2021 Annual VPMS Report

VERMONT

DEPARTMENT OF HEALTH

Contents

Introduction

In 2006, the Vermont Legislature authorized the Vermont Department of Health to establish and operate a Prescription Drug Monitoring Program (PDMP). Vermont's PDMP, known as the Vermont Prescription Monitoring System (VPMS), became operational in January of 2009. VPMS is an electronic, web-based data system that collects information on Schedule II–IV controlled substances dispensed by Vermont-licensed retail pharmacies. The intent of the program is to help health care providers improve patient care and prevent some of the problems associated with controlled substances. Authenticated system users who can prescribe or dispense controlled substances can review prescriptions received by individuals to avoid contraindicated prescription combinations or overlapping prescriptions of similar drugs. Potential misuse of prescriptions can be identified, and reviewing this information provides an opportunity to discuss substance misuse screening, referral, and treatment options.

VPMS data also serves as a health surveillance tool that is used to monitor statewide trends in the dispensing of controlled substances. This report includes prescription data for 2021 and trend information from 2017 to 2021. More detailed information, including county level trend information, is available upon request.

Executive Summary

This report covers measures related to VPMS use and functioning, programmatic initiatives, and general surveillance prescription trends in 2021. Below are highlights of the information contained in this report.

System Use and Updates

- The total number of system accounts increased by 11% from 7,618 users in 2020 to 8,444 in 2021 (Figure 1).
- The total number of patient queries increased by 4% from 2020 to 2021 (Figure 2).
- Prescribers received a total of 8,591 Prescriber Insight Reports displaying metrics on all the prescriptions dispensed under their DEA license number and detailing their prescribing trends in comparison with those of their peers.
- VPMS approved new interstate data sharing connections with Arizona, Florida, Pennsylvania, and the Military Health Services.
- 96% of the pharmacies required to report controlled substance prescription data uploaded information into the system were compliant with the requirement to upload prescriptions 24 hours or one business day.

Prescription Findings

- While opioid analgesics continue to be the most frequently dispensed prescription type in Vermont, stimulant prescriptions continue to rise, with similar numbers of these two classes of prescriptions dispensed in 2021 (Figure 7).
- 2021 was the first time that the percent of the Vermont population receiving at least one opioid analgesic prescription increased since to 2017 (Figure 3), however, the total amount of opioid analgesics dispensed, as measured by MME, continues to decline.
- The total morphine milligram equivalents (MME) of opioid analgesic pain relievers dispensed per 100 residents decreased 40% between 2017 and 2021 (Figure 14).
- More Vermonters are receiving stimulants. There was a 22% increase in the percent of the Vermont population receiving stimulants between 2017 and 2021 (Figure 3). The two categories of people with the highest rate of prescribed stimulants were males under 18 and females between 25-44 (Figure 28).
- Prescriptions for Medication for Opioid Use Disorder (MOUD), which are used to treat opioid use disorder, increased 40% between 2017 and 2021, reflecting Vermont's increased focus on treatment (Figure 3).
- The percent of days with overlapping prescriptions for opioid analgesics and benzodiazepines, a risk factor for overdose, decreased more than 18% between 2017 and 2021 (Figure 32).
- County-level dispensing of controlled substances varies. Stakeholders are encouraged to use this report, in combination with other community information, to determine if these variations are of concern (Disclaimers).

Definitions

Prescription Drug Monitoring Program

Prescription Drug Monitoring Programs (PDMPs) are databases that collect and track controlled substance prescriptions dispensed by pharmacies licensed in the state they operate. Each state operates its own PDMP, which have different access and use requirements based on their state statutes. VPMS is Vermont's PDMP.

Drug Schedules

The Drug Enforcement Agency (DEA) assigns controlled substances to different schedules according to their potential for abuse or dependence[1]. VPMS collects information on Schedule II-IV controlled substances. The scheduling is as follows:

- **Schedule I**
  Drugs with no currently accepted medical use and a high potential for abuse. These drugs are illegal at the federal level and are not included in VPMS.

[1] United States Drug Enforcement Administration Drug Scheduling. Accessed 6/1/2020. https://www.dea.gov/drug-scheduling.

Examples of Schedule I controlled substances include: heroin, lysergic acid diethylamide (LSD), cannabis (marijuana), 3,4-methylenedioxymethamphetamine (ecstasy), methaqualone, peyote, and illicitly manufactured fentanyl and fentanyl analogs.

Please note that even though Vermont legalized cannabis for medical use in 2004 and plans to open the regulated retail cannabis market in 2022, cannabis remains a federally scheduled substance and data related to this substance is not collected by VPMS.

- Schedule II
  Drugs with a high potential for abuse. Use of these drugs may lead to severe psychological or physical dependence.

  Examples of Schedule II controlled substances include oxycodone, prescribed fentanyl, amphetamine, and methylphenidate.

- Schedule III
  Drugs with a moderate to low potential for physical or psychological dependence.

  Examples of Schedule III controlled substances include products containing not more than 90 mg of codeine per dosage unit, buprenorphine, and anabolic steroids.

- Schedule IV
  Drugs with a moderate to low potential for abuse and low risk of dependence.

  Examples of Schedule IV controlled substances include clonazepam, diazepam, and alprazolam.

- Schedule V
  Drugs with lower potential for abuse than Schedule IV and consisting of preparations containing limited quantities of certain narcotics. Schedule V drugs are generally used for antidiarrheal, antitussive, and analgesic purposes. These are not included in VPMS.

  Examples of Schedule V controlled substances are: Lomotil®, Motofen®, Lyrica®, Parepectolin, and cough preparations with less than 200 milligrams of codeine per 100 milliliters such as Robitussin® AC.

Drug Type and Classes

This report assigns drugs to drug classes based on the U.S. Centers for Disease Control and Prevention's (CDC) treatment classes. The drug types included in this report are:

- **Opioid analgesics**: opioids used in the treatment of pain.

  Examples: oxycodone, hydrocodone, and 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 a MOUD opioid.

  Examples: Suboxone®, and Subutex®.

- **Benzodiazepines**: sedatives to treat anxiety, insomnia, and other conditions.

  Examples: lorazepam, clonazepam, and diazepam.

- **Stimulants**: medication to increase alertness, attention, and energy.

  Examples: methylphenidate, and amphetamine.

- **Other**: all other schedule II-IV drugs that are not in the other categories. Due to the wide variety of medications included in this group, "Other" prescription data, while present in the database, are not included in this report.

  Examples: hormones, muscle relaxants, cannabinoids, and non-hypnotic sedatives such as Ambien®, among others.

Opioid Types

Opioid prescriptions are reported in two different categories: opioid analgesics and MOUD prescriptions. Opioid analgesics are opioids prescribed for the treatment of pain. MOUD prescriptions, most frequently buprenorphine, are opioids prescribed to people for the treatment of opioid use disorder (OUD). This report includes data on only those MOUD drugs dispensed by a Vermont-licensed pharmacy. For situations in which opioid drugs or MOUD prescriptions are NOT included, please see below in Disclaimers.

Morphine Milligram Equivalents (MME)

Opioid pain medication strengths, dosages, and days of supply vary significantly across prescriptions. To better understand trends and patterns of use, Morphine Milligram Equivalents (MME) are used as a standardization measure. MME is a way to express the strength of an opioid analgesic as though each prescription were converted to morphine. Many research experts, federal agencies (e.g., Centers for Disease Control and Prevention, Bureau of Justice Administration, Substance Abuse and Mental Health Services Administration) and VPMS use MME dispensed to compare different formulations of drugs and better understand the misuse and overdose potential of opioid analgesics. MME is

expressed as total MME, which is the total MME in a prescription or combination of prescriptions, or an average daily MME which means the amount dispensed averaged over the number of days of the prescription.

Disclaimers

Data Exclusions and Qualifications

VPMS contains Schedule II-IV controlled substance prescriptions that are dispensed by Vermont-licensed pharmacies, including mail-order pharmacies dispensing to Vermonters. VPMS **does not** include prescriptions dispensed in the following situations:

- Prescriptions filled at out-of-state pharmacies that are not licensed in Vermont,
- Methadone and/or buprenorphine dispensed by specialty substance use disorder treatment providers such as Opioid Treatment Programs (OTP) which are known as "hubs" in Vermont,
- Drugs dispensed from an emergency room in an amount to treat pain for 48 hours or less,
- Drugs administered directly to a patient in a medical setting such as a hospital or nursing home,
- Prescriptions dispensed from veterinary offices, and
- Controlled substance prescriptions other than Schedule II-IV, including non-scheduled drugs (e.g., gabapentin, prednisone).

VPMS includes MOUD drugs used to treat opioid use disorder when they are prescribed at a physician's office or office-based opioid treatment (OBOT) provider, commonly referred to as a "spoke" in Vermont. These opioids are shown as "MOUD Prescriptions" in this report. MOUD drugs directly dispensed to a patient through an opioid treatment program (OTP), or "hub", are not included in VPMS due to federal regulations.

Data submitted to VPMS by pharmacies may contain errors. Each upload from a pharmacy is screened for errors and returned to the pharmacy if requires correction. However, not all errors are found or corrected.

VPMS does not contain prescriptions that are written but not filled. Patient diagnosis or information on how a prescribed medication is used is not included in VPMS.

County level information is based on the recipient's county of residence, which is determined by the recipient address information as sent to VPMS by the pharmacy that filled the prescription. Not all prescriptions in VPMS have correct address information; therefore, some prescriptions cannot be assigned to a county. Due to this, the number of prescriptions by county will not equal the total number of prescriptions statewide for a specific year.

Vermonters in counties that border other states may fill prescriptions in other states. Those prescriptions are not included in this report if the pharmacy is not licensed in Vermont. When reviewing county level variations, also consider factors such as the age distribution in the county and the likelihood that a prescription may have been filled out of state. High rates of manual labor and the associated risk of injury may impact regional prescribing patterns.

Measures that are based on the number of prescriptions should be interpreted carefully. A prescription may be for a short period of time, such as less than a week, while others may be for much longer, such as 30 days. Looking at the number of prescriptions in combination with days' supply – or using MME as a measure of opioids – provides a more complete view of prescribing.

Program Updates

In-depth Analysis and Specialized Data Briefs

Analysis of VPMS data yields general surveillance trends, but also can offer greater insight into developing trends. VPMS provides quarterly reports with the most frequently requested trends to assist with responsive oversight. These data, when used with other data sources, can highlight opportunities for intervention or increased programming. In 2021, VPMS data was used to provide a more in-depth look at substance use in Vermont during COVID-19. VPMS data was also used in the update to the Social Autopsy project. This project, which partnered with the Vermont departments of Corrections (DOC), Children and Families (DCF), Vermont Health Access (Medicaid), and Public Safety (DPS), examined the history of points of contact with state systems for people who died of an accidental or undetermined drug overdose. The goal of this project is to identify potential places for intervention. These reports and further insights help inform programs and policies to better serve Vermonters.

