



## **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–June 30, 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](https://uky.az1.qualtrics.com/jfe/form/SV_bDzBAIOXZprzO85)

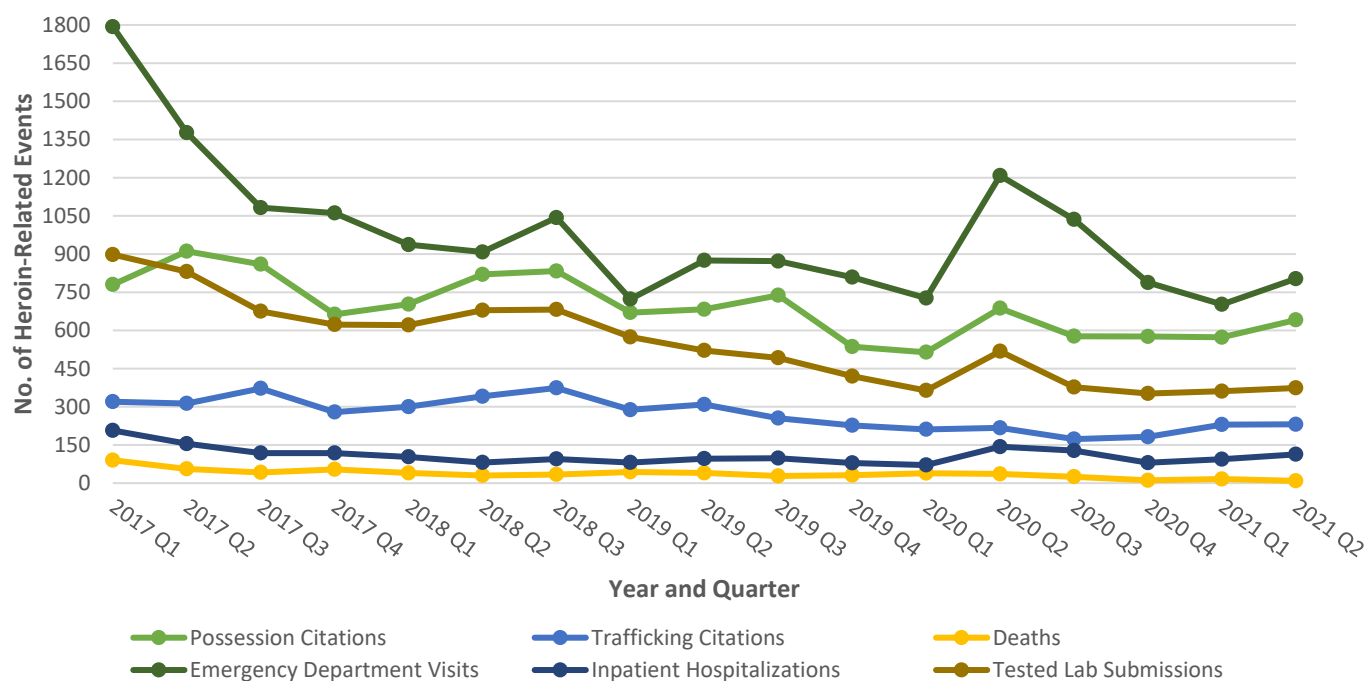


Thank you in advance!

