VERMONT
DEPARTMENT OF HEALTH

Fatal Overdoses Among Vermont Residents

Annual Data Brief – Data through 2023

April 2024

Key Points from the Opioid-Related Overdose Deaths Brief, 2023 Preliminary Data

- While this report is data-driven, it is important to note that each data point refers to someone who lost their life due to substance use. Therefore, these data should be viewed in the context of that humanity.
- The preliminary 2023 opioid-related accidental and undetermined fatal overdose **data show a decrease in opioid-related overdose deaths**. Currently, these data show a five percent decrease from 244 deaths in 2022 to 231 in 2023. However, there are still 15 unresolved death certificates in 2023, so **it is possible that the number of deaths will increase to a level closer to that seen in 2022**.
- Cocaine involvement in opioid-related deaths has increased to 61% in 2023, compared to 48% in 2022.
- Xylazine remains a drug of concern, while gabapentin and methamphetamine involvement have decreased slightly. Xylazine was involved in 32% of fatal opioid overdoses in 2023 (up from 28% in 2022).

Information About Opioid-Related Overdose Death Data

This brief is a product of the Vermont Department of Health, Division of Health Statistics and Informatics.

Data Source: Vermont Vital Statistics System

This report includes:

- Deaths of Vermont residents occurring in-state and out-of-state.
  - Data for residents of other states who died in Vermont are included only where explicitly stated.
- Accidents and overdoses with undetermined intent, unless otherwise stated.
- Deaths that involved at least one legal or illicit opioid.

The circumstances under which each of these fatal overdoses occurred are unique and cannot all be attributed to substance misuse or substance use disorder.

This report does not include:

- Deaths due to chronic substance use, injury related to substance use, or medical administration error.

The 2023 data are considered preliminary. At the date of this analysis, there are 15 pending death certificates: 11 people who died in Vermont and four who died out of state.

This brief includes five additional 2022 Vermont resident deaths than were reported in the 2022 annual brief (dated April 2023). This is due to out-of-state deaths taking longer to finalize than in-state deaths.

For more information: AHS.VDHOverdoseDataVT@vermont.gov

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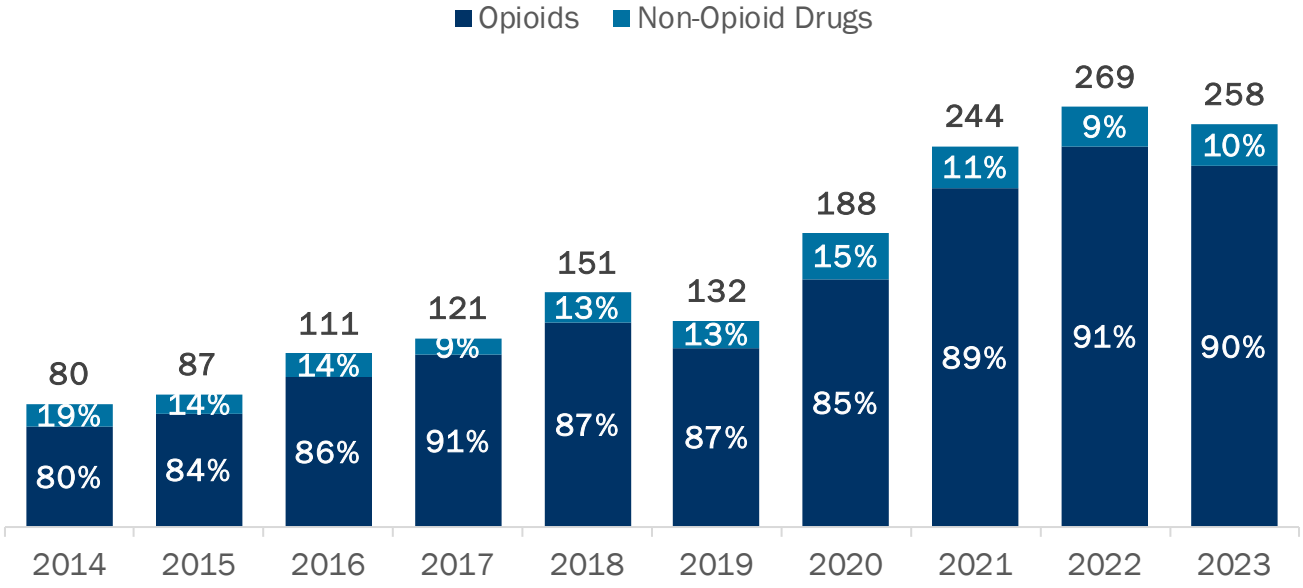
Fatal drug overdoses involving all drugs among Vermont residents

This section describes all accidental and undetermined manner drug overdoses that occurred among Vermont residents. Between 2014 and 2023, deaths classified by the Office of the Chief Medical Examiner (OCME) as caused by an overdose involving any drug (i.e., not exclusively opioids) increased from 80 to 258. Drug overdose deaths among Vermont residents typically involve at least one opioid. The 10% of overdose deaths that involved non-opioid drugs in 2023 most frequently included drugs such as alcohol, cocaine, benzodiazepines, antidepressants, methamphetamines, or a combination of these substances. Generally, over-the-counter medicine such as Tylenol was not involved in these deaths.

