DEPARTMENT OF HEALTH

Adverse Childhood Experiences (ACEs) Syndromic Surveillance Dashboard Guidance

2025

Contents

Information on ACEs Syndromic Surveillance Data

Why is this data important?

Data collection and analysis of emergency department (ED) visits related to ACEs help us to better understand how ACEs impact the life of Minnesotans. This data can be used to inform public health response, programs, and policies related to ACEs.

Where do the data come from?

Data come from the Minnesota Department of Health's syndromic surveillance system, which collects near real-time data from Minnesota health systems. This system uses a combination of free text and diagnosis codes to classify visits.

Syndromic surveillance uses near real-time data and statistical tools to detect and investigate public health-related topics. It helps track outbreaks, monitor their spread, assess response efforts, and supports public health officials in quickly addressing local health threats.

Who/what is included in the data?

All emergency department visits occurring in Minnesota for Minnesota residents.

Visits related to the suspected child abuse and neglect and sexual violence among children were limited to children less than 18 years of age that had visits with a known county of residence in Minnesota.

Visits related to mental health conditions, acute alcohol consumption, suicide-related behaviors, nonfatal drug overdose, and suspected suicide attempt among adults were limited to adults 18 years of age and older that had visits with a known county of residence in Minnesota.

Who/what is not included in the data?

- Events or incidents related to ACEs occurring or treated outside an ED.
- Visits related to ACEs seen at federal facilities, including the Veteran's Affairs or Indian Health Service facilities.
- Visits without a known county of residence?

How are ACEs-related visits identified?

ACEs-related visits from the syndromic surveillance system are identified using syndrome definitions developed by the National Syndromic Surveillance Program (NSSP), Centers for Disease Control and Prevention (CDC), and local and state health departments. A syndrome definition is a group of standards that identify visits related to a health condition or outcome of interest in health care facilities. A syndrome definition consists of one or more of the following:

- Discharge diagnosis codes: standardized codes used by medical professionals for clinical diagnosis and insurance billing purposes. In syndromic data, two coding systems are commonly used—the International Classification of Diseases, Clinical Modification (ICD CM) and the Systemized Nomenclature of Medicine, Clinical Terms (SNOMED CT). For this

dashboard, codes from the latest revisions of the ICD CM—the ninth and tenth revisions, also known as ICD-9-CM and ICD-10-CM respectively—were utilized.

- Keywords: terms related to the health condition or outcome of interest that are used to identify records of interest by searching in free text fields (e.g., patient chief complaint, admission reason, and triage notes)
- Negations: Discharge diagnosis codes or keywords specified in the syndrome definition to exclude falsely identified records.

For a full list of the syndrome definitions that are used to identify ACEs-related data shown in this dashboard, see Appendix I below.

How far back do the data go?

The data on this dashboard are available from 2023 onward as participation of healthcare facilities in MDH's syndromic surveillance system improved around this time.

What else should I know about the data?

Limitations of syndromic surveillance data

- **Syndromic surveillance data should not be used as a sole data source for estimates of ACEs.**
  - Syndromic surveillance data are initially based on diagnoses, signs, and symptoms when a patient first presents to the ED. Visits are considered suspected and are not confirmed. Additionally, data are not final, might change, and usually have a short delay in reporting to allow time for information to be updated.
  - The life circumstances around a child experiencing an ACE are known to impact whether a family or caregiver seeks treatment for the child. Being un- or underinsured, hours-long wait times at EDs, or the choice to seek care in non-emergent medical offices can keep some ACEs from appearing in ED records.
    - Additionally, some children may not have an adult with whom they feel comfortable sharing their experiences or is capable of seeking treatment for a child. Therefore, when looking at ED data, we must recognize that many ACEs are not captured by the medical system.
  - Syndromic surveillance data should be supplemental to other data sources that measure ACEs which are not necessarily captured by ED visits. These data sources include the Minnesota Student Survey (MSS) and the Youth Behavioral Risk Factor Surveillance System (YRBSS).
- **Results are interpreted at the visit-level, not the patient-level.** Syndromic surveillance tracks ED visits, not patients. Thus, if an individual patient visits the ED more than once, each visit would be counted separately.
- **The amount and quality of data reported to MDH changes over time**. The number of health care facilities participating in the Minnesota syndromic surveillance system has grown over time (i.e., facilities are being added). Additionally, data quality may differ

between participating facilities. To account for these differences, the data on this dashboard only come from participating facilities that consistently submitted informative weekly discharge diagnoses for at least 75% of their visits and had steady weekly ED visit volume (measured by having a weekly ED visit standard deviation of 35% or less).

