

Key Points from the Opioid-Related Fatal Overdose Brief, 2021 Preliminary Data

- The preliminary 2021 opioid-related accidental and undetermined fatal overdose data show an increase in opioid-related fatal overdoses. At this time, the data shows a 33% increase from 158 deaths in 2020 to 210 in 2021.
- The percentage of fentanyl involvement continues to increase. Fentanyl was involved in 93% of opioid-related deaths in 2021.
- Cocaine was involved in 48% of opioid-related fatal overdoses in 2021. Involvement of methamphetamine also increased to 10%.
- Heroin involvement in opioid-related fatal overdoses decreased dramatically from 25% in 2020 to 10% in 2021.
- This brief includes one additional 2020 Vermont resident death than was reported in the 2020 annual brief dated March 2021. This is due to out-of-state deaths taking longer to finalize than in-state deaths. 2021 data is preliminary. At the date of this analysis, there are 17 pending death certificates: 10 individuals who died in Vermont and 7 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.

2021 data are considered preliminary.

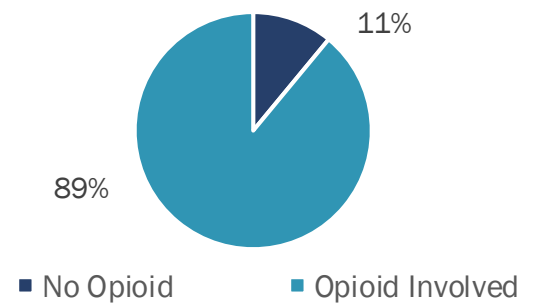
Table of Contents

KEY POINTS FROM THE OPIOID-RELATED FATAL OVERDOSE BRIEF	1
TABLE OF CONTENTS	2
OPIOID-RELATED FATAL OVERDOSES OVERVIEW	3
STIMULANT INVOLVEMENT IN OPIOID-RELATED FATAL OVERDOSES	6
SUBSTANCES OF CONCERN IDENTIFIED IN 2021	6
COMMON SUBSTANCE COMBINATIONS	7
APPENDIX 1: DATA TABLES	8
2021 PRELIMINARY DATA	18

Most fatal drug overdoses among Vermont residents involves opioids.

Out of the 236 fatal non-suicide all drug overdoses among Vermont residents in 2021, 210 (89%) involved opioids. The remainder of the drug overdoses are comprised of overdoses related to stimulants, alcohol, huffing or prescribed medications.

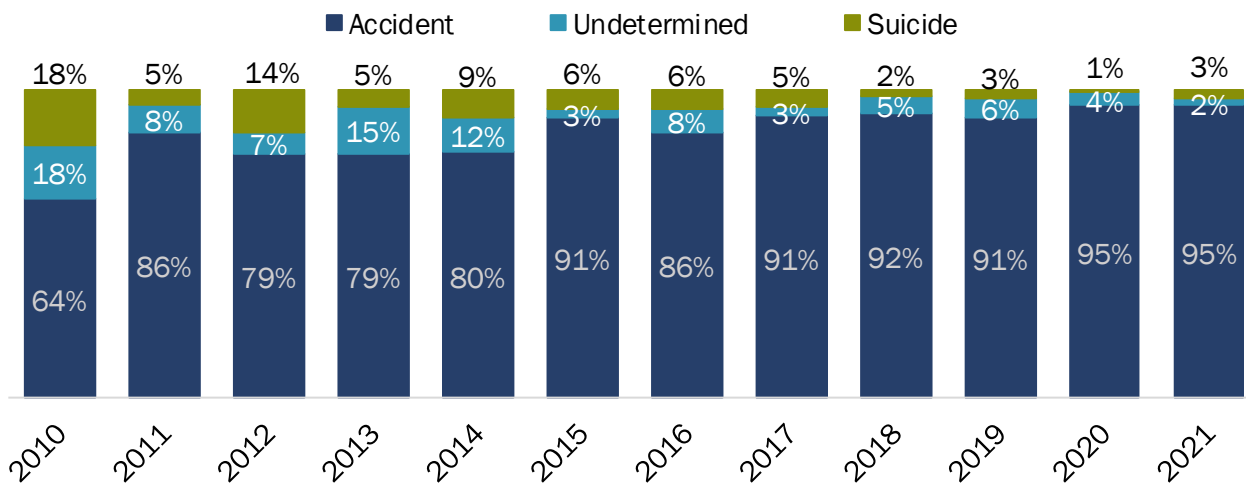
Figure 1. Opioid Involvement in Fatal Drug Overdoses among Vermont Residents



