

## Key Points from the Opioid-Related Fatal Overdose Brief, 2022 Preliminary Data

- The preliminary 2022 opioid-related accidental and undetermined fatal overdose data show an increase in opioid-related fatal overdoses. At this time, these data show a 10% increase from 217 deaths in 2021 to 239 in 2022.
- Gabapentin and xylazine have emerged as drugs of concern. Gabapentin was involved in 13% of fatal opioid overdoses in 2022 (up from 2% in 2021), and xylazine was involved in 28% of fatal opioid overdoses (up from 13% in 2021).
- Fentanyl, cocaine and methamphetamine all remained relatively similar. The percentage of fentanyl involvement in opioid-related death is now 93% in 2022, compared to 94% in 2021. Cocaine (49% in 2022, versus 46% in 2021) and methamphetamine were also similar (8% in 2022, versus 10% in 2021).
- This brief includes seven additional 2021 Vermont resident deaths than were reported in the 2021 annual brief (dated April 2022). This is due to out-of-state deaths taking longer to finalize than in-state deaths.
- The 2022 data are preliminary. At the date of this analysis, there are 14 pending death certificates: seven people who died in Vermont and seven who died out of state.

### OPIOID-RELATED FATAL OVERDOSE DATA DISCLAIMER

**Vermont opioid-related fatal overdose data come from the Vermont Department of Health Vital Statistics System. The data in this report primarily describe deaths of Vermonters occurring in-state and out-of-state. Data for out-of-state residents who died in Vermont are included only where explicitly stated.**

**The drug-related fatal overdoses reported here include accidents and fatal overdoses with undetermined intent unless otherwise stated. All deaths involved at least one legal or illicit opioid. Substances noted in this report contributed to the fatal overdose.**

**This report does not include deaths due to chronic substance use (such as HIV, liver disease, or infection); death due to injury related to substance use (i.e., car accident or falls); or deaths due to medical administration error.**

**It is important to note that most drug-related fatal overdoses involve combinations of substances. Additionally, the circumstances under which each of these fatal overdoses occurred are unique and cannot all be attributed to substance misuse or substance use disorder.**

**The 2022 data are considered preliminary.**

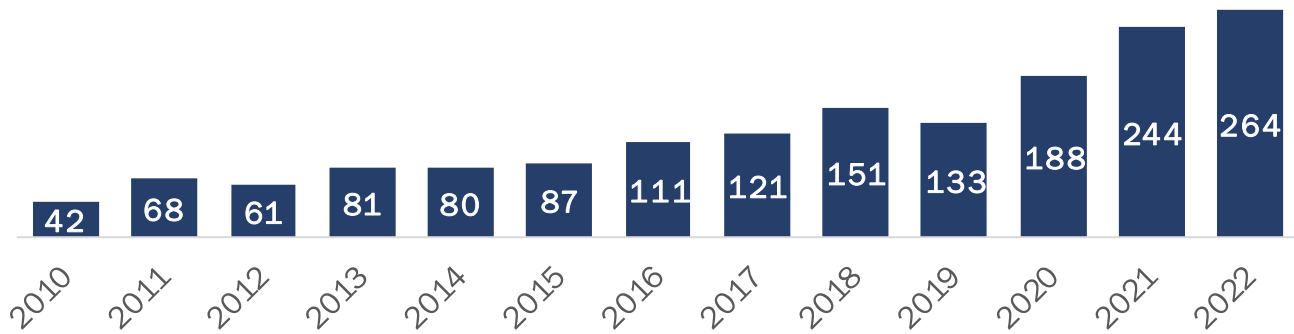
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## Fatal drug overdoses involving all drugs among Vermont residents

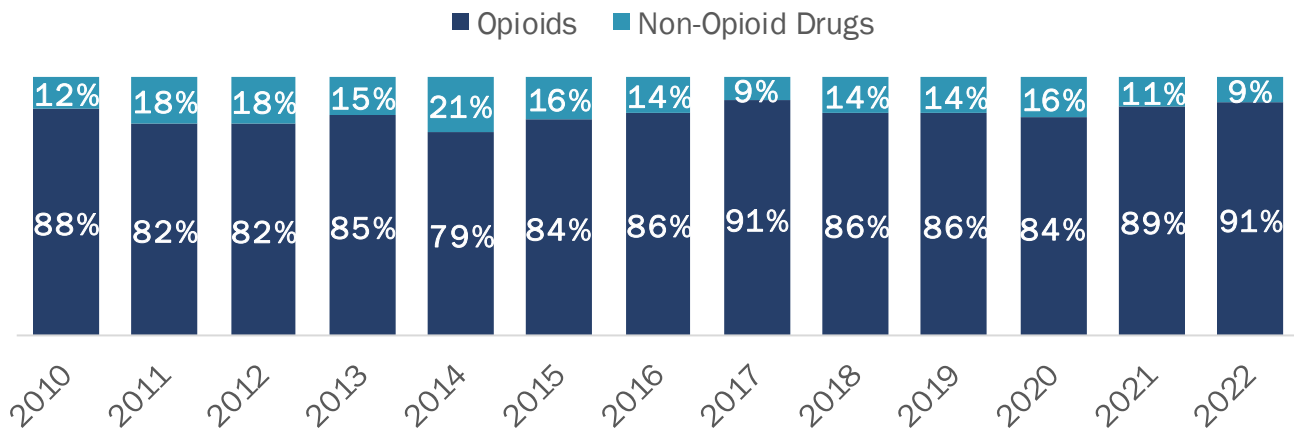
This section describes all accidental and undetermined manner fatal drug overdoses that occurred among Vermont residents. Between 2010 and 2022, deaths determined by the Office of the Chief Medical Examiner (OCME) to have been caused by overdose, involving any drug (i.e., not exclusively opioids) increased from 42 to 264 – an increase of more than 500%. With the exception of 2019, overdose deaths have increased each year since 2014.

**Figure 1: The total number of accidental and undetermined fatal drug overdoses among Vermont residents has increased more than 500% between 2010 and 2022**



Drug overdose deaths among Vermont residents typically involve at least one opioid. Overdose deaths in 2014 involved the lowest percentage of opioids (79%), while this percentage was highest in 2017 and 2022 (91%).

**Figure 2: Nearly all accidental and undetermined drug overdose deaths involve opioids**

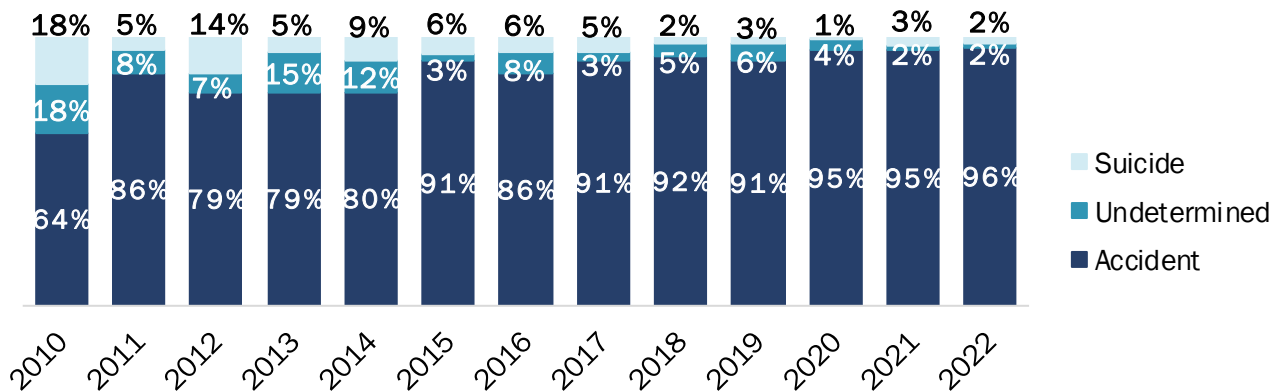


The remainder of this report focuses exclusively on opioid overdose deaths.