Figure 1: Nearly all accidental and undetermined drug overdose deaths involve opioids.

Percent involving opioids vs. non-opioids and the numeric total of overdose deaths



Opioid-related fatal overdose overview

In 2023, there were 231 opioid overdose deaths that were classified as accidental or undetermined intent. Two additional opioid overdose deaths were determined to be suicides, accounting for 1% of the total number of opioid overdose deaths. The distribution between accidental, undetermined, and suicide deaths has been stable since 2020.

Manner of Death	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Accidental	80%	91%	86%	91%	93%	91%	95%	95%	96%	95%
Undetermined	11%	3%	8%	3%	5%	7%	4%	2%	2%	4%
Suicide	9%	6%	6%	5%	2%	3%	1%	3%	2%	1%

Accidental and undetermined opioid-related fatal overdoses among Vermont residents

The rest of this report will focus on accidental and undetermined manner fatal opioid overdoses unless otherwise noted. The 231 deaths in 2023 represent a five percent decrease from the 244 deaths in 2022. The rate of death in 2022 was 37.7 per 100,000 Vermont residents, while the rate for 2023 is 35.7 per 100,000. These rates are statistically similar. Of note, there are still 15 pending death certificates in 2023, so it is possible that the number of deaths will increase to a level closer to that seen in 2022.

Figure 2: The number of accidental and undetermined opioid-related fatal overdoses among Vermont residents doubled between 2019 and 2023.

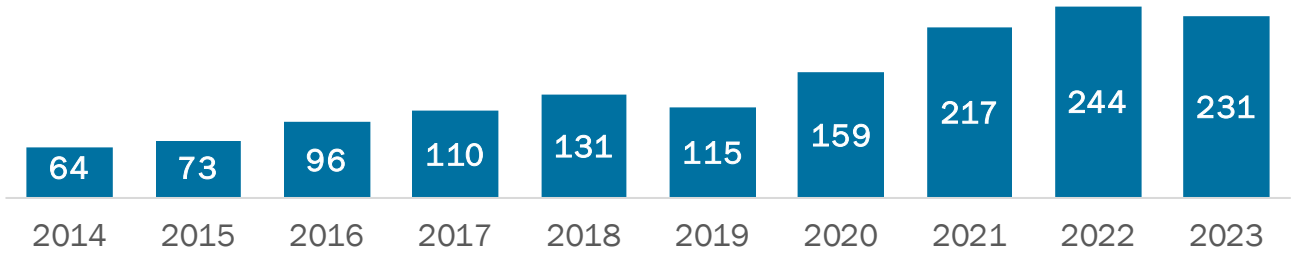
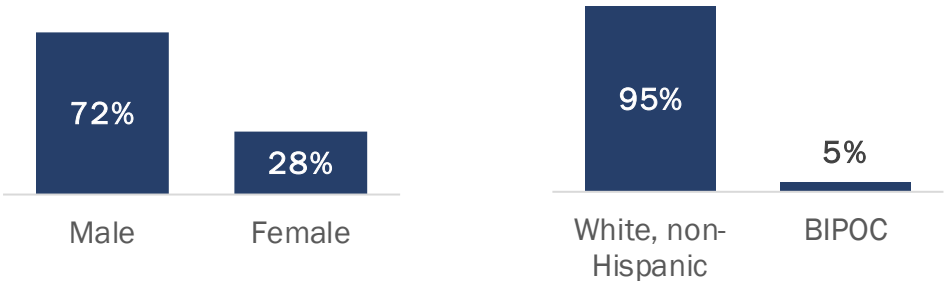
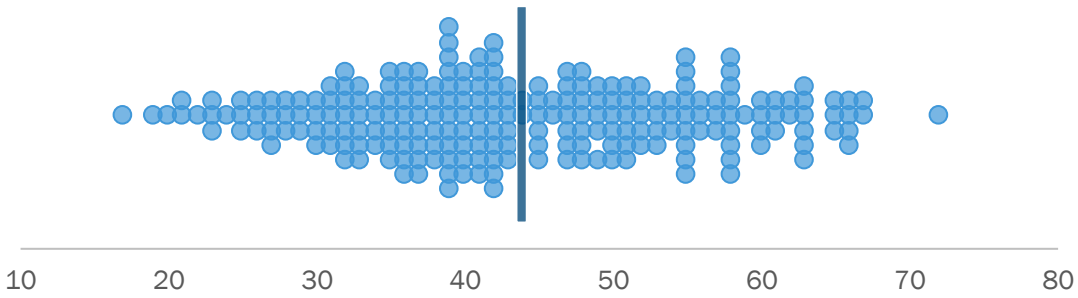


Figure 3: Most accidental and undetermined opioid-related fatal overdoses are among white, non-Hispanic males. More than half of these deaths occur among people 40 years of age and older.

