2019 and 2020 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 2020 and trend information from 2016 to 2020. More detailed information, including county level trend information and additional 2019 data, is available upon request.

Executive Summary

This report covers both measures related to VPMS use and functioning, programmatic initiatives, and general surveillance prescription trends for 2019 and 2020. Below are highlights of the information contained in this report.

System Use and Updates

- In 2020: 95% 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.
- The total number of system accounts increased by 9% from 6,990 users in 2019 to 7,618 in 2020, including 2,592 delegate accounts for health care provider and pharmacist office staff (Figure 1).
- The total number of patient queries conducted by health care providers and pharmacists increased by 9% from 2019 to 2020 (Figure 2).
- Prescribers received a total of 8,991 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 integrated with the Veterans Health Administration electronic health records. This allows health care providers serving Vermont veterans through the VA to access VPMS information, regardless of their location.

Prescription Findings

- The COVID-19 pandemic likely had an impact on prescribing, but for many metrics it is not possible to say whether the decrease in prescriptions was attributable to COVID-19 or was a continuation of previous trends. Prescribing in 2020 may have changed due to differences in the way medicine was practiced because of COVID-19. Some people did not seek health care or care was delayed because the health care system was treating those with COVID-19. In addition, the health care system had restrictions about elective surgeries allowed and precautions in place to prevent people from becoming infected. This report cannot attribute 2020 change to COVID-19, or any other specific event.
- More opioid analgesic pain relievers are dispensed in Vermont than any other Schedule II-IV controlled substances. It is followed by benzodiazepines, stimulants, and medications to treat opioid use disorder (OUD) (Figure 3).
- Opioid analgesic pain relievers are being dispensed to fewer Vermonters than in the past. The percent of the Vermont population receiving at least one opioid prescription dropped from 10.4% in 2018 to 8.8% in 2020, a decrease of 15% (Figure 10).
- The total amount of opioid analgesic pain relievers dispensed has declined. The total morphine milligram equivalents (MME) of opioid analgesic pain relievers dispensed per 100 residents decreased 41% between 2016 and 2020 (Figure 14).
- The percent of the population receiving benzodiazepine prescriptions also decreased 20% between 2016 to 2020 (Figure 3).
- More Vermonters are receiving stimulants. There was a 16% increase in the percent of the Vermont population receiving stimulants between 2016 and 2020 (Figure 3). The two categories of people who were most prescribed stimulants were males under 18 and females between 25-44 (Figure 28).
- Prescriptions for Medication Assisted Treatment (MAT), which is used to treat opioid use disorder, increased 34% between 2016 and 2020, 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 over 21% between 2016 and 2020 (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.

  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 (year) 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 in/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.

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

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-Assisted Treatment (MAT) opioid agonist/antagonist**: medications used to treat opioid use disorder. With a few exceptions, any drug containing buprenorphine is considered a MAT 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 MAT prescriptions. Opioid analgesics are opioids prescribed for the treatment of pain. MAT prescriptions, most frequently buprenorphine, are opioids prescribed to people for the treatment of opioid use disorder (OUD). This report includes data on only those MAT drugs dispensed by a Vermont-licensed pharmacy. For situations in which opioid drugs or MAT prescriptions are NOT included, please see below in Disclaimers.

Morphine Milligram Equivalents (MME)

Opioid pain medication strengths, dosages, and number of days 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 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, and
- Prescriptions dispensed from veterinary offices.

VPMS includes MAT 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 “MAT Prescriptions” in this report. MAT 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 it 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 2019, VPMS data was used to provide a more in-depth look at stimulant prescribing. In 2020, the impact of the 2017 *Rule Governing the Prescribing of Opioids for Pain* was measured in a data brief. The VPMS data was also used in 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.

Integration with Veteran's Affairs (VA) Health System

In October of 2020, VPMS integrated with the VA health system. This integration allowed VA providers to query VPMS for their Vermont patients. Previously, VA providers with Vermont patients, but licensed in another state, were unable to register for the VPMS. Data from VPMS can now be viewed within the VA Health record, allowing more accessible information for providers treating this population.