- The K-SURE Team -



## Heroin-Related Events



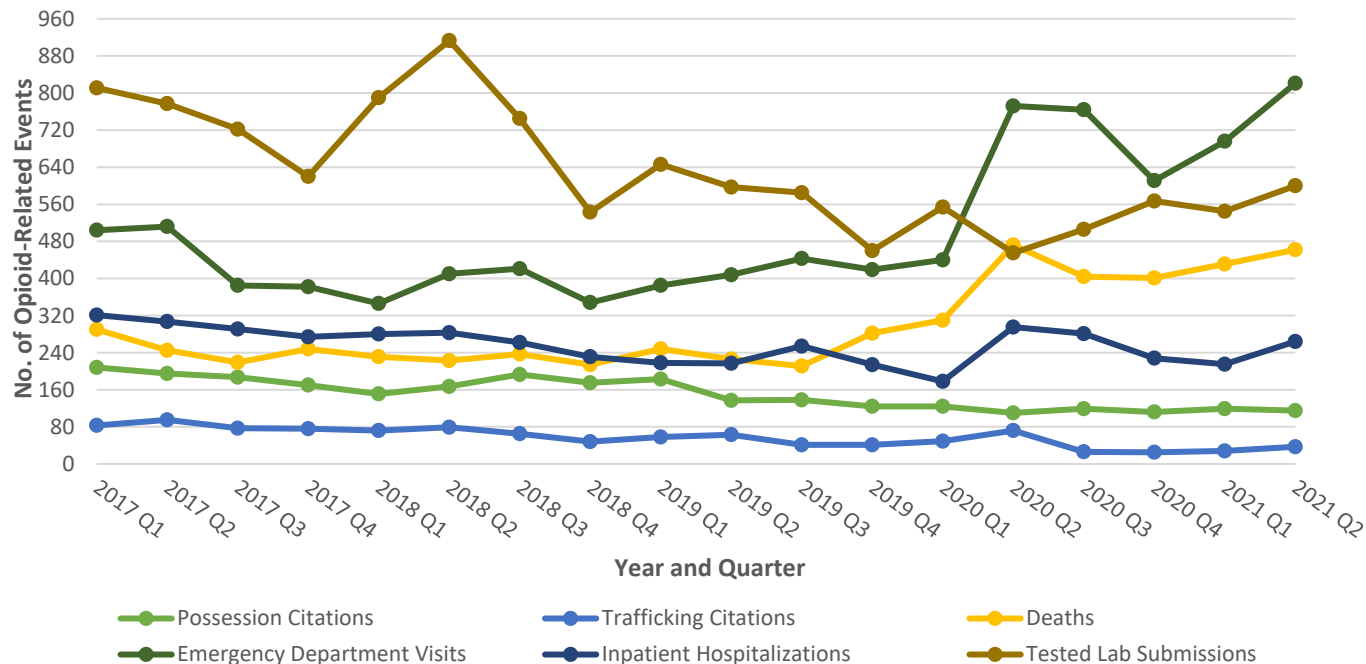
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 17.8% from January 2017 through June 2021, and an 11.9% increase was observed from the first quarter of 2021 through the second quarter of 2021.
- Heroin trafficking citations decreased by 27.8% from January 2017 through June 2021, and no change was observed from January 2021 through June 2021.
- Kentucky resident heroin-related deaths declined by 90% from January 2017 through June 2021 and by 43.8% from the first quarter of 2021 through the second quarter of 2021.
- Both heroin-related emergency department (ED) visits and inpatient hospitalizations (IH) declined from January 2017 through June 2021 (by 55.2% and 45.4%, respectively). Meanwhile, from the first quarter of 2021 through the second quarter of 2021, ED visits and IH rose (by 14.4% and 20.2%, respectively).
- Heroin-related tested lab submissions decreased 58.4% from January 2017 through June 2021 but increased 3.6% from the first quarter of 2021 through the second quarter of 2021.
- Overall, there was a 46.9% 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 June 2021. Yet there was a 9.9% increase in heroin-related events from the first quarter of 2021 through the second quarter of 2021.