Prescriber Insight Reports

With increased attention on improving prescribing practices, prescribers expressed interest in comparing their own prescribing to their peers. In 2021, VPMS sent quarterly reports to VPMS-registered providers who prescribed at least one controlled substance during the previous six months. The reports contain metrics on the prescriptions in VPMS associated with the individual prescriber and compares them to other prescribers in their specialty, as well as with other similar types of prescribers within the same specialty (e.g., physicians, nurse practitioners, physician's assistants). New functionality was added to the reports to allow providers to easily access information on which prescriptions contributed to the metrics displayed. This allowed for prescribers to easily access the information regarding patients who were at risk for prescription complications. A total of 8,591 reports were sent to prescribers in 2021. The state offers technical assistance and quality improvement assistance to prescribers on how to use the reports to inform prescribing practices.

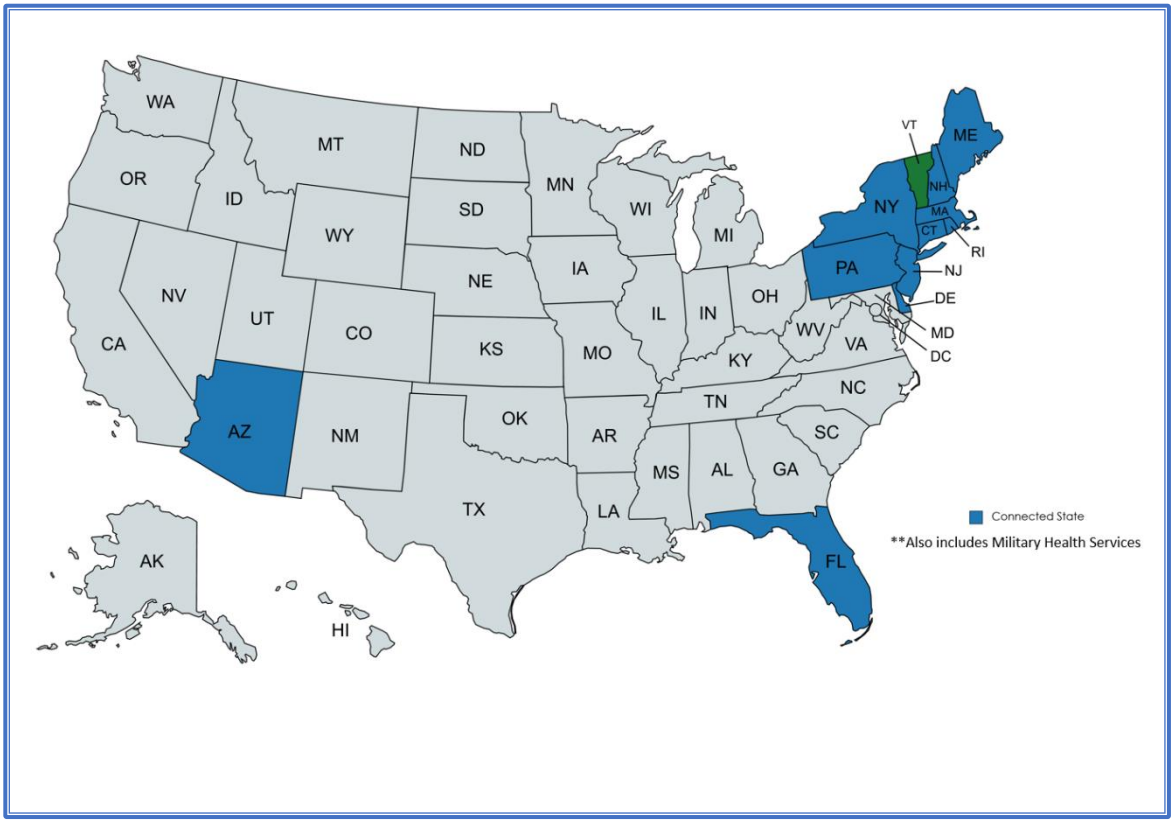
Interstate Data Sharing

Prescribers and pharmacists may only register to use PDMPs in states in which they are licensed, and prescriptions are only reported to Vermont if they are dispensed by a Vermont-licensed pharmacy. Since patients may fill their prescriptions at pharmacies in other states and receive care in other states, interstate data sharing allows Vermont providers to view patient prescriptions dispensed in other states and supplements the information that is included in VPMS.

VPMS has formal agreements with other states to ensure that only users in other states allowed by Vermont regulations are authorized to view VPMS data. Data from other states are included in a patient query when that state's data is specifically requested by the

provider. While providers can view out of state prescriptions through patient queries, prescriptions dispensed by non-Vermont licensed pharmacies do not appear in summary reports, such as this document, because these data are not "owned" by Vermont. This means prescription data may be less complete for counties that border other states. In 2021, VPMS approved sharing with Arizona, Florida, Pennsylvania, and the Military Health Services.

Map 1: Map of Interstate Data Sharing Partner States



Vermont providers queried other states' PDMPs 217,396 times in 2021. Of these, approximately 13% returned prescription information. Approved users in other states accessed VPMS data 2,836,272 times. Due to state confidentiality regulations, the number of queries returning additional information is unknown.

Pharmacy Compliance

Uploading prescription data in a timely manner ensures that information is readily accessible and relevant for providers reviewing patients. Pharmacies are required to upload prescription data within 24 hours or one business day of dispensing Schedule II-IV controlled substances.

VPMS tracks compliance with the reporting requirements. In 2021, Vermont licensed pharmacies were 96% compliant with the requirement to upload prescriptions within 24 hours or one business day.

Registration and Use

Access to VPMS is limited to provider types outlined in Vermont statute. These providers are primarily focused on patient care. All Vermont-licensed prescribers of controlled substances Schedule II-IV are required to register with VPMS. Both prescribers and pharmacists can approve delegates, such as office staff, to query the system on their behalf.

Use of VPMS

Registrations increased 11% from 7,618 users in 2020 to 8,444 in 2021. Newly licensed practitioners in Vermont were provided information about licensure requirements, including registration with VPMS.

Figure 1: Number of VPMS Patient Care User Accounts

User Type	Number of Accounts
Prescriber	4,628
Prescriber Delegate	2,936
Pharmacist	796
Pharmacist Delegate	84
Total Patient Care User Accounts	**8,444**

VPMS users queried the system 400,463 times in 2021, an increase of 4% over 2020. Prescribers or prescriber delegates accounted for nearly 76% of queries. However, while pharmacists and pharmacist delegates are only 10% of VPMS user accounts, they account for the remaining 24% of VPMS queries (Fig.2).

"Other" user types are administrative and system support staff, the Medical Director of the Department of Vermont Health Access, the Vermont Medical Examiner, and delegates from the Office of the Chief Medical Examiner. These user types only occasionally queried the system.

Figure 2: Number of VPMS Queries by User Type

User Type	Number of Queries
Prescriber	64,721
Prescriber Delegate	239,514
Pharmacist	88,846
Pharmacist Delegate	7,337
Other	45
Total Queries	**400,463**

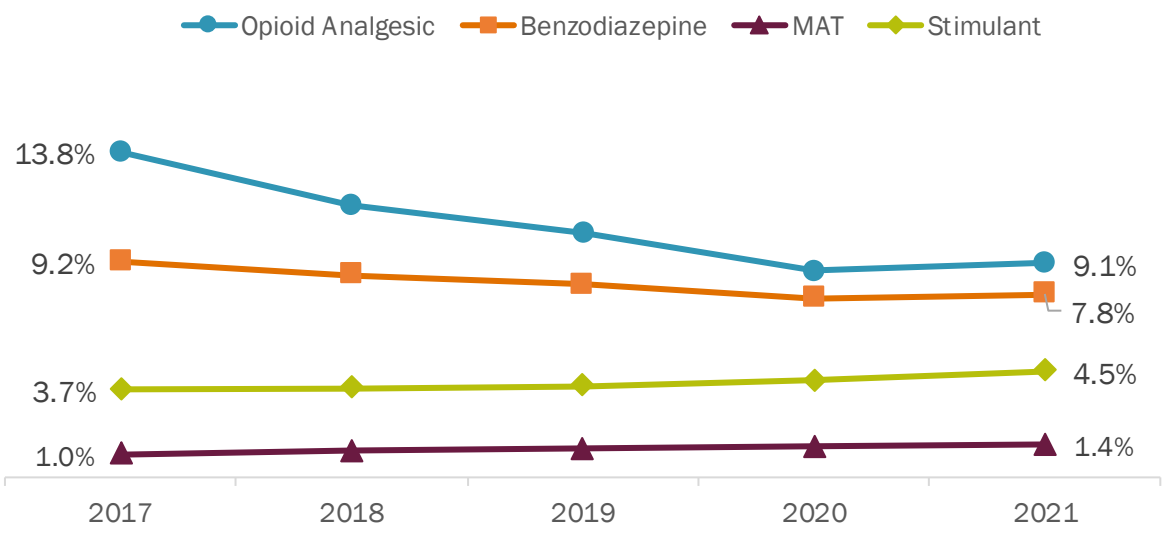
In 2021, 89% of prescriptions in VPMS were written by a prescriber who was licensed in Vermont and had a VPMS account. The remainder of prescriptions in VPMS were written by providers who did not have a VPMS account or who are licensed in another state.

Total Vermont Population Prescription Trends

Opioid analgesics remain the most dispensed controlled drug class. While the dispensation of opioids has been decreasing for over a decade, in 2021 there was a slight 0.3% increase in the population receiving opioids. In 2021, 9.1% of Vermonters received at least one opioid analgesic prescription, 7.8% of Vermonters received a benzodiazepine, 4.5% received a stimulant, and approximately 1.4% received a prescription for MOUD.

