Kentucky Resident Drug Overdose in 2020

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with the Kentucky Injury Prevention and Research Center

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**Educational Need/Practice Gap**

*Educational Need:* Timely information on drug overdose in Kentucky can help inform and evaluate evidence-based interventions.

*Practice Gap:* Connections between data analysts and community stakeholders must be built to improve the dissemination and utility of drug overdose statistics.
Objectives

• Describe the trends in drug overdose among Kentucky residents before and during 2020
• Discuss the data available through KIPRC and its limitations
• Utilize KIPRC data for grant applications, reporting periods, and community assessment
Expected Outcomes

By the end of this presentation, you should be able to...

- Explain recent trends in drug overdose among Kentucky residents
- Access data that meets the needs of your organization
What Is KIPRC?

• Stands for the Kentucky Injury Prevention and Research Center
• Partnership between the University of Kentucky College of Public Health and the Kentucky Department for Public Health
• Purpose: Decrease injury burden in the Commonwealth due to
  ▪ Substance use
  ▪ Occupational and fall hazards
  ▪ Trauma (e.g., motor vehicle accidents, suicide, homicide, abuse, etc.)
  ▪ Fire and other disasters
• Website: [http://www.kiprc.uky.edu](http://www.kiprc.uky.edu)
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Road Map

- Hospital discharge data
  - Emergency department visits
    - Nonfatal drug overdoses
- Electronic death certificates data
  - Drug overdose deaths
Road Map

What?
KY drug overdose mortality rates

Who?
Drug overdose by age, sex, race, and ethnicity

Where?
County maps of drug overdose

How?
Drug types involved in drug overdoses

When?
Monthly drug overdose in 2019, 2020, and 2021
Age-Adjusted Rate

Annual Age-Adjusted Rates of Drug Overdose Deaths, 2010-2020

The age-adjusted rate for the U.S. in 2020 was not available at the time this graph was created.

Produced by the Kentucky Injury Prevention and Research Center as a bona fide agent for the Kentucky Department for Public Health, June 2021.

**Descriptive Statistics for 2020**

### Nonfatal Drug Overdose Emergency Department Visits*

<table>
<thead>
<tr>
<th>Age</th>
<th>Mean: 41.0 years</th>
<th>SD: 22.7 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male: 56.1%</td>
<td>Female: 43.9%</td>
</tr>
<tr>
<td></td>
<td>Race: White: 87.5%</td>
<td>Black: 10.9%</td>
</tr>
<tr>
<td></td>
<td>Ethnicity: Hispanic: 1.5%</td>
<td>Non-Hispanic: 98.4%</td>
</tr>
</tbody>
</table>

### Drug Overdose Deaths*

<table>
<thead>
<tr>
<th>Age</th>
<th>Mean: 42.4 years</th>
<th>SD: 12.8 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>Male: 69.1%</td>
<td>Female: 30.9%</td>
</tr>
<tr>
<td></td>
<td>Race: White: 90.2%</td>
<td>Black: 8.7%</td>
</tr>
<tr>
<td></td>
<td>Ethnicity: Hispanic: 1.2%</td>
<td>Non-Hispanic: 98.7%</td>
</tr>
</tbody>
</table>

**TOTAL:** 12,894

**TOTAL:** 1,965

*Among Kentucky residents*
Geography

Age-Adjusted Rate of ED Visits for Nonfatal Drug Overdose by Kentucky County of Residence, 2020

Age-Adjusted Rate

- None
- Suppressed
- Under 100
- 100 to 199.9
- 200 to 299.9
- 300 to 399.9
- 400 or higher

Counties with the highest rates for emergency department (ED) visits:
1) Estill County with 581.7 visits per 100,000 residents (n=73)
2) Grant County with 580.9 visits per 100,000 (n=138)
3) Taylor County with 551.0 visits per 100,000 residents (n=128)

Age-Adjusted Drug Overdose Mortality Rate by Kentucky County of Residence, 2020

Age-Adjusted Mortality Rate

- None
- Suppressed
- Under 10
- 10 to 19.9
- 20 to 39.9
- 40 to 59.9
- 60 or higher

Counties with the highest mortality rates:
1) Knott County with 121.1 deaths per 100,000 residents (n=19)
2) Clark County with 104.3 deaths per 100,000 residents (n=35)
3) Bourbon County with 98.4 deaths per 100,000 residents (n=18)

Rates are expressed as the number of events per 100,000 residents. Rates based on counts less than 10 are suppressed in accordance with state data management policy. Rates based on counts less than 20 are unstable and should be interpreted with caution.

Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, July 2021. Data are provisional and subject to change.
Monthly Trends


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Monthly Trends


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Data are provisional and subject to change.
Drug Types

Annual Counts of Emergency Department Visits for Nonfatal Drug Overdoses Among Kentucky Residents by Drug Type, 2016–2020

Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, July 2021. Data are provisional and subject to change.
Drug Types

Annual Counts of Drug Overdose Deaths Among Kentucky Residents by Drug Type, 2016–2020

Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, July 2021. Data are provisional and subject to change.

