



Kentucky Substance Use Research & Enforcement

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

**Brief: Five Major Overdose-Related Substances in Kentucky,
January 1, 2017–December 31, 2020**

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

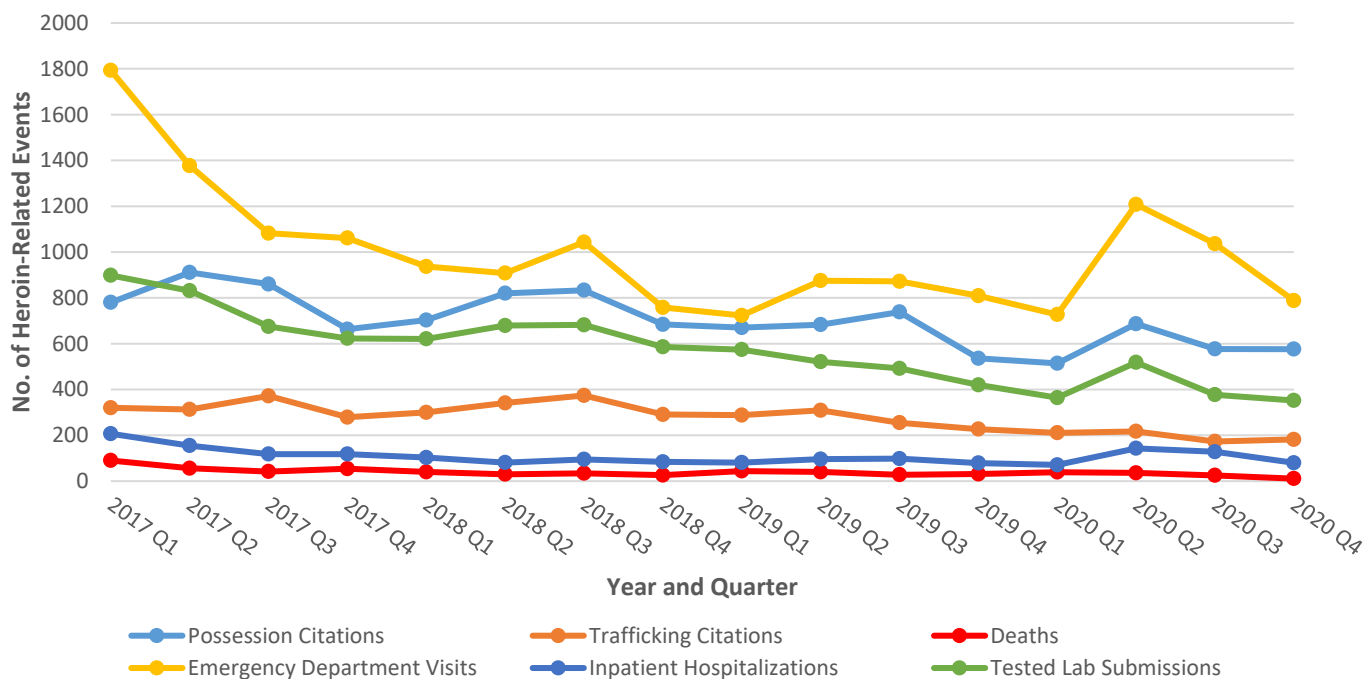


Thank you in advance!

- 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.