## Opioid-Related Events



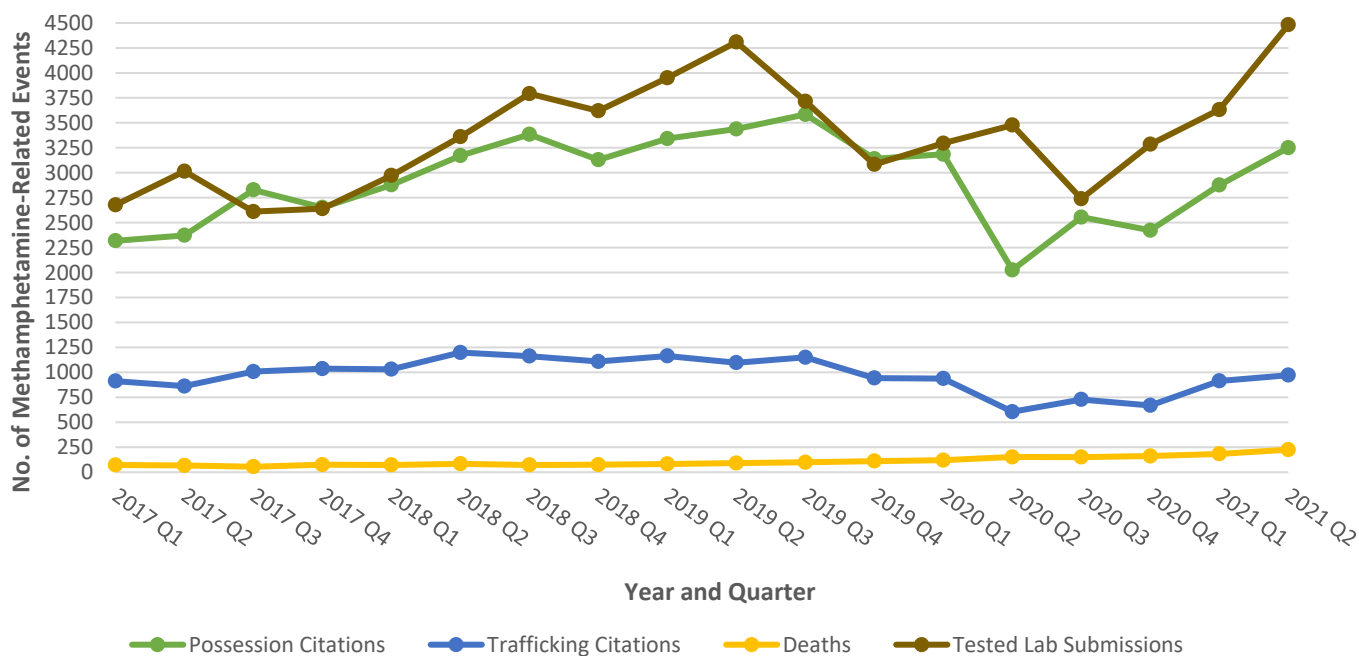
Data are provisional and subject to change. Opioid-related events reflect nonheroin opioids. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky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

- Opioid possession citations decreased by 44.7% from January 2017 through June 2021 and by 3.4% from January 2021 through June 2021.
- Opioid trafficking citations decreased by 55.4% from January 2017 through June 2021 and increased by 32.1% from January 2021 through June 2021.
- Opioid-related emergency department visits increased by 62.9% from January 2017 through June 2021 and by 18% from the first quarter of 2021 through the second quarter of 2021.
- Opioid-related inpatient hospitalizations declined by 17.8% from January 2017 through June 2021, while increasing by 22.8% from the first quarter of 2021 through the second quarter of 2021.
- Kentucky resident opioid-related deaths increased by 59.3% from January 2017 through June 2021 and by 7.2% from January 2021 through June 2021.
- There was a 26% decrease in tested lab submissions that positively identified opioids from 2017 through June 2021 and a 10.1% increase from January 2021 through June 2021. Opioids accounted for 8.6% of the total tested submissions from January 2017 through June 2021 (data not shown).
- Opioids and their devastating effects remain prevalent throughout the Commonwealth, with opioid-related events increasing by 3.7% from the first quarter of 2017 through the second quarter of 2021 and by 13% increase from the first quarter of 2021 through June 2021.

