

National Syndromic Surveillance Program: Mortality Data Source Development Overview

Background

The National Syndromic Surveillance Program (NSSP) is integrating mortality data into NSSP-ESSENCE. Incorporating mortality data into NSSP-ESSENCE will allow integration with illness, injury, and other health-related data, providing health officials with an additional resource to support more timely, robust analysis and response to public health threats and events of concern. The concept of integrating mortality data with other health data sources has proven successful in several local instances of ESSENCE. In line with the manner in which local health departments have piloted mortality data, discussed below, NSSP plans to accept these data in the standard Inter-Jurisdictional Exchange (IJE) electronic file format defined by the National Association for Public Health Statistics and Information Systems (NAPHSIS) IJE Committee. This is not meant to replicate statistical summaries provided by the National Center for Health Statistics, but rather to facilitate the integration of death data into public health surveillance practice.

A notable benefit of incorporating mortality data into NSSP-ESSENCE will be the availability of the literal cause of death and the relevant ICD-10 codes, both of which provide useful information during surveillance and analyses. Like the chief complaint field found within emergency department (ED) data, the “literal cause of death” is a text field that provides the first indication of cause of death. In situations where the finalization of ICD-10 data is prolonged for some records, analysts will be able to query the literal cause of death to obtain early insight. When the ICD-10 codes are updated within the record and processed by NSSP, both the literal cause of death and the ICD-10 coded values will be accessible via ESSENCE. This continuum of data will support detailed analyses and improve situational awareness and timely response to public health threats and events.

Mortality Data in NSSP

In 2020, three jurisdictions engaged in a pilot to test and refine data receipt mechanisms and processing, the data module, user interfaces, and data governance standards. Pilot activities were critical to defining requirements for moving from the staging environment into production and making the data available to users in accordance with established data use agreements.

To evaluate a variety of submission approaches, each pilot jurisdiction sent data to NSSP by a distinct method: one pilot jurisdiction’s data were pulled via Application Program Interface (API) from a local instance of ESSENCE and mapped subsequently to an IJE format and processed; the second jurisdiction’s data were obtained through Secure File Transfer Protocol (SFTP) push (the same manner in which many jurisdictions deliver ED data to NSSP); and the third jurisdiction’s data were pulled from a NAPHSIS-State and Territorial Exchange of Vital Events (STEVE) mailbox to which the jurisdiction provided NSSP access. Most personally identifiable information (PII) was removed upon receipt and parsing of the records. Data were processed and populated within staging environments.

In early 2021, two jurisdictions went live with mortality data in NSSP ESSENCE. NSSP continues to engage with partners at NAPHSIS to make dataflow from jurisdictions to NSSP via the STEVE 2.0 application even more streamlined to minimize level of effort required for jurisdictions to submit data. Several jurisdictions are in conversation with the program about bringing their mortality data into NSSP.

Participation

Interested jurisdictions may participate by contacting nssp@cdc.gov. The standard NSSP Data Use Agreement and a template of the IJE file format will be shared upon request. NSSP will work with jurisdictions, the [NSSP Community of Practice](#), and CDC leadership to determine business rules around data privacy and access. We look forward to working with you and your Office of Vital Statistics as needed to provide any additional background. NSSP greatly appreciates our public health partners’ continued interest in, engagement with, and contributions to NSSP activities.