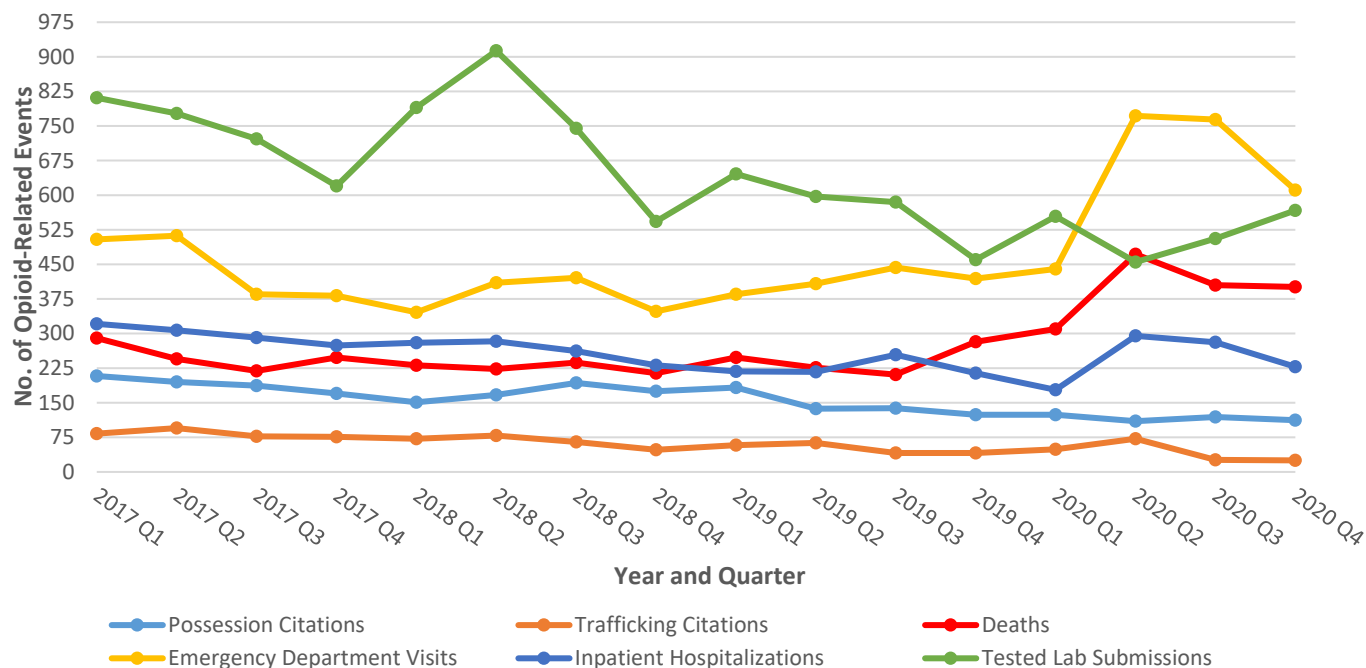
Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Claim Files, Office of Health and Data Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claim Files, 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 26.2% from January 2017 through December 2020.
- Heroin trafficking citations decreased by 43.1% from January 2017 through December 2020, while increasing 5.2% from the third quarter of 2020 through the fourth quarter of 2020.
- Kentucky resident heroin-related deaths declined by 87.8% from January 2017 through December 2020. However, heroin-related deaths declined 56% from the third quarter of 2020 through the fourth quarter of 2020.
- Both heroin-related emergency department visits and inpatient hospitalizations declined from January 2017 through December 2020 (56.1% and 61.4%, respectively).
- Heroin-related tested lab submissions decreased 60.8% from January 2017 through December 2020.
- Overall, there was a 51.3% 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 December 2020.