## Methamphetamine-Related Events

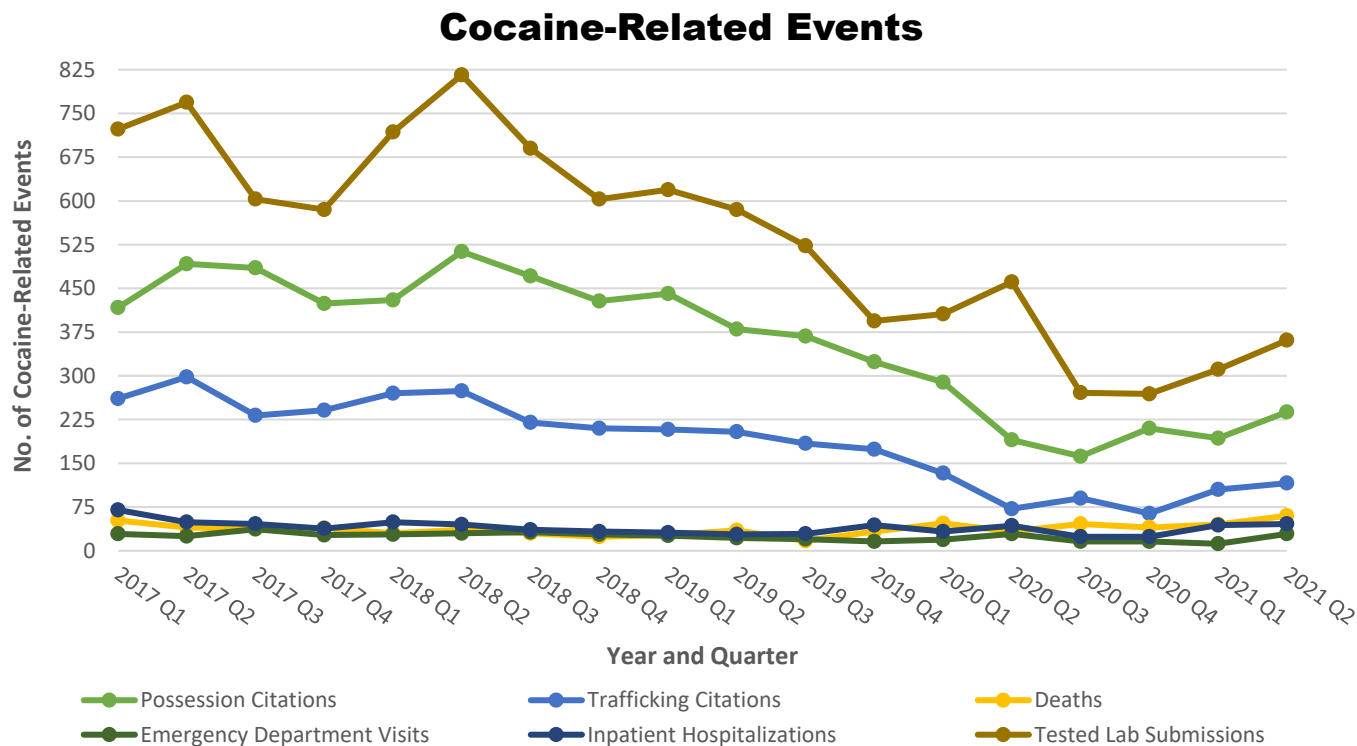


Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations 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 rose 40.2% and trafficking citations increased by 6.5% from January 2017 through June 2021. Both methamphetamine possession and trafficking citations increased from January 2021 through June 2021 (by 13% and 6.3%, respectively).
- A 213.9% increase in methamphetamine-related overdose deaths was observed among Kentucky residents from the beginning of January 2017 through June 2021; all involved the use of more than one drug (polydrug use). A 23.5% increase in deaths occurred January 2021 through June 2021.
- Tested lab submissions positively identifying methamphetamine increased by 67.4% from the beginning of 2017 through June 2021 and by 23.4% from the first quarter of 2021 through the second quarter of 2021. Methamphetamine remains the most common drug submitted 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 49.3% from January 2017 through June 2021. There was a 17.4% increase in methamphetamine-related events from January 2021 through June 2021.



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.

