

NSSP UPDATE



NSSP

National Syndromic
Surveillance Program

BioSense Platform

January 2018

Welcome to NSSP Update

NSSP Update is published monthly by the National Syndromic Surveillance Program (NSSP) and brings you the latest news about the BioSense Platform. To learn more, visit the [NSSP website](#). Link to more resources via the Syndromic Surveillance Community of Practice [Portal](#).

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Message from the Program Manager, NSSP

I'd like to highlight our accomplishments in 2017 and then lay out a realistic vision for NSSP in 2018.

In 2017:

- We expanded NSSP participation to 56 sites nationwide. Most states are now represented, in full or part, improving our national picture and readiness as *events occur*.
- Our NSSP Team developed online trainings for ESSENCE users and led three training sessions for CDC program staff. This training helps experts across CDC to understand what NSSP has to offer. Not surprisingly, use of ESSENCE has increased (more than 1,100 active users), and seeds have been planted for new collaborative projects.
- We ramped up our collaboration with CDC's National Center for Injury Prevention and Control in support of CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program. We worked together to create and finalize heroin and opioid overdose definitions in the BioSense Platform, brokered data access among ESOOS funding recipients, reported monthly on opioid and heroin overdose trends, and collaborated with ESOOS to write a *Vital Signs* publication. This is a *model collaborative project*. It expands the number of CDC personnel who understand and use the BioSense Platform for their surveillance needs; shows that syndromic surveillance (SyS) data are useful for real-time decision making; and shares information—pushing the envelope of one surveillance platform that serves many needs.
- The NSSP Team, with considerable input from the community, worked with our contractors and experts at Johns Hopkins University Applied Physics Laboratory (JHU-APL) to improve performance of BioSense Platform applications. These efforts—some large, some small—culminated in a refreshed and more capable set of servers, a new version of ESSENCE, and improved querying capability that uses cubes and key fields (e.g., identifying when a record has ever been in an emergency department). Users now experience fewer interruptions when querying the system and get answers quickly.
- We enhanced the data quality reports for timeliness, completeness, and validity. These reports, along with more monitoring of data issues on the BioSense Platform, have instigated more interaction with sites, vendors, and facilities. Currently, 83% of data on the BioSense

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Platform arrive within 48 hours, and 93% of these records are considered valid. Further, we are working diligently with the community to improve the messaging guide and expect to be ready to usher the guide through HL7 balloting in 2018, *which is a first!* All of these efforts improve data quality and bolster user confidence in the BioSense Platform.

- We've touted the benefits of SyS and its ability to improve situational awareness. Earlier this year, a supplemental issue of *Public Health Reports* increased visibility of SyS achievements—including the work being done abroad. The supplement broadened awareness of how SyS can and *should* be used to compliment traditional surveillance efforts. Also, many sites are contributing content to *NSSP Update*, making the newsletter more informative. The International Society for Disease Surveillance (ISDS), which facilitates the Syndromic Surveillance Community of Practice (CoP), has several workgroups and committees dedicated to SyS topics—which has energized the community. Through the CoP, individuals have stepped up to lead and inspire others.
- The SyS community responded as our country was pummeled by several hurricanes. For the first time, NSSP added valuable new data to the Platform from the Office of the Assistant Secretary for Preparedness Disaster Medical Assistance Teams (ASPR DMATs). This alone increased NSSP's visibility and utility across the U.S. Department of Health and Human Services, CDC's parent agency. And for the first time in many years, NSSP supported CDC's Epidemiology and Surveillance Task Force in the Emergency Operations Center. Many hours were dedicated to these complicated responses. Sometimes we provided full support for local surveillance, whereas at other times we were more of a backup for local responders. In every instance, NSSP shined as the responses unfolded—culminating in a Center for Surveillance, Epidemiology, and Laboratory Services (CSELS) Directors Award for "Excellence in Surveillance and Health Monitoring—Domestic."

As we look ahead to 2018, NSSP will:

- Focus on making actionable, timely, and accurate information available to sites. *Everything we work on* will support this goal. We want our state and CDC program partners to make informed decisions at appropriate times with quality information from the BioSense Platform.
- Highlight successes in the use of SyS. Among recipients of NSSP funding, for example, we will identify use cases, showcase successes, and share best practices. The more we learn and share, the more we'll advance SyS practice and science.
- Support the SyS CoP, its steering committee, and the myriad workgroups that serve the community. We will communicate regularly on CoP activities and encourage involvement.
- Refine data quality assessments and reports. We believe that doing this work and communicating regularly with site administrators will help everyone focus on maintaining quality. This will likely raise questions among community members regarding if and when to consider making targeted changes to how data are processed. Stay tuned!
- Enhance the BioSense Platform by continuing to improve the data flow as we can. Also, we'll work to develop a site-controlled Master Facility Table (MFT) application to make updating the MFT easier. Further, we'll work to expose SAS Web Studio as a tool on the BioSense Platform and continue to update ESSENCE and our servers that support the BioSense Platform. And we'll continue to onboard as many facilities as possible.

