



Kentucky Substance Use Research & Enforcement

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

Brief: Six Major Overdose-Related Substances in Kentucky,
January 1, 2017–March 31, 2021

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 & Enforcement (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:

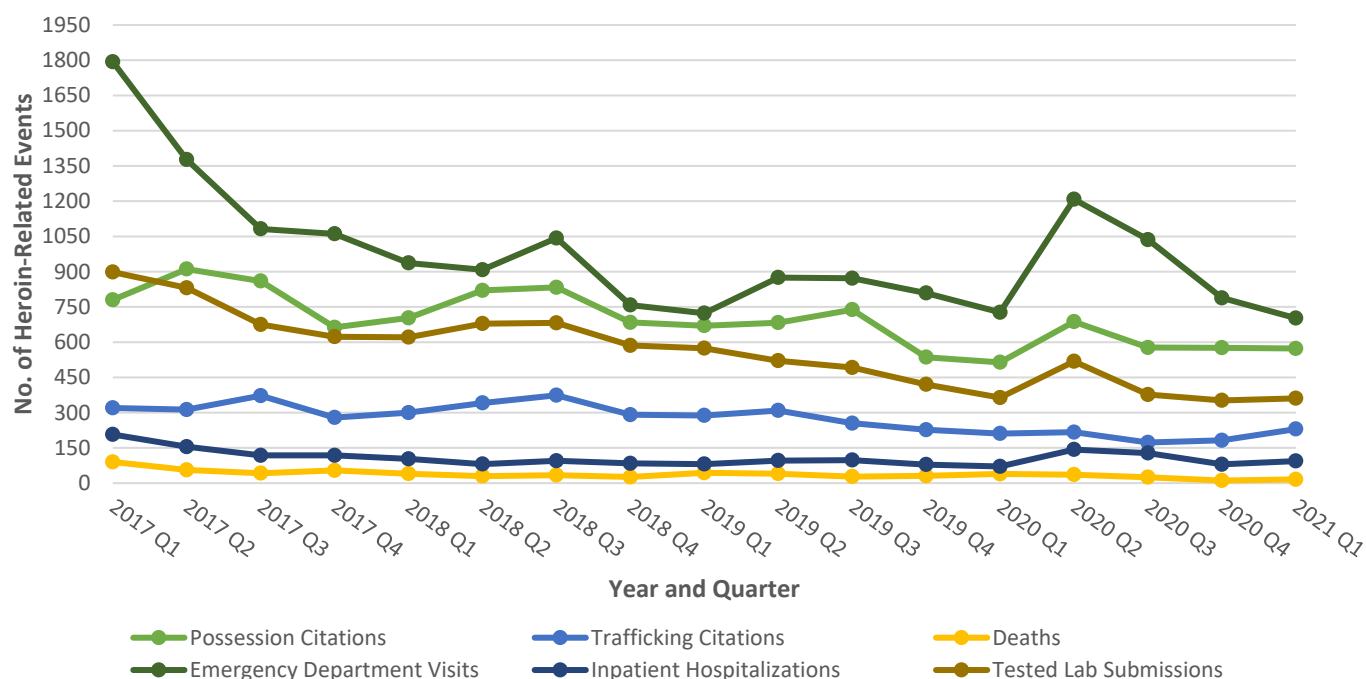
https://uky.az1.qualtrics.com/jfe/form/SV_bDzBAIOXZprzO85



Thank you in advance!

