



## **Kentucky Substance Use Research & Education**

*Using data to drive public safety and public health efforts against substance use across the Commonwealth*

### **Brief 31: Six Major Overdose-Related Substances and General Overdose-Related Events in Kentucky, January 1, 2017–June 30, 2023**

Based on data from possession and trafficking citations, drug overdose-related deaths, emergency department visits, hospitalizations, submissions to the state police lab, and general drug overdose-related events



Released December 2023

Produced by the Kentucky State Police Intelligence Branch and the Kentucky Injury Prevention and Research Center, as bona fide agent for the Kentucky Department for Public Health.

This report is supported by Centers for Disease Control and Prevention grant 6NU17CE010186. Report contents are solely the responsibility of the authors and do not necessarily represent the official views of the funders.

*Suggested citation:*

Kentucky Substance Use Research & Education. Six Major Overdose-Related Substances and General Overdose-Related Events in Kentucky, January 1, 2017–June 30, 2023. *K-SURE Brief (No.31)*, December 2023.



## Table of Contents

Data Evaluation Survey.....	4
Heroin-Related Events.....	5
Opioid-Related Events.....	6
Methamphetamine-Related Events.....	7
Cocaine-Related Events.....	8
Fentanyl- and Fentanyl Analog-Related Events.....	9
Marijuana-Related Events.....	10
General Drug Overdose-Related Events.....	11
K-SURE Data Matrix.....	12

## Data Evaluation Survey



We would like to hear your feedback on the Kentucky Substance Use Research & Education (K-SURE) briefs and other outputs you use. This will help us improve future K-SURE briefs, stakeholder engagement, dissemination, and audience receptivity. You

can find the survey here:

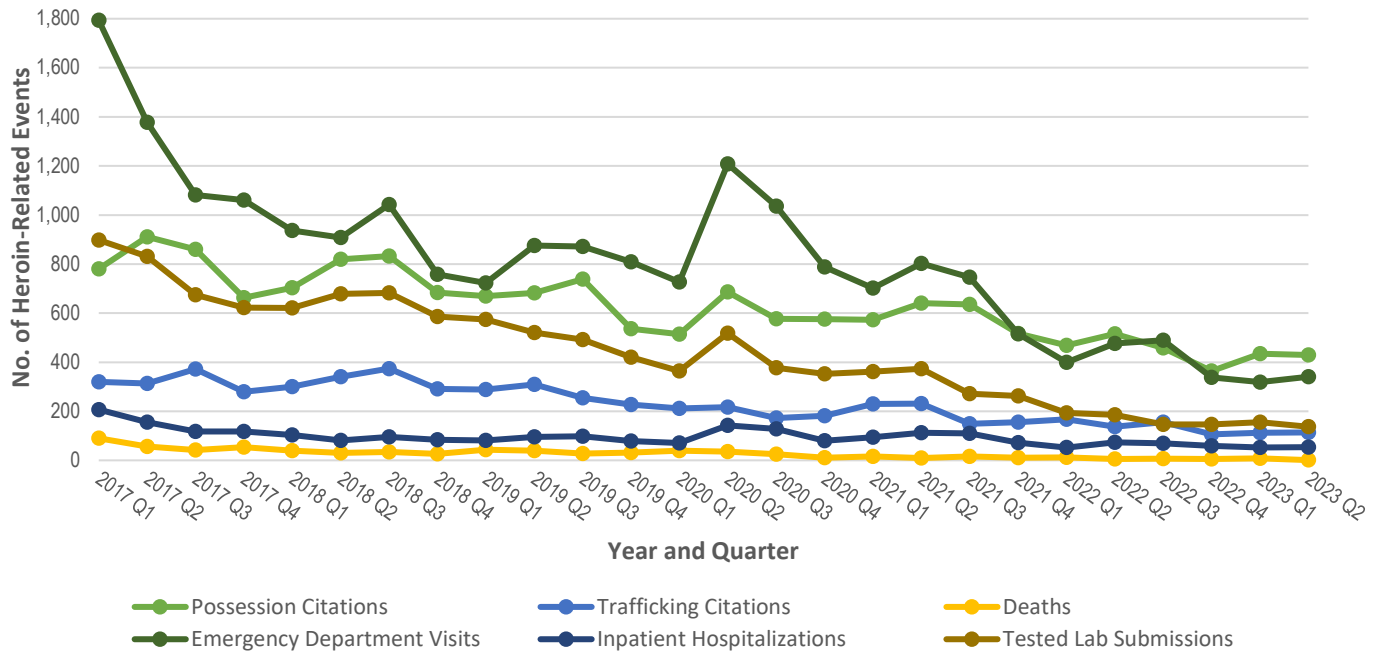
[https://uky.az1.qualtrics.com/jfe/form/SV\\_bDzBAIOXZprzO85](https://uky.az1.qualtrics.com/jfe/form/SV_bDzBAIOXZprzO85)



Thank you in advance!

