# NSSP BioSense Platform User Assessment: Functionality and Utility

OSTLTS Generic Information Collection Request
OMB No. 0920-0879

## Supporting Statement – Section A

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**Program Official/Project Officer**
Hussain Yusuf, M.D., M.P.H.
Team Leader, Program Evaluation Team
Partnerships and Evaluation Branch
Division of Health Informatics and Surveillance, CSELS, OPHSS
Centers for Disease Control and Prevention
1600 Clifton Rd., N.E., MS-E91, Atlanta, Ga 30333
Phone: Office 404-498-6642; Mobile 470-455-7104; PEB Mainline: 404-498-6460
Email: hay0@cdc.gov

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- **Purpose of the information collection**
  The purpose of this assessment is to assess the utility and functionality of the National Syndromic Surveillance Program's (NSSP's) BioSense Platform. Specifically, the purpose is to gather information on user needs and identify areas in need of improvement within the applications, quick start guides, and technical support.
- **Intended use of the resulting data**
  The results of this information collection will be used to inform strategies to inform activities for maintaining and enhancing the BioSense Platform and associated applications and to ensure optimal delivery of technical assistance, training, and information to users of the platform. The expected outputs include reports and presentations to inform the Centers for Disease Control and Prevention (CDC), partners and public health community.
- **Methods to be used to collect data**
  Data will be collected through a web-based assessment.
- **Respondent Universe**
  Respondents will be state and local public health agency officials who are active users of the NSSP's BioSense Platform. The respondent universe is comprised of 218 participants, including 117 participants at 41 state health agencies and 101 participants in 69 local health agencies. Roles and titles of participants may include syndromic surveillance coordinator, surveillance officer, epidemiologist, data analyst, public health program manager, and informatics coordinator.
- **How data will be analyzed**
  Descriptive statistics, including proportions, means, and associated dispersion metrics will be generated for responses to closed-ended questions. Correlational analysis will be conducted to examine selected issues interest (e.g. association between experience level and informational needs). Qualitative analysis of responses to open ended questions will be conducted to identify key themes in the responses. SAS software will be used to conduct quantitative data analysis and MAXQDA will be used for qualitative data analysis.

# Section A – Justification

## 1. Circumstances Making the Collection of Information Necessary

### Background

This information collection is being conducted using the Generic Information Collection mechanism of the OSTLTS OMB Clearance Center (O2C2) – OMB No. 0920-0879. The respondent universe for this information collection aligns with that of the O2C2. Data will be collected from a total of 218 respondents, including 117 participants at 41 state public health departments and 101 participants 69 at local public health departments). Respondents acting in their official capacities include syndromic surveillance coordinator, surveillance officer, epidemiologist, data analyst, public health program manager, informatics coordinator, and public health official (Please see Attachment A; Respondent Breakdown).

This information collection is authorized by Section 301 of the Public Health Service Act (42 U.S.C. 241). This information collection falls under the essential public health service(s) of

☒ 1. Monitoring health status to identify community health problems
☒ 2. Diagnosing and investigating health problems and health hazards in the community
☐ 3. Informing, educating, and empowering people about health issues
☐ 4. Mobilizing community partnerships to identify and solve health problems
☐ 5. Development of policies and plans that support individual and community health efforts
☐ 6. Enforcement of laws and regulations that protect health and ensure safety
☐ 7. Linking people to needed personal health services and assure the provision of health care when otherwise unavailable
☐ 8. Assuring a competent public health and personal health care workforce
☐ 9. Evaluating effectiveness, accessibility, and quality of personal and population-based health services
☐ 10. Research for new insights and innovative solutions to health problems [1]

Public health surveillance is a crucial public health function that enables the detection and monitoring of diseases and health threats and the development of strategies for their prevention and control.[2] The Division of Health Informatics and Surveillance (DHIS) provides leadership and cross-cutting support in developing public health information systems, managing public health surveillance programs, and providing health-related data needed for disease prevention and control.[3] DHIS manages two nationwide public health surveillance programs, the National Notifiable Diseases Surveillance System (NNDSS) [4], which is a multifaceted program that helps public health monitor, control, and prevent about 120 diseases (OMB No. 0920-0728), and the National Syndromic Surveillance Program (NSSP)[5], which promotes the development of a syndromic surveillance system and the conduct of syndromic surveillance practice (OMB No. 0920-0824). Syndromic surveillance is the collection and application of near real time health related data to enhance public health situational awareness and address public health concerns.

