Vermont Social Autopsy Report

2021 Data Analysis

August 2023
(Updated September 2023)

VERMONT
DEPARTMENT OF HEALTH

The purpose of the Social Autopsy Report is to identify trends in how Vermonters who died of a drug overdose interacted with state systems prior to death to identify opportunities for intervention.

These reports are dedicated to the people who died of overdose and their loved ones. While the work is data-driven, we must not lose sight of the fact that each data point is far more than that. These are Vermonters who unnecessarily lost their life.

The Vermont Department of Health, along with the partner departments and people that contributed to this project, analyze these data in the context of this humanity. We believe that the findings and recommendations within these documents are valuable assets for informing our collective work to prevent future losses of life due to overdose.

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[1] This report was updated September 2023 in order to account for a new understanding of the data provided by the Institute for Community Alliances (ICA). The previous version used terms like "unhoused" and "without housing"; however, the data reflect those who were unhoused and at risk of becoming unhoused. The language has been updated throughout this report.

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Executive Summary

The Vermont Social Autopsy Project was created to identify trends in how Vermonters who died of an overdose (including all illicit drugs, legal drugs, and alcohol) interacted with Vermont state systems prior to death to identify opportunities for intervention. This iteration of the Social Autopsy Report examines interactions for people who died of an overdose in 2021. The Executive Summary and Recommendations sections have been strategically placed at the beginning of the document to underscore the importance of linking the data back to action. Links to all previous reports are in the introduction section and trend data for 2017-2021 are in the appendices. With five years of data, some conclusions can be drawn as described below.

KEY POINTS

Of the 231 Vermonters who died of an overdose in 2021:

- Fentanyl was involved in 83% of deaths.
- Most (93%) had a substance use disorder.
- Nearly all (99%) interacted with at least one agency or data set prior to death.
- Most (77%) interacted with three or more agencies or data sets.

Some Patterns Have Changed

- Drug supply: Vermont had the highest number of fatal overdoses to date in 2021. Fentanyl is now the most prevalent substance found in overdose deaths. Fentanyl likely contributed to increases in death because it is highly potent, fast acting, and sometimes its presence in a drug is not known. Cocaine involvement has continued to increase while heroin reached historically low levels in 2021.
- Location of overdose: People who died were more likely to overdose at home (72%) or a motel (13%) than other locations. The increase in motels began in 2020, likely related to the COVID-19 pandemic response and continued to grow in 2021.
- Family Services Division (FSD) involvement: Nearly half (49%) of people who were born in or after 1982 (when the FSD data system was launched) were involved with Family Services Division of the Department for Children and Families as a child – an increase from the 31% in 2020.
- Department of Mental Health (DMH) involvement: DMH interacted with a smaller proportion of people who died of an overdose in 2021 than in previous years. However, the use of telemedicine began in 2020 and increased to more than a quarter (27%) of services utilized in 2021, indicating telemedicine may be an effective method to reach more people.

Other Trends Have Been Relatively Uniform from Year-to-Year

- Industry Risk: The highest risk industry is consistently construction, followed by accommodation/food services. The third highest industry in 2021 was manufacturing and has historically been either manufacturing (2018, 2021), retail (2017), or health care and social assistance (2019, 2020).
- Emergency Medical Services (EMS) Interaction: Most (69%) of people who died had previously interacted with EMS, usually more than a month prior to their death.

- **Mental health conditions:** About half of people who died had mental health conditions listed in the State Unintentional Drug Overdose Reporting System.
- **Prescription Use**: People who died of an overdose were more likely to have high-risk prescriptions in the year prior to their death compared to Vermont (90 MME or greater, overlapping opioid-benzodiazepines prescriptions, overlapping opioid prescriptions, or medication for opioid use disorder).
- **High Medicaid enrollment**: About two thirds (68%) were enrolled in Medicaid within 90 days of their death.

Additional Context from New Data Sources

- **Homelessness**: More than half (53%) of the people who died of an overdose in 2021 had ever received homelessness services. One in five (20%) had received homelessness services in the six months prior to their death.
- **Employment**: Of the 200 people in the Vermont Department of Labor database, less than half (43%) were employed in the year before their death, and fewer (38%) were employed in the six months before they died.
- **Income**: Income was significantly lower for people who died of an overdose than the general population. The median income for people who died of an overdose was consistently about 1/3 the state median income looking back several years before their death.

Takeaway

There is no one risk factor for overdose and there is not one single solution. A comprehensive approach must consider social determinants of health, trauma, instability, and inequality that contribute to overdose risk.

"There is no one risk factor for overdose and there is not one single solution."

The extensive data presented in this report underscore how pervasive and widespread the danger of overdose is to the Vermont community. These data also highlight many similarities among those who died, which should be used to evaluate and improve current screenings, intervention, education, prevention, or outreach. While many factors remained the same compared to previous years, some metrics have changed or new information from additional data sources provide additional context.

The following Recommendations section should be seen as a starting point for agencies and communities to consider how they can implement these or other measures to reduce overdose morbidity and mortality in Vermont.

For more information on this report or technical assistance, contact Rachel Newton, Overdose Data to Action (OD2A) program manager, AHS.VDHod2a@vermont.gov.

Recommendations

The overall purpose of the Social Autopsy Project is to identify opportunities for interventions and programmatic changes to reduce overdose and overdose risk. The recommendations below were informed by the data in this report, along with input from the programs, data managers, and commissioners of the departments involved. Section one includes new recommendations and section two provides updates on some of the work that has addressed recommendations in previous iterations of this report.

These recommendations can be used to inform state and community-based overdose prevention and response initiatives, including early intervention and support opportunities. The OD2A Program is available to provide technical assistance and support.

Section 1: New Recommendations

1. **First responder training and support**: First responders serve our communities, responding to many emergencies including drug overdoses. The difficult nature and feelings that can come from this work can create moral injury and negatively affect first responder mental and emotional health, which can lead to burnout and potentially leaving the profession. As such, it is critical to assess impacts on first responders, implement recommendations from the Emergency Service Provider Wellness Commission Report and ensure supports and training are available to limit this occupational stress and promote resiliency.
2. **Support youth and family-focused intervention opportunities**: Youth and early childhood intervention programs are vital for supporting families where the parents or children may be at increased risk. The Family Services Division (FSD) of the Department for Children and Families (DCF) found that 49% of the people born in and after 1982 who died of an overdose in 2021 were connected with FSD as a child. Both DCF and the Vermont Department of Health (VDH) can focus on ways to support and expand work that addresses adverse childhood experiences (ACEs) and trauma, and increases protective factors for children and their families. Example initiatives are Strong Families Vermont home visiting, Parent Child Center Network, Developmental Understanding and Legal Collaboration for Everyone (DULCE), and Children and Recovering Mothers Team (CHARM).
3. **Increase awareness of mental health supports**: The Department of Mental Health (DMH) oversees mental health services primarily through the Designated Agencies and Special Service Agencies. Supported by findings of the Mental Health Integration Council, DMH and VDH can further strengthen mental health integration efforts to co-manage co-occurring disorders in Hubs and Spokes and Certified Community Behavioral Health Clinics, and reach Vermonters where they are to increase access and awareness of mental health services through telehealth, in primary care settings, and with 9-8-8 Suicide and Crisis Lifeline.
4. **Enhance prevention and early intervention in the Impaired Driver Rehabilitation Program (IDRP)**: Enhance prevention and early intervention service offerings to people referred to the IDRP for any substance. Most people who died in 2021 who

ever utilized IDRP were first time or juvenile offenders, indicating IDRP may be the first, or only, intervention opportunity some people receive.

5. **Expand public/private partnerships at the community level.** Vermont has demonstrated time and again that when communities come together to face a crisis, they are stronger. Local discussions around the data presented in the social autopsy are encouraged to bring together diverse stakeholders with an emphasis on using the data to inform action. The OD2A Program can provide or identify appropriate technical assistance that will enable communities to understand their local data, build up capacity and readiness of community partners, and implement overdose prevention and response activities.
6. **Explore additional data enhancements:** The OD2A Program will seek feedback on and consider how to evolve the Social Autopsy Project to continue providing meaningful, actionable data. This could include changes such as releasing more frequent and smaller-scale data products that provide detailed analysis of topics of interest.
7. **Engage with client-facing staff as experts:** Client-facing staff of organizations that serve people who are at risk of overdose are in a unique position to recognize how trends identified in this report play out in everyday interactions with clients. To acknowledge this expertise, departments, organizations, and programs could create ongoing opportunities for their client-facing staff to discuss challenges, brainstorm solutions, and identify practical innovations to connect and retain people at risk of overdose with services, screening, and treatment.
8. **Measure community overdose and harm reduction awareness to develop relevant messaging and trainings:** The overdose crisis is constantly evolving with changes in drug supply. Some myths and perceptions affect community awareness of best practices for overdose prevention. Assessment of community knowledge, perceived risk, and readiness to respond to an overdose should be done. This will allow community outreach and trainings to be adapted and responsive to emerging trends as well as gaps in community knowledge or skills. An example would be ensuring the public is aware that many people who died of an overdose were alone, with 41% of the people who died of an overdose in 2021 having no witness to the drug use and no bystander present at the overdose. Messaging related to this trend can be further developed to promote resources to reduce incidence of people using alone.
9. **Consider demographic patterns when planning and implementing new interventions:** This report has identified some demographics disproportionately represented in overdose deaths year after year. Although these characteristics do not account for all people who die of an overdose, special consideration should be given to white non-Hispanic males aged 25-44, unmarried or divorced/separated, with high school education or less because this specific demographic represented 25% of all those who died in 2021. All agencies should consider how effective current outreach efforts are at reaching these demographics and consider new methods of outreach or partnerships. This represents a prime opportunity for interagency collaboration and sharing lessons learned.

Section 2: Updates on Recommendations from Previous Report

1. **Expand the Social Autopsy Project**: This year's report includes two new data sets (Vermont Department of Labor and the Institute for Community Alliances) that provide further context about people who died of an overdose. The Health Department, contributing partners, and stakeholders continue to consider and explore approaches to analyze data and provide additional context.
2. **Embed a social worker in the OCME**: The social worker position with the Office of the Chief Medical Examiner (OCME) will work with families and loved ones following an overdose death to collect additional data on the circumstances leading up to the overdose. This position has been included in a federal grant application and is expected to be created in calendar year 2024.
3. **Address work-related risk factors**: Construction has consistently been the highest risk industry for overdose in Vermont. A collaboration between Vermont Department of Health, Department of Aging and Independent Living, and Invest EAP has provided outreach to construction firms for both suicide and overdose prevention. This includes providing Employee Assistance Program (EAP) services, education, and training to construction workers. The work has recently expanded through partnerships with industry leaders to expand worker safety initiatives including first aid naloxone on jobsites and expanded access to harm reduction resources. Overdose and harm reduction trainings are being provided to higher risk occupations including construction and the service industry.
4. **Strengthen first responder initiatives**: The first responder naloxone leave behind kit program is an Opioid Overdose Response Initiative started in 2020, allowing for distribution of naloxone and harm reduction materials by EMS and law enforcement. The first full year of the program was 2021. In 2021, the Vermont State Police joined to expand the leave behind kits into law enforcement, understanding that first responders have a unique intervention point to get harm reduction resources into people's hands. Data collection for naloxone distribution has been updated to optimize reporting and tracking. In 2023, the program is expanding to include fentanyl and xylazine test strips.
5. **Statewide coordination of efforts and messaging**: Cross departmental and agency workgroups have grown. Within the Vermont Department of Health, the OD2A Program Manager convenes regular meetings with multiple divisions to discuss overdose prevention and response efforts to ensure a collaborative approach. Additionally, relationships with all the departments within this report have continued to strengthen both through implementation of this Social Autopsy Project and in other ways as interventions are identified and implemented. One example is the public health and public safety collaboration between multiple departments lead by the Department of Public Safety to address public safety, especially considering crime and negative impacts of substance use in communities. This was one of the strategies to come out of the Vermont Governor's 10-Point Safety Plan.

6. **Study of treatment regimen enhancements related to overdose recurrences**: While a study of treatment enhancement has not yet occurred, the Vermont Department of Health published a data brief about repeat opioid overdose emergency department visits to analyze who is likely to have an overdose recurrence, how soon after their first overdose, and where. The purpose of this report is a better understanding of the current landscape to inform strategies and policies.
7. **Expand SBINS and wraparound care following release from an institution**: VDH and DMH are working to address the high rate of co-occurring disorders between substance use and mental health. Increasing Screening, Brief Intervention, Brief Treatment and Navigation to Services (SBINS) is a statewide goal. Work through Act 22 and the first Opioid Settlement funds will strengthen these systems by providing funding for outreach workers and case management staff through the Preferred Provider network, overdose prevention and response education through the syringe service providers, and telehealth pilot for wound care. More than half of the DMH Designated and Special Service Agencies are also in the Preferred Treatment Provider network, which may help increase the utilization of both mental health and substance use services through this work.
8. **Family Services Division focus on children in their custody**: All youth in custody with the Family Services Division of the Department for Children and Families continue to have access to substance use services as needed. Many older youth in custody work directly with a youth development coordinator who can assist with accessing these services.

Introduction

The Vermont Social Autopsy Project was created to better understand and reduce drug-related overdose deaths in Vermont. Beginning in 2020 with data from 2017, each report has examined how Vermonters who died of a drug overdose (from all illicit drugs and legal drugs including alcohol) interacted with state systems prior to their death to identify opportunities for intervention. Previous iterations include the first Vermont Social Autopsy Report (2017 Data) followed by the Social Autopsy Report (2018 Data) and the 2022 Social Autopsy Report (2019/2020 Data). Each year's report has grown to include partnerships with additional agencies, further increasing understanding of the context and circumstances surrounding those who experienced a fatal overdose in Vermont and increasing collaboration across agencies.

Contributing State Partners

Vermont Department of Health
- Commissioner's Office
- Health Statistics and Informatics
- Laboratory Sciences and Infectious Disease
- Division of Substance Use Programs
- Emergency Preparedness, Response, and Injury Prevention
- Office of the Chief Medical Examiner

Department of Corrections

Department for Children and Families
- Economic Services
- Family Services

Department of Vermont Health Access

Department of Mental Health

Department of Public Safety
- Vermont Intelligence Center

Department of Labor

Contributing External Partners

Institute for Community Alliances
- Continua of Care

The present Social Autopsy Report includes data for each of the 231 Vermont residents that died of an overdose in 2021 in Vermont. The Vermont Department of Health continues to partner with the departments and divisions as noted in the text box on the right. New to this report are collaborations with the Vermont Department of Labor for information about employment and income, and the Institute for Community Alliances for information about homelessness and interactions with Vermont's Continua of Care initiative.

As the Social Autopsy Project has expanded and additional years of data have been collected, trend data has been collected and is outlined in the Appendix of this report. Some trends, including many demographic details, remain similar year-to-year. Other factors have changed over time, such as fentanyl involvement in overdose fatalities steadily increasing.

The state and external partners that contribute to this report provide data analysis, review their own sections for accuracy, context, and relevance, and suggest Recommendations related to their work. All partners have demonstrated sustained commitment to engaging with the data and reducing overdose deaths in the state.

Methodology

In preparation for the first iteration of this report, which analyzed 2017 data and was released in 2020, the Health Department approached each partner department separately to explain the project concept and goals. Partners were asked to identify measures that would best represent the intersection between people who overdosed, their department's programming, and the datasets available for inclusion. Given the sensitivity of the person-level data involved and the need to maintain trust between partners, the project team worked with each partner to select the measures to be included in the analysis and to validate the findings and conclusions in the report.

After identifying the measures, the project team received approval from the Agency of Human Services Institutional Review Board (IRB) to assure the privacy of the people who died. Memorandums of understanding (MOUs) were developed and executed between the Health Department and each of the participating departments. The MOUs specified the data to be provided to the Health Department, how the data could be used, and the data suppression rules that the data-owning department required the Health Department to use to protect anonymity. Data were collected by the Department for Children and Families, Department of Corrections, and individual Health Department divisions, and were provided to the project analysts. Health Department project analysts received special clearance and training to collect data from the identified Department of Public Safety and Medicaid data sets and completed the data analysis.