*The K-SURE Team*

## Heroin-Related Events



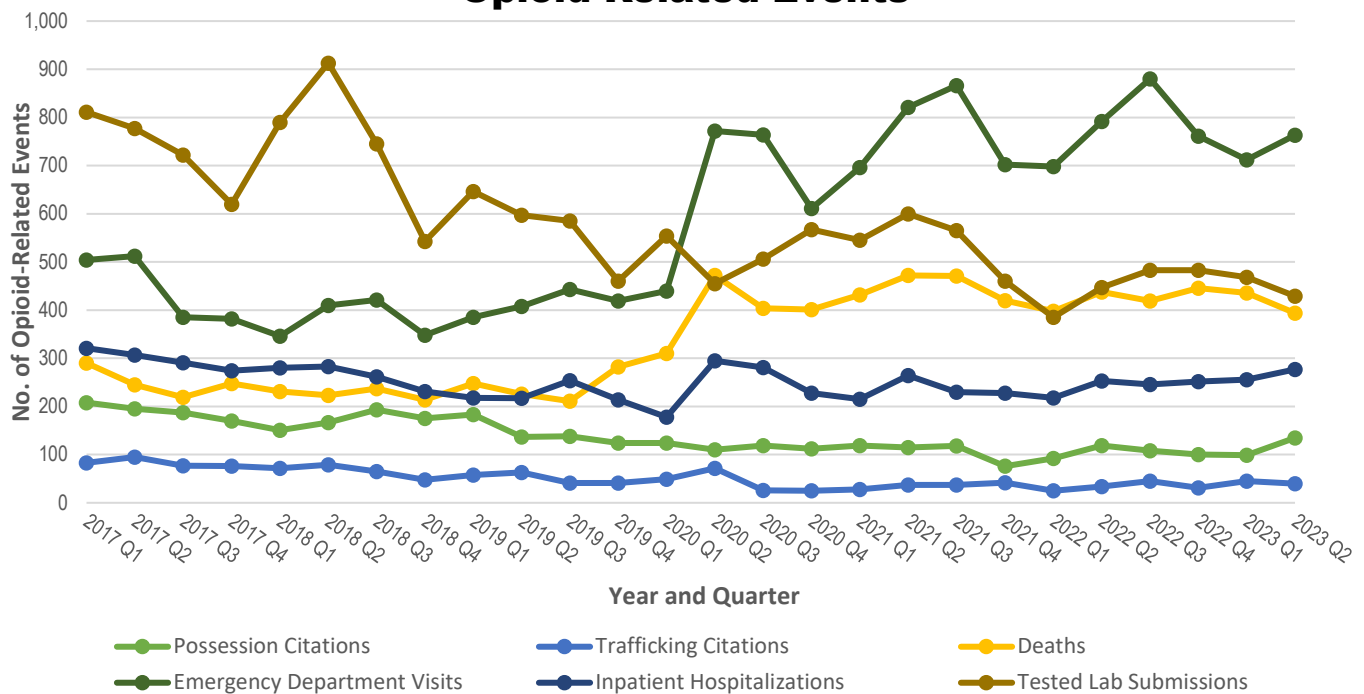
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Death data are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated in acute care facilities. Drug overdose-related emergency department visits represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated. Tested lab submission data represent those substances submitted to the lab for identification purposes; quantity is not reflected. Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s).

Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claims Files, Kentucky Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky State Police Crime Laboratory.

### Key Findings:

- Heroin possession citations decreased by 44.9% from January 2017 through June 2023 and by 0.9% from Q1 2023 through Q2 2023.
- Heroin trafficking citations decreased by 64.4% from January 2017 through June 2023 and increased by 0.9% from Q1 2023 through Q2 2023.
- Kentucky resident heroin-related deaths declined by 98.9% from January 2017 through June 2023 and by 87.5% from Q1 2023 through Q2 2023.
- Heroin-related emergency department (ED) visits and inpatient hospitalizations both declined from January 2017 through June 2023 (by 81% and 73.9%, respectively). Both ED visits and inpatient hospitalizations increased from Q1 2023 through Q2 2023 (by 6.9% and 1.9%, respectively).
- Heroin-related tested lab submissions decreased by 84.7% from January 2017 through June 2023 and decreased 11.6% from Q1 2023 through Q2 2023.
- Overall, total heroin-related events (possession and trafficking citations, deaths, ED visits, inpatient hospitalizations, and tested lab submissions) decreased by 73.7% from the beginning of 2017 through the end of June 2023 and by 0.5% from Q1 2023 through Q2 2023.

