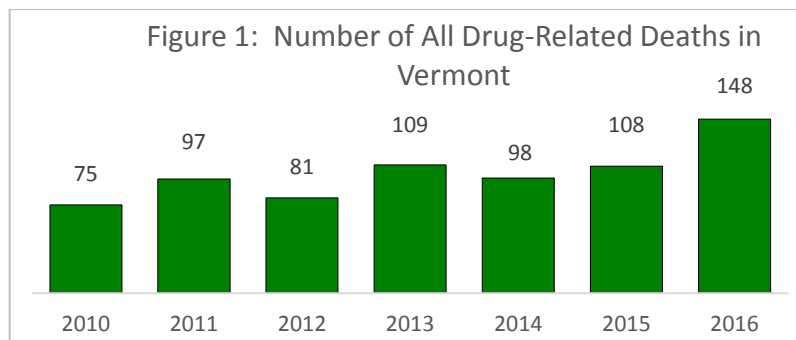


Drug-Related Fatalities in Vermont

Drug-Related Fatality Overview

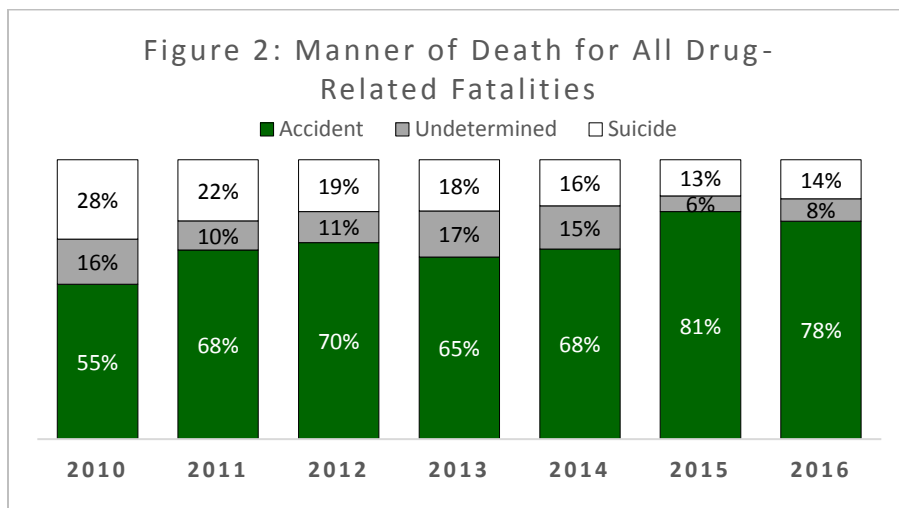
In 2016, there were 148 drug-related fatalities in Vermont (see definition to the right). This is 37% higher than the 108 deaths that were recorded in 2015. This equates to a rate of 23.6 per 100,000 Vermont residents. Drug-related fatalities have almost doubled since 2010, when the rate was 12.0 per 100,000 residents. The largest increase in one year was from 2015 to 2016. Deaths related specifically to opioids are addressed in a separate brief [here](#).

Of the 148 drug-related fatalities, 87% were Vermont residents. Males comprise two-thirds of drug-related deaths in Vermont (66%). Women comprise one-third of drug-related deaths (34%). The average age of those who die from a drug-related cause is 43. Most drug-related fatalities occur to those between 30 and 50 (54%). Nearly all drug-related fatalities are among white, non-Hispanics (99%).



Manner of Death in Drug-Related Fatalities

Most drug-related fatalities are accidental or of undetermined cause, some deaths are deaths attributed. Since 2010, the number of deaths determined accidental has increased, while undetermined manner and suicide has decreased. (Note: there have been three that were ruled homicides, one each in 2010, 2011 and 2014. That data is not shown.)



DRUG-RELATED FATALITY DATA

Vermont drug-related fatalities data come from the Vermont Department of Health Vital Statistics System and are based on deaths that occur in Vermont.

The drug-related fatalities reported here include accidents, suicides, homicides and fatalities with undetermined intent. All deaths involved at least one legal or illicit drug including: alcohol, prescription drugs, etc.

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 professional error. In addition, anticoagulant- and antibiotic-related deaths were not included in these analyses.

It is important to note that most drug-related fatalities are due to combinations of substances (e.g., a prescription opioid and cocaine), not a single drug. Additionally, the circumstances under which each of these fatalities occurred are unique, and cannot all be attributed to addiction and/or dependence.

