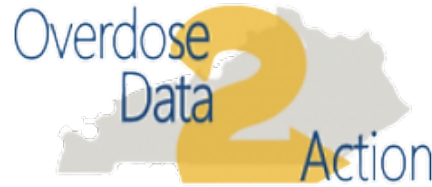


# KENTUCKY OVERDOSE DATA 2 ACTION COMMUNITY SUMMIT



## Kentucky Resident Nonfatal Drug Overdoses and Substance Use-Related Morbidity



**Kentucky Public Health**  
Prevent. Promote. Protect.

January 27, 2022



# GOALS

1

Introduce the data sources available through KIPRC and common groupings for analysis.

2

Explain recent trends in drug overdose and substance-use-associated morbidity among Kentucky residents.

3

Connect community leaders in drug overdose prevention with data that can help guide practice.



# INTRODUCTION



**Mira Mirzaian**

- KIPRC Epidemiologist
- Drug Overdose Surveillance and Prevention



**Meghan Steel**

- KIPRC Epidemiologist
- Drug Overdose Surveillance and Prevention





**KentuckyPublicHealth**  
Prevent. Promote. Protect.

# WHAT IS KIPRC?



**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



**KIPRC**

*A Safer Kentucky—It's No Accident!*

Website: <https://kiprc.uky.edu/>



**KentuckyPublicHealth**  
Prevent. Promote. Protect.

# OD2A & DOTAC

Kentucky Overdose Data to Action  
(KyOD2A)



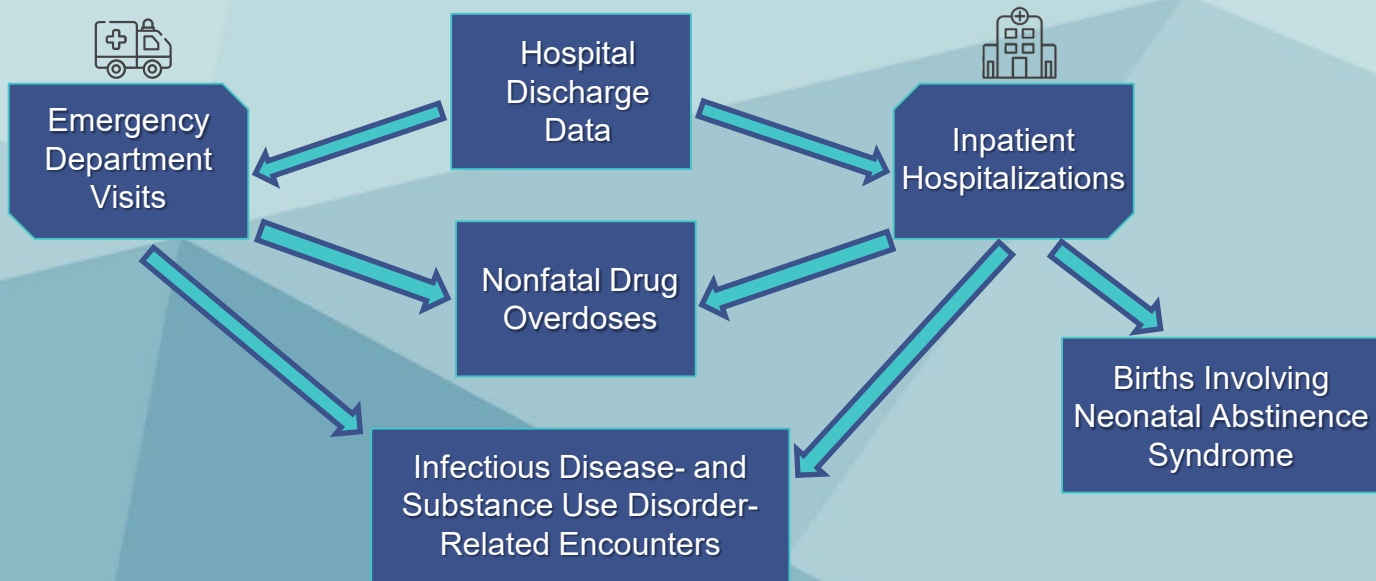
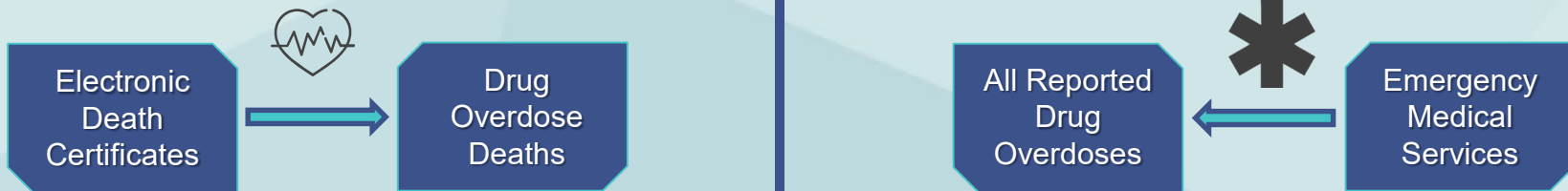
*Drug Overdose Surveillance*



Drug Overdose Technical  
Assistance Core (DOTAC)



# AVAILABLE DATA SETS



# COMMON GROUPINGS



## LOCATION

- County
- Service Area
- Region
- Statewide



## DRUG TYPE

- Limited use of ICD-10 codes and text scan



## DEMOGRAPHICS

- Sex
- Age
- Race
- Ethnicity



# 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.

Drug types available for analysis are based on ICD-10 codes.





# LIMITATIONS, CONT.

## Data set 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

## Hospital data count visits, not patients

- A person who experiences multiple nonfatal overdoses will be counted each time.
- Each hospital encounter for a person with an infectious disease of interest or condition related to substance use will be included in reported numbers.

Overdose reversed by emergency medical services is not charged by hospital, thus some cases are not counted.





# DEFINITIONS

Drug overdose deaths include 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 include the following supplemental cause of death codes:

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



# DEFINITIONS, CONT.

Nonfatal drug overdoses include events with any diagnostic code of T36–T50. Specific drug types are identified using the following codes:

Drug Type	ICD-10 Codes
Any Opioid	T40.0–T40.4 or T40.6
Heroin	T40.1
Non-Heroin Opioid	T40.0, T42.2–T40.4, or T40.6
Benzodiazepines	T42.4
Other Psychostimulants	T43.6
Cannabis	T40.7
Cocaine	T40.5



# DEFINITIONS, CONT.

The numbers for substance use disorder and infectious disease given in this presentation represent encounters of care and may be greater than the number of patients treated. A patient who has multiple hospital encounters for conditions pertaining to their substance use disorder or infectious disease status will be counted for each separate encounter.

Both of the following codes for neonatal abstinence syndrome must be present for an inpatient hospitalization to be counted. Newborns are grouped by their year of birth, not discharge date (unlike other ED and inpatient indicators).

Infectious Disease	ICD-10 Codes
Hepatitis A	B15.0
Hepatitis C	B17.10, B182, B192, or Z2252
Human immunodeficiency virus (HIV) disease	B20 or Z21
Endocarditis	B37.6, I33, I38, I39, or A3282

Indicator	ICD-10 Codes
Neonatal abstinence syndrome	P96.1 AND Z38

Substance Use Disorder Diagnosis	ICD-10 Codes
Opioid-related disorders	F11.1–F11.9
Cannabis-related disorders	F12.1–F12.9
Sedative-, hypnotic-, or anxiolytic-related disorders	F13.1–F13.9
Cocaine-related disorders	F14.1–F14.9
Other stimulant-related disorders	F15.1–F15.9
Hallucinogen-related disorders	F16.1–F16.9
Other psychoactive substance-related disorders	F19.1–F19.9

# 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, December 2021. This report was supported by Cooperative Agreement Number NU17CE924971, 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.