Prescriber Insight Reports

With increased attention on improving prescribing practices, prescribers expressed interest in comparing their own prescribing to their peers. In 2019 and 2020, VPMS sent quarterly reports to VPMS-registered providers who prescribed at least one controlled substance during the previous six months. This was a change from previous years where reports were only sent to prescribers who had prescribed at least one opioid prescription in a quarter. 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). Additional metrics were added in 2019 about MAT drugs, sedatives, and stimulants, including highlights of key potential risk metrics for the providers' specific dispensations. 9,124 reports were sent to prescribers in 2019 and 8991 reports were sent in 2020. The drop in prescriber reports is due to less prescribers prescribing a controlled substance that would qualify them to receive a report. The state offers technical assistance and quality improvement assistance to prescribers on how to use the reports to inform prescribing practices.

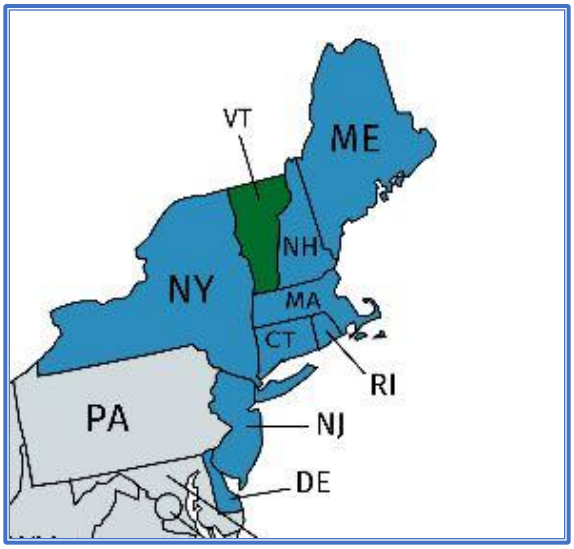
Interstate Data Sharing

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 several 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.

Vermont currently allows sharing with Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, New York, and Rhode Island.

Map 1: Map of Interstate Data Sharing Partner States



Vermont providers queried other states' PDMPs 188,185 times in 2020. Of these, approximately 12% returned prescription information. Approved users in other states accessed VPMS data 2,373,691 times. Due to state confidentiality requirements, 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 2020, Vermont licensed pharmacies were 95% 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 9% from 6,990 users in 2019 to 7,618 in 2020. Newly licensed practitioners in Vermont were provided information about licensure requirements, including registration with VPMS.

Figure 1: Number of VPMS Patient Care User Accounts (2020)

User Type	Number of Accounts
Prescriber	4,294
Prescriber Delegate	2,514
Pharmacist	732
Pharmacist Delegate	78
Total Patient Care User Accounts	**7,618**

VPMS users queried the system 386,562 times in 2020, an increase of 9% over 2019. Prescribers or prescriber delegates accounted for nearly 75% of queries, and pharmacists and pharmacist delegates the remaining 25% (Fig.2). On a per user basis, pharmacist user types queried an average of 120 times, whereas prescriber user types queried just over 42 times per registered user.

"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 (2020)

User Type	Number of Queries
Prescriber	66,678
Prescriber Delegate	222,802
Pharmacist	89,783
Pharmacist Delegate	7,363
Other	11
Total Queries	**386,562**

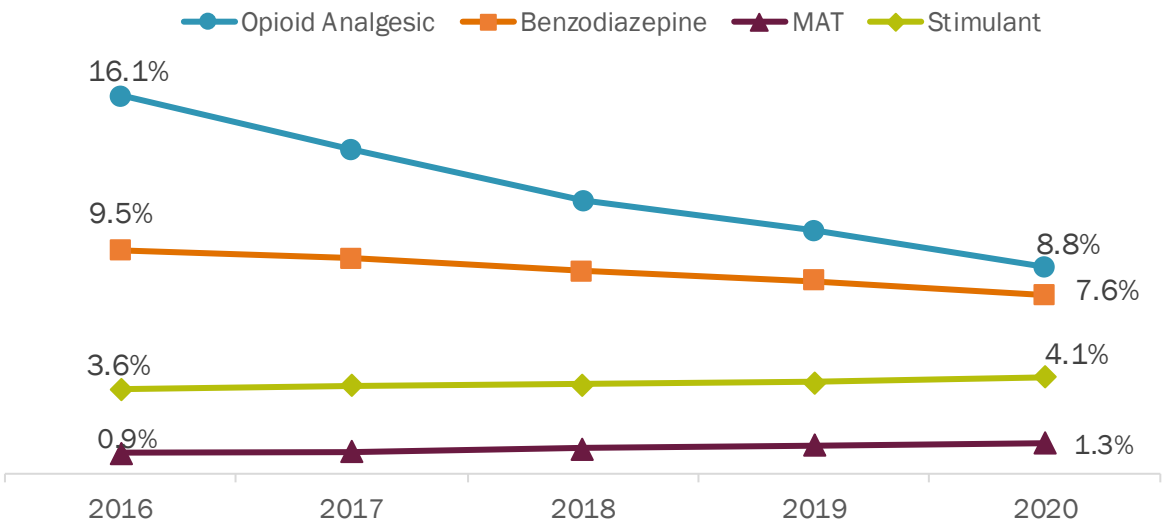
In 2020, 92% of prescriptions in VPMS were written by a prescriber who was licensed in Vermont and had a VPMS account, which was similar to 2019 (93%). The remainder of prescriptions in VPMS were written by providers who did not have a VPMS account or who are licensed in another state.