Data from 2015, 2016 and 2017 are preliminary.

Substances Involved in All Drug-Related Deaths

Drug-related fatalities may involve many different types of drugs – opioid and non-opioid – and most drug-related fatalities involve multiple substances. One-third of drug-related deaths in Vermont involved heroin (34%); one-third involve fentanyl (34%) and 30% involve a prescription opioid (not including fentanyl). Other frequently found substances in drug-related deaths were alcohol (19%) and cocaine (16%).

Substance*	Table 1: Number and Percentage of All Drug-Related Fatalities Substance Involved In 2016 Deaths	
	Number	Percentage
Alcohol	28	19%
Benzodiazepines	17	12%
Buprenorphine	1	1%
Cocaine	23	16%
Fentanyl	51	34%
Heroin	51	34%
Methadone	13	9%
RX opioid (no fentanyl)	44	30%

**Categories are not mutually exclusive as one death may involve multiple substances.*

Opioid-Related Fatality Overview and Manner of Death

Overall, there were 112 opioid-related fatalities in Vermont in 2016. Six of those deaths were determined to be suicides (5% of all opioid-related deaths). Public attention has been primarily focused on opioid misuse and abuse. In 2016, there were 106 accidental and undetermined opioid-related fatalities in Vermont – a 41% increase from the 75 reported in 2015. This equates to a rate of 16.9 fatalities per 100,000 Vermonters.

To find more information on accidental and undetermined cause fatalities that involved an opioid, please see the [Opioid-Related Fatalities in Vermont](#) summary.

Sources

All data are from the Vermont Vital Statistics System and only includes death that occurred in Vermont. Data from 2015, 2016 and 2017 are preliminary. This brief is a product of the Vermont Department of Health, Division of Health Surveillance Analysts Lela Kretzer, Lela.Kretzer@vermont.gov and Amanda Jones, Amanda.Jones@vermont.gov.

Table 2: All Drug-Related Fatalities Occurring in VT		2016			2015			2014			2013			2012			2011			2010		
<i>(Includes opioids and other drugs)</i>		Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers	Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers	Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers	Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers	Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers	Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers	Number	Percent of All Drug-Related Fatalities	Rate per 100K VT-ers
