

NSSP UPDATE



November 2018

People

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COMMUNITY OF PRACTICE UPDATES

Trending Topics

Are you looking for resources and ways to engage with partners to expand the scope of your syndromic surveillance data into a new domain like Suicide or Sexual Violence Prevention? Join the NSSP CoP community as we discuss resources and best practices for building these relationships on the [Community Forums!](#)

Member login, which is free, is required to access some links.

Workgroup and Committee Updates

- **Overdose Surveillance Committee (ODSC):** The ODSC members are excited to announce that they will conduct a workshop at the 2019 ISDS Annual Conference in San Diego, California. They want to explore all kinds of great topics for the syndromic surveillance community. Please add a post to this forum thread if you have a topic idea or question you would like addressed during the workshop.
- **Data Quality Committee (DQC):** The DQC held its monthly meeting on October 12, 2018, which included a follow-up discussion, led by the NSSP Team, on issues identified during the previous meeting around unknown values in the "Feed_Name" field and incorrect values in the "Vendor_Name" and "Vendor_Software" fields. Additional issues about the NextGen syndromic surveillance feed were identified, and the DQC plans to invite NextGen to be a guest on a future DQC call to resolve these issues.
- **Message Guide Workgroup (MGWG):** The MGWG is looking for community members, including vendors, to assist with the final recommendations being made to the proposed [HL7 2.5.1 Implementation Guide for Syndromic Surveillance](#). The MGWG wants to learn about your experience and get your thoughts during one of its weekly calls (Tuesdays at 2:00 PM ET). **If you want to participate in the workgroup, please join the group on healthsurveillance.org or email Dave Trepanier at dtrepanier@syndromic.org to be added to the listserv and calendar series.**

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- **Syndrome Definition Committee (SDC):** The SDC met in October to review the new ESSENCE Chief Complaint Discharge Diagnosis (CCDD) Categories for [Stimulants](#), Opioid Overdose, [Intimate Partner Violence](#), [Sexual Violence](#), and Heroin Overdose. [Zach Stein](#), SDC Co-Chair, shared an [overview of using Wildcards, Underscores, and Brackets](#) effectively when developing or refining syndrome definitions within ESSENCE.
- **Technical Committee (TC):** The TC hosted its inaugural meeting on October 4, 2018, in which it introduced the committee leadership team and reviewed the committee's scope and mission. The TC will meet quarterly, so watch the calendar for the next meeting in January 2019. Meanwhile, the TC has set up a [forum for reporting and discussing technical issues](#), so please join the conversation by mentioning issues you are experiencing or suggest ways to resolve issues being raised by others. To learn more about the goals for the Technical Committee, visit the [Group Home Page](#).

NSSP Community of Practice Call

Please join the monthly NSSP CoP Call. This call is powered by community members who want to share guidance, resources, and technical assistance. The call includes an open forum for discussion and questions. The next call will be held **November 20, 2018, 3:00–4:30 PM ET**. We will discuss how the **Washington State Department of Health uses syndromic data for STD surveillance**. Click [here](#) to register for the entire call series.

If you are unable to join the monthly NSSP CoP call or want to continue the conversation, **join Forum Fridays!** Held the third Friday of each month after the monthly CoP Call, Forum Fridays continues the conversation about surveillance practice via [Community Forums](#). This interactive event will take place all day, so you don't have to worry about joining at a particular time. The CoP presenters will return to share more of their expertise and be joined by other community members throughout the day. You can subscribe to forum and thread updates to be notified by email when comments are posted. If you need assistance with subscribing, view a short how-to video on our [FAQ page](#).



What are your colleagues saying? Click the icon to link to forum posts.

To access [slides](#) and [recordings](#) from previous calls, visit the [NSSP Community of Practice Group Page](#). You can also view a summary of the previous NSSP CoP Call from September 17, 2018, on Suicide Surveillance [here](#).