Total Vermont Population Prescription Trends

Opioid analgesics remain the most dispensed controlled drug class but have decreased every year since 2016. Nearly 9% of Vermonters received at least one opioid analgesic prescription in 2020; 7.6% received a benzodiazepine, 4.1% received a stimulant, and approximately 1.3% received a prescription for MAT.

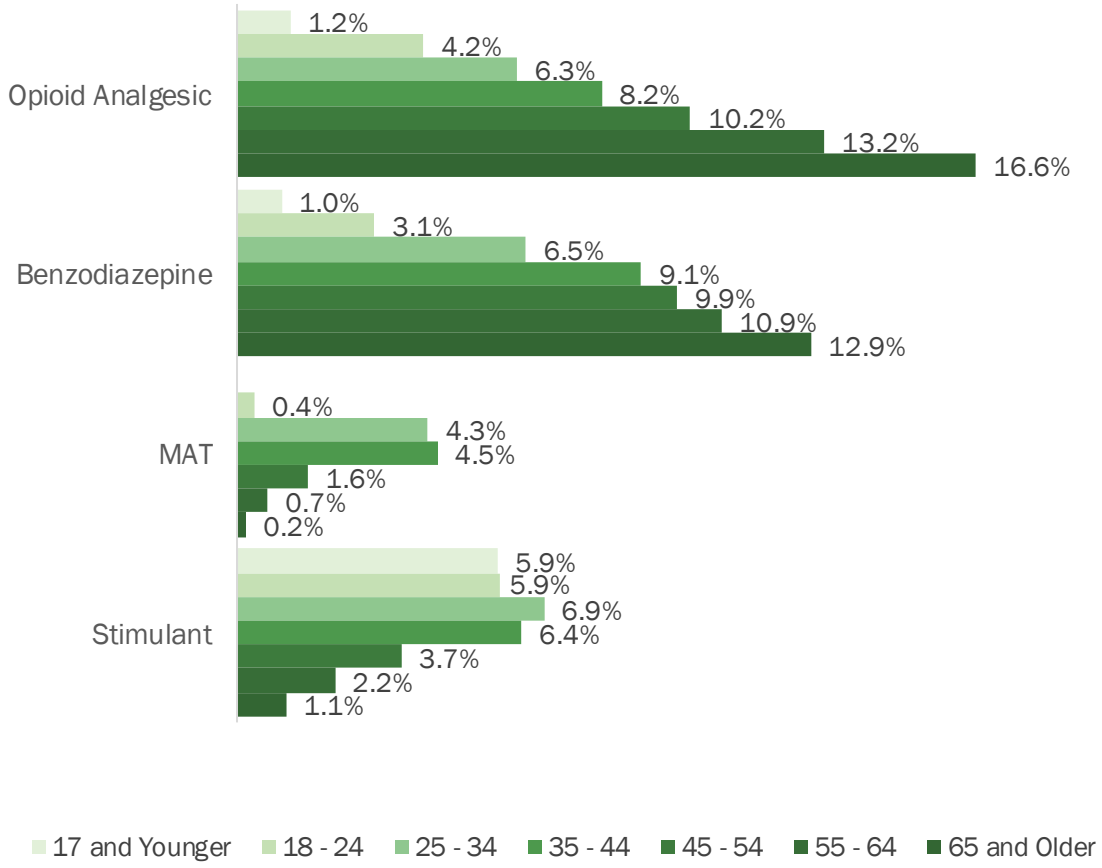
The percentage of the Vermont population dispensed an opioid analgesic prescription declined between 2016 and 2020, from 16.1% to 8.8%. There was a 15% decrease from 2019 to 2020.