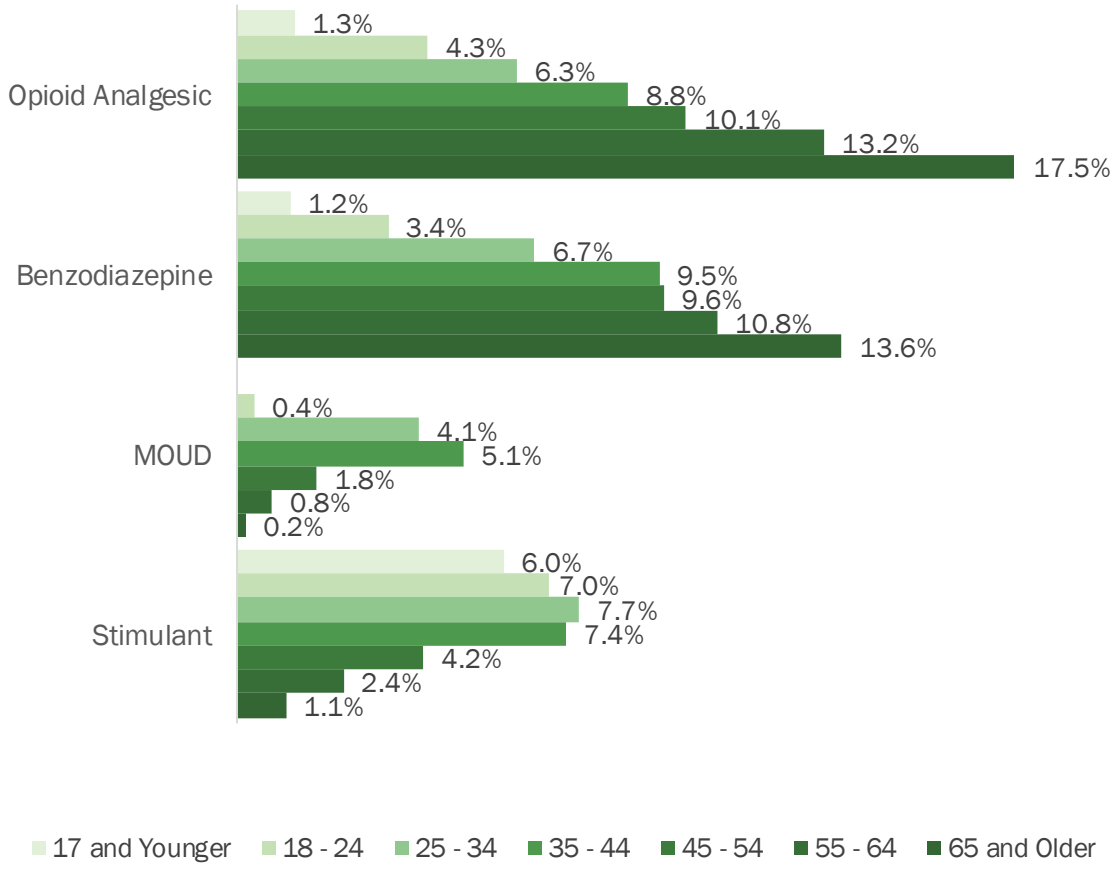
From 2017 to 2021, the percent change in population receiving at least one stimulant prescription has increased 22%.

Figure 3: Percent of Vermont Population Receiving at Least One Prescription by Drug Class



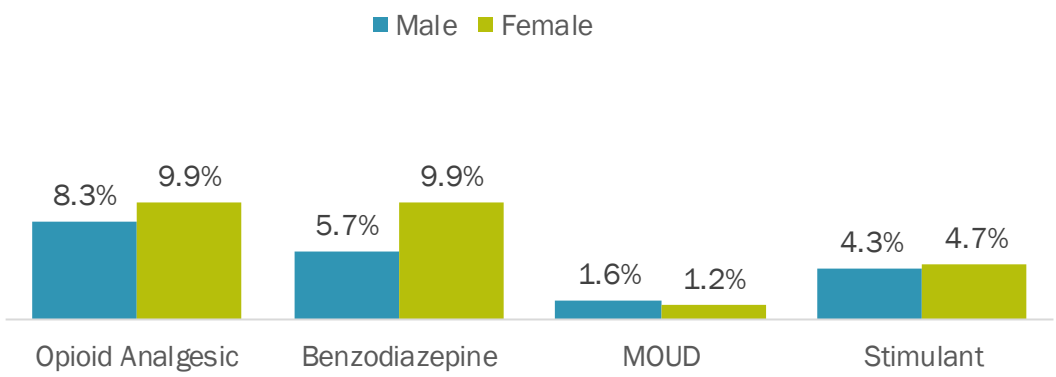
In 2021, drugs dispensed to Vermonters varied by age. Opioid analgesic and benzodiazepine use increased with age; MOUD drugs are most frequently used by those age 25-44; and people under 45 are most likely to be dispensed stimulants (Fig. 4).

Figure 4: Percent of Vermont Population Receiving At Least One Prescription by Drug Class and Age



While more females received prescriptions than males in all drug classes except MOUD drugs, the difference was most marked in benzodiazepines. Benzodiazepines were dispensed to females (nearly 10%) at almost twice rate of males (5.5%). Males and females were similarly dispensed stimulants and MOUD drugs (Fig. 5).

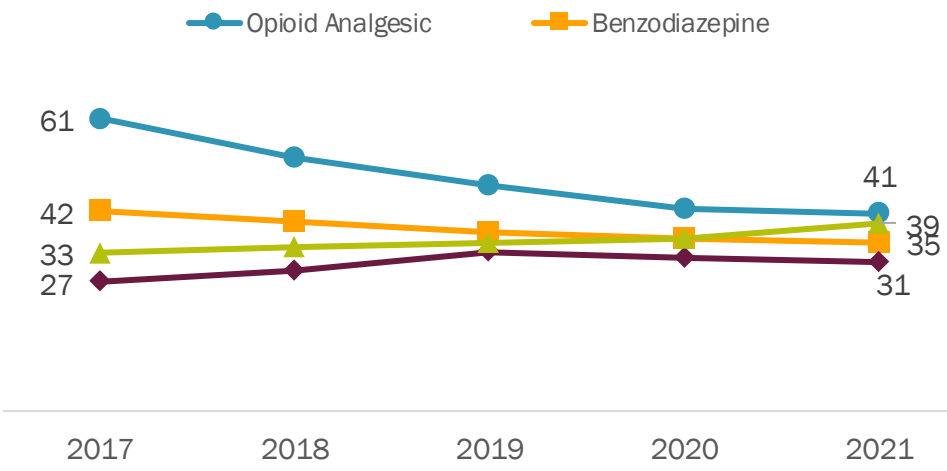
Figure 5: Percent of Vermont Residents Receiving At Least One Prescription by Gender and Drug Class



Since 2017, the number of dispensed opioid analgesic prescriptions per 100 Vermont residents has decreased by 33%. The rate of benzodiazepine prescriptions dispensed decreased by 17% between 2017 and 2021.

The rate of MOUD per 100 people increased approximately 15% between 2017 and 2021 due to increased access to treatment for opioid use disorder and an increase in prescribers with waivers to prescribe buprenorphine ("spoke" providers). There was a very slight decrease in the number of MOUD prescriptions per 100 people since 2019. Stimulant prescriptions increased over 18% between 2017 and 2021 (Fig. 6).

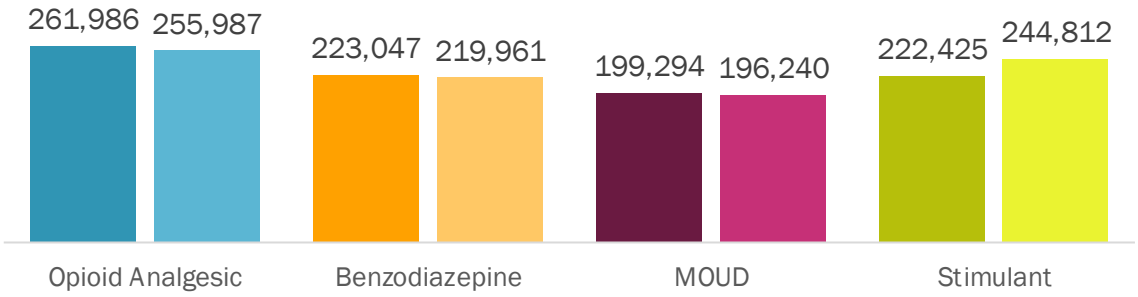
Figure 6: Number of Prescriptions per 100 Vermont Residents by Drug Class



The number of prescriptions provides a simple metric for measuring prescriptions dispensed but it does not accurately depict the actual quantities of medication dispensed. A single prescription may contain different doses, different numbers of pills, different strengths of the medication, etc.

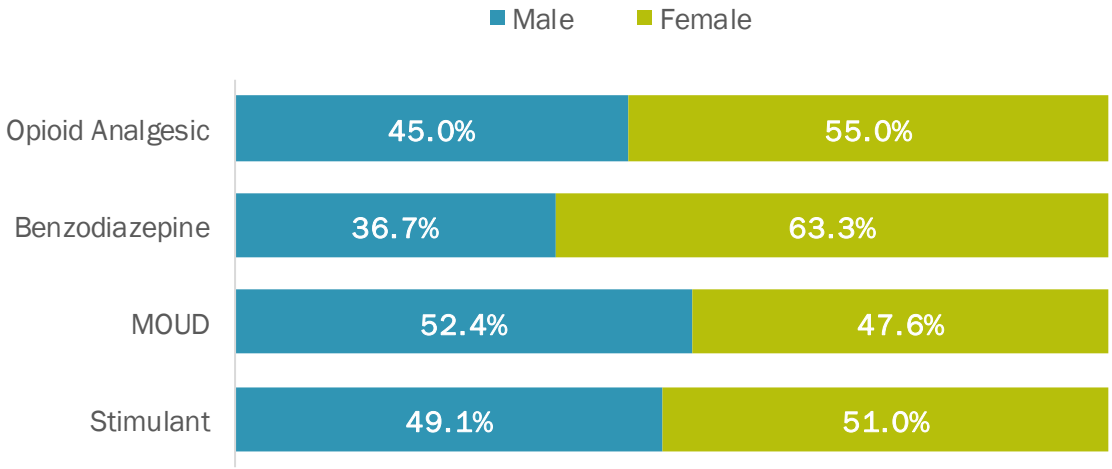
Except for stimulants, the number of prescriptions dispensed in each drug class decreased since 2020. Stimulant dispensations in 2021 increased 10% compared to 2020 (Fig. 7).

Figure 7: Number of Prescriptions by Drug Class (2020 and 2021)



In 2021, females were more likely to receive more prescriptions in all drug categories except MOUD drugs. Males were more likely to receive MOUD drugs than any other drug category. (Fig. 8).