Implementation Guide for Syndromic Surveillance

ISDS, CDC, and the Message Guide Workgroup are on schedule to reconcile comments from HL7 balloting in November 2018 and have agreed upon a tentative schedule for completing the *Implementation Guide* (shown below). Shaded time frames and activities have been completed. New, tentative dates for completing the standard for trial use have been added.

HL7 2.5.1 Implementation Guide Milestones	
Time Frame	Activity
2015	Completed Version 2.0 Final RELEASE*
2016	Released Erratum and Clarification Documents for Version 2.0
2017 Summer	Released Version 2.2 Working Draft for Community Comment and Consensus
2017 Winter	Released Version 2.3 for Review and Community Comment
2018 March	Released Version .09
2018 Spring	Submitted DRAFT HL7 Guide for Balloting: Implementation Guide for Syndromic Surveillance Release 1.0 Standard for Trial Use (STU) HL7 Version 2.5.1**
2018 Fall (October–December)	<ul style="list-style-type: none"> ▪ Integrated and Resolved HL7 and Public-provided Comments ▪ Submitted to HL7 for Review***
	<ul style="list-style-type: none"> ▪ Reconcile Comments and Obtain Final Approval from HL7 Public Health Workgroup ▪ 2-week Reposting of Dispositions (Final Voting)
2019 January	<ul style="list-style-type: none"> ▪ Integration of Approved Changes ▪ 2-week Review and Approval of Request to Publish <i>Implementation Guide</i>
2019 February	Submit Request to Publish <i>Implementation Guide</i> as a “Standard for Trial Use”
2019 Spring (March–May)	90-day Publication of <i>Implementation Guide</i> to HL7 Members
2019 June	Release to Public: <i>HL7 2.5.1 Implementation Guide for Syndromic Surveillance for Trial Use Version 1</i>

* Version 2.0 is currently being used; subsequent versions are working drafts only.

** Added April 2, 2018.

*** Resolution of comments from Spring 2018 Ballot Process is on schedule for completion in November 2018.

CDC FUNDING RECIPIENTS AND PARTNERSHIP UPDATES

CDC Support of NSSP Funding Recipients

CDC's Center for Surveillance, Epidemiology, and Laboratory Services (CSELS), the "parent" center for NSSP, continues to work closely with programs* across the agency to assist the 23 states funded to implement the State Capacity to Enhance Syndromic Surveillance for Opioid Conditions project (Public Health Crisis Response 2018 Opioid Overdose Crisis Cooperative Agreement; CDC-RFA-TP18-1802).

Several activities are well underway—for example, work plans have been reviewed and tools created to help monitor monthly activities and generate quarterly reports. On October 15, 2018, a webinar was held to discuss performance measures, provide an overview of the CSELS activity monitoring tool and reporting process, and answer questions.

A **training webinar** will be held November 14, 2018, to demonstrate the CSELS monitoring and reporting tool: REDCap. This secure Web application is already in use at CDC to monitor the Epidemiology and Laboratory Capacity Health Information Systems activities. **Wherever possible, the monitoring activities for the Opioid Overdose Crisis Cooperative Agreement and the current NSSP cooperative agreement are being combined to avoid duplicate efforts.**

**Collaborators include health scientists in the Center for Preparedness and Response's Division of State and Local Readiness (DSLRL), the National Center for Injury Prevention and Control (NCIPC), and the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP).*

Alabama Uses Syndromic Surveillance to Monitor and Improve Data Quality

The Alabama Department of Public Health (ADPH) recognized that data latency was affecting its ability to respond quickly to public health threats. Facilities were slow to process and submit data, which diminished ESSENCE's ability to function as a *daily* alert.

Alabama's syndromic surveillance analysts used a multifaceted approach to improve how they monitor data quality, engage facility staff in discussions, and keep ESSENCE users abreast of facility feed status.