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



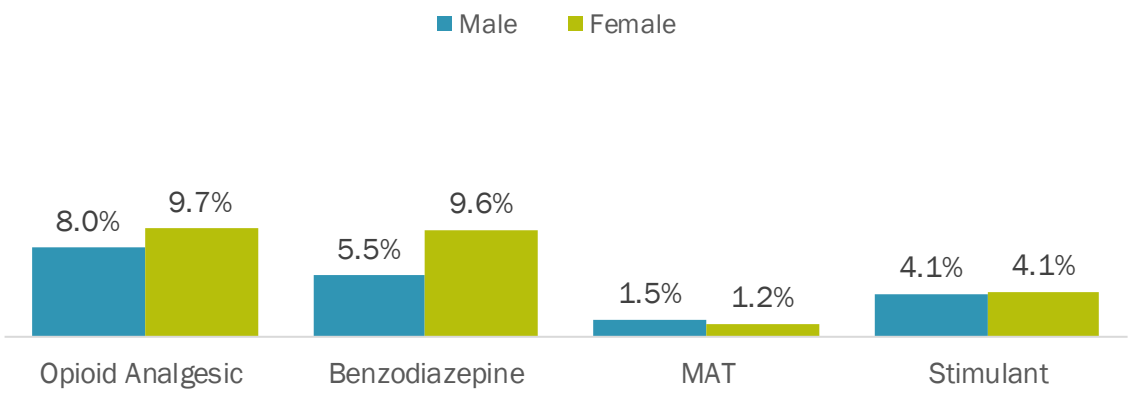
In 2020, drugs dispensed to Vermonters varied significantly by age. Opioid analgesic and benzodiazepine use increased with age; MAT drugs are most frequently used by those age 25-44; and people under 45 are most likely to be dispensed stimulants (Fig. 4). The overall trend is similar for 2019.

Figure 4: Percent of Vermont Population Receiving At Least One Prescription by Drug Class and Age (2020)



While more females received prescriptions than males in all drug classes except MAT 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 MAT drugs (Fig. 5). The overall interpretation is similar for 2019 data.

Figure 5: Percent of Vermont Residents Receiving At Least One Prescription by Gender and Drug Class (2020)

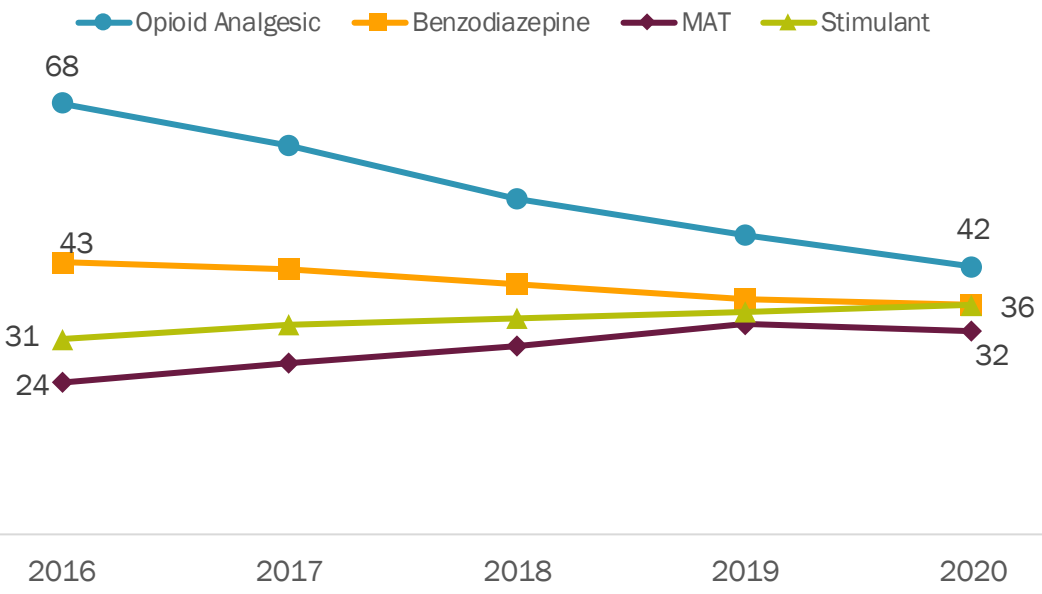


Since 2016, the number of dispensed opioid analgesic prescriptions per 100 Vermont residents have decreased by 38%. The rate of benzodiazepine prescriptions dispensed decreased between 2016 and 2020 by 16%.