Upon completion of analysis, the findings were disseminated to the commissioners and contributing staff of the partner agencies, as well as Department of Health staff and leadership, for their review. The recommendations at the conclusion of the report were collaboratively developed during the final review process.

A second iteration of the Social Autopsy analyzed data from 2018 and was released in October 2021. This iteration involved the same stakeholders and methodology as the previous report and added data from the Department of Mental Health and the Impaired Driver Rehabilitation Program, which is a program administered by the Health Department.

The third iteration involved the same stakeholders and methodology as previous reports. This report included data from both 2019 and 2020 to improve timeliness of the report. Additionally, the collaborating departments contributed more directly to the formation of recommendations outlined in the report.

This fourth and current iteration of the report includes data from 2021 and adds data from the Vermont Department of Labor and the Institute for Community Alliances. As a result of these additions, this, and future iterations will show a more complete picture of Vermonters who died of an overdose.

This project was funded by the Centers for Disease Control and Prevention, National Center for Injury Prevention and Control Overdose Data to Action (CDC-RFA-CE19-1904) grant.

Death Certificate Information

(Source: Vermont Vital Statistics System)

Demographic Profile of Vermonters Who Died of an Overdose in 2021

The Vermont Vital Statistics System contains identifying information about people who died of accidental or unintentional overdose (i.e., overdose deaths that are not classified as suicide or homicide). This information was linked to the other data sources used in this report to help identify where these Vermonters interacted with state systems. The people included in this report are Vermont residents who died in Vermont in 2021. An appendix of results from previous Social Autopsy Reports can be found at the end of this report.

In 2021, 231 Vermonters died of an overdose in Vermont. Most Vermonters who died of an overdose had a high school education or less (78%), were male (68%), never married (60%), between the ages of 25 and 44 (54%), and white and non-Hispanic (94%).[2]

Demographics of Vermonters Who Died of an Overdose	
	2021
High School or Less	78%
Any College	22%
Male	68%
Female	32%
Never Married	60%
Divorced/Separated	26%
Married	13%
Widowed	2%
<18	0%
18-24	7%
25-34	22%
35-44	32%
45-54	23%
55+	17%
White, non-Hispanic	94%
BIPOC	6%

Demographics of people who died from an overdose are statistically different compared to others who died of another cause of death in 2021 (N=6,188). In 2021, most Vermonters who died of any cause were white and non-Hispanic (98%), half were male (53%), and about two-thirds had a high school education or less (62%). Vermonters who died of an overdose

[2] Although the Vermont Department of Health recognizes genders beyond the binary, Vital Statistics death certificate data are only categorized as male or female. For this reason, all data throughout this report will reference male or female only.

died at a younger age than other Vermonters, with fewer who died of an overdose being over 55 (17%) compared to Vermonters who died overall (89%).

Drug Involvement

Death certificate data were analyzed to identify commonly occurring drugs and drug combinations contributing to overdoses that were identified through toxicology screening. In most cases, people who died of an overdose had an opioid in their system that contributed to their death (89%). Fentanyl was the most frequently identified individual drug (83%), followed by cocaine (45%) and prescription opioids (20%). Of note, the presence of xylazine, a veterinary sedative, increased in 2021 relative to prior years and was the fifth-most common substance involved in overdose deaths.

Most people who died of an overdose had multiple drugs in their system when they died. As fentanyl is the most frequent individual drug associated with drug overdose death, the most common combinations of drugs contributing to death involved fentanyl.

Five Most Common Drugs and Drug Combinations Identified in Vermonters Who Died of an Overdose

Individual Drugs	Drug Combinations
1. Fentanyl (83%)	1. Fentanyl and Cocaine (41%)
2. Cocaine (45%)	2. Fentanyl and Prescription Opioids (15%)
3. Prescription Opioids (excludes Fentanyl) (20%)	3. Fentanyl and Alcohol (13%)
4. Alcohol (16%)	4. Fentanyl and Xylazine (13%)
5. Xylazine (13%)	5. Fentanyl and Heroin (10%)

Industry and Occupation of Employment

Death certificates include information about the industry and occupation of people who have died.[3] In this context, industry and occupation both refer to the work performed during most of the person's working life. Therefore, while a person may have been unemployed or retired at the time of death, their death certificate could still include industry and occupation data. These data are collected for the death certificate through interviews with relatives or others who knew the deceased person, so this information is not always collected consistently, and some data are missing. All percentages presented in this section are out of the 231 people who died of an overdose in 2021, although 19% of death certificates were

[3] The United States Census Bureau defines industry as "the type of activity at a person's place of work" and occupation as "the kind of work a person does to earn a living." In other words, industry is the broad category of work that includes multiple types of occupations. For example, the construction industry employs people working in a variety of occupations, including carpenters, accountants, and human resource personnel, among others.

missing this information. The 'missing' category is omitted from the graphics and tables presented in this section.

Although there is no indication on the death certificate of whether the deceased person was working in a full- or part-time capacity at the time of their death, the most common industries and occupations listed on people's death certificates typically employ workers part-time, seasonally, or temporarily.[4] These positions tend to be more physically demanding than jobs in other industries and occupations and may be lower-paying as well.[5,6] Additionally, while many positions switched to remote or hybrid work to protect workers from COVID-19 in 2020 and into 2021, the jobs worked by people who died of an overdose may have been less likely to allow work from home given the nature of the work associated with these jobs.[7]

According to the Bureau of Labor Statistics, only 5% of Vermonters worked in the construction industry in 2021, while statistically more Vermonters who died of an overdose worked in this industry (23%). After construction, the most common industries for people who died of an overdose in 2021 were accommodation and food services (12%) and manufacturing (9%). These percentages are statistically similar to Vermonters who were employed in 2021.

Industry of Vermonters Who Died of an Overdose Compared to Vermont Overall in 2021

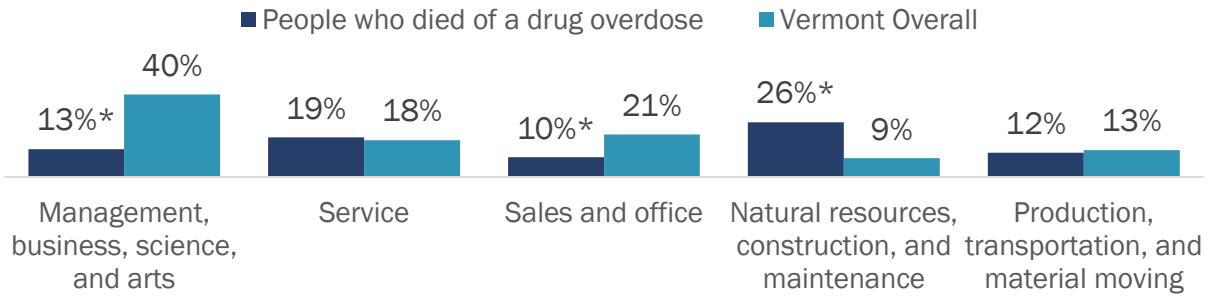
	People Who Died of an Overdose	Vermont Overall
Construction	23%*	5%
Accommodation and Food Services	12%	9%
Manufacturing	9%	10%

*Indicates a statistically significant difference.

[4] https://www.cdc.gov/niosh/docs/2015-178/pdfs/2015-178.pdf
[5] https://www.nist.gov/system/files/documents/2017/09/21/brian_d_lowe-_exoskeleton_tech_interchange_meeting_-_niosh_-_lowe_v2.pdf
[6] https://blogs.cdc.gov/niosh-science-blog/2023/02/16/sdoh/
[7] https://www.bls.gov/opub/mlr/2020/article/ability-to-work-from-home.htm

Compared to other Vermonters working in 2021, a significantly higher proportion of people who died of an overdose in 2021 worked in occupations related to "natural resources, construction, and maintenance" (26% vs 9%), while significantly fewer worked in "management, business, science, and arts" (13% vs 40%) or "sales and office" (10% vs 21%) occupations.

Vermonters who died of overdose in 2021 were more likely to work in natural resources, construction, and maintenance occupations than Vermonters overall.



*Indicates a statistically significant difference.

Place of Injury and Death

The place of injury on a person's death certificate describes where the overdose occurred. Most people experienced a fatal overdose in their home or a friend's home (72%). Overdoses were more likely to occur at a motel in 2021 (13%) than in 2020 (9%) or in 2019 (4%). Some overdoses occurred in other locations (3%) or places where the location was not known (11%). People without housing were provided housing at motels through an expansion of the General Assistance Program during the COVID-19 pandemic which may partially explain the increase in overdoses occurring at motels starting in 2020 and continuing in 2021.

Place of Injury Among Vermonters Who Died of an Overdose

	Frequency	Percent
At a home	166	72%
Motel	31	13%
Other	8	3%
Unknown	26	11%

The place of death may be different from where the overdose occurred. Most people died at either their home or a friend's home (61%), while some died at a hospital in either the emergency room, intensive care unit, or as an inpatient (9%).

Place of Death Among Vermonters Who Died of an Overdose		
	Frequency	Percent
At a Home	140	61%
Emergency Room	11	5%
Inpatient	5	2%
Hospital Intensive Care Unit	4	2%
Other	71	31%

How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 71 of the Appendix.

History and Circumstances Surrounding Overdose

(Source: State Unintentional Drug Overdose Reporting System)

State Unintentional Drug Overdose Reporting System (SUDORS)

SUDORS collects detailed information on accidental and undetermined deaths from drug overdose using death certificates, law enforcement reports, and medical examiner reports (including toxicology results). This database includes demographics, overdose-specific circumstances, substances present on toxicology tests, and other reported drug overdose risk factors. While there is a significant breadth of information in SUDORS, the availability of this information is subject to what is reported by medical examiners, law enforcement, or in the death certificate. Therefore, it is possible that any given data point could be underestimated as the data may not have been reported consistently.

Social Determinants of Health

Social determinants of health are the social, economic, and physical environments that affect a wide range of health, functioning, quality of life, risks, and outcomes.[8] The World Health Organization recognizes 10 factors that affect health and life expectancy: social gradient, stress, early life experiences, social exclusion, work, unemployment, social support, addiction (i.e., substance use disorder), food, and transportation.[9,10] Throughout this report, there are indications of health disparities that exist among Vermonters who died of an overdose. When available, comparisons are made to the Vermont adult population to look at differences and disparities from people who died of an overdose. Most comparison values are from the Vermont Behavioral Risk Factor Surveillance System (BRFSS), an annual randomized survey of Vermont adults (age 18 and older).[11] Estimates for substance use disorder and alcohol use disorder are from the National Survey on Drug Use and Health (NSDUH).[12]

Social Determinants of Health Among Vermonters Who Died of an Overdose		
	Vermonters who Died of an Overdose	VT Adults Overall
Substance use disorder[13]	93%	22%
Alcohol use disorder[13]	36%	13%
Last heard from two or more days before their death	16%	–
Unemployed at the time of death	24%	5%
Without housing at the time of death[14]	8%	–

[8] https://www.healthvermont.gov/sites/default/files/documents/pdf/PLN_HE_Glossary.pdf
[9] http://www.euro.who.int/_data/assets/pdf_file/0005/98438/e81384.pdf
[10] The social gradient is the extent of equity or the difference in wealth and opportunity between those with the most and those with the least.
[11] https://www.healthvermont.gov/health-statistics-vital-records/population-health-surveys-data/brfss
[12] https://www.samhsa.gov/data/report/2021-nsduh-state-prevalence-estimates
[13] May or may not have been clinically diagnosed.
[14] Without housing refers to people who did not have a permanent address of residence. Without housing does not include Vermonters who were living with a friend, family member, or other acquaintance.

Multiple Health Conditions

Physical and mental wellness influences quality of life, health conditions and outcomes. Having multiple health conditions places a person at greater risk for poor quality of life and health outcomes. When available, comparisons are made to the Vermont adult population to look at differences and disparities from people who died of an overdose using BRFSS data. Of note, nearly half of Vermonters who died of an overdose had any mental health diagnosis (45%). While rates of hypertension were similar among people who died of an overdose (24%) compared to Vermonters overall (25%), the rate of heart disease was three times as high among people who died of an overdose (24%) compared to the adult population of Vermont (8%).

Health Conditions Among Vermonters Who Died of an Overdose[15]

	Vermonters who Died of an Overdose	VT Adults Overall
Mental health		
Any mental health diagnosis	45%	–
2+ mental health diagnoses	27%	–
Depression	26%	25%
Anxiety	24%	–
History of suicidal thoughts	9%	6%
Ever attempted suicide	5%	–
Chronic physical health conditions		
Hypertension	24%	25%
Heart Disease	24%	8%
Diabetes	11%	9%
Asthma	7%	12%
COPD	11%	7%
Back pain	4%	–
Other chronic pain	16%	–
Hepatitis C	9%	–

[15] Disclaimer: hypertension and diabetes are not individual fields in the SUDORS system, they are based on free-text coding from the case narrative. Therefore, they may be underreported.

	Vermonters who Died of an Overdose	VT Adults Overall
Weight		
Underweight	3%	2%
Healthy weight	27%	36%
Overweight	31%	32%
Obese	39%	30%

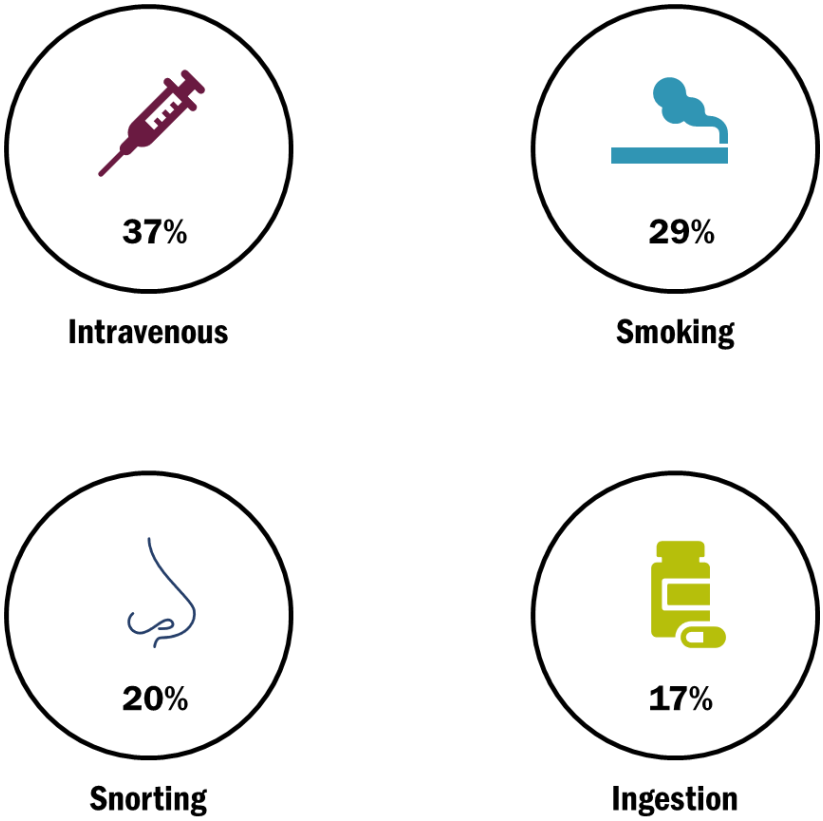
Type of Overdose

SUDORS categorizes the type of overdose by capturing the context in which the drugs contributing to the fatal overdose were used by the person who died. The purpose is to understand the circumstances surrounding the person's overdose. In 2021, 95% of overdoses were related to the use of illicit substances or misuse of prescription medications. There was insufficient information to determine the type of overdose for the remaining 5% of Vermonters. Other overdose types not represented in the data are those related to overmedication from prescribed medications, unintentionally taking a drug other than what the person intended to take or taking the wrong dose of the intended drug, and an "other" category capturing all other types.