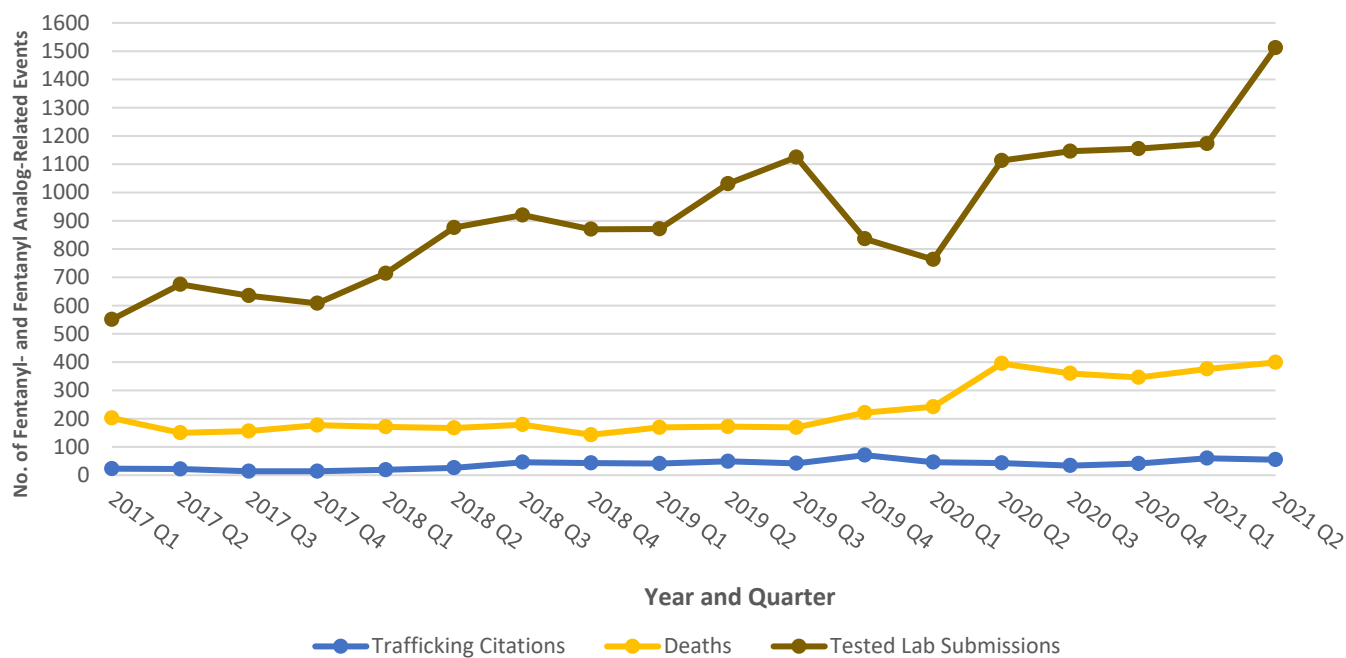
Data sources: Kentucky Open Portal System; Kentucky Death Certificate Database, Office of Vital Statistics, Cabinet for Health and Family Services; Kentucky Outpatient Claim Files, Office of Health and Data Analytics, Cabinet for Health and Family Services; Kentucky Inpatient Hospitalization Claim Files, 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 (by 42.9% and 55.6%, respectively) from January 2017 through June 2021. Notably, trafficking and possession citations increased from the first quarter of 2021 through the second quarter of 2021 (by 23.3% and 10.5%, respectively).
- Cocaine-related deaths increased by 15.4% from the beginning of 2017 through June 2021; a 33.3% increase was observed from the first quarter of 2021 through the second quarter of 2021.
- No change was observed for cocaine-related emergency department visits from January 2017 through June 2021. However, a 141.7% increase was observed from January 2021 through June 2021.
- Cocaine-related inpatient hospitalizations declined by 34.3% from the first quarter of 2017 through the second quarter of 2021; a 4.5% increase was observed from the first quarter of 2021 through the second quarter of 2021.
- Tested lab submissions positively identifying cocaine decreased by 50.1% from the first quarter of 2017 to the second quarter of 2021. Cocaine accounted for 7.3% of the total tested lab submissions from the beginning of 2017 through June 2021 (data not shown). Cocaine submissions increased by 16.1% from the first quarter of 2021 through the second quarter of 2021.
- Overall, cocaine-related events decreased 45.2% from January 2017 through June 2021. However, from the first quarter of 2021 through the second quarter of 2021, a 19.7% increase was observed.