Drug Types
- Fentanyl
- Methamphetamine
- Benzodiazepines
- Cocaine

All Drug Overdose Deaths

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Drug Combinations

Annual Counts of Drug Overdose Deaths Involving Fentanyl and Methamphetamine in Combination with at Least One Additional Drug, 2016–2020

Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, July 2021. Data are provisional and subject to change.
Drug Combinations

The count of nonfatal stimulant overdoses (excluding cocaine overdoses) is based on the number of emergency department visits and likely represents an undercount of the total number of nonfatal psychostimulant overdoses among Kentucky residents. Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, July 2021. Data are provisional and subject to change.
Nonfatal drug overdoses included events with any diagnostic code of T36–T50. Specific drug types were identified using the following codes:

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>ICD-10 Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin</td>
<td>T40.1</td>
</tr>
<tr>
<td>Non-Heroin Opioid</td>
<td>T40.0, T40.2–T40.4, or T40.6</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>T42.4</td>
</tr>
<tr>
<td>Other Psychostimulants</td>
<td>T43.6</td>
</tr>
<tr>
<td>Cannabis</td>
<td>T40.7</td>
</tr>
<tr>
<td>Cocaine</td>
<td>T40.5</td>
</tr>
</tbody>
</table>

On October 1 of 2015, hospitals switched from the ICD-9 to the ICD-10 coding system. While there is not a direct relationship between codes in the two systems, the following definitions were used to identify drugs before and after this change.

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>ICD-9 Codes</th>
<th>ICD-10 Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Opioid</td>
<td>9650.0–9650.3, 9650.9, or E850.0–E850.2</td>
<td>T40.0–T40.4 or T40.6</td>
</tr>
<tr>
<td>Other Psychostimulants</td>
<td>9697.0–9697.3, 9697.9, or E854.2</td>
<td>T43.6</td>
</tr>
</tbody>
</table>
Definitions

Drug overdose deaths included events with an underlying cause of death code of X40–X44, X60–X64, X85, or Y10–Y14. Drug overdose deaths involving specific drug types also included the following supplemental cause of death codes:

<table>
<thead>
<tr>
<th>Drug Type</th>
<th>ICD-10 Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fentanyl</td>
<td>T40.4 plus a textual mention of fentanyl</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>T43.6 plus a textual mention of methamphetamine</td>
</tr>
<tr>
<td>Prescription (RX) Opioids</td>
<td>T40.0, T40.2, or T40.3</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>T42.4</td>
</tr>
<tr>
<td>Heroin</td>
<td>T40.1</td>
</tr>
<tr>
<td>Cocaine</td>
<td>T40.5</td>
</tr>
<tr>
<td>Gabapentin</td>
<td>T42.7 plus a textual mention of gabapentin</td>
</tr>
<tr>
<td>Fentanyl Analogs</td>
<td>T40.4 plus a textual mention of a fentanyl analog</td>
</tr>
</tbody>
</table>
Disclaimers

Data are provisional and subject to change. Counts less than five and rates based on counts less than 10 are suppressed in accordance with state data management policy. Rates based on counts less than 20 are unstable and should be interpreted with caution.

Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, August 2021. This report was supported by Cooperative Agreement Number NU17CE924971-02-01, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the U.S. Department of Health and Human Services.
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Available Indicators

- Drug Overdose Deaths
- Emergency Department Visits
- Inpatient Hospitalizations
- Nonfatal Drug Overdoses
- Emergency Medical Service Calls
- Neonatal Abstinence Syndrome

Indicators of Drug Use Injury
Common Stratifications

- **Location**
  - County
  - Service area
  - Region
  - Statewide

- **Drug Type**
  - Limited by use of ICD-10 codes and text scan

- **Demographics**
  - Sex
  - Age
  - Race
  - Ethnicity
Additional Data Sources

- KASPER: The Kentucky All Schedule Prescription Electronic Reporting database, for prescribing patterns and trends.
  - Prescriber information
    - Degree or specialty
  - Pharmacy information
    - Location
  - Prescription information
    - Drug types, dosage, refills
  - Patient information
    - Demographics, polypharmacy, prescription history

- Emergency Medical Services
  - Available sooner than other datasets
    - Used to track trends, not capture burden
  - Includes naloxone use and refusal of transport
  - Limited ability to capture demographics
    - More precise location data
Limitations

- Identifiable information, like names, addresses, or dates of birth, are not available.
- Line level data (i.e., individual entries) are not available.
- Any counts less than five and rates based on counts less than 10 are not reportable.
Limitations

- Available drug types based on ICD-10 codes
- Dataset reporting periods
  - Hospital data updated quarterly with a 3- to 6-month lag
  - Death data updated weekly with a 3-month lag
  - EMS partially updated weekly, fully updated monthly
- Nonfatal overdose can only count visits, not patients
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Online Resources

• Annual Reports on Drug Overdose
  • Reports specific to datasets
    • Emergency Department Visits
    • Inpatient Hospitalizations
    • Electronic Death Certificates
  • Detailed breakdown of statewide data
    • Demographics
    • Drug Types

• https://kiprc.uky.edu/sites/default/files/2021-08/ED%20Report%20Updated.pdf
Online Resources

• County profiles: Dashboard for all Kentucky counties
  • Nonfatal drug overdose
  • Drug overdose deaths
  • Hospital encounters with a diagnosis of substance use disorder

• https://kiprc.uky.edu/resources
How to Submit a Data Request

Email
kiprc_data_request@L.uky.edu

Include your name, organization, contact information, and a description of the data you wish to receive.

• Include desired range of dates and the demographics in which you are interested (e.g., specific age ranges, gender, etc.).

Requests typically take at least two weeks to fulfill.
KyOD2A Happenings offers quarterly updates on drug overdose prevention research, initiatives, reports, and resources in the Commonwealth.

Contact KIPRInfo@uky.edu if you wish to receive future newsletters by email.
Thank you!

Please direct questions to Meghan Steel at meghansteel@uky.edu