## Opioid-related fatal overdose overview

Most opioid overdoses are of accidental or undetermined intent. Of the 243 Vermont residents who died of an opioid overdose in 2022, nearly all were classified as being of accidental or undetermined intent (239, 98%). Four deaths were determined to be suicides. Since 2010, the percent of opioid-related deaths classified as undetermined or suicide has decreased dramatically. At the date of this analysis, there were 14 pending death certificates: seven people who died in Vermont and seven who died out of state. **This report will focus on accidental and undetermined manner fatal opioid overdoses unless otherwise noted.**

**Figure 3: Most opioid-related fatal overdose deaths among Vermont residents are accidental or undetermined**

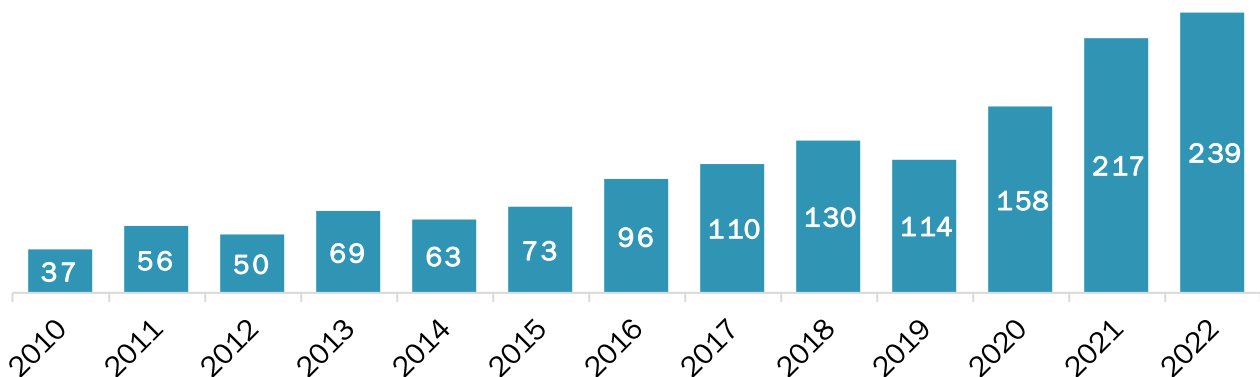


## Accidental and undetermined opioid-related fatal overdoses among Vermonters

Deaths due to suicide were removed from this analysis to show deaths more likely associated with opioid misuse and opioid use disorder. Preliminary data show 239 accidental and undetermined deaths among Vermont residents in 2022.

The 239 deaths in 2022 represent a 10% increase from the 217 deaths in 2021. The rate of death in 2021 was 33.6 per 100,000 Vermonters while the rate for 2022 is 37.0 fatal overdoses per 100,000 Vermonters. These rates are statistically similar. Of note, the percent increase from 2021 to 2022 was less than that from 2020 to 2021 (10% versus 37%).

**Figure 4: Total accidental and undetermined opioid-related fatal overdoses among Vermont residents has more than doubled between 2019 and 2022**



# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Males comprise 68% of 2022 accidental and undetermined opioid-related fatal overdoses among Vermont residents. Women comprise 32% of these deaths (Note: death certificate data on gender are limited to male, female, and unknown). The average age of death is 42 years (median 41), with over half of these deaths occurring among people between 30 and 49 years of age (62%). Most accidental and undetermined opioid-related fatal overdoses are among white, non-Hispanic Vermont residents (94%).

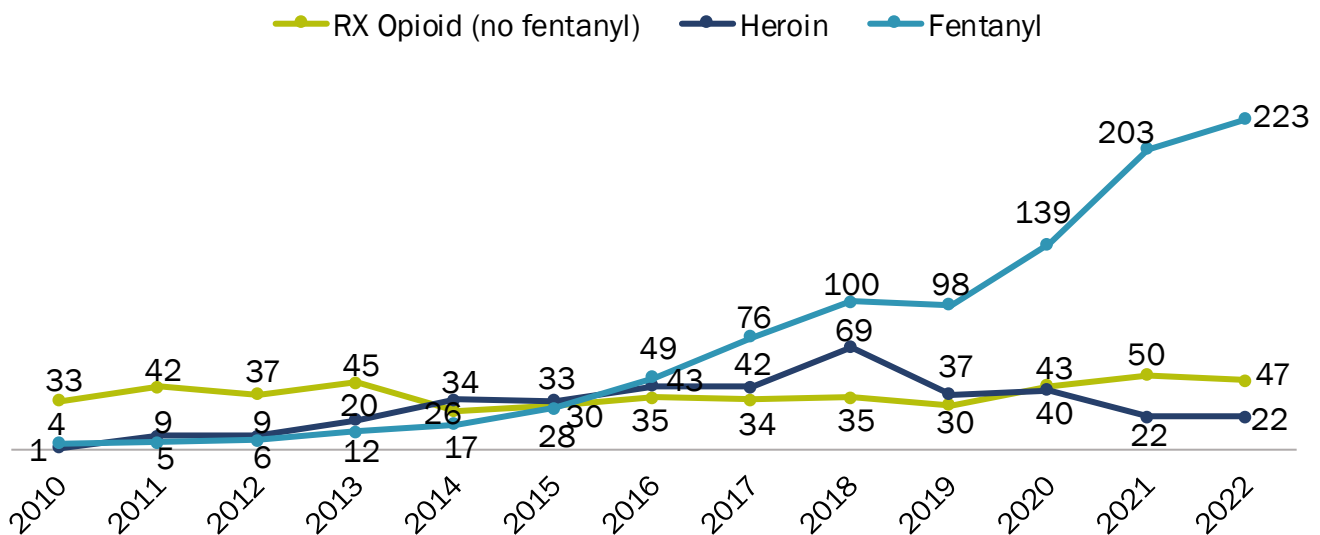
## Fentanyl involvement in opioid-related fatal overdoses

Fentanyl is currently the most prevalent substance involved in opioid-related deaths. In 2022, 93% of opioid-related fatal overdoses involved fentanyl. This proportion increased each year between 2011 (9%) and 2021 (94%) but decreased slightly between 2021 and 2022. Of note, deaths involving fentanyl could include prescription and/or illicit fentanyl and fentanyl analogues.

Heroin involvement in 2022 fatal opioid overdoses is low (9%). The proportion of overdoses involving heroin has decreased each year since 2018 (53%). Similarly, the percentage of opioid-related fatal overdoses involving prescription opioids decreased each year between 2020 (27%) and 2022 (20%) – these percentages are much lower compared to 2010 when nearly all (89%) fatal opioid overdoses involved prescription opioids.

