



Kentucky Substance Use Research & Education

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

Brief 28: Six Major Overdose-Related Substances and General Overdose-Related Events in Kentucky, January 1, 2017–December 31, 2022

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



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:

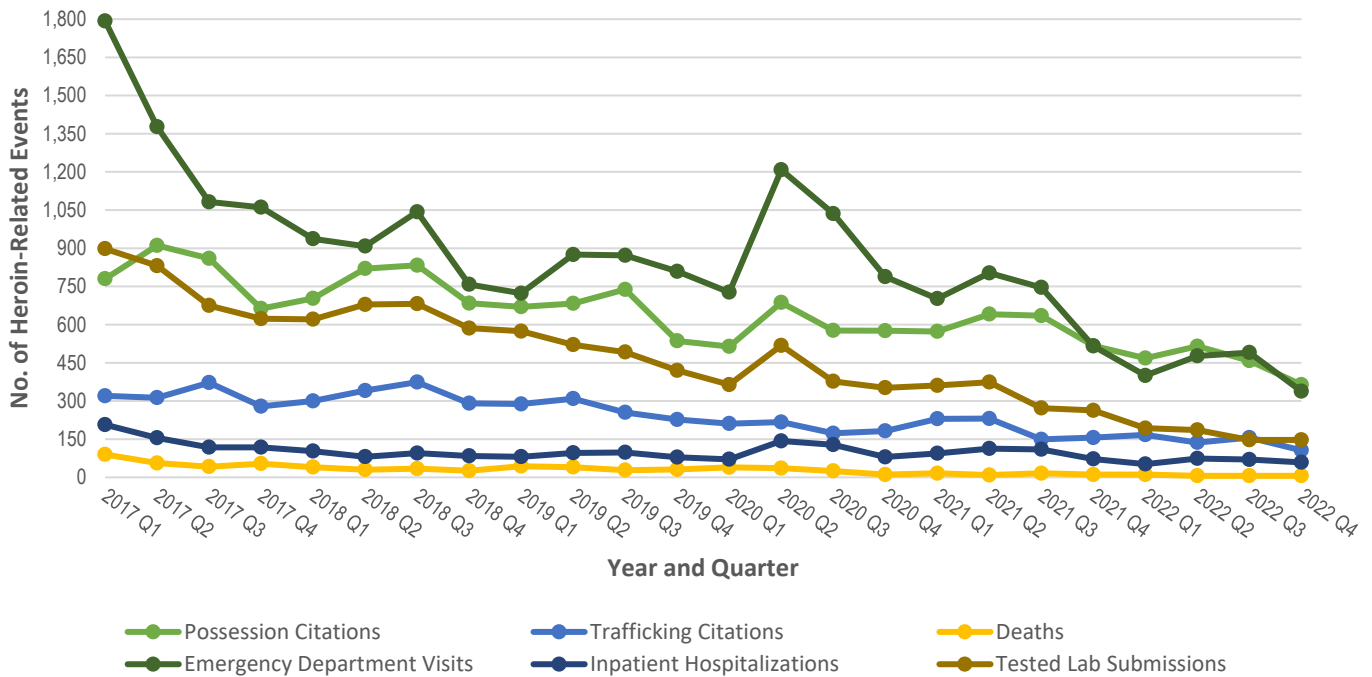
https://uky.az1.qualtrics.com/jfe/form/SV_bDzBAIOXZprzO85



Thank you in advance!