Risk Factors for Overdose

Method of Use[16]

Intravenous (administering drugs into a vein) drug use is a risk factor for death by overdose. In 2021, scene evidence suggested that the most common methods of use among Vermonters who died from an overdose were intravenous (37%), smoking (29%), and snorting (20%).

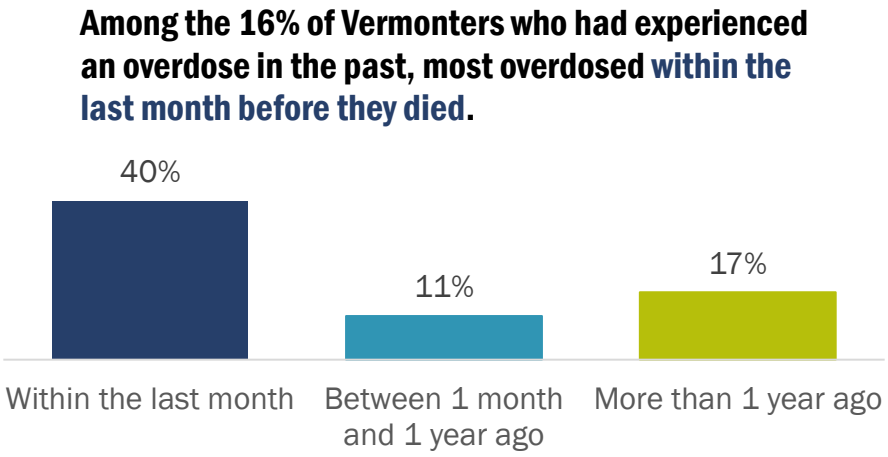


History of Overdose

A history of a previous overdose was reported for about one-sixth of Vermonters who died of an overdose (16%). Among those who had experienced a previous overdose, 40% had done so in the month before their death. The timing of the previous overdose was unknown for

[16] There may have been evidence of more than one method of use; the route by which each substance was administered is unknown; there may be evidence of a method of use for a substance that did not contribute to the person's death; or there may be no scene evidence of the method of use for a substance that contributed to the person's death.

about one-third of people and 17% had last experienced an overdose more than a year prior to their death.



History of Recurrence of Use

In 2021, 18% of Vermonters who died of an overdose had a history of opioid use recurrence, defined as starting to use opioids again after a period of abstinence. Many people who had returned to use did so within the two weeks before their death (24%). Two percent of people who returned to use did so between two weeks and three months before their death. Timing of recurrence of use was unknown for the remaining people who had done so prior to their death.

Release from an Institution

In this context, an institution refers to a hospital, residential treatment facility, or correctional facility. People recently released from an institution may be at elevated risk for overdose if, for example, their body is not able to tolerate the dose they used prior to admittance to the institution.

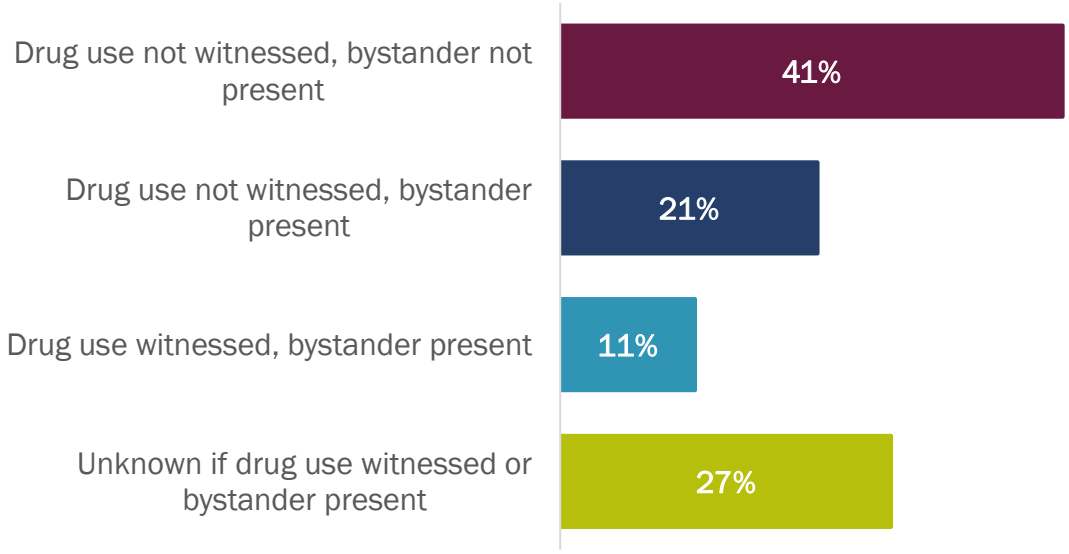
In 2021, 6% of Vermonters who died of an overdose had evidence of being released from an institution within a month of their death. Among those with evidence of recent release, 64% were released from a hospital and 36% were released from a jail, prison, or detention facility.

Presence of Other People

In SUDORS, a bystander is someone who was physically nearby during the overdose and had the opportunity to respond to it. A person does not have to witness the drug use that led to the overdose to be a bystander. In 2021, 41% of people who died of an overdose were not witnessed using the drugs that led to the fatal overdose, nor was a bystander nearby during the fatal overdose. It is unknown if drug use was witnessed for about one-fourth of

Vermonters who died of an overdose. Scene evidence also suggests that about 5% of people experienced a rapid overdose, defined as losing consciousness within 10 minutes of using drugs. Scene evidence used to determine whether a rapid overdose occurred may include: a needle still in the person's body, the person slumped over the drugs they were using, body positioning relative to drug paraphernalia, and witness reports.

Most people who overdosed did not have a bystander present.



How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 74 of the Appendix.

Interactions with Emergency Medical Services

(Source: Statewide Incident Reporting Network)

Interactions with EMS Since 2015

This section uses data from the Statewide Incident Reporting Network (SIREN). SIREN is Vermont's emergency medical services (EMS) electronic patient care reporting system. All EMS ambulance agencies with transport capabilities are required to use SIREN to document each incident within one business day of when it occurred. First response (non-transporting) EMS agencies are also required to report electronically into SIREN, however this is a new requirement as of February 2022. As a result, many agencies are in the process of transitioning from a written record to an electronic one. Previously, nearly half of first response agencies voluntarily reported data into SIREN, but some non-transporting agency data were not included. As more first response agencies begin to report electronically, the SIREN dataset will be more complete. The following section analyzes interactions with EMS personnel since 2015.

Of the 231 Vermonters who died of an overdose in 2021, 214 were identified in the SIREN database for the years 2015-2021. Of those 214 people, 172 (80%) were either declared dead on scene by EMS personnel or died in the hospital after being transported by EMS.

Among the 231 people who died in 2021, 159 (69%) had a previous interaction with EMS before they died. **The numbers presented below include only people who had an interaction with EMS prior to the call that resulted in a fatal overdose.**

Among people who interacted with EMS in the years prior to their death, more than half had interactions that involved substance use (58%). Mental health (28%) and motor vehicle accidents (18%) were also commonly identified as reasons for EMS interaction. An "other" category was created to include interaction types that could not be easily categorized. These include miscellaneous injuries and other types of medical complaints (e.g., pain, allergic reactions), as well as cases that could not be classified due to lack of information. This was the most common interaction type among those in SIREN (74%).

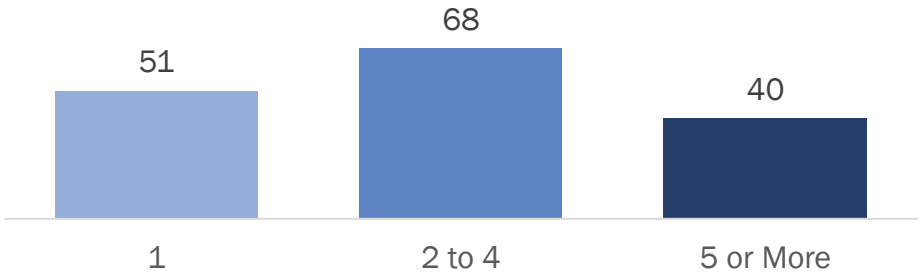
Categories of EMS Interactions Among Vermonters who Died of an Overdose who Previously Interacted with EMS

	Frequency	Percent
People with a prior EMS involvement	159	69%
Substance use	92	58%
Mental health	44	28%
Motor vehicle accident	29	18%
"Other" involvement	118	74%

Of note, the interaction categories described above are not mutually exclusive. In other words, people could have had interactions with EMS that involved substance use and mental health and would be considered in both categories. Additionally, while people could have had multiple interactions within the same category, the data below describe the percentage with *any* interaction of a given type.

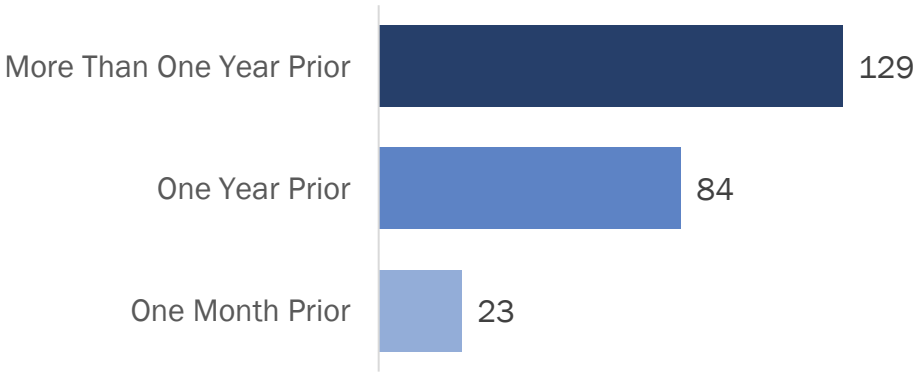
Those who interacted with emergency medical personnel typically had more than one incident between 2015 and the date of their death. Among people who died in 2021, 108 (68%) interacted with EMS two or more times. People who died in 2021 had a median of two interactions between 2015 and the date of their death.

Most Vermonters who died of an overdose who previously interacted with EMS interacted with EMS 2-4 times between 2015 and the date of their death.



Most people had an interaction with EMS personnel one or more years before they died of an overdose. Interactions with EMS personnel were less common in the month before death – 23 people who died in 2021 interacted with EMS during this time.

Most Vermonters who died of an overdose who previously interacted with EMS interacted with EMS more than one year prior to their death.



How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 78 of the Appendix.

Controlled Substance Prescription History

(Source: Vermont Prescription Monitoring System)

Vermont Prescription Monitoring System (VPMS) Data

Vermont's prescription drug monitoring program, called VPMS, is operated and managed at the state health department. This statewide, electronic database contains all Schedule II-IV controlled substance prescriptions that are dispensed by Vermont-licensed pharmacies, including mail-order pharmacies that dispense to Vermonters. Scheduled II-IV controlled substances have been identified by the DEA as substances that are most likely to be misused or to cause dependance. The prescriptions captured in VPMS fit into the following drug classes, which are based on the U.S. Centers for Disease Control and Prevention's (CDC) treatment classes:

- **Analgesic opioids**: opioids used in the treatment of pain.
  Examples: oxycodone, hydrocodone, prescribed fentanyl
- **Medication for opioid use disorder (MOUD) opioid agonist/antagonist**: medications used to treat opioid use disorder. With a few exceptions, any drug containing buprenorphine is considered an MOUD opioid. VPMS does not include medication assisted treatment prescriptions dispensed by specialty treatment providers such as opioid treatment programs (OTP) which are known as "hubs" in Vermont.
  Examples: Suboxone, Subutex
- **Benzodiazepines**: sedatives to treat anxiety, insomnia, and other conditions.
  Examples: lorazepam, clonazepam, diazepam
- **Stimulants**: medication to increase alertness, attention, and energy.
  Examples: methylphenidate, amphetamine
- **Other**: all other schedule II-IV drugs that are not in the other categories

VPMS, as a clinical tool, is used by health care providers to support the appropriate use of controlled substances for legitimate medical purposes and deter the misuse and diversion of these medications. For more information on the above categories, and VPMS in general, please see the 2021 VPMS Annual Report.

Prescriptions That Contributed to the Death of the Person Who Died of an Overdose

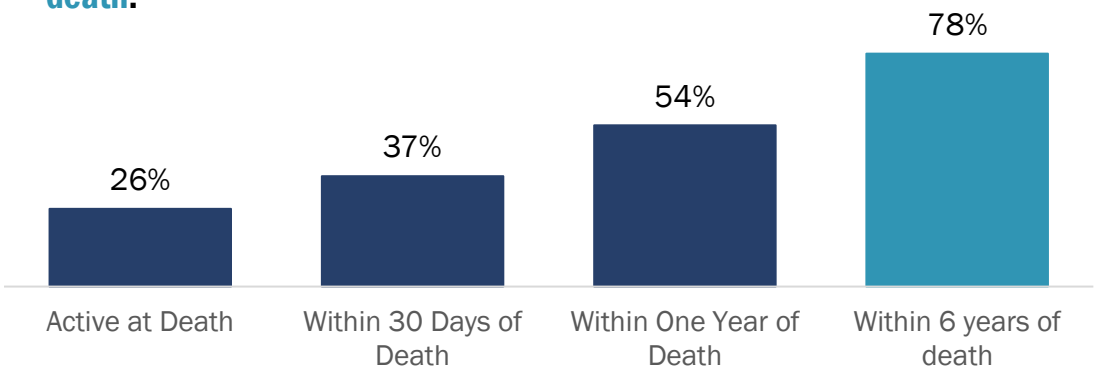
Prescribed medications contributed to the deaths of 20 people who died of an overdose in 2021. Sixteen of the 20 people had an active prescription in VPMS for at least one of the substances listed on their death certificate as contributing to their death.[17] In addition, 16 people had received a prescription for one of the substances that contributed to their death up to six years before their death, the time frame for which VPMS data are available.

[17] An "active prescription" refers to a prescription that covered the time frame in which the person died by overdose.

Prescription History Among Those Who Died of an Overdose

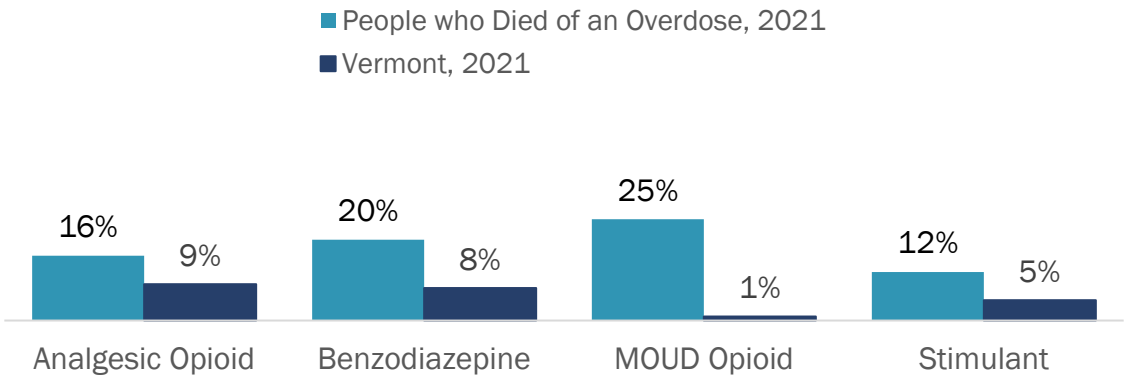
Seventy-eight percent of the Vermonters who died of an overdose in 2021 had at least one controlled substance prescription in VPMS within six years prior to their death. Twenty-six percent of people who died in 2021 had an active prescription at the time of their death. More than half of the people who died of an overdose (54%) received a Schedule II-IV prescription within a year of their death.

More than three-quarters of Vermonters who died of an overdose in 2021 had at least one prescription within six years prior to their death.



