



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

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

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

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## 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:

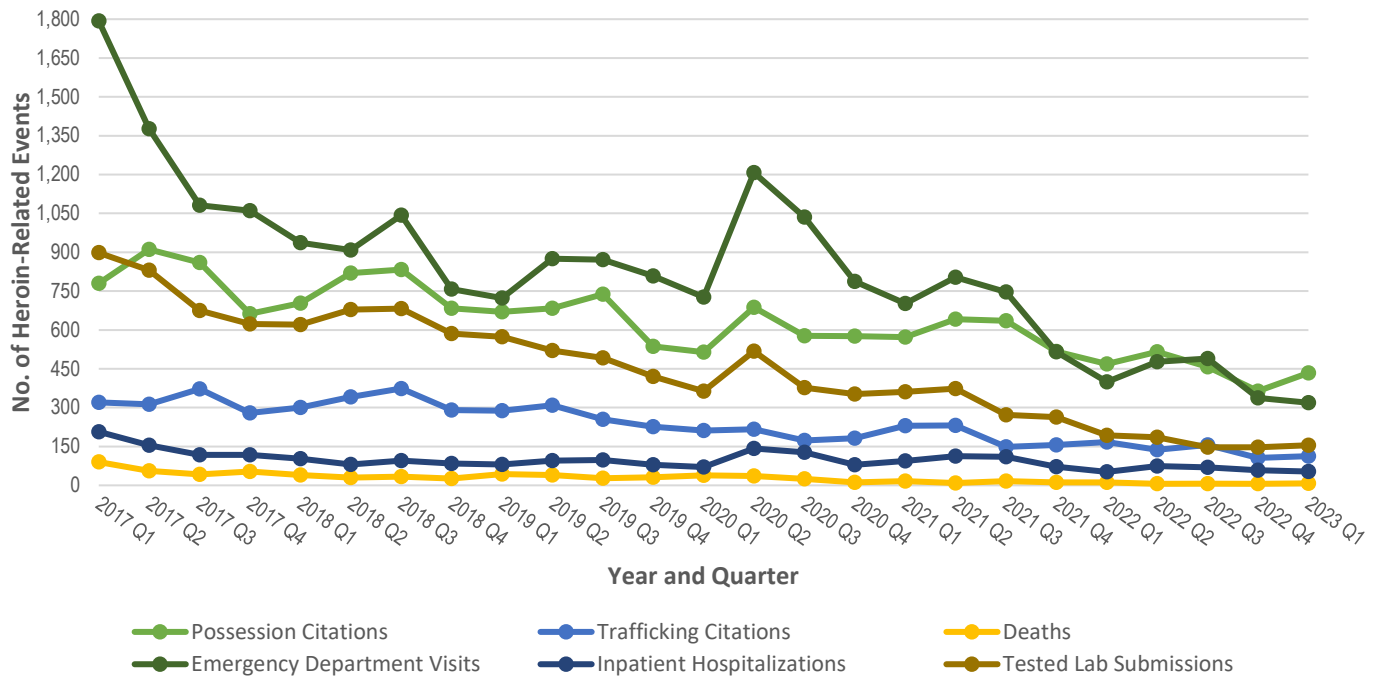
[https://uky.az1.qualtrics.com/jfe/form/SV\\_bDzBAIOXZprzO85](https://uky.az1.qualtrics.com/jfe/form/SV_bDzBAIOXZprzO85)



Thank you in advance!