Heroin overtook prescription opioids as the leading contributor to opioid overdose deaths in 2014, which was then surpassed by fentanyl in 2016. Of note, the presence of these drugs is not mutually exclusive and will not sum to the total.

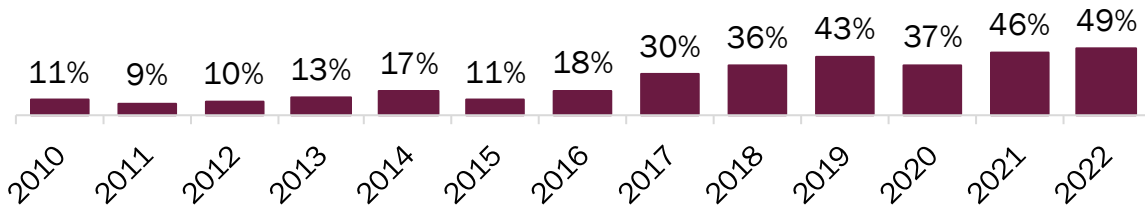
**Figure 5: Accidental and undetermined opioid-related fatal overdoses involving fentanyl has more than doubled between 2019 and 2022**



## Cocaine involvement in opioid-related fatal overdoses

Cocaine was involved in more opioid-related fatal overdoses than any other drug besides fentanyl in 2022 (49%). The number of cocaine-involved deaths has steadily increased since 2015. The percentage of deaths involving cocaine increased compared to 2021 (46%).

**Figure 6: Cocaine is involved in many opioid-related fatal overdoses**



## Drug involvement in fatal opioid overdoses: 2022 compared to 2021

Alcohol, benzodiazepines, buprenorphine, cocaine, gabapentin, methadone, and xylazine involvement as a percentage of fatal opioid overdoses increased in 2022 compared to 2021. The percentage of deaths involving fentanyl, heroin, methamphetamine, prescription opioids (excluding fentanyl), prescription stimulants, and tramadol decreased. Additional trend information for other substances involved is included in Appendix 1.

Substance*	2021		2022	
	#	%	#	%
Alcohol	31	14%	38	16%
Benzodiazepines	7	3%	23	10%
Buprenorphine	2	1%	4	2%
Cocaine	99	46%	117	49%
Fentanyl	203	94%	223	93%
Gabapentin	4	2%	32	13%
Heroin	22	10%	22	9%
Methadone	17	8%	28	12%
Methamphetamine	22	10%	20	8%
RX opioid (no fentanyl)	50	23%	47	20%
RX stimulants	4	2%	2	1%
Tramadol	5	2%	2	1%
Xylazine	29	13%	68	28%

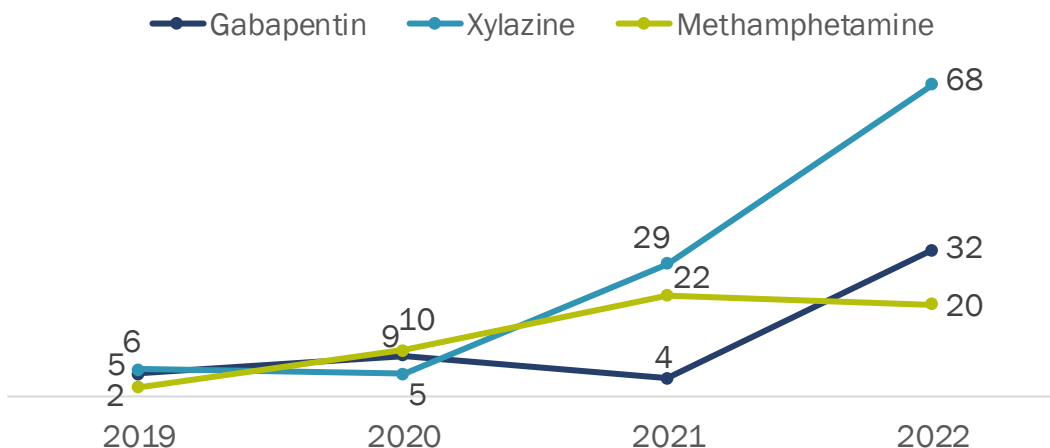
\*Involvement of individual substances is not mutually exclusive.

## 2022 emerging trends

The Office of the Chief Medical Examiner (OCME) contracts with an external lab for comprehensive forensic toxicology testing for drug overdose deaths to determine which substances caused the fatal overdose. [This testing includes over 200 substances](#). The Department of Health continuously monitors toxicology testing results for new substances and trends.

Gabapentin, [methamphetamine](#), and [xylazine](#) are increasingly contributing to opioid-related fatal overdoses among Vermont residents. While methamphetamine involvement was stable between 2021 and 2022, the number of deaths involving xylazine increased. Additionally, starting in July of 2022, gabapentin emerged as a substance of concern. Testing for gabapentin and xylazine began in 2019 so their level of involvement in overdose deaths prior to 2019 is not known. Though gabapentin and xylazine have been identified as being present in overdose toxicology reports, at this time we are unsure if it is being added, or ‘cut’, into the illicit drug supply, or if it is being intentionally taken in combination with other drugs, such as heroin and fentanyl.

**Figure 7: Xylazine, gabapentin, and methamphetamine are increasingly involved in opioid-related fatal overdoses**



These trends are particularly concerning because substances such as gabapentin, methamphetamine, xylazine, and other non-opioid drugs cannot be detected with fentanyl test strips. Naloxone (Narcan®), a medicine that can reverse an opioid overdose, does not reverse the impact of these substances in an overdose emergency. This can mean a higher risk of death.

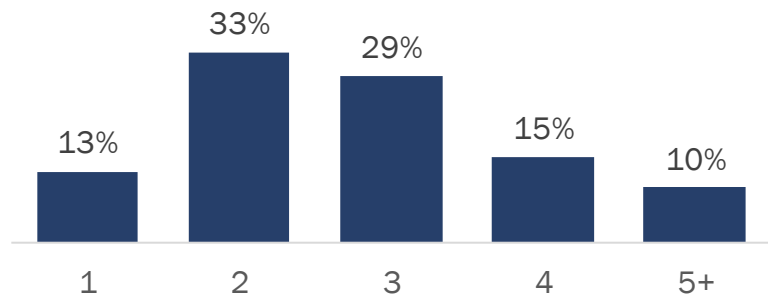
The increased number of opioid overdose deaths in which non-opioid drugs, like xylazine and gabapentin, are present highlights the importance of following the “What should you do during an overdose?” guidance on [KnowODVT.com](#). If an overdose is suspected, call 9-1-1, give naloxone, and start rescue breathing. If non-opioid drugs are involved, naloxone alone may not be effective and additional medical assessment will be needed.

## Multi-substance involvement in opioid-related fatal overdoses

Most opioid-related deaths involve multiple substances. In 2022, 87% of opioid-related fatal overdoses involved two or more substances, with 25% involving four or more substances.

The most common combination of substances among people who died in 2022 was fentanyl and cocaine, which accounted for nearly half (47%) of all opioid-related fatal overdoses. This was also the most common combination in 2021 (44%). Despite this similarity, drug combinations in 2022 were different compared to 2021. In 2021, fentanyl and prescription opioids (17%) and fentanyl and alcohol (14%) were the second- and third-most common drug combinations, respectively, while fentanyl and xylazine (28%) and cocaine and xylazine (15%) were the second- and third-most common combinations in 2022, respectively.