UPCOMING EVENTS

- | | |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| November 20 | Apply scheduled vendor patches in staging environment: 6:00–10:00 AM ET |
| November 23 | Apply scheduled vendor patches in production environment: 6:00–10:00 AM ET |
| January 29–
February 1, 2019 | 17th Annual International Society for Disease Surveillance Conference:
Harnessing Data Science to Improve Population Health and Public Health Surveillance; San Diego, California |

LAST MONTH'S TECHNICAL ASSISTANCE

- | | |
|------------|--------------------------------------------------|
| October 16 | Applied vendor patches in staging environment |
| October 18 | Applied vendor patches in production environment |

Questions and Tips

The following questions were asked during the 2018 Fall New-site Onboarding window and pertain to any site that is onboarding new facilities. If you have questions about onboarding or how to use the new automated Master Facility Table, please contact the [NSSP Service Desk](#).

Q. Now that site administrators can use the Access & Management Center to update their own master facility tables (MFTs) online, how long does it take to onboard a facility?

A. MFT requests are typically reviewed by the NSSP onboarding team within 1 to 2 business days, depending on the volume of requests. The time necessary to onboard a facility, however, still depends on the onboarding facility's preparedness and the volume of onboarding requests already in queue. That said, once the onboarding process begins and data is flowing to staging, the validation and review process typically takes no more than a few days assuming **data quality and completeness standards are met. If issues with data quality exist, including MFT-required changes, the validation time frame will be contingent on the complexity of the issue and the timeliness and responsiveness of the facility to resolve issues.**

Q. May I obtain a copy of my own MFT?

A. Yes, all site administrators may use the MFT module to download their MFTs into an Excel spreadsheet.

Q. What do onboarding and analytic data management checks involve?

A. The onboarding checks assess facility data for *completeness* and *exceptions*. The analytic data management (ADM) checks assess data *quality* by making sure data being collected in fields are valid and useful. These data checks are primarily centered on the level 1 priority fields specified in the data validity and completeness reports, which are available on the Stage-Collect server and accessible through an FTP application such as WinSCP.

Q. What happens if my facility is *not* production ready but I use the MFT module to submit "Activate It"?

A. When a facility is in review for production, the NSSP onboarding team and Analytic Data Management support staff will check data for completeness, exceptions, and validity. If their checks determine that the facility is not production ready, they will not approve the facility for production and explain why in the comments section. The request status will be changed to "Pending Site Review," and the Facility Status in the MFT will revert to "Onboarding." Whenever a record is "Pending Site Review," the system will email the user a message containing feedback from the onboarding team or Analytic Data Management support staff. After reviewing the feedback, a user may access the MFT to "Cancel Requested Changes," thereby removing the "Pending Site Review" status from the request. Once the user has responded to the feedback and determined the facility is "production ready," the request to update the facility status to "Active" may be resubmitted. This request will put the facility back in the queue for the NSSP onboarding team and Analytic Data Management support staff to review.

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.



You make a **Valid point!** New Validity Data Quality Reports Available

The Analytic Data Management support staff recently expanded the Onboarding Data Quality (DQ) reports to include Validity reports. Now, in addition to the Completeness reports we’ve been providing, you can access Validity reports to make sure data in pertinent fields, such as Patient Class or Facility Type, conform to PHIN standards-based vocabulary. In addition, the Validity reports describe elements that *do not* adhere to standards but might have unusual values (e.g., age, temperature). You can also review your top-reported Chief Complaint values.

The Onboarding DQ Validity reports have some new features as well. These reports now include a Priority column (PRI) that you can use, for example, to easily filter priority 1 fields (figure 1). The Validity reports also have a new Summary tab that, at a glance, allow you to review percent of visits with conforming values in each applicable field (figure 2). And, there are links to direct you to the details of the values reported (figure 3). We hope both the PRI column and Summary tab make accessing information even easier than before.