- The K-SURE Team -

Heroin-Related Events



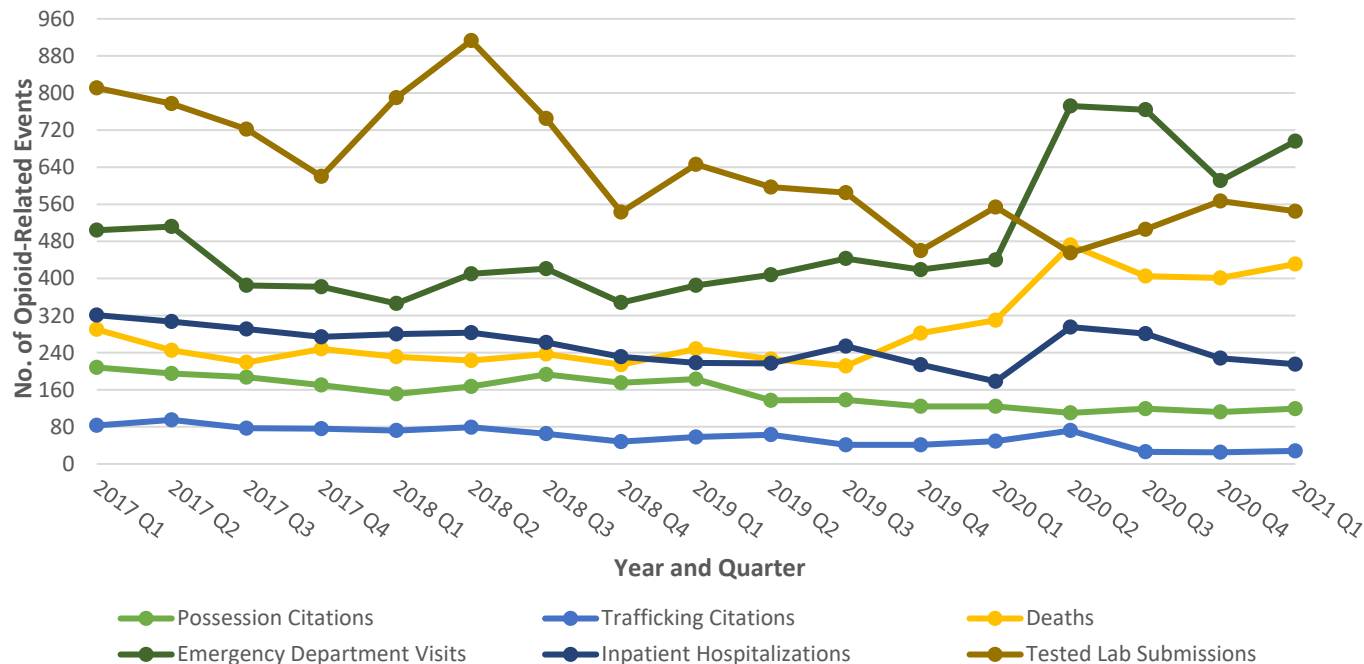
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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.

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

Key Findings:

- Heroin possession citations decreased by 26.5% from January 2017 through March 2021 and no change was observed from the fourth quarter of 2020 through the first quarter of 2021.
- Heroin trafficking citations decreased by 28.1% from January 2017 through March 2021 and by 26.4% from December 2020 through March 2021.
- Kentucky resident heroin-related deaths declined by 82.2% from January 2017 through March 2021; heroin-related deaths increased 45.5% from the fourth quarter of 2020 through the first quarter of 2021.
- Both heroin-related emergency department (ED) visits and inpatient hospitalizations (IH) declined from January 2017 through March 2021 (60.8% and 54.6%, respectively). Meanwhile, from the fourth quarter of 2020 through the first quarter of 2021, ED visits decreased 10.9% and IH increased 17.5%.
- Heroin-related tested lab submissions decreased 59.8% from January 2017 through March 2021, but increased 2.6% from the fourth quarter of 2020 through the first quarter of 2021.
- Overall, there was a 51.7% decrease in total heroin-related events (possession and trafficking citations, deaths, emergency department visits, hospitalizations, and tested lab submissions) from the beginning of 2017 through the end of March 2021. However, there was a less than 1% change in heroin-related events from the fourth quarter of 2020 through the first quarter of 2021.

