Harnessing Near Real-Time Data for Effective Suicide Prevention Efforts

What is "near real-time data"?

Near real-time data refers to data, typically collected through syndromic surveillance systems, that track patient encounters in participating emergency departments or urgent care clinics to support early detection of potential outbreaks and spikes in public health issues. In suicide prevention efforts, near real-time data generally refers to syndromic surveillance data collected on suicidal ideation and suicide attempts. Near real-time data does not include mortality data.

The National Syndromic Surveillance Program (NSSP)

Near real-time data enables public health officials to detect, monitor, and respond to health threats in real-time by tracking patients' symptoms in various settings. Analyzing syndromic surveillance data can assist suicide prevention professionals in identifying high or unusual instances of suicidal ideation and/or suicide attempts in a community. The NSSP bringgs together data from federal, state and territorial, local, and academic partners. It provides infrastructure for aggregating near real-time data from participating emergency departments and supports public health professionals in collaboratively strengthening their use of near real-time data.

The NSSP collects patient encounter data from emergency departments. Collected data may include patient diagnosis, identified risk factors, and demographic information. Over 80% of emergency departments across the U.S., including the District of Columbia and Guam, report data to the NSSP. Data is available in the NSSP within 24 hours of an emergency department visit.

How does collecting near real-time data benefit suicide prevention efforts?

- Near real-time data provides suicide prevention professionals with a timely understanding of locations and groups experiencing changes in suicidal ideation and suicide attempt numbers.
- The information collected through near real-time data can alert suicide prevention, mental health, and public health professionals to communities or groups in need of increased suicide prevention, mental health, and crisis response services.
- Near real-time data can be used to inform the development of community resources to respond to regions, communities, and demographics in need of increased support.

What are the limitations of near real-time data?

- Near real-time data often lacks context about patient circumstances that could assist prevention professionals with identifying risk or protective factors associated with suicidal ideation and suicide attempts among certain groups.
- Not all emergency departments that report near real-time data are able to share information with partners outside of the NSSP.
- Not all emergency departments that report near real-time data use the same data standards (e.g., the same criteria to identify "suicidal ideation" in patients).
- The NSSP reflects data from 80% of emergency departments across the U.S. and may not be representative of all populations or regions.

How can states and territories use near real-time data?

- Develop alerts to inform private and public partners of spikes in suicide-related emergency department visits within specific regions, communities, or demographics.
- Ensure time, resources, services, and trainings are provided to communities in which suicidal ideation and suicide attempts are increasing.
- Monitor the ongoing impact of prevention strategies (e.g., determine if there are changes in suicidal ideation and suicide attempt rates following implementation of suicide prevention efforts).
- Share data with public and private partners to further work toward shared suicide prevention goals and objectives.

Near Real-Time Data Use Case Study: Tennessee Suicide Prevention Network

Tennessee's Near Real-Time Data Infrastructure

In Tennessee, 100% of emergency departments report data, including suicide-related data, to the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), which reports all data to the NSSP. Data collected by this system include patient's chief complaints, discharge diagnosis, age, location, identified risk factors, and county of emergency department visit. Data for patients under five years old is excluded from ESSENCE. ESSENCE data is used by the Tennessee Suicide Prevention Network (TSPN) to inform suicide prevention efforts following spikes in suicidal ideation and suicide attempts reported by emergency departments.

TSPN utilizes diverse funding streams from multiple state contracts to support syndromic surveillance data collection and ESSENCE. Tennessee state leaders with suicide-centered lived experience have championed these efforts. Tennessee has also received funding from the Centers for Disease Control and Prevention to provide additional support to four counties for developing and implementing rapid response plans that offer low or no cost ways for these counties to support their communities when ESSENCE alerts are received.

Tennessee's Use of Near Real-Time Data

Data collected through ESSENCE is sent to the TSPN ESSENCE director, who generates weekly ESSENCE alerts for all counties across the state, which are distributed through TSPN's ESSENCE listserv. The ESSENCE alerts provide data on suicidal ideation, suicide attempts, and self-harm for each county, organized by age brackets. Additionally, aggregate information on diagnoses or physical/mental health concerns recorded in emergency departments during the same week as the data on suicide behaviors is included to provide contextual information on risk factors that may be contributing to local suicide risk. Finally, the alerts include links to webpages with state and local resources, along with contact information for Tennessee's regional suicide prevention directors.