Opioid-Related Fatal Overdoses Overview

Most opioid overdoses are of accidental or undetermined intent. Of the 217 Vermont residents who died of an opioid overdose in 2021, nearly all were classified as being of accidental or undetermined intent (210). Seven deaths were determined to be suicides. Since 2010, the percent of opioid-related deaths classified as undetermined manner of death or suicide has decreased dramatically. This report will be focused on accidental and undetermined manner fatal opioid overdoses unless otherwise noted. At the date of this analysis, there were 17 pending death certificates: 10 individuals who died in Vermont and 7 who died out-of-state.

Figure 2: Manner of Death in Opioid-Related Fatal Overdoses Among Vermont Residents

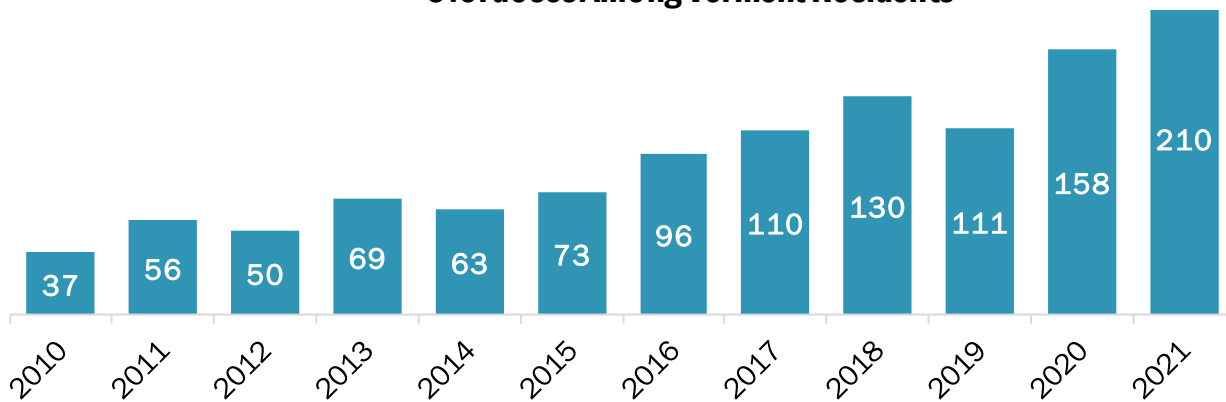


Accidental and Undetermined Opioid-Related Fatal Overdoses Among Vermonters

Deaths due to suicide were removed to show deaths more likely associated with misuse and opioid use disorder – the type of death some consider an “overdose.” Preliminary data show 210 accidental and undetermined cause deaths among Vermont residents in 2021.

At this time, the 210 deaths in 2021 represent a 33% increase from the 158 deaths in 2020. The rate of death in 2020 was 25.3 per 100,000 Vermonters. The rate for 2021 is 33.7 fatal overdoses per 100,000 Vermonters – a rate that is statistically different.

Figure 3: Number of Accidental and Undetermined Opioid-Related Fatal Overdoses Among Vermont Residents



Males comprise 69% of 2021 accidental and undetermined opioid-related fatal overdoses among Vermont residents. Women comprise 31% of these deaths. The average age of death is 41 years (median 40), with over half of these deaths occurring among persons between 30 and 49 years of age (56%). Most accidental and undetermined opioid-related fatal overdoses are among white, non-Hispanic Vermont residents (94%).

Fentanyl is involved in most opioid-related fatal overdoses.