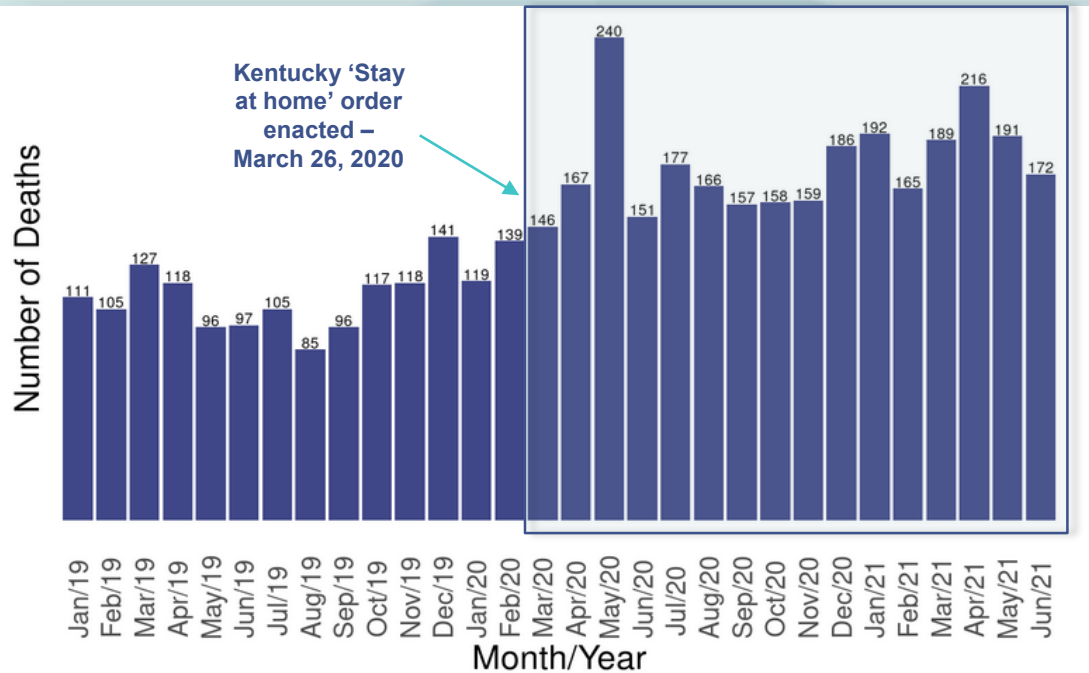


# OVERVIEW OF DRUG OVERDOSE IN KENTUCKY





# Figure 1. Monthly Number of Drug Overdose Deaths among Kentucky Residents, January 2019–June 2021

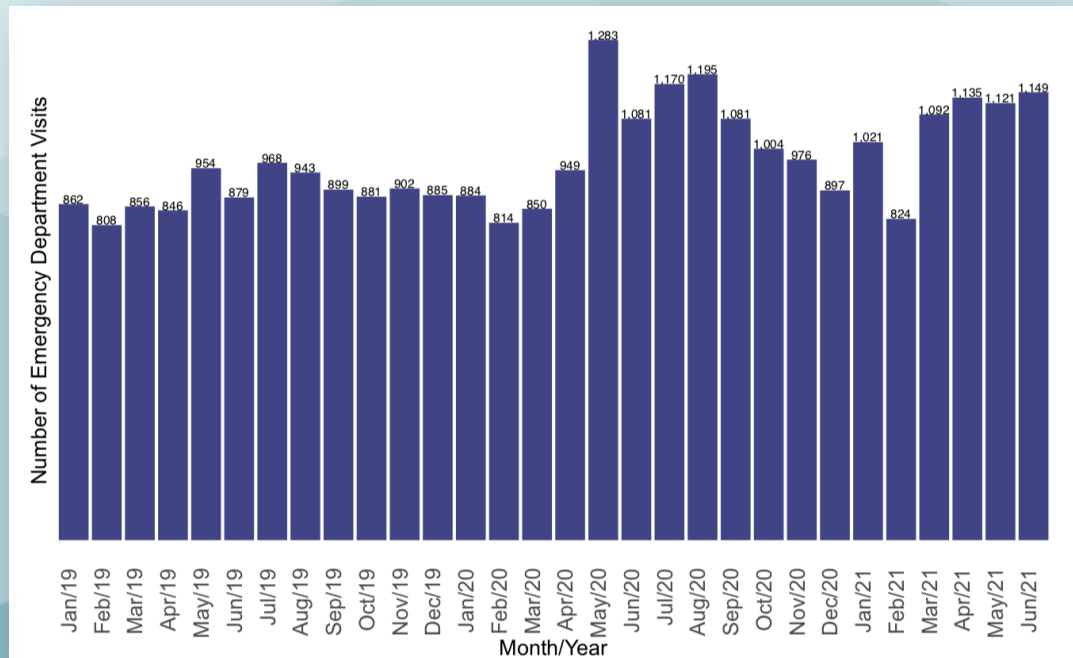


For more information, see **Annual Report: Kentucky Resident Drug Overdose Deaths, 2016-2020:**

<https://kiprc.uky.edu/sites/default/files/2022-01/OD%20Death%20Annual%20Report.pdf>



## Figure 2. Monthly Number of Emergency Department Visits for Nonfatal Drug Overdose among Kentucky Residents, January 2019–June 2021

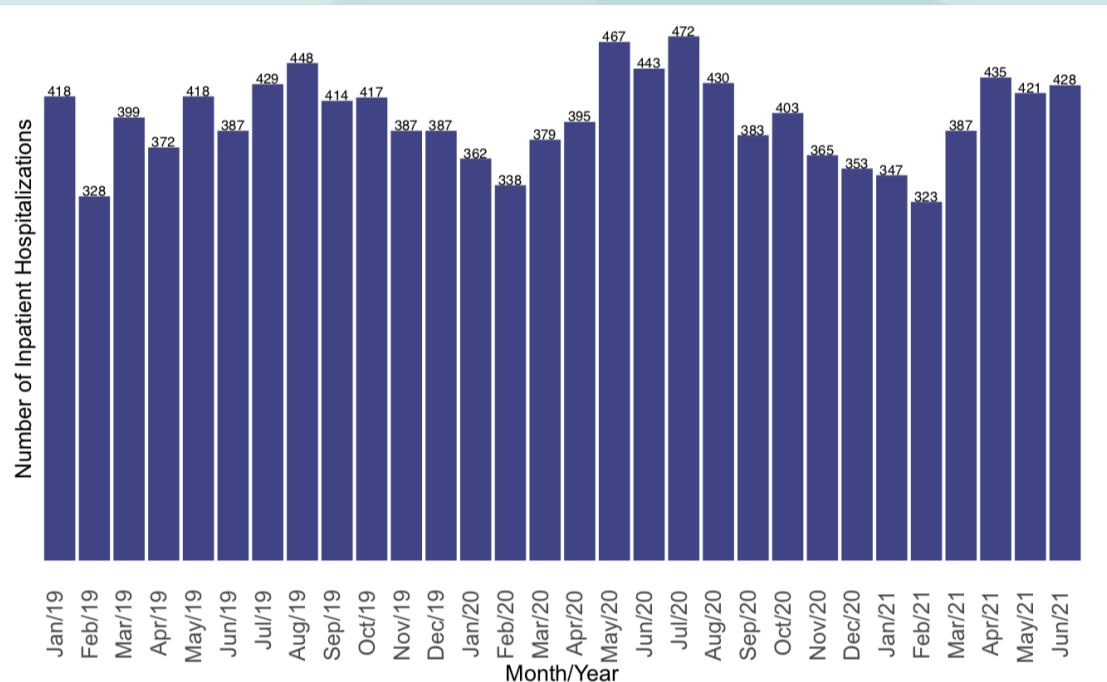


For more information, see **Annual Report: Kentucky Resident Emergency Department Admissions for Nonfatal Drug Overdoses, 2016-2020:**

<https://kiprc.uky.edu/sites/default/files/2021-08/ED%20Report%20Updated.pdf>



## Figure 3. Monthly Number of Inpatient Hospitalizations for Nonfatal Drug Overdose among Kentucky Residents, January 2019–June 2021



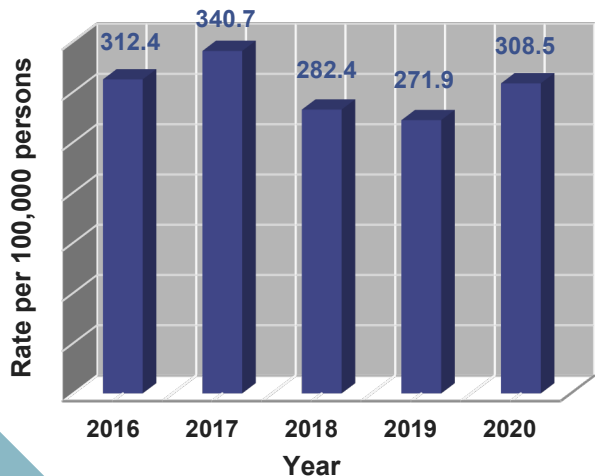
For more information, see **Annual Report: Kentucky Resident Inpatient Hospitalizations for Nonfatal Drug Overdoses, 2016-2020:**

