Syndromic Surveillance Overview for Comprehensive Suicide Program

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Syndromic Surveillance
Connecticut Department of Public Health
* What is Syndromic Surveillance (SyS)?

* Public Health monitoring system for emergency department and urgent care center cases.
* Monitors for illness symptoms and overdoses in patients that present for emergency or urgent care.
* Data can be used to detect early signs of an outbreak, emerging disease, or mass overdose (near real-time data).
* Collaborative surveillance between federal, state, and local health departments (LHDs).
How is SyS Data Collected?

ED and Urgent Care data → Health Monitoring Systems (HMS) → NSSP Essence

CT SyS (Epicenter)
Data Collected from EDs and Urgent Care Centers

- Date and Time
- DOB and Age
- Gender
- Resident Zip Code and County
- Facility and Facility County
- Race and Ethnicity
- Discharge ICD-10 Codes
- Disposition
- Chief Complaint
- Triage Notes

38 Emergency Departments
37 Urgent Care Centers
* Syndromic Surveillance data for CT Department of Public Health and Local Health Departments and Districts.
* Categorizes cases into syndromes based on discharge ICD-10 codes, chief complaints, and triage notes.
* Computer algorithm searches chief complaint and triage notes for key words and phrases to help categorize cases into CDC and/or Connecticut-defined syndromes.
* Search functions available to search for key words or phrases without using pre-defined syndromes
Comprehensive Suicide Program
* CSP Classifications

* Connecticut-defined classifications
  * Mental Health
  * Suicidal Ideation
  * Suicidal Attempt
    * Asphyxiation
    * Firearm
    * Intentional Overdose
* Mental Health

* Work-in-progress.
* About 70% sensitivity.
* Anxiety, depression, OCD, suicidal ideation/attempt, hallucinations, and psychological evaluations.
* Current definition still classifies some chest pain and SOB as “anxiety.”
* About 85-90% sensitivity.
* Specific ICD codes for SI (R45.851).
* Key phrases for variations of “I want to die.”
* Difficult to remove unrelated cases if the triage notes include a detailed medical history with previous SI visits.

Suicidal Ideation
Suicidal Attempt

- About 90% sensitive.
- ICD codes specific for SA (T14.91).
- Key phrases include variations of “I tried to kill myself.”
- Difficult to remove unrelated cases with detailed medical notes of previous attempts.
- Definition further divided into means of attempt, if available.
Means of Suicide Attempt

Weeks 22-Weeks 48: June - November

About 95% sensitive

About 95% sensitive

About 50% sensitive
*Seasonal Trends*

Connecticut Towns (Regional) EpiCenter Syndromic Surveillance System

Percentage of ED Visits for "Suicide Attempt" Connecticut Suicide, Suicidal Ideation (Classifier: Connecticut Suicide) Category, 2021–2022 Season Compared to Past Seasons

- **Sept.**
- **Oct.**
- **Nov.**
- **Dec.**
- **Jan.**
- **Feb.**
- **Mar.**
- **Apr.**
- **May**
- **June**
- **July**

- **Mar. ’20 (COVID)**

**Seasons**
- 2021–2022
- 2020–2021
- 2019–2020
- 2018–2019

**MMWR Week**

- 35
- 38
- 41
- 44
- 47
- 50
- 53
- 3
- 6
- 9
- 12
- 15
- 18
- 21
- 24
- 27
- 30
- 33
Monthly report available through Epicenter.

Counts and rates of SI and SA by county and LHD.

Counts of how a suicide was attempted, when available.

### CSP Monthly Publication - by County

#### Rates of SI/SH ED Visits in Demographic Breakdown Graphs in Connecticut per 10,000 Visits by County, December 1, 2020 - November 30, 2021