For information on hospital coverage by region, see Appendix III below.

Further data considerations

- **Emergency department visits related to ACEs identified through the syndromic surveillance system rely on provider documentation.** Estimates may be impacted by 1) presence or absence of provider training and awareness in identifying ACEs-related visits in the ED, or 2) unconscious attitudes or assumptions related to race and ethnicity and other demographic factors including socioeconomic status.
- Certain ACEs categories are non-exclusive. This means that certain visits are not limited to one category. For example, a sexual violence visit may also be a visit related to suspected child abuse and neglect. Therefore, the visit would also be counted as a "Sexual violence" visit and a "Suspected child abuse and neglect" visit.

Using the ACEs Syndromic Surveillance Dashboard

The *ACEs Syndromic Surveillance Dashboard* includes data and visualizations of state and regional level trends for Minnesotans treated in emergency departments with signs and symptoms of ACEs.

General Information

How often will the data be updated?

The *ACEs Syndromic Surveillance Dashboard* will be updated every three months. The latest data shared in the dashboard may change as more visits are finalized.

What are the different measure types used in this dashboard?

- Rate is a measure of frequency with which an event occurs in a defined population over time. Rates were calculated by dividing the number of ED visits related to each ACEs indicator by the total number of ED visits during the time period of interest and for a defined geographic region. The rates in the ACEs Syndromic Surveillance Dashboard are shown as a number per 10,000 ED visits during a time period. For each region, a relative percent change was calculated to compare the rates of the latest available year to rates of the previous year. Relative percent change was calculated by dividing the difference between the current and past year rates by the past year rate.

Why is some data not shown?

- **Data suppression** is used to protect patient privacy. Data are suppressed when visit counts are less than 5. When monthly visit counts are less than 10, the quarterly rates are shown instead.

How is geography information determined?

Region is based off the county in which the patient resides. County is based off the patient's residential zip code at the time of visit to the emergency department.

Navigating the Dashboard

Section 1: Suspected Abuse/Neglect and Sexual Violence Among Children

- **What can be answered with the data in the 'Suspected Abuse/Neglect and Sexual Violence Among Children' section?**
  - How have patterns in ED visits related to suspected abuse/neglect and sexual violence among children changed over time?
- **What data visualizations are in the 'Suspected Abuse/Neglect and Sexual Violence Among Children' section?**
  - Rate (per 10,000 ED visits) of visits related to suspected abuse/neglect and sexual violence among children by quarter.
- **Any other tips for the 'Suspected Abuse/Neglect and Sexual Violence Among Children' section?**
  - Hover over the lines in the data visualization to see the exact rates.
  - Quarterly rates are shown when visit counts are less than 10.

Section 2: Experiences Impacting Community Members

- **What questions can be answered with the data in the 'Experiences Impacting Community Members' section?**
  - How have patterns in ED visits related to experiences impacting community members changed over time?
- **What data visualizations are in the 'Experiences Impacting Community Members' section?**
  - Rate (per 10,000 ED visits) of visits related to mental health conditions, acute alcohol consumption, suicide-related behaviors, nonfatal drug overdose, and suspected suicide attempt among adults by month.
  - Rate (per 10,000 ED visits) of visits related intimate partner violence among adults by quarter.
- **Any other tips for the 'Experiences Impacting Community Members' section?**
  - Hover over the lines in the data visualizations to see the exact rates.
  - Quarterly rates are shown only when visit counts are less than 10.

Section 3: Geography

- What questions can be answered with the data in the 'Geography' section?