PRI
1
1
1
1
1

Figure 1. Priority Column

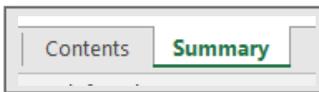


Figure 2. Summary Tab

Conforming			
% Records	% Visits	DQVar	DQ Column
100.0%	100.0%	Patient_Class_Code	Patient Class Code
100.0%	100.0%	Patient_Class_Code	Patient Class Code

Figure 3. Links for Direct Access to Values Being Reported

The new features are now available in the Onboarding DQ Validity reports (in Staging) and will soon be available in the Production monthly reports.

Thanks again for the helpful feedback on your reporting needs!

USING REPORTS TO . . . DRIVE DATA QUALITY

Data Completeness: *Completeness* is defined as the “visit’s full set of data,” not the capturing of a single record (message) or “last message only.” Data are considered across all messages associated with “the visit” to determine whether data in the field are missing. Record-level completeness is also included.

Data Timeliness: Reports and graphs note timeliness of visit-level data for either 24- or 48-hour periods. To calculate lag time, date/time of first message (for a visit) to arrive on the BioSense Platform is considered versus date/time of patient visit. (Note: Subsequent messages for the same visit are *not* included in the calculation.)

Data Validity: Reports show conformance to PHIN vocabulary standards and describe elements that *do not* adhere to standards but might have unusual values (e.g., age, temperature). Data either do or do not conform, and supporting reports specify the value of conformance. Missing data elements are categorized as nonconforming. Reports provide record-level information. Reports also include visit-level information by collapsing data across records and by using the same logic applied to downstream ESSENCE processing.

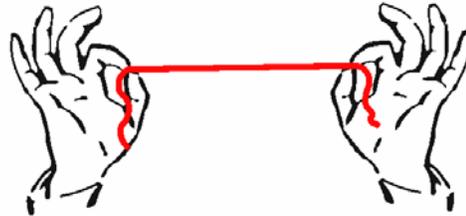
Questions about your site’s data quality? NSSP’s data support staff are available for one-on-one consultation. Contact the [NSSP Service Desk](#) to set up a meeting.

No strings attached!

How to Leverage String Fields in NSSP Data

Ever notice fields in NSSP Completeness DQ reports that begin with “str_”? What are these fields?

We call them “string fields.” These fields are populated with *exactly* what came in the message. There are associated columns that store data pulled from the string fields, and those data may be converted to a particular format such as datetime. Put another way... a column that supports a date and time has a “string” column that stores data *exactly* as reported and has another column formatted as *datetime2* to store the date time in an actual datetime format. For example, *str_admit_date_time* stores exactly what was reported, and *admit_date_time* stores the data in “datetime2” format. If you find “str” fields have high completeness but their associated fields have low completeness, this indicates a format issue with the data in the HL7 message.



Syndromic experts across the community are examining ways to better characterize the opioid epidemic. Many states have monitored the use of opioids and tracked trends for years. Here are a couple articles published in the July/August 2017 issue of Public Health Reports that describe how states have used syndromic data to inform the public health response to opioid misuse. One article describes how New Hampshire queries emergency department data to monitor opioid-related visits. The other article describes how Florida measures and assesses trends in heroin-related deaths and emergency department visits in Orange County. Both articles describe the flexibility of syndromic surveillance and its ability to improve situational awareness.



[Use of Emergency Department Data to Monitor and Respond to an Increase in Opioid Overdoses in New Hampshire, 2011–2015¹](#)

In 2006, practitioners at the New Hampshire Department of Health and Human Services began using syndromic surveillance. They started small, with just a few acute care hospitals, and over time required that all hospitals participate. In 2013, they began using emergency department (ED) data to monitor opioid-related overdoses and observed a rapid increase in overdoses and deaths.

To understand the extent of the state’s problem, New Hampshire public health practitioners used syndromic surveillance to study emergency department (ED) data from January 1, 2011, through December 31, 2015. They queried chief complaint text for related words such as fentanyl, heroin, and opiate and searched relevant ICD codes. During the study period, New Hampshire experienced a 70% increase in opioid-related ED visits—mostly among adults age 18–29 years and male. The article contains rich data including geographic distribution of patient opioid-related ED visits; visits by ICD code by age, sex, year; and visits related to heroin. The article states the limitations to using ICD codes and chief complaint text and why both were queried to increase sensitivity.