Time and again, NSSP and our CoP demonstrate that SyS data are useful for situational awareness and real-time decision making. In closing, CDC's NSSP will continue to [support sites, support CDC programs, support collaborative projects and perform national surveillance, as appropriate](#).

I'm looking forward to what our future holds—to exploring innovation in SyS practice and making even better use of the Platform tools. Please continue to tell us when something does not function well or needs improvement. Call us if you have questions about how to do something on the BioSense Platform. And don't be reluctant to tell us about your successes. That's what this community is about—informing, working with, and inspiring others.

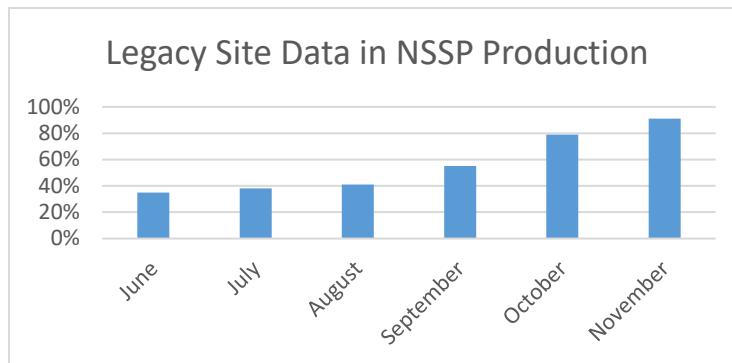
Happy New Year, everyone!

Michael A. Coletta, MPH

National Syndromic Surveillance Program Manager
Division of Health Informatics and Surveillance
Center for Surveillance, Epidemiology, and Laboratory Services
Centers for Disease Control and Prevention

NSSP Progress Toward Transitioning Legacy Data

For several months, the NSSP Team has diligently moved data from the legacy system to ESSENCE. By mid-December, more than 90% of the legacy sites had been moved into the BioSense Platform production environment (the Processed and Exception tables). Among the legacy sites in production, 46% of the legacy sites are available in production ESSENCE.



Of the 43 legacy sites, 18 have data available in production ESSENCE, and an additional 21 are ready to load data into ESSENCE. Of the remaining 4 legacy sites, 3 are reviewing data in the staging environment, and 1 is confirming its data-conversion requirements.

Thank you for your continued patience throughout the legacy transition. If you have specific questions about your site, please contact the [NSSP Service Desk](#).

Technology Update

ESSENCE Processing Update. On December 5, 2017, we emailed ESSENCE users about a data backlog. Our NSSP IT team worked with experts at Johns Hopkins University Applied Physics Laboratory (JHU-APL) to investigate why data processing rates were slower than expected. We discovered the issue was related to history processing of "Trigger Events" sent in MSH-9.2.

The history field for Trigger Events (*trigger_event_updates*) stores a consecutively de-duplicated list of the trigger events associated with messages reported for the *same* patient visit (ESSENCE_ID). The volume of messages associated with some visits reached abnormally high levels, extending the processing times for successfully maintaining the trigger event history data. The volume of updates slowed processing and prevented other data from flowing through the system.



We made the difficult decision to turn off trigger event history processing. This change and other system updates enabled the system to process the backlog in a few days. Currently, the BioSense Platform is processing data as intended. We continue to monitor the system closely and will send updates as needed.

We understand that trigger event history is useful for many of you. Therefore, we will work with JHU-APL to consider alternate approaches to provide indicators as to which triggers were reported for a visit.

Testing and Implementation of ESSENCE version 1.21. Throughout much of November and December, the NSSP Team tested a new version of ESSENCE (v1.21). Version 1.21 was deployed December 20, 2017. Although we debated whether to extend testing through December, a required security update for Production ESSENCE affected performance of free-text queries. We quickly recognized that the issue was already corrected in v1.21 and worked with JHU-APL to release the new version.

Features include a new access control system that (short term) will improve system performance and eventually, as the AMC is improved, will allow new levels of data sharing. Also, users can now define and query multiple text fields when building free-text queries (not just chief complaint, CC/DD, or triage note alone), view data details (line list) of more than 5,000 records (though this should be used judiciously), and add overlay graphs to dashboards.

AMC Enhancements. To complement the release of ESSENCE version 1.21, cosmetic changes were made to the AMC interface, and a new feature was added to allow site administrators to grant access to RStudio Pro and Adminer without submitting a ticket to the NSSP Service Desk.

Quick Start Guides. The *Quick Start Guide to Using the AMC* is being updated to reflect changes to the interface and explain how to grant access to applications. Also, the *Quick Start Guide to Using ESSENCE* is being updated to reflect changes to the interface.

Look for both updated quick start guides soon in the NSSP Resource Center.



Help Build the Syndrome Definition Library

The Syndromic Surveillance Community of Practice is beta testing its [Syndrome Definition Library](#). Look for syndromes by keyword. Filter search results by platform or author name.

To name a few topics, the library includes Heat-related Illness, Homeless Population, Zika, West Nile and Saint Louis Encephalitis, Chikungunya and Dengue, (various) Mass Gatherings, Opioid Diagnosis Codes, Fireworks Injuries, Agriculture-related Injuries, Hazardous Materials, and Rabies Exposure.