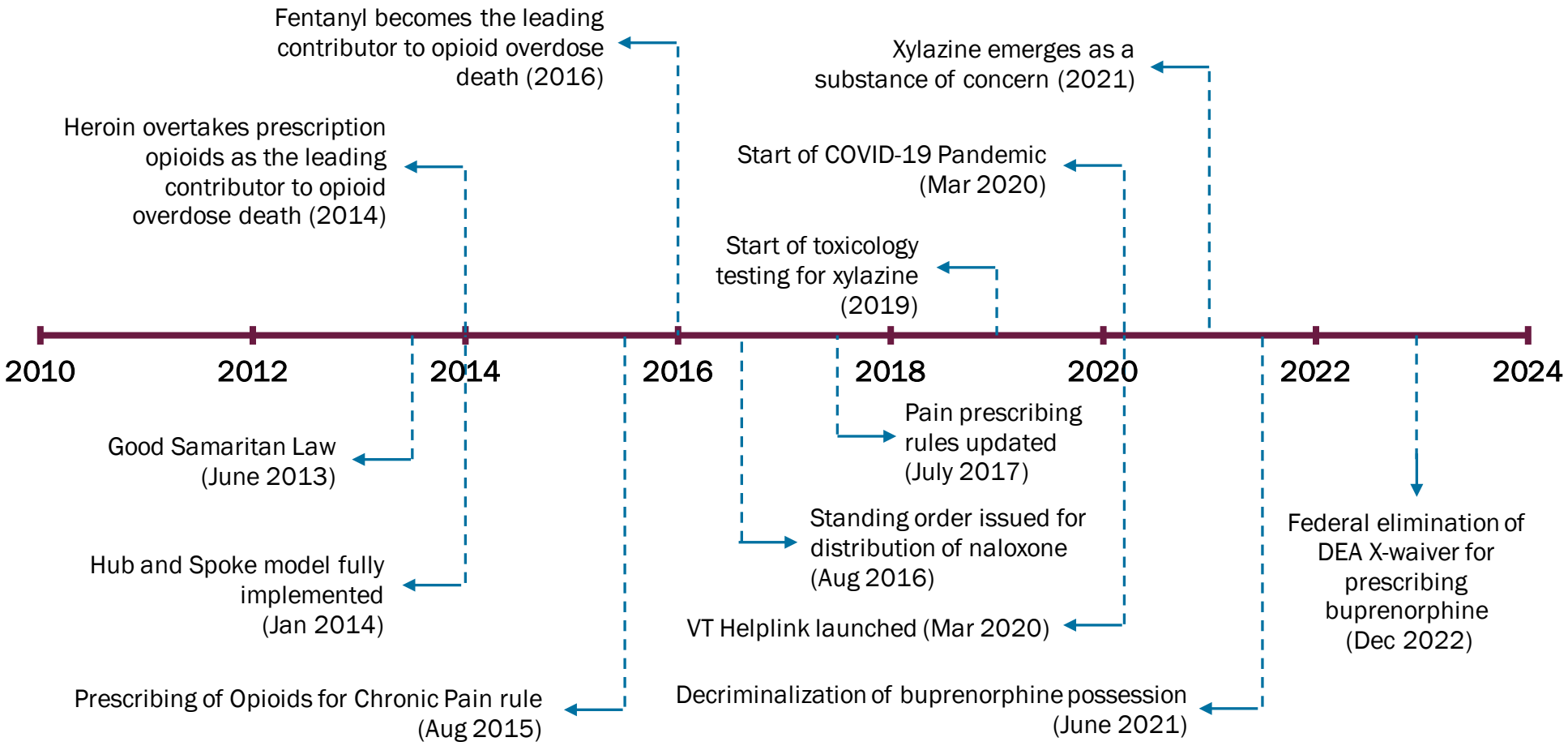


The average age of opioid-related fatal overdoses among Vermont residents is 44 years old.



Timeline of opioid policy and substance trends in Vermont

The following timeline serves to contextualize the numbers presented in this report with events and changes in the substance use landscape of Vermont. Included in the timeline are changes in legislation, updates to toxicology testing, trends in drug involvement, and the COVID-19 pandemic. This is not meant to be a comprehensive list, but rather a high-level overview of key events that have occurred over the years.



Drug involvement in fatal opioid overdoses

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.

The increased number of opioid overdose deaths including non-opioid drugs, like xylazine and benzodiazepines, highlights the importance of knowing what to do during an overdose.

- 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.
- Fentanyl and xylazine test strips can be used to test drug supplies to determine the presence (not amount) of fentanyl and xylazine. These test strips are available for free through syringe services programs and other community organizations.
- More information can be found at KnowODVT.com.

