

Exploratory Analysis Subgroup of the Arizona BioSense Workgroup

August 24, 2017



ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

Objectives

- Welcome and Attendance
- ADHS Staffing Updates
- NSSP Update-Newsletter
 - [Syndromic Surveillance: The Value of Real-time Data for Public Health Action](#)
 - Featured Maricopa County's work on [Evaluation of a Novel Syndromic Surveillance Query from Heat-Related Illness Using Hospital Data From Maricopa County, Arizona, 2015](#)
- Community of Practice Updates
 - August [Surveillance CoP](#) Call
 - Presentation and discussion on Cryptosporidiosis Surveillance
 - Jonathan Yoder, CDC
 - Mass Gathering Guidance Document-OR
 - Solar Eclipse Query
 - [ESSENCE User Group](#)
 - » Using Weather and Environmental Data in ESSENCE v1-OR
 - [Recording](#)
 - [ISDS Conference Call for Abstracts](#)
 - **Syndrome Definitions Committee**
 - [Register](#) for the call on 09/06/2017@10AM-11:00AM
 - [Syndromic Surveillance Information collection Tool](#)
 - Suicide Ideation Syndrome Definition
 - Testing ESSENCE Query Writer Tool-Xandy Peterson
 - Code Sharing Libraries-Rasneet Kumar and Krystal Collier



Objectives

- NSSP SAS in the Cloud Pilot Project
 - ADHS volunteered to help with testing
- Call with ADHS, Maricopa County, Pinal County and NSSP
 - Weather Stations
 - Trending Syndromes and Alerts-Sam Packard
 - Validating Queries-Rasneet Kumar
- Training Request for topics from ISDS
- ESSENCE
 - Table Builder-Rasneet Kumar
 - Chief Complaint Truncation
- NSSP [Success Stories](#)
 - Arboviral Syndromic Surveillance-Kara Tarter
- Questions and Open Discussion
- Next Meetings
-



ADHS Staffing Updates



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NSSP News Update: August 2017

SPOTLIGHT ON SYNDROMIC SURVEILLANCE PRACTICE

We continue our series of articles examining literature that advances the practice of syndromic surveillance. Here, we are pleased to announce a newly published supplement of Public Health Reports that focuses on the use of syndromic surveillance data.

Syndromic Surveillance: The Value of Real-time Data for Public Health Action

New articles in the journal *Public Health Reports* [v¹](#) demonstrate how syndromic surveillance (SyS) allows health practitioners to improve situational awareness in a variety of settings and for numerous reasons. These 18+ articles describe how SyS is being used for all-hazards public health surveillance, for characterizing health events, and for mass-gathering surveillance here and abroad. This is the first compilation of articles about SyS to be published in recent years. The result is an overview of the novel and increasingly more cost-effective ways in which syndromic data are being used and a glimpse at the future use of real-time data.

The supplement focuses on the use of electronic health record (EHR) data from clinical settings. To use EHR data to inform and monitor health decisions, considerable thought must be put into how data are collected and algorithms designed. Then, of course, one must understand and know how to interpret these data. Experts in SyS frequently refine queries, adjust algorithms, and *question* data to make sure they have a good understanding of what it represents.

The editorial sets the stage by acknowledging SyS as a core component of many surveillance programs, thanks to the proliferation of EHR and advancements in data systems. The reports are categorized into four sections: Enhancing Surveillance Systems, All-Hazards Surveillance, Monitoring Mass Gatherings, and Advancing Surveillance Practice.

Enhancing Surveillance Systems (3 articles)—Read about the history of BioSense—the challenges, lessons learned, and successful evolution into a national program focused on collaboration, data sources, and data quality. Then, head abroad to learn about the United Kingdom's publicly funded, single-payer provider health care system—not to mention its multiple electronic clinical information systems and data formats. Patient care and operational benefits are a driving force behind the United Kingdom's efforts to standardize its software system and to improve the quality of clinical data. Lastly, learn how telephone triage is a promising data source for public health surveillance, particularly infectious and noninfectious diseases.