QUESTIONS AND TIPS

Q: I do not understand the scoring process for syndrome definitions, including the weights on each searching term.

A: Patients use many terms to describe their symptoms, whereas electronic health record (EHR) user interfaces try to use *standardized* language. Because the chief complaint field allows free text (patient's own words), a system was needed to match keywords.

By using *weighted* keywords, the system can identify a match (6 points), variation in positive and negative numbers, account for wildcards, and allow for keyword combinations (e.g., GIBleeding). Here's an example that shows weighting:

BELLY (4)	BELLY ACHE (-4)	BELLY PAIN (-4)
BLACK (2)	BLEED (2)	BLEED (2)
BLEEDING (2)	BLOOD (2)	BLOOD PRESSURE (-2)
BLOOD SUGAR (-2)	BLOODY (2)	BOWEL (4)
DIARRHEA (4)	FECAL (4)	FECES (4)
GASTROINTESTINAL (4)	HEMATOCHEZIA (6)	HEMORRHAGE (2)
HEMORRHAGING (2)	INTESTINAL (4)	INTESTINE (4)
MELENA (6)	RECTAL (4)	RECTUM (4)
STOMACH (4)	STOMACH ACHE (-4)	STOMACH PAIN (-4)
STOOL (4)	TARRY (2)	TOILET PAPER (4)
VOIDED (4)		

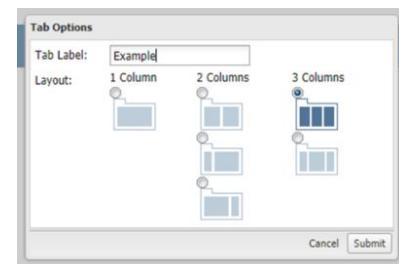
For more information, go to the NSSP Resource Center "ESSENCE Training Workshop: Chief Complaint Processor," slide 100, at <https://www.cdc.gov/nssp/documents/essence-training-presentation-phi-conference.pdf>

Q: How do I add widgets to *myESSENCE* so that others can see maps?

A: Widgets are a data visualization tool that can be inserted into *myESSENCE* dashboards. A common use is to insert a map. Dashboards that include widgets (e.g., maps, time series graphs) allow routine content to be displayed without extra navigation.

How to add Map widgets:

1. Go to *myESSENCE* home page.
2. Select tab you want. **Or...if this is your first widget:**
 - a. Select Add New Tab.
 - b. From the pop-up, name your Tab (Tab Label), and select from Tab Options.
 - c. Click Submit.
3. From the "Add New Widget" drop-down menu, select "Map."

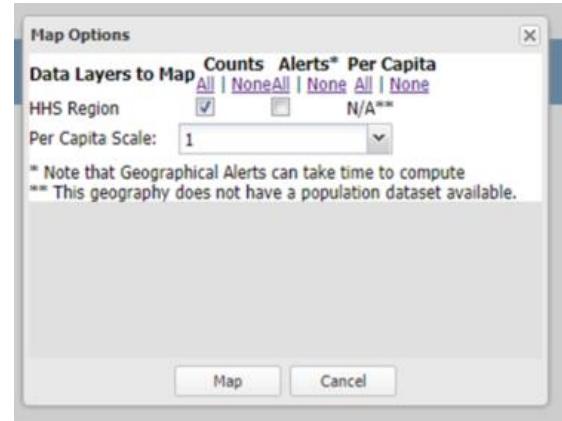
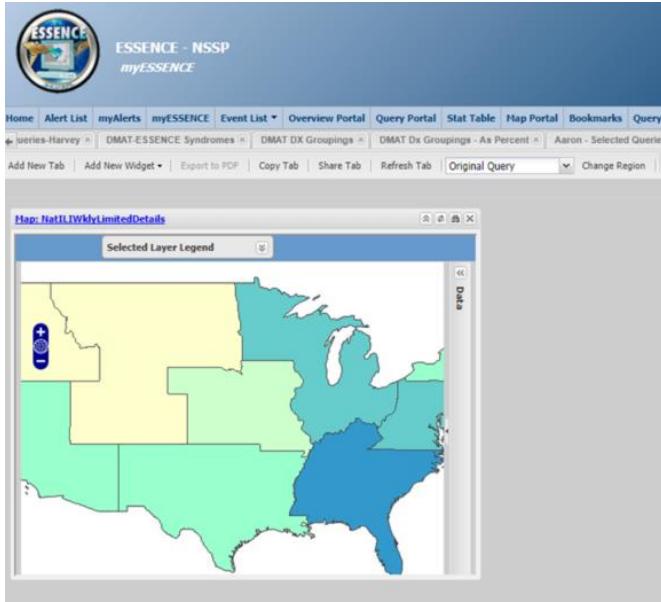


Label	Date Created	Start Date	End Date
NatLIWklyLimitedDetails	07Nov16	07Aug16	12Nov16
NatWklyAllVisitsLimitedDetails	07Nov16	07Aug16	12Nov16
NationalOpioidLikeCCDD	08Nov16	10Aug16	08Nov16
HFM CCDD	08Nov16	27Mar16	03Sep16
NatWklyHFMLimitedDetails	09Nov16	07Aug16	12Nov16
Georgia meningo example	16Nov16	01Jul16	16Nov16
ILI TX CC Hx	06Dec16	07Sep16	06Dec16
CCHXAnthrax	16Dec16	17Sep16	16Dec16
Anthrax	03Feb17	03Feb17	03Feb17

4. A pop-up (Widget Options) will appear. Select the saved query you want to populate the widget (map).

5. A pop-up (Map Options) will appear. Select the options desired and click the Map button.

The Map widget will be displayed.