<https://kiprc.uky.edu/sites/default/files/2021-09/IP%20Annual%20Report%202021%20FINAL%5B3275%5D.pdf>

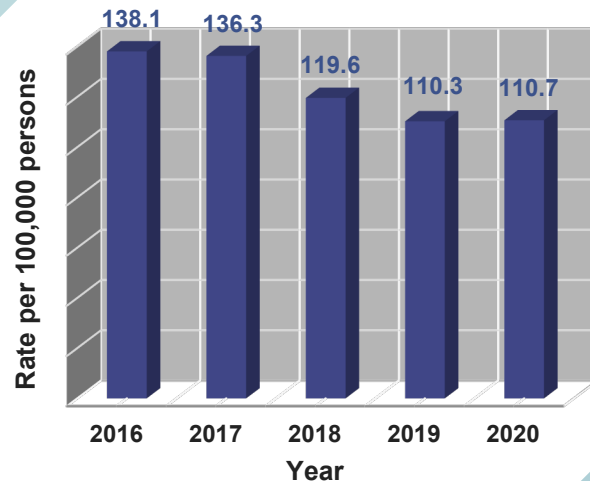


**Figure 4. Annual Age-Adjusted Rate of ED Visits and IP Hospitalizations for Nonfatal Drug Overdose among Kentucky Residents\*, 2016–2020**