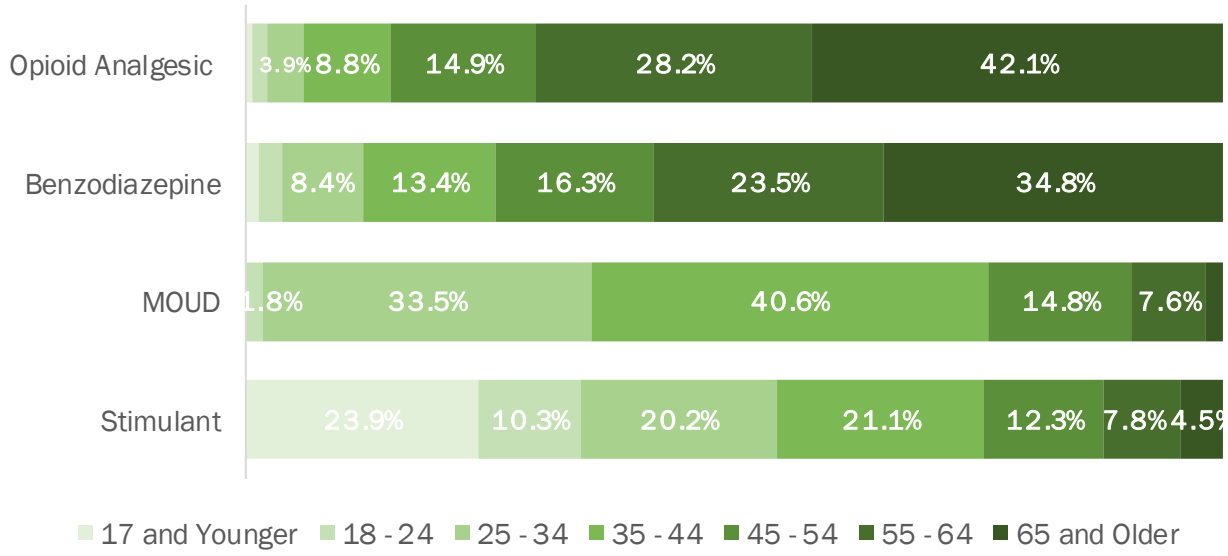
Figure 8: Percent of All Prescriptions by Drug Class and Gender



Dispensing patterns varied by drug class and age. Opioid analgesic and benzodiazepine prescriptions were most frequently dispensed to older Vermonters. More than 70% of opioid analgesics, and more than half of benzodiazepines were dispensed to people 55 and older Approximately 1% of opioid analgesic or benzodiazepine prescriptions dispensed were written for those under 18.

In 2021, MOUD and stimulants are more frequently dispensed to younger people. Most MOUD prescriptions (74%) were dispensed to those between the ages of 25 and 44 years of age. Youth under 18 were dispensed more stimulant prescriptions than any other age group, followed by those aged 35-44 (Fig. 9).

Figure 9: Percent of Prescriptions Dispensed by Drug Class and by Age



Opioid Analgesic Prescribing Patterns

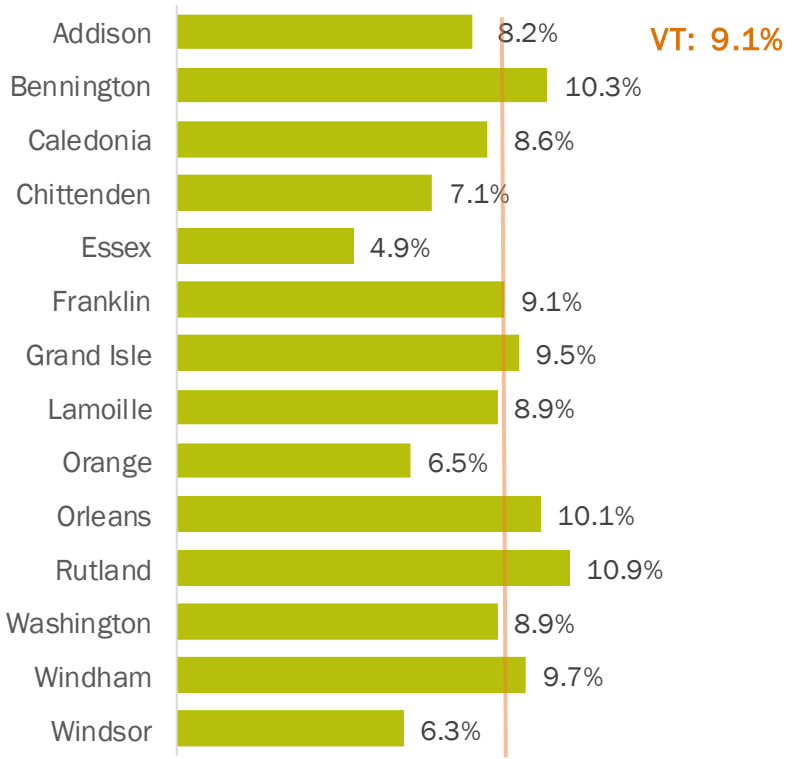
Opioid analgesics are prescription opioids used to treat pain. Since VPMS does not include diagnosis information, a combination of opioid analgesic measures must be considered to show trends and patterns of use. For example, using the percent of the population receiving opioid analgesics (Fig. 10) and the number of opioid analgesic prescriptions per 100 people (Fig. 12) in tandem provides more context than viewing each separately, as high numbers of prescriptions per 100 people may indicate that prescribers are giving short term prescriptions such as three separate five-day prescriptions rather than one 15-day prescription.

The percent of the population receiving opioid analgesics (Fig. 3), average daily MME (Fig. 16), percentage by MME category (Fig. 19), and the average days' supply (Fig. 22) each provide information about prescribing practices. High MME may indicate use for chronic

pain. Opioid analgesic prescriptions for five or fewer days typically indicate use for acute pain management such as immediately after an injury or surgery. Limits and requirements for the prescription of opioids for pain is outlined in the *Rule Governing the Prescribing of Opioids for Pain*. This rule provides legal requirements for the appropriate use of opioids in treating pain to minimize opportunities for misuse, and diversion, and to optimize prevention of addiction and overdose.

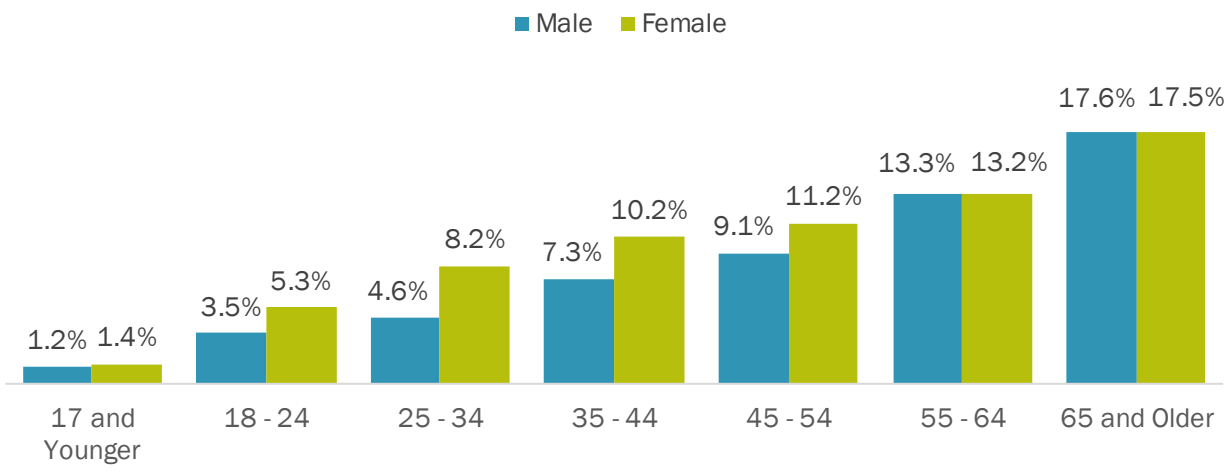
Statewide, 9.1% of the Vermont population received at least one opioid prescription. There was considerable county-level variation in opioid analgesics dispensed in 2021. The variation by county is shown in Figure 10 below. For example, the difference between Rutland and Essex counties: 10.9% of the population in Rutland County received an opioid prescription, but only 4.9% of the population of Essex County received an opioid prescription. This data also demonstrates the need to interpret this information with caution, as people in border counties may fill prescriptions out of state (Fig. 10).

Figure 10: Percent of Vermont Population Receiving at Least One Opioid Analgesic Prescription by County



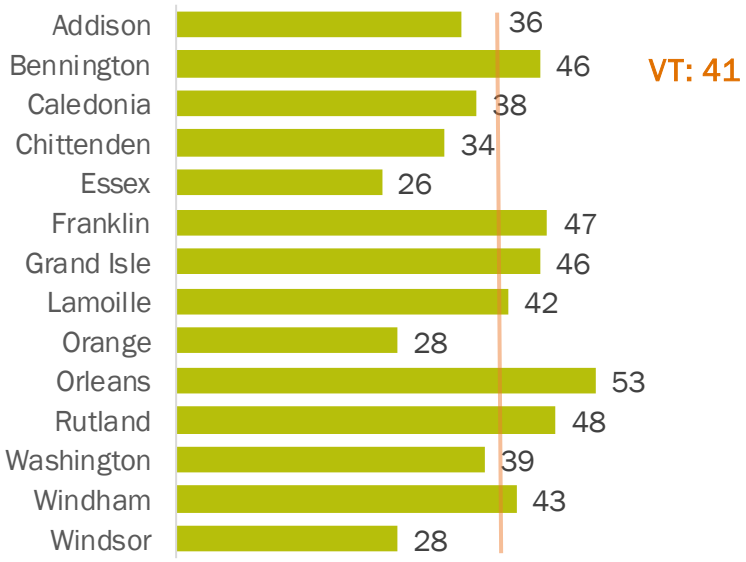
As people age, they are more likely to receive opioid analgesic prescriptions. For those under age 55, females were more likely to receive opioid analgesics than males. Males were as likely as females age 55+ to receive opioid analgesics (Fig. 11).

Figure 11: Percent of Population Receiving at Least One Opioid Analgesic Prescription by Age and Gender



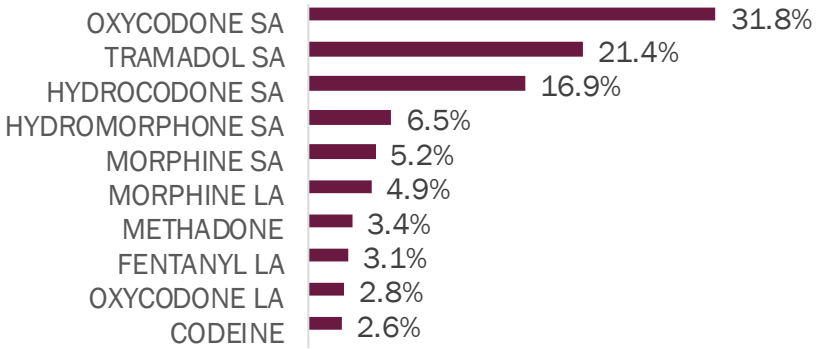
Opioid analgesics were the most frequently dispensed controlled drug class in all counties, although there was significant variation in the rate between counties. Orleans had the highest rate of opioid analgesic prescriptions dispensed. Bennington, Franklin, Grand Isle, Lamoille, Rutland, and Windham counties also have rates above the statewide rate (Fig. 12).