Total Drug-Related Fatalities Occurring in VT		148	--	23.6	108	--	17.3	98	--	15.6	109	--	17.4	81	--	12.9	97	--	15.5	75	--	12.0
Drug Related Fatalities That Are VT Residents		129	87%	20.6	98	91%	15.7	95	97%	15.2	101	93%	16.1	80	99%	12.8	90	93%	14.4	67	89%	10.7
By Manner																						
Accidental		116	78%	18.5	88	81%	14.1	66	67%	10.5	71	65%	11.3	57	70%	9.1	65	67%	10.4	41	55%	6.6
Undetermined		12	8%	1.9	6	6%	1.0	15	15%	2.4	18	17%	2.9	9	11%	1.4	10	10%	1.6	12	16%	1.9
Suicide		20	14%	3.2	14	13%	2.2	16	16%	2.6	20	18%	3.2	15	19%	2.4	21	22%	3.4	21	28%	3.4
Homicide		0	0%	0	0	0%	0	1	1%	0.2	0	0%	0	0	0%	0	1	1%	0.2	1	1%	0.2
Other Substances Involved																						
Alcohol		28	19%	4.5	15	14%	2.4	17	17%	2.7	27	25%	4.3	19	23%	3.0	17	18%	2.7	14	19%	2.2
Benzodiazepines		17	12%	2.7	8	7%	1.3	7	7%	1.1	21	19%	3.4	13	16%	2.1	8	8%	1.3	16	21%	2.6
Buprenorphine		1	1%	0.2	2	2%	0.3	3	3%	0.5	4	4%	0.6	1	1%	0.2	5	5%	0.8	0	0%	0
Cocaine		23	16%	3.7	13	12%	2.1	13	13%	2.1	11	10%	1.8	5	6%	0.8	12	12%	1.9	6	8%	1.0
Fentanyl		51	34%	8.1	29	27%	4.6	18	18%	2.9	12	11%	1.9	7	9%	1.1	5	5%	0.8	5	7%	0.8
Heroin		51	34%	8.1	34	31%	5.4	34	35%	5.4	20	18%	3.2	9	11%	1.4	9	9%	1.4	0	0%	0
Methadone		13	9%	2.1	8	7%	1.3	5	5%	0.8	14	13%	2.2	20	25%	3.2	14	14%	2.2	11	15%	1.8
RX Opioid (excludes fentanyl)		44	30%	7.0	36	33%	5.8	32	33%	5.1	50	46%	8.0	45	56%	7.2	52	54%	8.3	46	61%	7.4
				Rate Per 100K of Sub Group			Rate Per 100K of Sub Group			Rate Per 100K of Sub Group			Rate Per 100K of Sub Group			Rate Per 100K of Sub Group			Rate Per 100K of Sub Group			Rate Per 100K of Sub Group
By Gender																						
Male		97	66%	31.4	71	66%	23.0	63	64%	20.4	66	61%	21.3	51	63%	16.5	52	54%	16.8	46	61%	14.9
Female		51	34%	16.1	37	34%	11.7	35	36%	11.0	43	39%	13.5	30	37%	9.5	45	46%	14.2	29	39%	9.1
By Age																						
< 30		22	15%	9.9	17	16%	7.6	18	18%	8.0	16	15%	7.1	14	17%	6.2	20	21%	8.8	12	16%	5.2
30 - 39		47	32%	66.3	31	29%	43.8	26	27%	37.0	22	20%	31.4	13	16%	18.7	17	18%	24.5	13	17%	18.4
40 - 49		33	22%	42.8	20	19%	26.0	17	17%	21.4	28	26%	33.9	24	30%	27.9	27	28%	30.3	15	20%	16.3
50 +		46	31%	18.0	40	37%	15.7	37	38%	14.7	43	39%	17.3	30	37%	12.3	33	34%	13.7	35	47%	15.0
Average Age				43			43			45			44			45			43			48
By Race/Ethnicity																						
White, Non-Hispanic		146	99%	25.0	104	96%	17.8	96	98%	16.4	105	96%	17.9	80	99%	13.6	93	96%	NA	74	99%	NA
Racial or Ethnic Minority		2	1%	4.7	4	4%	9.5	2	2%	4.9	4	4%	10.4	1	1%	2.7	4	4%	NA	1	1%	NA