For more information, visit the NSSP Resource Center. Under the Webinars & Training tab, click on the [NSSP ESSENCE Training at PHI Conference](#) presentation, slide 60.

DATA QUALITY CORNER

Data—the foundation for making sound public health decisions—must be managed from collection through analysis and reporting. NSSP can work with sites to assess and improve data quality. Each month, NSSP provides site-specific reports on three essential and integrated measures of data quality: completeness, timeliness, and validity. Reports can be accessed in each site's secure shared folder and are available toward the end of the month. The Data Quality Corner can help you use these reports to bolster and maintain the integrity of your site's data quality.

DQ Completeness Report . . .

WHERE do I start?

Data Quality (DQ) Completeness reports cover a lot of territory, which, initially, can be intimidating. “Completeness” refers to data elements that are critical or nonessential. DQ Completeness reports cover all NSSP data—or, roughly a couple hundred data fields!

To start using the report, let's narrow our focus to the data elements that are *critical*. These include priority 1 and 2 data elements:

- **P1:** Minimum required data elements for **NSSP onboarding***
- **P2:** Additional required data elements (see *PHIN Messaging Guide for Syndromic Surveillance*)



*Data elements for onboarding are a subset of those described in the *PHIN Messaging Guide for Syndromic Surveillance*.

How to:

1. Go to the report's “All_Feeds” tab; see priority column (labeled “PRI”).
2. Filter by “PRI” field to **identify Priority 1 and 2 data elements**.
3. Look for fields with overall completeness less than (<) 90% that are highlighted in red. **These fields require investigation.**

Investigation tips: Priority 1 data elements are essential for processing and analyzing data. “Minimum” refers only to data elements that let you assess the quality of foundational data. **By filtering on priority 1, you can quickly determine if incoming data have sufficient information to be processed successfully.**

We thank NSSP’s Analytic Data Management (ADM) Team for this explanation. Members of the ADM Team are available to answer questions and discuss DQ reports. To schedule a one-on-one discussion, please contact the [NSSP Service Desk](#).

SPOTLIGHT ON SYNDROMIC SURVEILLANCE PRACTICE

We continue our series of articles examining literature that advances the practice of syndromic surveillance. This month's article initially ran in December 2016 and has been updated for 2018. The article draws content from several well-constructed documents for practicing syndromic surveillance.

Integration of SyS into Daily Practice

For those relatively new to syndromic surveillance (SyS), or even for those public health organizations that haven't fully integrated syndromic data into a daily routine, SyS can be a little overwhelming and confusing. Syndromic data aren't perfect—but that was never the intent. Syndromic data, although timely, are messy and require additional investigation (protocols, analyses) to be put into context and action.



There's no single "right" way to use syndromic data, but there are steps one can take to do a better job of incorporating these data into state and local surveillance. Resources abound to inspire those who are new to SyS practice. A couple excellent resources—Florida's *ESSENCE User Guide* and CDC's *MMWR* article on making sense of data—show how a theoretical framework can be used to develop steps for conducting SyS. We've drawn from both sources to summarize what we believe are worthwhile steps to consider for an SyS program, and we suggest looking at the task flow diagram developed by the International Society for Disease Surveillance to make sense of these data.^{1,2,3} For details, please go to the sources. We especially thank the Florida Department of Health for the details in steps 3 and 5.

Essential Steps for Monitoring, Analyzing, and Responding to Syndromic Surveillance Data

1. Establish protocols to monitor sources and to detect and analyze the importance of anomalies in data. Routine monitoring may include hospital and lab data, alerts for syndromes, time of alert, ZIP codes and maps, and specific free-text queries.
2. Compare syndromic with other data sources (e.g., reportable diseases, lab data, poison control).
3. Assess epidemiologic characteristics (person, place, time)²
 - Does the time series show an increasing trend—continuity of the increase?
 - Have there been multiple days with count data at or near this level? Across different strata (i.e., age groups, hospitals)?
 - Do the data show the same pattern when viewed as a proportion?
 - What is the magnitude of the difference from previous day(s)?
 - Is this part of an expected seasonal increase? Out of season?
 - How large is the ratio of observed-to-expected patients for a given day?