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>SUICIDAL IDEATION</th>
<th>SUICIDE ATTEMPT</th>
<th>SA BY ASPHYXIATION</th>
<th>SA BY FIREARM</th>
<th>SA BY POISONING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairfield</td>
<td>185.6 (5680)</td>
<td>35.4 (1082)</td>
<td>2.9 (88)</td>
<td>.4 (12)</td>
<td>10.1 (308)</td>
</tr>
<tr>
<td>Hartford</td>
<td>272.0 (10731)</td>
<td>36.8 (1451)</td>
<td>3.4 (133)</td>
<td>.5 (19)</td>
<td>7.5 (294)</td>
</tr>
<tr>
<td>Litchfield</td>
<td>244.6 (1770)</td>
<td>34.3 (248)</td>
<td>2.5 (18)</td>
<td>a</td>
<td>10.8 (78)</td>
</tr>
<tr>
<td>Middlesex</td>
<td>227.2 (1465)</td>
<td>27.0 (174)</td>
<td>2.8 (18)</td>
<td>a</td>
<td>5.4 (35)</td>
</tr>
<tr>
<td>New Haven</td>
<td>318.7 (12035)</td>
<td>72.2 (2725)</td>
<td>6.4 (242)</td>
<td>2.7 (102)</td>
<td>10.2 (387)</td>
</tr>
<tr>
<td>New London</td>
<td>227.2 (2960)</td>
<td>32.1 (421)</td>
<td>2.9 (38)</td>
<td>.5 (7)</td>
<td>9.8 (129)</td>
</tr>
<tr>
<td>Tolland</td>
<td>239.2 (1137)</td>
<td>42.9 (204)</td>
<td>3.6 (17)</td>
<td>a</td>
<td>9.0 (43)</td>
</tr>
<tr>
<td>Windham</td>
<td>230.4 (1438)</td>
<td>36.5 (228)</td>
<td>3.0 (19)</td>
<td>a</td>
<td>8.8 (55)</td>
</tr>
</tbody>
</table>

In keeping with confidentiality regulations, numbers and rates are not disclosed for between one and five events (“a”) and marked as “aa” when 6 or greater but suppressed to preserve censoring of an adjacent cell. Rates based on counts less than or equal to 20 are not calculated due to the instability of rates (“b”). These data are preliminary, and data quality and completeness may vary over time.
Rates of SI/SH ED Visits in Demographic Breakdown Graphs in Connecticut per 10,000 Visits by Gender, December 1, 2020 - November 30, 2021

<table>
<thead>
<tr>
<th>GENDER (M/F)</th>
<th>SUICIDAL IDEATION</th>
<th>SUICIDE ATTEMPT</th>
<th>SA BY ASPHYXIATION</th>
<th>SA BY FIREARM</th>
<th>SA BY POISONING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>227.2 (17683)</td>
<td>46.3 (3603)</td>
<td>2.3 (188)</td>
<td>.5 (40)</td>
<td>11.1 (861)</td>
</tr>
<tr>
<td>Male</td>
<td>288.4 (19546)</td>
<td>43.2 (2930)</td>
<td>5.8 (393)</td>
<td>1.6 (110)</td>
<td>6.9 (468)</td>
</tr>
</tbody>
</table>

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CSP Monthly Publication - by Age

Rates of SI/SH ED Visits in Demographic Breakdown Graphs in Connecticut per 10,000 Visits by Age, December 1, 2020 - November 30, 2021