## Fentanyl- and Fentanyl Analog-Related Events



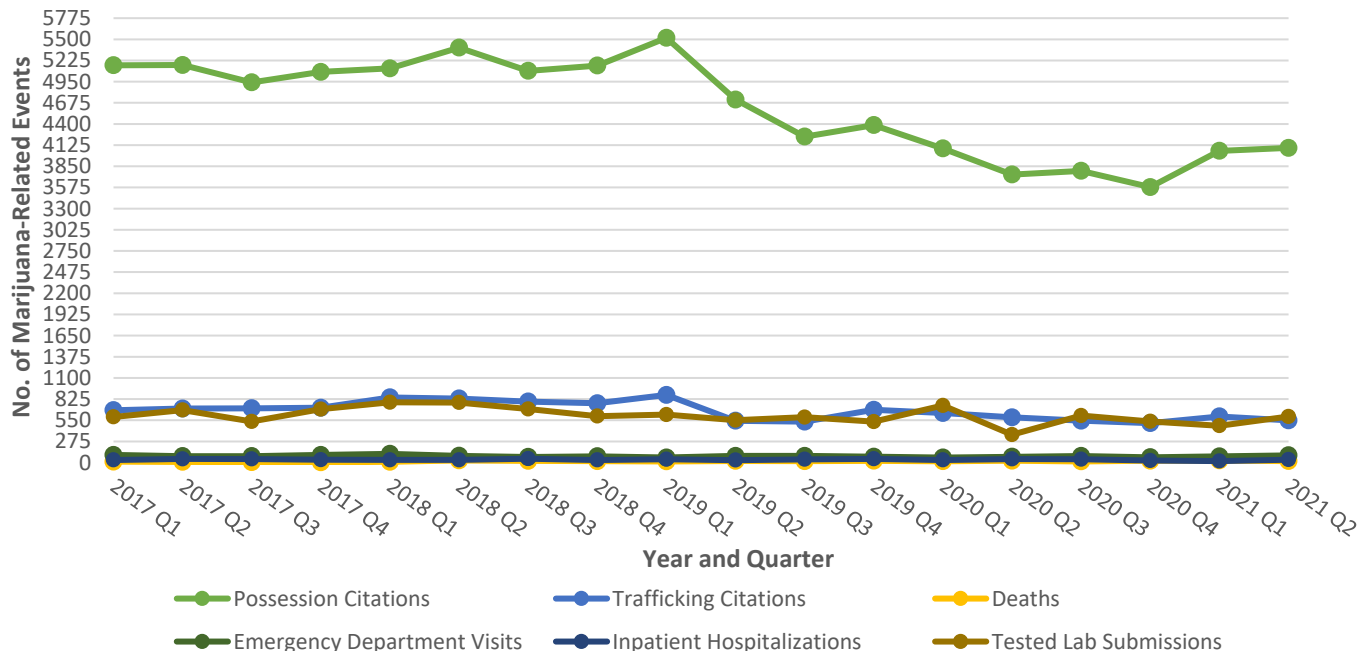
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. There are no Kentucky Revised Statute codes for fentanyl possession. Deaths are based on drug overdose-related 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 139.1% from January 2017 through June 2021. Additionally, trafficking citations decreased by 8.3% from the first quarter of 2021 through the second 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 its presence.
- Fentanyl- and fentanyl analog-related deaths increased by 97.5% from the beginning of 2017 through June 2021 and increased by 6.1% from the first quarter of 2021 through the second quarter of 2021.
- Tested lab submissions positively identifying fentanyl and fentanyl analogs increased by 174.4% from January 2017 through June 2021 and by 28.9% from the first quarter of 2021 through the second quarter of 2021. KSP Laboratories continue to see several different fentanyl derivatives, along with polydrug mixtures such as heroin/fentanyl, cocaine/fentanyl, and methamphetamine/fentanyl.
- 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 153.4% from January 2017 through June 2021, and by 22.2% from January 2021 through June 2021.

## Marijuana-Related Events



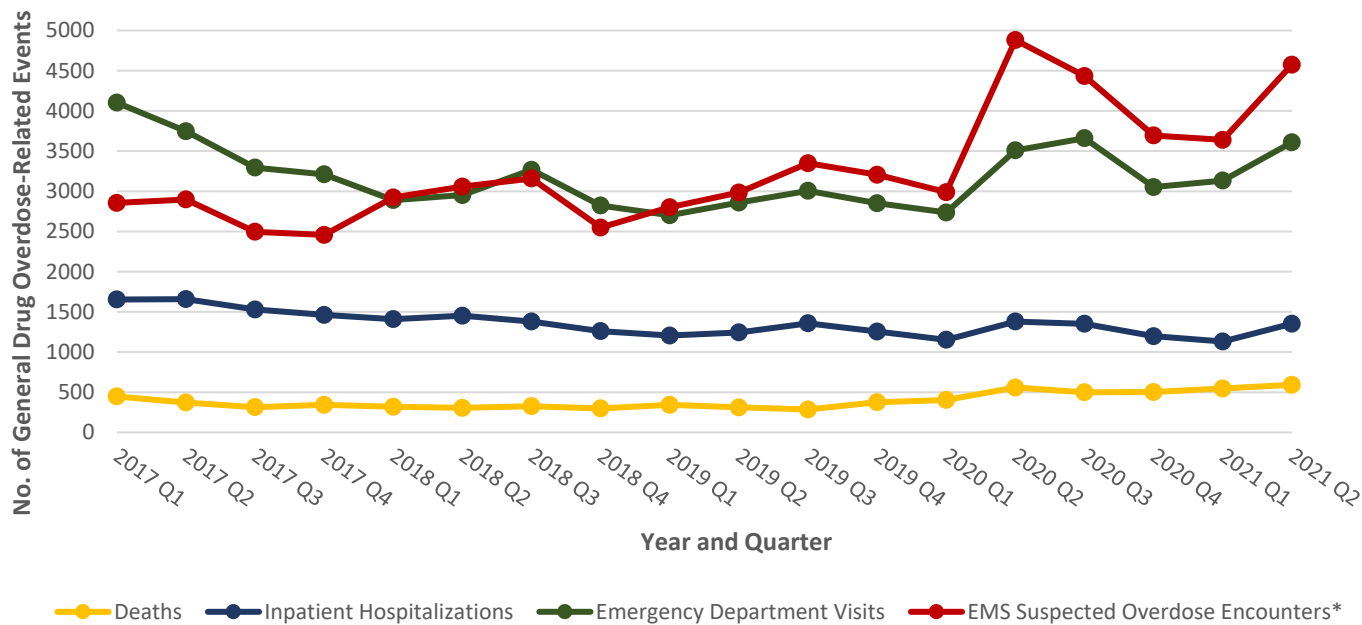
Data are provisional and subject to change. The number of citations could be greater than the number of individuals cited; citations are with over 90% of law enforcement agencies reporting. Deaths are based on drug overdose-related deaths among Kentucky residents. Drug overdose-related hospitalizations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