IN THIS ISSUE:

- Overall NSSP
- Spotlight on SyS Practice
- Upcoming Events
- Last Month's Technical Assistance
- NSSP Participation
- Onboarding Updates
- Grantees and Partnerships
- Community of Practice
- Archived NSSP Update

Public Health Reports



Evaluation of a Novel Syndromic Surveillance Query for Heat-Related Illness Using Hospital Data From Maricopa County, Arizona, 2015

Jessica R. White, Vjollca Berisha, Kathryn Lane, Henri Ménager, Aaron Gettel, Carol R. Braun
The Council of State and Territorial Epidemiologists Heat Syndrome Workgroup

First Published July 10, 2017; pp. 31S–39S

[Show Abstract](#)



August Surveillance CoP Call

- **Part I: Community Updates**
- ISDS Announcements
- Community Updates
 - NSSP Update
 - Meaningful Use Update
 - Data Quality Committee Update
 - Metadata Visualization App Workgroup Update
 - Syndrome Definition Committee Update
- Guided Discussion with Presentations
 - Topic of the month: Summer Surveillance
 - Cryptosporidiosis surveillance
- **Part II: Open Mic**
- What are your surveillance concerns this week?
-
- **Related Resources**
-
- For additional information about [waterborne diseases](#) and other summer surveillance topics, view the following resources:
- [Waterborne Disease Surveillance Forum](#)
- [Past webinar on Legionella](#) - **FIXED**
- [Heat-related Illness Forum](#)

ESSENCE User Group Forum



Krystal S. Collier Steering Committee Member posted a new entry in the forum General Discussion

08/04/2017 at 8:07 am



Wayne, Can you do a short webinar presentation on using weather station data source?

☆ Like

2



Wayne Loschen 08/04/2017 at 8:16 am



It would probably be pretty short. Let me see if I can just create a quick video and post it somewhere. If not - then sure - we can find a time for me to do that. Wayne

★ Like · ★ 1



Krystal S. Collier Steering Committee Member 08/14/2017 at 11:15 am



That would be great Wayne. We have had some really great conversations with our stakeholders on both use of the weather stations with heat and cold syndrome definitions in AZ. I am sure others would appreciate some examples to get them started! Thanks again for looking into this. We look forward to the update! Krystal

☆ Like



Write a comment...



Aaron Kite-Powell posted a new entry in the forum General Discussion

05/26/2017 at 5:05 am



Mass Gathering Guidance Document

Greg Crawford and 2 others commented on this post.



Meredith Jagger posted to Group: ESSENCE User Group

08/16/2017 at 7:56 am

I hope you have your eclipse glasses ready!

Oregon has developed an eclipse-specific mass gathering guidance document for local ESSENCE users. It includes our priority mass gathering queries and some we developed just for the eclipse, including eye injury and "eclipse" mentions in triage notes!

eye injury (CC/DD)

(, ^;H53^ ,or, ^;368^ ,or, ^;H31023^ ,or, ^;E11219^ ,or, ^;36210^ ,),and, (, ^blind^ ,or, ^blur^ ,or, ^vision^ ,or, ^retinopath^ ,or, ^conjunctivitis^ ,or, (, ^eye^ ,and, (, ^pain^ ,or, ^problem^ ,or, ^irritation^ ,or, ^injury^ ,),),andnot, (, ^foreignbody^ , ^abdominal^ , ^fall^ , ^cut^ , ^assault^ ,)

eclipse (triage note)

^eclipse ^ ,andnot, ^mitsub[ui]shi^

<http://www.oregon.gov/oha/PH/DISEASES/CONDITIONS/COMMUNICABLEDISEASE/PREPAREDNESS/SURVEILLANCE/EPIDEMIOLOGY/ESSENCE/Documents/using-essence-mass-gathering.pdf>

OREGON.GOV

★ Like ➦ Share

★ 5 💬 3 ➦ 1

[View older comments...](#)

Weather and Environmental Data in ESSENCE

Oregon Public Health Division, Acute and Communicable Disease Prevention

Using Weather and Environmental Data in ESSENCE

Syndromic Surveillance

Syndromic surveillance is the near real-time monitoring of key health indicators in emergency department (ED) and urgent care visits. Oregon ESSENCE tracks the number of visits for specific patient symptoms using chief complaints (what the patient says is the reason for their visit) and discharge diagnosis codes. Visit information is collected from EDs and urgent care centers across the state. Currently, all 60 eligible hospitals are sending ED data every day for syndromic surveillance. Some urgent care centers are also currently reporting.



ESSENCE has the ability to categorize visits and produce visualizations of recent visit trends. By incorporating environmental data feeds into a syndromic surveillance system, users can quickly assess the correlation between weather factors or air quality measures and health outcomes of interest in a specific geographic area.