The K-SURE Team

Heroin-Related Events



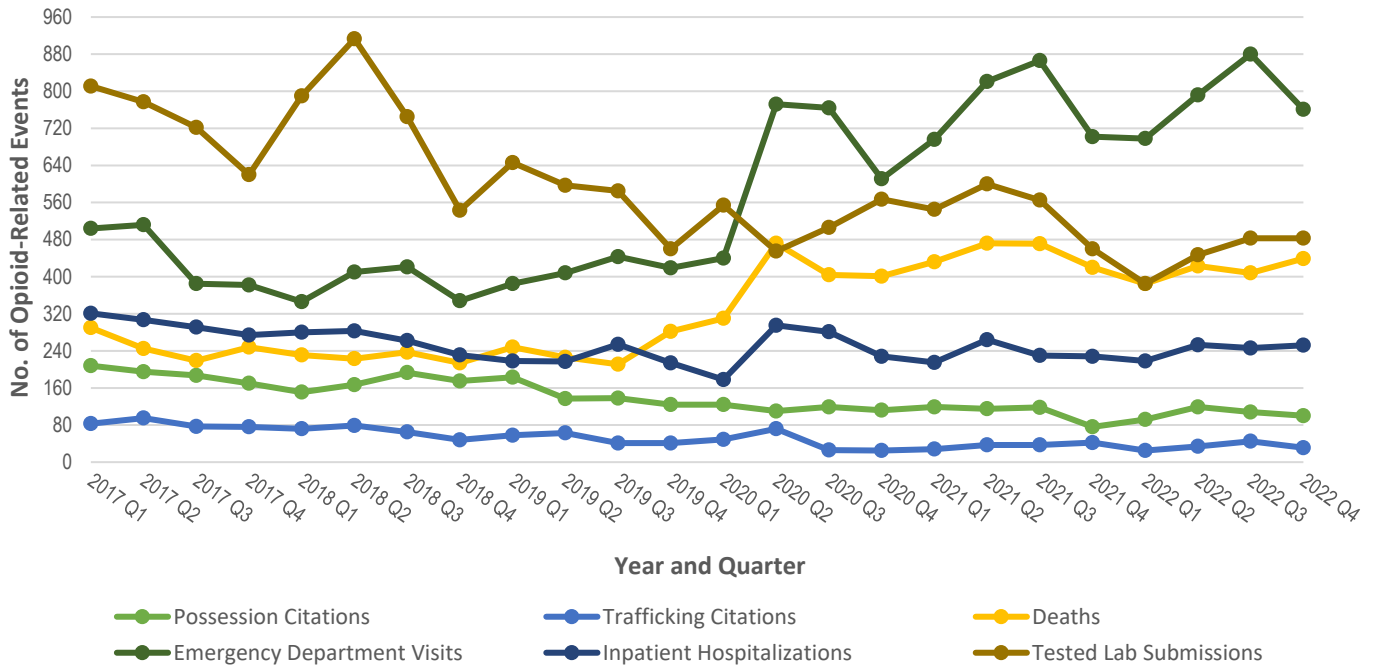
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 53.3% from January 2017 through December 2022 and by 20.5% from Q3 2022 through Q4 2022.
- Heroin trafficking citations decreased by 66.9% from January 2017 through December 2022 and by 32.1% from Q3 2022 through Q4 2022.
- Kentucky resident heroin-related deaths declined by 93.3% from January 2017 through December 2022 and no change in deaths were observed from Q3 2022 through Q4 2022.
- Heroin-related emergency department (ED) visits and inpatient hospitalizations both declined from January 2017 through December 2022 (by 81.1% and 71.5%, respectively). Both ED visits and inpatient hospitalizations decreased from Q3 2022 through Q4 2022 (by 31% and 15.7%, respectively).
- Heroin-related tested lab submissions decreased by 83.6% from January 2017 through December 2022 (heroin accounted for 6.3% of the total tested submissions from January 2017 through December 2022 [data not shown]) and no change was observed from Q3 2022 through Q4 2022.
- Overall, total heroin-related events (possession and trafficking citations, deaths, ED visits, inpatient hospitalizations, and tested lab submissions) decreased by 75% from the beginning of 2017 through the end of December 2022. Heroin-related events decreased by 23.1% from Q3 2022 through Q4 2022.