*One death is indicated as a Vermont resident; however, no county of residence is listed.

Table 3: All Drug-Related Fatalities Occurring in VT <i>(Includes opioids and other drugs)</i>		2016			2015			2014			2013			2012			2011			2010		
		# and % of All Drug-Related Fatalities		Rate per 100k in County	# and % of All Drug-Related Fatalities		Rate per 100k in County	# and % of All Drug-Related Fatalities		Rate per 100k in County	# and % of All Drug-Related Fatalities		Rate per 100k in County	# and % of All Drug-Related Fatalities		Rate per 100k in County	# and % of All Drug-Related Fatalities		Rate per 100k in County	# and % of All Drug-Related Fatalities		Rate per 100k in County
By County of Residence*																						
	Addison	6	4%	16.2	2	2%	5.4	3	3%	8.1	6	6%	16.3	4	5%	10.9	4	4%	10.9	4	5%	10.9
	Bennington	13	9%	35.8	3	3%	8.3	6	6%	16.5	5	5%	13.6	3	4%	8.2	4	4%	10.8	4	5%	10.8
	Caledonia	6	4%	19.5	3	3%	9.7	7	7%	22.6	3	3%	9.6	3	4%	9.6	2	2%	6.4	2	3%	6.4
	Chittenden	28	19%	17.4	25	23%	15.5	20	20%	12.5	23	21%	14.4	23	28%	14.5	25	26%	15.9	17	23%	10.9
	Essex	0	0%	0	1	1%	16.2	2	2%	32.7	1	1%	16.1	2	2%	32.1	1	1%	15.9	0	0%	0
	Franklin	9	6%	18.4	13	12%	26.6	11	11%	22.6	12	11%	24.8	5	6%	10.4	5	5%	10.4	5	7%	10.5
	Grand Isle	2	1%	29.2	2	2%	29.2	1	1%	14.3	0	0%	0.0	1	1%	14.3	1	1%	14.4	1	1%	14.3
	Lamoille	3	2%	11.9	1	1%	4.0	5	5%	19.9	6	6%	23.9	3	4%	12.0	4	4%	16.2	2	3%	8.2
	Orange	6	4%	20.8	3	3%	10.4	4	4%	13.9	6	6%	20.8	3	4%	10.4	4	4%	13.8	7	9%	24.2
	Orleans	7	5%	25.8	7	6%	25.8	3	3%	11.1	5	5%	18.4	5	6%	18.4	2	2%	7.4	1	1%	3.7
	Rutland	14	9%	23.4	12	11%	20.1	10	10%	16.6	15	14%	24.7	5	6%	8.2	11	11%	17.9	6	8%	9.7
	Washington	11	7%	18.8	8	7%	13.6	3	3%	5.1	10	9%	16.9	9	11%	15.1	6	6%	10.1	5	7%	8.4
	Windham	8	5%	18.4	5	5%	11.5	10	10%	22.9	3	3%	6.8	8	10%	18.2	12	12%	27.1	6	8%	13.5
	Windsor	15	10%	26.9	13	12%	23.3	10	10%	17.9	6	6%	10.7	6	7%	10.7	8	8%	14.1	6	8%	10.6
	Non-VT Residents (Rate Per 100K Vermonters)	17	11%	2.7	10	9%	1.6	2	2%	0.3	8	7%	1.3	1	1%	0.2	7	7%	1.1	8	11%	1.3
By County of Death																						
	Addison	7	5%	18.9	1	1%	2.7	2	2%	5.4	7	6%	19.0	2	2%	5.4	3	3%	8.2	4	5%	10.9
	Bennington	13	9%	35.8	3	3%	8.3	6	6%	16.5	6	6%	16.4	4	5%	10.9	8	8%	21.6	5	7%	13.5
	Caledonia	8	5%	26	3	3%	9.7	7	7%	22.6	3	3%	9.6	3	4%	9.6	2	2%	6.4	3	4%	9.6
	Chittenden	36	24%	22.3	31	29%	19.2	25	26%	15.6	27	25%	16.9	27	33%	17.0	29	30%	18.4	20	27%	12.8
	Essex	1	1%	16.2	1	1%	16.2	0	0%	0.0	1	1%	16.1	2	2%	32.1	1	1%	15.9	0	0%	0
	Franklin	9	6%	18.4	10	9%	20.5	11	11%	22.6	11	10%	22.8	5	6%	10.4	5	5%	10.4	5	7%	10.5
	Grand Isle	1	1%	14.6	1	1%	14.6	0	0%	0.0	0	0%	0.0	0	0%	0.0	0	0%	0.0	1	1%	14.3
	Lamoille	3	2%	11.9	2	2%	7.9	4	4%	15.9	6	6%	23.9	2	2%	8.0	4	4%	16.2	4	5%	16.3
	Orange	6	4%	20.8	3	3%	10.4	4	4%	13.9	4	4%	13.8	2	2%	6.9	6	6%	20.7	6	8%	20.7
	Orleans	7	5%	25.8	8	7%	29.5	4	4%	14.8	5	5%	18.4	4	5%	14.8	1	1%	3.7	1	1%	3.7
	Rutland	14	9%	23.4	16	15%	26.8	10	10%	16.6	15	14%	24.7	5	6%	8.2	11	11%	17.9	8	11%	13
	Washington	11	7%	18.8	8	7%	13.6	4	4%	6.8	10	9%	16.9	9	11%	15.1	7	7%	11.7	5	7%	8.4
	Windham	12	8%	27.7	6	6%	13.8	10	10%	22.9	5	5%	11.4	8	10%	18.2	11	11%	24.8	6	8%	13.5
	Windsor	20	14%	35.9	15	14%	26.9	11	11%	19.6	9	8%	16.1	8	10%	14.2	9	9%	15.9	7	9%	12.4

Annual Drug-Related Deaths by County of Death

The following tables list the number of drug-related fatalities by the county of death. Please note that these numbers are very small and variable. Regional numbers should be interpreted with caution. In addition, the county of death is not necessarily where the person lives or where the incident occurred. For example, individuals may be transferred to a hospital in another county as a result of an overdose and the death would be recorded as occurring at that hospital.