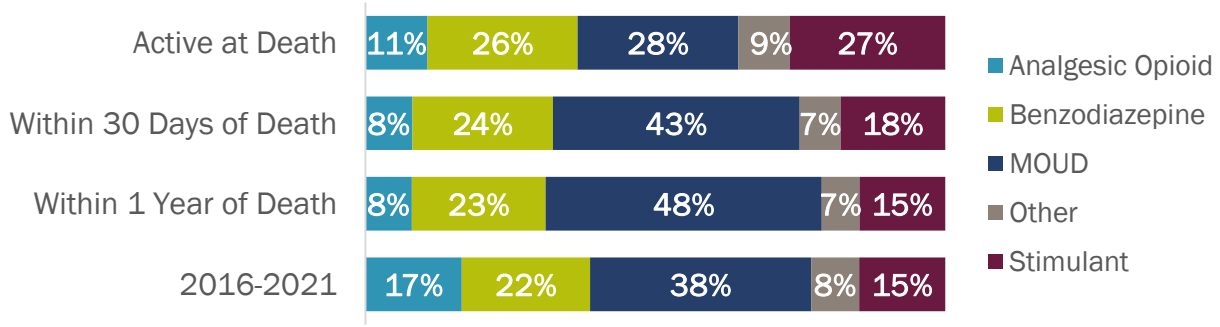
People who died of an overdose in 2021 were more likely to receive prescriptions in each drug class than the Vermont population who received prescriptions in 2021. People who died of an overdose were 25 times more likely to have an MOUD prescription, 2.5 times as likely to have had a stimulant or benzodiazepine prescription, and slightly less than twice as likely to have an analgesic opioid prescription than the Vermont population.

Vermonters who died of an overdose in 2021 were more likely to receive prescriptions in each drug class than Vermonters overall in 2021.



People who died of an overdose in 2021 were most likely to have a medication for opioid use disorder (MOUD) prescription at the time of death, as well as over the six-year period prior to death. In previous years, benzodiazepines and opioid analgesics were the types most commonly prescribed to this population. This change may reflect prescribing practices modified following the adoption of prescribing rules for opioid analgesics in 2017.

Vermonters who died of overdose in 2021 who had a prescription were most likely to have an active medication for opioid use disorder prescription when they died.

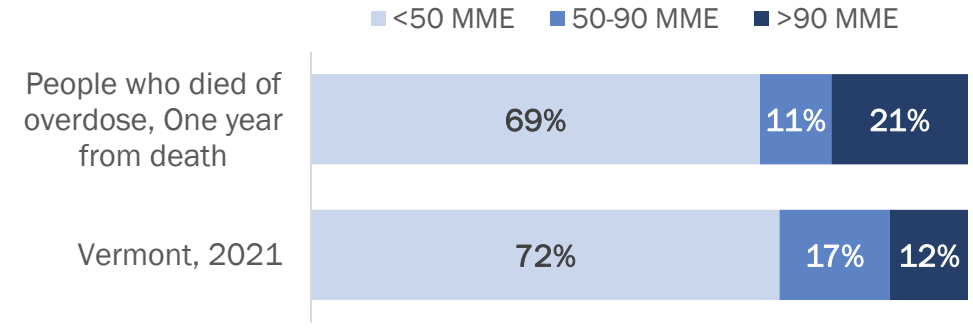


Comparing Opioid Prescriptions

Morphine Milligram Equivalents (MME) are a measurement used by medical providers to express the strength of an opioid prescription for pain management. MME is a standardized measure to help compare different drug strengths and dosages. The Centers for Disease Control and Prevention Guidelines for Prescribing Opioids for Chronic Pain categorizes prescribing based on three daily MME groups: <50 MME, 50-90 MME, and >90 MME. Higher MMEs are associated with greater risks of harm.

In comparison with analgesic opioid prescriptions received by all Vermonters in 2021, people who died of an overdose in 2021 received a greater percentage of high-dose opioid prescriptions (greater than 90 MME) and a lower percentage of lower MME prescriptions.

Vermonters who died of an overdose in 2021 who had an opioid prescription received a greater percentage of high-dose opioid prescriptions than Vermonters overall in 2021.



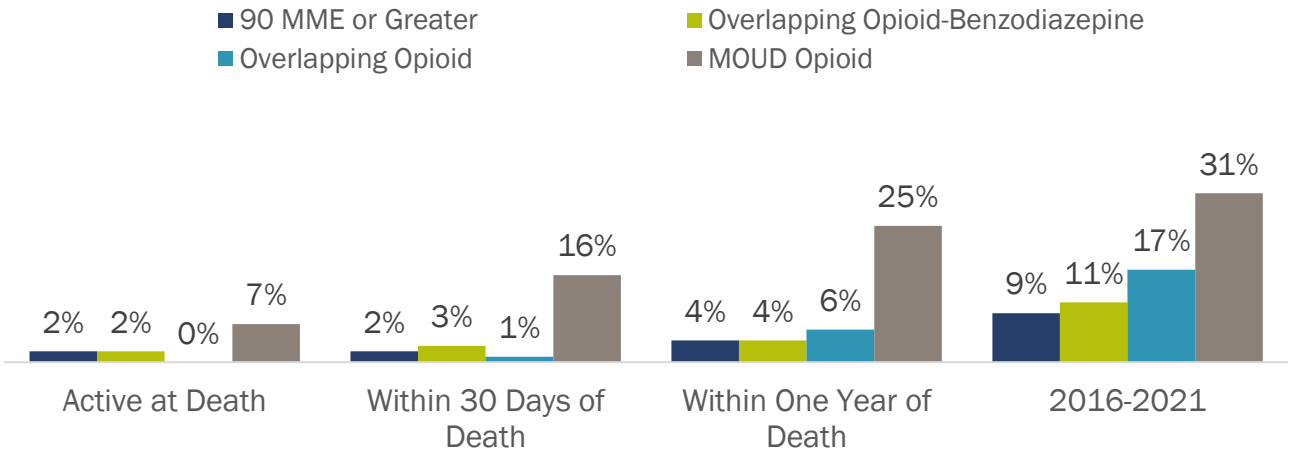
This difference in MME received is also evident in the average MME of prescriptions received by Vermonters in 2021 (53 MME) and by people who died of an overdose (61 MME). The total MME of opioids dispensed per 100 people who died of an overdose in the year before their death is seven times the total MME per 100 Vermonters in 2021 (261,808 vs 37,083).

Higher Risk Prescription Patterns

Some prescribing patterns may put people at higher risk such as overlapping opioid prescriptions (i.e., more than one active opioid prescription), overlapping opioid and benzodiazepine prescriptions, and opioid prescriptions equal to 90 MME or greater. Those receiving MOUD might also be at higher risk of an overdose. Of note, these prescription categories are not mutually exclusive (i.e., it is possible to receive a prescription of 90 MME or greater and to have overlapping opioid and benzodiazepine prescriptions).

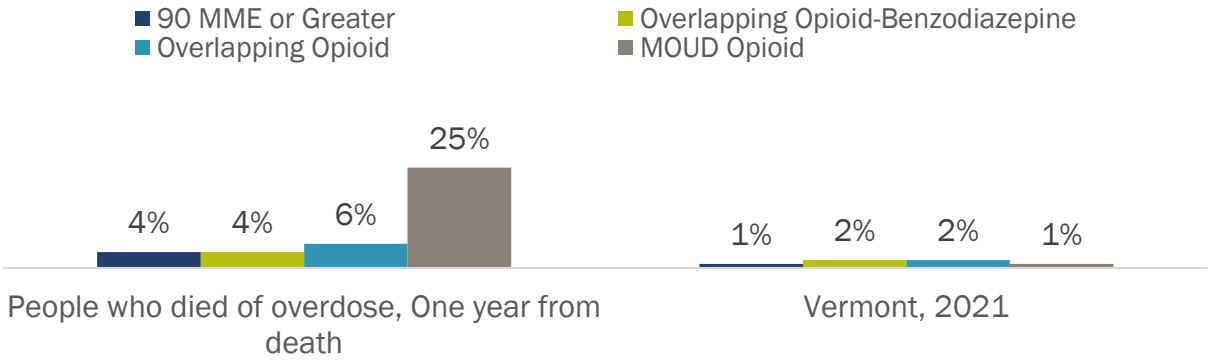
Over 30% of people who died of an overdose received some type of high-risk prescription at least once in the six-year period before their death. However, few people who died of an overdose had high-risk prescriptions that were active at the time of their death.

Over 30 percent of Vermonters who died of an overdose in 2021 received some type of high-risk prescription in the six-year period before their death.



While few people who died of an overdose had active high-risk prescriptions at the time of their death, in almost all categories at least 4% (4-25%) received a prescription within a year of their death. This percentage is much higher than the percentage of Vermonters who received these high-risk prescriptions in 2021. The high proportion of MOUD is a reminder that a person who is prescribed MOUD for an opioid use disorder remains at high risk for overdose. Treatment and recovery are long-term journeys that can include opioid use recurrence.

Vermonters who died of an overdose in 2021 received more high-risk prescriptions than Vermonters overall in 2021.



How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 79 of the Appendix.

Medicaid Enrollment and Utilization

(Source: Department of Vermont Health Access)

Healthcare Utilization Patterns Using Vermont's Medicaid Claims Data

The Department of Vermont Health Access (DVHA) is responsible for the management of Vermont's publicly funded health insurance program also known as the Vermont Medicaid Program. Medicaid claims were analyzed to look for enrollment status prior to death in addition to health care utilization measures.

Of the 231 people who died of an overdose in 2021, 71% (163) were enrolled in Medicaid in the year prior to death. Sixty-eight percent (157) were enrolled within the three months prior to death and 69% (160) were actively enrolled in Medicaid at their time of death.

Of the 163 people enrolled in Medicaid in the last year 91% (148) had at least one claim in the year before they died. Most people had claims within three months of death.

More than two-thirds of people who died of an overdose were enrolled in Medicaid within 90 days of death.

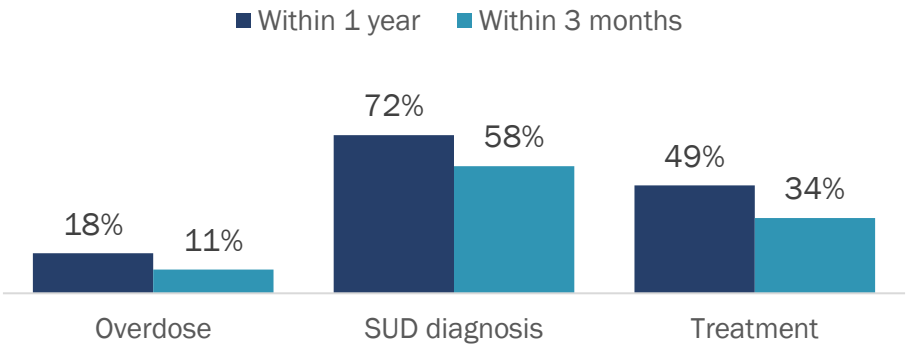
Medicaid Claims Among People Who Had a Medicaid Claim in the Past Year

The most common Medicaid claims among enrollees who died of an overdose in 2021 were related to substance use or mental health.

Of the 148 people who had claims within a year of death in 2021, about three-quarters (72%) had a claim with a substance use disorder (SUD) diagnosis in the last year. Most had an opioid use disorder diagnosis. Alcohol use disorder was the second most common diagnosis. There were also claims related to other substance use such as cocaine use, stimulant use disorder, cannabis use, and other substances. However, these were less frequently identified than opioid or alcohol use diagnoses. In addition, 18% of people who had a Medicaid claim within the last year had an overdose-related claim.

Nearly half of people who had a Medicaid claim in the year before they died had a claim related to substance use treatment. All forms of treatment are included such as medications for opioid use disorder (MOUD), residential treatment, and outpatient services. About two-thirds of people with a claim for treatment were accessing MOUD. Treatment percentages decrease closer to death, which suggests discontinuing treatment as a risk factor for fatal overdose.

Nearly half of Vermonters who died of an overdose in 2021 who had a Medicaid claim in the year before they died had a claim related to substance use treatment.



How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 83 of the Appendix.

Interactions with Family and Economic Services

(Source: Department for Children and Families)

Family Services Division

The Family Services Division (FSD) of the Department for Children and Families is responsible for ensuring children and youth are safe from abuse. The FSD data system was launched in 1982, so people born before 1982 are excluded from the following FSD data related to FSD involvement as children.

There were 92 people born in and after 1982 who died of an overdose in 2021. As children, 49% of these 92 people were involved with the Vermont Family Services Division. As parents, 28% had a history of involvement with the Family Services Division in 2021.

Of the 92 people born in and after 1982 who died of an overdose in 2021:

49% were involved with FSD as *children*.

28% were involved with FSD as *parents*.

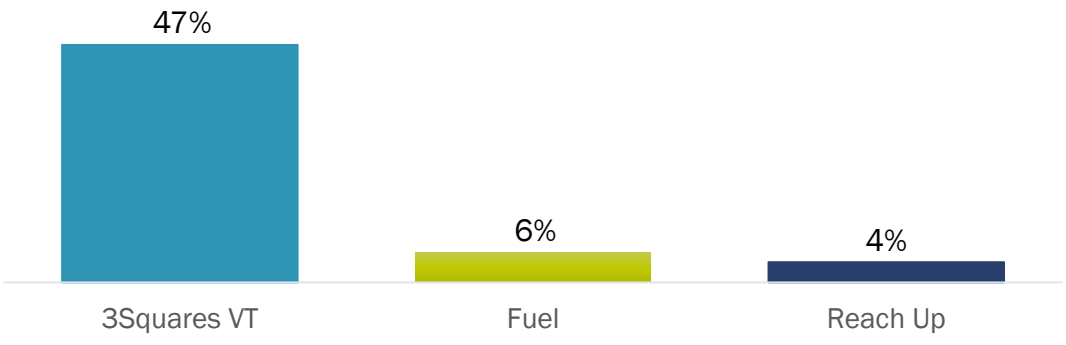
Economic Services Division

The Economic Services Division (ESD) of the Department for Children and Families provides financial assistance to families and people in need. This analysis focuses on three ESD benefit programs – 3Squares Vermont, Fuel Assistance, and Reach Up – although the Division provides additional programs. 3Squares Vermont is a supplemental nutrition assistance program offered to Vermonters with low income. The fuel assistance program helps pay heating bills for Vermonters with low income who rent or own a home. Reach Up provides case management and financial support to families with low income.[1]

About half (49%) of Vermonters who died from an overdose in 2021 were enrolled in at least one ESD Program in the month or year of their death, and 63% received at least one ESD service in 2021, including burial payment assistance.

The program with the greatest connection was 3Squares Vermont, used by 47% in 2021. The fuel assistance program was less likely to be utilized by people who died of an overdose compared to 3Squares Vermont, with 6% accessing fuel assistance in 2021. Reach Up was the program used the least, with 4% in 2021.

3Squares Vermont is used more by people who died of an overdose in 2021 compared to fuel benefits or Reach Up.



In addition to the three economic services offered to Vermonters with low incomes, the Economic Services Division will also pay for burials of people without financial assets. Forty-one percent of Vermonters who died of an overdose had their burial paid for by the Department for Children and Families in 2021.

Forty-one percent of Vermonters who died of an overdose had their burial paid for by the Department for Children and Families in 2021.

How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 84 of the Appendix.

Interactions with Vermont State Police

(Source: Department of Public Safety)

Vermont State Police Interactions Using Department of Public Safety's Database

The Department of Health partnered with the Department of Public Safety to learn how Vermont State Police (VSP) interacted with Vermonters who died of an overdose in 2021. An interaction is defined as any time a person came in contact with Vermont State Police and can include when a person contacts the police, is a person of interest, or is an offender. Not every interaction leads to an arrest.