Also check line-level details:

- Is there a pattern by age, sex, or patient ZIP code?
 - Is there a pattern in the wording of the chief complaints?
 - When available, what do the discharge diagnosis and discharge disposition suggest (admitted, discharged)?
 - Are there a number of visits with similar presentation times? And do these individuals also cluster by the emergency department they visited or by their ZIP code?
4. If a cluster is unlikely, resume monitoring (step 1). But if a cluster is likely and might be of public health significance, use your follow-up protocol (step 5).

5. Apply follow-up (response) protocol:

- Gather additional information from hospitals.
- Based on available data sources and any additional communications with a hospital(s) or patients, was this an outbreak or cluster of public health significance?
- Follow standard outbreak investigation steps, implement control measures or broadcast communications if appropriate, and provide recommendations.
- Summarize your concerns or findings and alert colleagues at the local, regional, or state level.

¹Centers for Disease Control and Prevention. [Syndromic Surveillance on the Epidemiologist's Desktop: Making Sense of Much Data](#); Figure 1, Theoretical framework for response protocols in use of syndromic surveillance systems. *MMWR* 2005;54(Suppl):141–6.

²*ESSENCE User Guide* [Internet]. Version 1.0. Florida Department of Health, Bureau of Epidemiology. 2010. Appendix 1: Flowchart for analysis and response to syndromic surveillance data; [cited 2016 Nov 22]. p. 56. Available from www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/disease-reporting-and-surveillance/_documents/florida-essence-user-guide.pdf

³International Society for Disease Surveillance. *Final recommendation: Core processes and EHR requirements for public health syndromic surveillance* [Internet]. Figure 5, Task flow diagram of BP 1—Conduct syndrome-based population health monitoring: Monitor and assist in the assessment, detection, communication, and response to public health conditions of interest; 2011 Jan [cited 2018 Jan 1]; Available from: https://knowledge-repository.s3.amazonaws.com/recommendations/Recommendation_2011_January_Core%20Processes%20and%20EHR%20Requirements%20for%20Public%20Health%20Syndromic%20Surveillance.pdf

UPCOMING EVENTS



The banner features the NSSP BioSense Platform logo on the left, which includes a stylized map of the United States and the text "NSSP National Syndromic Surveillance Program BioSense Platform". To the right of the logo are four circular images showing diverse groups of professionals in various work environments, such as a woman smiling, a group at a table, a man presenting, and two men looking at a tablet.

2018 ANNUAL RECIPIENT MEETING Maintaining and Advancing Syndromic Surveillance

January 3, 2018	Data Validation Support Call: 3:00–4:00 PM ET
January 17, 2018	Scheduled vendor patches in staging environment: 6:00–10:00 AM ET
January 19, 2018	Scheduled vendor patches in production environment: 6:00–10:00 AM ET
January 23, 2018	Surveillance Community of Practice Call: 3:00–4:30 PM ET. This information session will describe CoP-related activities happening at the upcoming ISDS Conference. Click here to register.
January 30–February 2, 2018	ISDS 2018 Annual Conference. Global Health Today and Tomorrow: <i>Policy Options and Scientific Solutions</i> ; Orlando, Florida
February 27–March 1, 2018	NSSP 2018 Annual Recipient Meeting: Maintaining and Advancing Syndromic Surveillance (formerly the Grantee Meeting); Atlanta, Georgia
April 17–20, 2018	Preparedness Summit; Atlanta, Georgia

Note. To access the Surveillance Community of Practice group resources, you must be signed in to your healthsurveillance.org account. To create an account, click [here](#).

LAST MONTH'S TECHNICAL ASSISTANCE

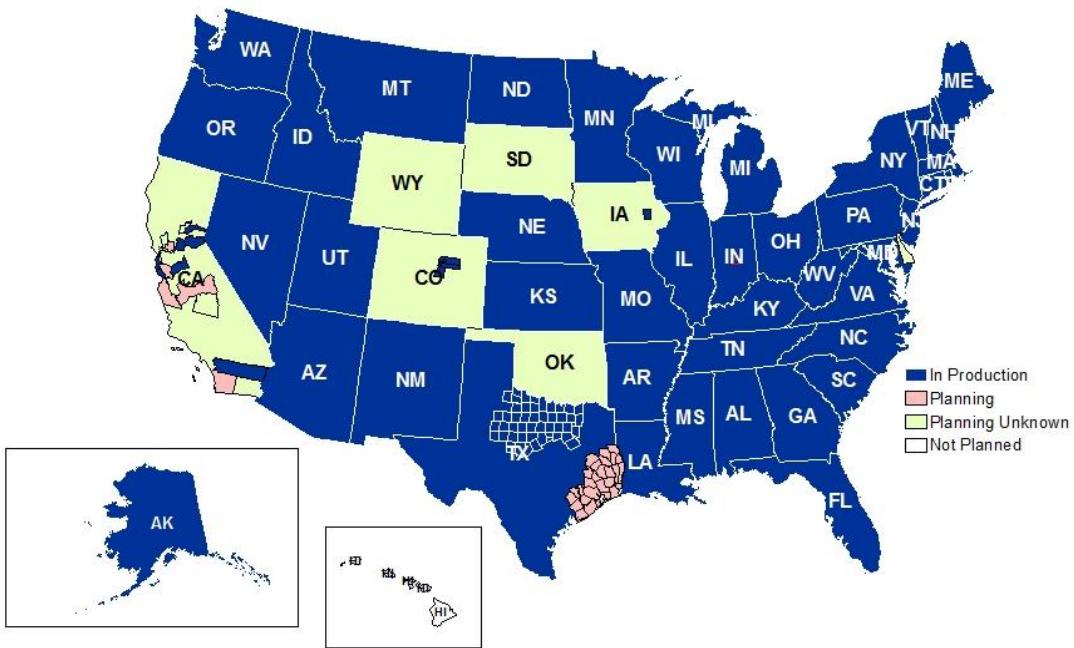
December 6, 2017	Data Validation Support Call
December 19, 2017	Scheduled vendor patches in staging environment
December 20, 2017	Deployed ESSENCE version 1.21 and AMC enhancements
December 21, 2017	Scheduled vendor patches in production environment