The NSSP is a collaboration among state and local health agencies, the CDC, other federal organizations, and other entities for the timely collection, exchange, and use of syndromic surveillance data to improve the nation's situational awareness and responsiveness to hazardous situations and disease outbreaks.[5] NSSP features the BioSense data platform and an NSSP Community of Practice (CoP).[6,7] The BioSense Platform provides a cloud-based computing environment to collect, store, analyze, and share data using health information system software applications including ESSENCE, Adminer, Access & Management Center (AMC), SAS Studio, and RStudio. Health officials can use the BioSense Platform to analyze and exchange syndromic surveillance data for improving their awareness of disease occurrence and health threats in their jurisdiction and, across jurisdictional boundaries when appropriate. Over the past few years, NSSP has operationalized a more advanced BioSense Platform to provide public health

practitioners with enhanced tools and improved data to conduct syndromic surveillance activities.[8]

The purpose of this assessment is to assess the utility and functionality of the National Syndromic Surveillance Program's (NSSP's) BioSense Platform. Specifically, the purpose is to gather information on user needs and identify areas in need of improvement within the applications, quick start guides, and technical support.

The results of this information collection will inform activities for maintaining and enhancing the BioSense Platform and associated applications (Access & Management Center [AMC], ESSENCE, Adminer, SAS Studio, and RStudio); thus, the information collection will help ensure that STLT's have an optimally functional and useful BioSense Platform and receive the most relevant and useful technical assistance and training related to the platform. The expected outputs include reports and presentations to inform the Centers for Disease Control and Prevention (CDC), partners and public health community.

**Overview of the Information Collection System**

Data will be collected from 218 state and local health agency officials via a web-based assessment (**see** Attachments B — NSSP BioSense Platform User Assessment – MS Word Version and Attachment C – NSSP BioSense Platform User Assessment – Web Version). The web-based assessment will be implemented using Epi Info's web assessment tool. The instrument will be used to gather information from state and local public health agency staff who are active users of the BioSense Platform regarding the utility and functionality of the National Syndromic Surveillance Program's (NSSP's) BioSense Platform. Specifically, information will be gathered on user needs and to identify areas in need of improvement within the applications, quick start guides, and technical support.

The information collection instrument was pilot tested by 5 public health professionals. Feedback from this group was used to refine questions as needed, ensure accurate programming and skip patterns and establish the estimated time required to complete the information collection instrument.

**Items of Information to be Collected**

The data collection instrument consists of 40 main questions of various types, including multiple choice questions, questions with open-ended answer fields, and questions with Likert type response categories. The instrument will collect data on the following:

- General characteristics about the user, including the type of work the user does and the user's level of experience with the BioSense Platform and associated applications.
- Use of and the functionality and utility of the BioSense Platform and associated applications including ESSENCE, Adminer, Access & Management Center (AMC), SAS Studio, and RStudio.
- Utility of and needs related to the BioSense Platform and applications related quick start guides, technical support provided through the NSSP Service Desk, and syndromic surveillance related training.

- Comments and suggestions related to how the above tools and services can be improved and/or other comments about these tools and services.

## 2. Purpose and Use of the Information Collection

The purpose of this assessment is to assess the utility and functionality of the National Syndromic Surveillance Program's (NSSP's) BioSense Platform. Specifically, the purpose is to gather information on user needs and identify areas in need of improvement within the applications, quick start guides, and technical support.

The results of this information collection will inform activities for maintaining and enhancing the BioSense Platform and associated applications (Access & Management Center [AMC], ESSENCE, Adminer, SAS Studio, and RStudio); thus, the information collection will help ensure that STLT's have an optimally functional and useful BioSense Platform and receive the most relevant and useful technical assistance and training related to the platform. The expected outputs include reports and presentations to inform the Centers for Disease Control and Prevention (CDC), partners and public health community.