- What are the yearly rates per 10,000 ED visits of each ACEs indicator in my region?
- **What data filters are in the 'Geography' section?**
  - The data filter, located on the top left side and right above the map in Section 3, is only applied to the 'Geography' section.
  - Data filters available in this section are the type of ACEs indicator.
- **What data visualization are in the 'Geography' section?**
  - Map that shows the rate of ED visits for each ACEs indicator by health care coalition regions. Gray regions indicate that the rate is suppressed due to visit counts less than 5 in that region. More information on the eight health care coalition regions can be found in Appendix II.
  - A table on the right side of the map that shows rates (per 10,000 ED visits) for the selected ACEs indicator by region, year, and relative percent change. The numbers will automatically update based on what ACEs indicator you have selected. A positive relative percent change indicates that the rate increased between the two years while a negative relative percent change indicates that the rate decreased between the two years. An asterisk present in the table indicates that the rate is suppressed due to visit counts less than 5.
- **Any tips for the 'Geography' section?**
  - Use the drop-down list located on the top left of Section 3 and right above the map to select an ACEs indicator.
  - Hover over the data visualization to see the exact rates for each region.

What should I do if I still have questions?

Contact health.injuryprevention@state.mn.us with any questions.

Appendix I: Syndrome definitions

Direct exposure to ACEs among Children (less than 18 years of age)

- CDC Suspected Child Abuse and Neglect (version 1)
- CDC Sexual Violence (version 3) - this syndrome definition version is uploaded in ESSENCE but may not be reflected in the Knowledge Repository

Experiences impacting community members (18 years of age and older)

- CDC Mental Health (version 1) - this syndrome definition version is uploaded in ESSENCE but may not be reflected in the Knowledge Repository
- CDC Alcohol (version 1) - this syndrome definition version is uploaded in ESSENCE but may not be reflected in the Knowledge Repository
- SDC Suicide Related (version 1)
- CDC All Drug Overdose Parsed (version 3)
- CDC Suicide Attempt (version 2)
- CDC Intimate Partner Violence (version 2) - this syndrome definition version is uploaded in ESSENCE but may not be reflected in the Knowledge Repository

Appendix II: Health Care Coalition (HCC) Regions

- **Central**
  - Benton
  - Cass
  - Chisago
  - Crow Wing
  - Isanti
  - Kanabec
  - Mille Lacs
  - Morrison
  - Pine
  - Sherburne
  - Stearns
  - Todd
  - Wadena
  - Wright
- **Metro**
  - Anoka
  - Carver
  - Dakota
  - Hennepin
  - Ramsey
  - Scott
  - Washington
- **Northeast**
  - Aitkin
  - Carlton
  - Cook
  - Itasca
  - Koochiching
  - Lake
  - St. Louis
- **Northwest**
  - Becker
  - Beltrami
  - Clearwater
  - Hubbard
  - Kittson
  - Lake of the Woods
  - Mahnomen
  - Marshall
  - Norman
  - Pennington

- Polk
- Red Lake
- Roseau

- **South Central**
  - Blue Earth
  - Brown
  - Faribault
  - Le Sueur
  - Martin
  - McLeod
  - Meeker
  - Nicollet
  - Sibley
  - Waseca
  - Watonwan
- **Southeast**
  - Dodge
  - Fillmore
  - Freeborn
  - Goodhue
  - Houston
  - Mower
  - Olmsted
  - Rice
  - Steele
  - Wabasha
  - Winona
- **Southwest**
  - Big Stone
  - Chippewa
  - Cottonwood
  - Jackson
  - Kandiyohi
  - Lac qui Parle
  - Lincoln
  - Lyon
  - Murray
  - Nobles
  - Pipestone
  - Redwood
  - Renville
  - Rock
  - Swift
  - Yellow Medicine

- **West Central**
  - Clay
  - Douglas
  - Grant
  - Otter Tail
  - Pope
  - Stevens
  - Traverse
  - Wilkin

Appendix III: Hospital Coverage by Health Care Coalition Regions

This table was updated on 06/12/2025.

Health care Coalition Regions	# of facilities onboarded	Total # of facilities in region	% Onboarded
Central	17	18	94%
Metro	23	27	85%
Northeast	15	16	94%
Northwest	7	13	54%
South Central	13	14	93%
Southeast	11	11	100%
Southwest	14	23	61%
West Central	5	9	56%
Grand Total	102	131	78%

Minnesota Department of Health
Injury and Violence Prevention Section
PO Box 64975
St. Paul, MN 55164-0975
651-201-5000
health.injuryprevention@state.mn.uys
www.health.state.mn.us

To obtain this information in a different format, call: 651-200-5000.