Opioid-Related Events



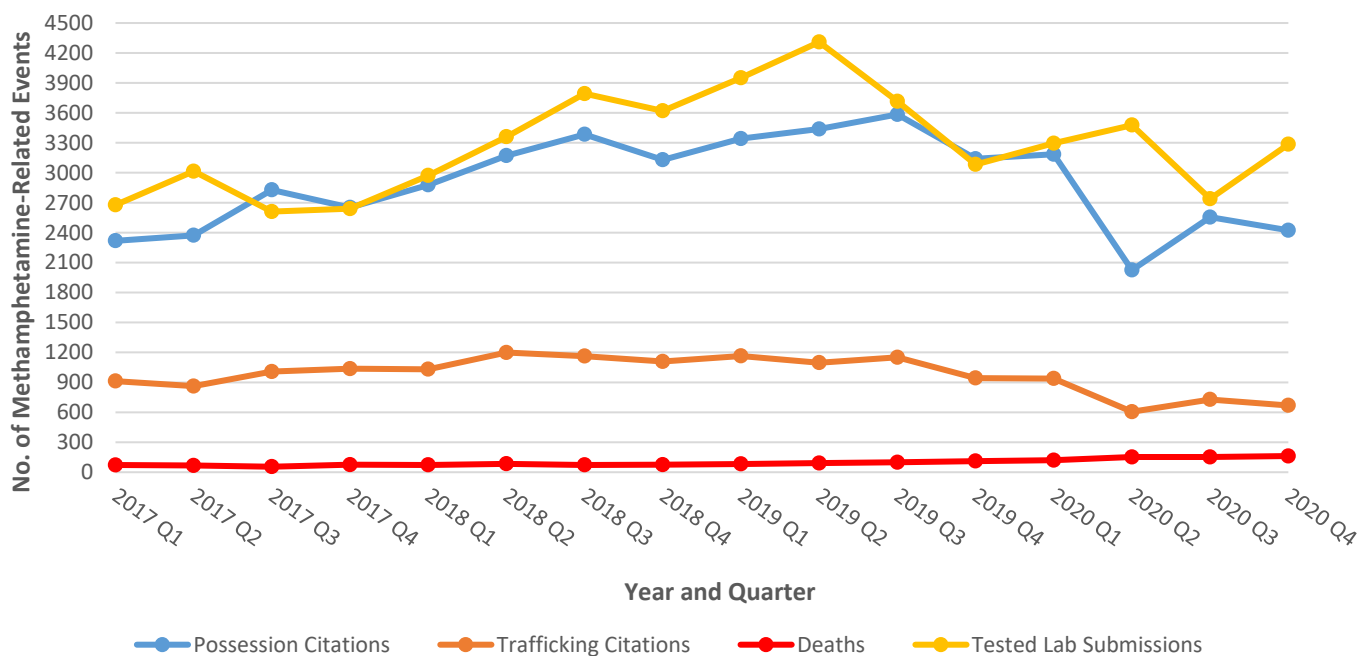
Data are provisional and subject to change. Opioid-related events reflect nonheroin opioids. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky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

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 opioid possession and trafficking citations decreased by 46.2% and 69.9%, respectively, from January 2017 through December 2020.
- Opioid-related emergency department visits increased by 21.2% from January 2017 through December 2020 and decreased by 20% from the third quarter of 2020 through the fourth quarter of 2020.
- Opioid-related inpatient hospitalizations declined by 29% from January 2017 through December 2020, while decreasing only 18.9% from the third quarter of 2020 through the fourth quarter of 2020.
- Kentucky resident opioid-related deaths increased by 38.3% from January 1, 2017, to December 31, 2020. A reduction in opioid-related deaths of 1% was observed from the third quarter of 2020 through the fourth quarter of 2020. Opioids still remain the leading substances identified among drug overdose-related deaths (data not shown).
- There was a 30.1% decrease in tested lab submissions that positively identified opioids from 2017 through December 2020, while a 12.1% increase was observed from the third quarter of 2020 through the end of 2020. Opioids accounted for 8.8% of the total tested submissions to Kentucky State Police Laboratories from the beginning of 2017 through December 2020 (data not shown).
- Opioids and their adverse effects remain prevalent throughout the Commonwealth, even as opioid-related events decreased by 12.3% from the first quarter of 2017 through the fourth quarter of 2020.