## 3. Use of Improved Information Technology and Burden Reduction

Data will be collected via a web-based assessment using a standard questionnaire for all respondents. The web-based assessment will be implemented using Epi Info's web assessment tool. This method was chosen to reduce the overall burden on respondents by enabling the respondent to complete the assessment entirely on-line, without the need for any downloading, printing, faxing, or mailing. Respondents will be provided 10 days to complete the assessment and will be able to complete the assessment at their convenience during that time; respondents will be able to complete the assessment in one sitting or multiple sittings, if they choose, as they will be able to save a partially completed assessment and return to it for completion before submitting their responses. The data collection instrument was designed to collect the minimum information necessary for the purposes of this project (i.e., limited to 40 questions). Furthermore, the questionnaire includes skip patterns so that selected respondents will be able to entirely skip several questions that would not be applicable to them; this will also help to reduce response burden.

## 4. Efforts to Identify Duplication and Use of Similar Information

Previously user assessments have been rigorously conducted to inform strategies and activities for the design, development, and operationalization of the present BioSense Platform and its associated tools.

These previous assessment have included small data collections on Biosense's functionality and useability (each assessment included less than 9 respondents). These efforts differ from the

current proposed assessment in that they were conducted among a small select group of state and local health agency participants and did not collect information from the broad group of BioSense users at state and local health agencies; in addition, the platform and applications have seen additional development since the beginning of those collections.

A prior data collection (BioSense Platform User Satisfaction Survey, OMB No. 0920-0974) from BioSense users regarding the functionality and utility of the BioSense Platform and associated applications and related quick start guides was approved by OMB and conducted in August of 2017. The assessment was participated in by 27 site administrators and 8 non-site administrators. The findings from this previous assessment helped improve the platform. However, there is still a lack of comprehensive and rigorous data about the functional status, utility, and use of the BioSense Platform and its associated applications from the broad group of users at state and local health departments nationwide. This is because the previous assessment did not provide data from the broad group of BioSense Platform Users; in addition, the current assessment collects information on several matters not addressed in those previous assessment. Such information is needed to ensure that these tools and services are optimally meeting their intended objectives and to identify and address any potential shortcomings. In this regard, user feedback is also needed about the BioSense related technical support, training, and information that is provided by NSSP.

Four other prior data collections (1. Assessment of the STLT Health Department Data Submission Processes into BioSense 2.01. (OMB No. 0920-0879), 2. Syndromic Surveillance Practice Assessment (OMB No. 0920-0879), 3. Syndromic Surveillance: Success Stories from the Field from Not CDC Funded State and Local Health Departments (OMB No. 0920-0879), and 4. Syndromic Surveillance: Success Stories from the Field from NSSP Awardees (OMB No. 0920-0879)) regarding syndromic surveillance have been approved, however the purpose of those data collections were different than that of the present assessment and the information collected through those assessment does not address the needs addressed by the present assessment. The first data collection effort mentioned above in this paragraph, the Assessment of the STLT Health Department Data Submission Processes into BioSense 2.0 focused on collecting information about systematic barriers and challenges encountered during the onboarding process associated with BioSense 2.0 (note that BioSense 2.0 was different back then and mainly used for collecting and utilizing syndromic surveillance related data. It did not specifically collect information about the functionality and utility of the BioSense Platform and associated applications. The second data collection, the Syndromic Surveillance Practice Assessment, used a telephone interview guide to collected information about how syndromic surveillance practice is being conducted at the jurisdictional level; this information was collected from the 31 state and local health departments funded by the CDC to strengthen syndromic surveillance capacities and practice and did not specifically collect information about the functionality and utility of the BioSense Platform and associated applications. The third and fourth data collection efforts, the Syndromic Surveillance: Success Stories from the Field from Not CDC Funded State and Local Health Departments and the Syndromic Surveillance: Success Stories from the Field from NSSP Awardees aimed to learn how

syndromic surveillance systems address public health problems and impact populations and identify best practices at the local and regional level. They also were not aimed to collect specific information regarding the functionality and utility of the BioSense Platform and its associated applications from the broad group of BioSense users. These four prior data collection efforts thus did not address the information needs addressed by the present survey.

Other efforts to assess if the information to be collected by this assessment (the BioSense Platform User Survey) is already available have included review of internal documents and records, reviews of published literature, and scanning of web-based information. These efforts failed to identify availability of the information that is needed. Therefore, the current collection is not duplicative of past efforts.

