ESSENCE Now Capable of Sending Data to ILINet

Outpatient influenza-like illness (ILI) data are collected through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), a collaborative effort between CDC, state, local, and territorial health departments and healthcare providers. ILINet consists of more than 3,000 enrolled outpatient healthcare providers in all 50 states, Puerto Rico, the District of Columbia, and the U.S. Virgin Islands. Any specialty that provides primary care is eligible to participate in ILINet including: emergency medicine, urgent care, family practice, pediatrics, internal medicine, infectious disease, and student health. Each week, these providers report data to CDC on the total number of patients seen for any reason and the number of those patients with ILI by age group.

The CDC/Influenza Division, in collaboration with the National Syndromic Surveillance Program, is interested in partnering with our state and local health colleagues to incorporate weekly ILI data that is currently reported to ESSENCE into ILINet. All facilities interested in participating will undergo data validation prior to inclusion in ILINet. While ILINet enrollment and data validation activities occur year-round, the deadline for inclusion for the upcoming 2018–2019 influenza season is September 14, 2018.

If any facilities are interested in contributing their ESSENCE ILI data to support national influenza surveillance activities, please contact your state influenza coordinator.

NSSP UPDATE

People

SUBSCRIBE NOW

COMMUNITY OF PRACTICE UPDATES

Trending Topics

Looking for heat-related surveillance resources? Visit the Knowledge Repository for climate-related surveillance resources. Do you want to know how to work with weather data in ESSENCE? Natasha Close, with the Washington State Department of Health, shared ESSENCE-specific resources related to weather data here. More questions? Join our conversations on the Climate-related surveillance forum.

Workgroup and Committee Updates

Data Quality Committee (DQC): The DQC thanks Lauri Middleton, Senior Manager of MU Interface Implementation at Evident, and her team for participating in a Q&A session on July's DQC call. The DQC looks forward to strengthening relationships and fostering communication between electronic health record vendors and state syndromic programs.

- **DQC Urgent Care (UC) Sub-Committee**

  o Four documents are now available by contacting the sub-committee: *UC Abstract Justification*, *How to Create a Complete UCC Jurisdictional Listing*, a current syndromic surveillance (SyS) overview, and a best practices document that will be updated as practice evolves.

  o The July 13, 2018, meeting focused on how health departments define Urgent Care and if the Data Quality forum could be leveraged to refine the definition. Participants asked *How do hospital-affiliated UCCs differ from other UCCs? How is urgent care data identified technically? How does one distinguish UC from ED data?* Join this conversation on the Urgent Care Sub-Committee forums.

  o The meeting was recorded and can be accessed on the UC Sub-Committee meetings page.

  o The UC Sub-Committee's next quarterly meeting will be in October (date forthcoming). Interim updates will be presented during the monthly Data Quality Committee meeting.

Syndromic Surveillance Public Health Emergency Preparedness, Response, and Recovery (SPHERR) Committee:

- *Practice Exchange Calls:* SPHERR met on August 10, 2018, and will meet again August 24, 2018, at 11:00 AM PT.

- *Template for Homeland Security Exercise and Evaluation Program (HSEEP)-compliant Exercise:* SPHERR has a workgroup developing a template exercise plan about the use of SyS data and information for emergency management. The exercise will be a facilitated discussion with scenarios that can be adapted to local priorities and interests.

- *Template Slides for Presenting SyS to Emergency Managers:* SPHERR has a workgroup developing slides that public health professionals can use to start developing presentations to educate emergency managers and preparedness professionals about SyS.

To learn about other CoP chapters, committees, and workgroups, check out the groups here. Registration is required to log in.

NSSP Community of Practice Call

August call cancelled. The NSSP Community of Practice (CoP) Call should resume in September. This call is powered by community members who share guidance, resources, and technical assistance. Calls generally include an open forum for discussion. Click here to register for the entire call series.

To access slides and recordings from previous calls, visit the NSSP Community of Practice Group Page.

Provide Feedback. Make a Difference.
Proposed Change to SyS Reporting Measures

The Centers for Medicare & Medicaid Services (CMS) requests comments on a proposed change to the Syndromic Surveillance Reporting Measures for stage three of the Promoting Interoperability Programs (formerly titled "Meaningful Use"), specifically Objective 8, Measure 2. Stage three focuses on the use of Certified Electronic Health Record Technology (CEHRT) to improve health outcomes.

