



2022 Tennessee Drug Overdose Deaths

**Tennessee Department of Health
Office of Informatics and Analytics**

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Introduction and Purpose

The purpose of this brief report is to describe drug overdose deaths among Tennessee residents in 2022, with an emphasis on providing useful data to stakeholders of Tennessee Department of Health (TDH) at the regional and county levels. Results presented here are derived from Vital Statistics death certificate data as well as data from Tennessee’s prescription drug monitoring program, the Controlled Substance Monitoring Database (CSMD).

Definitions

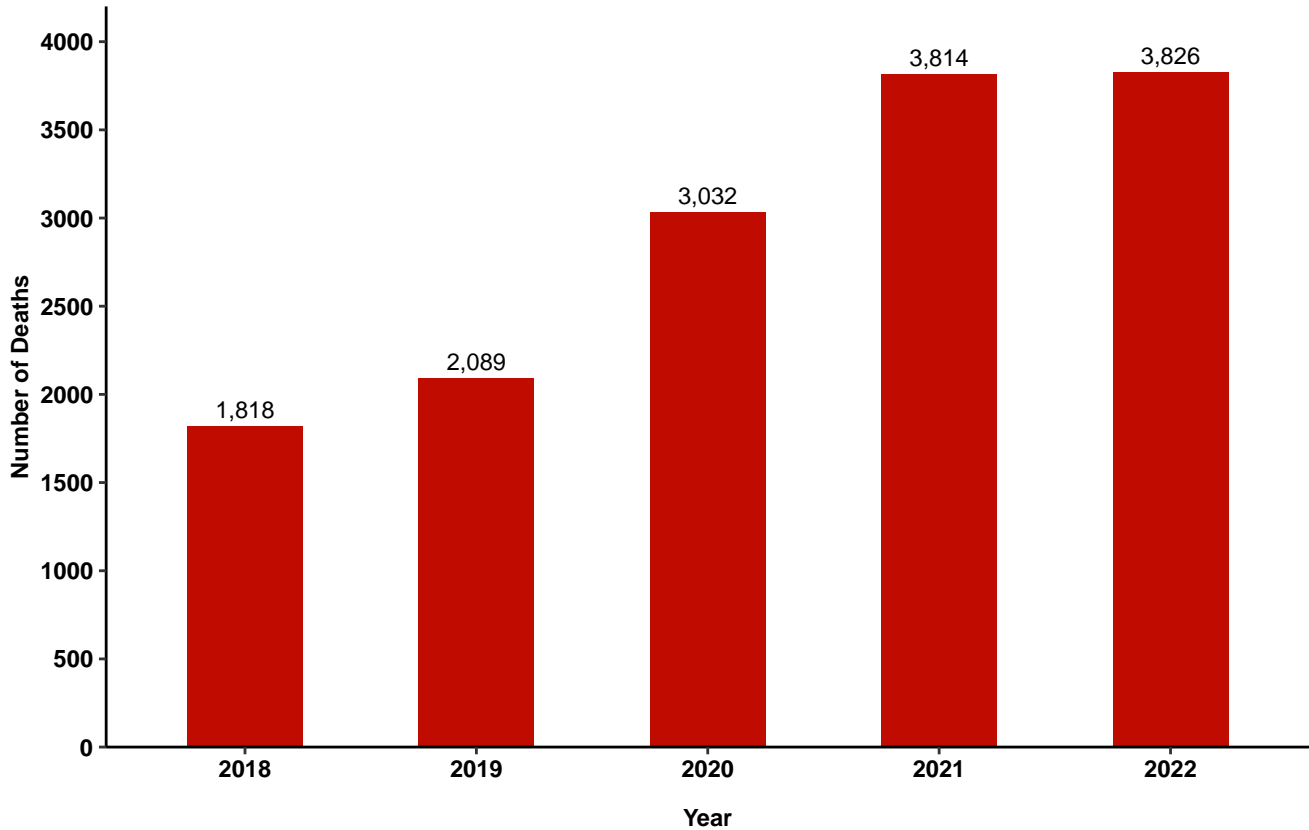
- Drug overdose (fatal and nonfatal)
 - A drug overdose is classified medically as a “drug poisoning.” An overdose may be fatal or nonfatal. In Tennessee, approximately 7 nonfatal overdose discharges (both outpatient visits and inpatient stays combined) occurred for every fatal overdose identified in 2022.¹
- Underlying cause of death
 - To be classified as a fatal overdose, the underlying cause of death on a death certificate must be designated as a drug poisoning. While drugs may contribute to deaths, only cases that designate drug poisoning as the underlying cause of death on death certificates are classified as fatal overdoses by the Centers for Disease Control and Prevention (CDC). TDH provides death certificate data to CDC and they provide the final classifications and coding for the causes of death. For this reason, it is possible that local medical examiners may consider rates of overdose death to be different than the final, official statistical data.²
- Contributing cause of death
 - In addition to the underlying cause of death, a death certificate may include multiple contributing causes of death. Once a death is designated as an overdose, the contributing causes provide data on the types of drugs that were present in the body of the decedent, as identified through toxicology report. Of note, contributing causes of death are coded using ICD10 codes, so drugs for which a code does not exist would not be identified in this way.
- Literal text on death certificates
 - In addition to coded data available in the underlying and contributing causes of death columns, there are text fields available that may provide additional information. For example, no ICD10 code currently exists that identifies fentanyl specifically. The analytics team instead uses a text search to identify fatal overdoses involving fentanyl.
- Controlled Substance Monitoring Database (CSMD)
 - CSMD of Tennessee includes data on controlled substances that are dispensed. For our analyses, we only include CSMD data for individuals who are state residents.

¹[TDH drug overdose data dashboard](#)

²[TDH drug overdose mortality report, 2021](#)