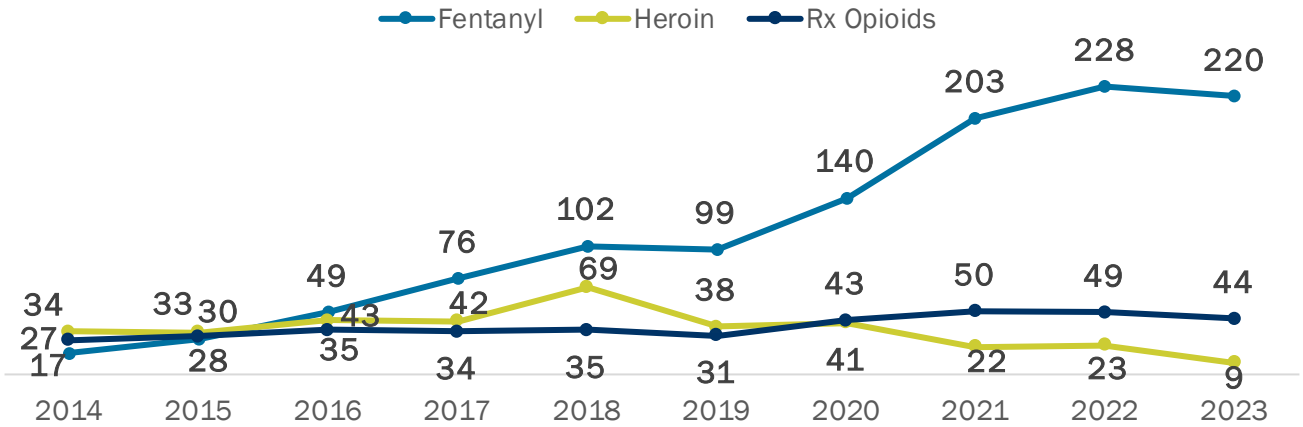
Alcohol, benzodiazepines, buprenorphine, cocaine, fentanyl, and xylazine involvement as a percentage of fatal opioid overdoses increased in 2023 compared to 2022. The percentage of deaths involving gabapentin, heroin, methadone, methamphetamine, prescription opioids (excluding fentanyl), and tramadol decreased. Counts and percentages for individual substance involvement in opioid-related fatal overdoses can be found in Appendix 1, Table 1.

Fentanyl involvement in opioid-related fatal overdoses

Fentanyl is currently the most prevalent substance involved in opioid-related deaths. In 2023, 95% (220) of opioid-related fatal overdoses involved fentanyl. Deaths involving fentanyl could include prescription fentanyl, illicit fentanyl, fentanyl analogs or a combination.

Heroin involvement in 2023 fatal overdoses is low (9, 4%). The proportion of overdoses involving heroin has decreased each year since 2018 (69, 53%).

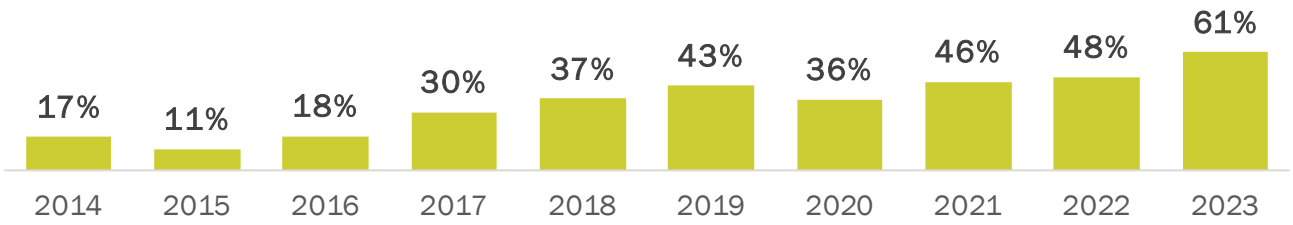
Figure 4: Accidental and undetermined opioid-related fatal overdoses involving fentanyl have more than doubled between 2019 and 2023.



Cocaine involvement in opioid-related fatal overdoses

Cocaine was the second most common drug involved in opioid-related fatal overdoses in 2023 (140, 61%). The number of cocaine-involved deaths has steadily increased since 2015 and the percentage of deaths involving cocaine increased significantly from 2022 (117, 48%).

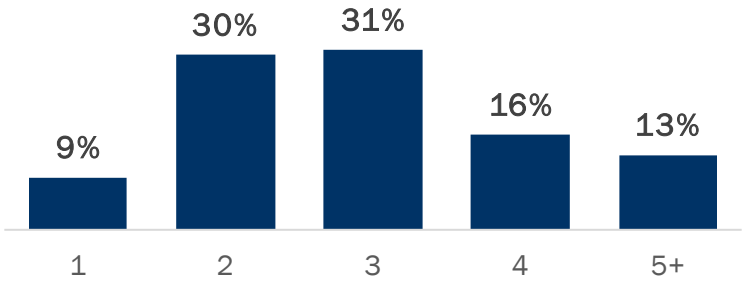
Figure 5: Cocaine is involved in over half of opioid-related fatal overdoses.