Methamphetamine-Related Events



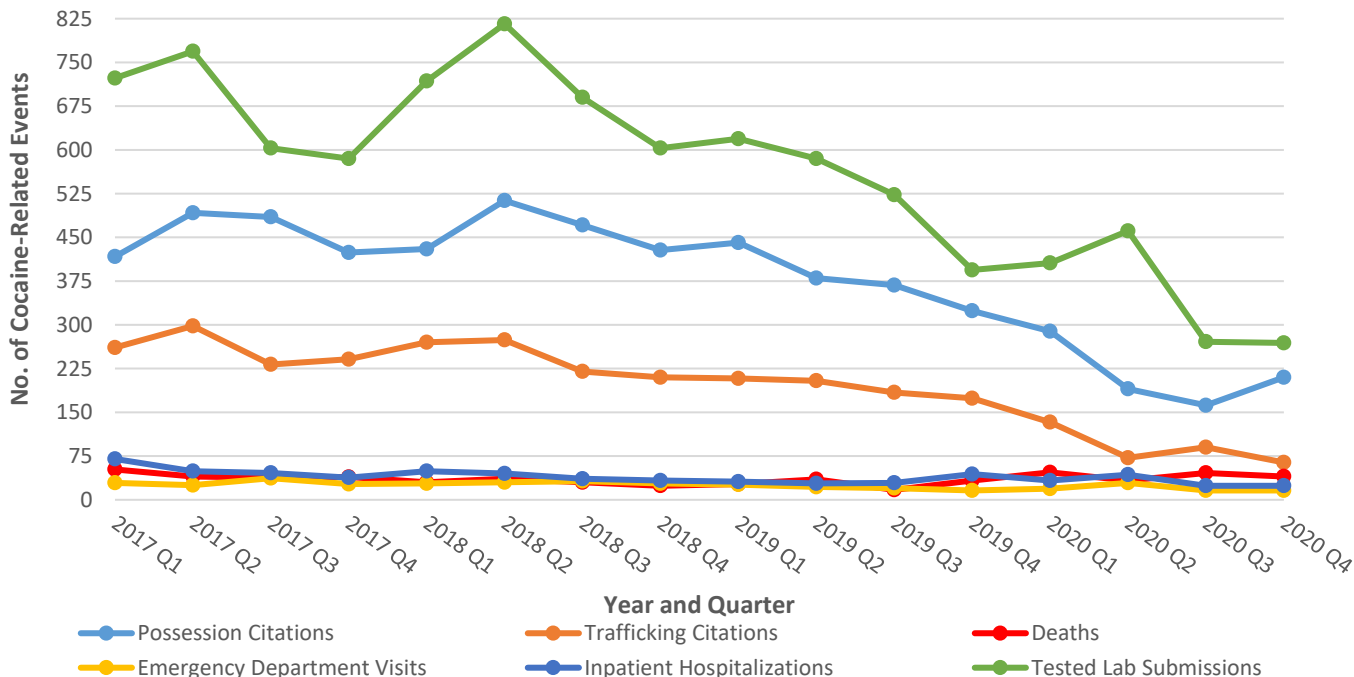
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 4.5% and trafficking citations decreased by 26.7% from January 2017 through December 2020. However, both methamphetamine possession and trafficking citations decreased from the third quarter through the fourth quarter of 2020 (5.2% and 8.1%, respectively).
- A large increase (125%) 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 2017 through the end of December 2020; a 6.6% increase in deaths occurred from the third quarter of 2020 through the fourth quarter of 2020.
- Tested lab submissions positively identifying methamphetamine increased by 22.7% from the first quarter of 2017 through the fourth quarter of 2020, and declined by 21.2% from the third quarter of 2020 through the fourth quarter of 2020. 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 9.3% from January 2017 through December 2020.

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.