## Opioid-Related Events

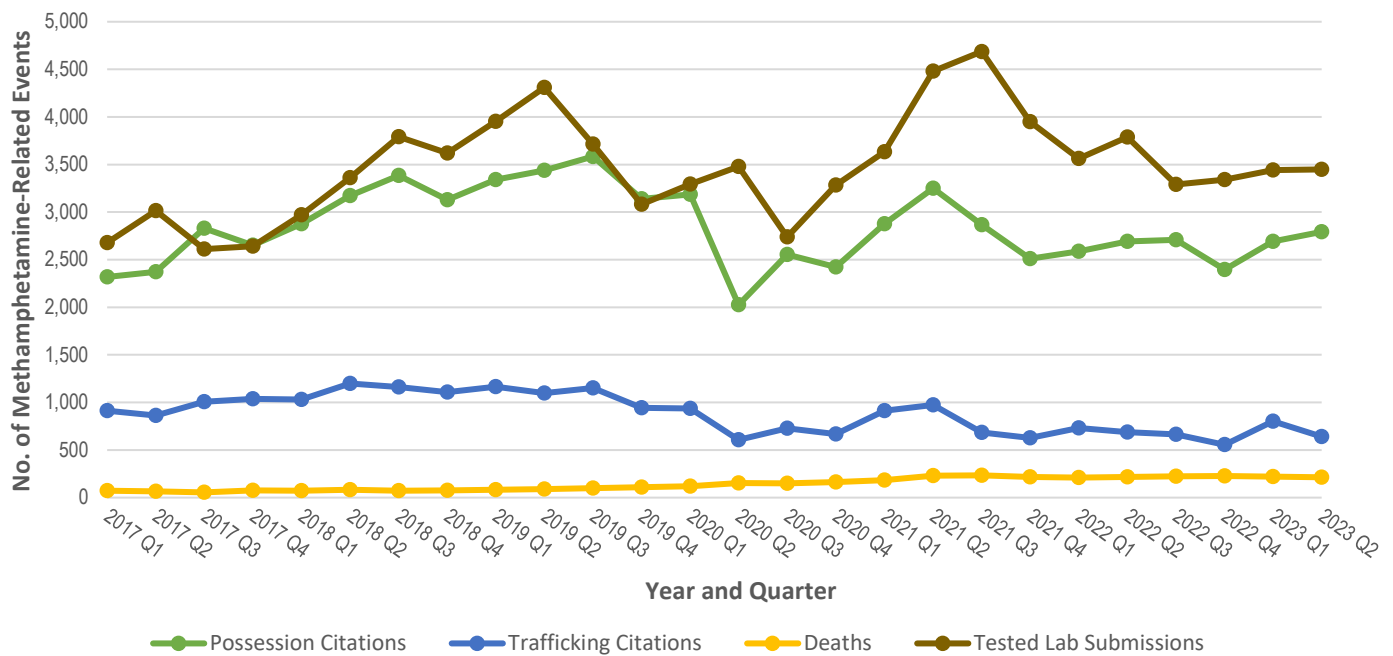


Data are provisional and subject to change. Opioid-related events reflect non-heroin- and non-fentanyl-related opioids. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Death data are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated in acute care facilities. Drug overdose-related emergency department visits represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated. Tested lab submission data represent those substances submitted to the lab for identification purposes; quantity is not reflected. Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s). Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claims Files, Kentucky Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky State Police Crime Laboratory.

### Key Findings:

- Opioid possession citations decreased by 35.1% from Q1 2017 through Q2 2023 and increased by 36.4% from Q1 2023 through Q2 2023.
- Opioid trafficking citations decreased by 51.8% from Q1 2017 through Q2 2023 and by 11.1% from Q1 2023 through Q2 2023.
- Kentucky resident opioid-related deaths increased by 35.9% from Q1 2017 through Q2 2023 and declined by 9.6% from Q1 2023 through Q2 2023.
- Opioid-related ED visits increased by 51.4% from Q1 2017 through Q2 2023 and by 7.2% from Q1 2023 through Q2 2023.
- Opioid-related inpatient hospitalizations declined by 13.7% from Q1 2017 through Q2 2023 and increased by 8.2% from Q1 2023 through Q2 2023.
- Tested lab submissions that positively identified opioids decreased by 47.1% from Q1 2017 through Q4 2022 and decreased by 8.3% from Q1 2023 through Q2 2023.
- Opioids and their devastating effects remain prevalent throughout the Commonwealth despite an 8.1% reduction in opioid-related events from Q1 2017 through Q2 2023; a 1.1% increase was observed from Q1 2023 through Q2 2023.