Opioid-Related Events



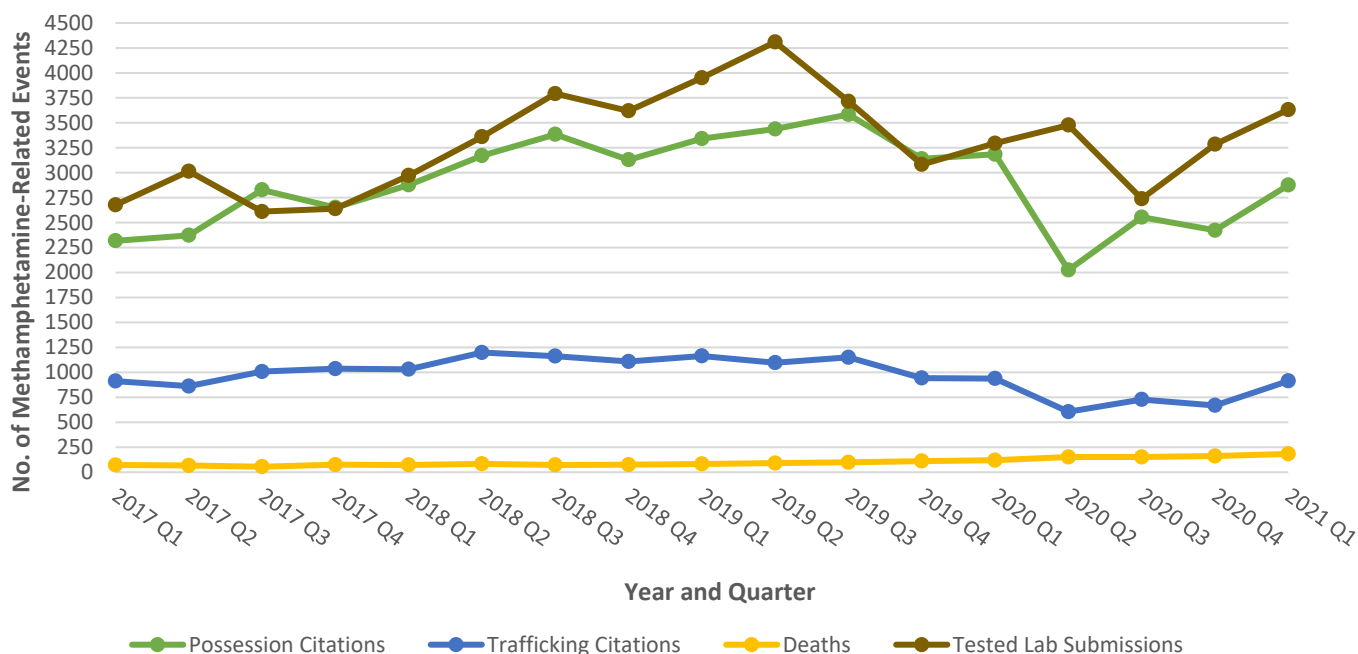
Data are provisional and subject to change. Opioid-related events reflect nonheroin opioids. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky 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.

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Key Findings:

- Statewide opioid possession and trafficking citations decreased by 42.8% and 66.3%, respectively, from January 2017 through March 2021, while both possession and trafficking citations increased from the fourth quarter of 2020 throughout the first quarter of 2021 (6.3% and 12%, respectively).
- Opioid-related emergency department visits increased by 38.1% from January 2017 through March 2021 and increased by 13.9% from the fourth quarter of 2020 through the first quarter of 2021.
- Opioid-related inpatient hospitalizations declined by 33% from January 2017 through March 2021, while decreasing only 5.7% from the fourth quarter of 2020 through the first quarter of 2021.
- Kentucky resident opioid-related deaths increased by 48.6% from January 1, 2017, to December 31, 2020. An increase in opioid-related deaths of 7.5% was observed from the fourth quarter of 2020 through the first quarter of 2021. Opioids remain the leading substances identified among drug overdose-related deaths (data not shown).
- There was a 32.8% decrease in tested lab submissions that positively identified opioids from 2017 through March 2021, and a 3.9% decrease was observed from the fourth quarter of 2020 through the first quarter of 2021. Opioids accounted for 8.8% of the total tested submissions to Kentucky State Police Laboratories from the beginning of 2017 through March 2021 (data not shown).
- Opioids and its devastating effects remain prevalent throughout the Commonwealth, even as opioid-related events decreased by 8.3% from the first quarter of 2017 through the first quarter of 2021, while a 4.6% increase was observed from the fourth quarter of 2020 through March 2021.

