePoisoning or Plague or Polio or Psittacosis or QFever or Rabies or RockyMountain or Rubella or Toxoplasmosis or Trichinosis or Tularemia or Typhoid or Typhus or Vibrio or YellowFever or Brucellosis or COPoisoning or Eschar
Resp	Respiratory	AcuteBronchitis or ChestCongestion or Cough or DifficultyBreathing or Hemoptysis or Laryngitis or LowerRespiratoryInfection or NasalCongestion or OtitisMedia 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		

Chief Complaint and Discharge Diagnosis Categories

Air Quality-related Respiratory Illness v1	CDC EVALI v1-Manually limit to ages 11-34	CDC Persons Experiencing Homelessness DD v1	Fever and Cough-Sob-DiffBr neg Influenza DD v1
All Traffic Related v1	CDC Falls 65 and Older v1	CDC Pertussis v1	Fever and Cough-Sob-DiffBr neg Influenza DD v2
All Traffic Related v2	CDC Fentanyl Overdose v1	CDC Pneumonia CCDD v1	Fever and Cough-Sob-DiffBr v1
Anxiety	CDC Fentanyl Overdose v2 Parsed	CDC Pregnancy and Pregnancy Loss and Delivery v1	Fever and Cough-Sob-DiffBr v2
CDC Acute Flaccid Myelitis DD v1	CDC Firearm Injury V1	CDC Respiratory Syncytial Virus DD v1	Fire and Smoke Inhalation v1
CDC Acute Hepatitis C v1	CDC Firearm Injury v2	CDC Respiratory Syncytial Virus v1	Foreign Travel
CDC AFM Broad v1-Limit to Pediatric	CDC Food Poisoning v1	CDC Schizophrenia Spectrum Disorders v1	Foreign Travel v2
CDC AFM Narrow v1-Limit to Pediatric	CDC Hand Foot and Mouth v1	CDC Seizure or Epilepsy v1	Heat Related Illness v1
CDC Alcohol v1	CDC Hepatitis A v1	CDC Sexual Violence v3	Heat Related Illness v2
CDC All Drug Overdose v3 Parsed	CDC Heroin Overdose v1	CDC Shigella v1	Homelessness v1
CDC All Drug v1	CDC Heroin Overdose v2	CDC Small Pox v1	ILI CCDD Neg Coronavirus DD v1
CDC All Drug v2	CDC Heroin Overdose v3	CDC Stimulant Overdose v4 Parsed	ILI CCDD v1
CDC Anxiety Disorders (without F419) v1	CDC Heroin Overdose v4	CDC Stimulants v1	ILI Neg Influenza Mention v1
CDC Anxiety Disorders v1	CDC Heroin Overdose v5 Parsed	CDC Stimulants v2	ILI Syndrome Neg Coronavirus DD v1
CDC Assault Firearm Injury v1	CDC Hip Fracture 65 and Older v1	CDC Stimulants v3	Intimate Partner Violence v1
CDC Asthma CCDD v1	CDC Influenza DD v1	CDC Suicidal Ideation v1	Marijuana v1
CDC Attention-Deficit Hyperactivity Disorders v1	CDC Intentional Firearm Injury v1	CDC Suicide Attempt v1	Marijuana v2
CDC Benzodiazepine Overdose v1	CDC Intimate Partner Violence v2	CDC Suicide Attempt v2	Marijuana v3
CDC Benzodiazepine Overdose v2 Parsed	CDC Legionella v1	CDC Suspected Child Abuse and Neglect v1	Mumps v1
CDC Bipolar Disorders v1	CDC Lyme Disease v1	CDC Suspected Sex Trafficking v1	Norovirus v1
CDC Broad Acute Respiratory DD v1	CDC Measles CCDD v1	CDC Synthetic Cannabinoids v1	PsyDx
CDC Chicken Pox v1	CDC Medication Refill v1	CDC Tic Disorders v1	PTSD
CDC Chickenpox v2	CDC Mental Health v1	CDC Tick Exposure v1	Recreational Boating Incidents v1
CDC Chronic Hepatitis C v1	CDC Methamphetamine Overdose v1 Parsed	CDC Trauma and Stressor-related Disorders v1	SDC Disaster Related Mental Health v1
CDC Cocaine Overdose v1	CDC Monkeypox DD v1	CDC Unintentional Carbon Monoxide Exposure v1	SDC Suicide Related v1
CDC Cocaine Overdose v2 Parsed	CDC Motor Vehicle Crash Occupant Injury v1	CDC Unintentional Drowning v1	Sexual Violence v1
CDC Coronavirus-DD v1	CDC Myocarditis with No Specified Pathogen v1	CDC Unintentional Firearm Injury v1	Sexual Violence v2
CDC COVID-Specific DD v1	CDC Obsessive-Compulsive Disorders v1	CDC Vaccine-Associated Adverse Events v1	SI
CDC Depressive Disorders v1	CDC Opioid Overdose v1	CDC Vaping and E Cig Injuries v1	Sickle Cell All ICD Codes V3
CDC Diabetic Ketoacidosis v1	CDC Opioid Overdose v2	Change in Taste or Smell v1	Visits of Interest
CDC Dialysis v1	CDC Opioid Overdose v3	CLI CC with CLI DD and Coronavirus DD v1	
CDC Disruptive Behavioral and Impulse-Control v1	CDC Opioid Overdose v4 Parsed	CLI CC with CLI DD and Coronavirus DD v2	
CDC Eating Disorders v1	CDC Pedestrian Motor Vehicle Traffic Injury v1	Cold Related Illness v1	

18. 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.

Air Quality data collected from [AirNow](#)

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.

Death Records Data – data received the Texas Center for Vital Statistics

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.

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 from 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.

Weather data observations collected from the [National Weather Service](#)

19. References

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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
5/6/24	4	Edited to reflect changes in v1.22, added updated Heat Related Illness v2 query, added CCDD Categories, ESSENCE API functionality	All



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