Figure 12: Number of Opioid Analgesic Prescriptions per 100 Residents by County



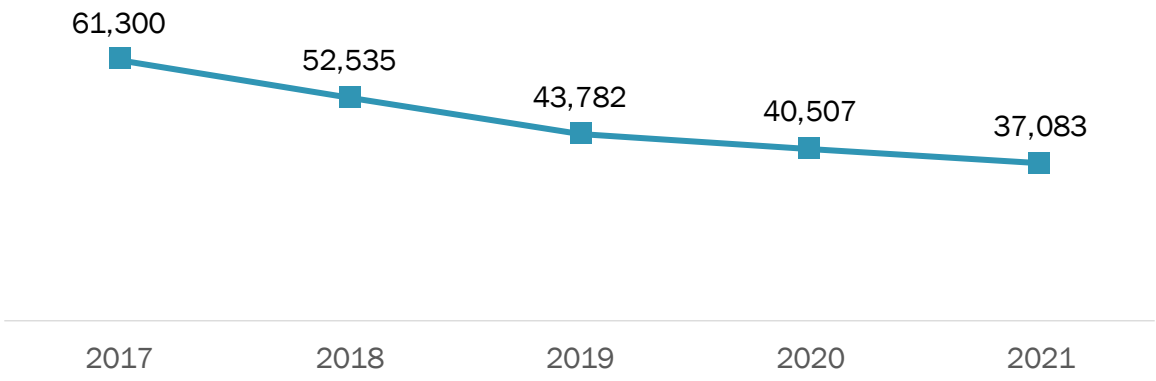
Opioid analgesics can be categorized as short-acting (SA) or long-acting (LA). Short-acting opioids are the opioids analgesics often used for acute or subacute outpatient opioid therapy as they have an immediate onset of pain relief. Long-acting opioid pain relievers are medicines used to relieve moderate to severe long-term pain and are intended to provide pain management over an extended time. In 2021, short-acting opioid analgesics were the most prescribed opioid analgesics in Vermont led by Oxycodone SA at 31.8%, Tramadol SA at 21.4% and Hydrocodone SA at 16.9%, (Fig. 13). No other opioid analgesic made up more than seven percent of opioid analgesic prescriptions.

Figure 13: Ten Most Commonly Prescribed Opioid Analgesics



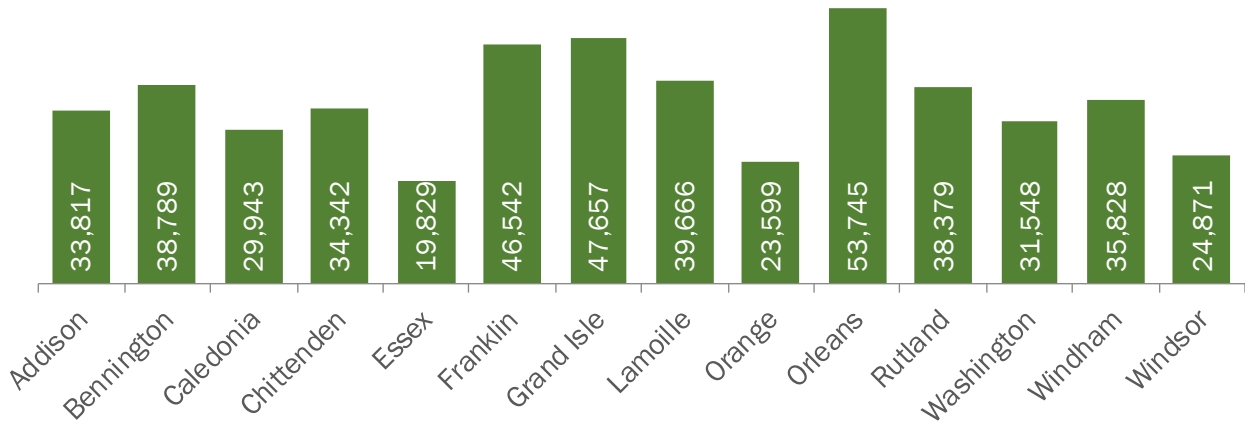
A standardized way to measure opioid analgesic prescriptions is the morphine milligram equivalents, or MME. Further information on opioid analgesics using this standardized measure is found in the definitions section of this report. The total MME prescribed per 100 residents declined from 61,300 in 2017 to 37,083 in 2021, a reduction of 40%.

Figure 14: Total Opioid Analgesic MME Dispensed per 100 Residents



All counties saw a decline in opioid analgesic MME per 100 residents between 2020 and 2021. Orleans, Franklin, and Grand Isle Counties have some of the highest rates in the state, while Essex County had the lowest rate in 2021 (Fig. 15).

Figure 15: Total Opioid Analgesic MME Dispensed per 100 Residents by County



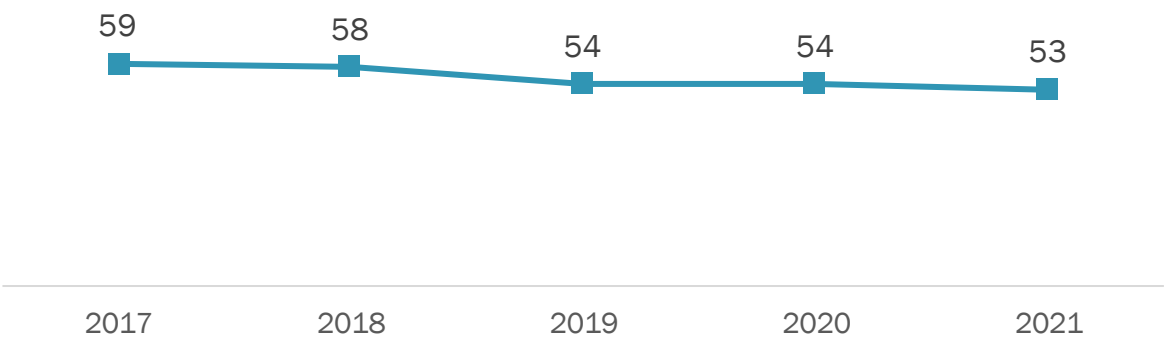
The average daily MME is equal to the total MME of the prescription dispensed divided by the total days' supply of the prescription. This provides a standardized way to report the total strength of the prescription over the time period of the prescription.

Prescriptions with higher MMEs are associated with increased risk of harm. Increasing dosages to ≥50 MME/day increases overdose risk without additional benefits for pain control or function[2]. The Centers for Disease Control and Prevention (CDC) recommends that clinicians carefully reassess evidence of individual benefits and risks when considering increasing opioid dosages to ≥50 MME/day. Most experts also agree that opioid dosages should not be increased above 90 MME/day without careful justification based on diagnosis.[3]

While the downward trend in average daily MME indicates a positive trend towards lower opioid prescribing, it is expected that the average daily MME would not decline rapidly once prescribing has stabilized at new, lower rates. A sharp and continuous drop-off in the daily MME might indicate that patients with chronic pain were tapered too quickly from their higher dose prescriptions. The slowly decreasing trend of recent years may indicate that patients with chronic pain are continuing to decrease high MME prescriptions, but this may be balanced by fewer acute prescriptions.

The average daily MME dispensed for opioid analgesics declined approximately 10% from 59 in 2017 to 53 in 2021 (Fig. 16).

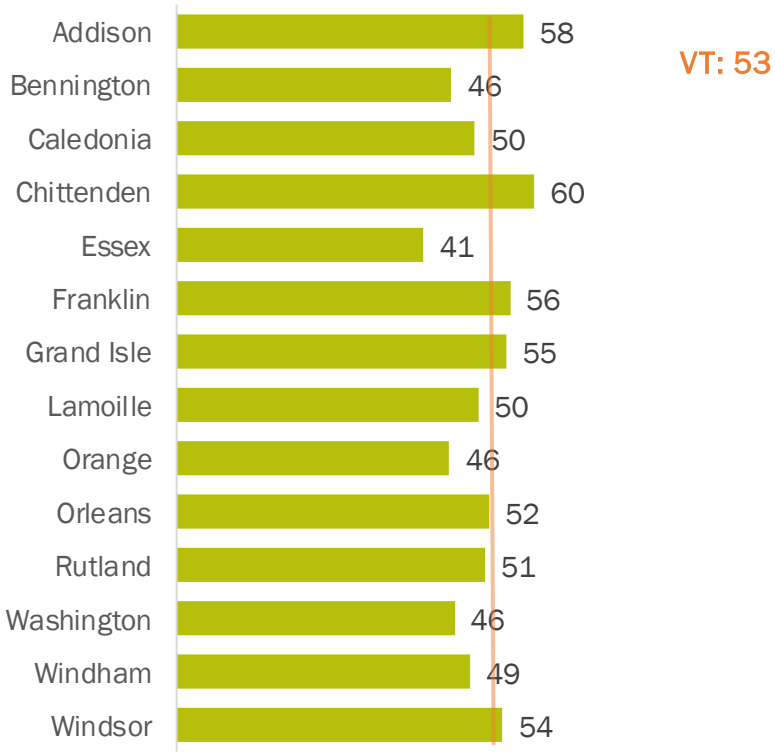
Figure 16: Average Daily MME Dispensed for Opioid Analgesic Prescriptions



[2] Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: http://dx.doi.org/10.15585/mmwr.rr6501e1.

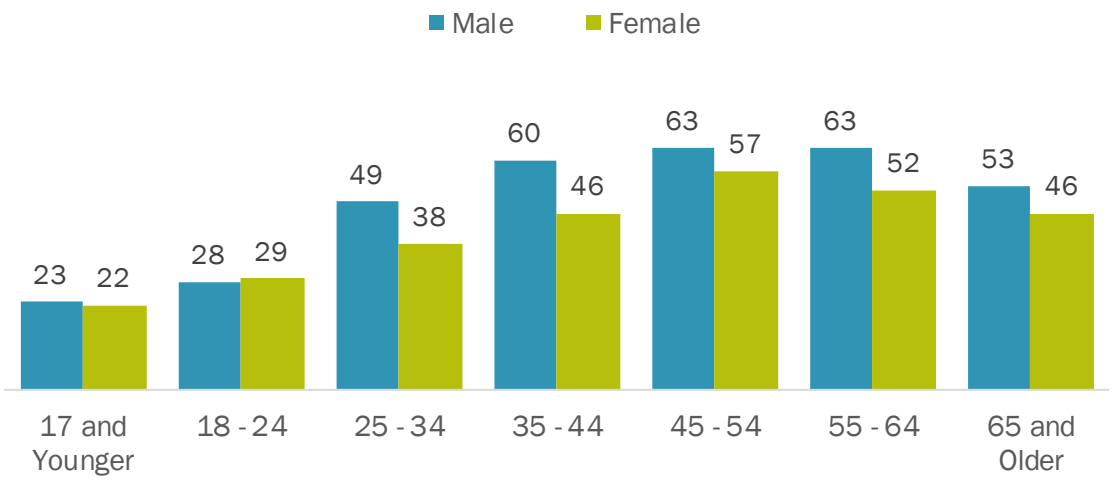
In 2021, Chittenden County had the highest average daily MME dispensed at 60 followed by Addison at 58. Chittenden, Addison, and Grand Isle were the only counties to increase average daily MME from 2020 levels. Essex County had the lowest average daily MME dispensed. (Fig. 17).