Multi-substance involvement in opioid-related fatal overdoses

Most opioid-related deaths involve multiple substances. In 2023, 91% (210) of opioid-related fatal overdoses involved two or more substances, with 29% (68) involving four or more substances.

Figure 6: 91% of Vermont residents who died of an opioid-related overdose had at least two substances contributing to their death.



The most common drug combinations have changed over the last ten years. In 2014, as heroin surpassed prescription opioids as the leading contributor to death, the top three combinations on death certificates were heroin and cocaine, heroin and fentanyl, and prescription opioids and fentanyl. The top three combinations in 2023 all involve fentanyl: fentanyl and cocaine, which accounted for over half (137, 59%) of all opioid-related fatal overdoses, fentanyl and xylazine (74, 32%), and fentanyl, cocaine, and xylazine (49, 21%). *Of note, involvement of substances individually and in combination with each other is not mutually exclusive. For example, a death involving fentanyl, cocaine, and xylazine would be counted in each of the three separate categories mentioned in the previous sentence.*

Sources

All data are from the Vermont Vital Statistics System and only include deaths that occurred among Vermont residents unless otherwise stated. Data from 2023 are preliminary. This brief is a product of the Vermont Department of Health, Division of Health Statistics and Informatics.

For more information: AHS.VDHOverdoseDataVT@vermont.gov

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%	9	16%	10	20%	14	20%	10	16%
Benzodiazepines	10	27%	4	7%	9	18%	12	17%	6	9%
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%	6	11%	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	53%
Methadone	9	24%	12	21%	18	36%	14	20%	6	9%
Methamphetamine	0	0%	0	0%	0	0%	0	0%	0	0%
RX opioid (no fentanyl)	33	89%	42	74%	37	74%	45	65%	27	42%
RX stimulants	0	0%	1	2%	2	4%	2	3%	5	8%
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	10%
Benzodiazepines	6	8%	10	10%	8	7%	8	6%	7	6%
Buprenorphine	2	3%	1	1%	0	0%	6	5%	3	3%
Cocaine	8	11%	17	18%	33	30%	48	37%	50	43%
Fentanyl	28	38%	49	51%	76	69%	102	78%	99	86%
Gabapentin	0	0%	0	0%	0	0%	0	0%	5	4%
Heroin	33	45%	43	45%	42	38%	69	53%	38	33%
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%	31	27%
RX stimulants	0	0%	1	1%	2	2%	7	5%	3	3%
Tramadol	3	4%	2	2%	1	1%	5	4%	0	0%
Xylazine	0	0%	0	0%	0	0%	0	0%	6	5%

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%	39	16%	42	18%		
Benzodiazepines	6	4%	8	4%	31	13%	36	16%		
Buprenorphine	2	1%	2	1%	5	2%	14	6%		
Cocaine	58	36%	99	46%	117	48%	140	61%		
Fentanyl	140	88%	203	94%	228	93%	220	95%		
Gabapentin	9	6%	4	2%	32	13%	24	10%		
Heroin	41	26%	22	10%	23	9%	9	4%		
Methadone	18	11%	17	8%	29	12%	19	8%		
Methamphetamine	11	7%	22	10%	21	9%	14	6%		
RX opioid (no fentanyl)	43	27%	50	23%	49	20%	44	19%		
RX stimulants	8	5%	4	2%	2	1%	3	1%		
Tramadol	6	4%	5	2%	2	1%	1	0%		
Xylazine	5	3%	29	13%	69	28%	74	32%		

*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%
Cocaine and Benzodiazepines	1	3%	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%	2	4%	2	4%	1	1%	0	0%
Fentanyl and Heroin	0	0%	0	0%	0	0%	0	0%	6	9%
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%
Fentanyl and Benzodiazepines	1	3%	0	0%	1	2%	0	0%	1	2%
RX Opioids and Benzodiazepines	9	24%	4	7%	7	14%	10	14%	5	8%
Alcohol and Benzodiazepines	2	5%	0	0%	2	4%	3	4%	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 Benzodiazepines	0	0%	0	0%	1	2%	2	3%	2	3%
Heroin and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%