**5. Impact on Small Businesses or Other Small Entities**

No small businesses will be involved in this information collection.

**6. Consequences of Collecting the Information Less Frequently**

This request is for a one time data collection. There are no legal obstacles to reduce the burden. If no data are collected, CDC will be unable to:

- Optimally understand how the BioSense Platform is being used and how well the various features and functions of its applications are performing.
- Optimally identify potential performance issues that may need to be addressed and inform future strategies and activities for maintaining and enhancing of the BioSense Platform and associated applications.
- Optimally inform strategies to ensure optimal delivery of technical assistance, training, and information to users by the program.

**7. Special Circumstances Relating to the Guidelines of 5 CFR 1320.5**

There are no special circumstances with this data collection package. This request fully complies with the regulation 5 CFR 1320.5 and will be voluntary.

**8. Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency**

This data collection is being conducted using the Generic Information Collection mechanism of the OSTLTS OMB Clearance Center (O2C2) – OMB No. 0920-0879. A 60-day Federal Register Notice was published in the Federal Register on April 27, 2017, Vol. 82, No. 80, pp 19371-19373. One non-substantive comment was received. CDC sent forward the standard CDC response.

CDC partners with professional STLT organizations, such as the Association of State and Territorial Health Officials (ASTHO), the National Association of County and City Health Officials (NACCHO), and the National Association of Local Boards of Health (NALBOH) along with the National Center for Health Statistics (NCHS) to ensure that the collection requests under individual ICs are not in conflict with collections they have or will have in the field within the same timeframe.

**9. Explanation of Any Payment or Gift to Respondents**

CDC will not provide payments or gifts to respondents.

**10. Protection of the Privacy and Confidentiality of Information Provided by Respondents**

The Privacy Act does not apply to this data collection. STLT governmental staff will be speaking from their official roles.

This data collection is not research involving human subjects.

**11. Institutional Review Board (IRB) and Justification for Sensitive Questions**

No information will be collected that are of personal or sensitive nature.

**12. Estimates of Annualized Burden Hours and Costs**

The estimate for burden hours is based on a pilot test of the data collection instrument by 5 of public health professionals. In the pilot test, the average time to complete the instrument including time for reviewing instructions, gathering needed information and completing the instrument, was approximately 14 minutes (range: 8 – 20). For the purposes of estimating burden hours, the upper limit of this range (i.e., 20 minutes) is used.

Estimates for the average hourly wage for respondents are based on the Department of Labor (DOL) Bureau of Labor Statistics for occupational employment for epidemiologist http://www.bls.gov/oes/current/oes_nat.htm. Based on DOL data, an average hourly wage of $36.65 is estimated for all 218 respondents. Table A-12 shows estimated burden and cost information.

There will be a total of 218 respondents and 218 responses.

**Table A-12:** Estimated Annualized Burden Hours and Costs to Respondents

| Data collection Instrument: Form Name | Type of Respondent | No. of Respondents | No. of Responses per Respondent | Average Burden per Response (in hours) | Total Burden Hours | Hourly Wage Rate | Total Respondent Costs |
|---|---|---|---|---|---|---|---|
| NSSP BioSense Platform User Assessment | State health department epidemiologist | 117 | 1 | 20 / 60 | 39 | $36.65 | $1,429 |
| NSSP BioSense Platform User Assessment | Local health department epidemiologist | 101 | 1 | 20 / 60 | 34 | $36.65 | $1,246 |
| | **TOTALS** | **218** | **1** | | **73** | | **$2,675** |

**13. Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers**

There will be no direct costs to the respondents other than their time to participate in each data collection.

**14. Annualized Cost to the Government**

There are no equipment or overhead costs. The only cost to the federal government would be the salary of CDC staff and an ORISE fellow (contractor) to develop the data collection instrument, collect data, and perform data analysis. The total estimated cost to the federal government is $8,361.00. Table A-14 describes how this cost estimate was calculated.