## Methamphetamine-Related Events



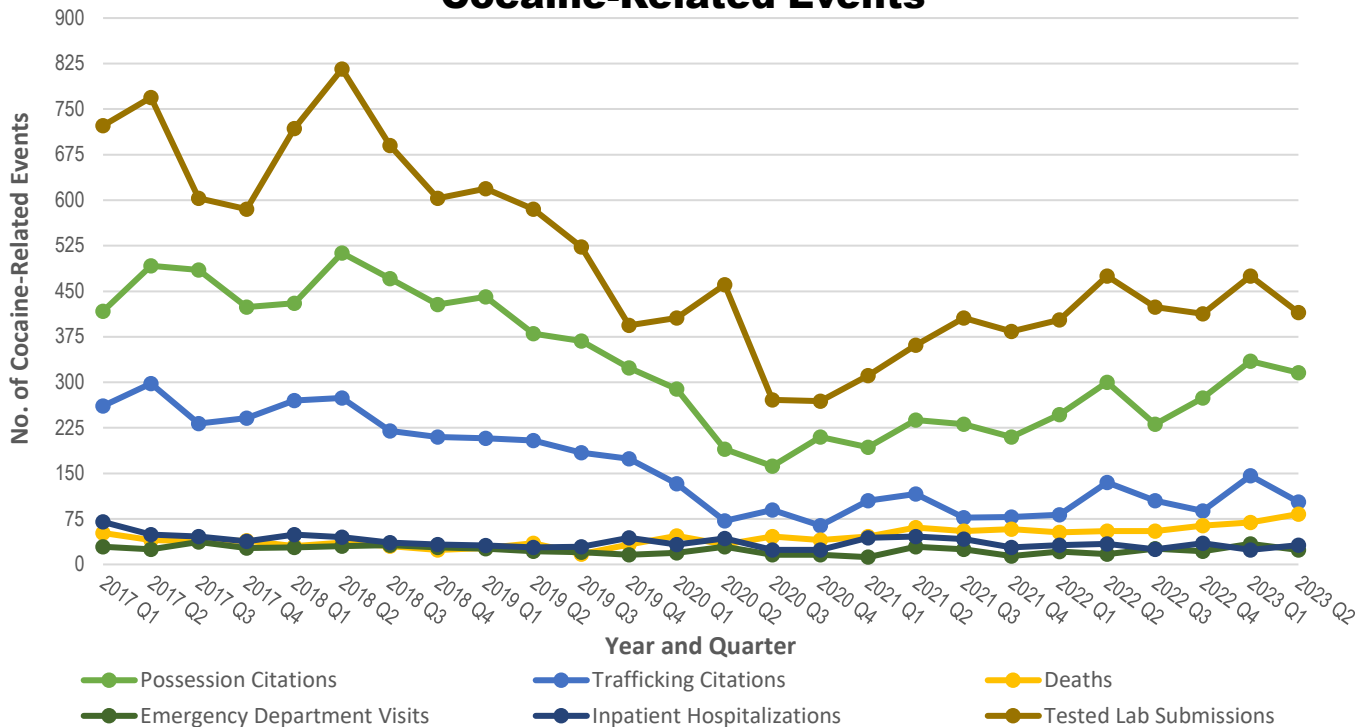
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Death data are based on drug overdose-related deaths among Kentucky residents. Tested lab submission data represent those substances submitted to the lab for identification purposes; quantity is not reflected. Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s).

Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky State Police Crime Laboratory.

### Key Findings:

- Methamphetamine possession citations rose by 20.5% from Q1 2017 through Q2 2023 and by 3.8% from Q1 2023 through Q2 2023.
- Methamphetamine trafficking citations decreased by 29.9% from Q1 2017 through Q2 2023 and by 20.1% from Q1 2023 through Q2 2023.
- A 195.8% increase in methamphetamine-related overdose deaths was observed among Kentucky residents from Q1 2017 through Q2 2023; all involved the use of more than one drug (polydrug use). A 3.2% decrease in deaths occurred from Q1 2023 through Q2 2023.
- Tested lab submissions positively identifying methamphetamine increased by 28.8% from Q1 2017 through Q2 2023 and by 0.1% from Q1 2023 through Q2 2023.
- Methamphetamine use and distribution continue to threaten the Commonwealth’s safety and health, as methamphetamine-related events increased by 18.6% from Q1 2017 through Q2 2023, while declining less than one percent from Q1 2023 through Q2 2023.

## Cocaine-Related Events



Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Death data are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated in acute care facilities. Drug overdose-related emergency department visits represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated. Tested lab submission data represent those substances submitted to the lab for identification purposes; quantity is not reflected. Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s).