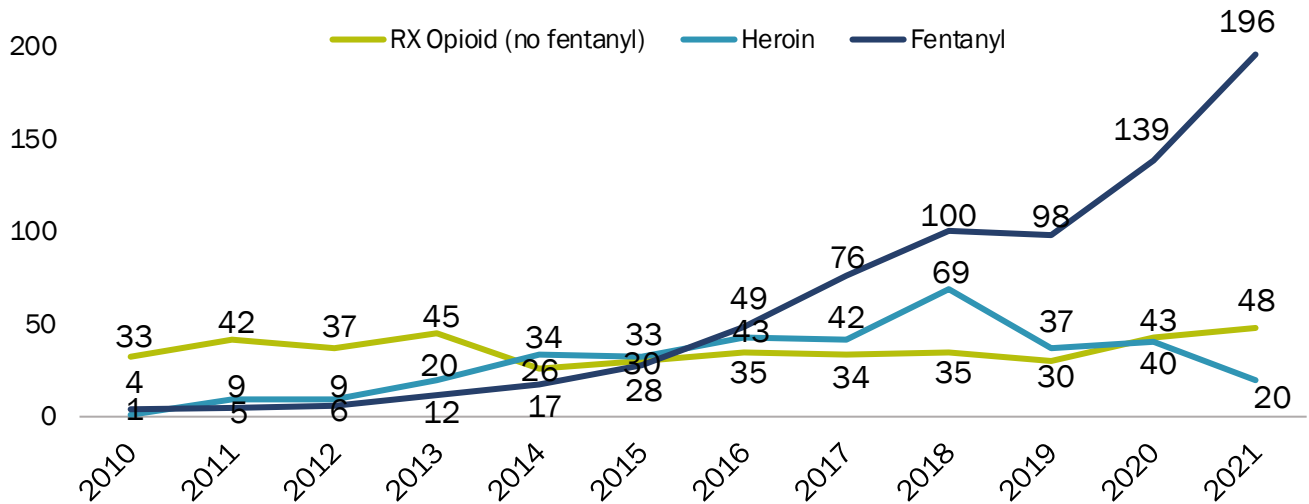
Fentanyl is currently the most prevalent substance involved in opioid-related deaths. In 2021, it was found in 93% of opioid-related fatal overdoses and has increased each year since 2011 (9%). Of note, deaths involving fentanyl could include prescription and/or illicit fentanyl and fentanyl analogues. In 2021, the number of fatal overdoses in Vermont related to para-fluorofentanyl increased, consistent with trends in [other areas of the United States](#).

Fentanyl Analogue	2020		2021	
	#	% of opioid-related fatal overdoses	#	% of opioid-related fatal overdoses
Para-fluorofentanyl	5	3%	11	5%
Acetyl fentanyl	16	10%	3	1%

Opioid-Related Fatal Overdoses Among Vermonters, 2021 Annual Data Brief

Heroin involvement in 2021 fatal opioid overdoses is very low (10%). The percentage of opioid-related fatal overdoses involving prescription opioids slightly decreased between 2020 and 2021. The percentage has decreased dramatically since 2010 when nearly all (89%) fatal opioid overdoses involved prescription opioids compared to 23% in 2021. Prescription opioids were overtaken by heroin as the leading contributor in 2014 but were then surpassed by fentanyl in 2016. Of note, the presence of these drugs is not mutually exclusive and will not sum to the total.

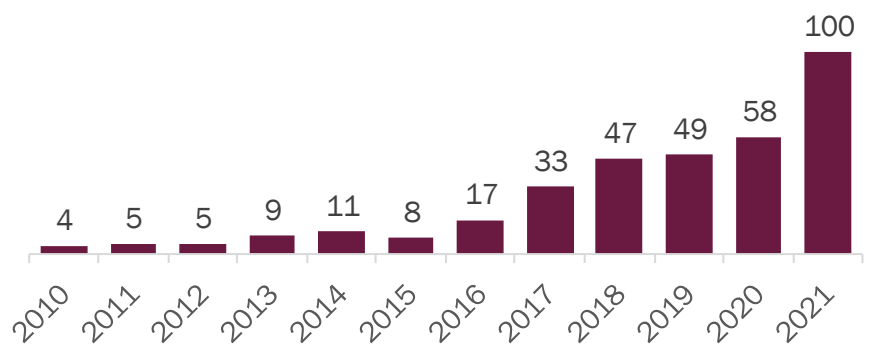
Figure 4: Number Accidental and Undetermined Opioid-Related Fatal Overdoses Among Vermont Residents



Cocaine was involved in nearly half of all opioid-related fatal overdoses among Vermonters.

Cocaine (48%) was involved in more 2021 opioid-related fatal overdoses than any other drug besides fentanyl. The number of cocaine involved deaths has steadily increased since 2015. The percent of involvement increased compared to 2020 (37% vs. 48%).