The rate of MAT per 100 people increased approximately 33% between 2016 and 2020 due to increased access to treatment for opioid use disorder and an increase in prescribers with waivers to prescribe buprenorphine ("spoke" providers). Despite this upward trend over the last five years, there was a very slight decrease in the number of MAT prescriptions per 100 people between 2019 and 2020.

Stimulant prescriptions increased over 16% between 2016 and 2020 (Fig. 6).

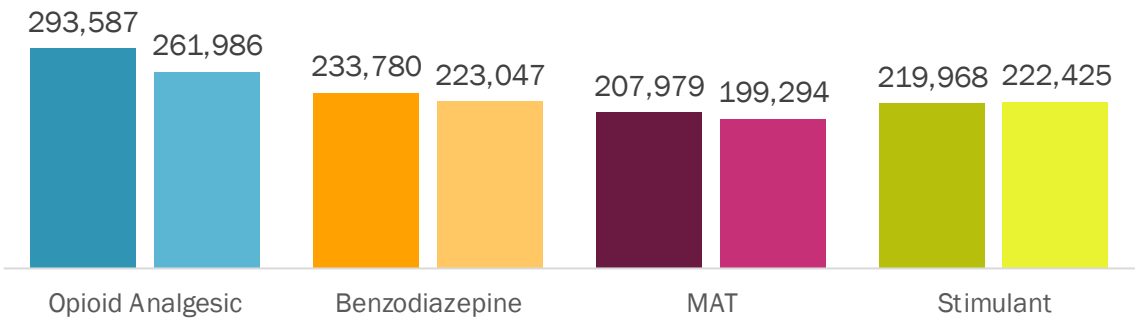
Figure 6: Number of Prescriptions per 100 Vermont Residents by Drug Class



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.

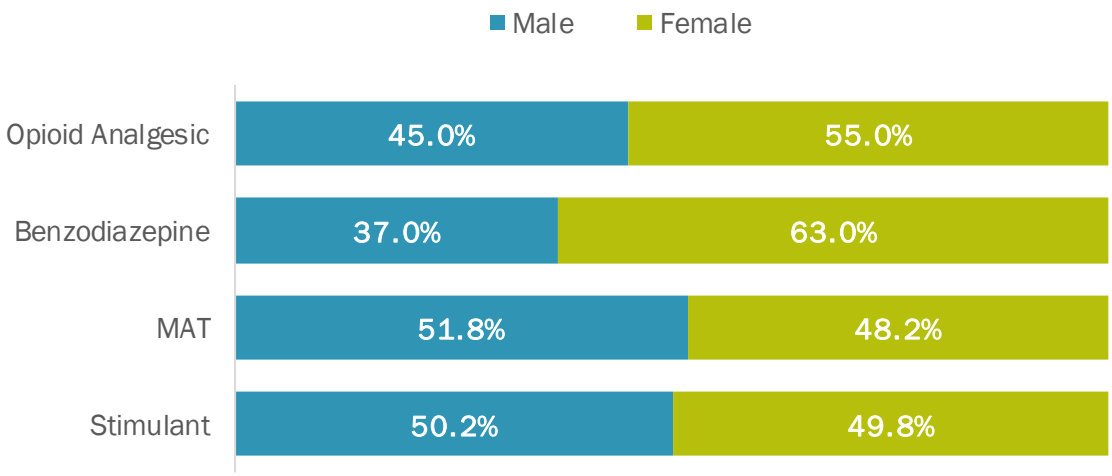
Except for stimulants, the number of all prescriptions dispensed went down in each drug class. Less than 300,000 prescriptions for opioid analgesics were dispensed in 2020, as were slightly over 223,000 prescriptions for benzodiazepines. MAT prescriptions dispensed were the least common, with nearly 200,000 prescriptions. There were over 220,000 prescriptions for stimulants dispensed in 2020 (Fig. 7).

Figure 7: Number of Prescriptions by Drug Class (2019 and 2020)



Females were more likely to receive opioid analgesics and benzodiazepines. Males were more likely to receive MAT drugs and stimulants (Fig. 8). The overall interpretation is the same for 2019 data.