Figure 17: Average Daily MME for Opioid Analgesic Prescriptions Dispensed by County



Males typically had higher average daily MME dispensed than females, except in the 18-24 age group. Average daily MME peaked at age 55-64 for men and 45-54 for women (Fig. 18).

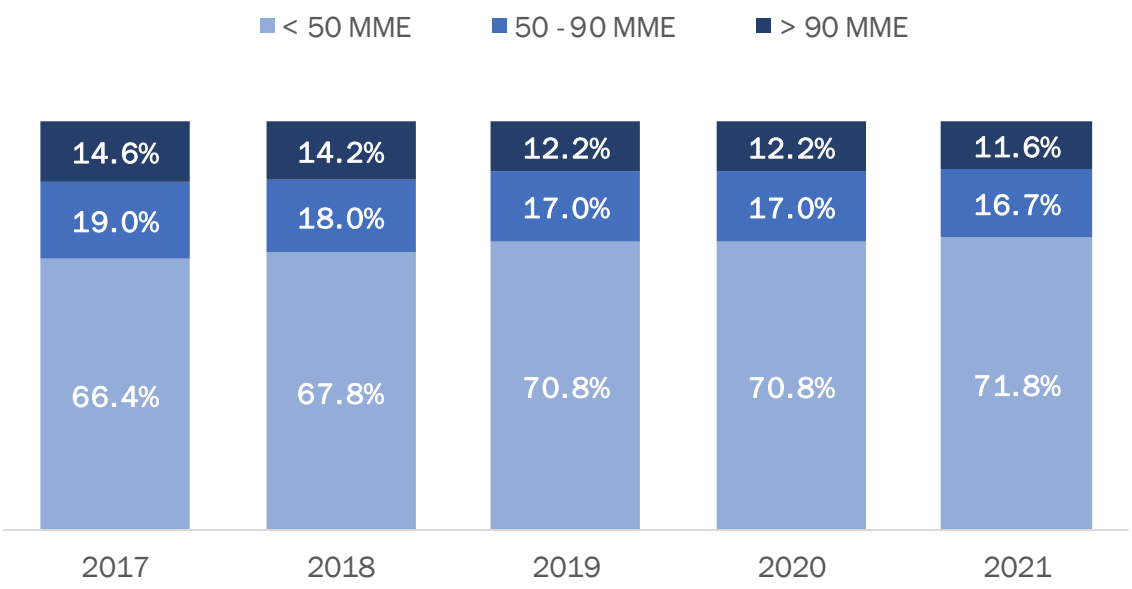
Figure 18: Opioid Analgesic Average Daily MME Dispensed by Age and Gender



The Centers for Disease Control and Prevention Guidelines for Prescribing Opioids for Chronic Pain[4] 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 2021, over 71% of opioid analgesic prescriptions dispensed in Vermont had an average daily MME under 50, an increase of over 8% from 2017. High daily MME prescribing (>90 MME) decreased almost 21% in the same period (Fig. 19). Without diagnosis information, interpreting these trends can be challenging.

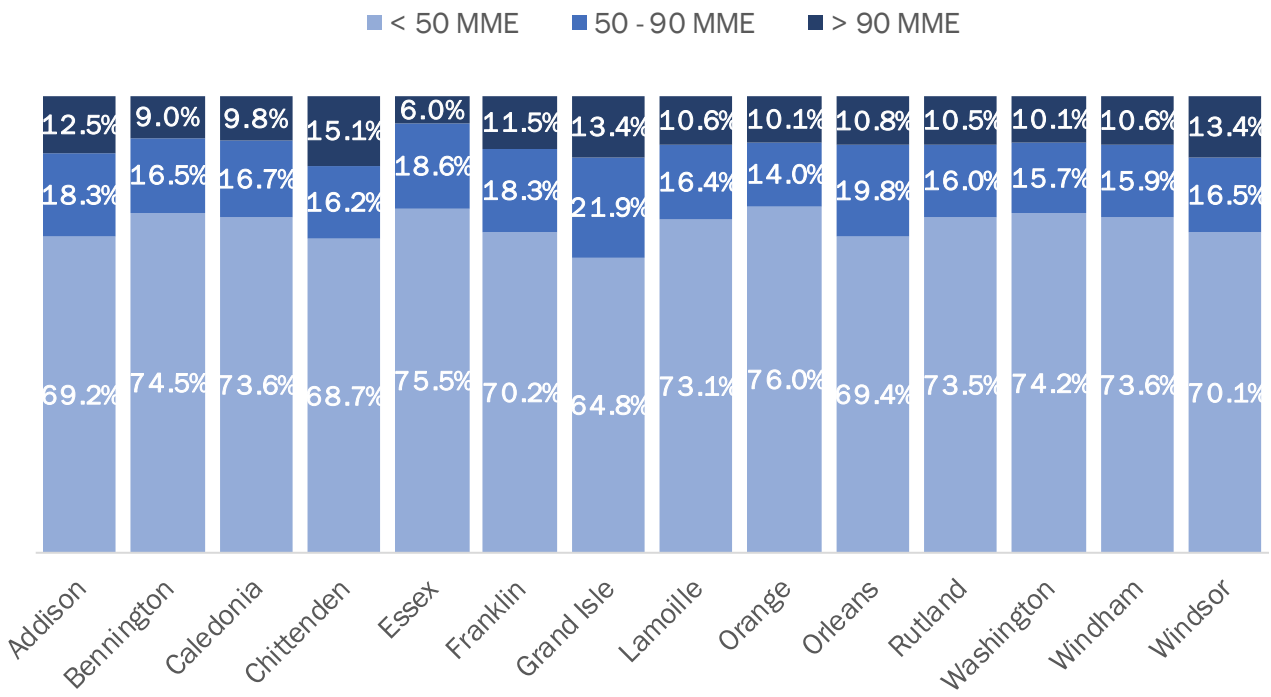
Figure 19: Percent of Opioid Analgesic Prescriptions by Average Daily MME Category



[4] Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: http://dx.doi.org/10.15585/mmwr.rr6501e1.

In 2021, average daily MME by county was similar to the state level. However, Chittenden County was higher than the state average, with Grand Isle and Windsor Counties also having a higher percentage of high MME opioid analgesic use. Essex County had the lowest (Fig. 20).

Figure 20: Percent of Opioid Analgesic Prescriptions by MME Category and County

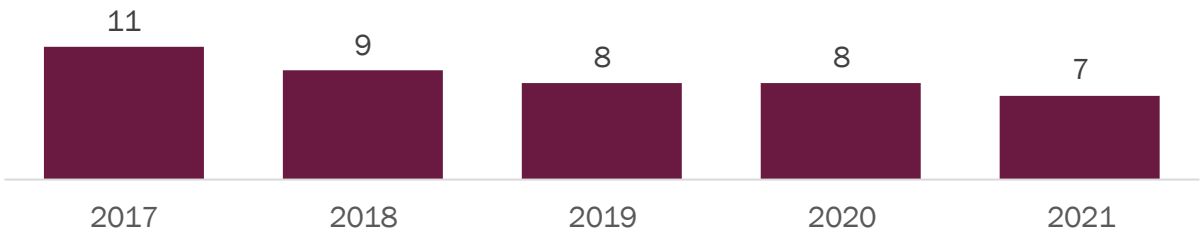


Long-term opioid use often begins with treatment of acute pain. The CDC notes that in cases of acute pain, more than a few days of exposure to opioid analgesics significantly increases hazards and risk of overdose.[5] Supplying three or fewer days of opioids in an initial opioid analgesic prescription reduces the likelihood of long-term opioid use. The CDC guidelines indicate that taking even a low-dose opioid for more than 3 months increases the risk of dependence by 15 times.[6] Each day of unnecessary opioid use increases likelihood of physical dependence. Prescriptions with fewer days' supply also minimize the number of pills available for unintentional or intentional diversion.

VPMS does not include the diagnosis for which a controlled substance has been prescribed, so use associated with acute or chronic pain is unknown.

In 2021, the total days' supply of opioid analgesics dispensed in VT was enough for each resident to use opioids for 7 days a year (Fig. 21). This has been decreasing since 2017. The days' supply is specified by the prescriber and transmitted to VPMS as part of the prescription information.

Figure 21: Potential Average Days of Opioid Analgesic Use Per Vermont Resident, Based on Total Amount Dispensed by Year

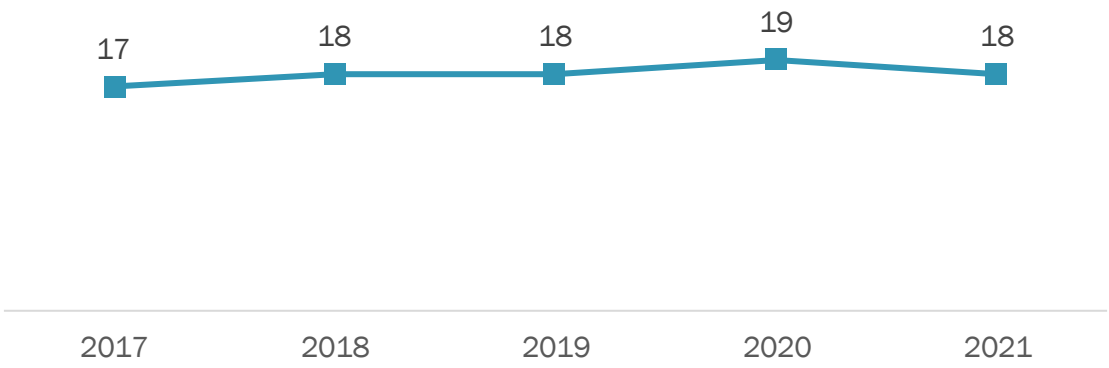


[5] Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: http://dx.doi.org/10.15585/mmwr.rr6501e1.