Figure 5: Number Accidental and Undetermined Opioid-Related Fatal Overdoses Involving Cocaine Among Vermont Residents



Stimulant involvement in opioid-related fatal overdoses including methamphetamine and cocaine increased in 2021.

Methamphetamine, cocaine, alcohol, and fentanyl involvement in opioid-related fatal overdoses slightly increased compared to the previous year. The involvement of prescription stimulants decreased. Additional trend information of other substances involved is included in Appendix 1.

Substance Involved	2021	
	#	%
Alcohol	29	14%
Benzodiazepines	7	3%
Buprenorphine	2	1%
Cocaine	100	48%
Fentanyl	196	93%
Heroin	20	10%
Methadone	17	8%
Methamphetamine	22	10%
RX opioid (no fentanyl)	48	23%
RX stimulants	4	2%
Tramadol	4	2%
Xylazine	29	14%

Substances of Concern identified in 2021

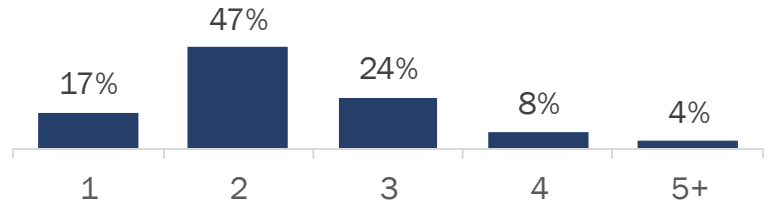
In 2021, two substances, [methamphetamine](#) and [xylazine](#) were identified as increasingly contributing to opioid-related fatal overdoses among Vermont residents. The Office of the Chief Medical Examiner (OCME) sends out for comprehensive forensic toxicology testing for drug overdose deaths to determine which substances caused the fatal overdose. This testing includes over 200 substances. The Department of Health will continue to monitor toxicology testing results for new substances and trends.

Most opioid-related fatal overdoses include a combination of substances.

Most opioid-related deaths involve multiple substances. In 2021, 83% of opioid-related fatal overdoses involved 2 or more substances, with 12% involving 4 or more substances.

The most common combination of substances among individuals who died in 2021 was fentanyl and cocaine, which accounted for nearly half (46%) of all opioid-related fatal overdoses. Next was fentanyl and prescription opioids (16%) then fentanyl and alcohol (14%).

Figure 6: Number of Substances Listed on the Death Certificate in Vermont Resident Opioid Fatal Overdoses (2021)

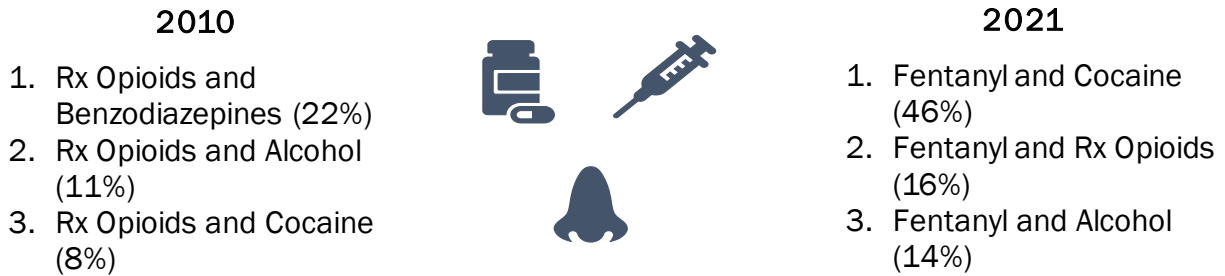


Combination of Substances	2021	
	#	%
Cocaine and Heroin	9	4%
Cocaine and RX Opioids	14	7%
Fentanyl and Cocaine	97	46%
Fentanyl and Alcohol	29	14%
Fentanyl and Heroin	20	10%
Fentanyl and RX Opioids (no fentanyl)	34	16%
Fentanyl and RX Stimulants	4	2%
Heroin and RX Stimulants	0	0%
Heroin, Cocaine, and Fentanyl	9	4%

Opioid-Related Fatal Overdoses Among Vermonters, 2021 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 is now involved in more deaths than any other drug, the most common combinations now all involve fentanyl.

Figure 6: Top Three Drug Combinations Listed on the Death Certificate in Vermont-Resident Opioid-Related Fatal Overdoses (2010 vs 2021 Comparison)



Sources:

All data are from the Vermont Vital Statistics System and only include deaths that occurred among Vermont residents unless otherwise stated. Data from 2021 are preliminary. This brief is a product of the Vermont Department of Health, Division of Health Surveillance.