<table>
<thead>
<tr>
<th>AGE</th>
<th>SUICIDAL IDEATION</th>
<th>SUICIDE ATTEMPT</th>
<th>SA BY ASPHYXIATION</th>
<th>SA BY FIREARM</th>
<th>SA BY POISONING</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>17.3 (203)</td>
<td>1.9 (22)</td>
<td>a</td>
<td>a</td>
<td>.0 (0)</td>
</tr>
<tr>
<td>10-17</td>
<td>702.4 (5553)</td>
<td>136.9 (1082)</td>
<td>aa</td>
<td>a</td>
<td>41.6 (329)</td>
</tr>
<tr>
<td>18-24</td>
<td>420.6 (5291)</td>
<td>76.9 (965)</td>
<td>6.3 (79)</td>
<td>1.2 (15)</td>
<td>19.2 (241)</td>
</tr>
<tr>
<td>25-34</td>
<td>348.5 (7726)</td>
<td>60.1 (1255)</td>
<td>6.8 (141)</td>
<td>1.1 (22)</td>
<td>10.8 (225)</td>
</tr>
<tr>
<td>35-44</td>
<td>312.5 (5933)</td>
<td>52.7 (1001)</td>
<td>5.8 (110)</td>
<td>1.2 (23)</td>
<td>9.7 (185)</td>
</tr>
<tr>
<td>45-54</td>
<td>295.5 (5258)</td>
<td>50.2 (894)</td>
<td>5.1 (91)</td>
<td>1.6 (23)</td>
<td>8.4 (150)</td>
</tr>
<tr>
<td>55-64</td>
<td>237.3 (4790)</td>
<td>40.9 (820)</td>
<td>2.6 (52)</td>
<td>2.0 (40)</td>
<td>5.6 (116)</td>
</tr>
<tr>
<td>65-74</td>
<td>116.5 (1775)</td>
<td>18.5 (282)</td>
<td>.7 (11)</td>
<td>.5 (7)</td>
<td>3.3 (51)</td>
</tr>
<tr>
<td>75-84</td>
<td>56.6 (670)</td>
<td>10.0 (119)</td>
<td>.5 (6)</td>
<td>.5 (6)</td>
<td>1.4 (16)</td>
</tr>
<tr>
<td>85+</td>
<td>61.3 (529)</td>
<td>10.8 (93)</td>
<td>1.4 (12)</td>
<td>a</td>
<td>1.9 (18)</td>
</tr>
</tbody>
</table>

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Rates of SI/SH ED Visits in Demographic Breakdown Graphs in Connecticut per 10,000 Visits by Race, December 1, 2020 - November 30, 2021

<table>
<thead>
<tr>
<th>RACE</th>
<th>SUICIDAL IDEATION</th>
<th>SUICIDE ATTEMPT</th>
<th>SA by Asphyxiation</th>
<th>SA by Firearm</th>
<th>SA by Poisoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native (AI/AN)</td>
<td>239.7 (57)</td>
<td>58.9 (14)</td>
<td>a</td>
<td>.0 (0)</td>
<td>a</td>
</tr>
<tr>
<td>Asian (A)</td>
<td>195.0 (347)</td>
<td>29.8 (53)</td>
<td>a</td>
<td>a</td>
<td>5.1 (9)</td>
</tr>
<tr>
<td>Black or African American (B)</td>
<td>271.5 (6634)</td>
<td>47.6 (1162)</td>
<td>4.3 (105)</td>
<td>2.0 (49)</td>
<td>6.9 (168)</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander (NH/PI)</td>
<td>194.9 (43)</td>
<td>68.0 (15)</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>White (W)</td>
<td>276.2 (22010)</td>
<td>48.8 (3893)</td>
<td>3.8 (306)</td>
<td>1.0 (76)</td>
<td>10.6 (848)</td>
</tr>
<tr>
<td>Other</td>
<td>213.5 (5550)</td>
<td>35.3 (918)</td>
<td>4.3 (112)</td>
<td>6.15</td>
<td>7.7 (201)</td>
</tr>
<tr>
<td>n/a</td>
<td>195.8 (2595)</td>
<td>36.1 (478)</td>
<td>3.2 (42)</td>
<td>.5 (6)</td>
<td>7.5 (99)</td>
</tr>
</tbody>
</table>

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Rates of SI/SH ED Visits in Demographic Breakdown Graphs in Connecticut per 10,000 Visits by Ethnicity, December 1, 2020 - November 30, 2021

<table>
<thead>
<tr>
<th>ETHNICITY</th>
<th>SUICIDAL IDEATION</th>
<th>SUICIDE ATTEMPT</th>
<th>SA BY ASPHYXIATION</th>
<th>SA BY FIREARM</th>
<th>SA BY POISONING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic or Latino</td>
<td>217.9 (7124)</td>
<td>39.1 (1279)</td>
<td>4.5 (146)</td>
<td>.7 (23)</td>
<td>8.2 (269)</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
<td>269.8 (28204)</td>
<td>46.6 (4873)</td>
<td>3.7 (391)</td>
<td>aa</td>
<td>9.4 (986)</td>
</tr>
<tr>
<td>n/a</td>
<td>228.3 (1908)</td>
<td>45.6 (381)</td>
<td>4.3 (36)</td>
<td>a</td>
<td>8.9 (74)</td>
</tr>
</tbody>
</table>

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Thank You!

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