Opioid-Related Events

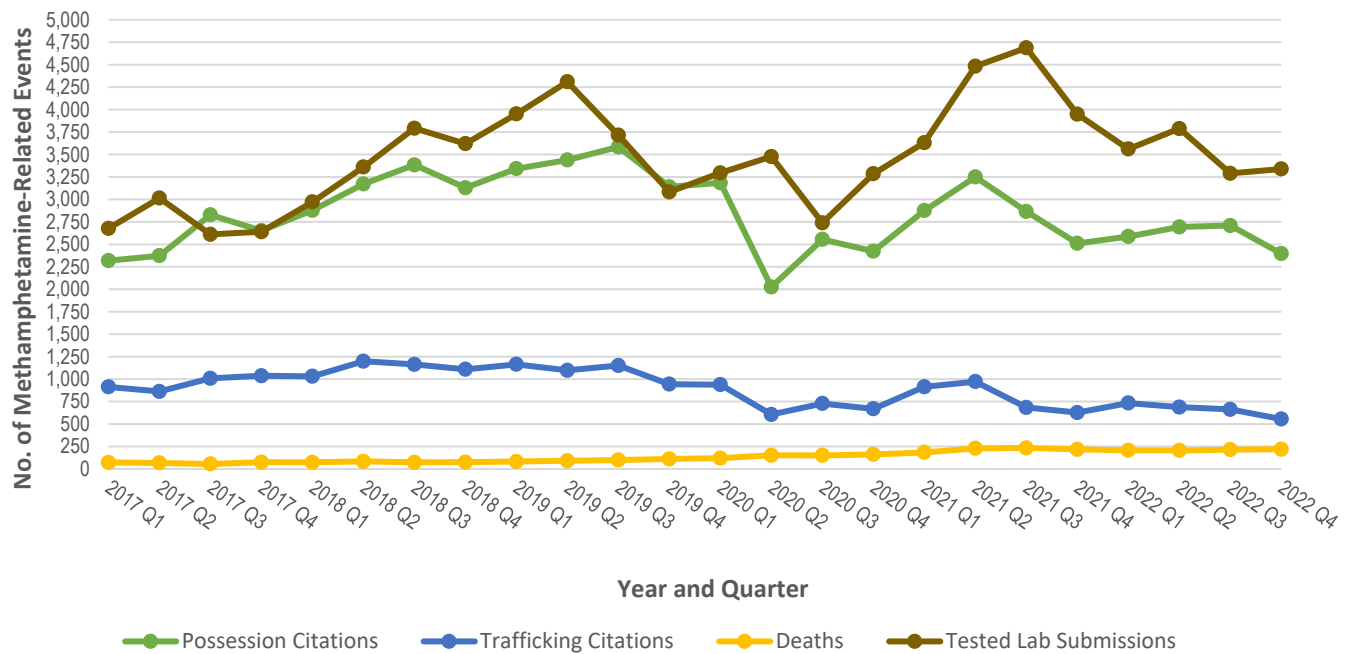


Data are provisional and subject to change. Opioid-related events reflect non-heroin- and non-fentanyl-related opioids. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related 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 51.9% from Q1 2017 through Q4 2022 and by 7.4% from Q3 2022 through Q4 2022.
- Opioid trafficking citations decreased by 62.7% from Q1 2017 through Q4 2022 and by 31.1% from Q3 2022 through Q4 2022.
- Kentucky resident opioid-related deaths increased by 51.4% from Q1 2017 through Q4 2022 and increased by 7.6% from Q3 2022 through Q4 2022.
- Opioid-related ED visits increased by 51% from Q1 2017 through Q4 2022 and declined by 13.5% from Q3 2022 through Q4 2022.
- Opioid-related inpatient hospitalizations declined by 21.5% from Q1 2017 through Q4 2022 and increased by 2.4% from Q3 2022 through Q4 2022.
- Tested lab submissions that positively identified opioids decreased by 40.4% from 2017 through Q4 2022 and no change was observed from Q3 2022 through Q4 2022. Opioids accounted for 8.1% of the total tested submissions from Q1 2017 through Q4 2022 (data not shown).
- Opioids and their devastating effects remain prevalent throughout the Commonwealth. A 6.8% reduction in opioid-related events occurred from Q1 2017 through Q4 2022, and a decrease of 4.8% occurred from Q3 2022 through Q4 2022.