*The K-SURE Team*

## Heroin-Related Events



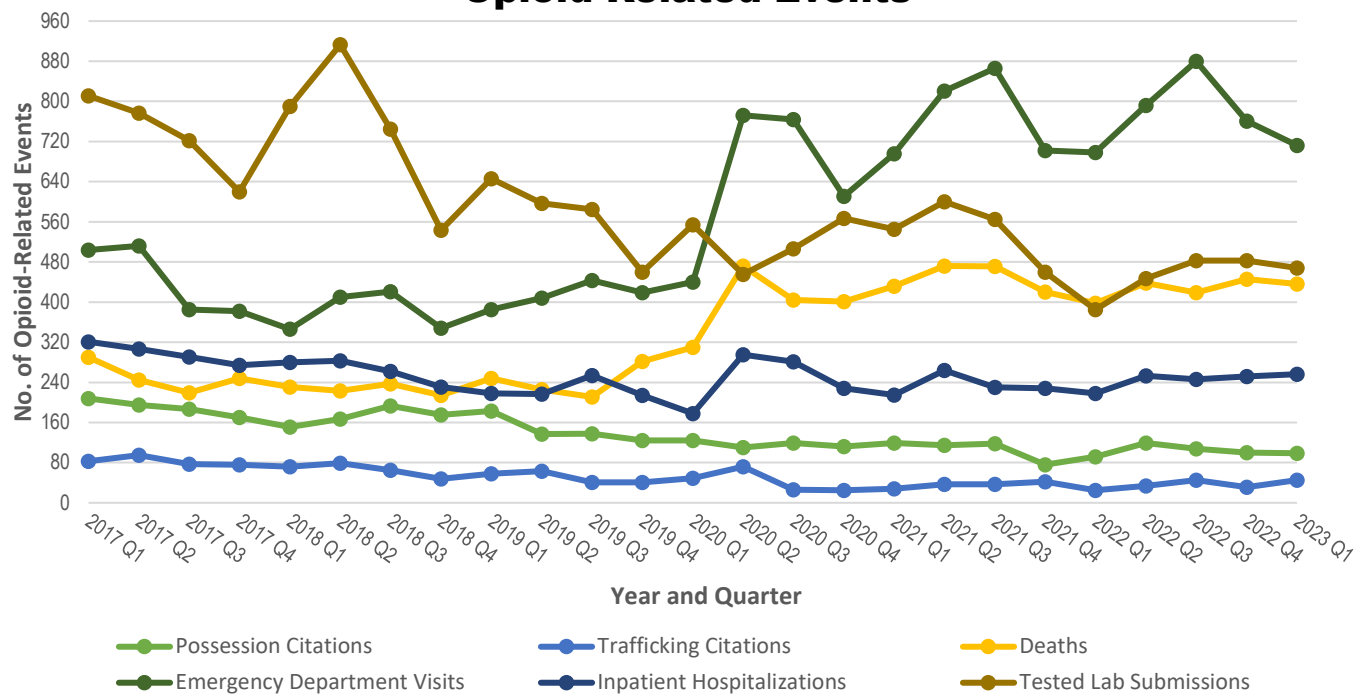
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 44.4% from January 2017 through March 2023 and increased by 19.2% from Q4 2022 through Q1 2023.
- Heroin trafficking citations decreased by 64.7% from January 2017 through March 2023 and increased by 6.6% from Q4 2022 through Q1 2023.
- Kentucky resident heroin-related deaths declined by 91.1% from January 2017 through March 2023, while increasing 33.3% from Q4 2022 through Q1 2023.
- Heroin-related emergency department (ED) visits and inpatient hospitalizations both declined from January 2017 through March 2023 (by 82.2% and 74.4%, respectively). Both ED visits and inpatient hospitalizations decreased from Q4 2022 through Q1 2023 (by 5.6% and 10.2%, respectively).
- Heroin-related tested lab submissions decreased by 82.7% from January 2017 through March 2023 and increased 5.4% from Q4 2022 through Q1 2023.
- Overall, total heroin-related events (possession and trafficking citations, deaths, ED visits, inpatient hospitalizations, and tested lab submissions) decreased by 73.5% from the beginning of 2017 through the end of March 2023. Heroin-related events increased by 6.1% from Q4 2022 through Q1 2023.