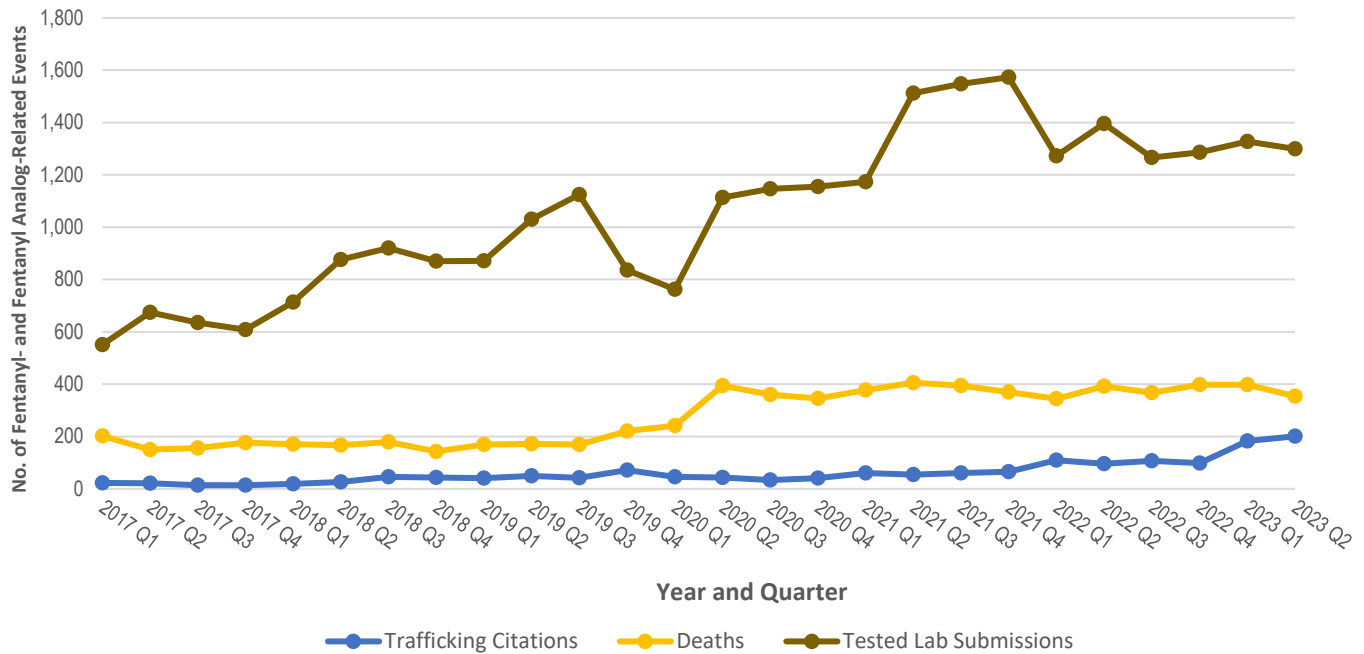
Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claims Files, Kentucky Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky State Police Crime Laboratory.

### Key Findings:

- Statewide cocaine possession citations decreased by 24.2% from Q1 2017 through Q2 2023 and by 5.7% from Q1 2023 through Q2 2023.
- Cocaine trafficking citations decreased by 60.5% from Q1 2017 through Q2 2023 and by 29.5% from Q1 2023 through Q2 2023.
- Cocaine-related deaths increased 59.6% from Q1 2017 through Q2 2023 and by 20.3% from Q1 2023 through Q2 2023.
- Cocaine-related emergency department visits decreased by 17.2% from Q1 2017 through Q2 2023 and by 29.4% from Q1 2023 through Q2 2023.
- Cocaine-related inpatient hospitalizations declined by 54.3% from Q1 2017 through Q2 2023; a 33.3% increase occurred from Q1 2023 through Q2 2023.
- Tested lab submissions positively identifying cocaine decreased by 42.6% from Q1 2017 to Q1 2023 and by 12.6% from Q1 2023 through Q2 2023.
- Overall, cocaine-related events decreased by 37.3% from Q1 2017 through Q2 2023 and by 10.2% from Q1 2023 through Q2 2023 across Kentucky.