Methamphetamine-Related Events



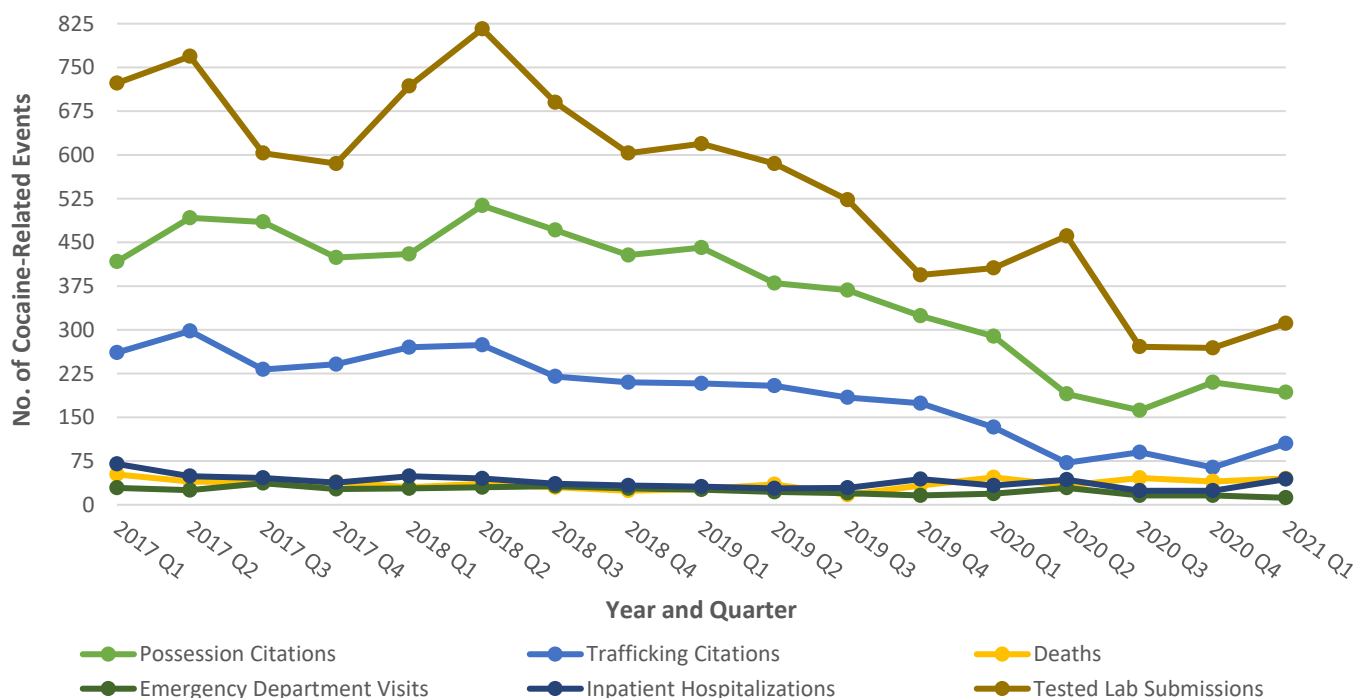
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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.