**Figure 8: Only 13% Vermont residents who died of an opioid-related overdose had one substance contributing to their death. The remaining 87% had at least two substances that contributed to their death (2022)**



Substance*	2021		2022	
	#	%	#	%
Cocaine and Heroin	9	4%	13	5%
Cocaine and RX Opioids	14	6%	16	7%
Cocaine and Gabapentin	1	0%	16	7%
Cocaine and Xylazine	16	7%	36	15%
Fentanyl and Cocaine	96	44%	112	47%
Fentanyl and Alcohol	31	14%	35	15%
Fentanyl and Heroin	22	10%	22	9%
Fentanyl and RX Opioids (no fentanyl)	36	17%	34	14%
Fentanyl and RX Stimulants	4	2%	2	1%
Fentanyl and Gabapentin	2	1%	28	12%
Fentanyl and Xylazine	29	13%	68	28%
Gabapentin and Xylazine	0	0%	10	4%
Heroin and RX Stimulants	0	0%	0	0%
Heroin and Gabapentin	0	0%	2	1%
Heroin and Xylazine	4	2%	6	3%
Heroin, Cocaine, and Fentanyl	9	4%	13	5%

\*Involvement of combinations of substances is not mutually exclusive. For example, a death involving cocaine, fentanyl, and heroin would be counted within three separate categories in the table above (cocaine and fentanyl; cocaine and heroin; fentanyl and heroin).



## Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

In 2010, when prescription opioids were involved in 89% of opioid-related fatal overdoses, the top three drug combinations all involved prescription opioids. Because fentanyl, cocaine, and xylazine were the three most common individual drugs involved in opioid overdose deaths in 2022, the most common combinations now all involve two of the three.

### Figure 9: The top three drug combinations listed on opioid-related fatal overdose death certificates in 2022 are completely different than in 2010



#### Sources:

All data are from the Vermont Vital Statistics System and only include deaths that occurred among Vermont residents unless otherwise stated. Data from 2022 are preliminary. This brief is a product of the Vermont Department of Health, Division of Health Statistics and Informatics.

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# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

## Appendix 1: Data Tables

**Table 1: Number and Percentage of Accidental and Undetermined Opioid-Related Fatal Overdoses Among Vermont Residents – Individual Substances Involved**

Substance*	2010		2011		2012		2013		2014	
	#	%	#	%	#	%	#	%	#	%
Alcohol	4	11%	8	14%	10	20%	14	20%	10	16%
Benzodiazepines	9	24%	4	7%	9	18%	12	17%	5	8%
Buprenorphine	0	0%	5	9%	1	2%	4	6%	3	5%
Cocaine	4	11%	5	9%	5	10%	9	13%	11	17%
Fentanyl	4	11%	5	9%	6	12%	12	17%	17	27%
Gabapentin	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin	1	3%	9	16%	9	18%	20	29%	34	54%
Methadone	9	24%	12	21%	18	36%	14	20%	5	8%
Methamphetamine	0	0%	0	0%	0	0%	0	0%	0	0%
RX opioid (no fentanyl)	33	89%	42	75%	37	74%	45	65%	26	41%
RX stimulants	0	0%	1	2%	2	4%	2	3%	4	6%
Tramadol	1	3%	3	5%	2	4%	2	3%	1	2%
Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%

**Table 1 (Continued): Number and Percentage of Accidental and Undetermined Opioid-Related Fatal Overdoses Among Vermont Residents – Individual Substances Involved**

Substance*	2015		2016		2017		2018		2019	
	#	%	#	%	#	%	#	%	#	%
Alcohol	9	12%	16	17%	14	13%	21	16%	12	11%
Benzodiazepines	6	8%	10	10%	6	5%	8	6%	6	5%
Buprenorphine	2	3%	1	1%	0	0%	6	5%	2	2%
Cocaine	8	11%	17	18%	33	30%	47	36%	49	43%
Fentanyl	28	38%	49	51%	76	69%	100	77%	98	86%
Gabapentin	0	0%	0	0%	0	0%	0	0%	5	4%
Heroin	33	45%	43	45%	42	38%	69	53%	37	32%
Methadone	7	10%	14	15%	12	11%	11	8%	9	8%
Methamphetamine	0	0%	0	0%	3	3%	5	4%	2	2%
RX opioid (no fentanyl)	30	41%	35	36%	34	31%	35	27%	30	26%
RX stimulants	0	0%	0	0%	5	5%	10	8%	2	2%
Tramadol	3	4%	2	2%	1	1%	5	4%	0	0%
Xylazine	0	0%	0	0%	0	0%	0	0%	6	5%

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

**Table 1 (Continued): Number and Percentage of Accidental and Undetermined Opioid-Related Fatal Overdoses Among Vermont Residents – Individual Substances Involved**

Substance*	2020		2021		2022		2023		2024	
	#	%	#	%	#	%	#	%	#	%
Alcohol	15	9%	31	14%	38	16%				
Benzodiazepines	6	4%	7	3%	23	10%				
Buprenorphine	2	1%	2	1%	4	2%				
Cocaine	58	37%	99	46%	117	49%				
Fentanyl	139	88%	203	94%	223	93%				
Gabapentin	9	6%	4	2%	32	13%				
Heroin	40	25%	22	10%	22	9%				
Methadone	18	11%	17	8%	28	12%				
Methamphetamine	10	6%	22	10%	20	8%				
RX opioid (no fentanyl)	43	27%	50	23%	47	20%				
RX stimulants	8	5%	4	2%	2	1%				
Tramadol	6	4%	5	2%	2	1%				
Xylazine	5	3%	29	13%	68	28%				

\*Involvement of individual substances is not mutually exclusive.

**Table 2: Combinations of Substances Involved in Opioid-Related Fatal Overdoses Among Vermont Residents**

Substance*	2010		2011		2012		2013		2014	
	#	%	#	%	#	%	#	%	#	%
Cocaine and Heroin	1	3%	2	4%	1	2%	1	1%	8	13%
Cocaine and RX Opioids	3	8%	3	5%	4	8%	6	9%	2	3%
Cocaine and Gabapentin	0	0%	0	0%	0	0%	0	0%	0	0%
Cocaine and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%
Fentanyl and Cocaine	1	3%	0	0%	0	0%	3	4%	4	6%
Fentanyl and Alcohol	0	0%	1	2%	2	4%	1	1%	0	0%
Fentanyl and Heroin	0	0%	0	0%	0	0%	0	0%	6	10%
Fentanyl and RX Opioids (no fentanyl)	2	5%	0	0%	1	2%	6	9%	5	8%
Fentanyl and RX Stimulants	0	0%	1	2%	0	0%	2	3%	1	2%
Fentanyl and Gabapentin	0	0%	0	0%	0	0%	0	0%	0	0%
Fentanyl and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%
Gabapentin and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and RX Stimulants	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and Gabapentin	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin, Cocaine, and Fentanyl	0	0%	0	0%	0	0%	0	0%	2	3%

## Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

**Table 2 (Continued): Combinations of Substances Involved in Opioid-Related Fatal Overdoses Among Vermont Residents**

Substance*	2015		2016		2017		2018		2019	
	#	%	#	%	#	%	#	%	#	%
Cocaine and Heroin	5	7%	13	14%	14	13%	27	21%	15	13%
Cocaine and RX Opioids	1	1%	5	5%	9	8%	10	8%	11	10%
Cocaine and Gabapentin	0	0%	0	0%	0	0%	0	0%	2	2%
Cocaine and Xylazine	0	0%	0	0%	0	0%	0	0%	2	2%
Fentanyl and Cocaine	3	4%	6	6%	25	23%	42	32%	44	39%
Fentanyl and Alcohol	3	4%	4	4%	9	8%	15	12%	10	9%
Fentanyl and Heroin	10	14%	21	22%	32	29%	59	45%	35	31%
Fentanyl and RX Opioids (no fentanyl)	6	8%	6	6%	12	11%	16	12%	17	15%
Fentanyl and RX Stimulants	0	0%	0	0%	3	3%	8	6%	2	2%
Fentanyl and Gabapentin	0	0%	0	0%	0	0%	0	0%	1	1%
Fentanyl and Xylazine	0	0%	0	0%	0	0%	0	0%	6	5%
Gabapentin and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and RX Stimulants	0	0%	0	0%	0	0%	6	5%	1	1%
Heroin and Gabapentin	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and Xylazine	0	0%	0	0%	0	0%	0	0%	3	3%
Heroin, Cocaine, and Fentanyl	1	1%	3	3%	10	9%	23	18%	14	12%

**Table 2 (Continued): Combinations of Substances Involved in Opioid-Related Fatal Overdoses Among Vermont Residents**

Substance*	2020		2021		2022		2023		2024	
	#	%	#	%	#	%	#	%	#	%
Cocaine and Heroin	12	8%	9	4%	13	5%				
Cocaine and RX Opioids	15	9%	14	6%	16	7%				
Cocaine and Gabapentin	5	3%	1	0%	16	7%				
Cocaine and Xylazine	2	1%	16	7%	36	15%				
Fentanyl and Cocaine	52	33%	96	44%	112	47%				
Fentanyl and Alcohol	13	8%	31	14%	35	15%				
Fentanyl and Heroin	39	25%	22	10%	22	9%				
Fentanyl and RX Opioids (no fentanyl)	27	17%	36	17%	34	14%				
Fentanyl and RX Stimulants	6	4%	4	2%	2	1%				
Fentanyl and Gabapentin	6	4%	2	1%	28	12%				
Fentanyl and Xylazine	5	3%	29	13%	68	28%				
Gabapentin and Xylazine	1	1%	0	0%	10	4%				
Heroin and RX Stimulants	1	1%	0	0%	0	0%				
Heroin and Gabapentin	0	0%	0	0%	2	1%				
Heroin and Xylazine	2	1%	4	2%	6	3%				
Heroin, Cocaine, and Fentanyl	11	7%	9	4%	13	5%				

\*Involvement of combinations of substances is not mutually exclusive. For example, a death involving cocaine, fentanyl, and heroin would be counted three separate categories in the table above (cocaine and fentanyl; cocaine and heroin; fentanyl and heroin).

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Table 3: Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		2010			2011			2012			2013			2014		
		<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>		
Total VERMONT Residents Accidental and Undetermined OPIOID-Related Fatal Overdoses		37	--	5.9	56	--	8.9	50	--	8.0	69	--	11.0	63	--	10.1
				<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>
By Gender	Male	21	57%	6.8	29	52%	9.4	33	66%	10.7	44	64%	14.2	41	65%	13.3
	Female	16	43%	5.0	27	48%	8.5	17	34%	5.4	25	36%	7.9	22	35%	6.9
By Age	< 30	3	8%	1.3	13	23%	5.7	11	22%	4.9	12	17%	5.3	16	25%	7.1
	30 - 39	8	22%	11.3	12	21%	17.3	10	20%	14.4	15	22%	21.4	22	35%	31.3
	40 - 49	9	24%	9.8	15	27%	16.9	17	34%	19.7	17	25%	20.6	9	14%	11.3
	50 +	17	46%	7.3	16	29%	6.7	12	24%	4.9	25	36%	10.1	16	25%	6.3
Average Age		47			41			41			43			39		
By Race/ Ethnicity	White, Non-Hispanic	37	100%	NA	55	98%	NA	48	96%	8.2	65	94%	11.1	62	98%	10.6
	BIPOC	0	0%	NA	1	2%	NA	2	4%	5.4	4	6%	10.4	1	2%	2.5

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Table 3 (Continued): Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		2015			2016			2017			2018			2019		
		% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents			% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents			% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents			% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents			% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		
Total VERMONT Residents Accidental and Undetermined OPIOID-Related Fatal Overdoses		73	--	11.7	96	--	15.4	110	--	17.6	130	--	20.8	114	--	18.3
				<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>
By Gender	Male	51	70%	16.5	63	66%	20.4	78	71%	25.3	77	59%	24.9	78	68%	24.3
	Female	22	30%	6.9	33	34%	10.4	32	29%	10.1	53	41%	16.7	36	32%	11.4
By Age	< 30	15	21%	6.7	20	21%	9.0	30	27%	13.6	30	23%	13.6	22	19%	10.1
	30 - 39	29	40%	40.9	32	33%	44.8	38	35%	52.6	45	35%	61.5	40	35%	54.4
	40 - 49	11	15%	14.3	25	26%	33.5	16	15%	21.9	23	18%	31.7	25	22%	34.9
	50 +	18	25%	7.1	19	20%	7.4	26	24%	10.1	32	25%	12.3	27	24%	10.3
Average Age		39			40			39			40			40		
By Race/ Ethnicity	White, Non-Hispanic	69	95%	11.8	95	99%	16.3	106	96%	18.2	127	98%	21.9	104	91%	18.0
	BIPOC	4	5%	9.5	1	1%	2.3	4	4%	9.2	3	2%	6.9	10	9%	21.5

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Table 3 (Continued): Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		<u>2020</u>			<u>2021</u>			<u>2022</u>			<u>2023</u>			<u>2024</u>		
		<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>			<u>% of Accidental and Undetermined Manner Opioid-Related Fatal Overdoses Occurring Among Vermont Residents</u>		
<b>Total VERMONT Residents Accidental and Undetermined OPIOID-Related Fatal Overdoses</b>		158	--	24.6	217	--	33.6	239	--	37.0		--			--	
				<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>			<u>Rate Per 100K of Sub Group</u>
<b>By Gender</b>	Male	109	69%	34.1	150	69%	46.8	162	68%	50.5						
	Female	49	31%	15.2	67	31%	20.6	77	32%	23.7						
<b>By Age</b>	< 30	27	17%	12.1	41	19%	18.5	28	12%	12.6						
	30 - 39	47	30%	61.2	60	28%	76.2	82	34%	104.1						
	40 - 49	40	25%	54.1	62	29%	83.7	66	28%	89.1						
	50 +	44	28%	16.4	54	25%	19.9	63	26%	23.2						
<b>Average Age</b>		41			41			42								
<b>By Race/Ethnicity</b>	White, Non-Hispanic	154	97%	26.0	204	94%	34.3	225	94%	37.8						
	BIPOC	4	3%	8.1	13	6%	25.8	14	6%	27.8						