New Hampshire public health practitioners routinely share syndromic data with response agencies (public health, law enforcement, Department of Safety) and public health partners so that everyone is working together on a comprehensive statewide response to opioid misuse. The demographic findings are used to allocate health care resources, target interventions, and educate the public. The flexibility of syndromic surveillance to customize chief complaint and ICD code queries is especially helpful when monitoring *emerging* health threats because, for example, one can query specific drug street names. Further, syndromic data can be combined with data sources including naloxone administration and death data to better characterize the problem. Overall, this article describes a practical and collaborative approach to monitoring opioid misuse and demonstrates that syndromic data improve situational awareness.

[Local Public Health Surveillance of Heroin-related Morbidity and Mortality, Orange County, Florida, 2010–2014²](#)

Florida, like other states, has observed a substantial increase in deaths associated with opioid use (heroin and prescription drugs, such as oxycodone and fentanyl). The authors introduce the prescription drug problem by citing 2010 statistics in which *Florida had the highest rate of prescription painkiller sales per person and was home to 98 of the 100 highest-oxycodone-prescribing physicians in the United States*. The authors examine heroin overdose deaths nationwide and those of Florida. They suggest reasons for the increase in deaths from prescription opioids and heroin and compare national

trends with those observed in Florida. Because Florida's Orange County has such a high heroin-related mortality rate, the authors decided that surveillance in that county could give insight into heroin-related morbidity and mortality rates and trends that could benefit the entire state.

They analyzed and compared data from three sources used for heroin surveillance: Florida Medical Examiner, Agency for Health Care Administration (AHCA), and ESSENCE. They conducted descriptive and geographic spatial analyses, examined death and injury rates, and compared timeliness. The article describes each data source and the statistical methods used.

During the study period, heroin-related deaths in Orange County, Florida, increased 590%. White men age 30–34 years made up 25% of heroin-related deaths. ED visits related to heroin increased 12-fold (AHCA data) and 6-fold (ESSENCE data). The study presents rich data including heroin-related ED visits and deaths by data source, by demographics, and by insurance payer and year.

All three data sources showed an increase in heroin-related events. More heroin-related ED visits were identified by using ESSENCE than by using the AHCA database, and the article suggests why. Syndromic data from ESSENCE was timely and, consequently, proved useful for identifying populations that could benefit from intervention until more complete data were available. Findings were presented to community leaders and the mayor of Orange County for use in allocating health care resources, targeting intervention, informing policy, and making strategic plans. The article demonstrates that ESSENCE provides timely data that characterize the heroin epidemic and can identify populations with the greatest need for intervention.

¹Daly ER, Dufault K, Swenson DJ, Lakevicius P, Metcalf E, Chan BP. Use of Emergency Department Data to Monitor and Respond to an Increase in Opioid Overdoses in New Hampshire, 2011–2015. *Public Health Reports* [Internet]. 2017 July/August [cited 2018 Oct 18];132(1 Suppl):73S–79S. Available from: <http://journals.sagepub.com/doi/full/10.1177/0033354917707934>

²Hudson T-ML, Klekamp BG, Matthews SD. Local Public Health Surveillance of Heroin-Related Morbidity and Mortality, Orange County, Florida, 2010–2014. *Public Health Reports* [Internet]. 2017 July/August [cited 2018 Oct 18];132(1 Suppl):80S–87S. Available from: <http://journals.sagepub.com/doi/full/10.1177/0033354917709783>

CoP Resources

Opioid Crisis Web Page:

Links to the CoP Knowledge Repository, the Opioid Surveillance Discussion Group, Overdose Surveillance Committee, CDC Opioid Microsite, and more.