This document is designed to help Oregon ESSENCE users create and interpret time series graphs that overlay health and weather or air quality data from a specific geographic area.

ISDS Annual Conference

2018 Annual Conference



Conference » 2018 Annual Conference

More in this Section... ▼

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ISDS 2018 Annual Conference

January 30 - One Health Symposium

January 31 - February 2 - Annual Conference

[Call for Abstracts](#)

Exciting Changes are Coming to ISDS 2018!

Join the Syndrome Definition Committee

Committees: Syndrome Definition Committee

 [Directory](#)  [Calendar](#)  [Blogs](#)  [Forums](#)  [Photo Gallery](#)  [Pages](#) ▼

 [Welcome](#)

ISDS's Syndrome Definition Workgroup is now the ISDS Syndrome Definition Committee!

Meetings will occur the first Wednesday of each month from 1-2 PM EST

Sign up [here](#)

NEXT STEPS:

The Syndrome Definition Committee members have voted to initially focus on **Suicide Ideation** syndrome.
Please use this [Google Doc](#) or the [Forums](#) to share Suicide Ideation syndromes from your jurisdiction.

The [Google Doc](#) is also a place to collect comments and bugs related to ESSENCE Chief Complaint Parsing, CCDD Category Issues, Syndrome Issues, and SubSyndrome Issues. All are welcome to participate

Register for future SDC Calls

Syndrome Definition Committee Call

[View Registrations](#)[Tell a Friend](#)[Events in Series](#)**9/6/2017**

- [RSVP for this event](#)

When: Wednesday, September 6, 2017
1 - 2 PM ET

Where: <https://attendee.gotowebinar.com/rt/6116206436909396738>
United States

Contact: Rasneet Kumar
rasneetkumar@mail.maricopa.gov

[« Go to Upcoming Event List](#)

Registration Link

<https://attendee.gotowebinar.com/rt/6116206436909396738>

Syndromic Surveillance Information Collection Tool

Secure | https://docs.google.com/spreadsheets/d/1hVKhvRj7r83iufRDdDpWMFxt1vd3WkLqVCR_rXdbM/edit#gid=0

Syndromic Surveillance Information Collection Tool

File Edit View Insert Format Data Tools Add-ons Help Last edit was made yesterday at 3:03 PM by Rasneet Kumar