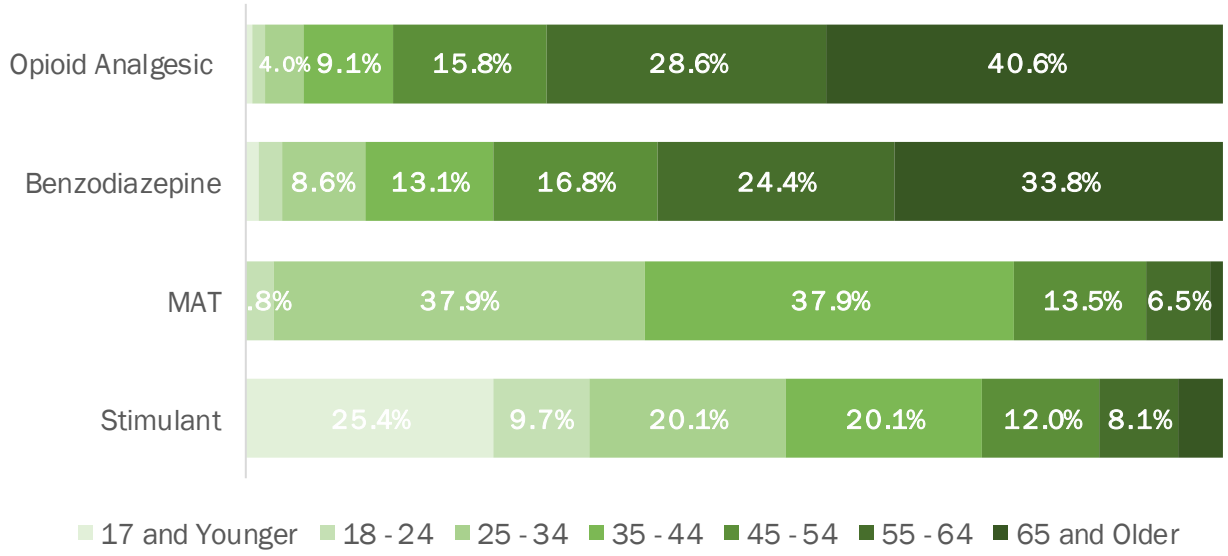
Figure 8: Percent of All Prescriptions by Drug Class and Gender (2020)



Dispensing patterns varied by drug class and age. Opioid analgesic and benzodiazepine prescriptions were most frequently dispensed to older Vermonters. More than half of the prescriptions dispensed in these classes were written to people 55 and older. Just over 15% of the opioid analgesic prescriptions dispensed were written to people under the age of 45. Approximately 1% of opioid analgesic or benzodiazepine prescriptions dispensed were written for those under 18.

In 2020, MAT and stimulants are more frequently dispensed to younger people. Most MAT prescriptions were dispensed to those between the ages of 25 and 44 years of age, and nearly a third were dispensed to those between 35 and 44. Youth under 18 were dispensed more stimulant prescriptions than any other age group, followed by those age 25-34 (Fig. 9). The overall interpretation of data is similar for 2019 data.

Figure 9: Percent of Prescriptions Dispensed by Drug Class and by Age (2020)