The Department of Health analyzed Vermont State Police records exclusively, as municipal law enforcement records were not available to be analyzed. Records were gathered from one of Vermont's law enforcement records management systems and were available back to 1988. It should also be noted that the place of residence of the person who died likely has a significant impact on whether the person would have interacted with Vermont State Police or other county and local agencies during their lifetime, as barracks locations and patrol patterns can influence whether State or local police respond to calls in an area.

Of the 231 people who died of an overdose in 2021, 195 (84%) had interacted with Vermont State Police between 1988 and their death in 2021. These 195 people had a combined total of 2,212 interactions with state police and an average of 11 interactions per person. Half of the 195 people had more than five interactions with state police. The number of times each person interacted with state police ranged from as low as one time to as high as 67 times.

Interactions were classified based on 20 categories, some of which came directly from the law enforcement records management system while others were created for the purposes of this analysis. Some examples of the categories were assault, nonfatal overdose, death investigation, driving under the influence (DUI) of alcohol or drugs, suspicious, domestic violence, family issue, driving with a license suspended (DLS), theft/burglary/larceny, alcohol or drugs, and non-criminal/other.

The most common category for people who died in 2021 was "Non-Criminal or Other" with a total of 590 interactions. These interactions encompassed a variety of situations that did not lead to charges or further involvement with state police, such as motor vehicle crashes not resulting in a DUI, DLS, or other charges. This was followed by cases related to "Theft, Burglary, Larceny, or Fraud" (308 involvements). "Suspicious" cases were the third most common interaction type in 2021 (249 involvements). Cases are typically classified as "suspicious" when the complainant suspects that something out of the ordinary is happening (e.g., an unfamiliar person is looking through windows in the neighborhood) and calls the police to investigate.

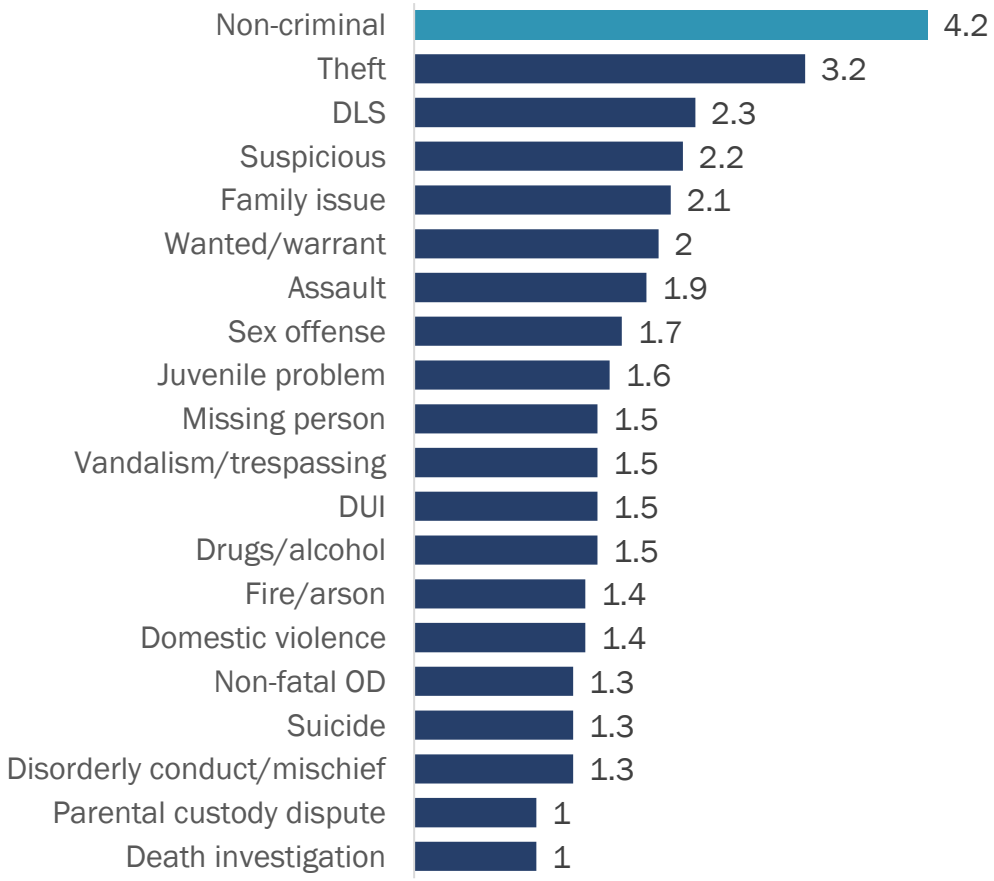
2021 State Police Interaction Top Categories Involving People Who Died of an Overdose	
Category of Police Interaction	Number of Interactions
Non-criminal/other	590
Theft/burglary/larceny/fraud	308
Suspicious	249

The top categories identified among people who had interactions with Vermont State Police are similar to the data reported in the Federal Bureau of Investigation (FBI) Crime Data Explorer for Vermont overall in 2021.[18] According to arrest data from the Crime Data Explorer, the highest proportion of arrests in Vermont was attributed to "other" offenses, excluding traffic offenses. This was followed by DUI, simple assault, and larceny/theft. However, it is important to note that the population described in this report differs from that of Vermont overall, as public safety interactions involving DUI were less frequent among people who died of an overdose in 2021 than Vermonters overall. Although the data reported by the FBI exclusively refer to arrests, the types of interactions described in the FBI data match the data observed in this report.

[18] https://cde.ucr.cjis.gov/

In the non-criminal/other category, people who died of an overdose had an average of 4.2 interactions with state police in 2021. This is followed by theft/burglary/larceny cases (3.2 interactions), driving with a license suspended (DLS) (2.3 interactions), and suspicious cases (2.2 interactions). Of note, cases categorized as "suicide" involve both suicide attempts and suicidal ideation, with most involving suicidal ideation.

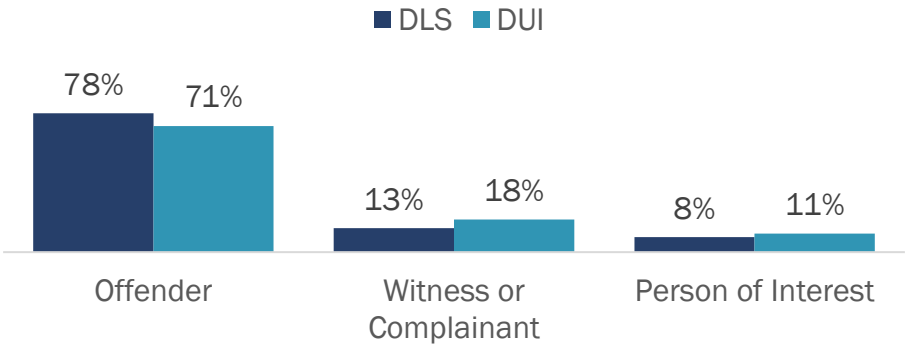
The most common type of interaction between VSP and people who died of an overdose in 2021 was non-criminal, based on the average number of interactions.



These statistics show how often people who died of an overdose were involved, on average, in the particular category of interaction. They do not show how often the person who died was listed as the offender. However, in most categories, the person who died was usually listed as the offender or a person of interest with the exception of death investigations. In death investigations, the person who died was usually listed as the victim, although a few were listed as witnesses. Additionally, some categories may have higher average interactions because they combine categories such as theft and burglary.

In cases of driving under the influence (DUI) and driving with a license suspended (DLS) most people were classified as an offender/arrestee/defendant. The next most common classification was witness or complainant.

Vermonters who died of an overdose in 2021 who had a DLS or DUI interaction with VSP were most often classified as an offender in DLS and DUI interactions.



How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 85 of the Appendix.

Incarceration History

(Source: Department of Corrections)

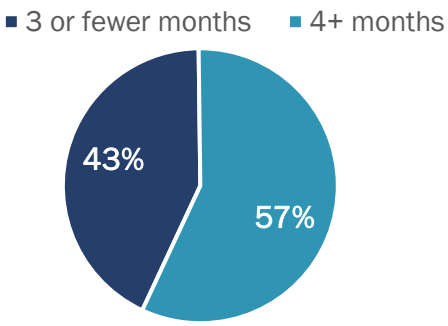
Incarceration History Using Department of Corrections Data

The Department of Health partnered with the Department of Corrections to determine whether people who had died of an overdose in 2021 had been incarcerated in the year prior to death and whether they had participated in a substance use screening during incarceration.

Of the 231 people who died of an overdose in 2021, 21 (9%) had been incarcerated within one year of their death, with a median length of stay of 52 days (1.7 months) for their most recent incarceration. The majority of people with a recent incarceration were white (86%), male (71%), and had a mean age of 36 years at the time of death.

All 21 of the people in this analysis were screened for substance use disorder (71%) upon entering a correctional facility or were released within one day (29%). Among people who died in 2021 and had been incarcerated in the year before they died, nearly two-thirds received MOUD while incarcerated (62%). People who did not receive treatment (38%) did so due to a variety of reasons: not screening positive for SUD, screening positive but being released before induction, and being released within 24 hours of admission. In 2021, 43% of the 21 people who had a history of incarceration died less than four months after release from a correctional facility.

Most Vermonters who died of an overdose in 2021 who had been incarcerated within one year of their death died four or more months after release from incarceration.



The Department of Corrections' program to provide medication for opioid use disorder (MOUD) for people who are incarcerated was in a pilot phase in 2017 and allowed the continuation of all forms of federally approved MOUD for people who are incarcerated with a verified prescription. During the timeframe, continuation of MOUD treatment – rather than induction (beginning treatment) – was the only standard of care.

When Act 176 went into effect in July 2018, the Department of Corrections was directed to continue all forms of federally approved and verified MOUD, and to induct people who were incarcerated on buprenorphine when it was medically necessary and the person elected to begin the treatment.[19] People who died in 2020 were the first group of people where the standard of care included inducting people who were incarcerated in a correctional facility, allowing for complete data in that year.

[19] https://legislature.vermont.gov/Documents/2018/Docs/ACTS/ACT176/ACT176%20As%20Enacted.pdf

It is important to note that the analyses in this report do not fully describe the scope of, or reflect on, the Department of Corrections' current treatment practices of people with substance use disorder within Vermont correctional facilities as this is beyond the scope of the report. Moreover, because the frequencies included in this report are very small (N = 21), with little time spent within the correctional facility (median = 52 days), and involve only a one-year snapshot, larger, longitudinal datasets and program evaluations are needed to draw predictive conclusions and provide a more comprehensive narrative, such as this evaluation of MOUD in Vermont correctional facilities.

How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 87 of the Appendix.

Impaired Driving Offenses

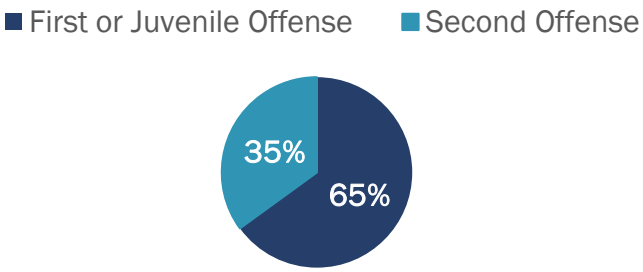
(Source: Impaired Driver Rehabilitation Program)

Impaired Driving Offenses Using Data from the Impaired Driver Rehabilitation Program

The Impaired Driver Rehabilitation Program (IDRP) is a program overseen by the Department of Health, Division of Substance Use Programs that provides screening, education, and treatment services for people who have received a conviction for operating a motor vehicle under the influence of alcohol or other substances. People are not eligible to have their unrestricted driver's license reinstated by the Department of Motor Vehicles until the person has successfully completed the IDRP. IDRP clinical evaluators screen people with a first offense to determine if additional SUD treatment with a licensed counselor is required – people with more than one impaired driving offense are required to complete treatment.

Of the 231 people who died of an overdose in 2021, 55 (24%) had an impaired driving offense in the IDRP database between 2000 and their date of death. Among people who died in 2021 who had an impaired driving offense, most were male (80%) and in their early-to-mid forties (average age at time of death was 44). Most offense types were first or juvenile (i.e., under 18 years old) offenses (65%).

First or juvenile offenses were most common among Vermonters who died of an overdose in 2021 who had an impaired driving offense.



All IDRP participants are required to complete the IDRP class and are screened for possible referral to treatment with an IDRP clinical evaluator, who is a licensed counselor. Of the 55 people who died in 2021 who had at least one offense in the IDRP database, 89% had a completed screening.

While the treatment component of IDRP falls outside of the scope of this report, most people who had an offense attended the IDRP class (96%). The class completion rate was also high (98%). This was similar to the percentage of all IDRP clients in Vermont who completed the class in 2021.

Nearly all the people who attended an IDRP class completed it.

How does this compare to previous years?

More information on how these data compare to data from 2018 through 2021 can be found on page 88 of the Appendix.

Interactions with Department of Mental Health

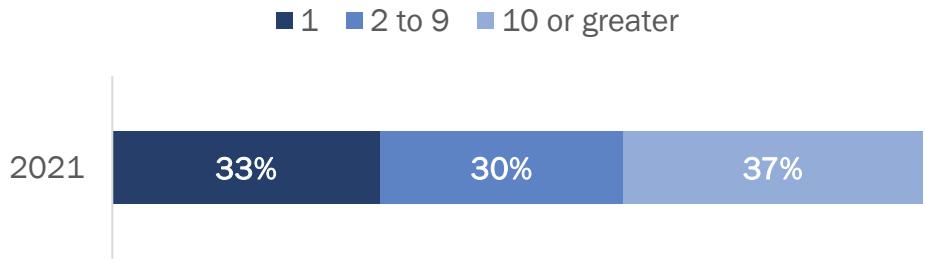
(Source: Department of Mental Health)

Interactions with the Department of Mental Health

The Department of Health partnered with the Department of Mental Health to identify and characterize interactions that people who died of an overdose had with a mental health agency overseen by the Department of Mental Health during their lives.[20] With the onset of the COVID-19 pandemic in 2020, Vermont's mental health care system had to adapt many different changes in service delivery guidelines, as well as adjust to workforce capacity fluctuations, as it became necessary to ensure a public health-informed response for all Vermonters. The COVID-19 pandemic has had a sustained impact on Vermont's health care system overall, and the mental health system of care is continuing to experience the pandemic's full impact.

In 2021, 30 of the 231 (13%) Vermonters who died of an overdose interacted with a Vermont Designated Agency (DA) or Specialized Service Agency (SSA) in the year before they died. With fewer opportunities for in-person interactions and the transition to telehealth services during the COVID-19 pandemic, along with an increased demand for mental health services, all Vermonters were less likely to access care or may have experienced barriers to accessing mental health services compared to previous years.

More than one-third of Vermonters who died of an overdose in 2021 and previously interacted with a DA or SSA had 10 or more interactions.



In 2021, 30% of the diagnoses the Department of Mental Health reported for people who died of an overdose were substance-use related. Most diagnoses were related to mental health, such as anxiety disorder or major depressive disorder. Of note, some Department of Mental Health providers provide specialized substance use disorder care.

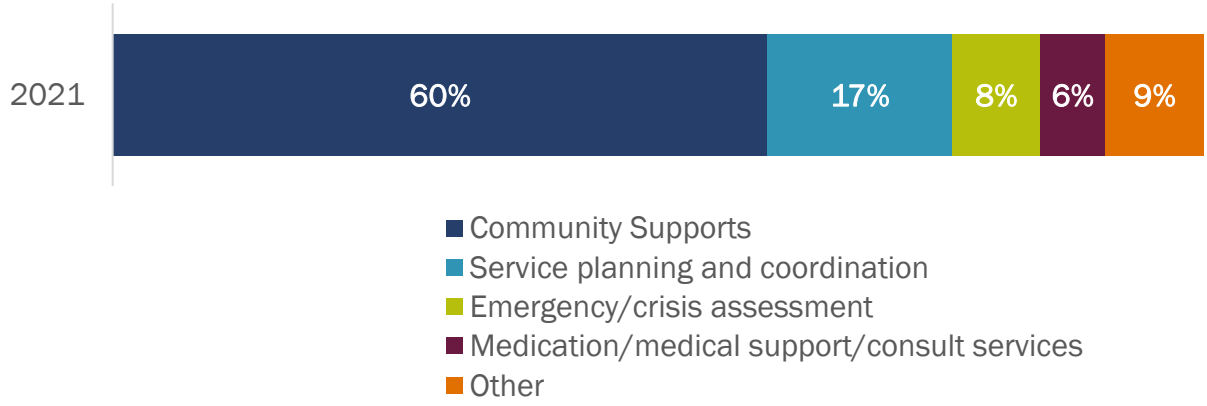
30% of the diagnoses were substance-use related.