Need More Info to Plan for the Future?

Link to Rule

Submit Comments electronically

This modification would change the definition of Eligible Providers (EP) from providers practicing *exclusively* in urgent care and emergency department clinical care settings to ANY provider practicing within ANY clinical venue with the ability to provide syndromic surveillance data as defined by local and state health regulations. **Comments are requested by September 10, 2018, no later than 5:00 PM.**

This proposed rule could affect the manner in which syndromic surveillance operates. We encourage you to take advantage of the opportunity to review the rule and provide comments to communicate how your operations will be affected.

Implementation Guide for Syndromic Surveillance

HL7 balloting closed May 7, 2018. ISDS collected and submitted comments on behalf of the community. ISDS, CDC, and the Message Guide Workgroup have reviewed and resolved about a third of the comments.

Development Schedule	
Time Frame	**Activity**
2015	Version 2.0 **Final RELEASE***
2016	Erratum and Clarification Documents Released for Version 2.0
2017 Summer	Version 2.2 Working Draft Released for Community Comment and Consensus
2017 Winter	Version 2.3 to be Released for Review and Community Comment
2018 March	Version .09
2018 Spring	HL7 Balloting; Guide Balloted is *Implementation Guide for Syndromic Surveillance Release 1.0 Standard for Trial Use (STU) HL7 Version 2.5.1***
2018 Fall	Anticipated Completion of HL7 Balloting and Release of *HL7 2.5.1 Implementation Guide for Syndromic Surveillance for Trial Use Version 1*

* Version 2.0 is currently being used; subsequent versions are working drafts only.
** Added April 2, 2018.

Opioid Notice of Funding Opportunity

The opioid crisis has been declared a public health emergency. To help address the epidemic, CDC received an increase in appropriations for Fiscal Year 2018. CDC has worked diligently since the passage of the bill to align planned activities with Congressional expectations. To that end, CDC is expanding and enhancing efforts already underway through its existing Overdose Prevention in States (OPIS) initiative and is making new or additional resources available to all 50 states, Washington, D.C., and eight territories in the form of Surge Support funds. More details about this funding can be found here.

These OPIS Surge Support funds will assist states in improving the timeliness and quality of surveillance data, as well as support public health response activities necessary to prevent further opioid-related overdoses, deaths, and other harms. Given the urgency of the opioid crisis, we are aiming for states to receive these additional dollars in early September 2018. CDC is committed to collaborating with the administration, state and local health departments, and our partners across the country to save lives and end the opioid epidemic.

NSSP Strives to Meet BioSense Platform Users' Needs

Assessment of NSSP Service Desk Tickets

The NSSP Service Desk provides technical support to BioSense Platform users. The service desk uses the Jira ticketing system as a project management tool to track support requests and task completion. Recently, NSSP's Program Evaluation Team conducted an analysis to assess if the needs of BioSense Platform users are being met, to inform DHIS leadership and staff about the support needs of platform users, and to capture other information that may guide future program activities.

The team extracted and analyzed select information from 977 tickets submitted to the service desk from January 1, 2017, through June 30, 2017. Of the extracted data, 112 tickets were excluded due to insufficient qualitative data, leaving 865 tickets for analysis. They categorized the remaining tickets into five broad categories of issue types. Then they qualitatively analyzed information within each of these groups to determine themes and subthemes. They developed textual codes for each ticket based on its content.

This brief report summarizes findings from their analysis:

Tickets by Category Type (N= 865)
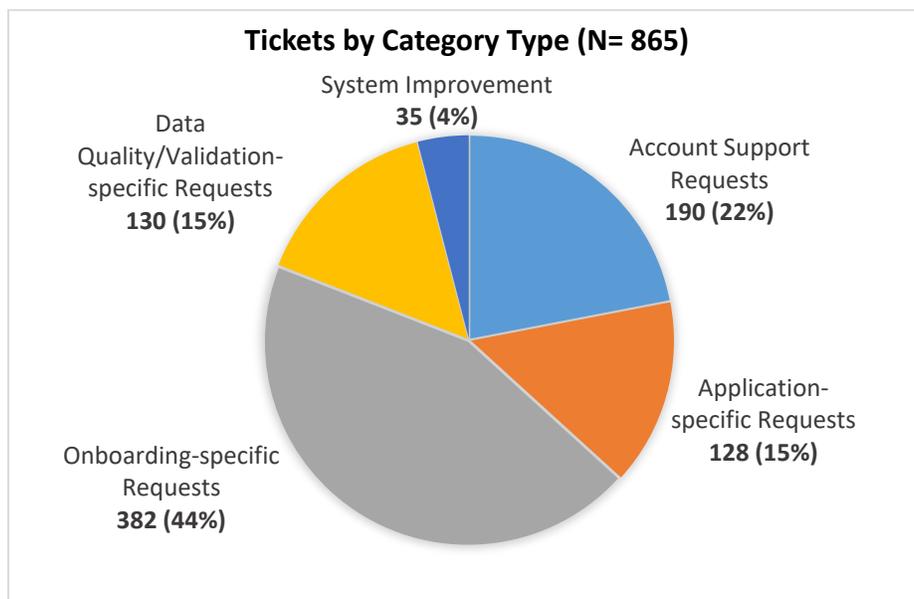
Almost half the tickets (382; 44%) related to onboarding issues. These issues included facility-specific questions, updates on facility onboarding requests, and questions about Secure File Transfer Protocols (SFTPs). The most common issue in this group concerned use of the master facility tables (MFTs).

The second common ticket type related to account support requests (190, 22%). These included tickets about accessing the platform and applications (e.g., login issues, password resets, and account activation requests).

Data quality/validation-specific requests and application-specific requests represented 30% of the tickets analyzed (128 and 130, 15% each). Most tickets in this category focused on data processing/ analysis questions followed by platform application troubleshooting and site data quality report requests.

Fewer tickets were submitted by sites for system improvements (35, 4%). These tickets focused on platform application functionality issues and suggestions for improving specific issues like measurement of data quality in legacy environments.

A full report is available [here](). We thank users in the community for their commitment to improving the BioSense Platform by offering suggestions and sharing their experiences with us.

UPCOMING EVENTS

August 20–23	[Public Health Informatics (PHI) Conference](); Connecting Systems & People to Improve Population Health
August 21	Scheduled vendor patches in staging environment: 6:00–10:00 AM ET
August 23	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

Note. To access Community of Practice resources, sign in to your [healthsurveillance.org]() account. To create an account, click [here]().

July 17	Applied vendor patches in staging environment
July 20	Applied vendor patches in production environment
August 1	Held Data Validation Support Call: 3:00–4:00 PM ET
August 6	Deployed self-service MFT module

Practice

Accurate Characterization of Opioid Crisis Includes SyS Data

Analysts at all levels of public health are collecting and analyzing various data sources to characterize the opioid crisis and to inform prevention and response efforts. States such as North Carolina and Alaska are displaying emergency department visit data from syndromic surveillance (SyS) systems along with mortality data, prescription data, and other data sources to provide a comprehensive picture of opioid-related encounters.

Recent studies show that emergency department data from SyS systems (including free text and ICD codes) identify drug overdoses and related indicators accurately.[1,2,3,4] Still, more work is needed to understand how the October 1, 2015, transition to ICD-10-CM has affected diagnoses of *poisoning/overdose* and *substance abuse and dependence*. As SyS systems increase their capture of ICD-10-CM codes, understanding how these data collected in near real-time compare to administrative data sets, such as hospital billing data, can inform surveillance approaches and demonstrate the benefits of sharing the timeliest data available with stakeholders.

Ongoing discussions among the SyS community are needed—via forums, webinars, and conferences. The International Society for Disease Surveillance Annual Conference is a great forum to share any work you have done in validating your drug overdose surveillance definitions. The call for abstracts is open until September 14, 2018. More information is available on the ISDS website: https://www.healthsurveillance.org/page/2019abstracts.

[1]Goldman-Mellor S, Jia Y, Kwan K, Rutledge J. Syndromic Surveillance of Mental and Substance Use Disorders: A Validation Study Using Emergency Department Chief Complaints. *Psychiatric Services.* 2017;69(1):55–60.