## Emergency Department Visits



## Inpatient Hospitalizations



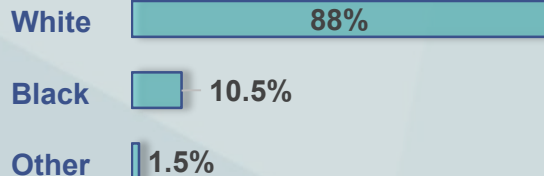
*\*Rate per 100,000 persons*



# Figure 5. Descriptive Statistics of Nonfatal Drug Overdoses among Kentucky Residents, 2020

**Total Nonfatal Drug Overdoses: 16,974**

## Race

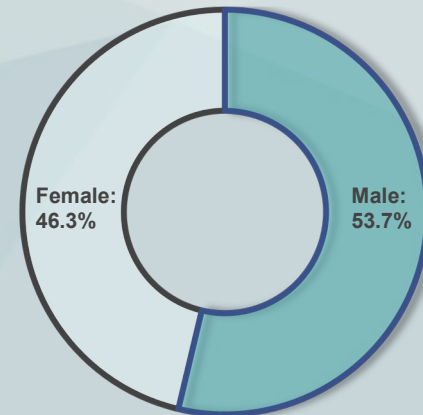


## Age

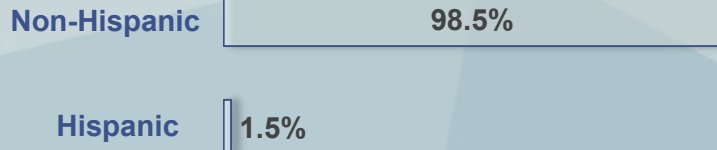
**Mean: 37.2 years**

**Standard Deviation:  
17.7 years**

## Sex



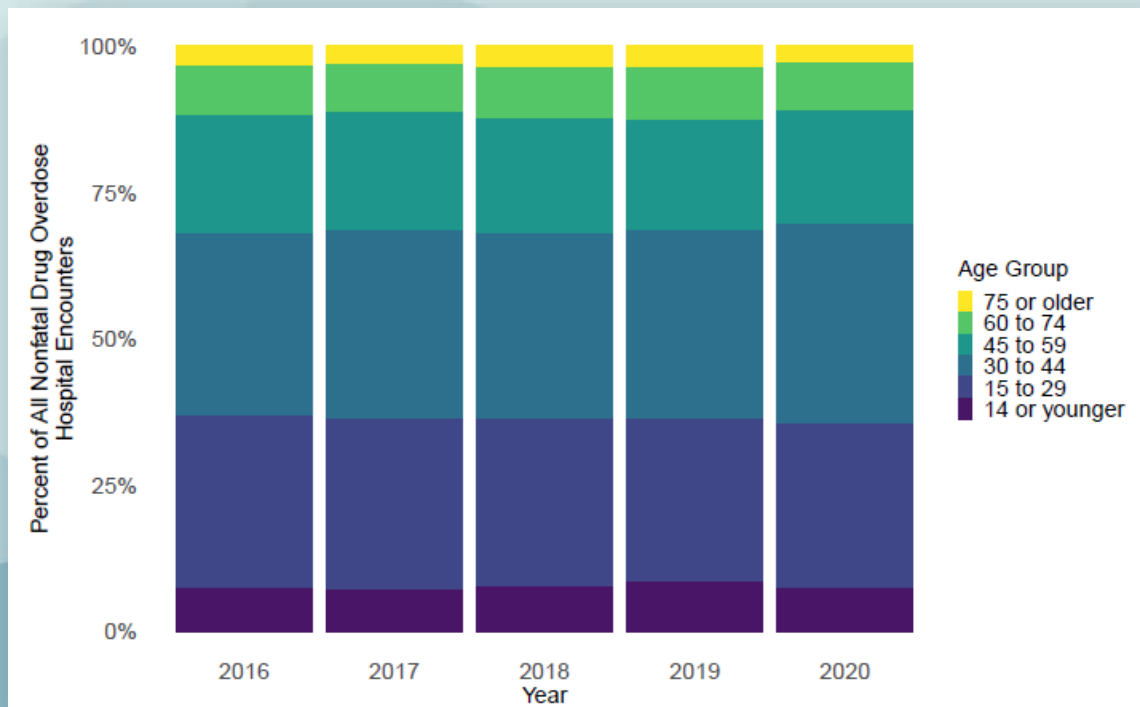
## Ethnicity



# Age and Drug Overdose in Kentucky

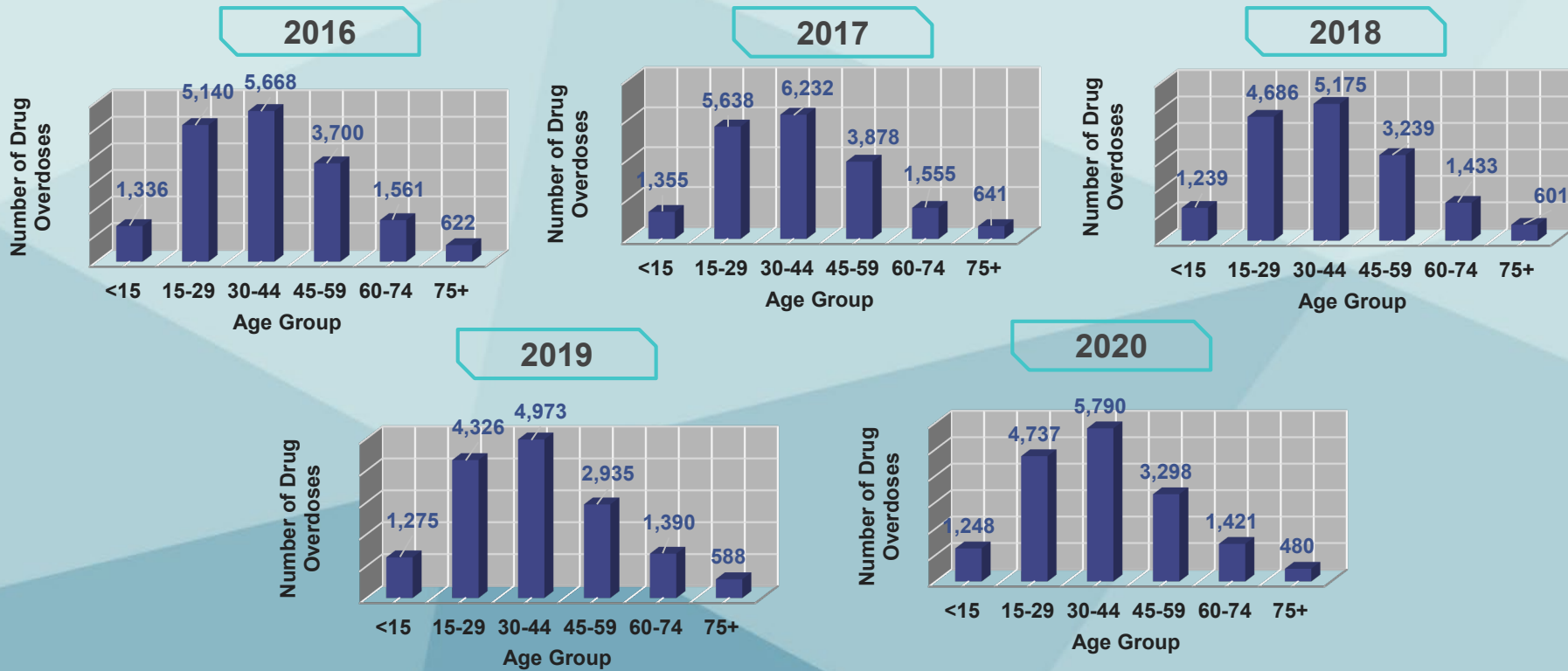


## Figure 6. Age Distribution of Kentucky Residents Involved in Nonfatal Drug Overdoses by Year, 2016–2020





## Figure 7. Yearly Number of Nonfatal Drug Overdoses among Kentucky Residents by Age Group, 2016–2020

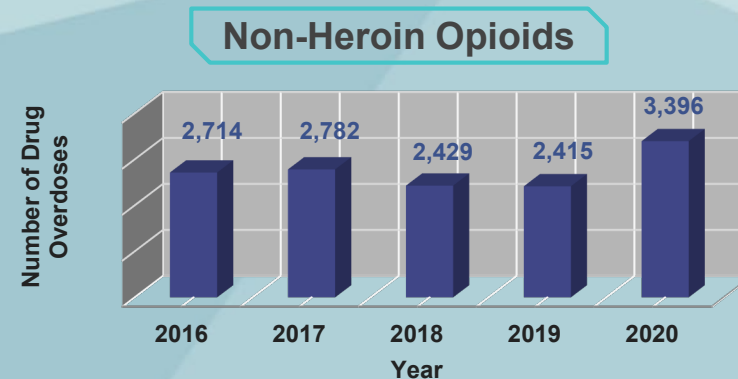
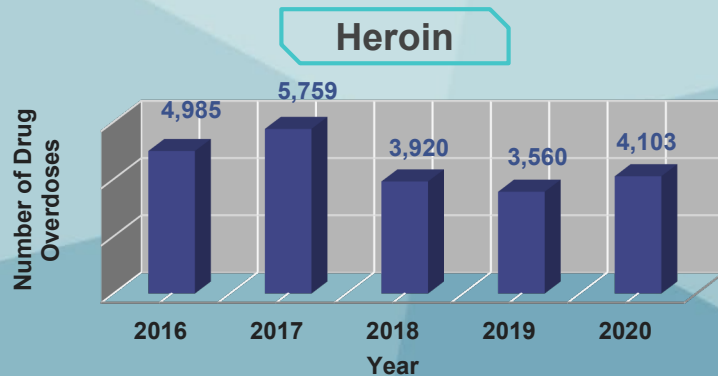
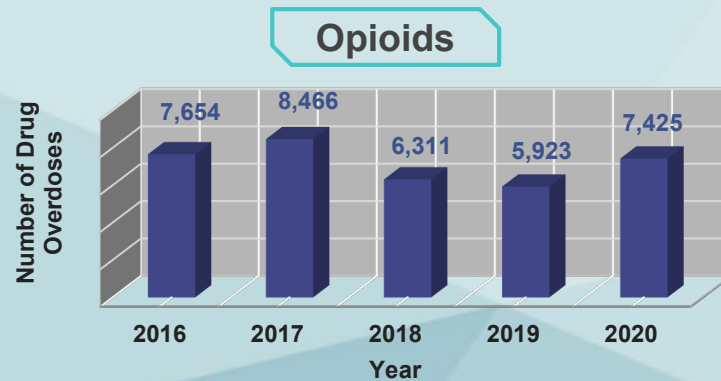
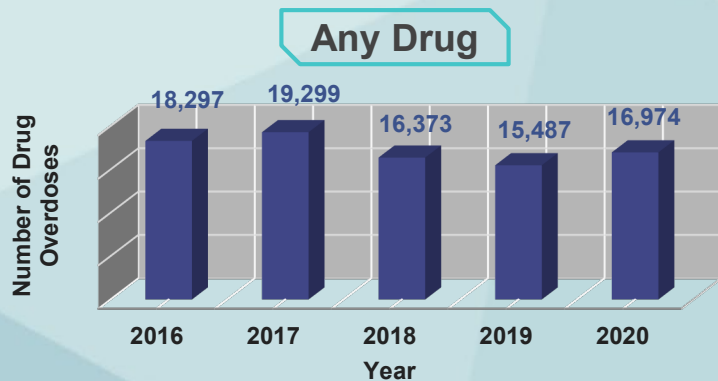


# Drug Types Involved in Kentucky Nonfatal Drug Overdose





# Figure 8. Yearly Number of Drug Overdoses among Kentucky Residents by Drug Type, 2016–2020

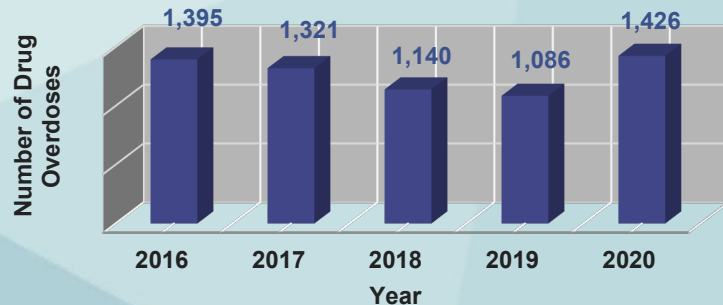




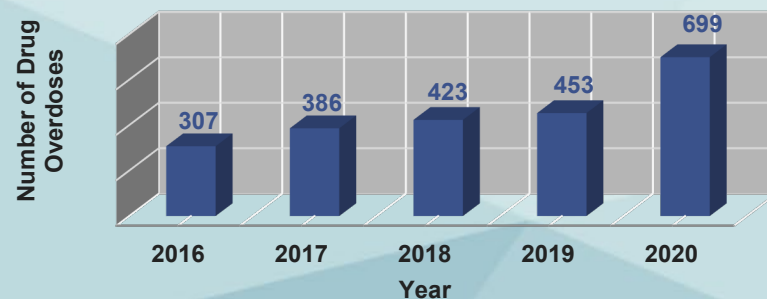


## Figure 8, Cont. Yearly Number of Drug Overdoses among Kentucky Residents by Drug Type, 2016–2020

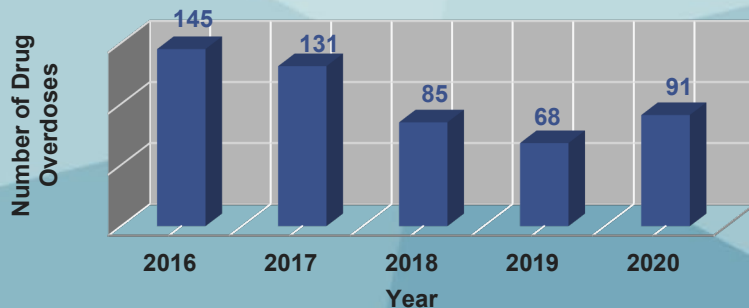
### Prescription Opioids



### Synthetic Opioids



### Methadone



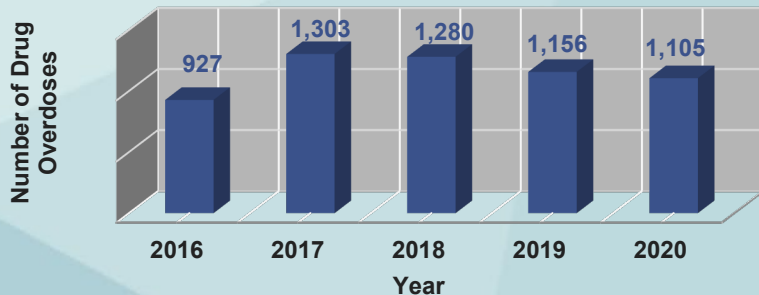
### Benzodiazepines





# Figure 8, Cont. Yearly Number of Drug Overdoses among Kentucky Residents by Drug Type, 2016–2020

## Psychostimulants



## Cocaine



## Cannabis





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## Figure 9. Rates of Opioid Overdose among Kentucky Residents, 2016–2020



2016

2017

2018

2019

2020

Rate per 100,000 People

None	Suppressed	Under 50	50 to 99	100 to 149	150 to 199	200 to 249	250 to 299	300 or higher
------	------------	----------	----------	------------	------------	------------	------------	---------------