## Opioid-Related Events

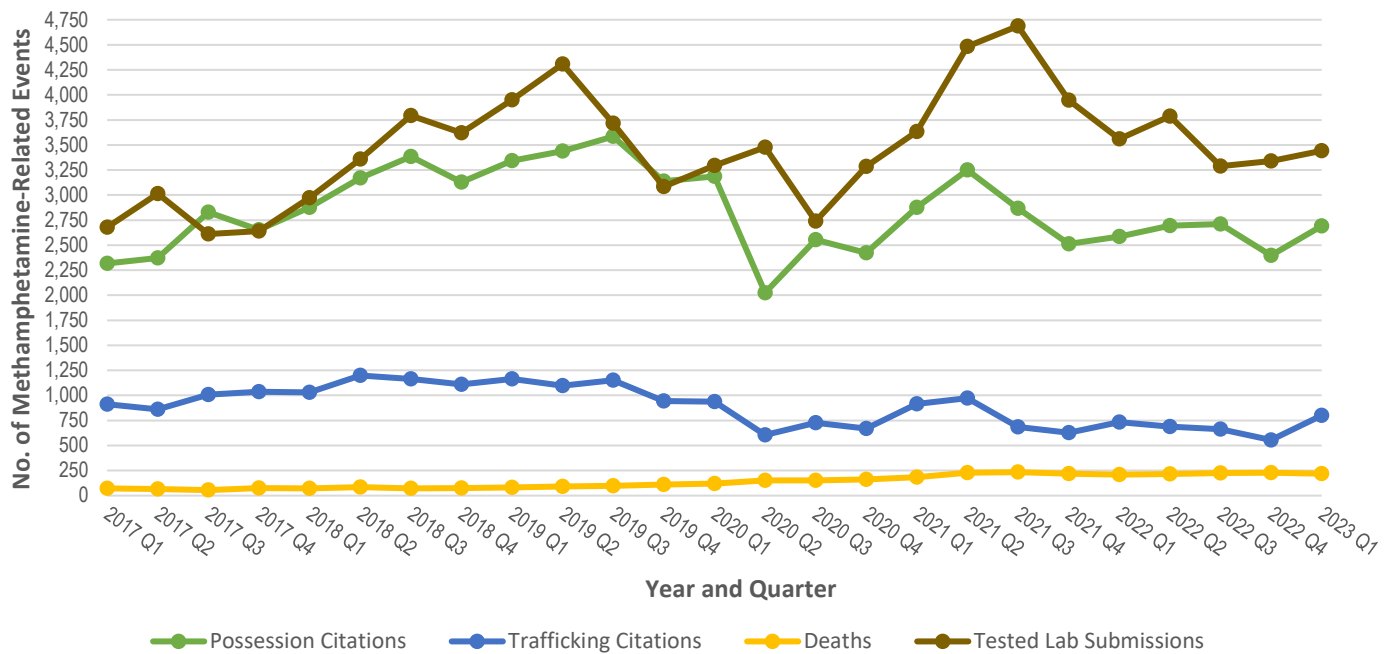


Data are provisional and subject to change. Opioid-related events reflect non-heroin- and non-fentanyl-related opioids. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related 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 52.4% from Q1 2017 through Q1 2023 and by 1% from Q4 2022 through Q1 2023.
- Opioid trafficking citations decreased by 45.8% from Q1 2017 through Q1 2023 and increased by 45.2% from Q4 2022 through Q1 2023.
- Kentucky resident opioid-related deaths increased by 50.3% from Q1 2017 through Q1 2023 and decreased by 2.2% from Q4 2022 through Q1 2023.
- Opioid-related ED visits increased by 41.3% from Q1 2017 through Q1 2023 and declined by 6.4% from Q4 2022 through Q1 2023.
- Opioid-related inpatient hospitalizations declined by 20.2% from Q1 2017 through Q1 2023 and increased by 1.6% from Q4 2022 through Q1 2023.
- Tested lab submissions that positively identified opioids decreased by 42.3% from Q1 2017 through Q4 2022 and decreased by 3.1% from Q4 2022 through Q1 2023.
- Opioids and their devastating effects remain prevalent throughout the Commonwealth despite a 9.1% reduction in opioid-related events from Q1 2017 through Q1 2023 and a 2.7% reduction from Q4 2022 through Q1 2023.