[2]DeYoung K, Chen Y, Beum R, Askenazi M, Zimmerman C, Davidson AJ. Validation of a Syndromic Case Definition for Detecting Emergency Department Visits Potentially Related to Marijuana. *Public Health Reports* [Internet]. 2017 Jul/Aug [cited 2018 Jul 23];132(4):471–479. Available from: http://journals.sagepub.com/doi/10.1177/0033354917708987

[3]Chen Y, Gonzalez S, Gil H, Askenazi M, Quintana-Zinn F, Davidson A, Billings C, Qu M. A Proposed SyS Case Definition for Opioid Overdose Related ED Visits—An Evaluation in Three Regions. *Online Journal of Public Health Informatics* [Internet]. 2018 [cited 2018 Jul 23];10(1). Available from: http://journals.uic.edu/ojs/index.php/ojphi/article/view/8654

[4]Reardon JM, Harmon KJ, Schult GC, Staton CA, Waller AE. Use of Diagnosis Codes for Detection of Clinically Significant Opioid Poisoning in the Emergency Department: A Retrospective Analysis of a Surveillance Case Definition. *BMC Emerging Medicine* [Internet]. 2016 Feb 8 [cited 2018 Jul 23];16:11. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4746926/

Q. How do I use negation terms in a complex free-text query?

A. First, we need to explain what makes a query complex and define a negation term. *Complexity* is associated with searches across multiple fields. *Negation* terms (also called *exclusion* terms) look for the **opposite intent** (*"I **don't** have…."*). For example, you do not want to have a visit classified into a respiratory syndrome if the patient said *"I don't have respiratory problems."*

The proper use of negation terms, or criteria, in a complex free-text query can be confusing. To resolve some of this confusion, Johns Hopkins Applied Physics Laboratory developed a Question and Answer webinar titled "ESSENCE Free-Text Query Negation."

The webinar explains how ESSENCE users often apply free-text queries to mine information from chief complaint (patient's reason for the visit) and discharge diagnosis (observations made by

ESSENCE

Free-Text Query Negation

JOHNS HOPKINS
APPLIED PHYSICS LABORATORY | National Health

This 14-minute ESSENCE webinar illustrates ESSENCE functionality (Explain Query button, Advanced Query Tool) and will help users understand how negation queries are processed.

doctors and nurses). Frequently, however, they further refine queries by selecting multiple fields and using keywords (inclusion terms) and negation criteria that hunt for and help distinguish between false- and true-positive ED visits.

This video can guide you in the proper way to apply negation terms in free-text queries. Choosing the appropriate keywords and negation criteria can be especially helpful in finding case definitions when specific terms are absent and for improving system sensitivity and positive predictive value.

More resources:
Use case: Negation Processing in Free Text Emergency Department Data for Public Health Surveillance
ESSENCE training: Using Queries

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.

Let's talk about filtered records . . .

Why aren't my records processing?

Records being processed into NSSP's BioSense Platform are checked for core data elements before being passed to the next stage of data processing.

Like in baseball, it begins at home base. For NSSP, "home base" is when data arrive on the BioSense Platform. Arrival—or, stepping up to the plate—isn't enough. These data must be ready to perform to be passed to first base—the Raw Table.

Aim for First Base
Each record is checked to make sure its contents meet message standards. Messages with all the essential information get a status of "Read" and are ready for processing (rounding the bases). If *minimal* standards are not met, the record is filtered and stored in the Raw Table with a status of "Filtered" (*message_status='Filtered'*). Filtered records are *not* processed.

Records are filtered for three main reasons:

1. Message lacks date/time from MSH_7.1 segment
2. MSH_9.1 Not Equal to ADT
3. MSH-4 lacks sending facility information

So, how can you keep your records out of the filtered zone? You do this by making sure each facility and vendor send **essential** data elements. Check your monthly Data Quality Reports to see how many records are being filtered. Then, as needed, contact the associated facilities or vendors for further action. If you need additional support, the Analytic Data Management (ADM) team is at your disposal to go over monthly data quality reports with you and answer questions.

Rounding the Bases
Once the record passes the initial filtering test and makes it to the Raw Table (first base), another stringent test must be passed to reach the Processed Table—or, second base. This check makes sure **core** data elements are present. And if not, records are removed and placed in a separate, site-specific Exceptions Table. (Previous newsletters give reasons why records are exceptioned.)