Methamphetamine-Related Events

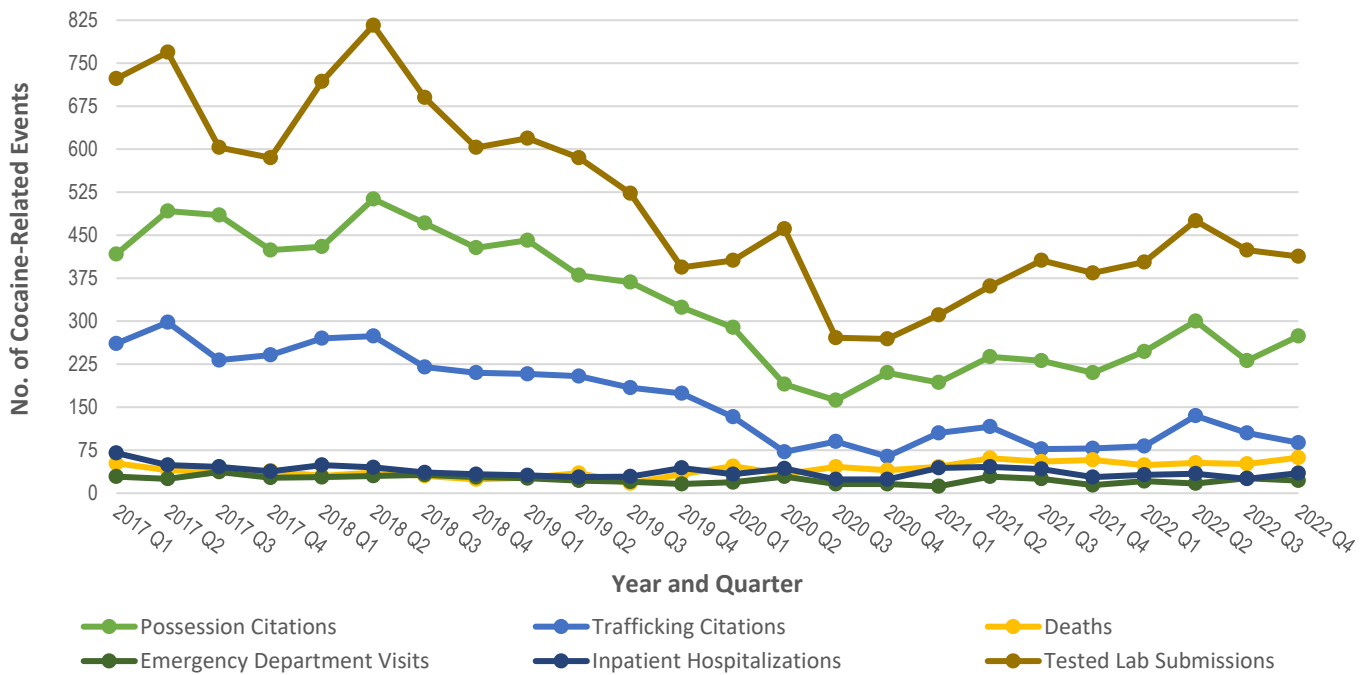


Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Tested lab submission data represent 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 3.4% from Q1 2017 through Q4 2022 and decreased by 11.5% from Q3 2022 through Q4 2022.
- Methamphetamine trafficking citations decreased by 39.2% from Q1 2017 through Q4 2022 and by 16.3% from Q3 2022 through Q4 2022.
- A 204.2% increase in methamphetamine-related overdose deaths was observed among Kentucky residents from Q1 2017 through Q4 2022; all involved the use of more than one drug (polydrug use). A 1.9% increase in deaths occurred from Q3 2022 through Q4 2022.
- Tested lab submissions positively identifying methamphetamine increased by 24.7% from Q1 2017 through Q4 2022 and by 1.5% from Q3 2022 through Q4 2022. Methamphetamine remains the most common drug submitted to Kentucky State Police Laboratories, accounting for 47.3% of the total tested submissions from Q1 2017 through Q4 2022 (data not shown).
- Methamphetamine use and distribution continue to threaten the Commonwealth’s safety and health, as methamphetamine-related events increased by 8.9% from Q1 2017 through Q4 2022 and decreased by 5.3% from Q3 2022 through Q4 2022.