67% were mental health diagnoses such as major depressive disorder and anxiety disorders.

[20] The Department of Mental Health has oversight over Designated Agencies and Specialized Service Agencies but not primary care providers who are treating people with mental health disorders.

The 30 Vermonters who died of an overdose in 2021 received a total 379 services (i.e., individual interactions) in the year before they died. The most common types of services used in 2021 included: community supports, service planning and coordination, emergency/crisis assessments, and medication/medical support/consult services. The remaining types made up a small percentage of the total types of services.

Community supports were the most commonly used service among Vermonters who died of an overdose in 2021 who interacted with a DA or SSA.



Of the 379 services in 2021, 34% of these services took place in a community setting, 33% were in an office, and 27% were delivered via telemedicine.

Location of Services Received by Vermonters who Died of an Overdose in 2021 who Interacted with a DA or SSA

	2021
Community	34%
Office	33%
Telemedicine	27%
Home	3%
Other (ER, schools, hospitals)	3%

How does this compare to previous years?

More information on how these data compare to data from 2018 through 2021 can be found on page 89 of the Appendix.

Employment Rates and Unemployment Claims

(Source: Vermont Department of Labor)

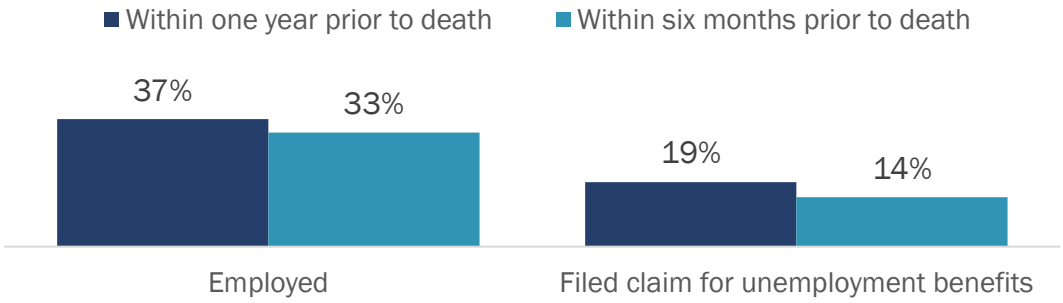
Employment Rates and Unemployment Claims

The Department of Health partnered with the Vermont Department of Labor (VDOL) to assess rates of employment, unemployment claims, industry of employment, and wages earned among Vermonters who died of an overdose in 2021. The following caveats should be taken into consideration when interpreting the data below:

- The data only include jobs in Vermont that are covered by unemployment insurance. For example, most self-employed and agriculture jobs are excluded from the data, among others.
- The data are heavily influenced by the COVID-19 pandemic, and specifically March of 2020, when unemployment rates and claims for unemployment benefits were significantly higher than the periods before or after.
- Of the 231 Vermonters who died of an overdose in 2021, 200 (87%) had valid Social Security numbers associated with their death certificate. Therefore, while some percentages are reported using a denominator of 231, the missing data should be noted.

In 2021, 85 of the 231 (37%) Vermonters who died of an overdose were employed in Vermont in the year before they died, while 76 (33%) were employed in the six months before they died. Additionally, 43 people (19%) filed a claim to receive unemployment benefits in the year before they died, while 33 (14%) filed a claim in the six months before they died.

Over one-third of Vermonters who died of an overdose in 2021 were employed in the year prior to their death.



Industry of Employment and Wages in 2020

Industry data from the Vermont Department of Labor differ slightly from what is reported in the Vital Statistics section of this report. This is because, in addition to the caveats described above, the VDOL data describe the person's work industry in 2020, whereas the death certificate captures the person's primary industry over the course of their life. Additionally, VDOL data are obtained from verified employment records, while death certificate data are typically collected from interviews with family and friends.

Similar to the data in the Vital Statistics section of this report, Vermonters who died of an overdose in 2021 and were employed in 2020 were statistically more likely to work in

construction than Vermonters overall (13% vs 6%). Those who died of an overdose were statistically more likely to work in the professional and business services (24% vs 10%) and less likely to work in all remaining industries (21% vs 50%). Of note, though the data are not shown in this report, only 8% of those who died had "professional and business services" listed as their industry on their death certificate. The professional and business services industry category includes a wide variety of industries, including accounting, bookkeeping, and payroll services, management of companies, and waste collection.

Industry of Primary Wages in 2020 Among Vermonters who Died of an Overdose in 2021 who Were Employed Compared to Vermonters Overall

	Vermonters Overall		Vermonters who Died of an Overdose	
Industry*	Number	Percent	Number	Percent
Natural Resources and Mining	5,671	2%	0	0%
Construction*	20,260	6%	11	13%
Trade, Transportation, and Utilities	66,917	19%	23	27%
Information	4,648	1%	0	0%
Professional and Business Services*	35,443	10%	20	24%
Leisure and Hospitality	45,663	13%	13	15%
Unknown	703	0%	0	0%
All Remaining Industries*,**	177,566	50%	18	21%

*Indicates a statistically significant difference.
**Combined due to confidentiality standards. This category includes Manufacturing, Financial Activities, Education and Health Services, Other Services, and Public Administration.

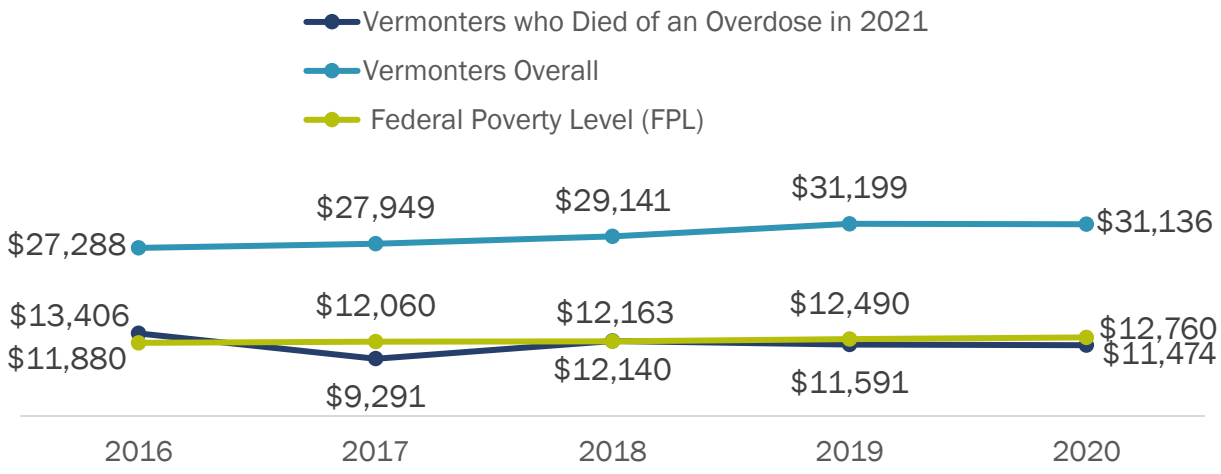
Of the Vermonters who died of an overdose in 2021 and were employed in the years prior to their death, most earned annual wages below the Federal Poverty Level (FPL) for a single income. At least half of the Vermonters who died of an overdose in 2021 and were employed earned below the FPL in 2017, 2019 and 2020 (and nearly 2018). Of note, the VDOL information below are specific to the person who died and do not take into account other household income. Therefore, comparisons to FPL guidelines may be imprecise due to unaccounted additional household income and increased FPL based on the number of people in the person's household.

Annual Wages of Vermonters Employed Between 2016 and 2020

	Vermonters who Died of an Overdose in 2021		Vermonters Overall		
Year	Number of People	Median	Number of People	Median	Federal Poverty Level (FPL)
2020	85	$11,474	356,871	$31,136	$12,760
2019	92	$11,591	361,813	$31,199	$12,490
2018	83	$12,163	370,460	$29,141	$12,140
2017	95	$9,291	369,142	$27,949	$12,060
2016	83	$13,406	367,563	$27,288	$11,880

Vermonters who died of an overdose in 2021 also had a much lower median income than Vermonters overall – in 2017, 2019, and 2020, the median income of Vermonters was nearly three times that of Vermonters who died of an overdose in 2021.

The median income of Vermonters who died of an overdose in 2021 who were employed was closer to the federal poverty level than the median income of Vermonters overall.



How do employment and unemployment benefits compare to Vermonters overall?

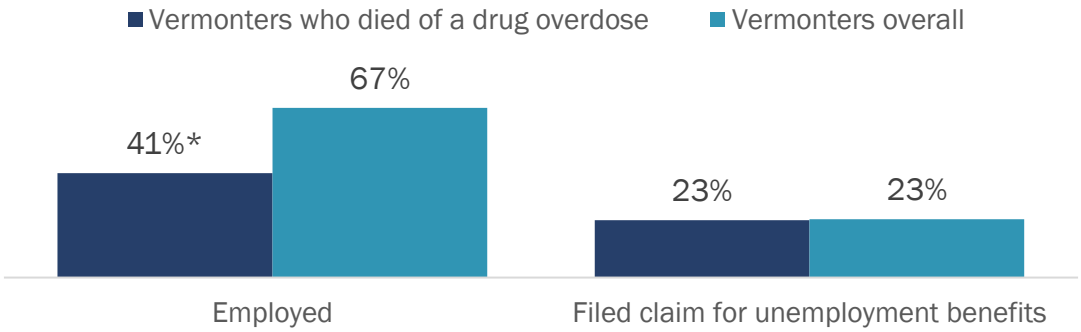
To compare rates of employment and unemployment claims among Vermonters who died of an overdose in 2021 to Vermonters overall, VDOL analyzed records from 2020 to ensure a full year of employment was represented. Statistically fewer Vermonters who died of an overdose in 2021 were employed in 2020 compared to Vermonters overall (41% vs 67%), while a similar percentage of both populations filed claims for unemployment benefits in 2020. Of note, unemployment rates and unemployment insurance claims both increased as a result of the COVID-19 pandemic in March 2020. [21,22] Low employment rates among Vermonters who died of an overdose and Vermonters overall are likely a result of the

[21] https://fred.stlouisfed.org/series/ICSA

[22] https://www.bls.gov/opub/mlr/2021/article/unemployment-rises-in-2020-as-the-country-battles-the-covid-19-pandemic.htm

pandemic, while the similar rates of unemployment insurance claims among both populations could have been influenced by this as well.

Vermonters who died of an overdose in 2021 were statistically less likely to be employed but had a similar rate of unemployment insurance claims as Vermonters overall in 2020.



*Indicates a statistically significant difference.

How does this compare to previous years?

This is the first iteration of the Social Autopsy report to include data from the Vermont Department of Labor, so data are only available for 2021. These data can be found on page 90 of the Appendix.

Homelessness Services Utilization Among Vermonters who Died of Overdose

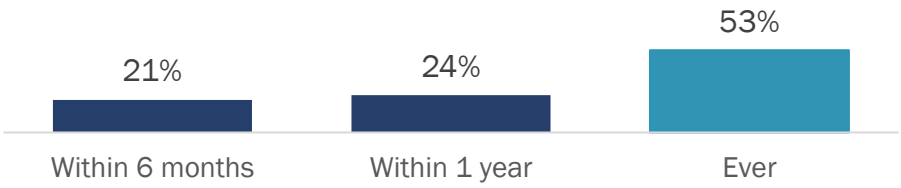
(Source: Institute for Community Alliances)

Homelessness Services Utilization Among Vermonters who Died of an Overdose

The Department of Health partnered with the Institute for Community Alliances (ICA) to assess rates of homelessness services utilization among Vermonters who died of an overdose in 2021. **Homelessness services are defined as programs that serve people who are unhoused or at risk of being unhoused**. ICA provides technical support and guidance for Vermont's continua of care (CoCs), which provide direct services (referred to as contacts throughout this section) to Vermonters experiencing homelessness or at risk of homelessness. The data in this section come from ICA's Homelessness Management Information System (HMIS).

Of the 231 Vermonters who died of an overdose in 2021, 53% (122) had received homelessness services at any point prior to their death. Nearly a quarter (24%, 55 people) received homelessness services in the year prior to death, while 21% received these services within the six months prior to death. Of note, the 122 people matched to the HMIS database were last served an average of 1,133 days – or just over three years – prior to their data of death.

More than half of Vermonters who died of an overdose in 2021 received homelessness services at some point in their lives.



People who received homelessness services typically had multiple contacts with CoCs before they died from an overdose. Those who received homelessness services in the year prior to their date of death had 1,133 total contacts with CoCs at any point in their lives, with a median of 13 contacts per person, and they were served by homelessness services providers for a median of 1,498 days – or about four years.

Project Type

Vermonters who died of an overdose who had contact with CoC's in the year before they died received services within several project types:

Number of Vermonters who Died of an Overdose in 2021 within Project Type		
Service	Definition*	Frequency
Services Only (HUD)	Supportive Services Only (SSO) projects are a CoC program component type that allows recipients and subrecipients to provide supportive services to people experiencing homelessness and families not residing in housing operated by the subrecipient.	47
Other (HUD)	Activities or services not otherwise described in other categories.	22
Emergency Shelter (HUD)	Emergency Shelter activities are designed to increase the quantity and quality of temporary shelters provided to people experiencing homelessness, through the renovation of existing shelters or conversion of buildings to shelters, paying for the operating costs of shelters, and providing essential services.	21
PH - Rapid Re-Housing (HUD)	RRH is permanent housing solution emphasizing housing search and relocation services and short- and medium-term rental assistance to move people and families experiencing homelessness as rapidly as possible into housing.	20
Homelessness Prevention (HUD)	A component of Emergency Solutions Grant (ESG) assistance where funds are provided to people and families who meet the "at risk of homelessness" definition or who meet the criteria in paragraphs (2), (3), or (4) of the "homeless" definition in 24 CFR 576.2 and have an annual income below 30% of the median family income as determined by HUD, and lack the resources to obtain permanent housing. See 24 CFR 576.103 of the ESG Interim Regulations.	8

Data Source: https://www.hudexchange.info/

How does homelessness services utilization compare to Vermonters overall?

In 2021, 33,545 Vermonters – about 5% – received homelessness services. This was statistically lower than the 24% of people who died of an overdose that were received homelessness services in the year before they died. Additionally, Vermonters who received homelessness services in 2021 had lower median numbers of contacts with CoC's (3 vs 13) and days served by homelessness services providers (519 vs 1,498) compared to people who died of an overdose.

Vermonters who died of an overdose did not differ from Vermonters overall based on project type – the three most common project types among both groups were Services Only, Other, and Emergency Shelter.

How does this compare to previous years?

This is the first iteration of the Social Autopsy report to include data from the Institute for Community Alliances, so data are only available for 2021. These data can be found on page 91 of the Appendix.

Overall Interactions

Overall Interactions with State Agencies or Datasets Prior to Death

Five Department of Health datasets and data from seven other State of Vermont agencies were included in this project. Data from Vital Statistics, State Unintentional Drug Overdose Reporting System (SUDORS), Statewide Incident Reporting Network (SIREN), Vermont Prescription Monitoring System (VPMS), and Impaired Driver Rehabilitation Program (IDRP) are managed by the Department of Health. Data from the departments of Public Safety, Corrections, Vermont Health Access, Mental Health, and the Department for Children and Families were included as datasets external to the Health Department, as well as two additional datasets that were newly added to the 2021 report: the Vermont Department of Labor and the Institute for Community Alliances.