State-level Overview 2018 - 2022

Drug Overdose Deaths among TN Residents, 2018-2022

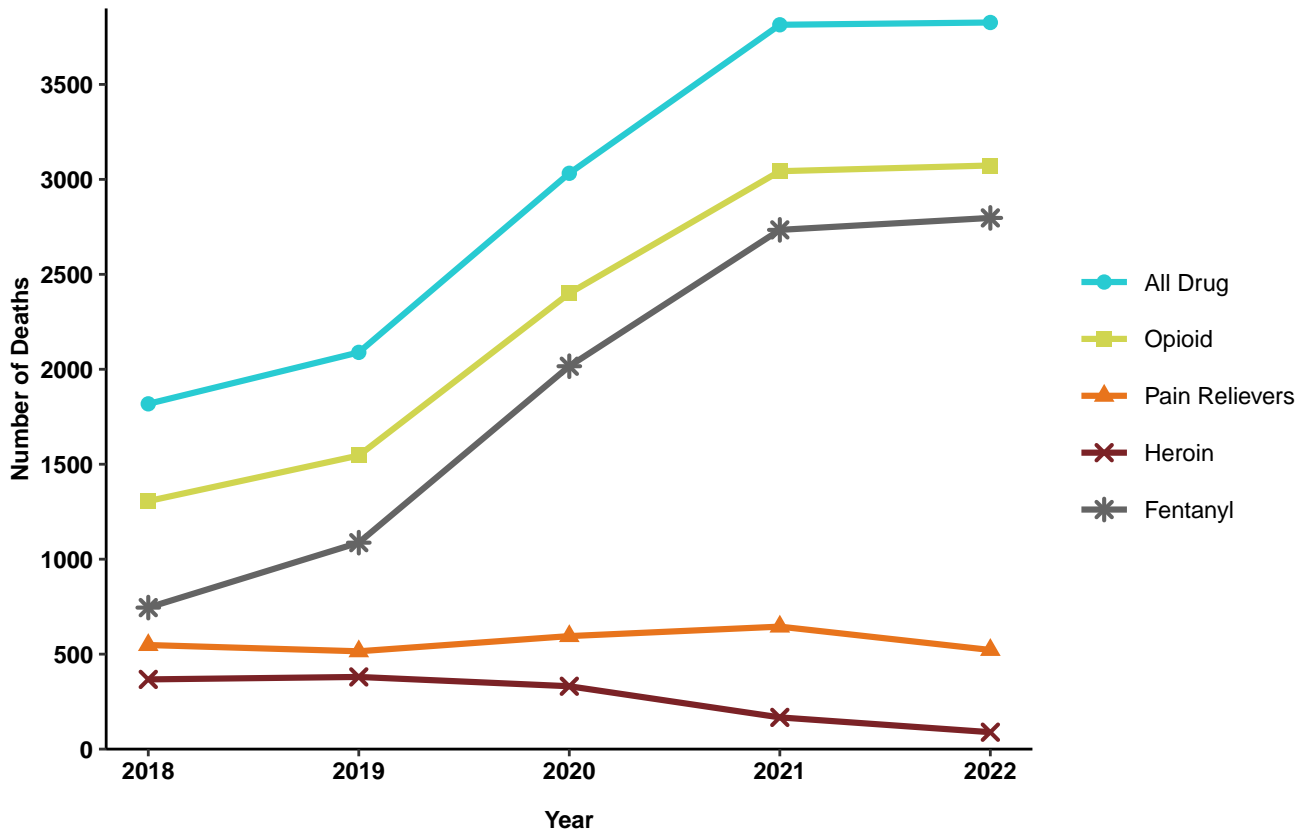


Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

In 2022, a total of 3,826 Tennesseans died of a drug overdose. Compared to 2021, Tennessee saw a slight increase (0.3%) for fatal overdoses in 2022. Between 2018 and 2021, drug overdose deaths among TN residents increased consistently. However, 2022 is the first year the number of deaths has not significantly increased from the year prior. The largest increase was observed from 2019 to 2020.

The intent, sometimes referred to as manner of death, is the general classification of how the injury led to the death. In 2022, 96% of all drug overdose deaths (n=3,684) in TN were due to unintentional poisoning, while 3% of overdose deaths were intentional.

Number of Overdose Deaths by Drug Type among TN Residents, 2018-2022



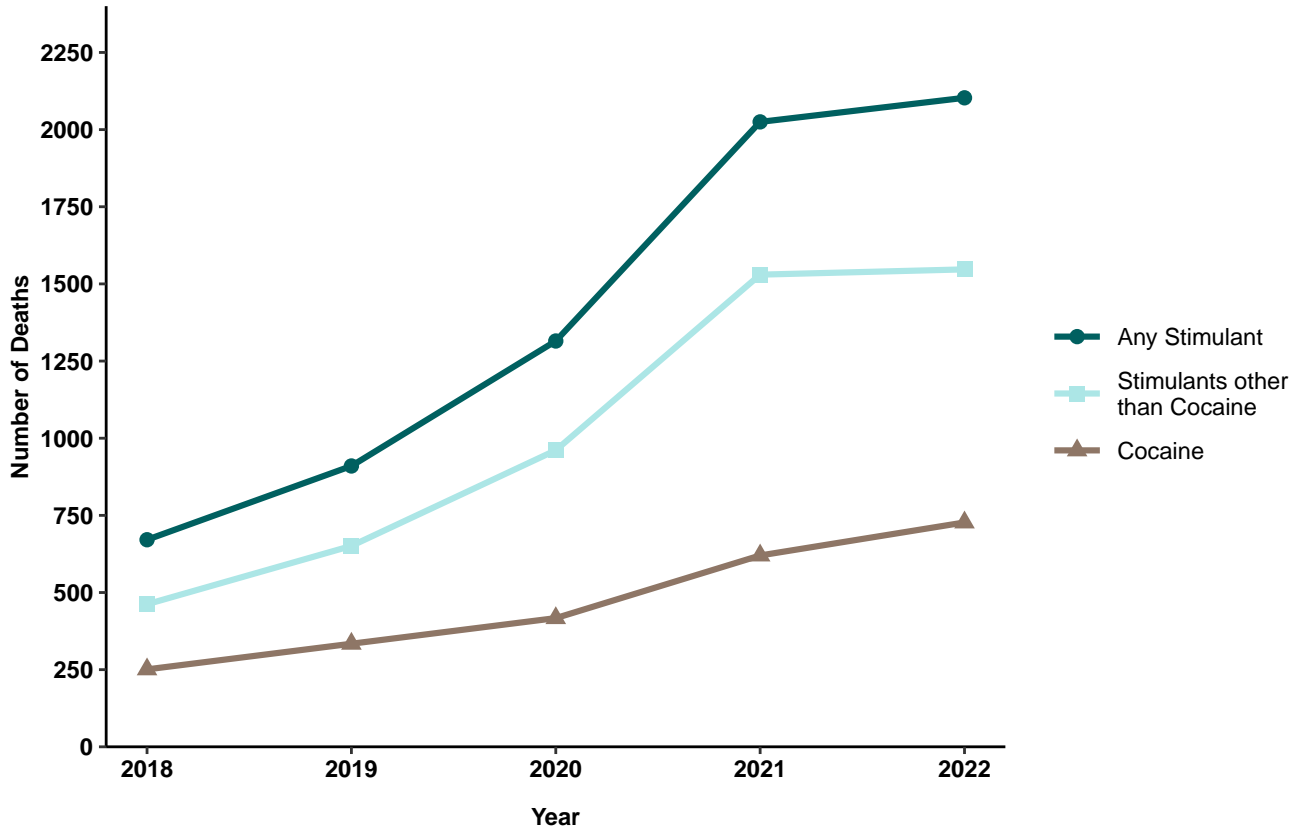
Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of Overdose Deaths among TN Residents by Drug Type					
Type	2018	2019	2020	2021	2022
All Drug	1,818	2,089	3,032	3,814	3,826
Opioid	1,306	1,546	2,400	3,043	3,073
Pain Relievers	548	515	595	645	522
Heroin	367	380	331	167	89
Fentanyl	745	1,087	2,016	2,734	2,797

Opioids have consistently played a role in drug overdose deaths among TN Residents and were involved in 3,073 overdose deaths* in 2022. The increase in opioid overdose deaths is primarily driven by deaths involving illicit fentanyl. Deaths involving opioids identified as pain relievers (i.e., those typically obtained through a prescription) saw a decline in 2022 after a slight increase in 2020 and 2021. Deaths involving heroin have decreased significantly since 2019.