Cocaine-Related Events



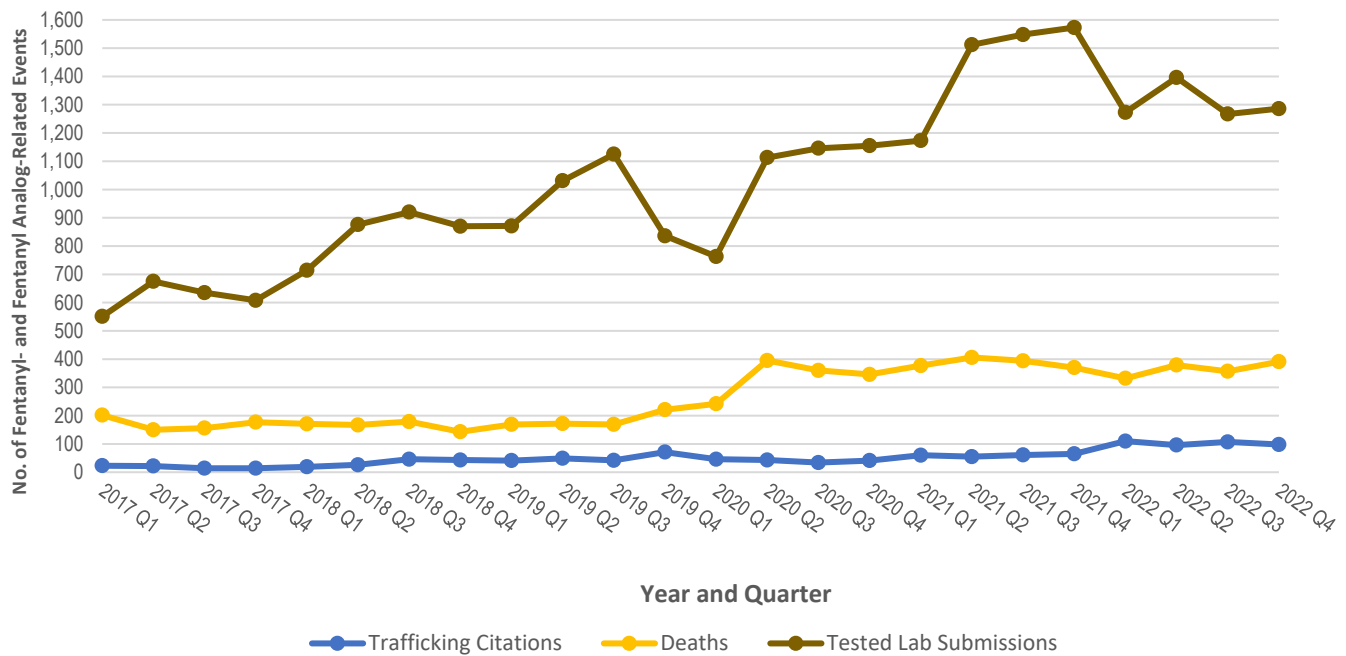
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 34.3% from Q1 2017 through Q4 2022 and increased by 18.6% from Q3 2022 through Q4 2022.
- Cocaine trafficking citations decreased by 66.3% from Q1 2017 through Q4 2022 and by 16.2% from Q3 2022 through Q4 2022.
- Cocaine-related deaths increased 19.2% from Q1 2017 through Q4 2022 and by 21.6% from Q3 2022 through Q4 2022.
- Cocaine-related emergency department visits declined by 24.1% from Q1 2017 through Q4 2022 and by 15.4% from Q3 2022 through Q4 2022.
- Cocaine-related inpatient hospitalizations declined by 50% from Q1 2017 through Q4 2022 and increased by 40% from Q3 2022 through Q4 2022.
- Tested lab submissions positively identifying cocaine decreased by 42.9% from Q1 2017 to Q4 2022; a 2.6% decrease occurred from Q3 2022 through Q4 2022. Cocaine accounted for 6.9% of the total tested lab submissions from Q1 2017 through Q4 2022 (data not shown).
- Overall, cocaine-related events decreased by 42.4% from Q1 2017 through Q4 2022 and increased by 3.7% from Q3 2022 through Q4 2022.