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%
Cocaine and Benzodiazepines	0	0%	0	0%	1	1%	1	1%	3	3%
Fentanyl and Cocaine	3	4%	6	6%	25	23%	43	33%	45	39%
Fentanyl and Alcohol	3	4%	4	4%	9	8%	16	12%	11	10%
Fentanyl and Heroin	10	14%	21	22%	32	29%	60	46%	36	31%
Fentanyl and RX Opioids (no fentanyl)	6	8%	6	6%	12	11%	16	12%	18	16%
Fentanyl and RX Stimulants	0	0%	0	0%	1	1%	6	5%	3	3%
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%
Fentanyl and Benzodiazepines	3	4%	0	0%	3	3%	4	3%	4	3%
RX Opioids and Benzodiazepines	3	4%	8	8%	6	5%	4	3%	3	3%
Alcohol and Benzodiazepines	1	1%	6	6%	1	1%	3	2%	2	2%
Gabapentin and Xylazine	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and RX Stimulants	0	0%	0	0%	0	0%	3	2%	1	1%
Heroin and Gabapentin	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin and Benzodiazepines	2	3%	2	2%	0	0%	3	2%	1	1%
Heroin and Xylazine	0	0%	0	0%	0	0%	0	0%	3	3%

Table 2 (Continued): Combinations of Substances Involved in Opioid-Related Fatal Overdoses Among Vermont Residents										
Substance*	2020		2021		2022		2023		2024	
	#	%	#	%	#	%	#	%	#	%
Cocaine and Heroin	13	8%	9	4%	13	5%	5	2%		
Cocaine and RX Opioids	15	9%	14	6%	16	7%	19	8%		
Cocaine and Gabapentin	5	3%	1	0%	16	7%	9	4%		
Cocaine and Xylazine	2	1%	16	7%	36	15%	49	21%		
Cocaine and Benzodiazepines	1	1%	3	1%	16	7%	11	5%		
Fentanyl and Cocaine	52	33%	96	44%	112	46%	137	59%		
Fentanyl and Alcohol	13	8%	31	14%	36	15%	40	17%		
Fentanyl and Heroin	40	25%	22	10%	23	9%	9	4%		
Fentanyl and RX Opioids (no fentanyl)	27	17%	36	17%	36	15%	33	14%		
Fentanyl and RX Stimulants	6	4%	4	2%	2	1%	3	1%		
Fentanyl and Gabapentin	6	4%	2	1%	28	11%	20	9%		
Fentanyl and Xylazine	5	3%	29	13%	69	28%	74	32%		
Fentanyl and Benzodiazepines	3	2%	7	3%	28	11%	32	14%		
RX Opioids and Benzodiazepines	2	1%	2	1%	7	3%	12	5%		
Alcohol and Benzodiazepines	1	1%	2	1%	3	1%	8	3%		
Gabapentin and Xylazine	1	1%	0	0%	10	4%	8	3%		
Heroin and RX Stimulants	1	1%	0	0%	0	0%	0	0%		
Heroin and Gabapentin	0	0%	0	0%	2	1%	1	0%		
Heroin and Benzodiazepines	2	1%	1	0%	3	1%	2	1%		
Heroin and Xylazine	2	1%	4	2%	7	3%	4	2%		

*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).

Table 3: Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		2010			2011			2012			2013			2014		
		# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group
Total VERMONT Residents Accidental and Undetermined OPIOID-Related Fatal Overdoses		37	--	5.9	57	--	9.1	50	--	8.0	69	--	11.0	64	--	10.2
By Gender	Male	21	57%	6.8	29	51%	9.4	33	66%	10.7	44	64%	14.2	41	64%	13.3
	Female	16	43%	5.0	28	49%	8.8	17	34%	5.4	25	36%	7.9	23	36%	7.2
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	34%	31.3
	40 - 49	9	24%	9.8	16	28%	18.0	17	34%	19.7	17	25%	20.6	10	16%	12.6
	50 +	17	46%	7.3	16	28%	6.7	12	24%	4.9	25	36%	10.1	16	25%	6.3
Average Age		47			41			41			43			40		
By Race/ Ethnicity	White, Non-Hispanic	36	97%	NA	55	96%	NA	47	94%	8.0	65	94%	11.1	62	97%	10.6
	BIPOC	1	3%	NA	1	2%	NA	3	6%	8.0	4	6%	10.4	2	3%	4.9
	Unknown	0	0%		1	2%		0	0%		0	0%		0	0%	

Table 3 (Continued): Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		2015			2016			2017			2018			2019		
		# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group
Total VERMONT Residents Accidental and Undetermined OPIOID-Related Fatal Overdoses		73	--	11.7	96	--	15.4	110	--	17.6	131	--	20.9	115	--	18.4
By Gender	Male	51	70%	16.5	63	66%	20.4	78	71%	25.3	78	60%	25.2	78	68%	24.3
	Female	22	30%	6.9	33	34%	10.4	32	29%	10.1	53	40%	16.7	37	32%	11.7
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	46	35%	62.9	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	24%	12.3	28	24%	10.7
Average Age		39			40			39			39			40		
By Race/ Ethnicity	White, Non-Hispanic	67	92%	11.5	90	94%	15.5	100	91%	17.2	121	92%	20.8	102	89%	17.7
	BIPOC	5	7%	11.9	4	4%	9.2	9	8%	20.8	9	7%	20.8	13	11%	28.0
	Unknown	1	1%		2	2%		1	1%		1	1%		0	0%	