**Drug categories are not mutually exclusive. An overdose may have involved multiple types of opioids, non-opioids or both. Due to improvement in text searches, opioid counts (fentanyl specifically) from previous years may be updated to reflect the new criteria.*

Number of Stimulant Overdose Deaths among TN Residents, 2018-2022

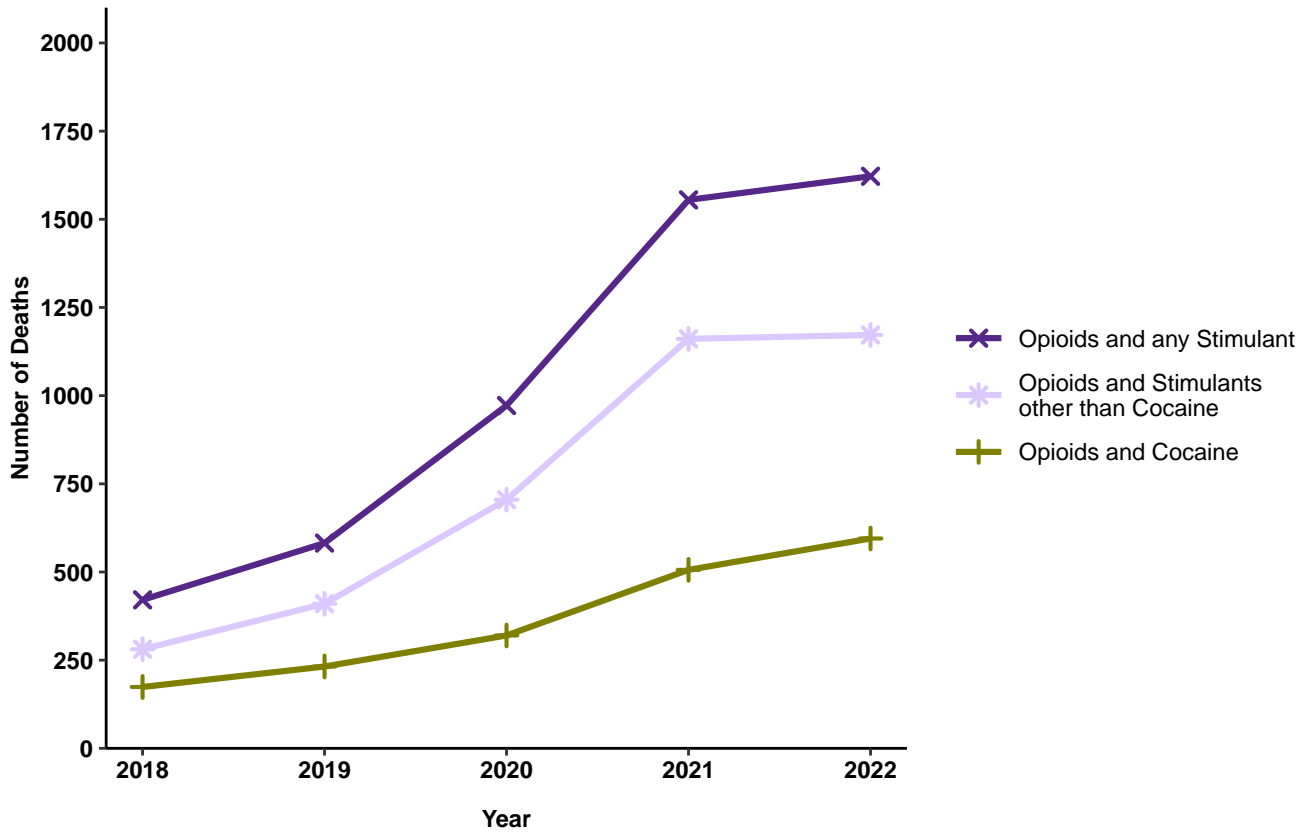


Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of Stimulant Overdose Deaths among TN Residents					
Type	2018	2019	2020	2021	2022
Any Stimulant	671	910	1,315	2,025	2,103
Stimulants other than Cocaine	462	651	961	1,530	1,547
Cocaine	251	334	417	620	727

Deaths involving any stimulants have increased consistently from 2018 to 2021, but have plateaued between 2021 and 2022. There has been a 213% increase from 2018 to 2022. Deaths involving stimulants other than cocaine, a category that includes primarily methamphetamine, have increased substantially from 2018 to 2022. Deaths involving cocaine increased more than other stimulants from 2021 to 2022.