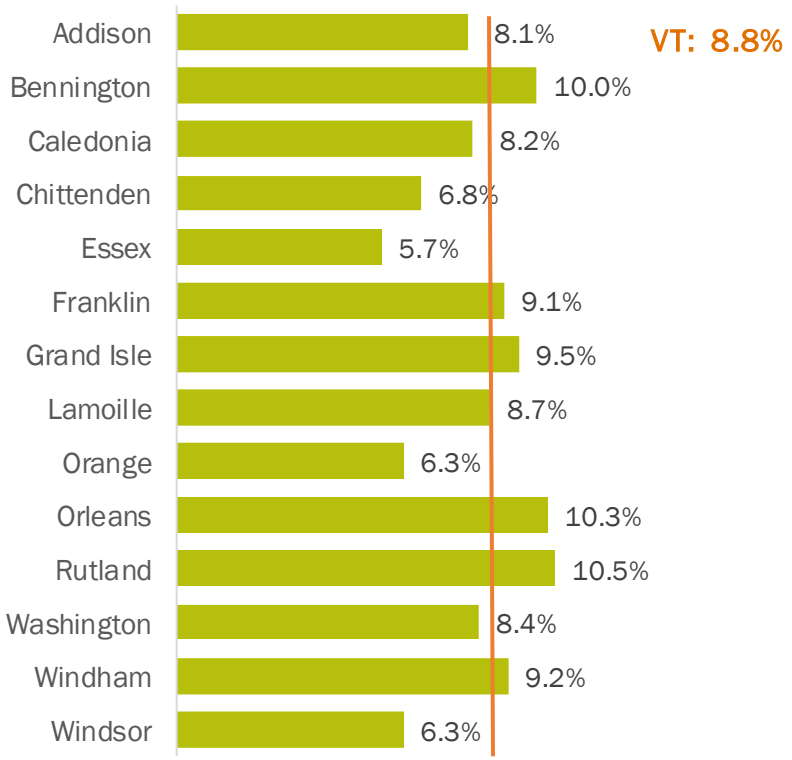
Opioid Analgesic Prescribing Patterns

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.

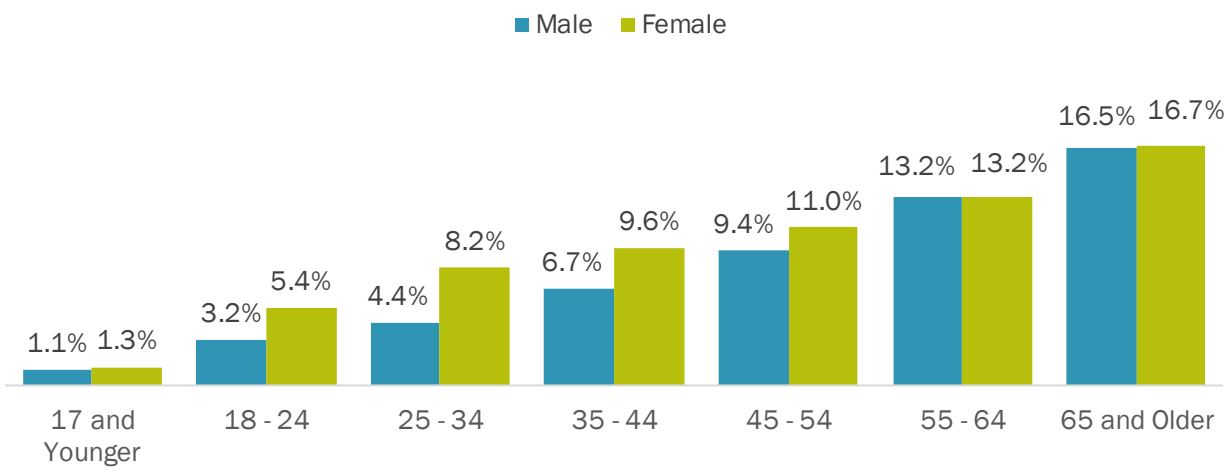
There was considerable county-level variation in opioid analgesics dispensed in 2020. Statewide, 8.8% of the Vermont population received at least one opioid prescription. The variation by county is shown in Figure 10 below, for example, in the differences between Rutland and Essex counties: 10.5% of the population in Rutland County received an opioid prescription, but only 5.7% 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). Rutland County also had the highest percentage of population receiving an opioid in 2019, with Essex County reporting the lowest percentages.

Figure 10: Percent of Vermont Population Receiving at Least One Opioid Analgesic Prescription by County (2020)



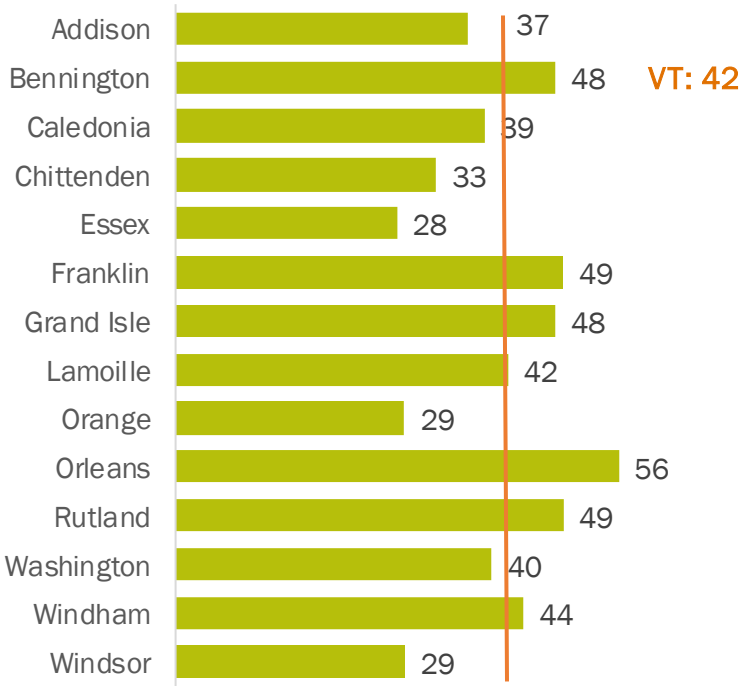
As people age, they are more likely to receive opioid analgesic prescriptions. For those under age 55, females were more likely to receive opioid analgesics than males. Males were as likely as females age 55+ to receive opioid analgesics (Fig. 11). This overall interpretation is the same for 2019.