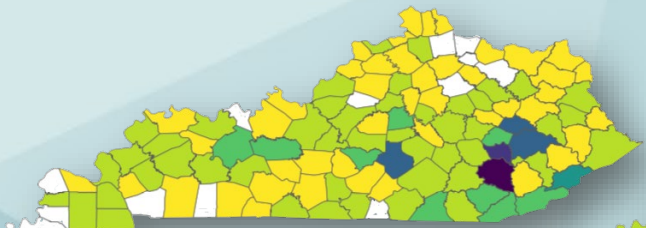


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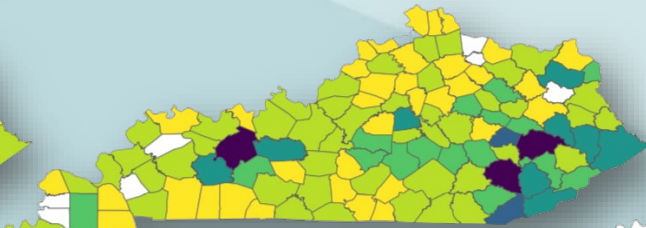
# Figure 10. Rates of Psychostimulant Overdose among Kentucky Residents, 2016–2020



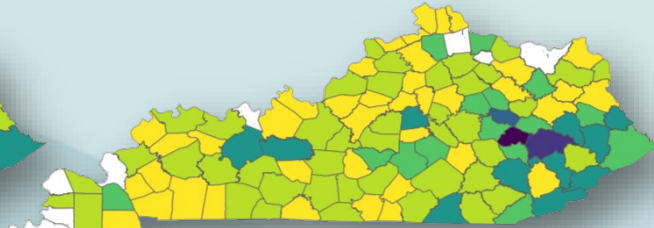
2016



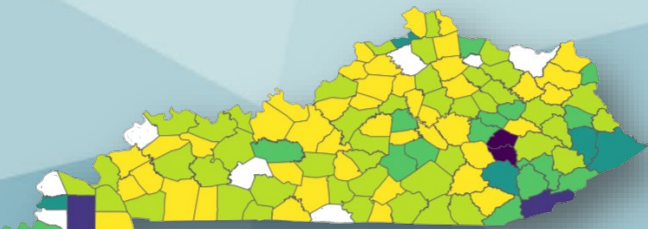
2017



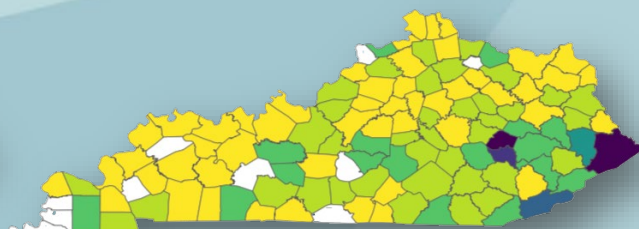
2018



2019



2020



Rate per 100,000 People

None	Suppressed	Under 20	20 to 39	40 to 59	60 to 79	80 to 99	100 to 119	120 or higher
------	------------	----------	----------	----------	----------	----------	------------	---------------



KentuckyPublicHealth  
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# Figure 11. Rates of Benzodiazepine Overdose among Kentucky Residents, 2016–2020



2016

2017

2018

2019

2020

Rate per 100,000 People

None	Suppressed	Under 20	20 to 39	40 to 59	60 to 79	80 to 99	100 to 119	120 or higher
------	------------	----------	----------	----------	----------	----------	------------	---------------

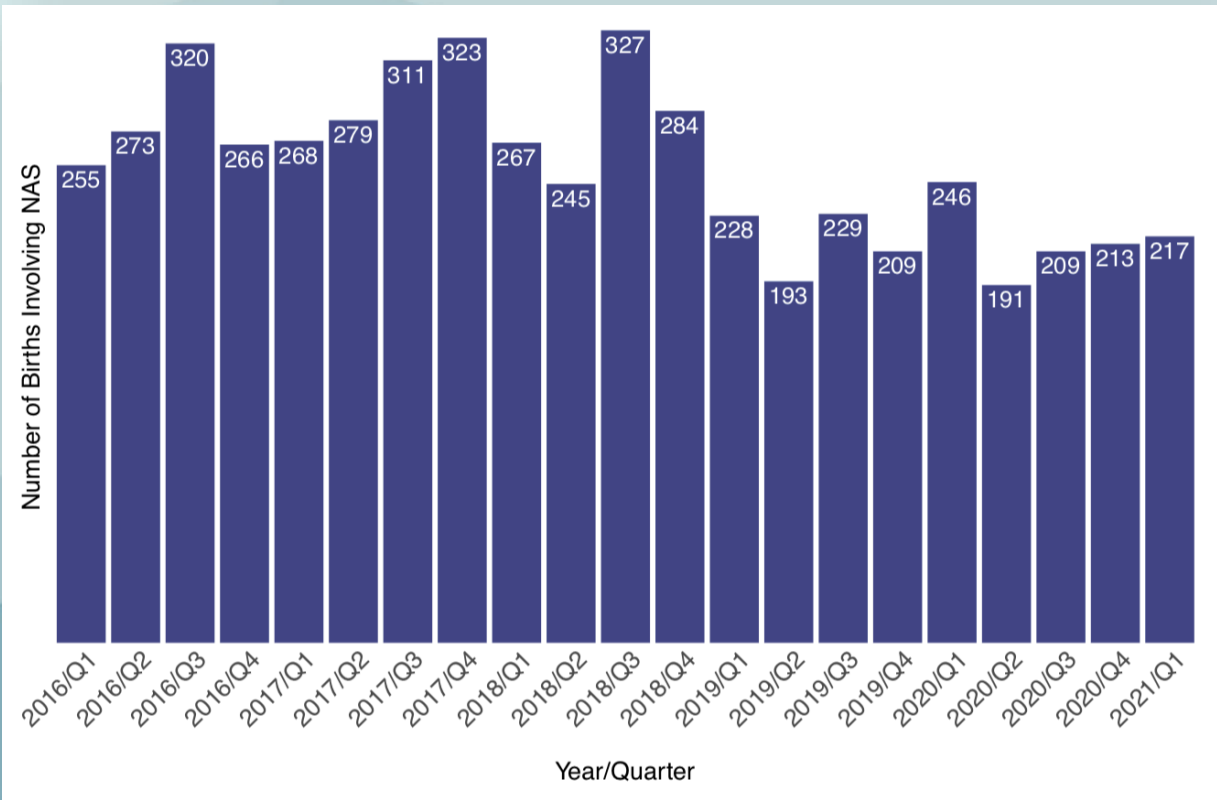


# Neonatal Abstinence Syndrome in Kentucky





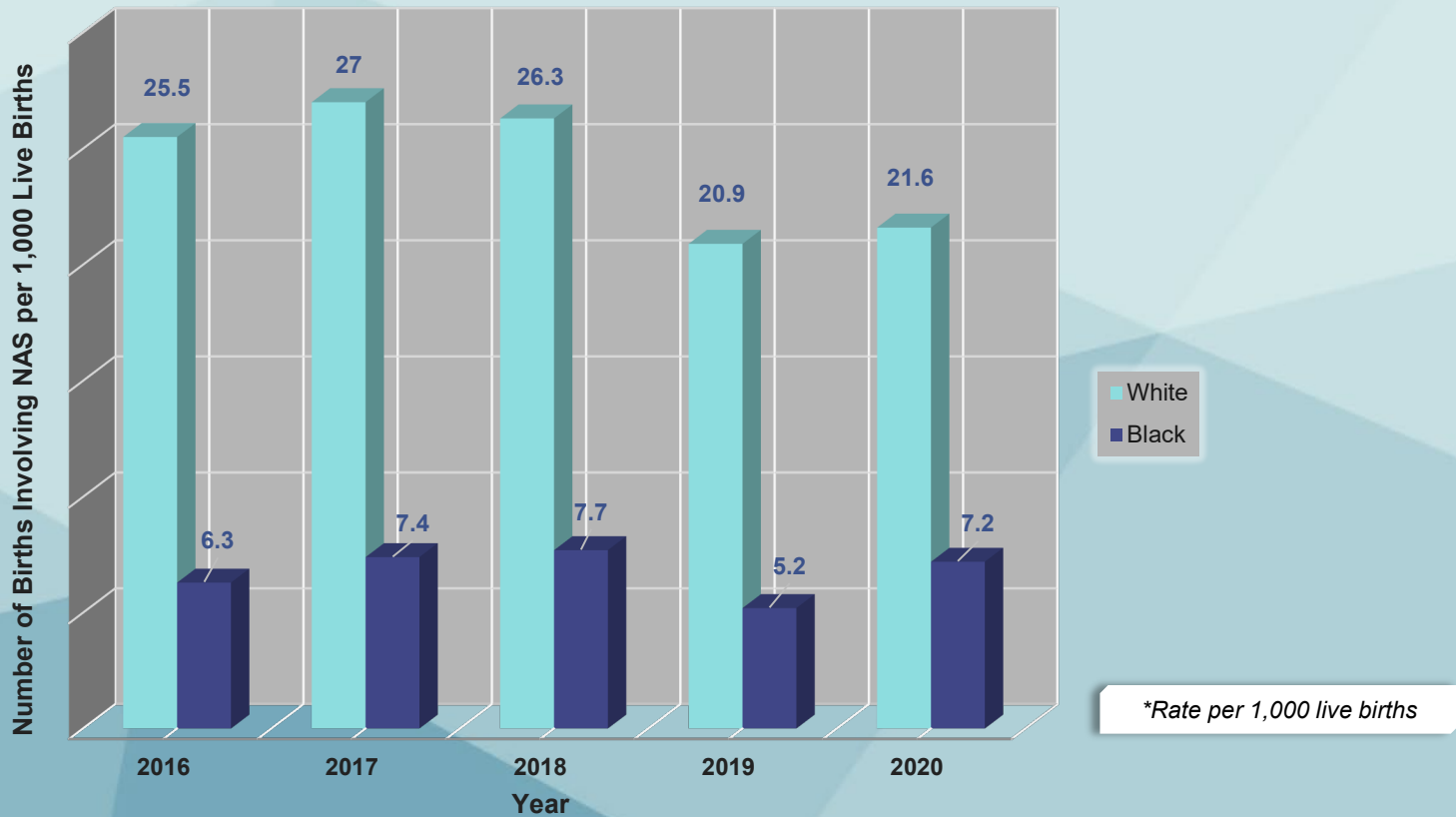
# Figure 12. Number of NAS Births by Quarter, Q1 2016–Q1 2021



