



ESSENCE

2021 Program Update

Electronic Surveillance System for the Early Notification of Community-based Epidemics Questions?
Want to know more? Contact cedep.surveillance@tn.gov

What is syndromic surveillance?

- **Syndromic surveillance** is the process of **monitoring information on patient symptoms** or groups of symptoms (i.e., syndrome) **to detect and respond to disease outbreaks and events** which may impact population health.
- In Tennessee, **data on emergency department (ED) visits** are collected, analyzed, and visualized using **ESSENCE** - Electronic Surveillance System for the Early Notification of Community-based Epidemics.

What other data are available to analyze in ESSENCE?

- In addition to data available from hospital emergency departments, **ESSENCE is also used** to capture, analyze and visualize data **on reportable diseases, school absenteeism, hospital resources (hospital beds, service availability), and weather.**

How has ESSENCE been used in Tennessee?

Reopening the State by Monitoring Statewide Trends



- The Tennessee Department of Health utilized the White House “gating criteria” to develop **COVID-19 Critical Indicators** to help TN state and county officials **monitor essential COVID-19 trends.**¹
- By tracking CLI and ILI symptoms reported to ESSENCE, TDH has been able to monitor the trajectory of reported CLI and ILI.
- These data were used to **determine when it was safe for various regions of the state to begin reopening**, as well as to identify “problem areas” where reported symptoms have increased.²

Drug Overdose Response & Reduction



- The ESSENCE database has allowed Davidson County to detect acute surges in overdose activity and initiate timely responses.⁴
- *“Since 2019, the myAlerts tool has detected and alerted our team to multiple spikes in overdose activity occurring in the county, most recently in early June 2021. During this incident, our Opioid/Overdose Response and Reduction Program **examined ESSENCE and local EMS data and activated a local response all within a few hours of receiving the alert.**”⁵*

Identifying Related MIS-C Cases



- Multisystem Inflammatory Syndrome in Children (MIS-C) has been recognized in some children who’ve been infected with SARS-CoV-2.³
- TDH **identifies cases of MIS-C in ESSENCE to enhance surveillance efforts for this condition.**

Suicide Prevention



- Weekly syndromic surveillance is conducted by the TDH **Suicide Prevention Program** using ESSENCE.
- This program **monitors ED visits** related to intentional self-harm, suicidal ideation, and suicide attempts **in children** under the age of 18.⁶



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TN Department of Health

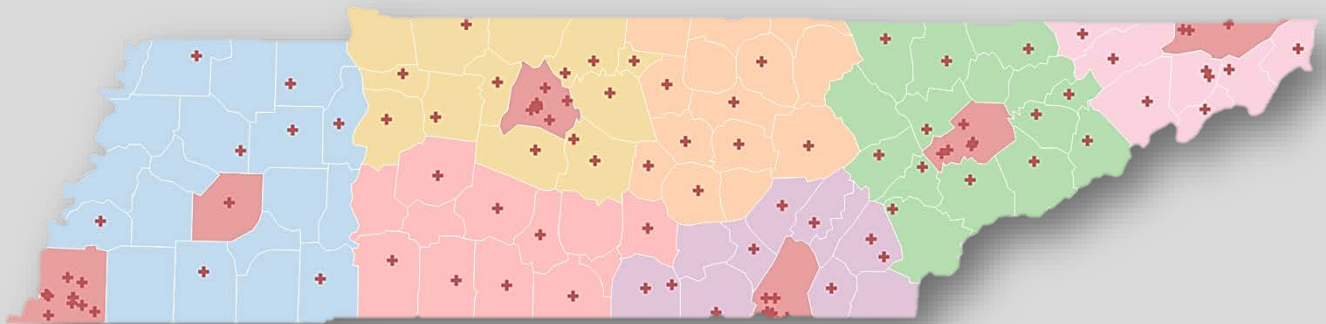
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What is next for syndromic surveillance in Tennessee?



Continue to increase the number of Tennessee hospitals providing data to ESSENCE.

103 Tennessee hospitals currently contribute some form of data to ESSENCE. The data received by these hospitals represent over 100k Emergency Department messages each day.



Improve the timeliness and completeness of data available in ESSENCE to facilitate faster responses.

88% of ED data is available in ESSENCE within 24 hours of patient visit. Another 10% is available within 48 hours.

96% is the average percentage of data completeness for ED data received by ESSENCE. By increasing the completeness of Diagnosis and Admit Reason Descriptions, this average would increase to nearly 100%.



Continue to promote the use of the ESSENCE database across Tennessee.

Connect ESSENCE users in Tennessee to each other to share valuable lessons learned through experience.

Improve the quality of written resources and guidance.

Increase availability of training, both in-person and online.

References

¹<https://trumpwhitehouse.archives.gov/openingamerica/>

²<https://www.tn.gov/content/dam/tn/health/documents/cedep/novel-coronavirus/CriticalIndicatorReport.pdf>

³https://www.tn.gov/content/dam/tn/health/documents/immunizationrequirements/summit/2020/10-AFM&MIS-C_Jones.pdf

⁴<https://www.tn.gov/content/dam/tn/health/documents/pdo/Overdose%20Report%202020.pdf>

⁵Statement from a Nashville Metro Public Health Department epidemiologist

⁶<https://www.tn.gov/content/dam/tn/health/documents/child-fatality-reports/2018-Child%20Fatality-Review-report%20.pdf>