[6] Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. MMWR Morbidity & Mortality Weekly Rep 2017; 66:265–269. DOI: http://dx.doi.org/10.15585/mmwr.mm6610a1

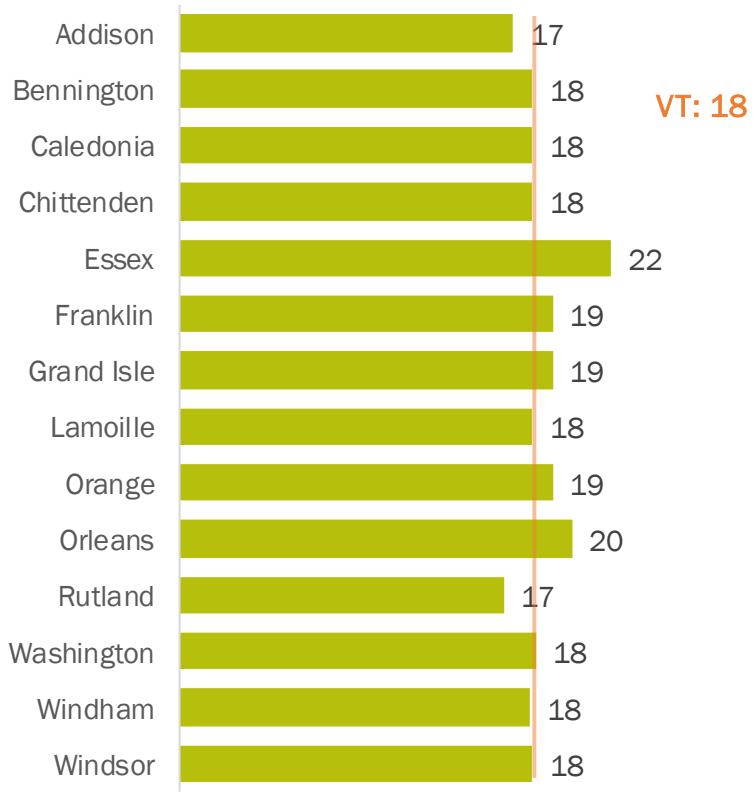
Over the last five years, average days' supply of opioid analgesic prescriptions has remained relatively constant.

Figure 22: Average Days' Supply per Opioid Analgesic Prescription



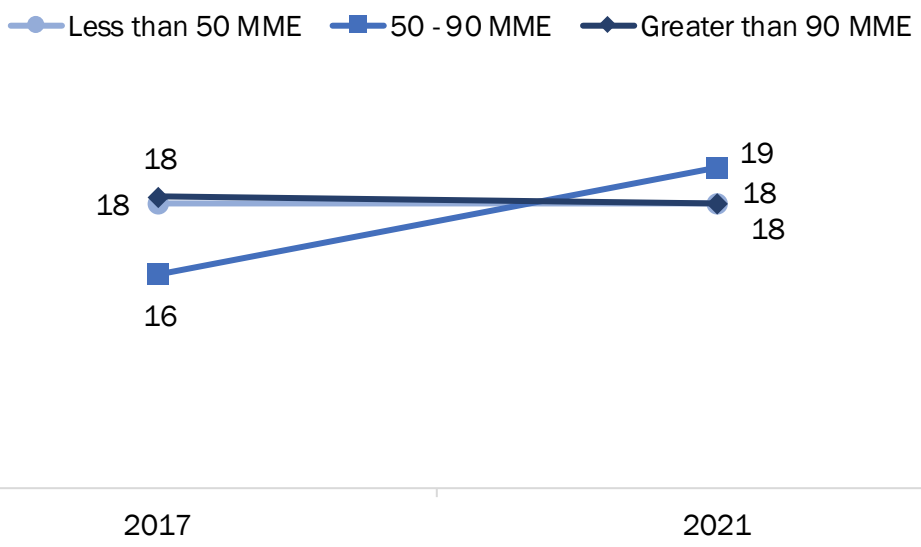
In 2021, Essex and Orleans Counties had the highest average days' supply at 22 and 20 days respectively (Fig. 23).

Figure 23: Opioid Analgesic Average Days' Supply by County



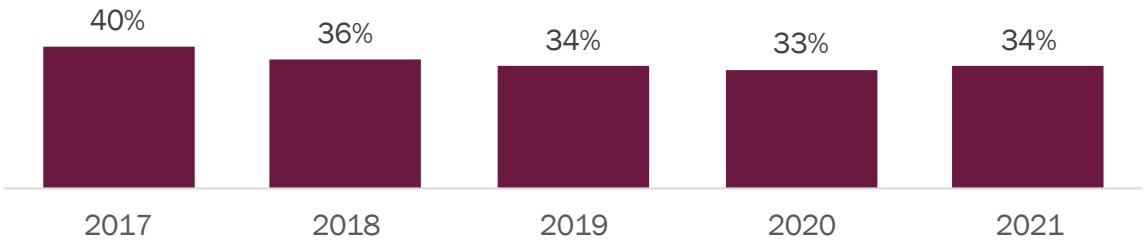
Average days' supply has been stable over time for > 90 MME prescriptions and lower MME prescriptions, while the days' supply of the middle MME category prescriptions has increased (Fig. 24).

Figure 24: Average Days' Supply by MME Category



VPMS considers patients to be opioid naïve when they have received no long-acting (LA) opioid prescriptions within the last 30 days. In 2021, one-third of long-acting opioid prescription recipients were opioid-naïve when they received their prescription, down from the high of 40% in 2017 (Fig. 25). This is a decrease of 15%.

Figure 25: Percent of Opioid Naïve Recipients of Long-acting Opioid Analgesic Prescriptions

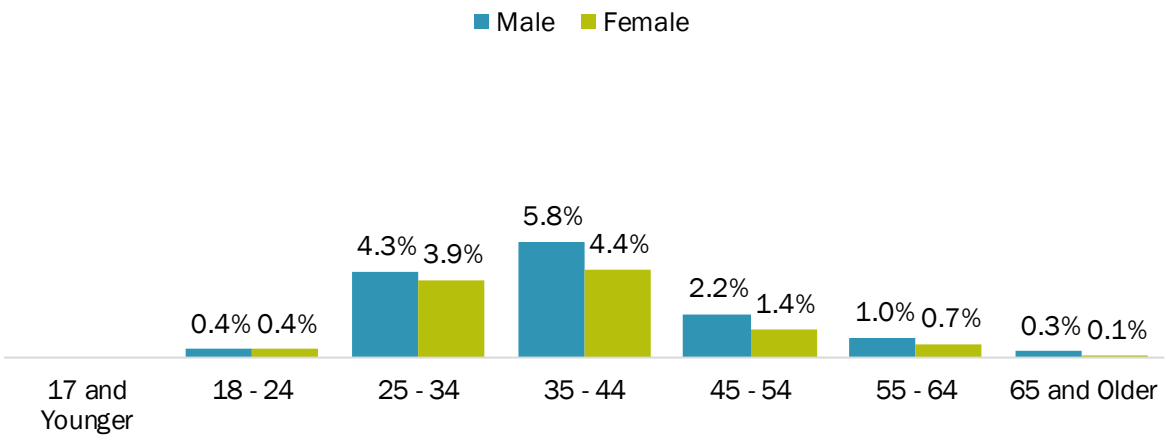


Medication for Opioid Use Disorder (MOUD) Prescribing Patterns

These numbers do not include information about people who receive treatment in specialty treatment facilities that dispense buprenorphine or methadone, known as opioid treatment programs (OTPs) or "hubs." Buprenorphine or methadone used in "hubs" are administered directly to the patient at the facility and do not appear in VPMS. Only individuals who received a prescription from an office based opioid treatment provider (OBOT), also known as a "spoke," are reflected in VPMS data because the prescriptions are dispensed by a pharmacy.

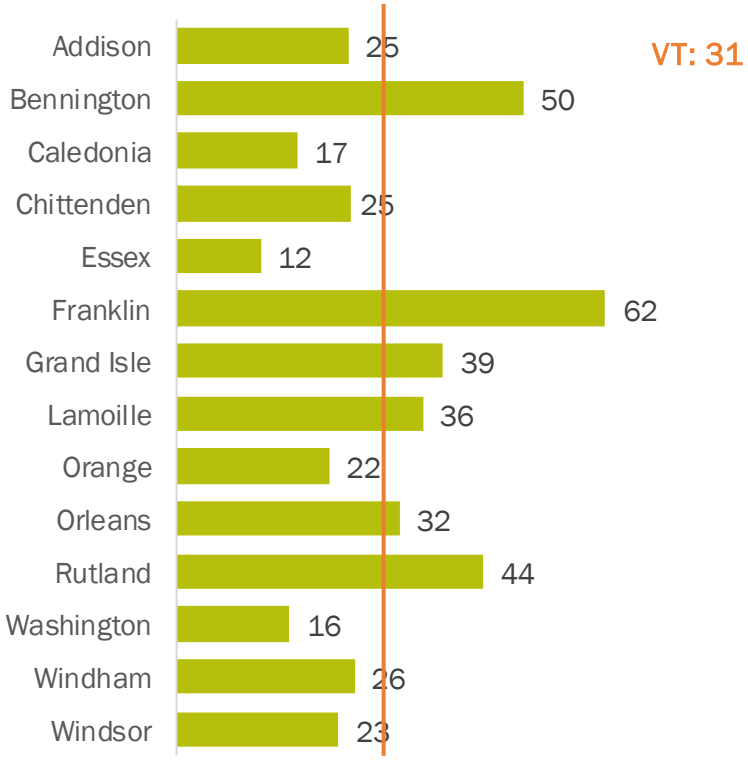
Males are slightly more likely to be prescribed MOUD drugs then females, except in the 18-24 age group where prescribing is equally likely (Fig. 26.).

Figure 26: Percent of Population Receiving at Least One MOUD Prescription by Age and Gender



MOUD prescriptions by county shown below are associated with people receiving care in spokes (Fig. 27). Counties with high rates of treatment in spokes typically have low rates of treatment in hubs and vice versa. The county with the highest rate of MOUD prescriptions is Franklin County.