Data sources: Kentucky Outpatient Services Database (emergency department visits) and Kentucky Inpatient Hospitalization Claims Files (inpatient hospitalizations), Office of Health Data and Analytics, Cabinet for Health and Family Services  
Produced by the Kentucky Injury Prevention and Research Center as bona fide agent for the Kentucky Department for Public Health, January 2022.  
Data are provisional and subject to change.



# Figure 13. Rate of NAS Births by Race, 2016–2020





# Infectious Diseases Related to Substance Use among Kentucky Residents





# Figure 14. Numbers of Infectious Disease Hospital Encounters, 2016–2021

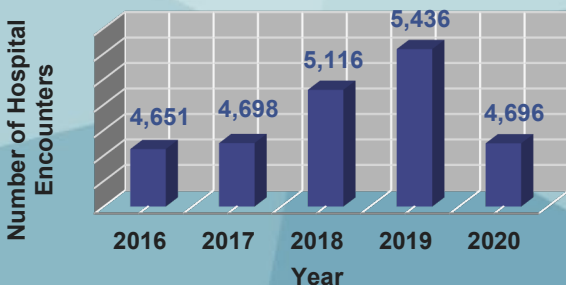
## Hepatitis A



## Hepatitis C



## HIV



## Endocarditis





## Figure 15. Rates of Hepatitis A-Related Hospital Encounters among Kentucky Residents, 2016–2020

2016

2017

2018

2019

2020

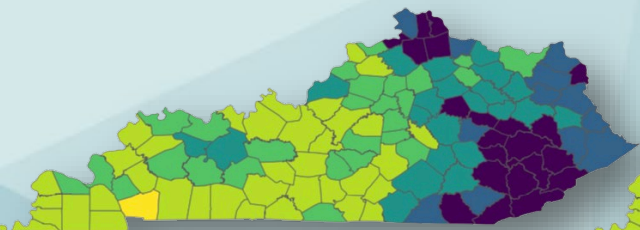
Rate per 100,000 People

None	Suppressed	Under 20	20 to 39	40 to 59	60 to 79	80 to 99	100 or higher
------	------------	----------	----------	----------	----------	----------	---------------

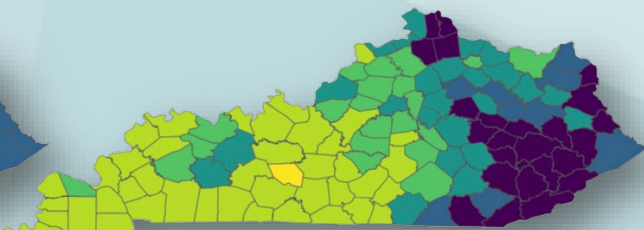


## Figure 16. Rates of Hepatitis C-Related Hospital Encounters among Kentucky Residents, 2016–2020

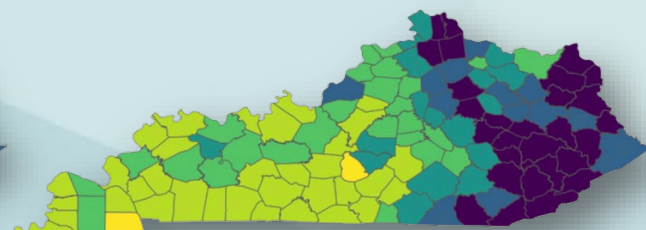
2016



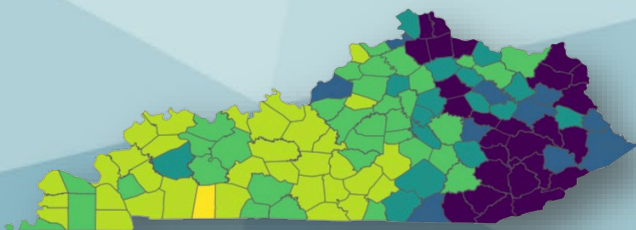
2017



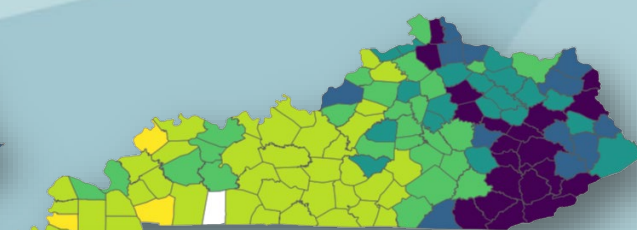
2018



2019



2020



Rate per 100,000 People

None	Suppressed	Under 50	50 to 199	200 to 399	400 to 599	600 to 799	800 or higher
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## Figure 17. Rates of HIV-Related Hospital Encounters among Kentucky Residents, 2016–2020

2016

2017

2018

2019

2020

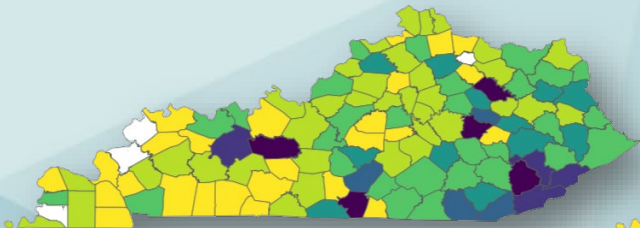
Rate per 100,000 People

None	Suppressed	Under 25	25 to 49	50 to 74	75 to 99	100 to 124	125 to 149	150 or higher
------	------------	----------	----------	----------	----------	------------	------------	---------------