Comments Share

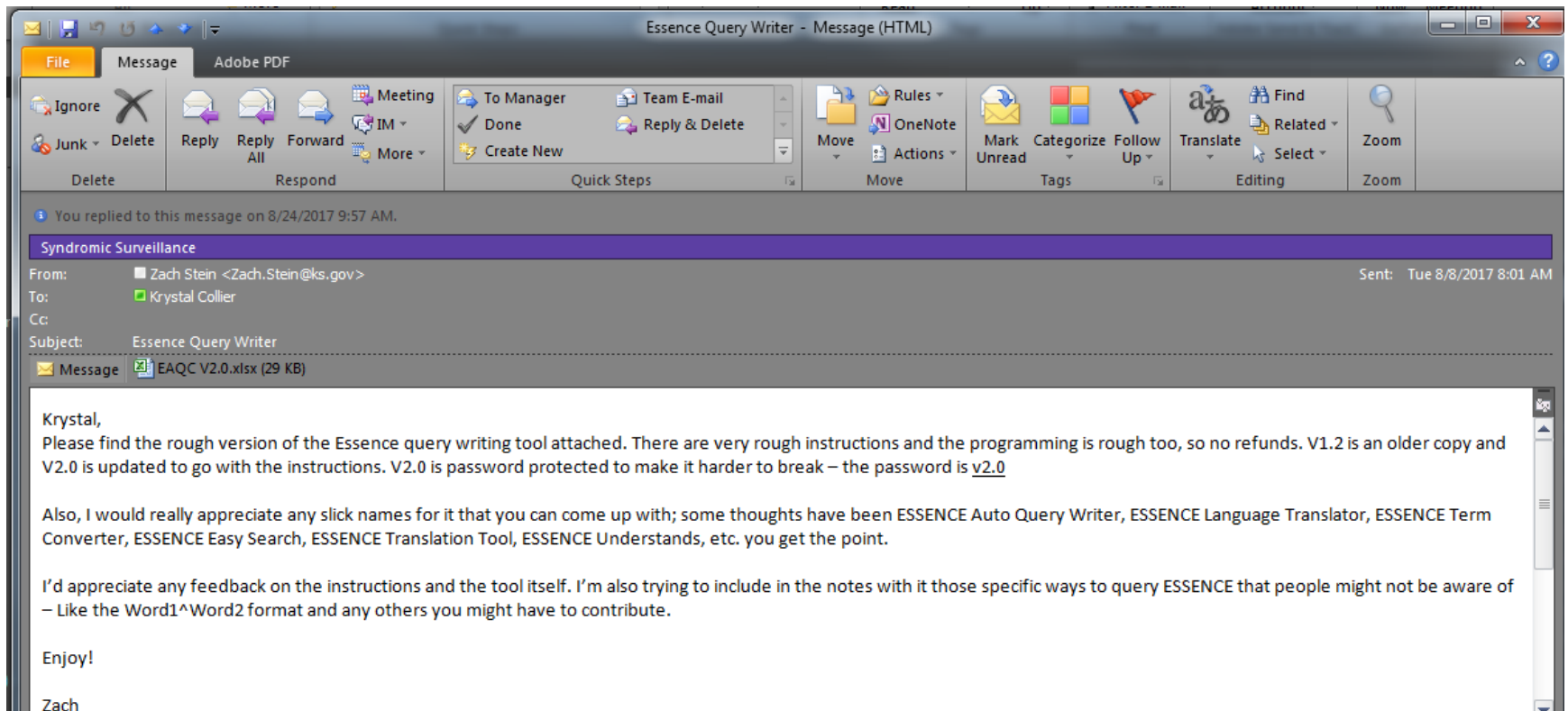
syndromicsurveillance@azdhs.gov

	A	B	C	D	E	F
	Date Added	Functional Area	Description of Problem	Reporting Jurisdiction	Contact Email	
2		CCDD Category Issues	Noticed that "FL" is being spelled out to "floor" instead of "Florida"	NSSP	akitepowell@cdc.gov	
3	8/18/2016	Chief Complaint Parsing	Rad Onc is being parsed to Reactive airway disease oncology when I think it should be radiation oncology	NSSP	akitepowell@cdc.gov	
4	8/18/2016	Chief Complaint Parsing	Peds is being spelled out to Pedestrian when it could also be Pediatric	NSSP	akitepowell@cdc.gov	
5	8/19/2016	Chief Complaint Parsing	School PE is being spelled out to pulmonary embolism, but really means physical exam	NSSP	akitepowell@cdc.gov	
6	10/5/2016	Chief Complaint Parsing	"nad" is being parsed to reactive airway disease	NSSP	akitepowell@cdc.gov	
7	10/17/2016	Chief Complaint Parsing	"MHE" is being parsed into mental health evaluation. is this accurate? observed in New Hampshire data	NSSP	akitepowell@cdc.gov	
8	10/17/2016	Chief Complaint Parsing	"SI" is being parsed into substance inhalation. is this accurate? observed in New Hampshire data	NSSP	akitepowell@cdc.gov	
9	10/24/2016	Chief Complaint Parsing	"has fever" is fuzzy matched and interpreted as "hay fever", which has a negation for the fever category and as a result these encounters are not binned into Fever	NSSP	akitepowell@cdc.gov	
10	11/8/2016	Chief Complaint Parsing	"beat" is changed to heat and messing up heat related illness syndrome	NSSP	akitepowell@cdc.gov	
11	11/8/2016	Chief Complaint Parsing	hemoptysis subsyndrome counts "cough" and "coughing" as separate words and sums to >6 for inclusion; sputum isn't in the definition either	NSSP	akitepowell@cdc.gov	
12	11/8/2016	Chief Complaint Parsing	Feveronly subsyndrome - "blisters" not being negated	NSSP	akitepowell@cdc.gov	
13	11/8/2016	CCDD Category Issues	Visits of Interest - andnot injection	NSSP	akitepowell@cdc.gov	
14	7/25/2017	Sub-syndrome Issues	Foreign Travel - need to add andnot: no travel, recent travel, denies travel	NSSP	akitepowell@cdc.gov	
15	1/24/2017	Chief Complaint Parsing	Hematemesis- Any patient with both "Vomit" and "Vomiting" is tagged as hematemesis. Same issue as Hemoptysis	Kansas	Zach.Stein@KS.gov	
16	1/24/2017	Sub-syndrome Issues	Excessive Cold- There are no syndromes for Cold-Related Injuries such as Hypothermia or Frost Bite	Kansas	Zach.Stein@KS.gov	
17	1/24/2017	Chief Complaint Parsing	"Broken" does not fall under a syndrome definition related to injury. "Broken Arm" only registers as a partial hit under SidedWeakness and Overexertion. "Broken Toe" does not bin under any syndrome	Kansas	Zach.Stein@KS.gov	
18	1/24/2017	Chief Complaint Parsing	"Rash on Trunk" gets parsed/read/binned as Rash (rash), Injury (drunk, crash, truck), AlcoholUse (drunk), and MotorVehicle (truck)	Kansas	Zach.Stein@KS.gov	
19	1/24/2017	Chief Complaint Parsing	"St." in instances mentioning KS Hospitals St. Francis, St. Joseph, St. Teresa, etc. is being parsed to "SORE THROAT"	Kansas	Zach.Stein@KS.gov	
20	1/24/2017	Chief Complaint Parsing	CC containing "exp" is being tagged as Exposure. A good number of Kansas's hospitals use the abbreviation "exp" for "experiencing"	Kansas	Zach.Stein@KS.gov	
21	3/7/2017	Syndrome Issue	There is no syndrome definition for heart attack, despite the high likelihood of these ending up in the ED	Kansas	Zach.Stein@KS.gov	
22	3/22/2017	Chief Complaint Parsing	"AGE" is parsed to "ACUTE GASTROENTERITIS"	Kansas	Zach.Stein@KS.gov	
23	8/3/2017	Sub-syndrome Issues	Allergic Reaction. Anaphylaxis. Allergies have no syndromes - Anaphylaxis is particularly likely to drive ED visits	Kansas	Zach.Stein@KS.gov	