## Methamphetamine-Related Events



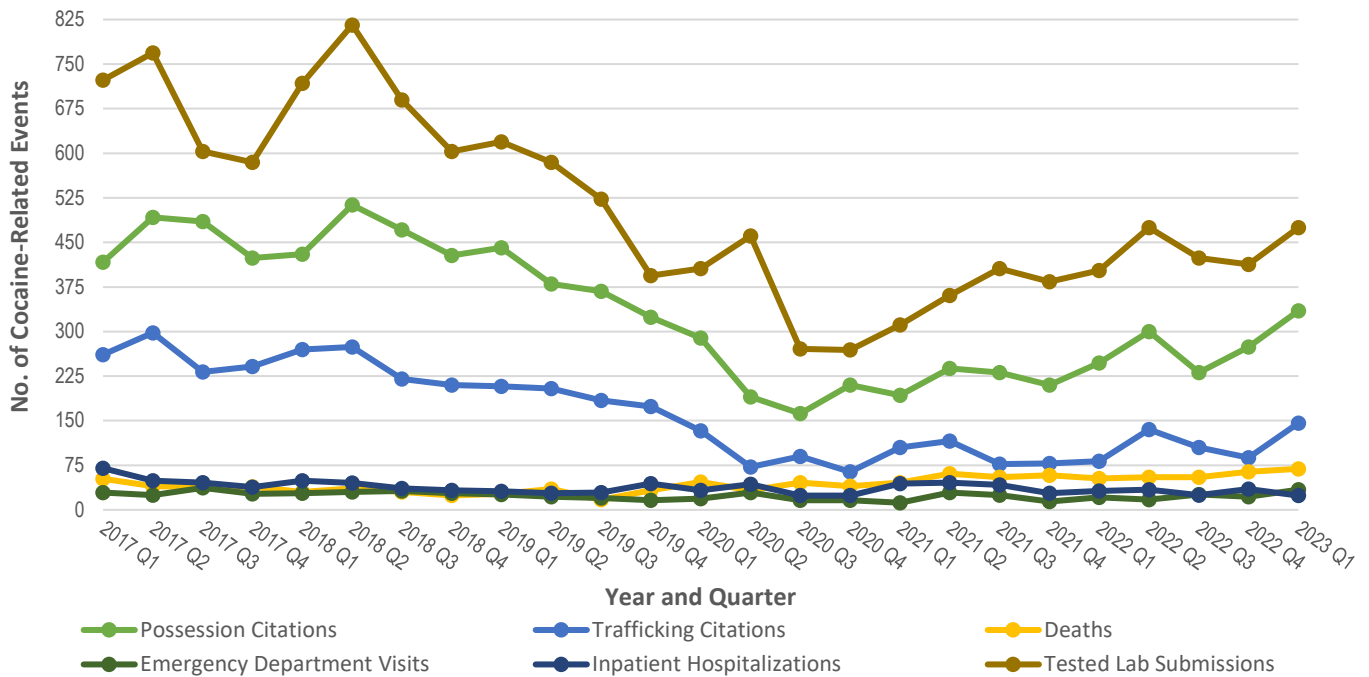
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Tested lab submission data represent 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 16.1% from Q1 2017 through Q1 2023 and increased by 12.3% from Q4 2022 through Q1 2023.
- Methamphetamine trafficking citations decreased by 12.3% from Q1 2017 through Q1 2023 and increased by 44.3% from Q4 2022 through Q1 2023.
- A 205.6% increase in methamphetamine-related overdose deaths was observed among Kentucky residents from Q1 2017 through Q1 2023; all involved the use of more than one drug (polydrug use). A 3.1% decrease in deaths occurred from Q4 2022 through Q1 2023.
- Tested lab submissions positively identifying methamphetamine increased by 28.6% from Q1 2017 through Q1 2023 and by 3.1% from Q4 2022 through Q1 2023.
- Methamphetamine use and distribution continue to threaten the Commonwealth’s safety and health, as methamphetamine-related events increased by 19.6% from Q1 2017 through Q1 2023 and by 9.8% from Q4 2022 through Q1 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. Deaths 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).