## Fentanyl- and Fentanyl Analog-Related Events

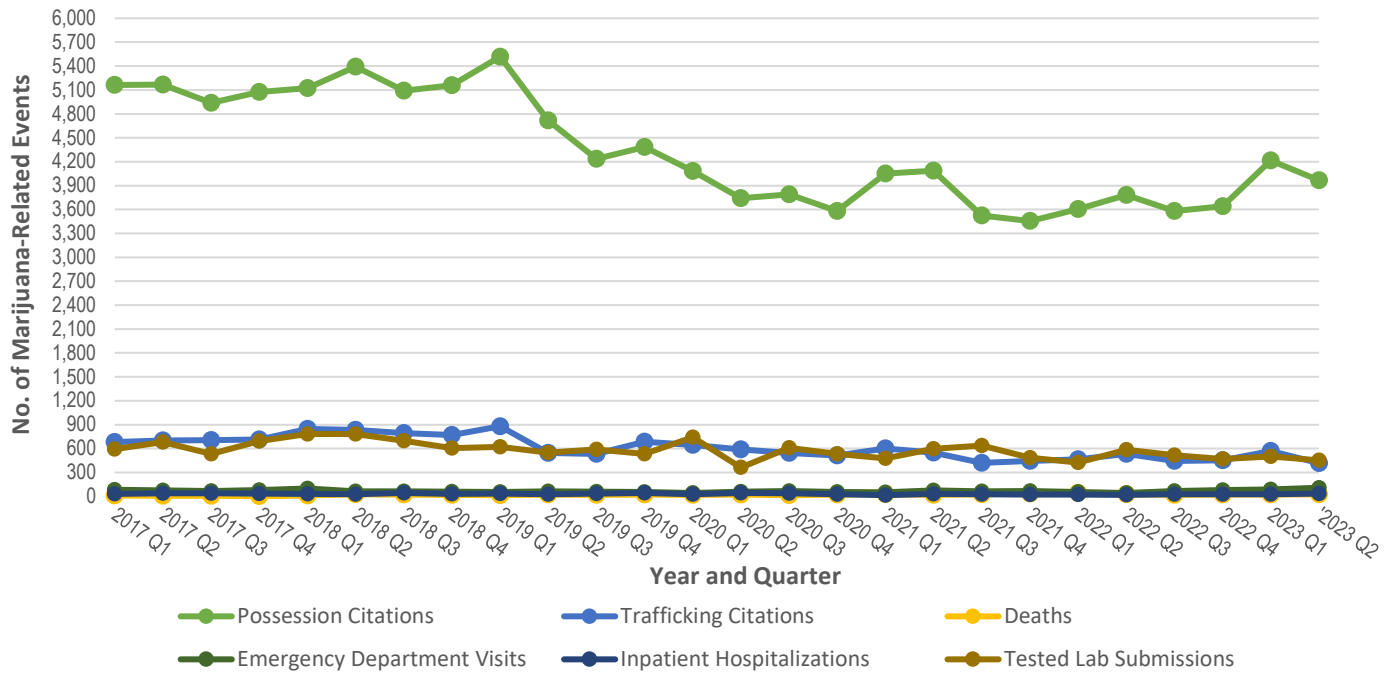


Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. There are no Kentucky Revised Statute codes for fentanyl possession. Death data are based on drug overdose-related deaths among Kentucky residents. Tested lab submission data represent those substances submitted to the lab for identification purposes; quantity is not reflected. Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s). Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky State Police Crime Laboratory.

### Key Findings:

- Notably, fentanyl and fentanyl analog trafficking citations increased 773.9% from Q1 2017 through Q2 2023 and by 9.8% from Q1 2023 through Q2 2023. Citations related to fentanyl and its related analogs may be underestimated, as fentanyl is often associated with polydrug use and laboratory testing is often needed to confirm its presence.
- Fentanyl- and fentanyl analog-related deaths increased by 75.2% from Q1 2017 through Q2 2023 and decreased by 11.1% from Q1 2023 through Q2 2023.
- Tested lab submissions positively identifying fentanyl and fentanyl analogs rose by 135.8% from Q1 2017 through Q2 2023 and declined by 2.1% from Q1 2023 through Q2 2023.
- Fentanyl and fentanyl analogs are pervasive in Kentucky—increasing the risk of overdose and exposure to individuals, families, communities, and public safety—as fentanyl- and fentanyl analog-related events across Kentucky increased by 138.9% from Q1 2017 through Q2 2023, despite a 2.8% decrease from Q1 2023 through Q2 2023.