ESSENCE syndrome or text bugs Suicide Ideation Syndrome Definitions Syndrome Definitions

Explore

ESSENCE Query Writer Tool



Copy of EAQC V2.0.xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Acrobat

Clipboard Font Alignment Number Styles Cells Editing

Calibri 11 A A

B I U

Wrap Text

General

Normal Bad Good

Neutral Calculation Check Cell

Conditional Formatting as Table

Insert Delete Format

AutoSum Fill Clear

Sort & Filter Find & Select

C33

	A	B	C	D	E	F	G	H	I	J	K
21											
22	Output String #VALUE!										
23											
24	Main Term Fields	Term 1	Term2	Term 3	Term 4	Term 5	Term 6	Term 7	Term 8	Term 9	Term 10
25	Enter up to 50 Main Terms of Interest										
26	AND Values by Main Term	Ands - Term 1	Ands - Term 2	Ands - Term 3	Ands - Term 4	Ands - Term 5	Ands - Term 6	Ands - Term 7	Ands - Term 8	Ands - Term 9	Ands - Term 10
27	Enter up to 5 AND Terms for each Main Term - 1										
28	2										
29	3										
30	4										
31	5										
32	ANDNOT Values by Main Term	ANDNOTs - Term 1	ANDNOTs - Term 2	ANDNOTs - Term 3	ANDNOTs - Term 4	ANDNOTs - Term 5	ANDNOTs - Term 6	ANDNOTs - Term 7	ANDNOTs - Term 8	ANDNOTs - Term 9	ANDNOTs - Term 10
33	Enter up to 50 ANDNOT Terms for each Main Term and its AND Terms - 1										
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58	26										

Basic Instructions v1.2 v2.0

Ready 70%

Code Sharing Libraries

- Knowledge Repository
 - Syndrome Definitions Committee
- Github
 - R Group for BioSurveillance
 - Data Quality Committee
 - Metadata Viz App Workgroup

NSSP SAS in Cloud Pilot Project

- ADHS will be working with NSSP on this collaborative project

Logged Enhancement Request

Community Forums

NSyS Technical Weekly Updates

[Forum Index](#) » [NSyS Technical Weekly Updates](#)

[+ New Topic](#)

[⚙ Forum Actions](#) ▼

 Search Forums...