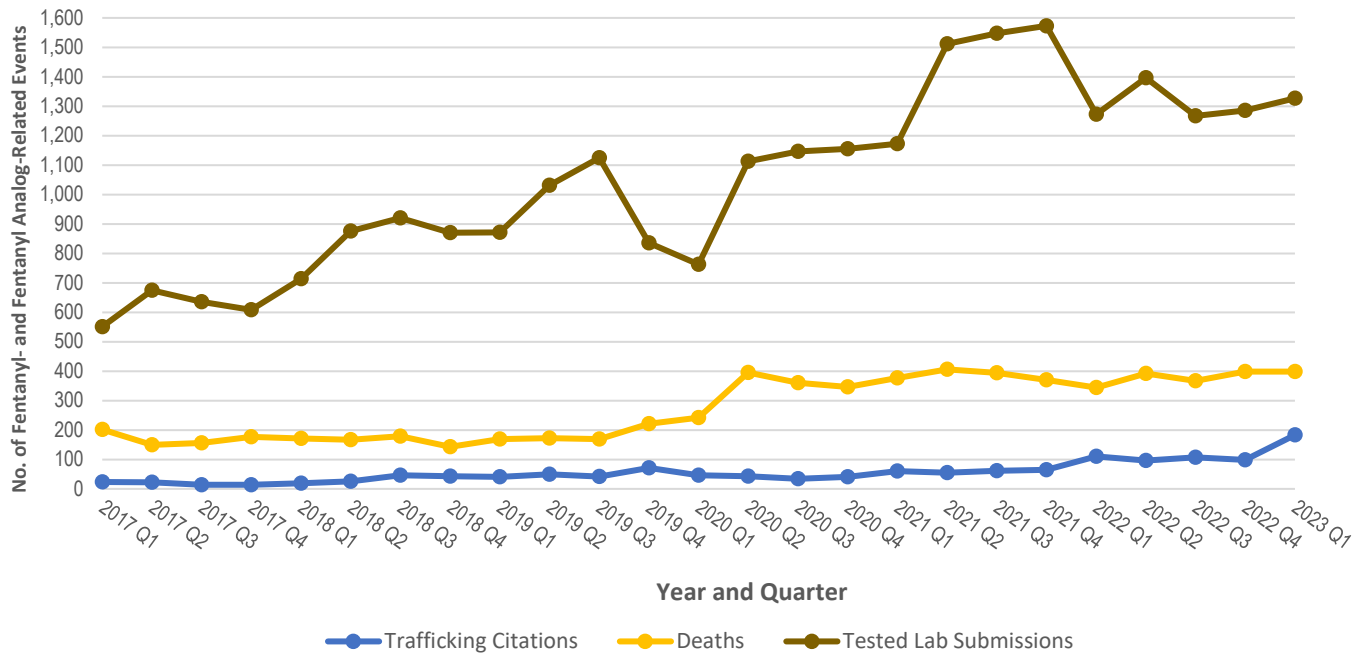
Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Services Database Files, Office of Health Data and Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization 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 19.7% from Q1 2017 through Q1 2023 and increased by 22.3% from Q4 2022 through Q1 2023.
- Cocaine trafficking citations decreased by 44.1% from Q1 2017 through Q1 2023 and increased by 65.9% from Q4 2022 through Q1 2023.
- Cocaine-related deaths increased 32.7% from Q1 2017 through Q1 2023 and by 7.8% from Q4 2022 through Q1 2023.
- Cocaine-related emergency department visits increased by 17.2% from Q1 2017 through Q1 2023 and by 54.5% from Q4 2022 through Q1 2023.
- Cocaine-related inpatient hospitalizations declined by 65.7% from Q1 2017 through Q1 2023 and decreased by 31.4% from Q4 2022 through Q1 2023.
- Tested lab submissions positively identifying cocaine decreased by 34.3% from Q1 2017 to Q1 2023; a 15% increase occurred from Q4 2022 through Q1 2023.
- Overall, cocaine-related events decreased by 30.2% from Q1 2017 through Q1 2023 and increased by 20.9% from Q4 2022 through Q1 2023.