**Table A-14:** Estimated Annualized Cost to the Federal Government

| Staff (FTE) | Average Hours per Collection | Average Hourly Rate | Total Average Cost |
|---|---|---|---|
| Health Scientist – GS-14, Step 7: Provide oversight to overall project, lead the development of project protocol and instruments and oversee implementation of the survey, data analysis, and report development. | 60 | $62.26 /hour | $3,736 |
| Health Scientist – GS-13, Step 2: Provide support with survey implementation, data analysis, and report development. | 20 | $45.37 /hour | $907 |
| Orise Fellow: Support the development and implementation of the survey, conduct data | | | $3,718 |

| | | | |
|---|---|---|---|
| analysis, develop presentations and reports, and support other activities. | | | |
| **Estimated Total Cost of Information Collection** | | | **$8,361.00** |

**15. Explanation for Program Changes or Adjustments**

This is a new data collection.

**16. Plans for Tabulation and Publication and Project Time Schedule**

The data that is collected through this assessment will be housed in standard data files which may include Epi Info, MS Excel, and MS Access, and SAS. All information will be kept in secured CDC share drives and will only be accessible to program staff. The data will only be shared in aggregate form.

Analysis of data collected through this assessment will include generation of descriptive statistics, including proportions, means, and associated dispersion metrics for responses to closed-ended questions. Correlational analysis will be conducted to examine selected issues interest (e.g., association between experience level and informational needs). Qualitative analysis of responses to open ended questions will be conducted to identify key themes in the responses. SAS software will be used to conduct quantitative data analysis and MAXQDA will be used for qualitative data analysis. Results from the analysis will be used to prepare internal reports and presentations, inform an operational analysis of BioSense, and produce material for broader dissemination (including conference presentations and journal publications).

Project Time Schedule

- ✓ Design instrument ..... (COMPLETE)
- ✓ Develop protocol, instructions, and analysis plan ..... (COMPLETE)
- ✓ Pilot test instrument ..... (COMPLETE)
- ✓ Prepare OMB package ..... (COMPLETE)
- ✓ Submit OMB package ..... (COMPLETE)
- ❑ OMB approval ..... (TBD)
- ❑ Conduct data collection ..... (10 days)
- ❑ Code data, conduct quality control, and analyze data..... (3-4 weeks)
- ❑ Prepare summary report(s) ..... (3 months)
- ❑ Disseminate results/reports ..... (3 months)

**17. Reason(s) Display of OMB Expiration Date is Inappropriate**

We are requesting no exemption.

**18. Exceptions to Certification for Paperwork Reduction Act Submissions**

There are no exceptions to the certification. These activities comply with the requirements in 5 CFR 1320.9.

## LIST OF ATTACHMENTS – Section A

Attachment A – Respondent Universe
Attachment B – NSSP BioSense Platform User Assessment – MS Word Version
Attachment C – NSSP BioSense Platform User Assessment – Web Version

## REFERENCE LIST


1. Centers for Disease Control and Prevention (CDC). "National Public Health Performance Standards Program (NPHPSP): 10 Essential Public Health Services." Available at http://www.cdc.gov/nphpsp/essentialservices.html. Accessed on 8/14/14.

2. Centers for Disease Control and Prevention. Strategies for Improvement — Public Health Surveillance and Data. Available at: https://www.cdc.gov/surveillance/surveillance-data-strategies/index.html. Accessed on 1/14/2019.

3. Centers for Disease Control and Prevention. Division of Health Informatics and Surveillance. Available at http://www.cdc.gov/ophss/csels/dhis/overview.html. Accessed on 1/14/2019.

4. Centers for Disease Control and Prevention. National Notifiable Diseases Surveillance System (NNDSS). Available at https://wwwn.cdc.gov/nndss/. Accessed on April 3, 2017.

5. Centers for Disease Control and Prevention. National Syndromic Surveillance Program. NSSP Overview. Available at http://www.cdc.gov/nssp/overview.html. Accessed on April 5, 2017.

6. Centers for Disease Control and Prevention. National Syndromic Surveillance Program. BioSense. Available at https://www.cdc.gov/nssp/biosense/index.html. Accessed on 1/14/2019.

7. Centers for Disease Control and Prevention. National Syndromic Surveillance Program. Fact Sheet. Available at: https://www.cdc.gov/nssp/documents/NSSP-fact-sheet-508.pdf. Accessed on 1/14/2019.

8. Gould DW, Walker D, Yoon PW, The Evolution of BioSense: Lessons Learned and Future Directions. Public Health Reports. 2017;132 (Supplement 1):7S-11S.