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Table 4: Opioid-Related Fatal Overdoses by County of Residence and County of Death (Vermont and Non-Vermont Residents)	2010			2011			2012			2013			2014		
	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County
<b>By County of Residence*</b>															
Addison	3	7%	8.1	2	3%	5.4	1	2%	2.7	5	7%	13.6	3	5%	8.1
Bennington	2	5%	5.4	1	2%	2.7	3	6%	8.2	4	6%	10.9	5	8%	13.7
Caledonia	2	5%	6.4	0	0%	0.0	0	0%	0.0	1	1%	3.2	5	8%	16.1
Chittenden	11	26%	7.0	15	25%	9.5	15	29%	9.5	17	24%	10.7	13	20%	8.1
Essex	0	0%	0.0	1	2%	15.9	2	4%	32.1	1	1%	16.1	1	2%	16.3
Franklin	2	5%	4.2	4	7%	8.3	3	6%	6.2	7	10%	14.5	6	9%	12.3
Grand Isle	0	0%	0.0	0	0%	0.0	1	2%	14.3	0	0%	0.0	1	2%	14.3
Lamoille	0	0%	0.0	3	5%	12.1	2	4%	8.0	3	4%	12.0	3	5%	12.0
Orange	2	5%	6.9	3	5%	10.3	1	2%	3.5	4	6%	13.8	1	2%	3.5
Orleans	0	0%	0.0	1	2%	3.7	5	10%	18.4	4	6%	14.7	3	5%	11.1
Rutland	4	10%	6.5	9	15%	14.7	2	4%	3.3	11	15%	18.1	7	11%	11.6
Washington	2	5%	3.4	5	8%	8.4	6	12%	10.1	7	10%	11.8	1	2%	1.7
Windham	4	10%	9.0	7	12%	15.8	4	8%	9.1	2	3%	4.6	8	12%	18.3
Windsor	5	12%	8.8	5	8%	8.8	5	10%	8.9	3	4%	5.4	6	9%	10.7
Non-VT Residents who Died in VT (Rate Per 100K Vermonters)	5	12%	0.8	3	5%	0.5	1	2%	0.2	2	3%	0.3	2	3%	0.3
<b>By County of Death</b>															
Addison	3	7%	8.1	1	2%	2.7	0	0%	0.0	4	6%	10.9	2	3%	5.4
Bennington	2	5%	5.4	4	7%	10.8	3	6%	8.2	4	6%	10.9	4	6%	31.0
Caledonia	1	2%	3.2	0	0%	0.0	0	0%	0.0	1	1%	3.2	5	8%	36.7
Chittenden	13	31%	8.3	16	27%	10.2	16	31%	10.1	18	25%	11.3	19	29%	10.4
Essex	0	0%	0.0	1	2%	15.9	2	4%	32.1	1	1%	16.1	0	0%	32.5
Franklin	2	5%	4.2	3	5%	6.2	4	8%	8.3	7	10%	14.5	5	8%	10.1
Grand Isle	0	0%	0.0	0	0%	0.0	0	0%	0.0	0	0%	0.0	0	0%	0.0
Lamoille	1	2%	4.1	3	5%	12.1	2	4%	8.0	3	4%	12.0	2	3%	15.8
Orange	1	2%	3.5	5	8%	17.2	1	2%	3.5	3	4%	10.4	1	2%	0.0
Orleans	0	0%	0.0	1	2%	3.7	4	8%	14.8	4	6%	14.7	2	3%	18.5
Rutland	6	14%	9.7	9	15%	14.7	2	4%	3.3	11	15%	18.1	7	11%	20.6
Washington	2	5%	3.4	5	8%	8.4	6	12%	10.1	7	10%	11.8	1	2%	18.8
Windham	3	7%	6.7	6	10%	13.6	4	8%	9.1	3	4%	6.8	7	11%	42.6
Windsor	5	12%	8.8	5	8%	8.8	5	10%	8.9	3	4%	5.4	6	9%	23.6
Out of State (Rate Per 100k Vermonters)	3	7%	0.5	0	0%	0.0	2	4%	0.3	2	3%	0.3	4	6%	0.6

\*Some deaths are missing county of residence. These are included in overall totals but not included in the table above.



# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Table 4 (Continued): Opioid-Related Fatal Overdoses by County of Residence and County of Death (Vermont and Non-Vermont Residents)	2015			2016			2017			2018			2019		
	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in County
<b>By County of Residence*</b>															
Addison	1	1%	2.7	4	4%	10.8	2	2%	5.4	2	1%	5.4	2	2%	5.4
Bennington	2	3%	5.5	6	6%	16.6	4	3%	11.2	13	10%	36.5	11	10%	30.9
Caledonia	1	1%	3.2	4	4%	13.2	5	4%	16.6	7	5%	23.1	11	10%	33.0
Chittenden	17	22%	10.5	21	19%	13.0	29	25%	17.9	14	10%	8.5	17	15%	10.3
Essex	3	4%	48.7	0	0%	0.0	0	0%	0.0	0	0%	0.0	2	2%	32.0
Franklin	10	13%	20.5	7	6%	14.3	9	8%	18.4	12	9%	24.3	5	4%	10.1
Grand Isle	2	3%	29.2	2	2%	28.9	1	1%	14.3	0	0%	0.0	0	0%	0.0
Lamoille	0	0%	0.0	3	3%	11.8	3	3%	11.8	4	3%	15.8	4	3%	15.8
Orange	3	4%	10.4	4	4%	13.8	5	4%	17.3	3	2%	10.3	0	0%	0.0
Orleans	6	8%	22.1	6	6%	22.3	4	3%	14.9	3	2%	11.1	5	4%	18.6
Rutland	10	13%	16.7	13	12%	21.9	11	9%	18.6	19	14%	32.4	12	10%	18.7
Washington	4	5%	6.8	8	7%	13.7	13	11%	22.3	12	9%	20.6	11	10%	18.9
Windham	2	3%	4.6	3	3%	7.0	13	11%	30.3	25	18%	58.5	18	16%	39.8
Windsor	12	15%	21.5	14	13%	25.2	11	9%	20.0	16	12%	28.9	13	11%	23.5
Non-VT Residents who Died in VT (Rate Per 100K Vermonters)	6	8%	1.0	13	12%	2.1	6	5%	1.0	6	4%	1.0	4	3%	0.6
<b>By County of Death</b>															
Addison	0	0%	0.0	6	6%	16.2	1	1%	2.7	1	1%	2.7	2	2%	5.4
Bennington	1	1%	2.8	6	6%	16.6	3	3%	8.4	10	7%	28.1	12	10%	33.8
Caledonia	2	3%	6.5	5	5%	16.5	5	4%	16.6	4	3%	13.2	9	8%	30.0
Chittenden	20	25%	12.4	24	22%	14.9	35	30%	21.6	18	13%	10.9	19	17%	11.6
Essex	1	1%	16.2	1	1%	16.2	0	0%	0.0	0	0%	0.0	1	1%	16.2
Franklin	7	9%	14.3	7	6%	14.3	7	6%	14.3	7	5%	14.2	3	3%	6.1
Grand Isle	1	1%	14.6	1	1%	14.5	1	1%	14.3	0	0%	0.0	1	1%	13.8
Lamoille	1	1%	4.0	3	3%	11.8	3	3%	11.8	2	1%	7.9	5	4%	19.7
Orange	3	4%	10.4	4	4%	13.8	4	3%	13.8	2	1%	6.9	0	0%	0.0
Orleans	6	8%	22.1	6	6%	22.3	2	2%	7.5	2	1%	7.4	5	4%	18.5
Rutland	14	18%	23.4	11	10%	18.5	10	9%	16.9	16	12%	27.3	13	11%	22.3
Washington	4	5%	6.8	8	7%	13.7	10	9%	17.2	13	10%	22.4	9	8%	15.4
Windham	2	3%	4.6	6	6%	13.9	14	12%	32.7	24	18%	56.1	15	13%	35.1
Windsor	12	15%	21.5	18	17%	32.4	12	10%	21.8	18	13%	32.6	8	7%	14.5
Out of State (Rate Per 100k Vermonters)	5	6%	0.8	3	3%	0.5	9	8%	1.4	19	14%	3.0	16	14%	2.6

\*Some deaths are missing county of residence. These are included in overall totals but not included in the table above.