NSSP PARTICIPATION

Since 2016, the community and NSSP Team have worked to improve what's at the core of the BioSense Platform—its data quality and data flow. As a result, the NSSP has a much improved data flow that accounts for variations in feeds and attempts to ensure data are as complete as possible. Also, thanks largely to the community, we have a robust Master Facility Table (MFT) that accurately reflects the facility type(s) used for identifying emergency facilities, registered facilities that send syndromic surveillance data to the BioSense Platform, and facilities with which NSSP has established relationships. Taken together, **the NSSP can now account for facilities, data feeds, and state participation in ways that were difficult to imagine two years ago.**

An accurately defined MFT and improved data flow (in use since 2016) provide opportunities to explore alternate approaches for estimating data representativeness. Coupled with the use of data from the American Hospital Association, we are in a good position to refine the baselines for measuring and reporting NSSP participation. In the next few months, we will inform you on our progress.

On the basis of estimations that precede the new data flow, NSSP receives data from more than 4,000 facilities. Of these, about 2,567 are emergency departments (EDs) that actively submit data, which means that about 60% of all ED visits in the country are being represented (based on American Hospital Association data). At least 55 sites in 45 states participate in NSSP. Although NSSP is pleased with participation to date, **sites with data in production do not always translate into sites with broad ED coverage.**



Definitions: NSSP consolidates facilities that provide data under a single data administrative authority called a **site administrator**. These facilities and single-site administrator constitute a **site**.

ONBOARDING UPDATES

New-site Activities

New site onboarding activities concluded November 17, 2017, for Connecticut, Indiana, New Hampshire, Ohio, Rhode Island, and Texas. As of mid-December, the new sites were fully onboard the NSSP BioSense Platform and in production.

Data Validation Support

Conference calls are held the first Wednesday of each month, 3:00–4:00 PM ET, to assist with data validation compliance. For more information, contact the [NSSP Service Desk](#).



CDC FUNDING RECIPIENT AND PARTNERSHIP UPDATES

Get Ready to Collaborate!

NSSP's 2018 Annual Recipient Meeting—Maintaining and Advancing Syndromic Surveillance—will be held in Atlanta, Georgia, on February 27, 2018–March 1, 2018. Through presentations, roundtable discussions, and hands-on training, participants will learn how to improve the nation's situational awareness and respond to hazardous events and disease outbreaks. In addition, Rear Admiral Michael F. Iademarco, MD, director of the Center for Surveillance, Epidemiology, and Laboratory Services (CSELS), will meet with funding recipients to answer questions.

Registration and hotel information have been emailed to funding recipients. If you did not receive this information, please contact your project officer. We look forward to another successful annual meeting!

*State and local public health authorities receive funding through [CDC-RFA-OE15-1502: Enhancing Syndromic Surveillance Capacity and Practice](#).

Syndromic Surveillance for Arboviral Disease in Arizona

Each year, Arizona reports an average of 116 cases of West Nile virus and is at risk for importation of viruses such as chikungunya, dengue, and Zika. This is due to an abundance of *Aedes aegypti* mosquitoes in many parts of the state.

In 2015, Arizona saw a reemergence of St. Louis encephalitis virus. Since rapid identification of potential cases of arboviral disease (borne by mosquitoes and ticks) is critical to implementing appropriate public health responses, Arizona's BioSense Exploratory Analysis Subgroup, which includes representatives from the Arizona Department of Health Services and seven Arizona counties, collaborated to develop a query and standard procedure for identifying potential cases of arboviral disease.

Read about how the NSSP BioSense Platform was used to [identify arboviral disease](#) before laboratories or healthcare providers submitted reports.

The template is titled "Syndromic Surveillance Success Stories" and features a sub-section for "Arboviral Diseases in Arizona". It includes a photograph of a mosquito, a section titled "Lessons Learned" with bullet points, and a detailed description of the process for identifying potential arboviral disease cases using the BioSense platform.