Table 3 (Continued): Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		2020			2021			2022			2023			2024		
		# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group	# and % of All Accidental and Undetermined Opioid-Related Fatal Overdoses		Rate per 100k in Group
Total VERMONT Residents Accidental and Undetermined OPIOID-Related Fatal Overdoses		159	--	24.7	217	--	33.6	244	--	37.7	231	--	35.7		--	
By Gender	Male	110	69%	34.4	150	69%	46.8	166	68%	51.5	167	72%	51.9			
	Female	49	31%	15.2	67	31%	20.6	78	32%	24.0	64	28%	19.7			
By Age	< 30	27	17%	12.1	41	19%	18.5	28	11%	12.8	26	11%	11.9			
	30 - 39	47	30%	61.2	60	28%	76.2	84	34%	105.0	68	29%	85.0			
	40 - 49	41	26%	55.4	62	29%	83.7	68	28%	90.8	63	27%	84.2			
	50 +	44	28%	16.4	54	25%	19.9	64	26%	23.3	74	32%	27.0			
Average Age		42			41			42			44					
By Race/ Ethnicity	White, Non-Hispanic	151	95%	25.4	200	92%	33.6	226	93%	38.0	219	95%	36.8			
	BIPOC	8	5%	16.3	17	8%	33.7	18	7%	34.5	12	5%	23.0			
	Unknown	0	0%		0	0%		0	0%		0	0%				

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
By County of Residence*															
Addison	3	7%	8.1	3	5%	8.2	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	7	11%	12.5
Non-VT Residents who Died in VT	5	12%	NA	3	5%	NA	1	2%	NA	2	3%	NA	2	3%	NA
By County of Death															
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	3	7%	NA	1	2%	NA	2	4%	NA	2	3%	NA	5	8%	NA

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

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
By County of Residence*															
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	9%	36.5	11	9%	30.9
Caledonia	1	1%	3.2	4	4%	13.2	5	4%	16.6	7	5%	23.1	11	9%	33.0
Chittenden	17	22%	10.5	21	19%	13.0	29	25%	17.9	14	10%	8.5	17	14%	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	20	15%	34.1	13	11%	22.3
Washington	4	5%	6.8	8	7%	13.7	13	11%	22.3	12	9%	20.6	11	9%	18.9
Windham	2	3%	4.6	3	3%	7.0	13	11%	30.3	25	18%	58.5	18	15%	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	6	8%	NA	13	12%	NA	6	5%	NA	6	4%	NA	3	3%	NA
By County of Death															
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	19	14%	11.5	19	16%	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	9%	22.4	9	8%	15.4
Windham	2	3%	4.6	6	6%	13.9	14	12%	32.7	24	18%	56.1	14	12%	33.2
Windsor	12	15%	21.5	18	17%	32.4	12	10%	21.8	18	13%	32.6	8	7%	14.5
Out of State	5	6%	NA	3	3%	NA	9	8%	NA	19	14%	NA	17	14%	NA

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

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
By County of Residence*															
Addison	4	2%	10.7	5	2%	13.4	7	3%	18.6	7	3%	18.6			
Bennington	9	5%	24.1	17	7%	45.6	17	7%	45.5	20	8%	53.5			
Caledonia	12	7%	39.8	10	4%	32.9	12	5%	39.2	8	3%	26.2			
Chittenden	26	15%	15.4	41	18%	24.3	48	19%	28.4	52	22%	30.7			
Essex	0	0%	0.0	0	0%	0.0	3	1%	50.1	6	3%	100.1			
Franklin	5	3%	10.0	15	6%	29.8	18	7%	35.5	8	3%	15.8			
Grand Isle	3	2%	41.2	2	1%	27.0	2	1%	26.7	2	1%	26.7			
Lamoille	5	3%	19.3	11	5%	42.1	8	3%	30.7	4	2%	15.3			
Orange	7	4%	23.9	12	5%	40.6	10	4%	33.5	10	4%	33.5			
Orleans	6	4%	21.9	9	4%	32.7	13	5%	47.0	11	5%	39.8			
Rutland	20	12%	33.1	28	12%	46.2	34	13%	56.3	33	14%	54.7			
Washington	21	13%	35.1	23	10%	38.4	14	5%	23.3	16	7%	26.6			
Windham	12	7%	26.2	21	9%	45.6	28	11%	61.1	28	12%	61.1			
Windsor	29	17%	50.3	21	9%	36.1	30	12%	51.6	26	11%	44.7			
Non-VT Residents who Died in VT	9	5%	NA	15	6%	NA	12	5%	NA	8	3%	NA			
By County of Death															
Addison	3	2%	8.0	2	1%	5.4	4	2%	10.6	5	2%	13.3			
Bennington	7	4%	18.8	17	7%	45.6	12	5%	32.1	16	7%	42.8			
Caledonia	12	7%	39.8	13	6%	42.8	13	5%	42.5	10	4%	32.7			
Chittenden	33	20%	19.6	52	22%	30.8	55	21%	32.5	57	24%	33.7			
Essex	1	1%	16.9	0	0%	0.0	3	1%	50.1	5	2%	83.4			
Franklin	3	2%	6.0	12	5%	23.8	15	6%	29.6	8	3%	15.8			
Grand Isle	2	1%	27.5	1	0%	13.5	2	1%	26.7	1	0%	13.4			
Lamoille	5	3%	19.3	9	4%	34.4	8	3%	30.7	4	2%	15.3			
Orange	8	5%	27.3	9	4%	30.5	10	4%	33.5	12	5%	40.2			
Orleans	4	2%	14.6	9	4%	32.7	12	5%	43.4	7	3%	25.3			
Rutland	20	12%	33.1	29	13%	47.9	40	16%	66.3	32	13%	53.0			
Washington	17	10%	28.5	23	10%	38.4	12	5%	20.0	15	6%	25.0			
Windham	14	8%	30.5	22	9%	47.7	23	9%	50.2	29	12%	63.3			
Windsor	28	17%	48.5	22	9%	37.8	26	10%	44.7	21	9%	36.1			
Out of State	11	7%	NA	12	5%	NA	21	8%	NA	17	7%	NA			