Topics	Replies	Author	Latest Post
NSyS Technical Weekly Update	0	J. Staley	Attached is the technical update report for the week ending 08/18/2017 which the project director... by J. Staley Tuesday, August 22, 2017
NSyS Technical Weekly Update	0	J. Staley	Attached is the technical update report for the week ending 08/11/2017 which the project director... by J. Staley Monday, August 14, 2017
 NSyS Technical Weekly Update	0	J. Staley	Attached is the technical update report for the week ending 08/04/2017 which the project director... by J. Staley Tuesday, August 8, 2017
NSyS Technical Weekly Update	0	J. Staley	Attached is the technical update report for the week ending 07/28/2017 which the project director... by J. Staley Monday, July 31, 2017
NSyS Technical Weekly Update	0	J. Staley	Attached is the technical update report for the week ending 07/21/2017 which the project director... by J. Staley Tuesday, July 25, 2017

Logged Enhancement Request

Community Enhancement Requests

Enhancement Type	Key	Summary	Status	Created	Updated
ESSENCE Support	NTA-989	ZIP query –Issues creating a ZIP code count of visits in table	Open	05/17/2017	05/10/2017
Improvement	NTA-704	Non-required fields in DQ report; NTA- 661	Active	04/04/2017	06/08/2017
Improvement	NTA-1272	Data Description – request to see if the rule for a data source is set to aggregate or aggregate and data details in AMC.	Active	07/13/17	07/14/2017
Improvement	NTA-1343	Question of Multiple Weather Station Data Sources in ESSENCE	Open	07/27/17	07/28/2017

Call with ADHS, Maricopa, Pinal and NSSP

- Weather Stations
- Trending Syndromes and Alerts
 - Sam Packard
- Validating Queries
 - Rasneet Kumar

Training Requests

- ISDS would like to know what type of training we would like to see in future webinars from CDC and JHU
 - Suggestions for ESSENCE
 - Map Function
 - Sharing Dashboards
 - Validating Queries

ESSENCE

- Table Builder
 - Rasneet Kumar
- Chief Complaint Truncation
 - Cerner had been truncating Chief Complaints at 200 Characters
 - 08/21/2017
 - A fix has been put in place for AZ without any character limit on Chief Complaint
 - This fix will be applied to data moving forward

NSSP Success Stories: Example from New Jersey

GRANTEES AND PARTNERSHIPS UPDATES

Two Unique Syndromic Surveillance Systems

State and Federal Collaboration to Gain a Better Understanding of Anomalies

A recent [success story](#) describes how an analyst with the New Jersey Department of Health (NJDOH) collaborated with an NSSP syndromic surveillance (SyS) expert to examine whether anomalies that manifested in one system were observed in the other—and if so, whether these anomalies had any public health significance. NJDOH uses an in-house system to collect, manage, and analyze real-time emergency department (ED) data from acute care hospitals and satellite EDs. NJDOH also sends data to the BioSense Platform and participates in the NSSP.



The NJDOH success story demonstrates collaboration to understand anomalies observed in two different SyS systems.

Each SyS system has its own way of creating syndromes. The analyst and NSSP SyS expert considered the characteristics of each system. For example, the BioSense Platform has different classifications and keyword groups than NJDOH's in-house SyS system.

The takeaway here is that analysts with in-house systems who send data to the BioSense Platform have considerably more information at their disposal for making public health decisions. By leveraging data from two systems, analysts can broaden their view of the data and potentially increase the likelihood of making observations that could not have been made by using just one system. Such collaboration also gives the NSSP Team a better understanding of state SyS data flow and needs, ultimately improving the BioSense Platform, which helps all system users.

We thank Analyst Teresa Hamby of the New Jersey Department of Health for sharing her time and insights.

NSSP wants to help others succeed. Please share your successes for improving data representativeness; data quality, timeliness, and utility; SyS practice; and the use of SyS data for public health action and response. Simply fill out the [NSSP Success Stories Template](#) and email to us.

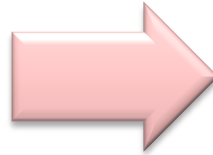
NSSP Success Stories

- Process to move NSSP Success Stories over to the Knowledge Repository
- Arboviral Syndromic Surveillance
 - Kara Tarter

Upcoming Meetings

Exploratory Analysis Subgroup

- Thurs. Sept. 28
from 1:00 – 2:00



Arizona BioSense Workgroup

- Tues. Oct. 3 from
1:00 – 2:00



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OF HEALTH SERVICES

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THANK YOU

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azhealth.gov

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