Once the record passes the Exceptions check, the record is prepped per business processing rules and collapsed into holistic, visit-level data. Then the record is ready to round second base (Processing) toward third base—ESSENCE. After ESSENCE processing, site personnel will be able to visualize these data and conduct additional analyses. Data from the Raw, Exceptions, and
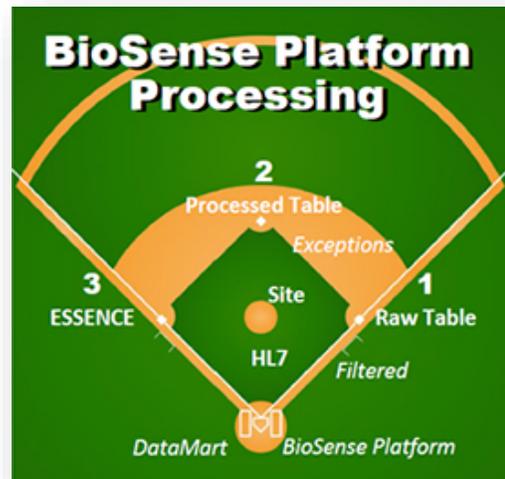
Processed Tables then head to Home Base and into the DataMart, where site personnel can use tools such as Adminer, R, and eventually SAS Studio to further access these data.

To re-"baseball" cap. Records can be Filtered to the Raw Table, sent to the Exceptions Table, or successfully passed to the Processed Table and into ESSENCE. The Processed Table and ESSENCE are the end goals to ensure you have complete, usable, and actionable data. Filtered and exceptions Tables are the places where records can be stopped before getting there.

With your help in maintaining and improving data quality, more and more data are "rounding" the bases and hitting home runs! We hope you find this explanation helpful. As always, please contact the Analytic Data Management (ADM) team site inspectors if you have questions or concerns.

<div style="background-color:#c0532a; color:white; padding:8px;">SPOTLIGHT ON SYNDROMIC SURVEILLANCE PRACTICE</div>

This article describes how syndromic surveillance provides the vital data needed for local health departments to develop prevention interventions for medication and drug overdose. Although the article is a few years old, it is an excellent description of how syndromic surveillance works at local and state levels. This is a good article for anyone new to syndromic surveillance and for sharing with project collaborators who are unfamiliar with how syndromic data work.

Use of Syndromic Surveillance Data to Monitor Poisonings and Drug Overdoses in State and Local Public Health Agencies[1]

For nearly two decades, the incidence of poisoning and drug overdose in the United States has rapidly increased. In North Carolina (NC) from 1999 to when this article was written, deaths had increased more than 350%.[1,2] Because the nature of syndromic data lends itself to capturing near real-time data on nonfatal overdoses, local health departments in NC wanted to use the state's syndromic surveillance (SyS) system to characterize poisoning and overdose and to inform community-level prevention initiatives (e.g., better access to naloxone, drug diversion and safe disposal, prescription drug monitoring). This article describes the complexities NC faced in using nonfatal data for poisoning and overdose surveillance.

NC uses the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT) to conduct syndromic surveillance. NC DETECT collects data from three sources: state emergency department visits, emergency medical services data from the EMS Performance Improvement Center (EMSPIC), and call data from the Carolinas Poison Center. NC DETECT data are updated at least daily. The system includes a variety of reports for monitoring *emerging* drugs, which, at that time, included bath salts and synthetic marijuana.

NC convened a workgroup to decide on an approach for monitoring nonfatal poisonings and drug overdose because *a national consensus for the case definition did not exist*. The workgroup based the multiple NC overdose definitions on ICD 9- and 10-CM codes and free-text data from chief complaints and triage notes. (You can view NC DETECT case definitions at this site: http://ncdetect.org/case-definitions/.)

The article discusses how 21 local health departments with the state's highest overdose mortality burden received grants to add data from NC DETECT to monthly surveillance reports. Later, after using the reports, the health departments were surveyed on how useful they found the new case definitions. This article summarizes respondent feedback—which clearly shows how valuable real-

time data (at ZIP code level) are to informing community-level prevention work. Respondents also appreciated the value of having a flexible SyS system for tracking unforeseen events. SyS data identified where community interventions were needed the most and helped in engaging the appropriate stakeholders.