- Marijuana possession citations declined by 20.8% from January 2017 through June 2021, while an increase of 1.0% was observed from January 2021 through June 2021.
- Marijuana trafficking citations declined by 19.4% from January 2017 through June 2021 and by 8.5% from January 2021 through June 2021.
- Marijuana (cannabis)-related deaths increased by 8.3% from the beginning of 2017 through June 2021. A 29.6% decrease occurred from the first quarter of 2021 through the second quarter of 2021.
- Marijuana-related emergency department visits decreased 5.1% from January 2017 through June 2021. Visits increased 17.5% from the first quarter of 2021 through the second quarter of 2021.
- Marijuana-related hospitalizations increased by 15.2% from 2017 through June 2021 and by 100% from the first quarter of 2021 through the second quarter of 2021.
- Tested lab submissions positively identifying marijuana remained consistent from January 2017 through June 2021. However, a 25.1% increase was observed from the first quarter of 2021 through the second quarter of 2021.
- Marijuana use and distribution are prevalent across Kentucky, even as an 18.1% decrease in marijuana-related events was observed from the beginning of 2017 through June 2021 and a 2.5% increase occurred from the first quarter of 2021 through the second 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 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 32.1% from the beginning of 2017 through the end of 2020. An 8.4% rise was observed from the first quarter of 2021 through the second quarter of 2021.
- Drug overdose-related emergency department visits declined 12% from January 2017 through June 2021. However, visits increased 15.2% from the first quarter of 2021 through the second quarter of 2021.
- Drug overdose-related hospitalizations declined by 18.3% from 2017 through June 2021 and increased by 19.5% from the first quarter of 2021 through the second quarter of 2021.
- Emergency medical services (EMS) suspected drug overdose-related encounters increased 60.2% from January 2017 through the end of June 2021. From the first quarter of 2021 through the second quarter of 2021, a 25.7% increase in EMS encounters occurred.
- Among the law enforcement agencies currently reporting, 1,408 naloxone doses were administered from December 12, 2018, through June 30, 2021 (data not shown).
- Drug use, misuse, and distribution are still affecting Kentuckians, as a 11.8% decrease in general drug overdose-related events was observed from the beginning of 2017 through June 2021. A 19.9% increase occurred from the first quarter of 2021 through the second quarter of 2021.



## 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>	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.
<b>Opioids</b>	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	
<b>Methamphetamine</b>			Text scan	KRS: 42187, 42188, 42215, 42216	KRS: 42113, 42114, 42290, 42291, 42364, 42365, 42366, 42367	
<b>Cocaine</b>	T40.5	T40.5	T40.5	KRS: 35320, 35321, 42193, 42194, 42203, 42204	KRS: 35300, 35301, 42103, 42104, 42368, 42369, 42370, 42371	
<b>Fentanyl and Fentanyl Analogs</b>			T40.4 and text scan; Fentanyl Analogs: Methylfentanyl, Methoxybutyrylfentanyl, Acetylfentanyl, Acrylfentanyl, Hydroxythiofentanyl, Butyrylfentanyl, Carfentanil,		KRS: 42465, 42472, 42474, 42476, 42478, 42590, 42593, 42596, 42599	

			Furanylfentanyl, Para_1, Para_2, U47700			
<b>Marijuana</b>	T40.7X1, T40.7X2, T40.7X3, T40.7X4, T40.7X5	T40.7X1, T40.7X2, T40.7X3, T40.7X4, T40.7X5	T40.7	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 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
<b>Notes</b>	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.