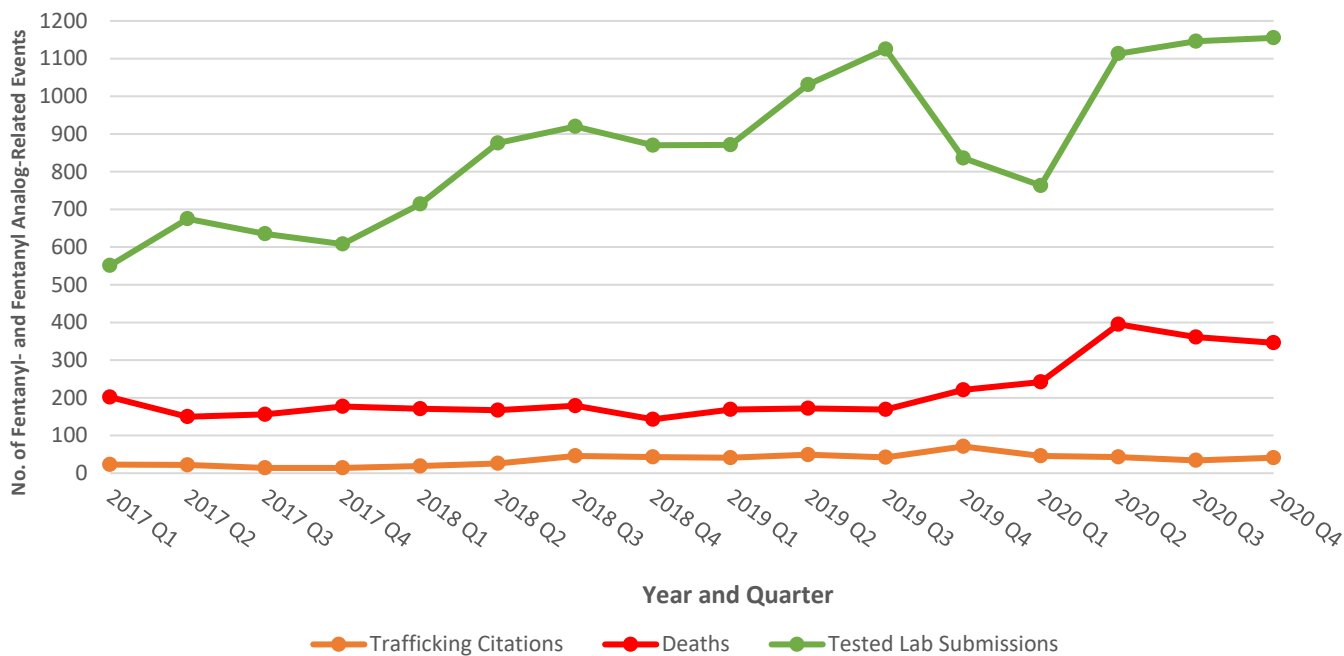
Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Claim Files, Office of Health and Data Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claim Files, 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 (49.6% and 75.5%, respectively) from January 2017 through December 2020. Notably, possession citations increased 29.6% while trafficking citations declined 28.9% from the third quarter through the fourth quarter of 2020.
- Cocaine-related deaths decreased by 23.1% from the beginning of 2017 through December 2020; a 13% decrease was observed in cocaine-related deaths from the third quarter of 2020 through the fourth quarter of 2020.
- Cocaine-related emergency department visits declined 44.8% from January 2017 through December 2020; no change was observed from the third quarter of 2020 through the fourth quarter of 2020.
- Cocaine-related inpatient hospitalizations decreased by 65.7% from the first quarter of 2017 through the fourth quarter of 2020; no change was observed from the third quarter of 2020 through the fourth quarter of 2020.
- Tested lab submissions positively identifying cocaine decreased by 62.8% from the first quarter of 2017 to the fourth quarter of 2020. Cocaine accounted for 7.7% of the total tested lab submissions from the beginning of 2017 through December 2020 (data not shown).
- Overall, cocaine-related events decreased 59.9% from January 2017 through December 2020.