Table 4: Number of All Drug-Related Fatalities by Year and County of Death

	2010	2011	2012	2013	2014	2015	2016
Addison County	4	3	2	7	2	1	7
Bennington County	5	8	4	6	6	3	13
Caledonia County	3	2	3	3	7	3	8
Chittenden County	20	29	27	27	25	31	36
Essex County	0	1	2	1	0	1	1
Franklin County	5	5	5	11	11	10	9
Grand Isle County	1	0	0	0	0	1	1
Lamoille County	4	4	2	6	4	2	3
Orange County	6	6	2	4	4	3	6
Orleans County	1	1	4	5	4	8	7
Rutland County	8	11	5	15	10	16	14
Washington County	5	7	9	10	4	8	11
Windham County	6	11	8	5	10	6	12
Windsor County	7	9	8	9	11	15	20
TOTAL	75	97	81	109	98	108	148

2017 PRELIMINARY DATA Updates - The following data will be updated monthly with a 10- to 12-week time lag. Historic data may change if there are delays in reporting and all data in the following tables should be considered preliminary until final data is published.

Table 5: 2017 Drug- and Opioid-Related Fatalities by Month

2017 Month of Death	All Drug-Related Fatalities by Manner				Number of Opioid-Related Accidental and Undetermined Manner Fatalities and Substances Involved			
	Total	Accident	Suicide	Undeter- mined	Total*	Rx opioid (no fentanyl)	Heroin	Fentanyl
January	9	9	0	0	7	2	3	6
February	13	11	2	0	10	4	5	5
March	13	12	1	0	12	5	4	5
April	11	9	2	0	8	2	4	5
May	6	6	0	0	5	2	2	4
June	9	7	1	1	8	2	4	6
July	12	12	0	0	12	5	3	7
August	7	6	1	0	6	2	2	5
September	8	5	3	0	4	3	0	2
October	13	11	1	1	11	4	2	8
November								
December								
TOTAL	101	88	11	2	83	31	29	53

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

Table 6: Total Number of All Drug-Related Fatalities, Preliminary 2017 Data by County of Death

Place of death	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Addison County	0	0	0	0	0	0	0	0	0	1			1
Bennington County	2	0	0	0	1	0	0	1	0	0			4
Caledonia County	0	1	1	0	0	0	1	0	1	1			5
Chittenden County	4	2	5	4	2	2	4	4	3	3			33
Essex County	0	0	0	0	0	0	0	0	0	0			0
Franklin County	0	1	0	0	1	1	1	0	1	0			5
Grand Isle County	0	0	0	0	1	0	0	0	0	0			1
Lamoille County	1	0	1	0	0	0	1	0	0	0			3
Orange County	0	1	0	0	0	1	2	0	0	1			5
Orleans County	0	0	1	1	0	0	0	0	0	0			2
Rutland County	1	2	3	1	1	3	0	0	0	1			12
Washington County	0	1	0	1	0	2	0	1	2	2			9
Windham County	0	4	1	1	0	0	3	1	1	3			14
Windsor County	1	1	1	3	0	0	0	0	0	1			7
VERMONT Total	9	13	13	11	6	9	12	7	8	13			101

The drug-related fatalities here include accidents, suicide, and undetermined drug-related fatalities. This report does not include deaths due to the consequences of chronic substance use such as HIV, liver disease or infection; or deaths due to errors by medical professionals. This report also does not include deaths due to injury related to substance abuse. Anticoagulant- and antibiotic-related deaths were not included. Most drug-related fatalities are due to combinations of substances and cannot be attributed to a single drug. It is also important to note that the conditions under which each of these fatalities occurred are unique and cannot all be attributed to addiction and/or dependence.

Vermont Methodology for Calculating Drug-related Fatalities

The Vermont Department of Health utilizes a unique methodology for calculating a drug-related fatality. The VDH method differs from the CDC methodology, as described in 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>

Vermont’s drug-related fatality data brief uses Vital Statistics data and includes all deaths that occur in Vermont, regardless of residency of the individual. Determining a drug-related fatality 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, the injury description text is also examined to identify any listed alcohol or drugs. Fatalities 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”. The main difference between the methodologies is VDH’s consideration of all causes of death, contributing conditions and injury descriptions as opposed to underlying cause of death only. For example, an underlying cause of death may be cardiovascular accident but the injury description field in the death record, lists “intentional ingestion of prescribed medication”. VDH would report that case as a drug-related fatality while the CDC would not. This accounts for the higher count of drug-related fatalities by VDH. The Vermont method of fatality identification reveals 10-15% *more* fatality on average compared to the CDC’s methodology’s findings for Vermont.

	Number of Drug-Related Fatalities	
	CDC Methodology	Vermont Methodology
2013	93	109
2014	83	98
2015	99	108