## Marijuana-Related Events



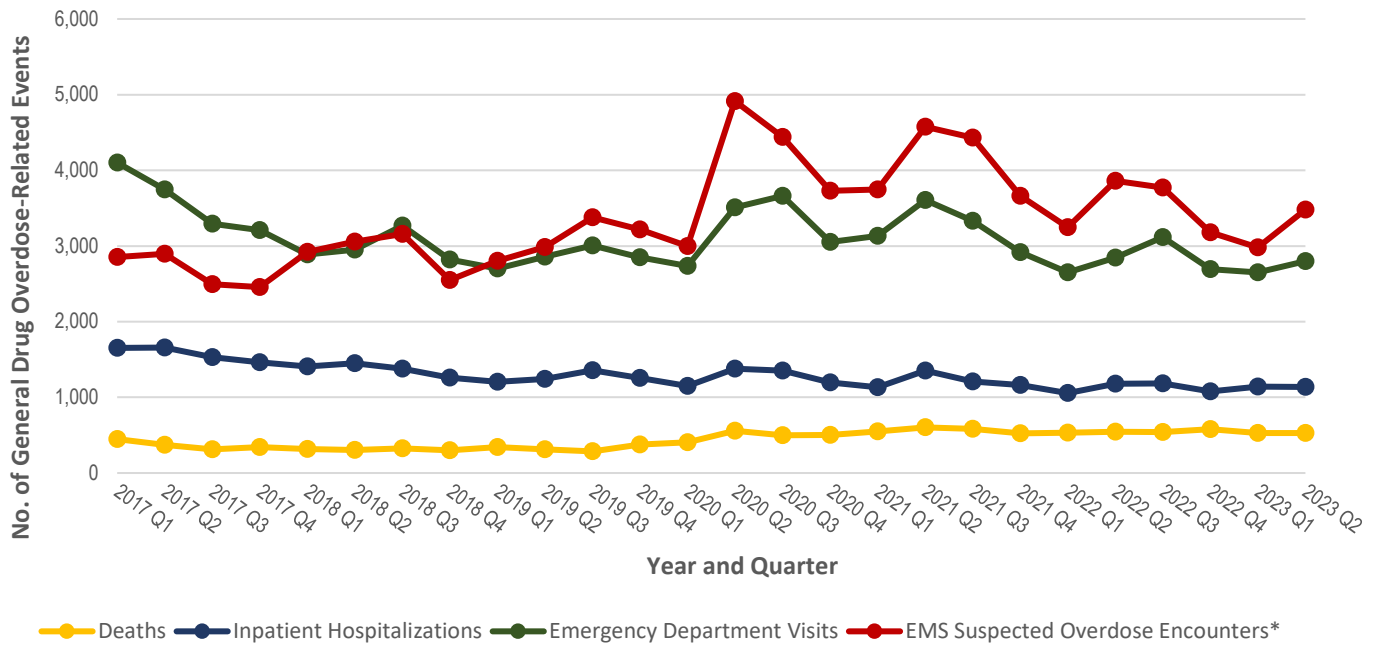
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Death data are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated in acute care facilities. Drug overdose-related emergency department visits represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated. Tested lab submission data represent those substances submitted to the lab for identification purposes; quantity is not reflected. Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s).

Data sources: Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claims Files, Kentucky Office of Health Data and Analytics, Cabinet for Health and Family Services.

### Key Findings:

- Marijuana possession citations declined by 23.2% from Q1 2017 through Q2 2023 and by 6% from Q1 2023 through Q2 2023.
- Marijuana trafficking citations declined by 38.7% from Q1 2017 through Q2 2023 and by 26.8% from Q1 2023 through Q2 2023.
- Marijuana (cannabis)-related deaths increased by 108.3% from Q1 2017 through Q2 2023 and by 4.2% from Q1 2023 through Q2 2023; all involved polydrug use.
- Marijuana-related emergency department visits increased by 33.3% from Q1 2017 through Q2 2023 and by 25.6% from Q1 2023 through Q2 2023.
- Marijuana-related inpatient hospitalizations rose by 20.7% from Q1 2017 through Q2 2023 and by 25% from Q1 2023 through Q2 2023.
- Tested lab submissions positively identifying marijuana decreased 23.8% from Q1 2017 through Q2 2023 and by 9.4% from Q1 2023 through Q2 2023.
- Marijuana use and distribution are prevalent across Kentucky even as marijuana-related events declined by 23.7% from Q1 2017 through Q2 2023 and by 7.8% from Q1 2023 through Q2 2023.

## General Drug Overdose-Related Events



\*A large emergency medical services (EMS) agency began reporting to the Kentucky State Ambulance Reporting System in January 2018.

Data are provisional and subject to change. Death data are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated in acute care facilities. Drug overdose-related emergency department visits represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated. EMS suspected overdose encounters, which represent encounters of care and could be greater than the number of individual patients treated, are based on scans of free-text fields and medication fields (for naloxone/Narcan administration with indicated positive response) and on state of incident (Kentucky).

Data sources: Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claims Files, Kentucky Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky State Ambulance Reporting System, Kentucky Board of Emergency Medical Services.