[1] Ising A, Proescholdbell S, Harmon KJ, Sachdeva N, Marshall SW, Waller AE. Use of Syndromic Surveillance Data to Monitor Poisonings and Drug Overdoses in State and Local Public Health Agencies. *Injury Prevention* [Internet]. 2016 [cited 2018 Jul 3];22:i43–i49. Available from: https://injuryprevention.bmj.com/content/22/Suppl_1/i43

[2] CDC/NCHS, National Vital Statistics System, Mortality File. http://www.cdc.gov/nchs/data/health_policy/AADR_drug_poisoning_involving_OA_Heroin_US_2000-2014.pdf (accessed 15 Dec 2015*).

Program

Transition of Legacy Data

No change in status from July 2018. NSSP has converted legacy data into the production environment for 95% of the 43 sites that requested legacy migration. Of the 43 total legacy sites, 41 have data available in production ESSENCE. The remaining two sites are under review in the staging environment.

If you have questions, please contact the NSSP Service Desk.

Technology Update

NSSP Launches Automated Master Facility Table—The newly released Master Facility Table (MFT) module will alleviate much of the complexity associated with bringing facilities onboard the BioSense Platform. This automated version of the MFT is accessible to site administrators via the Access & Management Center. Site administrators will be able to enter new facilities themselves, update facility information, and change facility status to reflect production readiness. A webinar is available to further explain how the new MFT can streamline onboarding.

The NSSP Team thanks the stakeholders who participated in MFT User Acceptance Testing (UAT) in July. Their suggestions refined the MFT module and improved usability of the associated Quick Start Guide.

SAS Studio Upgrade: SAS Studio is a customizable, Web browser-based interface for advanced analytics. It is one of an array of user-preferred software tools available on the BioSense Platform. SAS is being upgraded to SAS v9.4 M5 and will be installed on new servers to improve performance, add more user-desired features, and update server port settings to eliminate the need for additional IT intervention. The upgrade is scheduled for completion in early September 2018.


August | New to NSSP Resource Center

BioSense Platform Quick Start Guide to Using the **Master Facility Table** August 2018

NSSP National Syndromic Surveillance Program BioSense Platform

BioSense Platform Quick Start Guide to Using the Master Facility Table—This guide describes the new, automated Master Facility Table (MFT) that maps facility data to the BioSense Platform. The guide is available in the NSSP Resource Center and explains how to access and navigate MFT features.

The NSSP is refining its definition of participation. Meanwhile, current estimates show that 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.
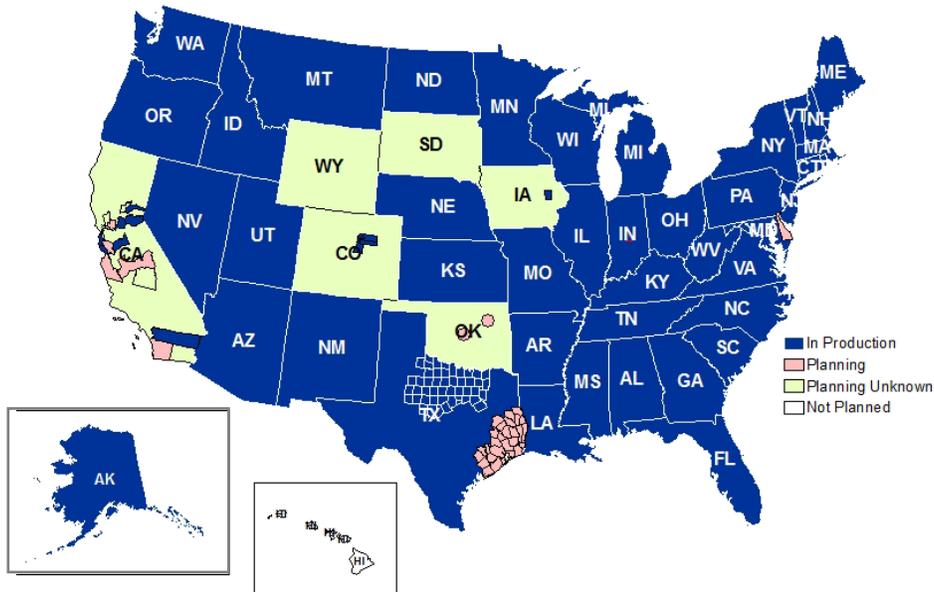
Definitions: NSSP consolidates facilities that provide data under a single data administrative authority called a ***site administrator***. These facilities and single-site administrator constitute a ***site***.

ONBOARDING UPDATES

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](#).