## Fentanyl- and Fentanyl Analog-Related Events

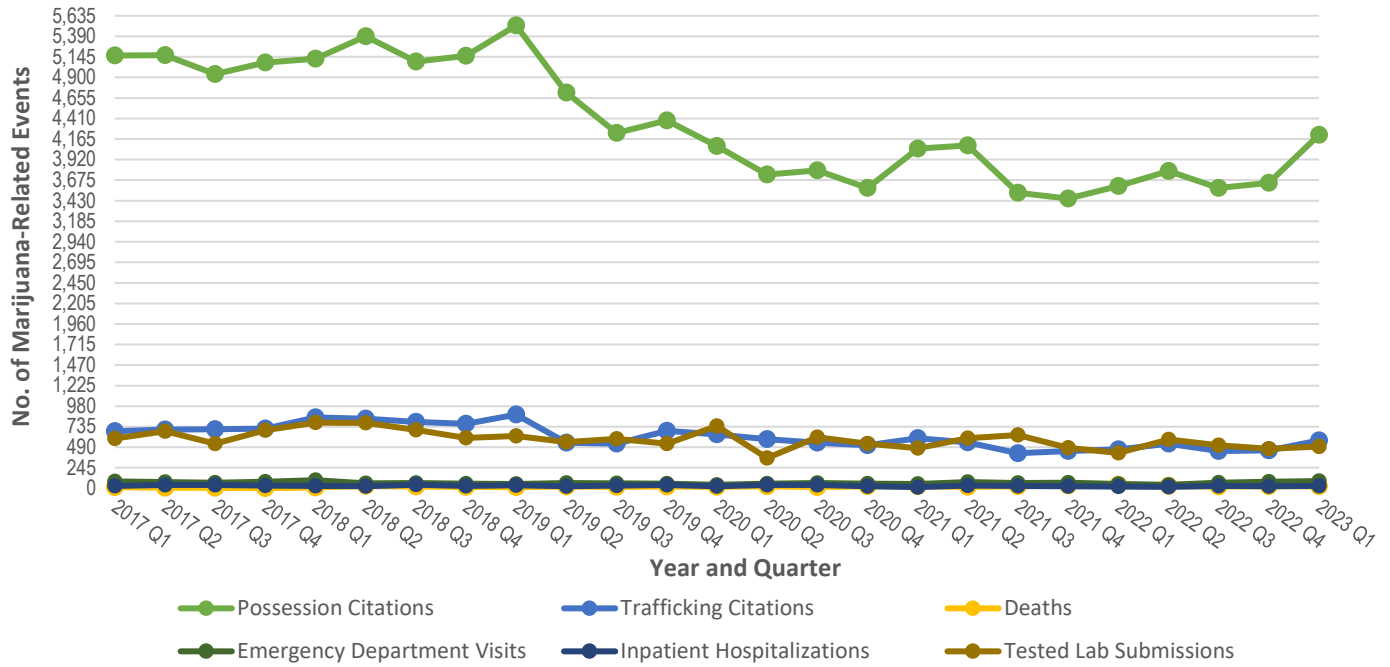


Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. There are no Kentucky Revised Statute codes for fentanyl possession. Deaths are based on drug overdose-related 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 695.7% from Q1 2017 through Q1 2023 and increased by 86.7% from Q4 2022 through Q1 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 97% from Q1 2017 through Q1 2023 and no change was observed from Q4 2022 through Q1 2023.
- Tested lab submissions positively identifying fentanyl and fentanyl analogs rose by 140.8% from Q1 2017 through Q1 2023 and by 3.2% from Q4 2022 through Q1 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 145.9% from Q1 2017 through Q1 2023; a 7.1% increase was observed from Q4 2022 through Q1 2023.