Number of Stimulant and Opioid Overdose Deaths among TN Residents, 2018-2022

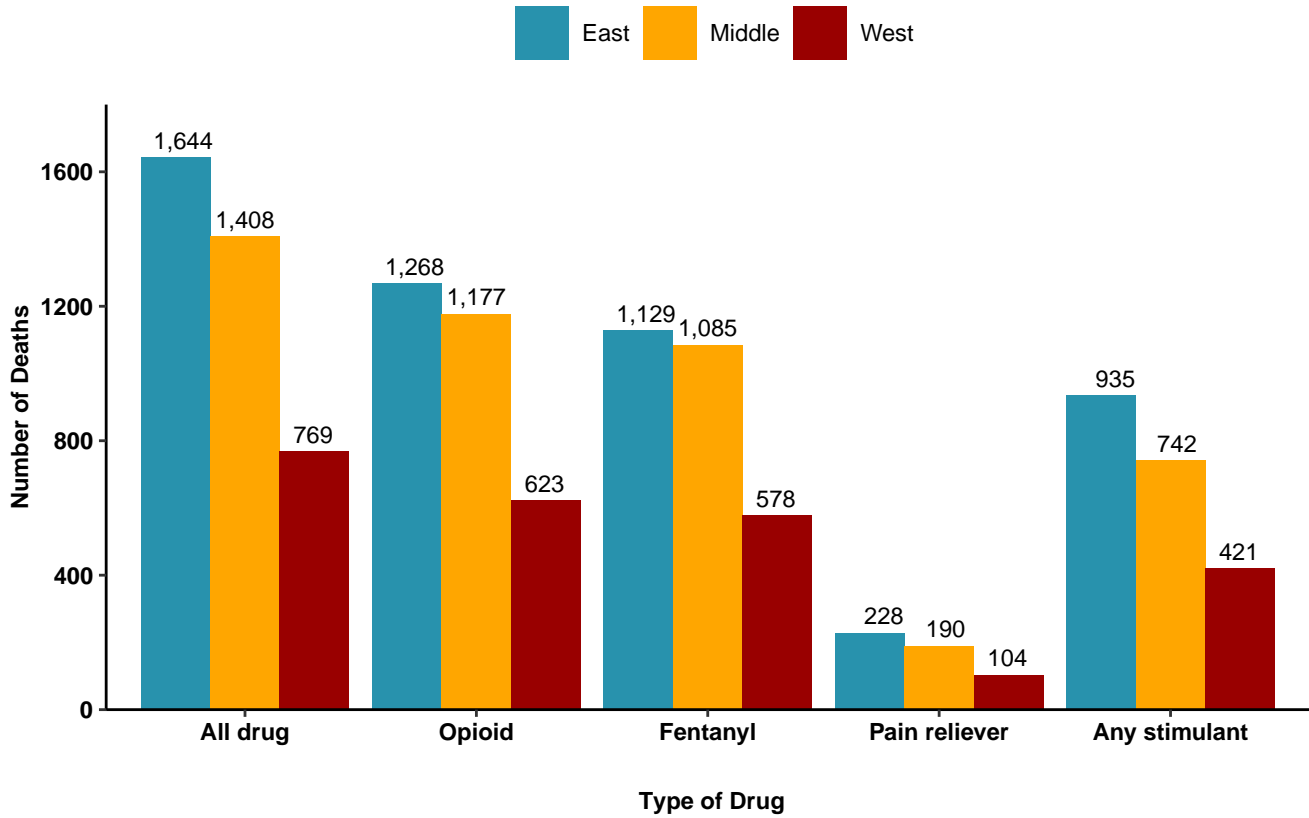


Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents. Data Source: TN Death Statistical File.

Number of Stimulant and Opioid Overdose Deaths among TN Residents					
Type	2018	2019	2020	2021	2022
Opioids and Any Stimulant	421	582	972	1,555	1,622
Opioids and Stimulants other than Cocaine	281	410	705	1,161	1,172
Opioids and Cocaine	174	232	320	506	595

Deaths involving both opioids and stimulants have also increased over the past five years. In 2022, 77% of stimulant-involved deaths also involved an opioid. Of these deaths (n=1,622), the opioid most frequently involved was fentanyl (96%).

Number of All Drug Overdose Deaths by Grand Division among TN Residents, 2022

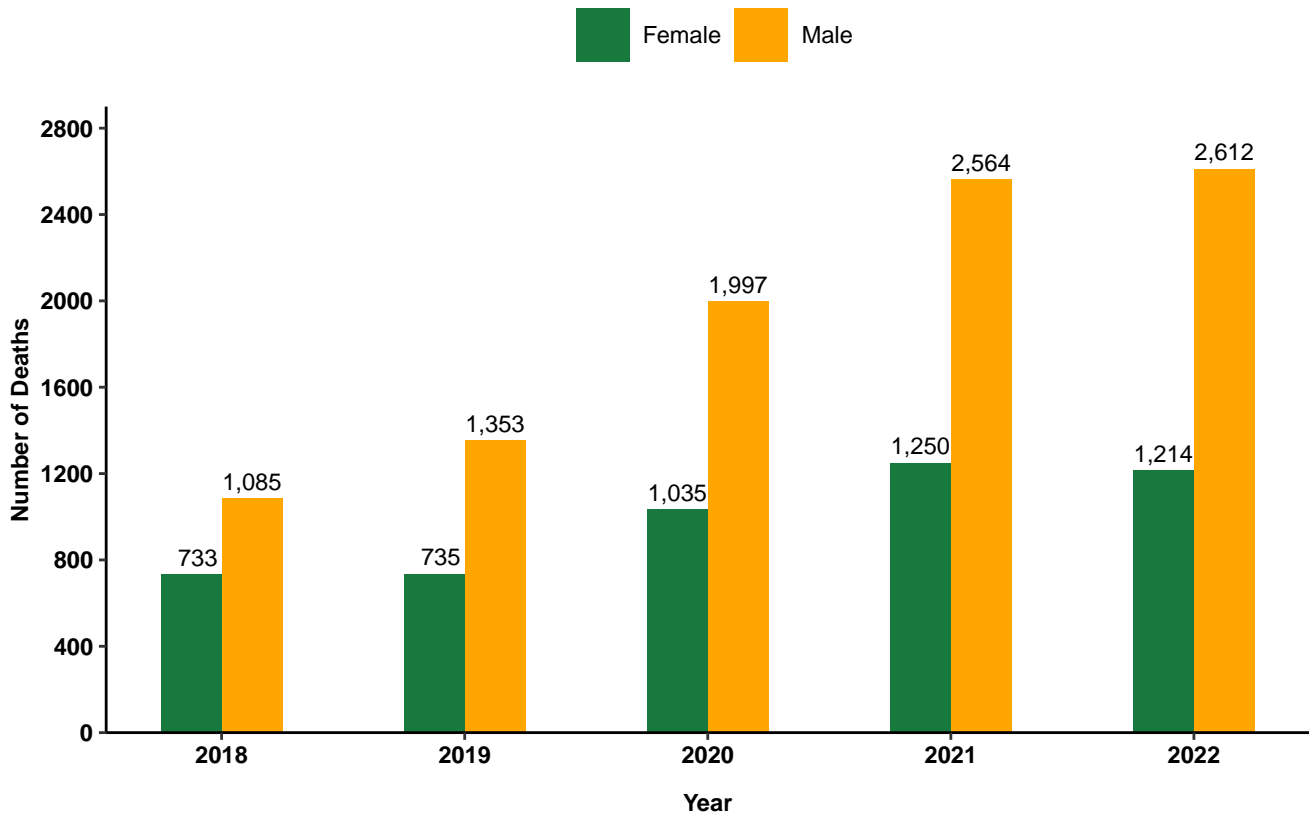


Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of All Drug Overdose Deaths by Grand Division among TN Residents					
Grand Division	All drug	Opioid	Fentanyl	Pain reliever	Any stimulant
East	1,644	1,268	1,129	228	935
Middle	1,408	1,177	1,085	190	742
West	769	623	578	104	421

East TN had the highest number of overdose deaths, encompassing 43% of the deaths in 2022, followed by Middle and West grand divisions.