In addition to the analyses presented throughout this report related to each individual agency or dataset, interactions across agencies and datasets were also analyzed. This section excludes data from Vital Statistics and SUDORS because all 231 people who died of an overdose in 2021 are in each of these datasets, and the information included in these datasets is collected after death. Except for the table below, data from the Vermont Department of Labor (VDOL) and the Institute for Community Alliances (ICA) are also excluded from this analysis due to data sharing restrictions.

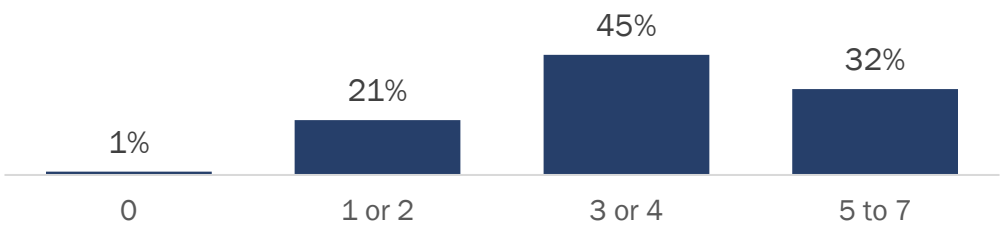
Vermonters who died of an overdose in 2021 were most likely to interact with the Department of Public Safety (84%) and the Vermont Prescription Monitoring System (78%).

Overall, people who died of an overdose in 2021 were most likely to interact with the Department of Public Safety (84%) and the Vermont Prescription Monitoring System (78%). The datasets referenced in this report varied in the years that were available for analysis. This likely impacted the number of involvements that were found among those in this study.

Interactions with Individual Agencies/Datasets Among Vermonters Who Died of Overdose in 2021			
	Agency/Dataset	**Description**	**Percent**
	Public Safety	Interacted with Vermont State Police between 1988 and date of death.	84%
	VPMS	Had at least one prescription for a controlled substance in the 6 years prior to death.	78%
	Vermont Health Access	Were enrolled in Medicaid in year prior to death.	71%
	SIREN	Interacted with EMS between 2015 and date of death.	69%
	Children and Families	Interacted with DCF-FSD between 1982 and date of death.	59%
	IDRP	Had an impaired driving offense between 2000 and date of death.	24%
	ICA	Received homelessness services in year prior to death.	24%
	VDOL	Filed a claim for unemployment benefits in year prior to death.	19%
	Mental Health	Interacted with a Vermont Designated Agency or Specialized Service Agency in year prior to death.	13%
	Corrections	Were incarcerated within one year of their death.	9%

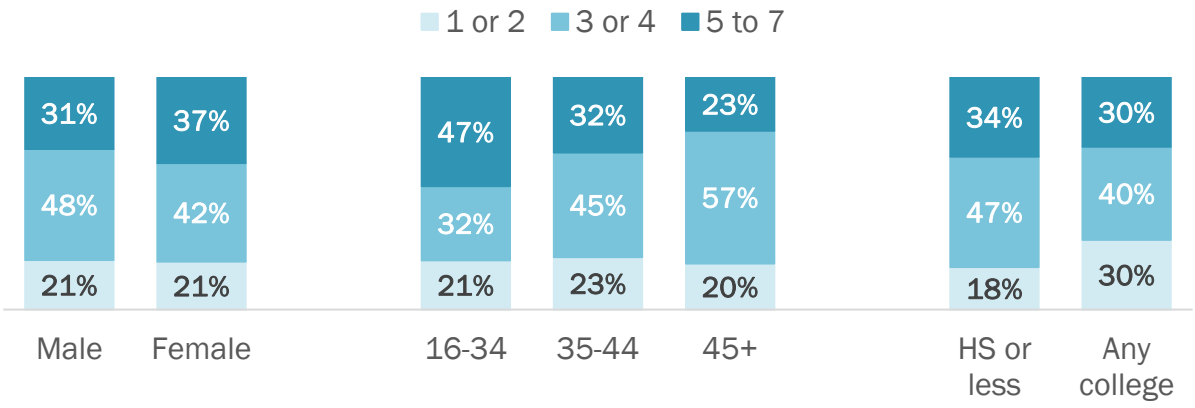
Nearly all of the 231 people who died of an overdose in 2021 interacted with at least one agency or dataset in the years before they died (99%). Because most people had interacted with either VPMS or DPS individually, this was expected. However, most people interacted with three or more agencies or datasets in the years before they died (77%).

Most Vermonters who died of an overdose in 2021 interacted with three or more agencies or datasets.



Of the people who died of an overdose in 2021 and interacted with at least one agency prior to their death, the demographic groups who interacted with the greatest number of agencies or datasets were women, people between the ages of 16 and 34, and people who had a high school education or less. Of note, the number of agencies or datasets people interacted with differed significantly by age but was statistically similar by sex and education.

Women, people between the ages of 16 and 34, and people with a high school education or less interacted with the most agencies or datasets.



How does this compare to previous years?

More information on how these data compare to data from 2017 through 2021 can be found on page 92 of the Appendix.

Discussion

Discussion and Implications

This fourth iteration of the Vermont Social Autopsy Report analyzed the interactions that people who died of an overdose in 2021 had with various State of Vermont and partner programs prior to death. Of the 231 people who died of an overdose in 2021, 99% interacted with one and most (77%) interacted with at least three Vermont state programs and data sets. Key findings are highlighted in the Executive Summary. Trend data for all sections of the report are in the Appendix.

The broad range of data collected for this report provide a picture of the risk factors that can lead to eventual overdose as well as potential outreach points for screening, intervention, education, or referral. The inclusion of labor and housing data in this year's report further describe life stories that have instability and vulnerability woven throughout. Substance use disorder and overdose risk can affect anyone, but this report shows a wide range of health risks and quality of life factors can exacerbate risk.

Half of the 92 people born after 1981 were involved with the Family Services Division of DCF as children. This is higher than the proportion in any previous year and underscores the impact of generational trauma. Generational social determinants of health should be considered when considering outreach and potential overdose risk. Additional outreach opportunities to families where the parent has substance use disorder or other needs that require FSD intervention should be explored. This could include enhancements to Children and Recovery Mothers (CHARMs) teams, pediatric medical case coordination, Family Recovery Coaching, and other programs throughout the state that support families with substance use disorder.

People who died of an overdose had high rates of mental health conditions but low rates of interactions with services. Additionally, there were high rates of chronic conditions, including hypertension, heart disease, and diabetes. These chronic conditions are often related to food insecurity and higher rates of adverse childhood experiences (ACEs). [23,24] This again points to the importance of considering the impact of ACEs and social determinants of health on eventual drug use and overdose risk.

The higher rates of chronic conditions also represent a new avenue for provider outreach and education. Specialty providers such as pulmonologists, cardiologists, mental health clinicians, and pain clinics could be opportunities to expand provider education and screening and referral programs. Additional training on ACEs and subsequent health risks for primary care physicians who may be treating chronic conditions or substance use disorders could be beneficial.

Vermont's first responders often interact with people who die of an overdose, sometimes multiple times. This represents a prime opportunity for intervention and referral, many programs of which have already been implemented in the state through Leave Behind Kit

[23] Seligman, H. K., Laraia, B. A., & Kushel, M. B. (2010). Food insecurity is associated with chronic disease among low-income NHANES participants. The Journal of nutrition, 140(2), 304-310.

[24] Chanlongbutra, A., Singh, G. K., & Mueller, C. D. (2018). Adverse childhood experiences, health-related quality of life, and chronic disease risks in rural areas of the United States. Journal of Environmental and Public Health, 2018.

distribution, connections with Recovery Coaches, and trainings for first responders in motivational interviewing and overdose prevention. It is important to recognize that 80% of people who died of an overdose that interacted with EMS died either on scene or in the hospital after being transported. First responders are in a position to help prevent overdoses, but they are also in a position of witnessing firsthand the pain and trauma of an overdose death. It is critical to provide support for EMS and other first responders as they are likely to experience compassion fatigue, burnout, and other negative impacts from frequently witnessing such traumatic events.

Of the people who died in 2021, few had evidence of being released from a facility within a month of their death, with the smallest proportion (6%) seen in these reports to date. It should be noted that due to the increase in overdoses overall in 2021, the number of people who died after recent release from a facility is still similar to other years (14 in 2021, compared to a range of 10-17). However, the majority of those released had been from a hospital (which could include psychiatric hospitals), with the rest from a correctional facility. This was the first year of the project where there were no people who had recently left a residential SUD treatment facility.

Despite the continued increase in fentanyl in the drug supply, only 5% of people who died showed evidence of a rapid overdose, compared to 10-21% in previous years. This shift should be explored to determine whether something is changing in the drug supply or behavior or is not a true change.

People who died of an overdose were less likely to be employed, often had incomes below the federal poverty limit for a single person and worked in different fields than the Vermont population overall. These trends point to income instability. It is important to note that not everyone who died was in the Vermont Department of Labor database – this could be due to several reasons such as not having a social security number (SSN), their SSN not being known during the death investigation, having never worked in a job that provided Vermont unemployment insurance, being self-employed, working “under the table” or working in another state.

Housing instability was a pervasive problem for people who died of an overdose. More than half (53%) of the people who died in 2021 had received homelessness services over the course of their lives, with a quarter (24%) having received homelessness services in the year before their death. This was significantly higher than the 5% of the Vermont population who received homelessness services in 2021. Additionally, people who died also had more contacts with the Continua of Care than all Vermonters who received homelessness services (13 vs 3) and were served by homelessness services providers for more days (1,498 vs 519). It is evident that people who died of an overdose were likely to have long-term needs including extensive housing instability.

To have a healthy Vermont, where people flourish, and substance use disorder, suicide and chronic disease are rare, we must ensure people have access to the services that meet their needs. Integrating Vermont data systems is key to this success.

This Social Autopsy Project is an example of utilizing data integration to improve prevention, intervention, and treatment strategies. The results summarized above, and other results detailed further throughout this report, demonstrate many opportunities for engagement or quality improvement. Research shows that public health improvements are most effective when frontline workers are engaged in identifying and implementing changes. By including programs in data analysis and recommendations, the perspectives of public health workers who interact directly with those at highest risk of overdose can be used to recommend systemic changes. Additional engagement at the department or program level with relevant frontline workers and stakeholders is recommended to further refine interventions and opportunities for engagement with people who are at risk of overdose. This includes giving an opportunity for frontline workers to celebrate successes and consider ways to identify and prevent compassion fatigue, vicarious trauma, and burnout among themselves and their peers.

The Recommendations section of this report includes insights from program levels through the commissioners of the state agencies along with a summary of progress made since the last report was released.

For more information: Rachel Newton, Overdose Data to Action (OD2A) program manager, AHS.VDHod2a@vermont.gov

Appendix

Vital Statistics

Death Certificate Information (Vital Statistics)

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Education					
High school or less	70%	79%	71%	70%	78%
Any college	30%	21%	29%	30%	22%
Sex					
Male	72%	60%	66%	69%	68%
Female	28%	40%	34%	31%	32%
Age					
<18	0%	0%	0%	1%	0%
18 to 24	10%	4%	6%	4%	7%
25 to 34	31%	32%	27%	26%	22%
35 to 44	25%	26%	31%	23%	32%
45 to 54	19%	24%	21%	29%	23%
55+	15%	13%	14%	17%	17%
Marital status					
Never married	55%	58%	65%	59%	60%
Divorced/separated	29%	23%	21%	27%	26%
Married	14%	19%	12%	13%	13%
Widowed	3%	0%	3%	2%	2%
Race/ethnicity					
BIPOC	5%	6%	11%	3%	6%
White, non-Hispanic	95%	94%	89%	97%	94%

Measure	2017	2018	2019	2020	2021
Drug involvement					
Fentanyl	61%	63%	74%	74%	83%
Heroin	36%	47%	29%	23%	10%
Prescription opioids (excluding fentanyl)	30%	24%	26%	22%	20%
Cocaine	34%	37%	44%	39%	45%
Alcohol	16%	19%	15%	9%	16%
Fentanyl and heroin	27%	40%	27%	22%	10%
Fentanyl and cocaine	22%	29%	35%	29%	41%
Cocaine and heroin	13%	18%	12%	7%	4%
Fentanyl and prescription opioids	10%	10%	15%	13%	15%
Cocaine, heroin, and fentanyl	9%	16%	12%	6%	4%
Occupation					
Management, business, science, arts	11%	13%	16%	15%	13%
Service	23%	25%	20%	23%	19%
Sales and office	12%	9%	8%	8%	10%
Natural resources, construction, and maintenance	24%	22%	25%	23%	26%
Production, transportation, and material moving	17%	13%	8%	11%	12%
Industry (top 3)					
1	Construction (18%)	Construction (18%)	Construction (23%)	Construction (22%)	Construction (23%)
2	Accommodation/Food Services (14%)	Accommodation/Food Services (17%)	Accommodation/Food Services (12%)	Accommodation/Food Services (13%)	Accommodation/Food Services (12%)

Measure	2017	2018	2019	2020	2021
3	Retail (9%)	Manufacturing (11%)	Health Care and Social Assistance (8%)	Health Care and Social Assistance (9%)	Manufacturing (9%)
Place of injury					
Home	79%	81%	86%	69%	72%
Motel	2%	2%	4%	9%	13%
Parking lot/car	3%	2%	2%	5%	0%
Work	2%	2%	2%	1%	0%
Other/unknown	15%	14%	7%	16%	14%
Place of death					
Home	62%	74%	68%	60%	61%
Emergency room	7%	5%	8%	4%	5%
Inpatient	7%	5%	4%	5%	2%
Hospital intensive care unit	7%	0%	1%	5%	2%
Nursing home	0%	1%	0%	0%	0%
Other	16%	16%	19%	26%	31%

State Unintentional Drug Overdose Reporting System

State Unintentional Drug Overdose Reporting System (SUDORS)

Measure	2017	2018	2019	2020	2021
Substance use history					
Substance use disorder	95%	90%	95%	92%	93%
Alcohol use disorder	27%	35%	30%	32%	36%
Educational attainment					
High school diploma/GED or less	70%	73%	71%	70%	77%
Social isolation					
Last heard from two or more days before their death	20%	15%	17%	13%	16%
Unemployed	20%	28%	25%	22%	24%
Without housing	6%	5%	10%	8%	8%
Mental Health	42%	44%	44%	52%	45%
Depression	29%	32%	31%	28%	26%
Anxiety	17%	18%	15%	27%	24%
Two or more mental health diagnoses	18%	21%	20%	26%	27%
Three or more mental health diagnoses	9%	8%	11%	9%	12%
Suicidal thoughts or behavior					
Thoughts of suicide	15%	12%	10%	9%	9%
Past suicide attempt	8%	5%	9%	6%	5%

Measure	2017	2018	2019	2020	2021
Chronic disease					
Hypertension	19%	14%	24%	24%	24%
Heart disease	6%	5%	17%	20%	24%
Diabetes	8%	5%	11%	10%	11%
Asthma	6%	7%	10%	11%	7%
Chronic obstructive pulmonary disease	3%	5%	15%	16%	11%
Back Pain	9%	4%	9%	7%	4%
Other Chronic Pain	7%	5%	17%	13%	16%
Hepatitis C	4%	5%	11%	10%	9%
Body mass index weight category					
Underweight	4%	4%	4%	5%	2%
Healthy weight	30%	27%	31%	42%	36%
Overweight	28%	28%	31%	25%	32%
Obese	38%	41%	34%	28%	30%
Type of Overdose					
Related to substance use/misuse	92%	90%	96%	93%	95%
Related to overmedication from prescribed medications	5%	2%	2%	3%	0%
Unintentionally took a drug or the wrong dose	0%	0%	0%	1%	0%
Other	0%	0%	0%	1%	0%
Insufficient information on type of overdose	4%	8%	2%	2%	5%
History of opioid use recurrence	20%	28%	17%	21%	18%

Measure	2017	2018	2019	2020	2021
Of those with a history of recurrence, the recurrence occurred…					
Within 2 weeks of death	32%	27%	26%	40%	24%
Between 2 weeks and 3 months of death	23%	14%	0%	6%	2%
Timing unclear	45%	59%	74%	54%	73%
Recent release from institution	12%	13%	9%	9%	6%
Of those with recent release, the facility was a…					
Jail, prison, or detention facility	50%	59%	30%	20%	36%
Hospital (including psychiatric hospital)	21%	24%	50%	53%	64%
Residential facility	29%	18%	20%	27%	0%
Of those who experienced a recurrence in use, % who were recently released from an institution	41%	30%	16%	20%	20%
History of overdose	28%	17%	20%	17%	16%
Of those who had previously experienced an overdose, the overdose occurred…					
Within the last month	23%	18%	9%	10%	40%
Between 1 month and 1 year before death	44%	32%	41%	24%	11%
More than 1 year before death	20%	18%	32%	21%	17%
Route of drug administration					
Injection	45%	51%	51%	41%	37%
Ingestion	39%	22%	22%	11%	17%
Snorting	22%	21%	24%	17%	20%

Measure	2017	2018	2019	2020	2021
Smoking	10%	15%	15%	19%	29%
No reported route of use	8%	6%	11%	13%	13%
Substance use was not witnessed*	80%	92%	82%	89%	61%
And a bystander was not present at the time of the overdose	47%	46%	42%	52%	41%
Evidence of rapid overdose	21%	11%	12%	10%	5%

*2017 and 2018 values will vary slightly due to a methodology change in data analysis that was implemented in the 2019/2020 report.