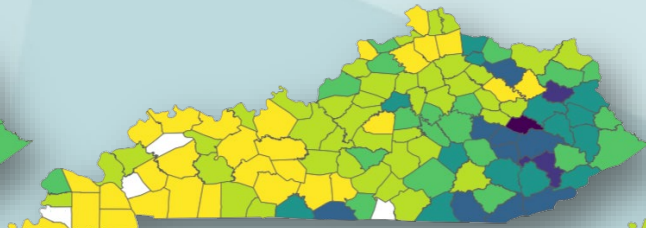


## Figure 18. Rates of Endocarditis-Related Hospital Encounters among Kentucky Residents, 2016–2020

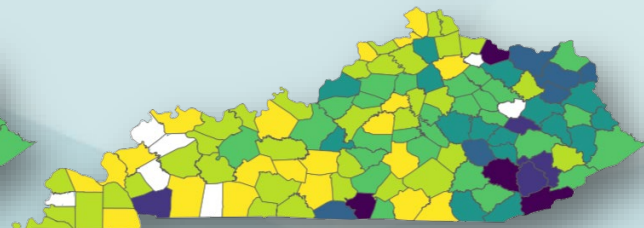
2016



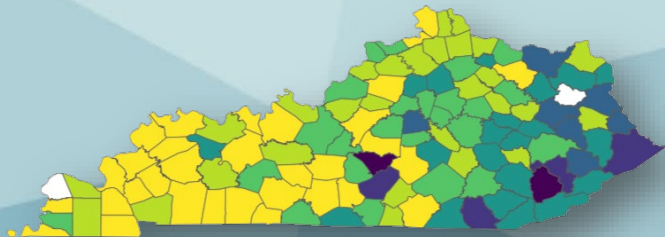
2017



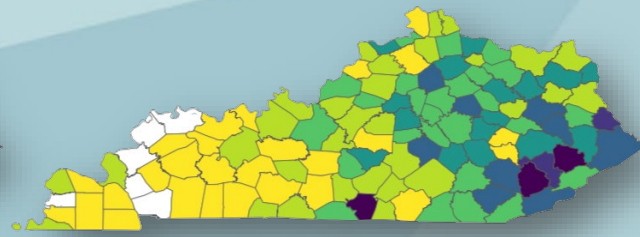
2018



2019



2020



Rate per 100,000 People

None	Suppressed	Under 25	25 to 49	50 to 74	75 to 99	100 to 124	125 to 149	150 or higher
------	------------	----------	----------	----------	----------	------------	------------	---------------

# Mental Disorders and their Association with Drug Overdose



**Kentucky Public Health**  
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## COMORBIDITY

*Substance Use and Other Mental Disorders*

**COMORBIDITY:**

When a person has two or more disorders at the same time or one after the other. This occurs frequently with substance use and mental disorders. Comorbidity also means that interactions between these two disorders can worsen the course of both.

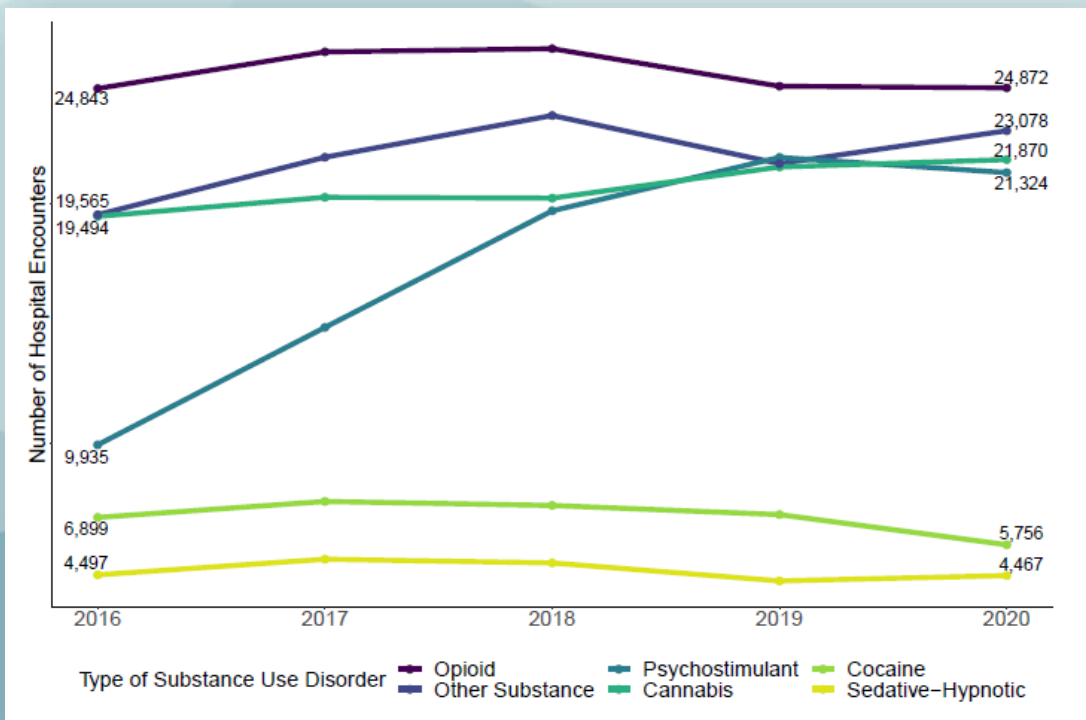
Source: Han B, Compton WM, Blanco C, Colpe LJ. Prevalence, Treatment, and Unmet Treatment Needs of US Adults with Mental Health and Substance Use Disorders. *Health Aff (Proj Hope)*. 2019;36(10):1739-1747. doi:10.1371/journal.pone.0217058

 **NIH** National Institute on Drug Abuse

For more information about finding treatment for yourself or a loved one, visit [drugabuse.gov/related-topics/treatment](https://drugabuse.gov/related-topics/treatment).



# Figure 19. Total Number of Substance Use Disorder-Related Hospital Encounters among Kentucky Residents, 2016–2020







## Figure 20. Opioid Use Disorder-Related Hospital Encounters among Kentucky Residents, 2016–2020

2016

2017

2018

2019

2020

Rate per 100,000 People

None	Suppressed	Under 100	100 to 249	250 to 499	500 to 749	750 to 999	1,000 to 1,249	1,250 to 1,499	1,500 or higher
------	------------	-----------	------------	------------	------------	------------	----------------	----------------	-----------------



## Figure 21. Stimulant Use Disorder-Related Hospital Encounters among Kentucky Residents, 2016–2020

2016

2017

2018

2019

2020

Rate per 100,000 People

None	Suppressed	Under 200	200 to 399	400 to 599	600 to 799	800 to 999	1,000 to 1,199	1,200 or higher
------	------------	-----------	------------	------------	------------	------------	----------------	-----------------

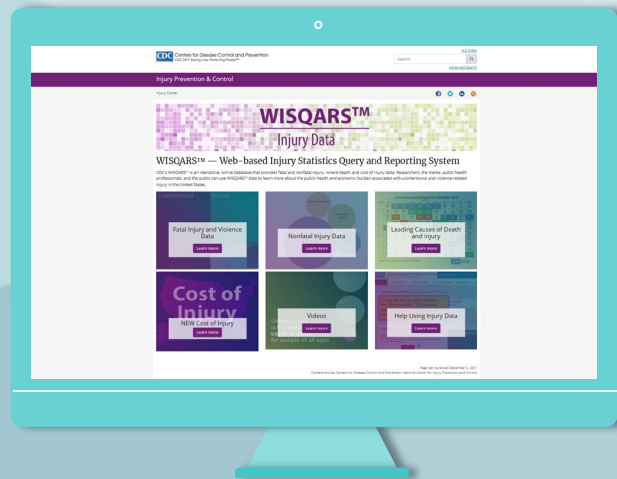
# WISQARS

## (Web-based Injury Statistics Query and Reporting System)

Able to search, sort, and view data as well as create reports, maps, and graphics through the interactive database.

The following modules are included in the database:

- Fatal injury data
- Nonfatal injury data
- Cost of injury data
- Fatal injury mapping
- Violent deaths



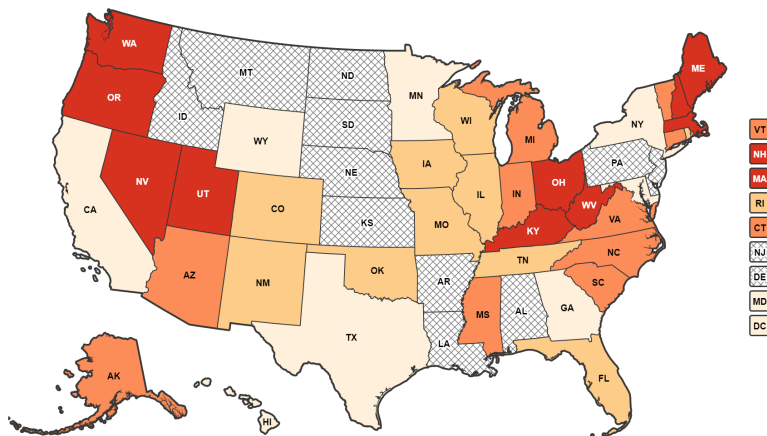
Website:

<https://www.cdc.gov/injury/wisqars/>



# ECONOMIC COST OF OPIOID USE DISORDER BY STATE

Per Capita Economic Cost of Opioid Use Disorder by State, 2017



The prevalence of opioid use disorder was obtained from the Substance Abuse & Mental Health Data Archive, the count of fatal opioid overdose from the CDC WONDER, and the cost estimates from "The Economic Cost of Opioid Use Disorder and Fatal Opioid Overdose in the United States, 2017" and "The State-Level Economic Cost of Opioid Use Disorder and Fatal Opioid Overdose in the United States, 2017". Substance Abuse & Mental Health Data Archive: <https://www.datafiles.samhsa.gov/> CDC WONDER: <https://wonder.cdc.gov/>