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 increased by 24.1%, and no change was observed for trafficking citations from January 2017 through March 2021. However, both methamphetamine possession and trafficking citations increased from the fourth quarter of 2020 through the first quarter of 2021 (18.7% and 36.6%, respectively).
- A 154.2% increase was observed among Kentucky resident methamphetamine-related overdose deaths, all of which involved the use of more than one drug (polydrug use), from the beginning of January 2017 through March 2021; a 13% increase in deaths occurred from the fourth quarter of 2020 through the first quarter of 2021.
- Tested lab submissions positively identifying methamphetamine increased by 35.7% from the first quarter of 2017 through the first quarter of 2021 and declined by 10.6% from the fourth quarter of 2020 through the first quarter of 2021. Methamphetamine continues to be the most commonly submitted drug to Kentucky State Police Laboratories (data not shown).
- Methamphetamine use and distribution continue to threaten the Commonwealth's safety and health, as methamphetamine-related events increased by 27.2% from January 2017 through March 2021.

Cocaine-Related Events



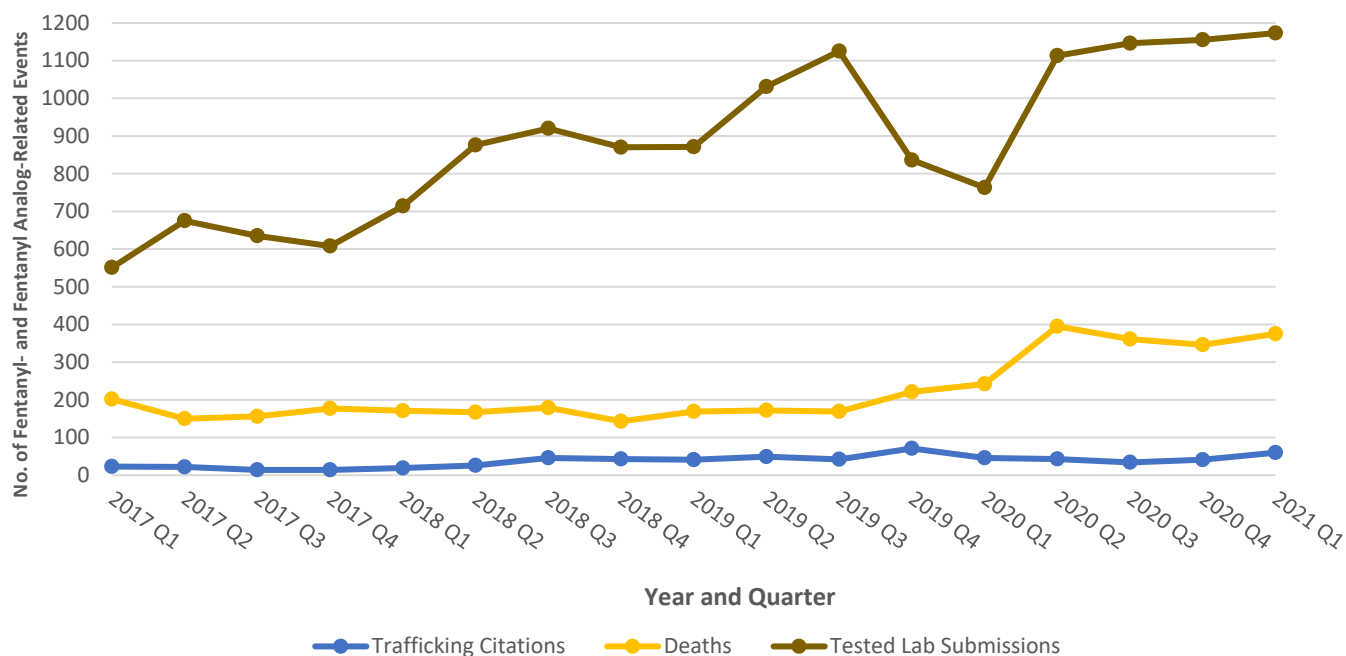
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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.