For more information: AHS.VDHOVerdoseDataVT@vermont.gov

Appendix 1: Data Tables

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%
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%

Opioid-Related Fatal Overdoses Among Vermonters, 2021 Annual Data Brief

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%	9	43%
Fentanyl	28	38%	49	51%	76	69%	100	77%	98	86%
Heroin	33	45%	43	45%	42	38%	69	53%	37	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%	30	27%
RX stimulants	0	0%	0	0%	5	5%	10	8%	4	4%
Tramadol	3	4%	2	2%	1	1%	5	4%	0	0%

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%	29	14%						
Benzodiazepines	6	4%	7	3%						
Buprenorphine	2	1%	2	1%						
Cocaine	58	37%	100	48%						
Fentanyl	139	88%	196	93%						
Heroin	40	25%	20	10%						
Methadone	18	11%	17	8%						
Methamphetamine	10	6%	22	10%						
RX opioid (no fentanyl)	43	27%	48	23%						
RX stimulants	8	5%	4	2%						
Tramadol	6	4%	4	2%						

Opioid-Related Fatal Overdoses Among Vermonters, 2021 Annual Data Brief

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%
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%
Heroin and RX Stimulants	0	0%	0	0%	0	0%	0	0%	0	0%
Heroin, Cocaine, and Fentanyl	0	0%	0	0%	0	0%	0	0%	2	3%

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%
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%	3	3%
Heroin and RX Stimulants	0	0%	0	0%	0	0%	6	5%	0	0%
Heroin, Cocaine, and Fentanyl	1	1%	3	3%	10	9%	23	18%	14	12%

*Combinations are 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, 2021 Annual Data Brief

Substance*	2020		2021		2022		2023		2024	
	#	%	#	%	#	%	#	%	#	%
Cocaine and Heroin	12	8%	9	4%						
Cocaine and RX Opioids	15	9%	14	7%						
Fentanyl and Cocaine	52	33%	97	46%						
Fentanyl and Alcohol	13	8%	29	14%						
Fentanyl and Heroin	39	25%	20	10%						
Fentanyl and RX Opioids (no fentanyl)	27	17%	34	16%						
Fentanyl and RX Stimulants	6	4%	4	2%						
Heroin and RX Stimulants	1	1%	0	0%						
Heroin, Cocaine, and Fentanyl	11	7%	9	4%						

*Combinations are not mutually exclusive. For example, a death involving cocaine, fentanyl, and heroin would be counted in three separate categories in the table above (cocaine and fentanyl; cocaine and heroin; fentanyl and heroin).

Opioid-Related Fatal Overdoses Among Vermonters, 2021 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
	Racial or Ethnic Minority	0	0%	NA	1	2%	NA	2	4%	5.4	4	6%	10.4	1	2%	2.5

Opioid-Related Fatal Overdoses Among Vermonters, 2021 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
	Racial or Ethnic Minority	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, 2021 Annual Data Brief

Table 3 (Continued): Opioid-Related Fatal Overdoses Occurring Among Vermont Residents		2020			2021			2022			2023			2024		
		<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		158	--	25.3	210	--	33.7		--			--			--	
				<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	109	69%	35.4	145	69%	47.0									
	Female	49	31%	15.5	65	31%	20.6									
By Age	< 30	27	17%	12.4	39	19%	17.9									
	30 - 39	47	30%	64.0	60	29%	81.7									
	40 - 49	40	25%	55.9	58	28%	81.0									
	50 +	44	28%	16.8	53	25%	20.3									
Average Age		41			41											
By Race/ Ethnicity	White, Non-Hispanic	154	97%	26.7	197	94%	34.1									
	Racial or Ethnic Minority	4	3%	8.6	13	6%	28.0									