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

Table 4 (Continued): Opioid-Related Fatal Overdoses by County of Residence and County of Death (Vermont and Non-Vermont Residents)	2020			2021			2022			2023			2024		
	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k In County
<b>By County of Residence*</b>															
Addison	3	2%	8.0	5	2%	13.4	7	3%	18.8						
Bennington	9	5%	24.1	17	7%	45.6	17	7%	45.6						
Caledonia	12	7%	39.8	10	4%	32.9	11	4%	36.2						
Chittenden	26	16%	15.4	41	18%	24.3	48	19%	28.4						
Essex	0	0%	0.0	0	0%	0.0	3	1%	50.6						
Franklin	5	3%	10.0	15	6%	29.8	18	7%	35.8						
Grand Isle	3	2%	41.2	2	1%	27.0	2	1%	27.0						
Lamoille	5	3%	19.3	11	5%	42.1	8	3%	30.6						
Orange	7	4%	23.9	12	5%	40.6	9	4%	30.5						
Orleans	6	4%	21.9	9	4%	32.7	12	5%	43.6						
Rutland	20	12%	33.1	28	12%	46.2	34	13%	56.1						
Washington	21	13%	35.1	23	10%	38.4	14	6%	23.3						
Windham	12	7%	26.2	21	9%	45.6	26	10%	56.4						
Windsor	29	17%	50.3	21	9%	36.1	30	12%	51.5						
Non-VT Residents who Died in VT (Rate Per 100K Vermonters)	9	5%	1.4	15	6%	2.3	13	5%	2.0						
<b>By County of Death</b>															
Addison	2	1%	5.4	2	1%	5.4	4	2%	10.7						
Bennington	7	4%	18.8	17	7%	45.6	12	5%	32.2						
Caledonia	12	7%	39.8	13	6%	42.8	13	5%	42.8						
Chittenden	33	20%	19.6	52	22%	30.8	55	22%	32.6						
Essex	1	1%	16.9	0	0%	0.0	3	1%	50.6						
Franklin	3	2%	6.0	12	5%	23.8	15	6%	29.8						
Grand Isle	2	1%	27.5	1	0%	13.5	2	1%	27.0						
Lamoille	5	3%	19.3	9	4%	34.4	8	3%	30.6						
Orange	8	5%	27.3	9	4%	30.5	10	4%	33.9						
Orleans	4	2%	14.6	9	4%	32.7	12	5%	43.6						
Rutland	20	12%	33.1	29	13%	47.9	40	16%	66.0						
Washington	17	10%	28.5	23	10%	38.4	12	5%	20.0						
Windham	14	8%	30.5	22	9%	47.7	23	9%	49.9						
Windsor	28	17%	48.5	22	9%	37.8	26	10%	44.7						
Out of State (Rate Per 100k Vermonters)	11	7%	1.7	12	5%	1.9	17	7%	2.6						

\*Some deaths are missing county of residence. These are included in overall totals but not included in the table above.

# Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

## Appendix 2: 2022 Preliminary Data

The following tables include monthly opioid-related fatal overdose data. As these data are preliminary, previously published data may change. All data should be considered preliminary until final data are published. The following tables include overdose deaths among Vermont residents, regardless of place of death (i.e., in Vermont vs. out-of-state).

Table 5. 2022 Month of Death	Total Number of Opioid-Related Accidental and Undetermined Manner Fatal Overdoses								
	Total*	Fentanyl	RX opioid (no fentanyl)	Heroin	Cocaine	Xylazine	Gabapentin	Benzodiazepines	Methamphetamine
January	24	20	9	0	8	4	0	0	2
February	14	13	2	1	9	7	1	0	1
March	12	11	1	1	7	4	0	1	2
April	20	19	3	4	11	4	0	3	1
May	15	14	1	4	8	3	1	2	0
June	16	16	3	1	8	4	2	3	0
July	29	28	3	2	14	12	7	5	3
August	23	22	8	4	9	5	5	2	4
September	17	16	3	2	11	5	3	1	2
October	21	21	2	1	10	6	4	1	1
November	22	20	8	0	8	7	4	3	2
December	26	23	4	2	14	7	5	2	2
<b>Total Vermont Residents</b>	<b>239</b>	<b>223</b>	<b>47</b>	<b>22</b>	<b>117</b>	<b>68</b>	<b>32</b>	<b>23</b>	<b>20</b>
<b>Vermonters in Vermont</b>	<b>222</b>	<b>207</b>	<b>46</b>	<b>22</b>	<b>110</b>	<b>67</b>	<b>32</b>	<b>23</b>	<b>20</b>
<b>Vermonters Out of State</b>	<b>17</b>	<b>16</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Non-Vermont Residents</b>	<b>13</b>	<b>12</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>

\*Involvement of individual substances is not mutually exclusive.

## Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

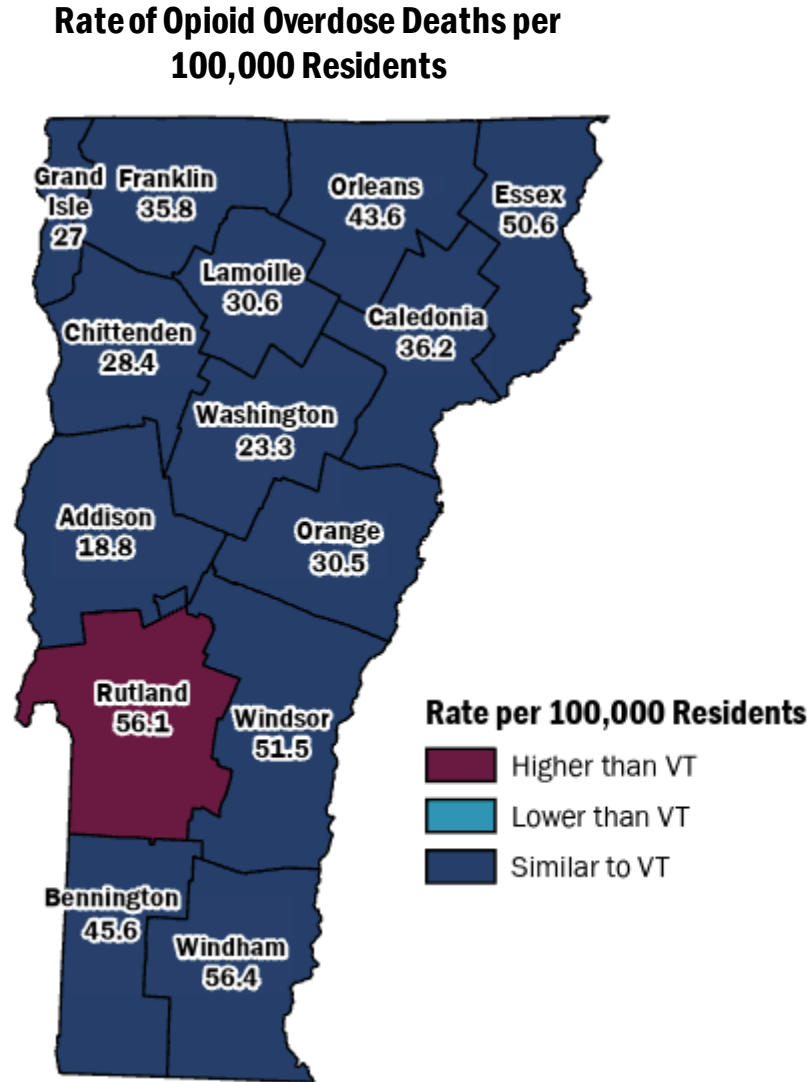
**Table 6. Total Number of Opioid-Related Accidental and Undetermined Fatal Overdoses, Preliminary 2022 Data by County of Residence**