Statewide Incident Reporting Network

Interactions with Emergency Medical Services (SIREN)

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
In SIREN database since 2015	91	111	97	149	214
Declared dead by EMS	72	93	77	116	172
Had EMS interaction prior to death (denominator for below)	56	76	68	108	159
Interaction types					
Substance use	48%	50%	51%	61%	58%
Mental health	20%	26%	28%	36%	28%
Motor vehicle accident	18%	13%	10%	21%	18%
Other	59%	63%	65%	63%	74%
Number of interactions					
1	50%	45%	49%	31%	32%
2 to 4	30%	38%	34%	43%	43%
5 or more	20%	17%	18%	27%	25%
Median	1.5	2	2	3	2
Timing of interactions prior to death					
One month prior	14%	13%	15%	19%	14%
One year prior	50%	54%	53%	64%	53%
More than one year prior	75%	79%	75%	78%	81%

Vermont Prescription Monitoring System

Controlled Substance Prescription History (VPMS)

Measure*	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Prescriptions contributing to death	17	19	12	16	20
Prescriptions active at death	11	9	7	7	16
Prescriptions listed as cause of death	6	10	5	9	4
Additional cases with active prescriptions up to 6 years before death	4	9	4	10	16
Percent of population with at least one prescription in class, one year prior to death					
At least one opioid prescription in year before death	25%	27%	24%	26%	16%
At least one benzodiazepine prescription in year before death	22%	27%	21%	24%	20%
At least one MOUD prescription in year before death	12%	14%	20%	22%	25%
At least one stimulant prescription in year before death	9%	11%	13%	13%	12%
Prescriptions by MME category in year before death					
<50 MME	50%	69%	45%	41%	69%
50-90 MME	22%	19%	36%	14%	11%
>90 MME	27%	12%	19%	45%	21%
Total MME per 100 individuals	352,294	187,078	393,782	641,887	261,808
Average MME	81	53	73	191	61

Measure*	2017	2018	2019	2020	2021
Percent of population with high-risk prescriptions					
MOUD prescription	13%	14%	20%	22%	25%
>90 MME	7%	5%	5%	5%	4%
Overlapping opioid prescriptions	15%	10%	15%	12%	6%
Overlapping opioid-benzodiazepine prescriptions	13%	10%	6%	10%	4%
Active prescription					
At time of death	20%	24%	27%	28%	26%
Within 30 days of death	30%	27%	37%	37%	37%
Within 1 year of death	57%	56%	53%	61%	54%
Within 1 to 6 years of death	84%	83%	79%	85%	78%
Active MOUD prescription					
At time of death	5%	5%	7%	5%	7%
Within 30 days of death	5%	6%	10%	8%	16%
Within 1 year of death	13%	14%	20%	22%	25%
Within 1 to 6 years of death	22%	28%	31%	33%	31%
Active high-dose analgesic prescription					
At time of death	3%	2%	2%	2%	2%
Within 30 days of death	3%	2%	3%	4%	2%
Within 1 year of death	7%	5%	5%	5%	4%
Within 1 to 6 years of death	21%	28%	20%	13%	9%
Active overlapping opioid prescriptions					
At time of death	5%	2%	0%	2%	0%
Within 30 days of death	6%	2%	4%	5%	1%

Measure*	2017	2018	2019	2020	2021
Within 1 year of death	15%	10%	15%	12%	6%
Within 1 to 6 years of death	31%	41%	27%	33%	17%
Active overlapping opioid-benzodiazepine prescriptions					
At time of death	6%	2%	2%	2%	2%
Within 30 days of death	6%	2%	3%	6%	3%
Within 1 year of death	13%	10%	6%	10%	4%
Within 1 to 6 years of death	23%	27%	16%	25%	11%
Percent of prescription type active at time of death					
Analgesics	25%	20%	29%	21%	11%
Benzodiazepines	33%	38%	31%	29%	26%
MOUD	20%	16%	22%	14%	28%
Stimulants	18%	21%	12%	26%	26%
Other	3%	5%	6%	11%	9%
Percent of prescription type active within 30 days of death					
Analgesics	25%	14%	25%	27%	8%
Benzodiazepines	26%	35%	22%	24%	24%
MOUD	27%	30%	38%	26%	43%
Stimulants	16%	16%	12%	18%	18%
Other	5%	5%	4%	6%	7%
Percent of prescriptions in each drug class, within 1 year of death					
Analgesics	34%	21%	24%	27%	8%
Benzodiazepines	18%	26%	18%	22%	23%
MOUD	28%	36%	43%	31%	48%
Stimulants	15%	11%	11%	14%	15%
Other	4%	6%	4%	5%	7%

Measure*	2017	2018	2019	2020	2021
Percent of prescription type active within 1 to 6 years of death					
Analgesics	43%	31%	33%	38%	17%
Benzodiazepines	19%	23%	17%	21%	22%
MOUD	21%	26%	33%	24%	38%
Stimulants	12%	14%	9%	11%	15%
Other	5%	7%	8%	6%	8%

*Of the 172 people who died of an overdose in 2020, a small number (fewer than 6) were dispensed extremely high-MME prescriptions. These prescriptions make it appear as though 2020 has increased dramatically relative to previous years, however, because of these outliers, any results from 2020 involving MME should be interpreted with caution.

Department of Vermont Health Access

Medicaid Enrollment and Utilization (DVHA)

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Medicaid enrolled within 90 days	64%	70%	61%	64%	68%
Overdose within one year prior to death	13%	10%	15%	16%	18%
Overdose within 90 days prior to death	10%	5%	7%	12%	11%
SUD diagnosis within year prior to death	47%	71%	67%	65%	72%
SUD diagnosis 90 days prior to death	40%	50%	40%	47%	58%
Treatment within year prior to death	45%	58%	45%	41%	49%
Treatment within 90 days prior to death	35%	31%	24%	20%	34%

Department for Children and Families

Interactions with Family Services and Economic Services (DCF)

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Economic Services Division (ESD)					
Receiving 3SVT	34%	46%	47%	49%	47%
Fuel benefits	6%	15%	12%	11%	6%
Reach Up	4%	5%	5%	3%	4%
Burial costs paid by DCF	33%	35%	39%	45%	41%
Family Services Division (FSD)					
Vermont overdose deaths of individuals in the FSD data system	48	52	47	67	92
Involved with the FSD as a parent	23%	35%	36%	25%	28%
Involved with FSD as a child	13%	8%	32%	31%	49%

Department of Public Safety

Interactions with Vermont State Police (DPS)

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Interacted with DPS (denominator for below)	89	106	96	146	195
Total interactions*	790	3,841	854	1,543	2,212
Mean number of interactions**	9	9	9	11	11.3
Interaction types (top 3)					
1	Non-Criminal (357)	Non-Criminal (1,660)	Non-Criminal (295)	Non-Criminal (507)	Non-criminal (590)
2	Theft (145)	Theft (463)	Theft (107)	Theft (204)	Theft (308)
3	DLS/DUI (75)	DLS (174)	Suspicious (92)	Suspicious (175)	Suspicious (249)
Mean number of interactions by case type**					
Non-criminal	4.6	5	3.9	4.6	4.2
Theft	3.8	4	2.3	2.8	3.2
Suspicious	1.6	3	2.1	2.3	2.2
Family issue	2.1	2	1.9	1.8	2.1
Suicide***		1	1.8	1.6	1.3
DLS	2.5	2	1.7	1.8	2.3
Fire/arson		1	1.7	1	1.4
Assault	1	2	1.6	1.6	1.9
Domestic violence	1.9	1	1.6	1.8	1.4

Measure	2017	2018	2019	2020	2021
Drugs/alcohol		2	1.5	1.7	1.5
Vandalism/trespassing		3	1.5	1.6	1.5
Sex offense		1	1.5	1.5	1.7
DUI	1.4	1	1.3	1.4	1.5
Disorderly conduct/mischief		3	1.2	1.4	1.3
Wanted/warrant		4	1.2	1.7	2
Death investigation	1	1	1.1	1	1
Non-fatal OD	1.2	1	1.1	1.6	1.3
Parental custody dispute		1	1	1.9	1
Juvenile problem		1	1	1.5	1.6
Missing person		1	1	1.1	1.5

*Due to differences in methodology in 2018 compared to other years, the total number of interactions is inflated. Additionally, the total number of interactions varies based on the number of people who died of an overdose in a given year. For a more reliable representation of year-to-year differences, please refer to the "Mean Number of Interactions" row.
**Blank categories had a mean of zero interactions or were not added until 2018. 2018 data are presented as the median number of interactions.
***Interactions in this category may not have included suicidal ideation in 2018. Most of these cases in 2019-2021 involved suicidal ideation compared to suicide attempts.

Department of Corrections

Interactions with Department of Corrections (DOC)

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Incarcerated in year prior to death (denominator for below)	19	25	11	22	21
Median length of stay (in days)	10	19	101	10	52
Screened for substance use disorder	95%	80%	100%	91%	71%
Received MOUD while incarcerated*	5%	4%	64%	59%	62%
Months between release from incarceration and death					
3 or fewer months	58%	48%	55%	55%	43%
4+ months	42%	52%	45%	45%	57%

*Act 176 went into effect on July 1, 2018, allowing DOC to induct people who are incarcerated on buprenorphine (MOUD) when it was medically necessary and the person elected to begin treatment. This is likely the cause of the increase after 2018.

Impaired Driver Rehabilitation Program

Impaired Driving Offenses (IDRP)

Measure	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	131	113	172	231
Offense in IDRP database (denominator for below)	30	31	48	55
Offense types				
First or juvenile offense	80%	55%	65%	65%
Second offense	20%	45%	35%	35%
Completed assessment after offense	87%	97%	94%	89%
Attended IDRP class	100%	94%	100%	96%
Completed IDRP class (percent of people who attended)	89%	100%	98%	98%

Department of Mental Health

Interactions with Department of Mental Health (DMH)

Measure	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	131	113	172	231
Interacted with a DA or SSA	28	50	28	30
Frequency of services among people who interacted with DA or SSA				
1	21%	16%	14%	33%
2 to 9	46%	36%	43%	30%
10+	32%	48%	43%	37%
Total number of services provided (denominator for below)	709	2,349	588	379
Types of services provided				
Community supports	53%	38%	52%	60%
Service planning and coordination	25%	39%	14%	17%
Individual or group therapy	11%	11%	12%	5%
Emergency/crisis assessment*	0%	4%	13%	8%
Other	12%	8%	9%	11%
Location of services provided				
Office	65%	58%	57%	33%
Community	16%	36%	4%	34%
Home	15%	5%	28%	3%
Telemedicine**			7%	27%
Other (ER, schools, hospitals)	4%	1%	5%	3%

*Emergency/Crisis Assessment is a new service category as of 2019.
**Telemedicine is a new service location as of 2020.

Department of Labor

Interactions with Vermont Department of Labor (VDOL)

Measure	2021
Vermonters who died of an overdose in Vermont	231
Employed in year prior to death	37%
Employed in six months prior to death	33%
Filed a claim for unemployment benefits in year prior to death	19%
Filed a claim for unemployment benefits in six months prior to death	14%
Number employed in year prior to death (denominator/population for below)	85
Industry of primary wages in 2020	
Natural Resources and Mining	0%
Construction*	13%
Trade, Transportation, and Utilities	27%
Information	0%
Professional and Business Services*	24%
Leisure and Hospitality	15%
Unknown	0%
Other*	21%
Median income in 2020	$11,474
*Combined due to confidentiality standards. This category includes Manufacturing, Financial Activities, Education and Health Services, Other Services, and Public Administration.	

Institute for Community Alliances

Interactions with Continua of Care (CoC)

Measure	2021
Vermonters who died of an overdose in Vermont	231
Utilization of homelessness services at any point prior to death	53%
Utilization of homelessness services in year prior to death	24%
Utilization of homelessness services in six months prior to death	21%
Among Vermonters who died of an overdose who received homelessness services in year prior to death…	
Total number of contacts with CoC's	1,133
Median number of contacts with CoC's	13
Median number of days served by homelessness services providers	1,498
Number within each project type:	
Services only	47
Other	22
Emergency shelter	21
Rapid re-housing	20
Homelessness prevention	8

Overall Interactions

Overall Interactions with State Agencies/Datasets

Measure	2017	2018	2019	2020	2021
Vermonters who died of an overdose in Vermont	109	131	113	172	231
Number of state agencies or datasets interacted with before death					
0	2%	2%	3%	1%	1%
1 or 2	31%	18%	17%	13%	21%
3 or 4	36%	33%	35%	40%	45%
5 to 8*	31%	47%	46%	47%	32%
Demographics by number of agencies interacted with*					
1 or 2 agencies					
Sex					
Male	32%	23%	17%	15%	21%
Female	30%	12%	18%	7%	21%
Age					
16-34	30%	20%	32%	15%	21%
35-44	27%	18%	9%	8%	23%
45+	37%	17%	10%	14%	20%
Education					
HS or less	31%	18%	14%	9%	18%
Any college	31%	22%	26%	20%	30%
3 or 4 agencies					
Sex					
Male	40%	31%	38%	42%	48%
Female	27%	37%	32%	37%	42%

Measure	2017	2018	2019	2020	2021
Age					
16-34	42%	36%	32%	42%	32%
35-44	31%	24%	31%	42%	45%
45+	34%	37%	41%	38%	57%
Education					
HS or less	32%	34%	35%	44%	47%
Any college	47%	30%	39%	35%	40%
5 to 8 agencies**					
Sex					
Male	27%	45%	46%	43%	31%
Female	43%	52%	50%	56%	37%
Age					
16-34	28%	43%	35%	42%	47%
35-44	42%	58%	59%	50%	32%
45+	29%	46%	49%	48%	23%
Education					
HS or less	36%	48%	51%	47%	34%
Any college	22%	48%	35%	45%	30%

*Too few people are included in the “0 Agencies” category to provide meaningful demographic comparisons.
**The 2017 Social Autopsy included a maximum of 6 agencies people could have interacted with prior to death. All subsequent years of data include a maximum of 8 agencies. As a result, differences between 2017 and 2018-2021 should be interpreted with caution.