Lessons Learned

- Syndromic surveillance can be used for identify cases of arboviral disease. This recently may be identified in the syndromic surveillance data before laboratory confirmation of the disease is requested to report.
- Identifying potential cases can improve situational awareness of arboviral disease as part of an integrated approach to surveillance. In the absence of other data sources, syndromic surveillance data can be used to inform public health surveillance, syndrome data may be used.

Actions Taken

In 2015, Arizona's BioSense Exploratory Analysis Subgroup, which included representatives from the Arizona Department of Health Services (ADHS) and seven Arizona counties, developed a standard procedure for identifying potential arboviral disease cases by using the National Syndromic Surveillance System (NS3) BioSense platform. The BioSense platform uses syndromic surveillance data contains emergency department and hospital records, including chief complaint (CC) and charge diagnosis (DC) fields. The BioSense platform also includes a search function for specific diseases, such as dengue, chikungunya, and Zika, in the context of CC and DC fields. The BioSense platform also includes a search function for primary WNV season and once a week during the rest of the year, and ADHS staff review the county health department's CC and DC fields for their county. Once a case is identified, it is reported to the ADHS BioSense platform, which is part of the standard protocol, to determine if the result is "High," "Medium," or "Low." Results are classified based on a diagnosis of an arboviral disease, presence of symptoms consistent with arboviral disease (fever, rash, muscle/joint pain, etc.), and laboratory confirmation of the disease. If a case is "High," further investigation is conducted, including medical record review, date of service, history review, etc., to search for the case in Arizona's Medical Electronic Disease Surveillance (MEDS) system. If the case is found in MEDS, the case is flagged as a "Duplicate Case." If the case is not found in MEDS, the case is flagged as a "New Case." If the case is a new case, it is reported to the facility. If appropriate, the case is then entered into MEDS and a trigger is having been first identified through syndromic surveillance.

Tennessee Department of Health Publishes in MMWR

In [December](#), we reported the Tennessee Department of Health's (TDH) use of syndromic surveillance to prepare for people displaced by Hurricanes Harvey and Irma. TDH's monitoring of population changes was published in the December 15, 2017, issue of *Morbidity and Mortality Weekly Report (MMWR)* "[Notes from the Field: Monitoring Out-of-State Patients During a Hurricane Response Using Syndromic Surveillance—Tennessee, 2017](#)." MMWR describes how ESSENCE was the only readily accessible source for collecting near real-time information. TDH observed that syndromic surveillance improved situational awareness and plans to integrate its use into future public health response efforts.

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.

COMMUNITY OF PRACTICE UPDATES

Trending Topics

Do you have a question for the community but don't know the best place to ask? Join the community discussions on the [Forums](#)! Community members are sharing ideas about topics from data quality improvements to ways to connect MPH students with public health opportunities internationally. Come join our conversations!



Workgroup and Committee Updates

- **Data Quality Committee**—The Data Quality Committee (DQC) thanks Kait Sherrerd and Melissa Pesaturo from electronic health record vendor AthenaHealth for presenting on its December call. Kait and Melissa spoke about AthenaHealth's syndromic product and answered questions from committee members. AthenaHealth has traditionally created products for the ambulatory setting but has recently expanded into the hospital sector. For anyone with questions, AthenaHealth representatives can be reached by email at publichealthregistry@athenahealth.com.

Have you noticed data quality issues lately? Would you like to learn more from savvy community members and troubleshoot possible solutions together? If so, connect with the DQC! The DQC has also been discussing the use of SNOMED CT codes received with or in place of ICD-10 codes in syndromic data and how this could affect syndromic surveillance practice. For more information or to get involved, contact DQC chairs Sophia Crossen (Sophia.crossen@ks.gov) or Jill Baber (jbabber@nd.gov).

- **Urgent Care Workgroup**—The Urgent Care (UC) Workgroup's Roundtable Discussion Abstract was accepted for the ISDS Conference. The UC Workgroup is also completing its presentation of the UC Justification and three documents for discussion and feedback:
 1. Overview of Syndrome Surveillance
 2. How to Create a Jurisdictional UC Facility Listing
 3. Best Practices for Onboarding UC Facilities

During its monthly call, the UC Workgroup reported on a prior call with Centers for Medicare and Medicaid Services (CMS) and Office of the National Coordinator for Health Information Technology (ONC) about onboarding pushback from urgent care centers (UCCs), advising some UCCs did not meet the CMS definition for UC. For more information, please contact David Swenson (David.Swenson@dhhs.nh.gov) or Em Stephens (emily.stephens@vdh.virginia.gov).