Opioid-Related Fatal Overdoses Among Vermonters, 2021 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
By County of Residence*															
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
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 (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, 2021 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
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	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
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	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, 2021 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
By County of Residence*															
Addison	3	2%	8.2	5	2%	13.6									
Bennington	9	5%	25.4	16	7%	45.1									
Caledonia	12	7%	40.0	10	4%	33.3									
Chittenden	26	16%	15.9	38	17%	23.2									
Essex	0	0%	0.0	0	0%	0.0									
Franklin	5	3%	10.1	14	6%	28.3									
Grand Isle	3	2%	41.5	2	1%	27.6									
Lamoille	5	3%	19.7	11	5%	43.4									
Orange	7	4%	24.2	12	5%	41.5									
Orleans	6	4%	22.2	9	4%	33.3									
Rutland	20	12%	34.4	28	13%	48.1									
Washington	21	13%	36.0	23	10%	39.4									
Windham	12	7%	28.4	20	9%	47.4									
Windsor	29	17%	52.7	20	9%	36.3									
Non-VT Residents who Died in VT (Rate Per 100K Vermonters)	9	5%	1.4	14	6%	2.2									
By County of Death															
Addison	2	1%	5.4	2	1%	5.4									
Bennington	7	4%	19.7	16	7%	45.1									
Caledonia	12	7%	40.0	13	6%	43.3									
Chittenden	33	20%	20.1	48	21%	29.3									
Essex	1	1%	16.2	0	0%	0.0									
Franklin	3	2%	6.1	12	5%	24.3									
Grand Isle	2	1%	27.6	1	0%	13.8									
Lamoille	5	3%	19.7	9	4%	35.5									
Orange	8	5%	27.7	9	4%	31.2									
Orleans	4	2%	14.8	9	4%	33.3									
Rutland	20	12%	34.4	29	13%	49.8									
Washington	17	10%	29.1	23	10%	39.4									
Windham	14	8%	33.2	22	10%	52.1									
Windsor	28	17%	50.9	22	10%	40.0									
Out of State (Rate Per 100k Vermonters)	11	7%	1.8	9	4%	1.4									

*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, 2021 Annual Data Brief

2021 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. 2021 Month of Death	Total Number of Opioid-Related Accidental and Undetermined Manner Fatal Overdoses			
	Total*	RX opioid (no fentanyl)	Heroin	Fentanyl
January	13	1	4	13
February	12	2	1	11
March	26	8	2	22
April	16	1	3	16
May	14	3	0	13
June	16	3	0	14
July	22	7	2	20
August	17	3	2	17
September	21	6	2	21
October	19	2	2	19
November	21	7	2	18
December	13	5	0	12
Total Vermont Residents	210	48	20	196
Vermonters in Vermont	201	45	20	188
Vermonters Out of State	9	3	0	8
Non-Vermont Residents	14	1	4	14

*NOTE: Prescription opioid, fentanyl, and heroin deaths are not mutually exclusive.