## Marijuana-Related Events



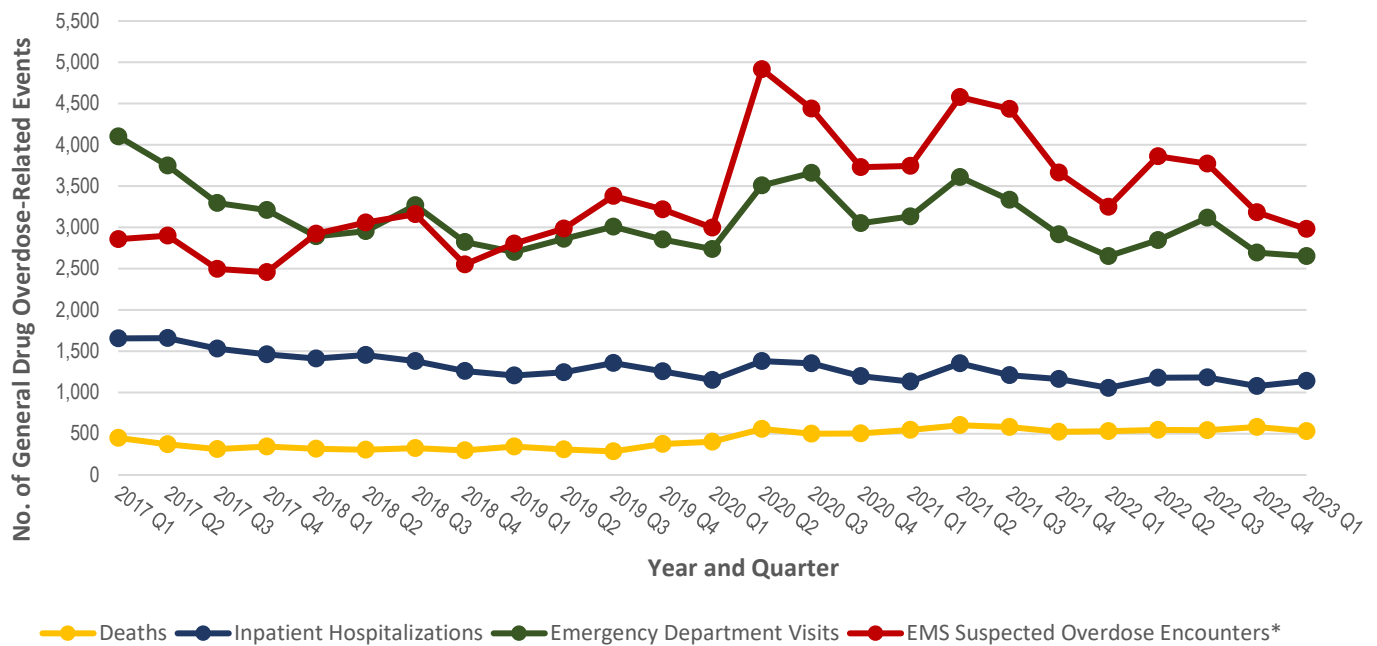
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 18.3% from Q1 2017 through Q1 2023 and increased by 15.7% from Q4 2022 through Q1 2023.
- Marijuana trafficking citations declined by 16.2% from Q1 2017 through Q1 2023 and increased by 26.1% from Q4 2022 through Q1 2023.
- Marijuana (cannabis)-related deaths increased by 100% from Q1 2017 through Q1 2023, and no change was observed from Q4 2022 through Q1 2023; all involved polydrug use.
- Marijuana-related emergency department visits increased by 6.2% from Q1 2017 through Q1 2023 and increased by 10.3% from Q4 2022 through Q1 2023.
- Marijuana-related inpatient hospitalizations declined by 3.4% from Q1 2017 through Q1 2023 and increased by 12% from Q4 2022 through Q1 2023.
- Tested lab submissions positively identifying marijuana decreased 15.9% from Q1 2017 through Q1 2023 and increased by 6.2% from Q4 2022 through Q1 2023.
- Marijuana use and distribution are prevalent across Kentucky even as marijuana-related events declined by 17.3% from the Q1 2017 through Q1 2023; events increased 15.6% from Q4 2022 through Q1 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. Deaths 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 18.3% from Q1 2017 through Q1 2023; an 8.8% decrease was observed from Q4 2022 through Q1 2023.
- Drug overdose-related ED visits decreased by 35.4% from Q1 2017 through Q1 2023 and by 1.5% from Q4 2022 through Q1 2023.
- Drug overdose-related hospitalizations declined by 31% from Q1 2017 through Q1 2023 and increased by 5.8% from Q4 2022 through Q1 2023.
- Emergency medical services (EMS) suspected drug overdose-related encounters increased by 4.4% from Q1 2017 through Q1 2023. A 6.3% decrease in EMS encounters occurred from Q4 2022 through Q1 2023.
- Among law enforcement agencies currently reporting, 3,004 naloxone doses were administered from December 12, 2018, through March 31, 2023 (data not shown).
- Drug use, misuse, and distribution are still affecting Kentuckians, even as a 19.4% decrease in general drug overdose-related events was observed from Q1 2017 through Q1 2023; a 3% decrease also occurred from Q4 2022 through Q1 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.