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

Key Findings:

- Statewide cocaine possession and trafficking citations decreased (53.7% and 59.8%, respectively) from January 2017 through March 2021. Notably, trafficking citations increased 64.1% while possession citations declined 8.1% from the fourth quarter of 2020 through the first quarter of 2021.
- Cocaine-related deaths decreased by 13.5% from the beginning of 2017 through March 2021; a 12.5% increase was observed in cocaine-related deaths from the fourth quarter of 2020 through the first quarter of 2021.
- Cocaine-related emergency department visits declined 58.6% from January 2017 through March 2021 and 25% from the fourth quarter of 2020 through the first quarter of 2021.
- Cocaine-related inpatient hospitalizations decreased by 37.1% from the first quarter of 2017 through the first quarter of 2021; an 83.3% increase was observed from the fourth quarter of 2020 through the first quarter of 2021.
- Tested lab submissions positively identifying cocaine decreased by 57.0% from the first quarter of 2017 to the first quarter of 2021. Cocaine submissions increased by 15.6% from the fourth quarter of 2020 through the first quarter of 2021.
- Overall, cocaine-related events decreased 54.3% from January 2017 through March 2021. However, from the fourth quarter of 2020 through the first quarter of 2021, a 14.0% increase was observed.

Fentanyl- and Fentanyl Analog-Related Events



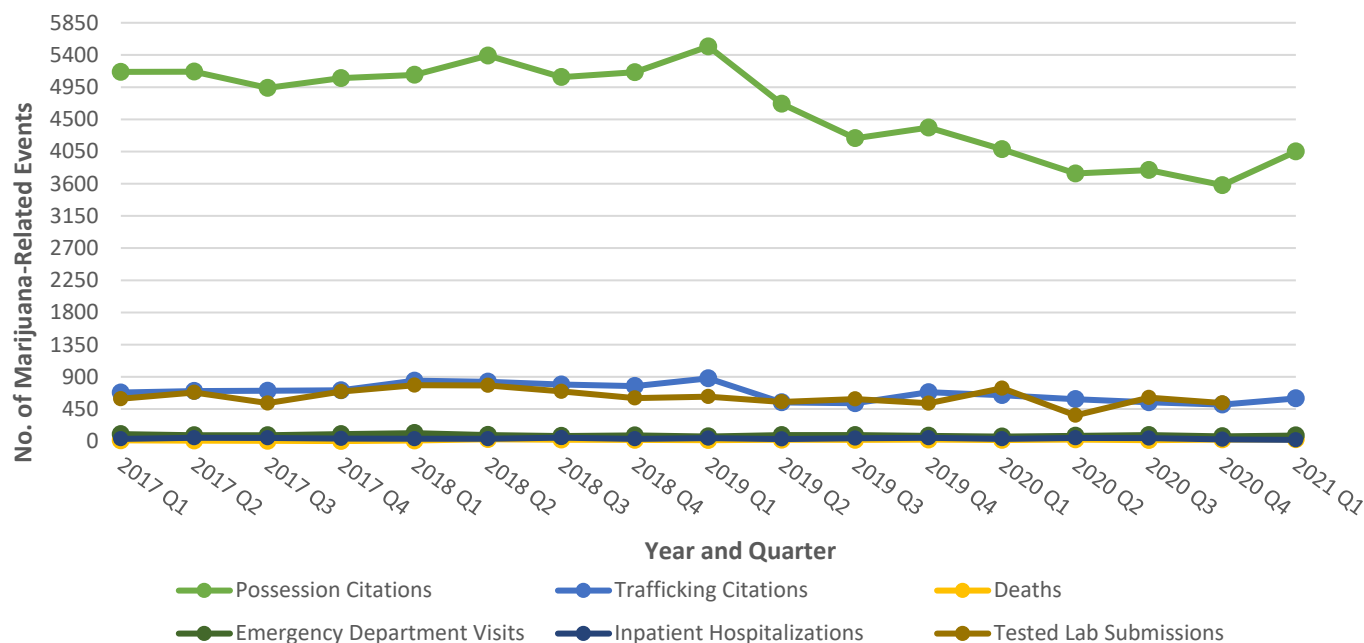
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. There are no Kentucky Revised Statute codes for fentanyl possession. Deaths are based on drug overdose-related deaths among Kentucky residents. 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.