Number of All Drug Overdose Deaths by Sex among TN Residents, 2018-2022

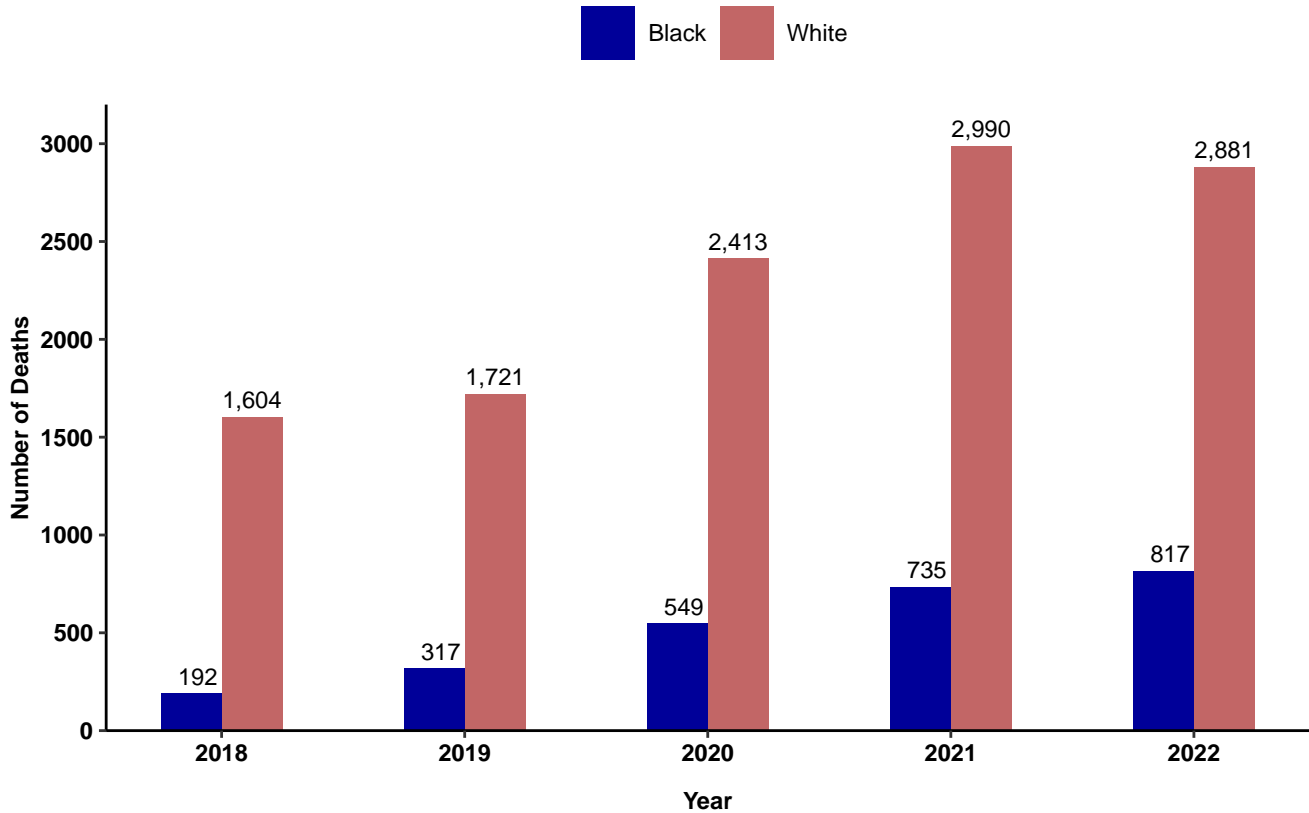


Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of All Drug Overdose Deaths by Sex among TN Residents					
Sex	2018	2019	2020	2021	2022
Female	733	735	1,035	1,250	1,214
Male	1,085	1,353	1,997	2,564	2,612

Males have made up an increasing proportion of overdose deaths over the past five years, now accounting for approximately two-thirds of all overdose deaths. The number of males who died of a drug overdose increased 2% between 2021 and 2022. Overdose deaths among females increased by 70% from 2019 to 2021 and then decreased slightly in 2022 by 3%.

Number of All Drug Overdose Deaths by Race among TN Residents, 2018-2022



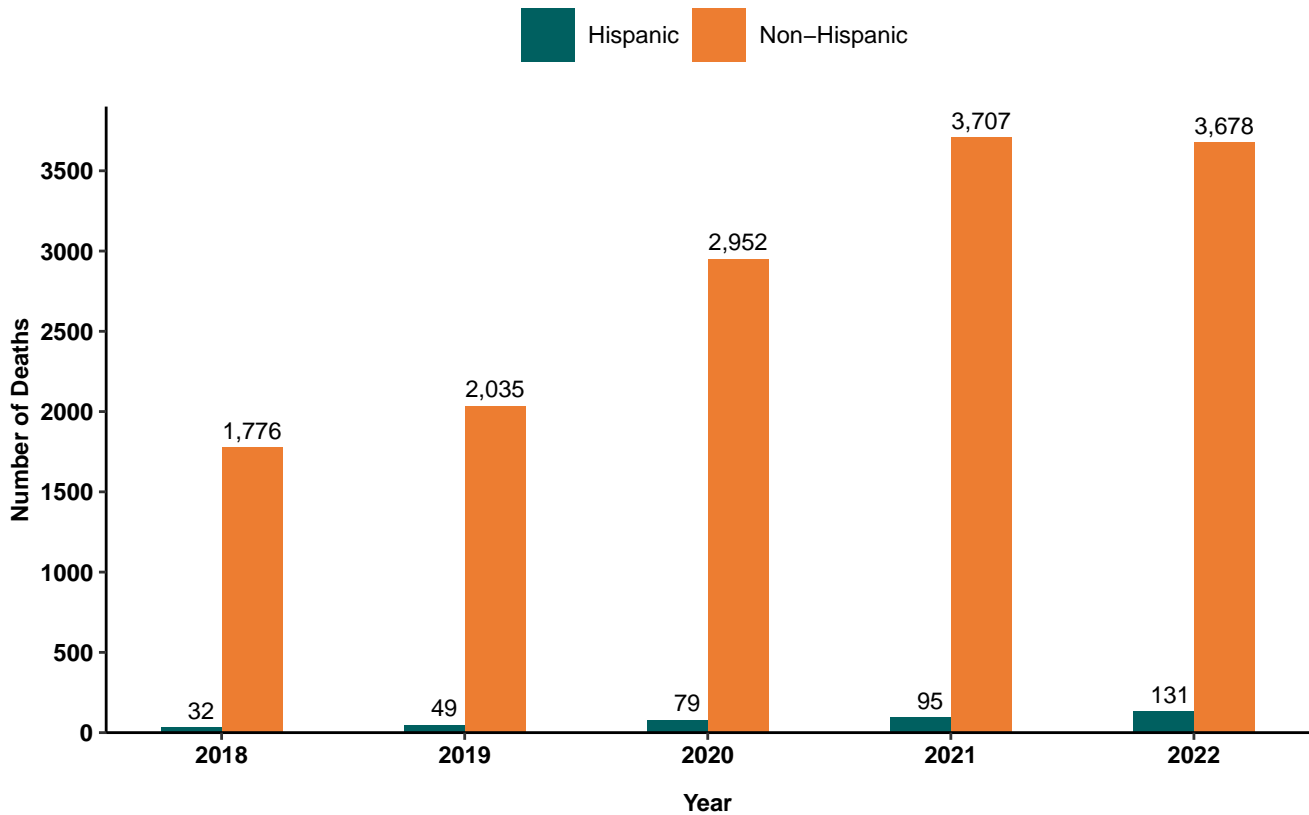
Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of All Drug Overdose Deaths by Race among TN Residents					
Race	2018	2019	2020	2021	2022
Black	192	317	549	735	817
White	1,604	1,721	2,413	2,990	2,881

