Mental health and substance use during COVID-19

Presenters:
Marcy Campbell
Steffie Goodman
Kristen Daly
Introduction and Context
Colorado and national mental health context

- Significant unmet mental health needs existed prior to the pandemic
- Colorado: 40th for Adults and 48th for youth in 2018
- Healthy Kids Colorado Survey 2019
  - 30.5% or nearly 1 in 3 youths said they were so sad and hopeless that they stopped regular activity
    - 55.6% for LGBTQ
  - 16% or 1 in 6 youth seriously considered suicide
    - 39.5% for LGBTQ
COVID has complex impacts on mental health

- Isolation, economic challenges, grief
- Young Adults
- First Responders, Medical staff, Frontline workers
- Those who have contracted COVID-19
Our data sources for today

- Syndromic surveillance emergency department visit data for Boulder County (SyS)
- Vital statistics (i.e., death certificates)
Emergency department visits (ESSENCE/SyS)

Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)
National Syndromic Surveillance Platform (NSSP)
Emergency Department Visits by Boulder County Residents

- Suicide Attempt
- Alcohol Overdose
- Opioid Overdose
- Sexual Violence

- Age (0-9, 10-17, 18-24, 25-29, 30-39, 40-49, 50-59, 60-69, 70+)
- Gender
- Race/Ethnicity
Cumulative ED visits by Boulder County residents by year
ED visits by Boulder County residents by year
Trend in two-week incidence of new COVID-19 cases among Boulder County residents, by age group (1/4/21)
Suicide Attempt

2017-2020
Cumulative ED visits for suicide attempt by Boulder County residents by year

Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)
Cumulative emergency department visits by Boulder County residents for suicidal attempt by year, age 18-24

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)
### Percent increase of cumulative emergency department visits by Boulder County residents for suicide attempt by age group, 2017-2020

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Average 2017-2019</th>
<th>2020</th>
<th>% increase in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>5.33</td>
<td>17</td>
<td>219%</td>
</tr>
<tr>
<td>10-17</td>
<td>112</td>
<td>127</td>
<td>13%</td>
</tr>
<tr>
<td>18-24</td>
<td>84</td>
<td>129</td>
<td>53%</td>
</tr>
<tr>
<td>25-29</td>
<td>40</td>
<td>85</td>
<td>113%</td>
</tr>
<tr>
<td>30-39</td>
<td>67.67</td>
<td>97</td>
<td>43%</td>
</tr>
<tr>
<td>40-49</td>
<td>51.67</td>
<td>92</td>
<td>77%</td>
</tr>
<tr>
<td>50-59</td>
<td>45.67</td>
<td>72</td>
<td>57%</td>
</tr>
<tr>
<td>60-69</td>
<td>26</td>
<td>66</td>
<td>150%</td>
</tr>
<tr>
<td>70+</td>
<td>18</td>
<td>61</td>
<td>239%</td>
</tr>
</tbody>
</table>

Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE)
Gender comparison of emergency department visits for suicidal attempt by Boulder County residents by year

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)
Percent by race/ethnicity of emergency department visits for suicide attempt by Boulder County residents, (average years 2017-2019, 2020) compared to overall percent by race/ethnicity Boulder County population.
Cumulative emergency department visits for alcohol overdose in Boulder County, by year

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (AKA Syndromic Surveillance)
Percent increase of cumulative emergency department visits by Boulder County residents for alcohol overdose by age group, 2017-2020

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Average 2017-2019</th>
<th>2020</th>
<th>% increase in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-29</td>
<td>180</td>
<td>230</td>
<td>28%</td>
</tr>
<tr>
<td>30-39</td>
<td>264</td>
<td>404</td>
<td>53%</td>
</tr>
<tr>
<td>40-49</td>
<td>283</td>
<td>373</td>
<td>32%</td>
</tr>
<tr>
<td>50-59</td>
<td>352</td>
<td>509</td>
<td>45%</td>
</tr>
<tr>
<td>60-69</td>
<td>241</td>
<td>379</td>
<td>6%</td>
</tr>
</tbody>
</table>
Gender comparison of emergency department visits for alcohol overdose by Boulder County residents by year

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent Female</th>
<th>Percent Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>2018</td>
<td>36%</td>
<td>64%</td>
</tr>
<tr>
<td>2019</td>
<td>37%</td>
<td>63%</td>
</tr>
<tr>
<td>2020</td>
<td>33%</td>
<td>67%</td>
</tr>
</tbody>
</table>