CDC Resources

Podcast:

[CDC Vital Signs—Opioid Overdoses Treated in Emergency Departments](#)

Websites:

[Opioid Overdose: Promising State Strategies](#)

[Opioid Overdose: State Information](#)

Publication:

[Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States](#) (2018)

UPDATES

Technology Update

Due to unexpected delays in the planned rollout of SAS Studio, the next AMC release will be postponed until late November or early December to coincide with the availability of SAS Studio on the BioSense Platform. Stay tuned for more detailed communications and webinars about this new analytic option.

NSSP Transitions Legacy Data

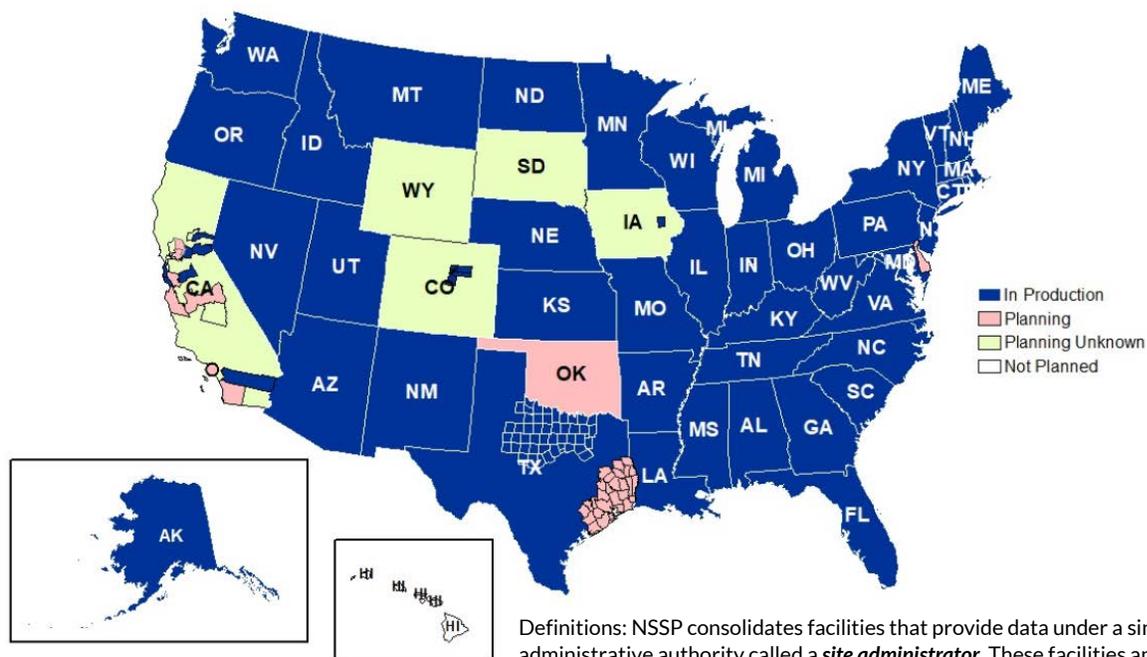
ALL legacy data for sites that requested migration have been converted into production. This is a milestone worth celebrating! We thank everyone for their patience throughout the migration process.

669
MILLION

Legacy records successfully migrated to the BioSense Platform as of November 2018

NSSP PARTICIPATION

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, including the District of Columbia, 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.



New-site Onboarding

This fall's NSSP new-site onboarding is well underway. The third new-site onboarding webinar was held October 30, 2018, and provided an overview of ESSENCE. Three sites are in the testing phase, which involves reviewing and improving data quality and completeness. These facilities are scheduled to move into production the first week of November.

The revised Master Facility Table (MFT) module—*which is already entering its third month in production*—has expedited the onboarding process. Site administrators who use the new MFT find its biggest advantage to be having the convenience to access, download, and edit their own MFT at any time. They've also raised questions that the onboarding team is sharing with the community in this issue's [Questions and Tips](#) section. Feedback and questions from the NSSP community on MFT enhancements are always welcome.



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](#)