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:

- Fentanyl and fentanyl analog trafficking citations increased 160.9% from January 2017 through March 2021. Additionally, trafficking citations increased by 46.3% from the fourth quarter of 2020 through the first quarter of 2021. 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 the presence of this substance.
- Fentanyl- and fentanyl analog-related deaths increased by 85.6% from the beginning of 2017 through March 2021 and increased by 8.4% from the fourth quarter of 2020 through the first quarter of 2021.
- Tested lab submissions positively identifying fentanyl and fentanyl analogs increased by 112.9% from January 2017 through March 2021 and by 1.6% from the fourth quarter of 2020 through the first quarter of 2021. KSP Laboratories continue to see several different fentanyl derivatives, along with polydrug mixtures including heroin/fentanyl, cocaine/fentanyl, and methamphetamine/fentanyl.
- Fentanyl and fentanyl analogs remain 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 107.2% from January 2017 through March 2021. Fentanyl and fentanyl analog events remained consistent in prevalence from the fourth quarter of 2020 through the first quarter of 2021.

Marijuana-Related Events



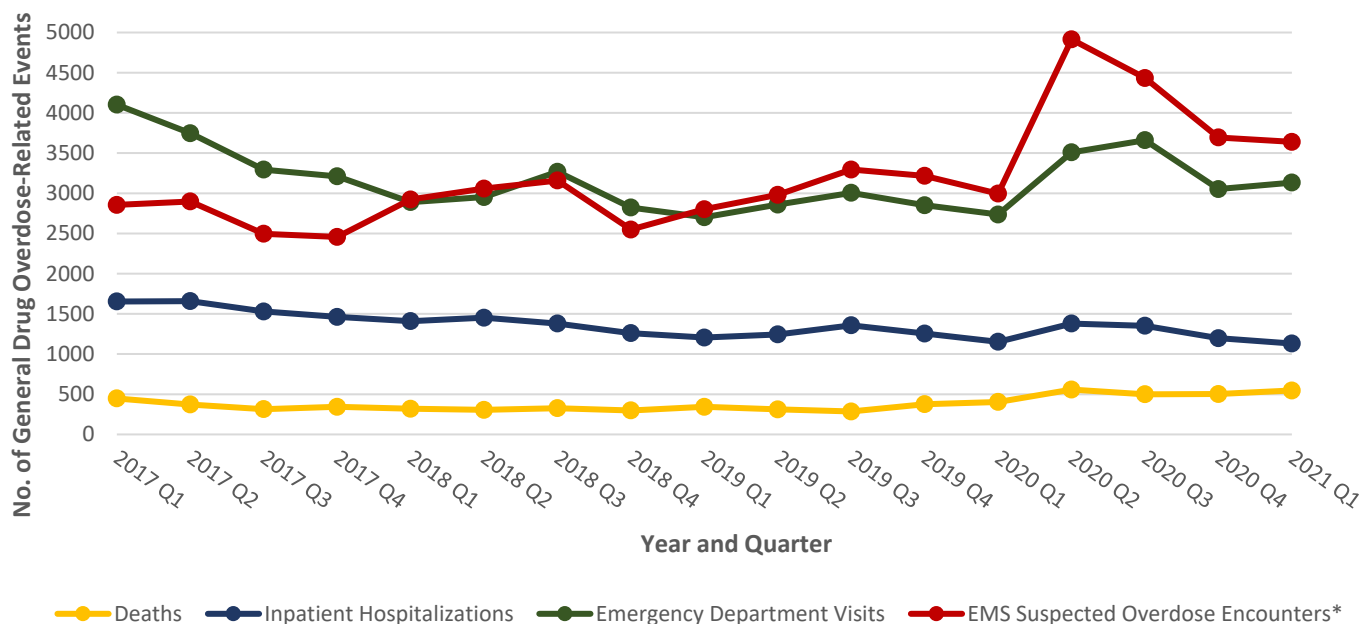
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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.