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)
Percent by race/ethnicity of emergency department visits for alcohol overdose by Boulder County residents, (average years 2017-2019, 2020)compared to overall percent by race/ethnicity Boulder County population

<table>
<thead>
<tr>
<th>Percent of Boulder County Population</th>
<th>Average 2017-2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>White non-Hispanic</td>
<td>77%</td>
<td>81%</td>
</tr>
<tr>
<td>Hispanic any race</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>Any other race non-Hispanic</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Opioid Overdose

2017-2020
Cumulative emergency department visits by Boulder County residents for opioid overdose by year, age 25-29

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)
Cumulative emergency department visits of Boulder County residents for opioid overdose by year, age 18-24
Percent increase of cumulative emergency department visits by Boulder County residents for opioid overdose by age group, 2017-2020

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Average 2017-2019</th>
<th>2020</th>
<th>% increase in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-29</td>
<td>14</td>
<td>34</td>
<td>143%</td>
</tr>
<tr>
<td>40-49</td>
<td>9</td>
<td>15</td>
<td>67%</td>
</tr>
<tr>
<td>50-59</td>
<td>6</td>
<td>22</td>
<td>267%</td>
</tr>
<tr>
<td>70+</td>
<td>7</td>
<td>14</td>
<td>100%</td>
</tr>
</tbody>
</table>
Gender comparison of emergency department visits for opioid overdose by Boulder County residents by year

Year | Percent Female | Percent Male
--- | --- | ---
2017 | 39% | 61%
2018 | 40% | 60%
2019 | 33% | 67%
2020 | 37% | 63%

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)
Percent by race/ethnicity of emergency department visits for opioid overdose by Boulder County residents, (average years 2017-2019, 2020) compared to overall percent by race/ethnicity Boulder County population.

- **White non-Hispanic**:
  - 2017-2019: 85%
  - 2020: 83%

- **Hispanic any race**: 9% in 2017-2019 and 3% in 2020.

- **Any race (non-White) non-Hispanic**: 14% in 2017-2019 and 13% in 2020.

Source: Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) (AKA Syndromic Surveillance)
Summary of findings

• Indicators most concerning
  – Suicide attempt
    • 9/9 age groups affected (13-239% increase in 2020)
    • F>M
  – Alcohol overdose
    • 5/9 age groups affected (6-53% increase in 2020)
    • M>F
  – Opioid overdose
    • 4/9 age groups affected (67-267% increase in 2020)
    • M>F

• Race/ethnicity does not seem to be a driving force
• Limitations of data
  – ED data only
  – Gender binary only
Death data from Vital Statistics

https://www.cdc.gov/nchs/nvss/about_nvss.htm
Number of Suicide Deaths in Colorado by Month 2018-2020

Please note that 4th Quarter 2020 data is not yet complete.

Suicide Deaths as a Percent of Total Deaths by Age Group in Colorado and Boulder County 2018-2020

* indicates fewer than three events in category.


Please note that 4th Quarter 2020 data is not yet complete.
Number of Drug Poisoning Deaths in Colorado by Month 2018-2020


Please note that 4th Quarter 2020 data is not yet complete.
Number of Poisoning Deaths from Methamphetamine, Heroin, and Any Opioid Analgesic from 2018-2020


Please note that 4th Quarter 2020 data is not yet complete.
Number of Fentanyl Deaths in Colorado and Boulder County 2018-2020

<table>
<thead>
<tr>
<th>Year</th>
<th>Fentanyl deaths CO</th>
<th>Fentanyl deaths Boulder</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>102</td>
<td>0</td>
</tr>
<tr>
<td>2019</td>
<td>214</td>
<td>8</td>
</tr>
<tr>
<td>2020</td>
<td>445</td>
<td>12</td>
</tr>
</tbody>
</table>


Please note that 4th Quarter 2020 data is not yet complete.
National Trends

Find more information at CoHID Colorado Health Information Dataset
Conclusion and implications
Strengths & limitations

Strengths: observe severe outcomes related to MH and SU and analyze by demographics

Limitations: SyS is ED only and gender binary; Vital Statistics- 2020 is incomplete and small local numbers

General limitations: Only capture most severe outcomes
Implications- what can we do?

• Communication around this data
• Looking upstream before severe outcome
• Policy and Funding implications
• Access- Telehealth
• Other?
Discussion question

What other questions do you need answered by mental health and substance use data, both quantitative and qualitative?