Fentanyl- and Fentanyl Analog-Related Events

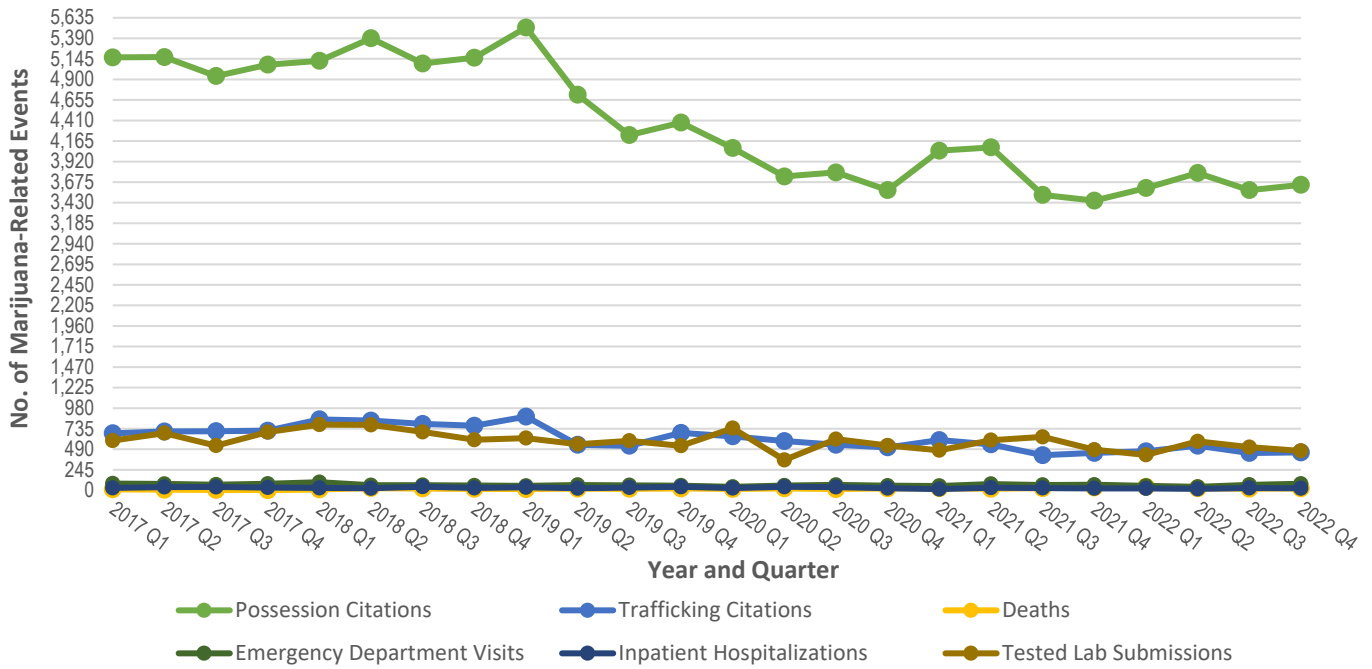


Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. There are no Kentucky Revised Statute codes for fentanyl possession. Deaths are based on drug overdose-related 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 326.1% from Q1 2017 through Q4 2022 and decreased by 8.4% from Q3 2022 through Q4 2022. 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 93.6% from Q1 2017 through Q4 2022 and by 9.5% from Q3 2022 through Q4 2022.
- Tested lab submissions positively identifying fentanyl and fentanyl analogs rose by 133.4% from Q1 2017 through Q4 2022 and by 1.5% from Q3 2022 through Q4 2022. Fentanyl derivatives, along with polydrug mixtures such as heroin/fentanyl, cocaine/fentanyl, and methamphetamine/fentanyl, made up 14.2% of total tested lab submissions from Q1 2017 through Q4 2022.
- 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 128.7% from Q1 2017 through Q4 2022; a 2.5% increase was observed from Q3 2022 through Q4 2022.