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

Key Findings:

- Both marijuana possession and trafficking citations decreased (21.6% and 11.9%, respectively) from January 2017 through March 2021. From the fourth quarter of 2020 through the first quarter of 2021, related citations increased (13.1% and 17.0%, respectively).
- Statewide marijuana (cannabis)-related deaths increased by 125% from the beginning of 2017 through March 2021. A 12.5% increase was observed from the fourth quarter of 2020 through the first quarter of 2021.
- Marijuana-related emergency department visits decreased 19.2% from January 2017 through March 2021. Visits increased 15.9% from the fourth quarter of 2020 through the first quarter of 2021.
- Marijuana-related hospitalizations declined by 42.4% from 2017 through March 2021 and by 26.9% from the fourth quarter of 2020 through the first quarter of 2021.
- Tested lab submissions positively identifying marijuana decreased by 19.4% from January 2017 through March 2021, and by 10.5% from the fourth quarter of 2020 through the first quarter of 2021.
- Marijuana use and distribution is prevalent across Kentucky, even as a 20.2% decrease was observed from the beginning of 2017 through March 2021, while a 10.7% increase occurred from the fourth quarter of 2020 through the first quarter of 2021.

General Drug Overdose-Related Events



*A large emergency medical services (EMS) agency began reporting to the Kentucky State Ambulance Reporting System starting 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 history fields (for naloxone/Narcan administration with indicated positive response) and based on state (Kentucky) of incident.

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

Key Findings:

- Statewide drug overdose-related deaths increased by 21.9% from the beginning of 2017 through the end of 2020. An 8.5% increase was observed from the fourth quarter of 2020 through the first quarter of 2021.
- Drug overdose-related emergency department visits decreased 23.6% from January 2017 through March 2021. Visits increased 2.7% from the fourth quarter of 2020 through the first quarter of 2021.
- Drug overdose-related hospitalizations declined by 31.6% from 2017 through March 2021 and decreased by 5.5% from the fourth quarter of 2020 through the first quarter of 2021.
- Emergency medical services (EMS) suspected drug overdose-related encounters increased 27.5% from January 2017 through the end of March 2021. From the fourth quarter of 2020 through the first quarter of 2021, a small decrease was observed in EMS encounters.
- Among the law enforcement agencies currently reporting, 1,189 naloxone doses were administered from January 1, 2019, through March 31, 2021 (data not shown).
- Drug use, misuse, and distribution are still affecting Kentuckians, even as a 6.7% decrease was observed from the beginning of 2017 through March 2021. No change was observed for general drug overdose-related events from the fourth quarter of 2020 through the first quarter of 2021.

K-SURE Data Matrix

	Emergency Department (ED) Visits	Inpatient Hospitalizations	Deaths	Possession Citations	Trafficking Citations	Crime Lab Submissions
Heroin	T40.1	T40.1	T40.1	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	T40.0, T40.2, T40.3, T40.4, T40.60, T40.69	T40.0, T40.2, T40.3, T40.4, T40.60, T40.69	T40.0, T40.2, T40.3, T40.4, T40.6	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	T40.5	T40.5	T40.5	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,		KRS: 42465, 42472, 42474, 42476, 42478, 42590, 42593, 42596, 42599	

			Butyrylfentanyl, Carfentanil, Furanylfentanyl, Para_1, Para_2, U47700			
Marijuana	T40.7X1, T40.7X2, T40.7X3, T40.7X4, T40.7X5	T40.7X1, T40.7X2, T40.7X3, T40.7X4, T40.7X5	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 Claim Files, Office of Health and Data Analytics, Cabinet for Health and Family Services	Kentucky Inpatient Hospitalization Claim Files, Kentucky Office of Health and Data Analytics, Cabinet for Health and Family Services	Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services	Kentucky Open Portal System, Kentucky State Police	Kentucky Open Portal System, Kentucky State Police	Kentucky State Police Crime Laboratory
Notes	Drug overdose- related emergency department visits represent encounters of care among Kentucky residents and could be greater than the number of individual patients treated. Data are provisional and subject to change.	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. Data are provisional and subject to change.	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. Data are provisional and subject to change.