Any Tennessee community member can sign up to receive ESSENCE alerts. Subscribers have the option to select the counties for which they would like to receive alerts, or they may elect to receive alerts for all counties in Tennessee. Through Tennessee's robust ESSENCE and listserv notification system, communities across the state are better prepared to respond to increases in suicide-related behaviors.

Please see a sample Tennessee Essence alert on the next page.

Suicide-Related ESSENCE Alerts
for the week of
November 17 - 23, 2024

To find more information about suicide-related syndromic surveillance efforts in Tennessee, please view an infographic describing efforts here.

NOTE: ESSENCE alerts are generated by county of residence.

Please fill out: ESSENCE Subscriber Survey

ESSENCE Alerts Week of 11/17/2024 to 11/23/2024

ESSENCE alerts for youth 5-17 years: Carter, Cheatham, Cumberland, Dickson, Greene, Johnson, Macon, Montgomery, Putnam, Robertson, Rutherford, Stewart, Warren, Washington, and Williamson Counties.
ESSENCE alerts for adults 18-24 years: No alerts.
ESSENCE alerts for adults 25-44 years: Blount, Cocke, Hamblen, Jefferson, Morgan, and Roane Counties.
ESSENCE alerts for adults 45-64 years: Bedford, Coffee, Lawrence, Lincoln, Madison, and Sullivan Counties.
ESSENCE alerts for adults 65+: Campbell, Carter, Maury, Sevier, Shelby, and Washington Counties.

Current Trends: Week of 11/17/2024 to 11/23/2024

- Northeast (4x), Mid-Cumberland (7x), and Upper Cumberland (4x) regions alerted for ages 5-17.
- East (6x) region alerted for ages 25-44.
- South Central (4x) and West (1x) regions, and Sullivan metro alerted for ages 45-64.
- East (3x), Northeast (1x), and South Central (1x) regions, and Sullivan metro alerted for ages 65+.
  *Alerts are generated based on the Tennessee Department of Health defined regions. For more information, click here.

For information regarding your TSPN regional director, please click here.

Additional diagnoses/concerns seen during this period that can increase the risk of a child or adult attempting or dying by suicide include:

- **Risk Factors for ages 5-17:** Anxiety, depression, autism, delusion disorder, not taking medication, substance misuse, PTSD, and high conflict home.
- **Suicidal Behavior:** Self-laceration, intentional overdose, and hanging.

- **Risk Factors for ages 18-24:** No alerts.

- **Risk Factors for ages 25-44**: Hallucinations, domestic dispute, loss of family member, anxiety, substance misuse, bipolar disorder, ADHD, and PTSD.
- **Suicidal Behavior:** Self-laceration.

- **Risk Factors for ages 45-64**: Hallucinations, bipolar disorder, depression, homelessness, previous suicide attempt, loss of family member, and substance misuse.
- **Suicidal Behavior:** Self-laceration, intentional overdose, and use of motor vehicle.

- **Risk Factors for age 65+:** Depression, anxiety, Alzheimer's, dementia, pain, bipolar disorder, previous suicide attempt, and homelessness.
- **Suicidal Behavior:** Self-laceration and intentional overdose.

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As a reminder, suicide-related ESSENCE alerts are generated when a specific county/region is showing an increase in the number of individuals presenting to an emergency department for suicide-related behavior, including visits for suicide attempts, intentional self-harm, and/or suicidal thoughts and feelings. These alerts are generated based on the county of residence.

To find more information about suicide prevention programs and services available across Tennessee, including free training on how to identify and support those at risk, please visit www.preventsuicidetn.com. You can also consult the 2023-2024 Mental Health and Suicide Prevention Resource Directory.

Questions or comments about ESSENCE Alerts may be directed to Shauna Greer, ESSENCE Director at essence@tspn.org.