### Key Findings:

- Statewide drug overdose-related deaths increased by 17.6% from Q1 2017 through Q2 2023; a 0.6% decrease was observed from Q1 2023 through Q2 2023.
- Drug overdose-related ED visits decreased by 31.7% from Q1 2017 through Q2 2023 and increased by 5.7% from Q1 2023 through Q2 2023.
- Drug overdose-related hospitalizations declined by 31.1% from Q1 2017 through Q2 2023 and by 0.2% from Q1 2023 through Q2 2023.
- Emergency medical services (EMS) suspected drug overdose-related encounters increased by 21.9% from Q1 2017 through Q2 2023 and by 16.7% from Q1 2023 through Q2 2023.
- Among law enforcement agencies currently reporting, 3,282 naloxone doses were administered from December 12, 2018, through June 30, 2023 (data not shown).
- Drug use, misuse, and distribution are still affecting Kentuckians, even as a 12.3% decrease in general drug overdose-related events was observed from Q1 2017 through Q2 2023; an 8.8% increase occurred from Q1 2023 through Q2 2023.

## K-SURE Data Matrix

	<b>Emergency Department (ED) Visits</b>	<b>Inpatient Hospitalizations</b>	<b>Deaths</b>	<b>Possession Citations</b>	<b>Trafficking Citations</b>	<b>Crime Lab Submissions</b>
<b>Heroin</b>	T401	T401	T401	KRS: 35120, 35121, 42195, 42196, 42205, 42206	KRS: 35100, 35101, 42105, 42106, 42376, 42377, 42378, 42379, 42466, 42468, 42470, 42480, 42483, 42486	Tested lab submissions represent those substances submitted to the lab for identification purposes; quantity is not reflected.
<b>Opioids</b>	T400, T402, T403, T404, T4060, T4069	T400, T402, T403, T404, T4060, T4069	T400, T402, T403, T404, T406	KRS: 35220, 35221, 42197, 42198, 42209, 42210, 42237, 42238, 42246	KRS: 35200, 35201, 42109, 42110, 42372, 42373, 42374, 42375, 42435, 42436, 42437, 42438, 42137, 42138	
<b>Methamphetamine</b>			Text scan	KRS: 42187, 42188, 42215, 42216	KRS: 42113, 42114, 42290, 42291, 42364, 42365, 42366, 42367	
<b>Cocaine</b>	T405	T405	T405	KRS: 35320, 35321, 42193, 42194, 42203, 42204	KRS: 35300, 35301, 42103, 42104, 42368, 42369, 42370, 42371	
<b>Fentanyl and Fentanyl Analogs</b>			T404 and text scan; Fentanyl Analogs: Methylfentanyl, Methoxybutyrylfentanyl, Acetylfentanyl, Acrylfentanyl, Hydroxythiofentanyl, Butyrylfentanyl, Carfentanil, Furanylfentanyl, Para_1, Para_2, U47700		KRS: 42465, 42472, 42474, 42476, 42478, 42590, 42593, 42596, 42599	

<b>Marijuana</b>	T407X1, T407X2, T407X3, T407X4, T407X5	T407X1, T407X2, T407X3, T407X4, T407X5	T407	KRS: 42330	KRS: 42301, 42302, 42311, 42312, 42321, 42322	
<b>General Drug Overdoses</b>	T36-T50, T369, T379, T399, T414, T427, T439, T459, T479, T499	T36-T50, T369, T379, T399, T414, T427, T439, T459, T479, T499	X40-X44, X60-X64, X85, Y10-Y14			
<b>Data Sources</b>	Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services: Frankfort, Kentucky	Kentucky Inpatient Hospitalization Claims Files, Kentucky Office of Health Data and Analytics, Cabinet for Health and Family Services: Frankfort, Kentucky	Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services: Frankfort, Kentucky	Kentucky Open Portal System, Kentucky State Police: Frankfort, Kentucky	Kentucky Open Portal System, Kentucky State Police: Frankfort, Kentucky	Kentucky State Police Crime Laboratory: Frankfort, Kentucky
<b>Notes</b>	The codes listed above are relevant ICD-10-CM codes. Drug overdose-related emergency department visits represent initial encounters of care among Kentucky residents and could be greater than the number of individual patients treated. Data are provisional and subject to change.	The codes listed above are relevant ICD-10-CM codes. Drug overdose-related hospitalizations represent initial encounters of care among Kentucky residents and could be greater than the number of individual patients treated in acute care facilities. Data are provisional and subject to change.	The codes listed above are relevant ICD-10 codes. Deaths are based on drug overdose-related deaths among Kentucky residents. Deaths may involve more than one drug. Data are provisional and subject to change.	Possession citations reflect violations of Kentucky Revised Statutes. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. data are provisional and subject to change.	Trafficking citations reflect violations of Kentucky Revised Statutes. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Data are provisional and subject to change.	Lab data represent submissions tested within the corresponding time frame; submission date is not reflected. Testing of submissions is based on those items supporting the highest-tier charge(s). Data are provisional and subject to change.