Tennesseans who died from a drug overdose were more likely to be White. However, the proportion of White Tennesseans who died of a drug overdose has decreased from 88% in 2018 to 75% in 2022. Between 2018 and 2022, drug overdose deaths involving Black Tennesseans have increased 325%, an 11% increase between 2021 and 2022.

Please see [page 22](#), the technical note section for recent changes in race calculation.

Number of All Drug Overdose Deaths by Ethnicity among TN Residents, 2018-2022

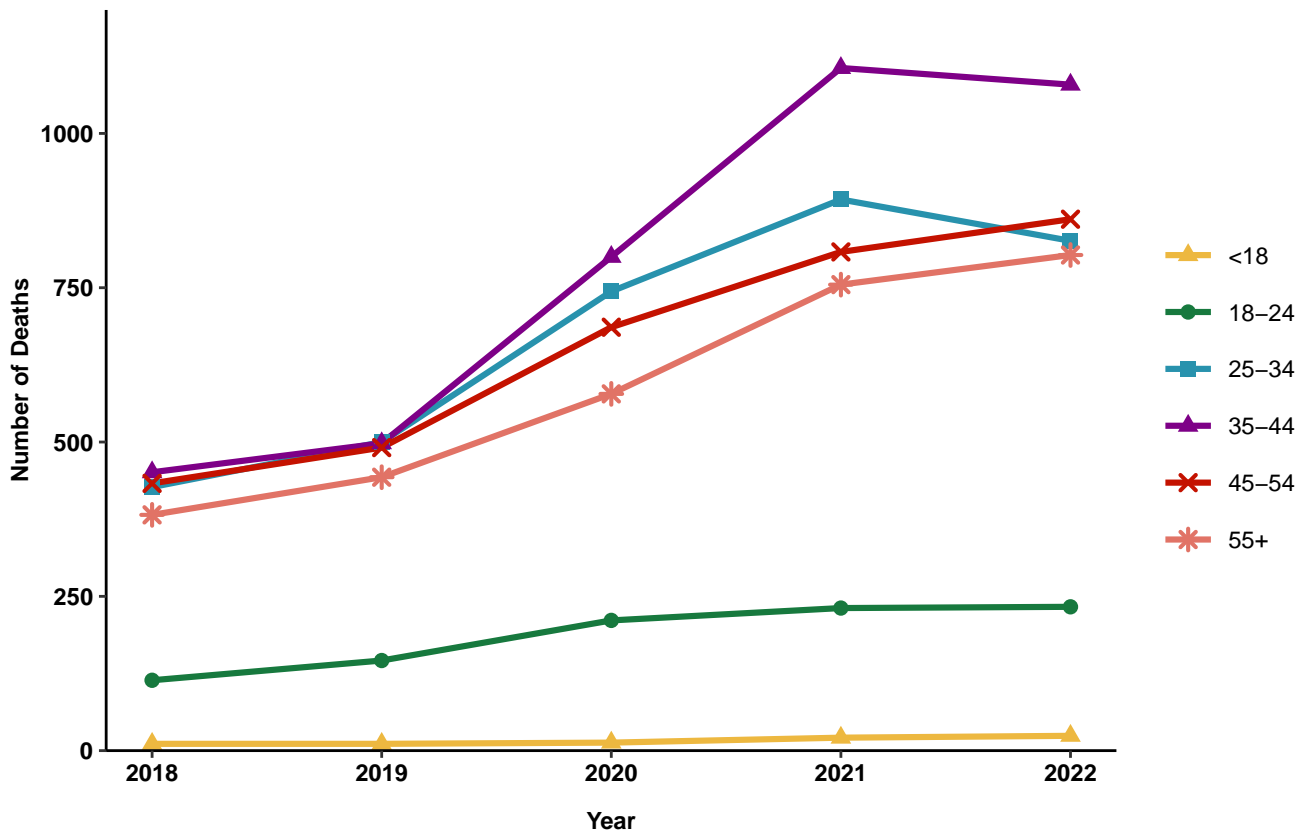


Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of All Drug Overdose Deaths by Ethnicity among TN Residents					
Ethnicity	2018	2019	2020	2021	2022
Hispanic	32	49	79	95	131
Non-Hispanic	1,776	2,035	2,952	3,707	3,678

Between 2018 and 2022, drug overdose deaths involving Hispanic Tennesseans has increased 309%. Over the five year time period, deaths among Hispanic Tennesseans have primarily involved opioids (fentanyl specifically) and stimulants (both cocaine and methamphetamine).

Number of All Drug Overdose Deaths by Age Group among TN Residents, 2018-2022



Analysis by the Office of Informatics and Analytics, TDH (last updated February 7, 2024). Limited to TN residents.
Data Source: TN Death Statistical File.

Number of All Drug Overdose Deaths among TN Residents by Age Group					
Age Category	2018	2019	2020	2021	2022
<18	11	11	13	21	24
18-24	114	146	211	231	233
25-34	427	500	744	893	826
35-44	451	498	800	1,106	1,079
45-54	433	491	686	808	861
55+	382	443	578	755	803

From 2018 to 2022, overdose deaths have increased among all age groups. Between 2018 and 2022, persons aged 35-44 years had the highest percent increase (139%) of drug overdose deaths among these age groups.