Fentanyl- and Fentanyl Analog-Related Events



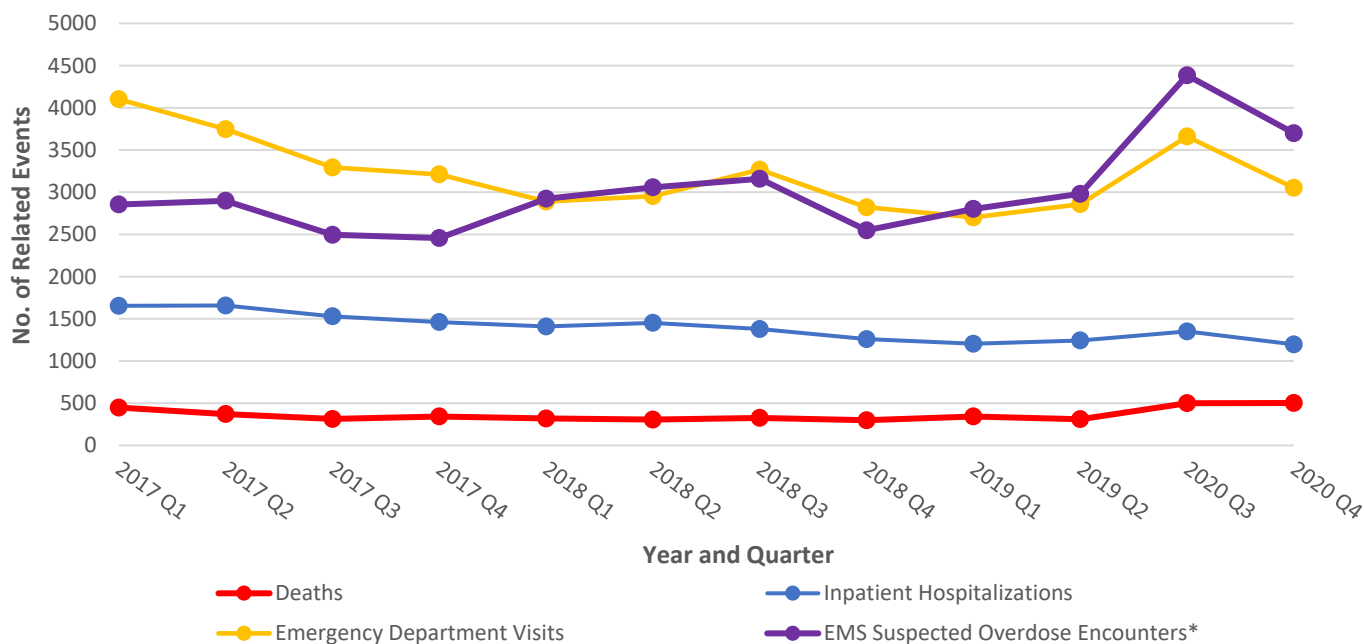
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. There are no Kentucky Revised Statute codes for fentanyl possession. Deaths are based on drug overdose-related 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 78.3% from January 2017 through December 2020. However, trafficking citations increased by only 20.6% from the third quarter of 2020 through the fourth quarter of 2020. 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 71.3% from the beginning of 2017 through December 2020 and decreased by 4.2% from the third quarter of 2020 through the end of 2020.
- Tested lab submissions positively identifying fentanyl and fentanyl analogs increased by 109.6% from January 2017 through December 2020, and by 1% from the third quarter of 2020 through the fourth quarter of 2020. 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 law enforcement — as fentanyl- and fentanyl analog-related events across Kentucky increased 98.7% from 2017 through the end of 2020. Fentanyl and fentanyl analog events remained consistent in prevalence from the third quarter of 2020 quarter 3 through the fourth quarter of 2020.

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 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 12.3% from the beginning of 2017 through the end of 2020. An 0.6% decrease was observed from the third quarter of 2020 through the fourth quarter of 2020.
- Drug overdose-related emergency department visits decreased 25.6% from January 2017 through December 2020. Visits decreased 16.6% from the third quarter of 2020 through the end of 2020.
- Drug overdose-related hospitalizations declined by 27.6% from 2017 through December 2020 and decreased only by 11.4% from the third quarter of 2020 through the fourth quarter of 2020.
- Emergency medical services (EMS) suspected drug overdose-related encounters increased 2.6% from January 2017 through the end of December 2020. From the third quarter of 2020 through the fourth quarter of 2020, EMS encounters decreased by 15.6%.
- Among the law enforcement agencies currently reporting, 740 naloxone doses were administered from January 1, 2019, through December 31, 2020 (data not shown).
- Drug use, misuse, and distribution are still affecting Kentuckians, as a 6.7% decrease was observed from the beginning of 2017 through December 2020. A decrease of 14.6% was observed for general drug overdose-related events from the third quarter of 2020 through the fourth quarter of 2020.



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: Methyلفentanyl, Methoxybutyrylfentanyl, Acetylfentanyl,		KRS: 42465, 42472, 42474, 42476, 42478, 42590, 42593, 42596, 42599	

			Acrylfentanyl, Hydroxythiofentanyl, Butyrylfentanyl, Carfentanil, Furanylfentanyl, Para_1, Para_2, U47700			
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.