County of Residence	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Addison County	2	1	0	0	0	0	1	0	0	1	0	2	7
Bennington County	1	2	2	1	0	0	3	2	0	0	4	2	17
Caledonia County	2	1	0	1	0	1	0	0	0	1	2	3	11
Chittenden County	5	3	1	8	3	4	4	7	2	5	2	4	48
Essex County	0	0	0	1	1	0	1	0	0	0	0	0	3
Franklin County	1	2	3	0	1	1	2	2	2	1	2	1	18
Grand Isle County	0	0	0	0	0	0	0	0	0	1	0	1	2
Lamoille County	2	1	0	1	0	0	0	2	1	0	1	0	8
Orange County	0	0	0	0	0	1	2	0	2	1	2	1	9
Orleans County	4	1	1	0	0	1	2	1	1	1	0	0	12
Rutland County	1	1	1	2	3	2	3	4	4	2	5	6	34
Washington County	0	1	0	2	2	2	4	0	2	1	0	0	14
Windham County	4	1	0	3	2	3	2	3	1	4	1	2	26
Windsor County	2	0	4	1	3	1	5	2	2	3	3	4	30
Missing County of Residence	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>VERMONT Resident Total</b>	<b>24</b>	<b>14</b>	<b>12</b>	<b>20</b>	<b>15</b>	<b>16</b>	<b>29</b>	<b>23</b>	<b>17</b>	<b>21</b>	<b>22</b>	<b>26</b>	<b>239</b>
<b>Non-Vermont Residents</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Pending Cases</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>14</b>

The number of pending cases represents the total number of cases for each month which have not yet been assigned a cause of death in the Vermont Vital Statistics System. Cases still pending six to eight weeks after the end of the month of death are not necessarily drug related.

## Opioid-Related Fatal Overdoses Among Vermonters, 2022 Annual Data Brief

The rate of opioid overdose deaths among Rutland County residents (56.1 per 100,000) was statistically higher than Vermont overall. All other counties were statistically similar to Vermont overall (37.0 per 100,000).



## Appendix 3: Vermont Methodology for Calculating Drug-Related Fatal Overdoses

The Vermont Department of Health utilizes a unique methodology for calculating a drug-related fatal overdose. The VDH method differs from the CDC methodology, as described in MMWR: Increases in Drug and Opioid-Involved Overdose Deaths – United States, 2010–2015:

“The National Vital Statistics System multiple cause-of-death mortality files were used to record drug overdose deaths. Drug overdose deaths were identified using the International Classification of Disease, Tenth Revision (ICD-10), based on the ICD-10 underlying cause-of-death codes X40–44 (unintentional), X60–64 (suicide), X85 (homicide), or Y10–Y14 (undetermined intent). Among deaths with drug overdose as the underlying cause, the type of opioid is indicated by the following ICD-10 multiple cause-of-death codes: opioids (T40.0, T40.1, T40.2, T40.3, T40.4, or T40.6); natural/semisynthetic opioids (T40.2); methadone (T40.3); synthetic opioids other than methadone (T40.4); and heroin (T40.1). Some deaths involved more than one type of opioid; these deaths were included in the rates for each subcategory. Therefore, categories of deaths presented are not mutually exclusive.” <https://www.cdc.gov/mmwr/volumes/65/wr/mm655051e1.htm>

Determining a drug-related fatal overdose is a multi-step process. Any death certificate with a pending investigation or natural death classification is removed before analyses. All causes of death, including any contributing conditions, are scanned to recognize any ICD code that represents a drug poisoning (including alcohol). Next, all literal text fields, including the injury description text are also examined to identify any listed alcohol or drugs. Deaths related to chronic alcohol use, medical complications of medication administration, end of life care, intrauterine or gestational exposure, helium, or exposure/injury in the context of intoxication are excluded as they do not represent a likely “overdose”.

There are two main differences between the methodologies used by VDH and the CDC. First, VDH considers all causes of death, contributing conditions, and injury descriptions as opposed to underlying cause of death only. Second, VDH examines a broader list of ICD-10 codes than those used by the CDC. Beyond the list of ICD-10 codes used by the CDC, VDH examines the following additional ICD-10 codes to identify its initial list of drug-related fatal overdoses:

ICD Codes Used in Drug-Related Fatal Overdose Analysis (beyond those used by CDC)			
X45	F10.0	F14.0	F17.0
X65	F10.1	F14.1	F17.1
Y15	F11.0	F15.0	F18.0
T36-T50	F11.1	F15.1	F18.1
T51.0	F13.0	F16.0	F19.0
	F13.1	F16.1	F19.1

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While the CDC does examine multiple cause-of-death codes for those described in the MMWR excerpt above (T40.0, T40.1, T40.2, T40.3, T40.4, or T40.6), they do so only for individuals who have an underlying cause-of-death code equal to X40-44, X60-64, X85, or Y10-Y14.

In an example of how the VDH and CDC methodologies differ based on use of ICD codes and literal text analysis, an underlying cause of death may be listed as cardiovascular disease and identified in the death record with the ICD-10 code I25.0 (CVD). This individual would not be included as a drug-related fatal overdose using the CDC methodology. However, upon closer inspection of literal text and additional cause of death fields, the injury description lists “substance abuse” with a contributing condition of “acute cocaine intoxication” and ICD codes indicating poisoning by narcotics (T45.0). Based on this additional information, VDH would classify this as a drug-related fatal overdose.

The Vermont Department of Health’s method of identification reveals an average 6% fewer fatal overdoses (range 0% to -12%) compared to the [CDC’s findings for Vermont](#). This is likely a result of more stringent exclusion criteria. It is also possible that some of the deaths identified by the CDC as overdoses are not the same as those identified by the Department of Health and vice versa.

	Number of Drug-Related Fatal Overdoses*	
	CDC Methodology	Vermont Methodology
2014	83	80
2015	99	87
2016	125	111
2017	134	121
2018	153	151
2019	133	133
2020	190	188
2021	*	244
2022	*	264

\*2021 and 2022 CDC data are not yet available.