Prescription History among Overdose Decedents for TN Residents

Prescription History in the 365 Days Before Overdose Death among TN Residents, 2018-2022

Percent who filled any prescription in the TN CSMD within 365 days of death by type of overdose death among all individuals who died, 2018-2022 (n_total=14,579, n_linked=12,350)					
Type	2018	2019	2020	2021	2022
All drug	58	53	48	44	41
All opioid	58	53	47	44	40
Pain Relievers	69	63	62	60	59
Benzodiazepine	75	66	66	60	62
Heroin	51	49	47	44	38
Fentanyl	50	49	44	42	38
Opioid and Benzodiazepine	73	66	65	59	61

The CSMD helps to provide insight on the amount of controlled substances prescribed to Tennesseans who died from a drug overdose. The table above shows the percentage of overdose decedents who filled any controlled substance prescription in the 365 day period before their death. Overdose deaths are further divided into categories by the drug* involved in the death. For example, in 2022, 40% of individuals who died of an opioid overdose had filled any controlled substance prescription (reported to the CSMD) in the past year, compared to 24% doing so in the 60 days before death (see next page). **Categories of drug deaths are not mutually exclusive.*

Prescription History in the 60 Days Before Overdose Death among TN Residents, 2018-2022

Percent who filled any prescription in the TN CSMD within 60 days of death by type of overdose death among all individuals who died, 2018-2022
(n_total=14,579, n_linked=12,350)

Type	2018	2019	2020	2021	2022
All drug	38	34	31	27	24
All opioid	38	34	30	27	24
Pain relievers	53	47	47	42	42
Benzodiazepine	61	52	51	46	50
Heroin	30	27	29	23	25
Fentanyl	27	28	25	24	21
Opioid and Benzodiazepine	59	52	50	45	48

The table above shows the percentage of overdose decedents who filled any controlled substance prescription in the 60 day period before their death. Overdose deaths are further divided into categories by the drug* involved in the death. From 2018 to 2022, there has been a continual decrease in the percentage of decedents who filled a prescription in the CSMD in the 60 days before death for most categories. For example, in 2018, 38% of overdose decedents filled a prescription in the 60 days before death, but by 2022 that number dropped to just 24%. These trends reflect the decrease in deaths involving prescription opioids and increase involving illicit opioids; the current driving force behind the fatal overdose epidemic. **Categories of drug deaths are not mutually exclusive.*

Opioid and Benzodiazepine Prescription History in the 60 Days Before Overdose Death among TN Residents, 2018-2022

Percent who filled a prescription for an opioid / benzodiazepine in the TN CSMD within 60 days of death by type of overdose death among all individuals who died, 2018-2022 (n_total=14,579, n_linked=12,350)

Type	Opioid prescription filled					Benzodiazepine prescription filled				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
All drug	26	22	19	17	14	20	15	14	11	10
All opioid	27	23	19	17	14	20	15	14	11	10
Pain relievers	40	36	34	30	28	29	23	24	20	19
Benzodiazepine	38	30	29	23	24	47	38	38	34	36
Heroin	22	18	18	12	18	13	13	11	8	12
Fentanyl	18	18	15	15	12	11	11	11	9	8
Opioid and Benzodiazepine	40	32	29	23	26	45	38	37	32	33

The table above shows the percentage of overdose decedents who filled an opioid or benzodiazepine prescription in the 60 day period before their death. Overdose deaths are further divided into categories by the drug* involved in the death. For example, in 2022, 14% of all drug overdose decedents had filled an opioid prescription in the 60 days before death, a 46% decrease from 2018. **Categories of drug deaths are not mutually exclusive.*

2022 County Level Data

The following pages include county data on the number of overdose deaths in 2022 by a subset of drug types*.

**Please note that the contributing drugs are not mutually exclusive and the counts of subcategories of overdose death will not necessarily sum to total overdose deaths.*

2022 Overdose Death Counts by County of Residence

2022 Overdose Death Counts by County						
County	All drug	Opioid	Pain reliever	Heroin	Fentanyl	Any stimulant
Anderson	75	60	16	1	53	46
Bedford	15	13	3	0	13	7
Benton	6	4	0	0	4	4
Bledsoe	3	2	0	1	2	3
Blount	76	69	9	5	65	37
Bradley	42	28	5	0	24	22
Campbell	45	29	5	9	19	22
Cannon	8	6	2	0	3	5
Carroll	6	3	0	0	3	2
Carter	34	24	4	0	20	25
Cheatham	43	39	8	0	36	19
Chester	2	2	1	0	2	1
Claiborne	21	13	1	2	12	7
Clay	2	1	1	0	0	0
Cocke	31	19	6	0	14	12
Coffee	25	18	9	0	13	15
Crockett	2	1	0	0	1	1
Cumberland	45	39	10	3	33	22
Davidson	540	471	54	8	456	294
DeKalb	10	8	0	1	7	5
Decatur	3	3	1	0	2	2
Dickson	32	26	4	0	26	21
Dyer	7	6	0	0	6	1
Fayette	15	13	2	0	13	8
Fentress	11	8	2	0	6	7
Franklin	12	10	1	0	9	5
Gibson	13	9	4	1	6	5
Giles	11	11	2	1	9	4
Grainger	17	8	3	0	7	7
Greene	38	28	8	2	27	26
Grundy	7	3	1	0	2	6
Hamblen	35	29	6	1	26	18
Hamilton	184	147	15	5	136	107
Hancock	4	2	1	0	1	3
Hardeman	9	5	1	0	3	6
Hardin	12	10	2	0	8	8
Hawkins	25	19	4	0	14	18
Haywood	2	2	0	0	2	0