- **Overdose Surveillance Committee**—The Overdose Surveillance Committee (ODSC) will lead the Opioid Surveillance Workshop at the upcoming ISDS Conference, currently scheduled for February 1, 2018. In its recent call, the ODSC discussed a draft agenda for the upcoming workshop. ODSC is reviewing responses and recommendations, contacting potential speakers, and updating the agenda accordingly. An updated agenda will be posted soon on the group page (http://www.healthsurveillance.org/members/member_engagement/groups.aspx?code=Overdose). The ODSC is looking for additional community feedback and welcomes critiques and recommendations. If you are interested in sharing information on the following topics, please email Yushuan Chen, ychen@tchd.org.
 - Data Sources (emergency medical services, prescription drug monitoring program, poison control, vital data, hospital discharge data)
 - Objectives (background of the data, how to set up the system, data element and quality, benefits and limitations, examples of use cases)

- Tools and Skill Building (develop case definition in ESSENCE, validate cases and case definition, exercise and hands-on practice)
- Connect to Your Communities (situational awareness, evaluation of intervention, law enforcement and other engagement)

In addition to the workshop planning, the ODSC provided updates from CDC's Enhanced State Opioid Overdose Surveillance (ESOOS) program and the Council of State and Territorial Epidemiologists (CSTE) ICD-10-CD Drug Poisoning Indicators. CDC ESOOS has recently expanded to include 33 participating states. Preliminary estimates from the October data submission show a significant increasing trend in ED opioid overdoses. An upcoming issue of *Vital Signs* being developed will present detailed information on overdose trends using ESOOS syndromic data. CSTE shared updates on the progress in developing overdose indicators with draft recommendations for the ICD9-10-CM being produced early 2018. The final recommendations are planned to follow [CSTE's conference](#) in June 2018.

- ***Analytic Solutions Committee***—Are you a public health surveillance practitioner with questions about your data that you are not sure how to address? Do you need (or would you like) assistance with more advanced analyses of your data than you're already completing? Are you being asked to provide reports that require more analysis than you or your staff have time to develop? Please join us for a Virtual Speed Networking Event, sponsored by the ISDS Analytic Solutions Committee on January 11, 2018, 11:00 AM ET. For more information, contact Howard Burkom (Howard.Burkom@jhuapl.edu), Ian Painter (ipainter@uw.edu), Teresa Hamby (teresa.hamby@doh.nj.gov), or Krystal Collier (krystal.collier@azdhs.gov).
- ***Syndrome Definition Committee***—The Syndrome Definition Committee (SDC) thanks Dr. Kristin Holland, from the CDC Injury Center's Division of Violence Prevention, Surveillance Branch, and Aaron Kite Powell, health scientist with CDC's National Syndromic Surveillance Program, for speaking on the December SDC call. Dr. Holland presented on how syndromic surveillance is used for identifying suicide-related trends in the United States. Aaron shared his analysis on how the community uses ESSENCE. The SDC appreciates their willingness to join its efforts in improving the use of syndromic surveillance and developing a syndrome to identify suicide-related hospitalizations. To learn more about the SDC, please contact the co-chairs Rasneet Kumar (RasneetKumar@mail.maricopa.gov) or Zach Stein (Zach.Stein@ks.gov).

Interested in joining a chapter, committee, or workgroup? You can find a list of the groups [here](#).

Messaging Guide

The Messaging Guide Workgroup thanks everyone who submitted comments on the [Implementation Guide for Syndromic Surveillance: Emergency Department, Urgent Care, Inpatient, and Ambulatory Care Settings, Release 2.3](#). More than 90 comments were received, and the workgroup is now partnering with community members and vendors to address the comments and update the guide in preparation for HL7 Balloting in 2018. If you are interested in assisting, please visit the [Messaging Guide Workgroup page](#) to access the working documents and call-in information.

Development of *Messaging Guide for Syndromic Surveillance**

Time Frame	Activity
2015	Version 2.0 Released
2016	Erratum and Clarification Documents Released for Version 2.0
2017 Summer	Version 2.2 Released for Community Comment and Consensus
2017 Winter	Version 2.3 to be Released for Review and Community Comment
2018 March**	Version 2.4 Finalized for HL7 Balloting
2018 May	HL7 Balloting Begins
2018 Fall	HL7 Balloting (anticipated) Completed and HL7 2.5.1 Implementation Guide for Syndromic Surveillance Released

*This document was previously titled *Public Health Information Network (PHIN) Messaging Guide for Syndromic Surveillance*.

**Date and activity added December 2017.

Community of Practice Call

Please join the monthly Surveillance Community of Practice (CoP) Call. The purpose of this call is to bring together stakeholders with a vested interest in surveillance and to spark collaborative efforts to share guidance, resources, and technical assistance.

The November Surveillance CoP Call about natural disaster surveillance was one of the best attended calls yet—with more than 90 attendees! View the recording [here](#) to see presentations on the San Diego wildfires and hurricane response efforts in Houston and Florida.

The next call will be January 23, 2018, 3:00–4:30 PM EDT. This information session will outline CoP-related activities happening at the upcoming ISDS Conference. Click [here](#) to register.

Note. Please remember to register for each call individually. To access the slides and recordings from previous Surveillance CoP Calls, visit the Surveillance [Community](#) of Practice Group Page. You must be signed into your [healthsurveillance.org](#) account. To create an account on [healthsurveillance.org](#), click [here](#).

Syndrome Definitions

Are you looking for syndrome definitions? Visit the [ISDS Syndrome Definition Library](#) to see syndromes that others are using. You may also submit syndromes to share! Please note that you must have an account on the ISDS Surveillance Knowledge Repository to submit a syndrome.