Marijuana-Related Events



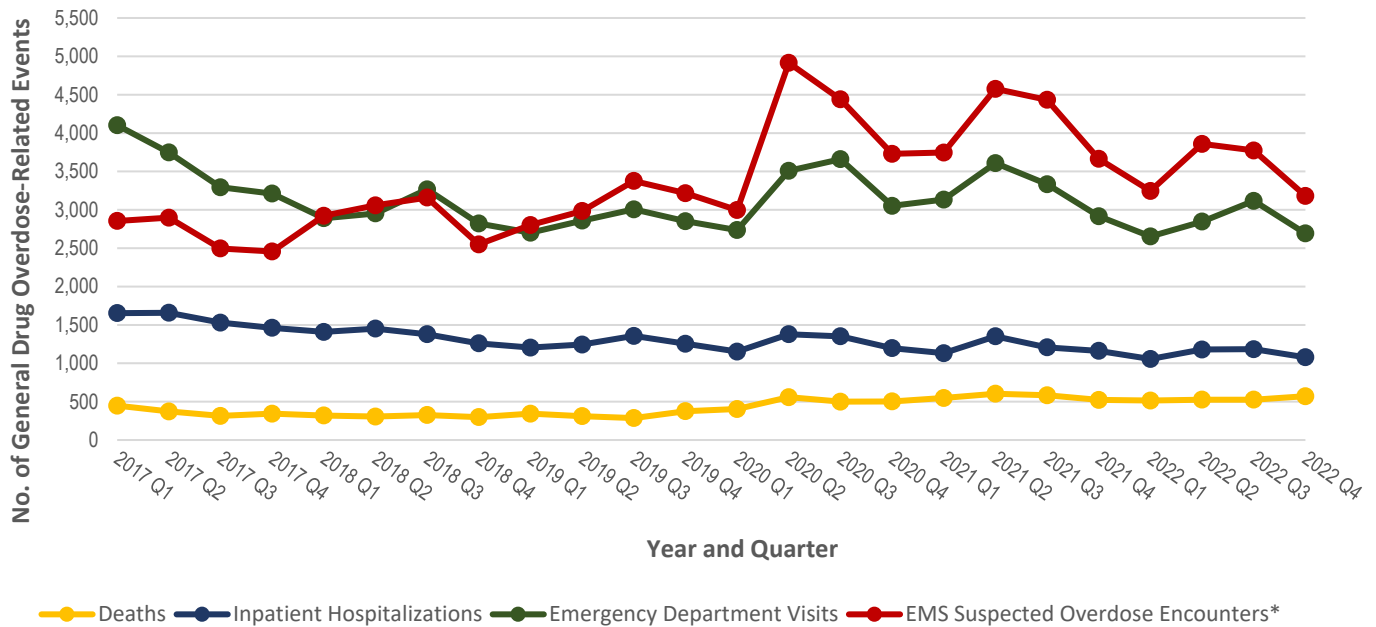
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 29.4% from Q1 2017 through Q4 2022 and increased by 1.8% from Q3 2022 through Q4 2022.
- Marijuana trafficking citations declined by 33.5% from Q1 2017 through Q4 2022 and increased by 1.6% from Q3 2022 through Q4 2022.
- Marijuana (cannabis)-related deaths increased by 100% from Q1 2017 through Q4 2022 and by 20% from Q3 2022 through Q4 2022; all involved polydrug use.
- Marijuana-related emergency department visits decreased by 3.7% from Q1 2017 through Q4 2022; however, ED visits increased 18.2% from Q3 2022 through Q4 2022.
- Marijuana-related inpatient hospitalizations declined by 13.8% from Q1 2017 through Q4 2022 and by 10.7% from Q3 2022 through Q4 2022.
- Tested lab submissions positively identifying marijuana decreased 20.7% from Q1 2017 through Q4 2022 and by 8.7% from Q3 2022 through Q4 2022. Marijuana accounted for 8% of the total tested submissions from Q1 2017 through Q4 2022 (data not shown).
- Marijuana use and distribution are prevalent across Kentucky even as marijuana-related events declined by 28.5% from the beginning of 2017 through Q4 2022 and no change was observed from Q3 2022 through Q4 2022.

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 27.5% from Q1 2017 through Q4 2022; an 8.6% increase was observed from Q3 2022 through Q4 2022.
- Drug overdose-related ED visits declined by 34.4% from Q1 2017 through Q4 2022 and by 13.6% from Q3 2022 through Q4 2022.
- Drug overdose-related hospitalizations declined by 34.8% from Q1 2017 through Q4 2022 and by 9% from Q3 2022 through Q4 2022.
- Emergency medical services (EMS) suspected drug overdose-related encounters increased by 11.4% from Q1 2017 through Q4 2022. An 15.7% decrease in EMS encounters occurred from Q3 2022 through Q4 2022.
- Among the law enforcement agencies currently reporting, 2,787 naloxone doses were administered from December 12, 2018, through December 31, 2022 (data not shown).
- Drug use, misuse, and distribution are still affecting Kentuckians, even as a 17% decrease in general drug overdose-related events was observed from Q1 2017 through Q4 2022; a 12.5% increase occurred from Q3 2022 through Q4 2022.

K-SURE Data Matrix

	Emergency Department (ED) Visits	Inpatient Hospitalizations	Deaths	Possession Citations	Trafficking Citations	Crime Lab Submissions
Heroin	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.
Opioids	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	
Methamphetamine			Text scan	KRS: 42187, 42188, 42215, 42216	KRS: 42113, 42114, 42290, 42291, 42364, 42365, 42366, 42367	
Cocaine	T405	T405	T405	KRS: 35320, 35321, 42193, 42194, 42203, 42204	KRS: 35300, 35301, 42103, 42104, 42368, 42369, 42370, 42371	
Fentanyl and Fentanyl Analogs			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	

Marijuana	T407X1, T407X2, T407X3, T407X4, T407X5	T407X1, T407X2, T407X3, T407X4, T407X5	T407	KRS: 42330	KRS: 42301, 42302, 42311, 42312, 42321, 42322	
General Drug Overdoses	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			
Data Sources	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
Notes	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.