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

Appendix 2: 2023 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 in the next iteration of this report. The following tables include overdose deaths among Vermont residents, regardless of place of death (i.e., in Vermont vs. out-of-state).

Table 5. 2023 Month of Death	Total Number of Opioid-Related Accidental and Undetermined Manner Fatal Overdoses								
	Total*	Fentanyl	RX opioid (not fentanyl)	Heroin	Cocaine	Xylazine	Gabapentin	Benzodiazepines	Methamphetamine
January	18	17	6	2	10	5	2	4	0
February	24	23	2	0	17	7	3	3	1
March	17	17	4	0	9	6	1	2	0
April	25	25	5	1	14	8	1	3	1
May	15	14	4	0	6	6	2	5	0
June	20	18	4	2	15	6	3	4	3
July	27	25	3	2	19	8	3	2	1
August	23	21	6	0	11	13	2	5	2
September	16	16	3	0	9	2	2	2	0
October	19	17	2	1	10	3	4	3	4
November	10	10	0	0	7	4	0	1	0
December	17	17	5	1	13	6	1	2	2
Total Vermont Residents	231	220	44	9	140	74	24	36	14
Vermonters in Vermont	214	204	42	8	133	72	24	33	13
Vermonters Out of State	17	16	2	1	7	2	0	3	1
Non-Vermont Residents	8	8	0	2	5	3	0	0	1

*Involvement of individual substances is not mutually exclusive.

Table 6. Total Number of Opioid-Related Accidental and Undetermined Fatal Overdoses, Preliminary 2023 Data by County of Residence													
County of Residence	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Addison County	1	2	0	0	1	0	1	0	1	1	0	0	7
Bennington County	1	1	1	3	1	2	4	1	2	3	0	1	20
Caledonia County	0	0	1	2	0	1	2	1	0	1	0	0	8
Chittenden County	6	5	6	4	3	8	3	7	2	2	2	4	52
Essex County	1	0	1	1	0	0	0	0	0	2	0	1	6
Franklin County	0	1	1	1	2	1	0	0	1	1	0	0	8
Grand Isle County	0	1	0	0	0	0	0	1	0	0	0	0	2
Lamoille County	0	2	0	0	0	0	2	0	0	0	0	0	4
Orange County	0	2	1	1	0	0	1	3	0	0	1	1	10
Orleans County	1	1	2	0	0	0	4	1	0	2	0	0	11
Rutland County	3	2	0	5	1	5	2	2	8	2	1	2	33
Washington County	0	1	0	1	4	2	0	2	0	1	2	3	16
Windham County	3	2	3	3	2	0	4	3	1	2	2	3	28
Windsor County	2	4	1	4	1	1	4	2	1	2	2	2	26
Missing County of Residence													
VERMONT Resident Total	18	24	17	25	15	20	27	23	16	19	10	17	231
Non-Vermont Residents	0	1	1	1	0	0	0	1	2	0	0	2	8
Pending Cases	0	0	1	1	0	0	2	1	1	1	1	7	15

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.

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 Health Department method differs from Centers for Disease Control and Prevention (CDC) methodology, as described in the Morbidity and Mortality Weekly Report (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." 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 the Health Department and the CDC. First, we consider all causes of death, contributing conditions, and injury descriptions as opposed to underlying cause of death only. Second, the Health Department 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, the Health Department 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

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 people who have an underlying cause-of-death code equal to X40-44, X60-64, X85, or Y10-Y14.

In an example of how the Health Department 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 person 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, the Health Department would classify this as a drug-related fatal overdose.

The Vermont Department of Health's method of identification reveals an average 5% 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	252	244
2022	*	269
2023	*	258

*2022 and 2023 CDC data are not yet available.