Opioid-Related Fatal Overdoses Among Vermonters, 2021 Annual Data Brief

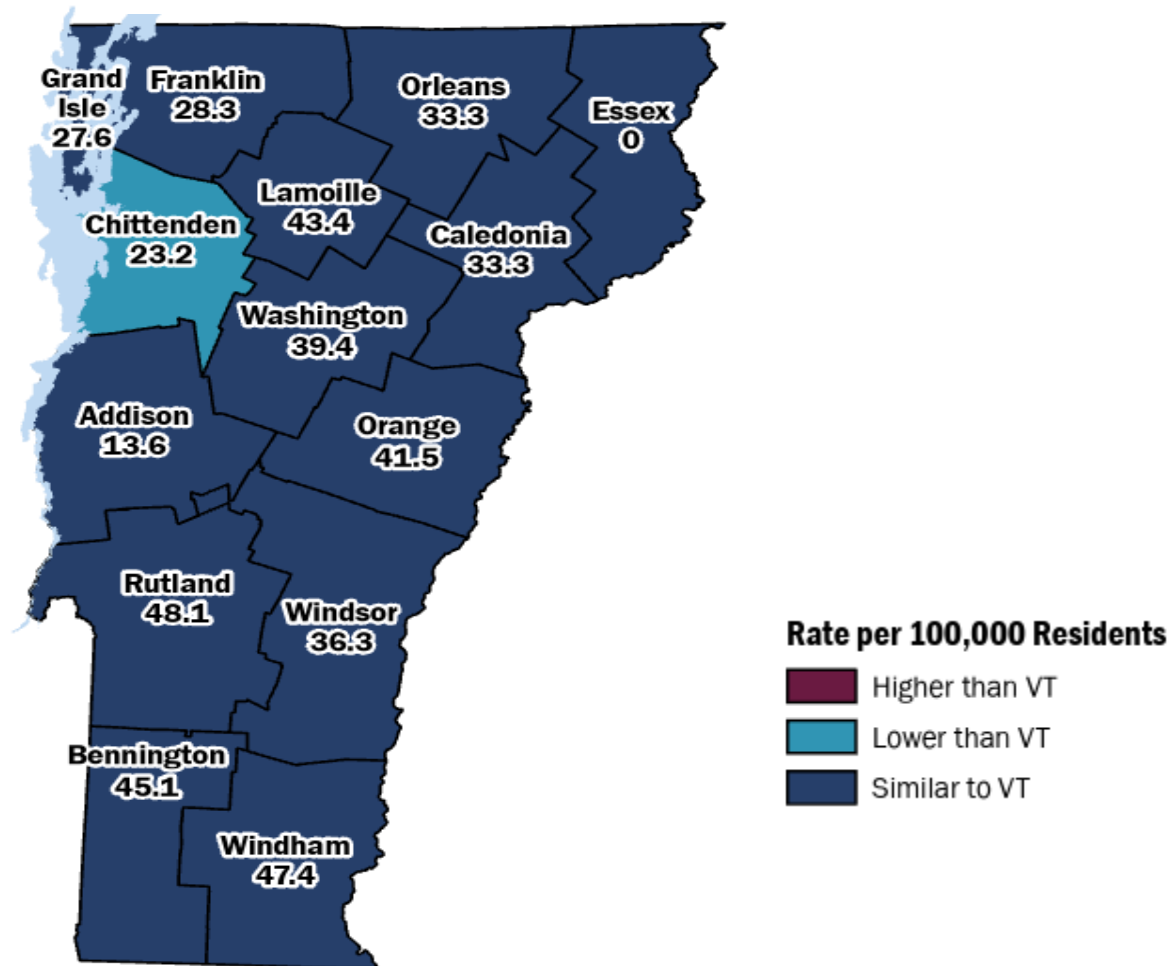
County of Residence	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Addison County	1	1	1	0	0	0	2	0	0	0	0	0	5
Bennington County	2	2	2	1	2	2	0	0	2	1	1	1	16
Caledonia County	1	1	1	2	0	1	2	0	0	1	1	0	10
Chittenden County	3	2	6	3	1	5	5	3	2	2	4	2	38
Essex County	0	0	0	0	0	0	0	0	0	0	0	0	0
Franklin County	2	0	1	1	1	1	1	1	3	1	2	0	14
Grand Isle County	0	0	0	0	0	0	0	1	0	0	0	1	2
Lamoille County	0	2	1	1	0	1	0	3	2	0	1	0	11
Orange County	0	0	1	1	1	2	2	0	0	5	0	0	12
Orleans County	0	0	0	1	1	0	0	1	2	3	0	1	9
Rutland County	2	0	1	3	2	2	2	3	4	2	5	2	28
Washington County	0	1	5	2	1	1	1	3	2	1	3	3	23
Windham County	1	0	3	1	1	1	3	2	1	1	4	2	20
Windsor County	1	3	4	0	4	0	4	0	2	1	0	1	20
Missing County of Residence	0	0	0	0	0	0	0	0	1	1	0	0	2
VERMONT Total	13	12	26	16	14	16	22	17	21	19	21	13	210
Non-Vermont Residents	3	1	1	1	1	2	0	0	2	2	0	1	14
Pending Cases	0	1	1	0	1	1	0	0	2	0	6	5	17

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, 2021 Annual Data Brief

The rate of opioid overdose deaths among Chittenden County residents was significantly lower than Vermont overall. Rutland and Windham counties have the highest rates compared to the state rate, but it is not significantly different.

Rate of Opioid Overdose
Deaths per 100,000 Residents



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

Opioid-Related Fatal Overdoses Among Vermonters, 2021 Annual Data Brief

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.

As a result of its broader inclusion criteria, the Vermont Department of Health’s method of identification reveals an average 5% more fatal overdoses (range -1% to 14%) compared to the CDC’s findings for Vermont.

	Number of Drug-Related Fatal Overdoses*	
	CDC Methodology	Vermont Methodology
2014	83	96
2015	99	103
2016	125	127
2017	134	137
2018	153	159
2019	133	142
2020	*	189
2021	*	236

*2020 and 2021 CDC data are not yet available.