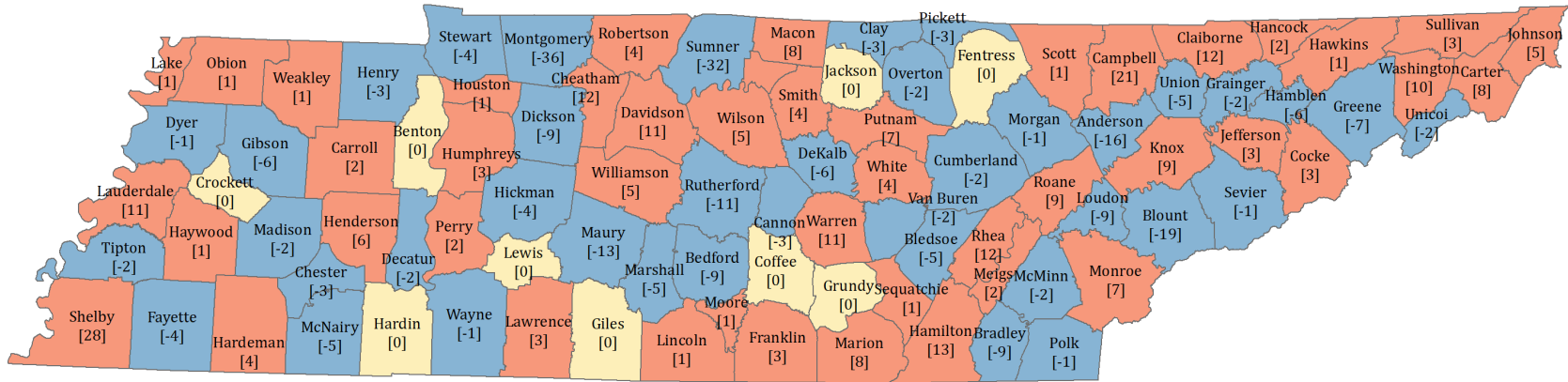
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2022 Overdose Death Counts by County						
County	All drug	Opioid	Pain reliever	Heroin	Fentanyl	Any stimulant
Henderson	11	9	2	0	9	7
Henry	7	6	3	0	6	7
Hickman	20	15	1	1	14	18
Houston	5	4	2	1	3	2
Humphreys	10	8	1	0	7	5
Jackson	6	4	0	2	3	3
Jefferson	33	23	4	1	19	12
Johnson	14	7	1	0	5	12
Knox	461	383	65	10	352	270
Lake	4	3	0	0	3	2
Lauderdale	12	7	1	0	5	5
Lawrence	19	10	2	2	8	5
Lewis	9	9	1	0	9	4
Lincoln	8	4	1	0	3	7
Loudon	25	24	4	1	22	12
Macon	16	10	1	1	9	9
Madison	33	23	4	0	21	21
Marion	19	15	4	0	13	12
Marshall	14	13	6	1	9	6
Mauzy	39	30	5	0	26	17
McMinn	27	8	3	0	7	11
McNairy	8	4	1	2	2	3
Meigs	11	7	1	0	6	5
Monroe	35	23	4	1	23	27
Montgomery	81	69	13	0	65	43
Moore	2	1	0	0	0	0
Morgan	12	12	4	3	11	8
Obion	6	4	2	0	2	1
Overton	7	6	3	0	6	2
Perry	5	4	2	0	2	2
Pickett	1	1	1	0	0	0
Polk	4	3	2	0	1	1
Putnam	29	22	8	0	17	15
Rhea	24	18	3	1	18	19
Roane	59	53	10	4	49	31
Robertson	36	32	3	0	29	19
Rutherford	130	116	22	1	108	62
Scott	4	3	0	1	2	3
Sequatchie	8	6	1	0	6	5
Sevier	71	53	7	0	50	36
Shelby	577	481	73	7	456	320
Smith	13	12	2	1	12	9
Stewart	7	6	0	0	6	5
Sullivan	77	55	7	2	44	49
Sumner	61	48	6	0	42	28
Tipton	26	25	5	1	23	14
Trousdale	8	7	0	0	7	3
UNKNOWN	5	5	0	0	5	5

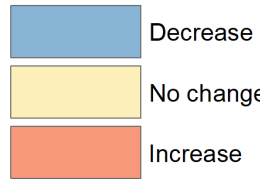
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2022 Overdose Death Counts by County						
County	All drug	Opioid	Pain reliever	Heroin	Fentanyl	Any stimulant
Unicoi	8	5	1	0	4	6
Union	17	11	1	2	10	3
Van Buren	1	1	0	0	1	1
Warren	21	12	5	0	11	11
Washington	68	49	14	2	40	43
Wayne	4	3	0	0	2	2
Weakley	8	3	2	0	1	3
White	18	14	4	0	13	12
Williamson	46	36	10	0	30	23
Wilson	68	60	3	1	57	36
TENNESSEE	3,826	3,073	522	89	2,797	2,103

Map: Change of All Drug Overdose Deaths by TN County of Residence from 2021-2022



Change in number of all drug overdose deaths by TN county of residence



Technical Notes: Tennessee Drug Overdose Deaths Indicator

Categories of drug overdose are identified as follows:

Category	Criteria
Primary Criteria	Only Tennessee residents Excludes voided death certificates
All Drug Overdose	Deaths that have been coded with any of the following ICD-10 codes as the underlying cause of death: X40-X44: Accidental poisoning by drugs X60-X64: Intentional self-poisoning by drugs X85: Assault by drug poisoning Y10-Y14: Drug poisoning of undetermined intent
Drug Overdose Deaths Involving Opioids	Must meet criteria for All Drug Overdose deaths AND contain at least one of the following ICD-10 codes as a contributing cause of death: T40.0: Poisoning by opium T40.1: Poisoning by heroin T40.2: Poisoning by natural and semisynthetic opioids T40.3: Poisoning by methadone T40.4: Poisoning by synthetic opioids other than methadone T40.6: Poisoning by other and unspecified narcotics Must meet criteria for All Drug Overdose deaths AND contain the following text in the contributing cause of death text fields: 'FENTAN', 'FENTA', 'FANTAN' and some other misspellings when no opioid code is available
Drug Overdose Deaths Involving Opioid Pain Relievers	Must meet criteria for All Drug Overdose deaths AND contain at least one of the following ICD-10 codes as a contributing cause of death: T40.2: Poisoning by natural and semisynthetic opioids T40.3: Poisoning by methadone
Drug Overdose Deaths Involving Heroin	Must meet criteria for All Drug Overdose deaths AND contain the following ICD-10 code as a contributing cause of death: T40.1: Poisoning by heroin
Drug Overdose Deaths Involving Fentanyl	Must meet criteria for All Drug Overdose deaths AND contain the following text in the contributing cause of death text fields: 'FENTAN', 'FENTA', 'FANTAN' and some other misspellings
Drug Overdose Deaths Involving Any Stimulant	Must meet criteria for All Drug Overdose deaths AND contain the following ICD-10 code as a contributing cause of death: T43.6: Poisoning by psychostimulants with abuse potential or T40.5: Poisoning by cocaine
Drug Overdose Deaths Involving Benzodiazepine	Must meet criteria for All Drug Overdose deaths AND contain the following ICD-10 code as a contributing cause of death: T42.4: Poisoning by benzodiazepine

Important Note for Race Variable Calculation

Single-race white and single-race black are represented in the report for all years of data. Previous reports included multiple-race responses that had been bridged to white or black in the respective white or black counts. That bridging was done according to the methods outlined in the Center for Disease Control (CDC) National Center for Health Statistics (NCHS) “Procedures for Multiple-race and Hispanic Origin Data: Collection, Coding, Editing, and Transmitting”.

NCHS discontinued race bridging beginning with 2022 data. Previous reports also imputed the race as white for Hispanic decedents for which the race was not classifiable in one or more of the OMB’s five minimum categories for data on race (i.e. with a race of ‘some other race’). Therefore, counts by race in previous reports will be higher than the counts published here to the extent that records previously classified as white or black no longer meet the revised criteria.

The race categories used in this report also differ from those used by NCHS in current publications, including drug overdose reports. Like this report, NCHS now uses single-race categories, but NCHS assigns the race of all records for which race unknown, not stated, or not classifiable to the racial designation of the previous single-race records.