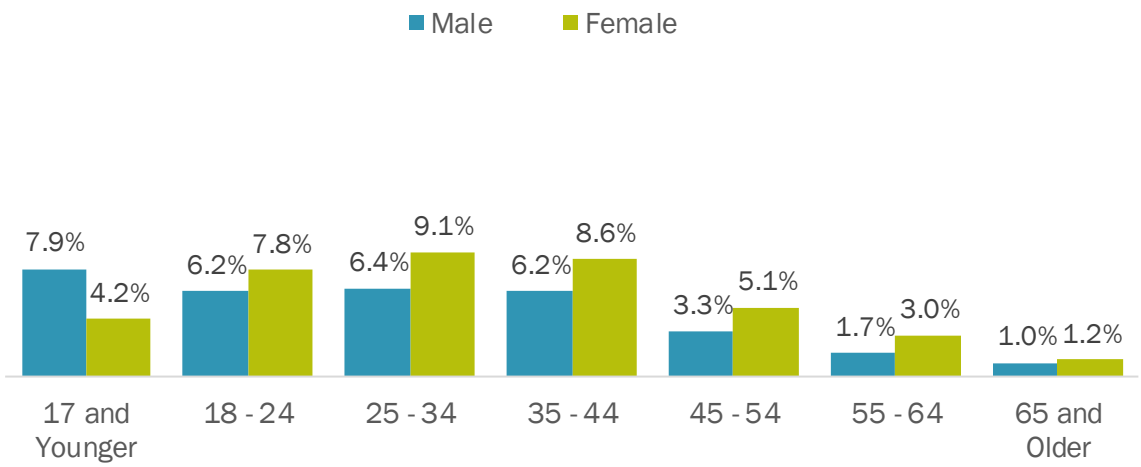
Figure 27: Number of MOUD Prescriptions per 100 Residents by County



Stimulant Prescribing Patterns

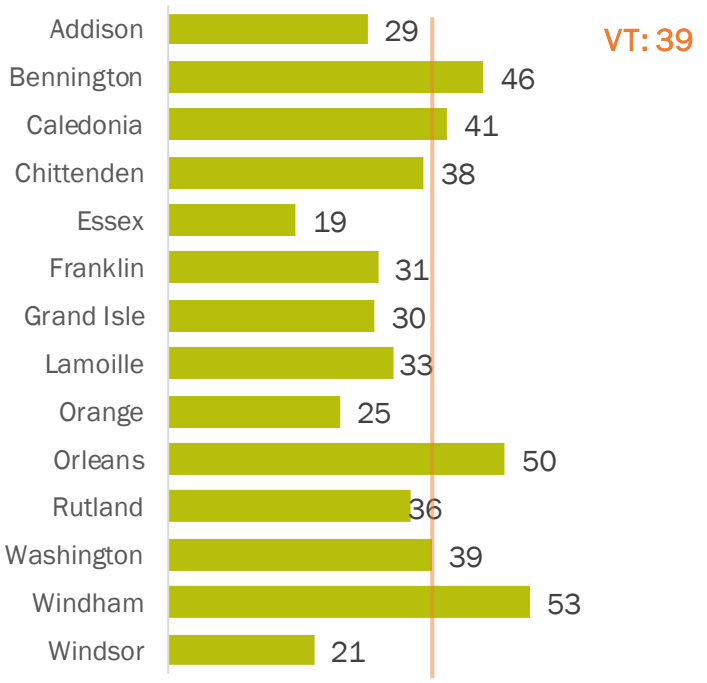
Males under the age of 18 were prescribed stimulants at twice the rate of females. In all categories over the age of 18, females were more likely to be prescribed stimulants. (Fig. 28).

Figure 28: Percent of Population Receiving At Least One Stimulant Prescription by Age and Gender



There is significant county to county variation in the number of stimulant prescriptions per 100 residents, with Windham County 36% higher than the state average of 39 stimulant prescriptions per 100 residents (Fig. 29).

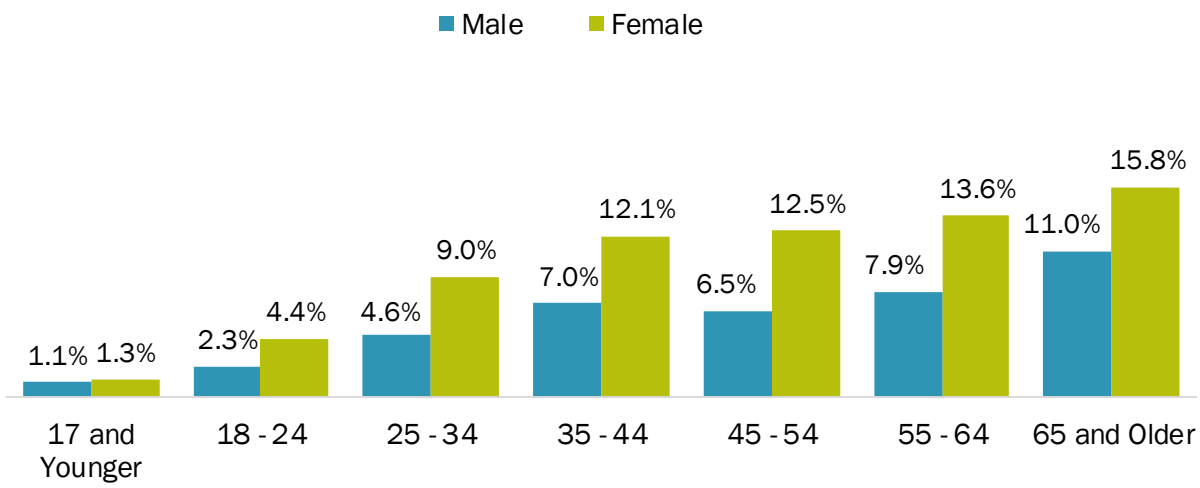
Figure 29: Number of Stimulant Prescriptions per 100 Residents by County



Benzodiazepine Prescribing Patterns

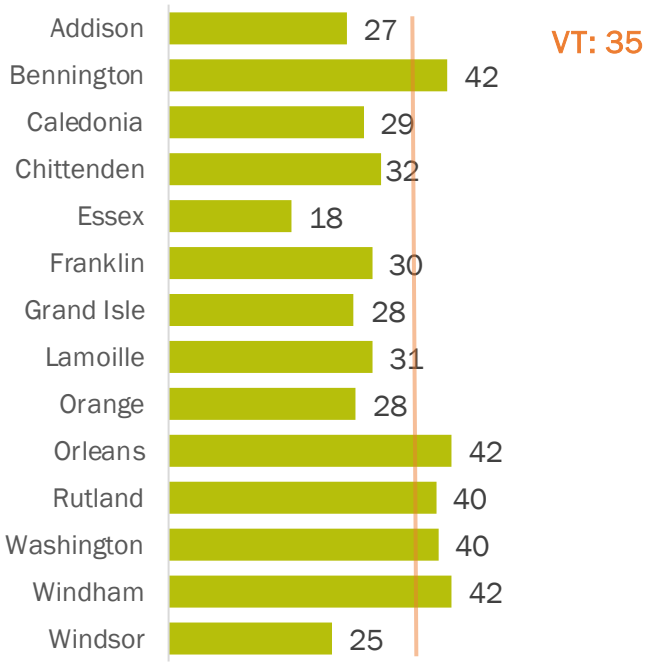
Females in all age categories were more likely to receive prescriptions for benzodiazepines than men. Benzodiazepines dispensed increased as people age (Fig. 30).

Figure 30: Percent of Population Receiving At Least One Benzodiazepine Prescription by Age and Gender



There are significant differences in benzodiazepine prescribing rates by county with Bennington, Orleans, Rutland, Washington, and Windham counties all higher than the state rate of 35 prescriptions per 100 residents (Fig.31).

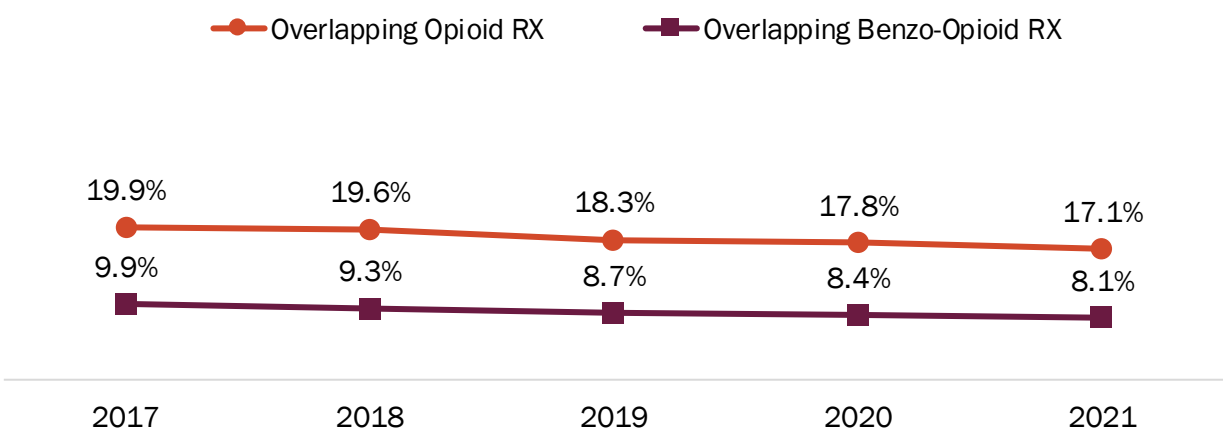
Figure 31: Benzodiazepine Prescriptions Dispensed per 100 Residents by County



Prescription Issues of Concern

Simultaneous use of opioid analgesics and benzodiazepines is a risk factor for prescription misuse or overdose, as is receiving overlapping opioid analgesic prescriptions. Among individuals with an opioid analgesic prescription, 17.1% of prescription days overlapped with a second opioid analgesic prescription. Less than one in ten opioid analgesic prescription days overlapped with a benzodiazepine prescription (8.1%) (Fig. 32). These trends have consistently decreased since 2017.

Figure 32: Percent of Opioid Analgesic Prescription Days with Overlapping Prescriptions



Conclusion

Vermont has improved the VPMS platform and tools available to better assist prescribers and pharmacists in providing care to their patients. This, along with greater awareness of opioid use disorder and the changes in the *Rule Governing the Prescribing of Opioids for Pain*, may have resulted in a reduction in opioid analgesics dispensed in the State. Simultaneously, there has been an increase in the availability of medication for opioid use disorder (MOUD) as shown in the increase in MOUD prescribing. These prescribing trends suggests Vermont has made progress in addressing prescription opioid over-prescribing.

VPMS continues to be an effective tool for monitoring trends in the use of scheduled drugs that may lead to dependence, and for identifying areas where messaging to the public, prescribers, and pharmacists may be advantageous to improving the health of Vermonters.

Vermont data show increased use of stimulants. VPMS data will remain critical to help develop a comprehensive public health response to address controlled substance misuse.

Further analysis of VPMS data remains a priority to proactively identify developing trends of concern. In addition, comparing VPMS data with other datasets, such as both fatal and non-

fatal overdose data, can offer additional opportunities for intervention and support of patient care and health.

Opportunities for system improvements remain. These include continuing to assess new tools provided through the VPMS that assist prescribers in provision of care, increasing the number of states with whom Vermont shares data, and allowing linkages between the VPMS and electronic health records.