\*12 states data were suppressed because they did not meet requirements for adequate drug specificity in 2017. See "Drug and Opioid-Involved Overdose Deaths — United States, 2017–2018" (<https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6911a4-H.pdf>)

- \$635 - \$1,148
- \$1,196 - \$1,476
- \$1,483 - \$1,858
- \$1,949 - \$2,509
- ⊗ Suppressed Data



## Economic Cost Summary

Fatal and Nonfatal Opioid Use Disorder	United States	Kentucky
Per Capita Total Costs	\$3,134	\$5,491
Total Costs	\$1.02 T	\$24.46 B
Opioid Use Disorder (Nonfatal)	United States	Kentucky
Opioid Use Disorder Prevalence	2,129,000	50,000
Total OUD Costs	\$470.98 B	\$11.06 B
Fatal Overdose Mortality	United States	Kentucky
Fatal Overdose Deaths	47,600	1,160
Total Fatal Overdose Costs	\$549.69 B	\$13.40 B

\$: 2017 Dollars; M: Millions; B: Billions; SU: Substance Use; QOL: Quality of Life; OUD: Opioid Use Disorder

Data source: *Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, December 2021*



# PUBLICATIONS AND REPORTS



## Annual Reports on Drug Overdose

- Reports specific to data sets
  - Emergency department visits
  - Inpatient hospitalizations
  - Electronic death certificates
  - Kentucky veterans and active-duty military
- Detailed breakdown of statewide data
  - Demographics
  - Drug types



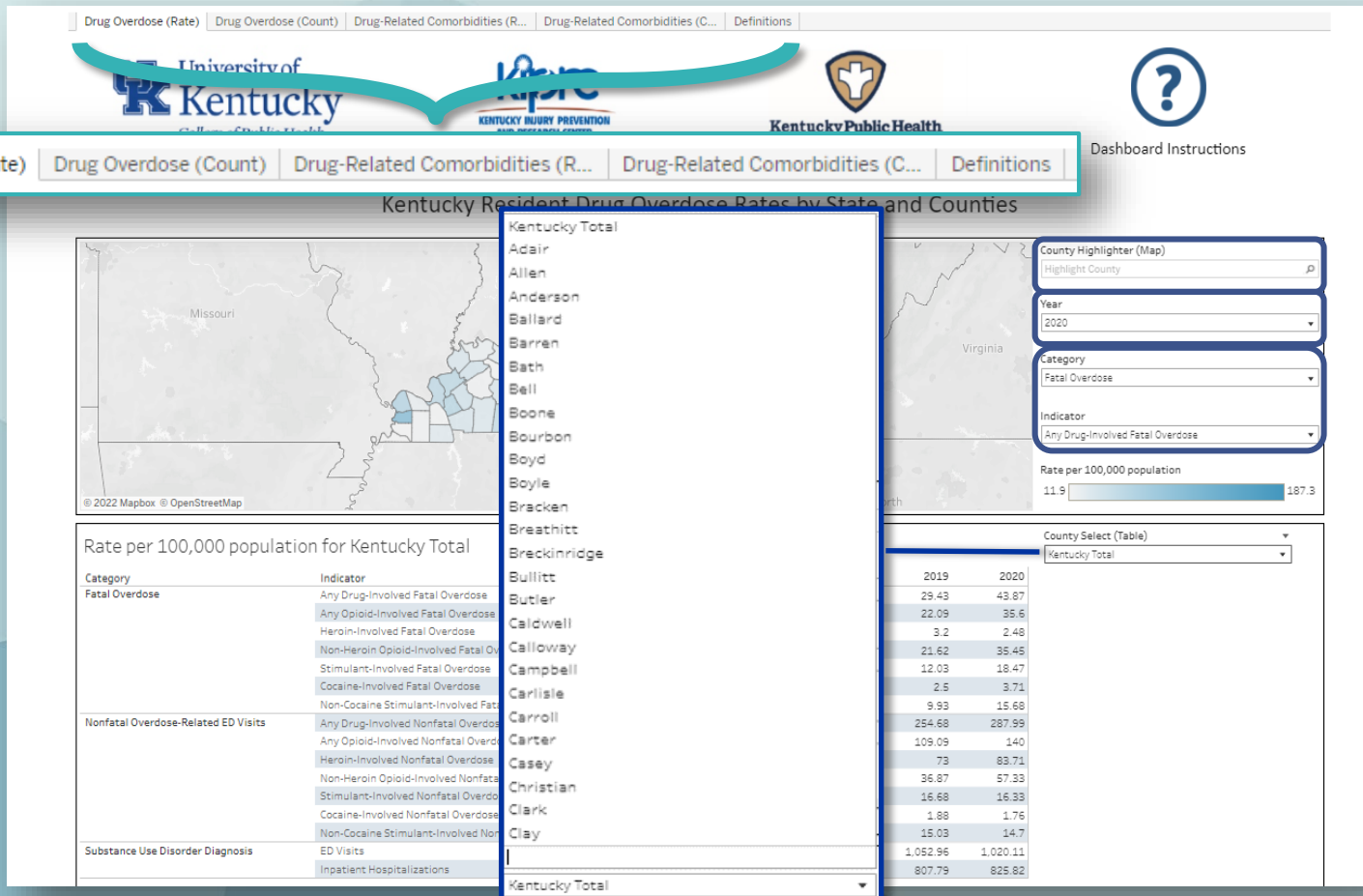
## County Profiles: Dashboard for all Kentucky Counties

- Nonfatal drug overdoses
- Drug overdose deaths
- Hospital encounters with a diagnosis of substance use disorder

**Website:**

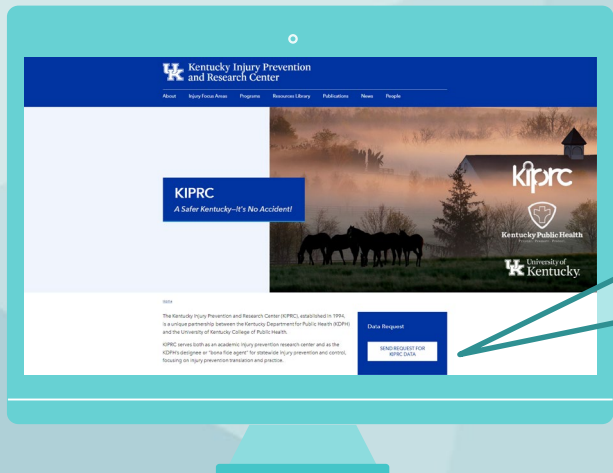
<https://kiprc.uky.edu/resources>

# COUNTY PROFILES





# CREATING CUSTOM REPORTS



Data Request

SEND REQUEST FOR  
KIPRC DATA

University of Kentucky

Your Name:

Your Organization:

Your Email Address:

Best Phone Number To Reach You:

NOTE: Data requests typically take at least two weeks to complete. We will contact you at the email address you provided to confirm we have received your request and with any additional questions.

Also, our data policies require suppression of counts below five. Data requests for individual counties, less common or very specific injuries, or small time frames may contain several suppressed values. We are happy to discuss the best approach for your needs.

- 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, sex, etc.)
- Requests typically take at least two weeks to fulfill.



# HOW TO SUBMIT AN EMAIL DATA REQUEST

Email: [kiprc\\_data\\_request@L.uky.edu](mailto: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, sex, etc.)



- Requests typically take at least two weeks to fulfill.





# ADDITIONAL RESOURCES – KyOD2A Newsletter

- *KyOD2A Happenings* offers quarterly updates on drug overdose prevention research, initiatives, reports, and resources in the Commonwealth.
- Contact [KIPRCinfo@uky.edu](mailto:KIPRCinfo@uky.edu) if you wish to receive future newsletters by email or visit <https://tinyurl.com/KIPRCnewsletter>



# Questions?



**Kentucky Public Health**  
Prevent. Promote. Protect.



# EVALUATION

***Let us know how we did!  
How may we improve these  
summits?***



[https://uky.az1.qualtrics.com/jfe/form/SV\\_bqMlcW3QmjVuJ2C](https://uky.az1.qualtrics.com/jfe/form/SV_bqMlcW3QmjVuJ2C)

# THANK YOU!

Please direct any questions to Mira  
Mirzaian at [mira.mirzaian@uky.edu](mailto:mira.mirzaian@uky.edu)

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