Figure 11: Percent of Population Receiving at Least One Opioid Analgesic Prescription by Age and Gender (2020)



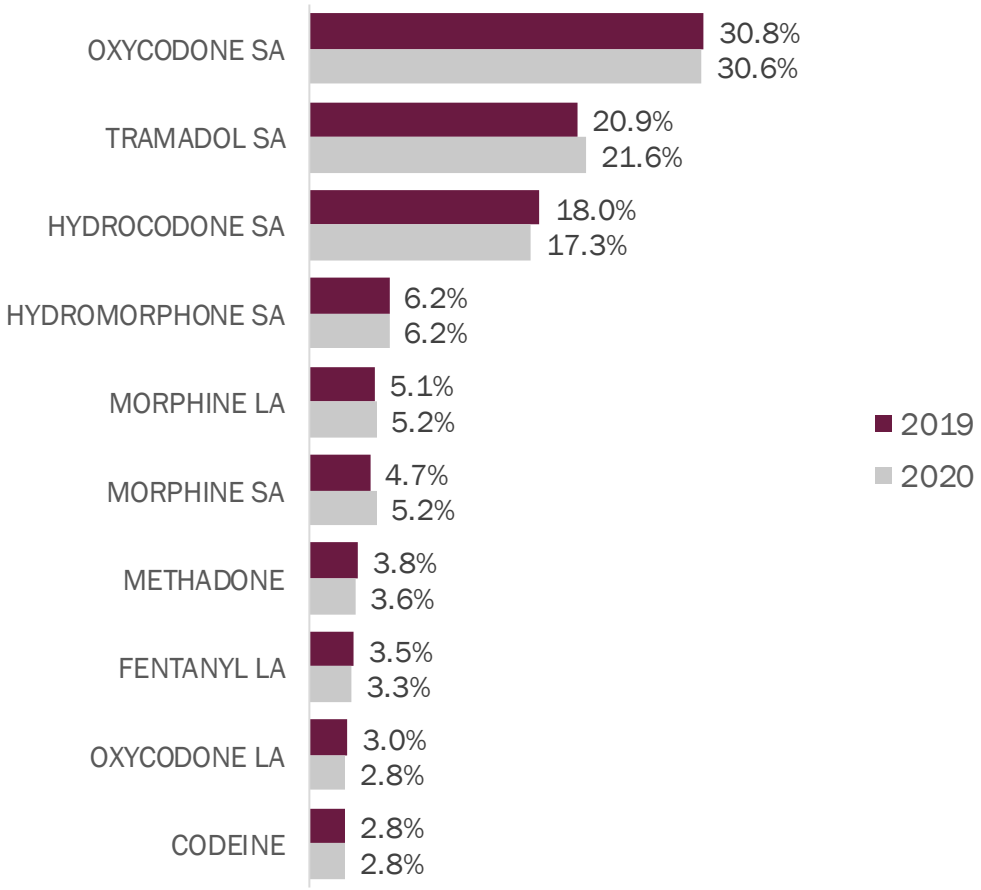
Opioid analgesics were the most frequently dispensed controlled drug class in all counties, although there was significant variation in the rate between counties. Orleans had the highest rate of opioid analgesic prescriptions dispensed. Grand Isle, Franklin, Rutland, Bennington, and Windham counties also have rates above the statewide rate (Fig. 12). These counties were also the highest in 2019.

Figure 12: Number of Opioid Analgesic Prescriptions per 100 Residents by County (2020)



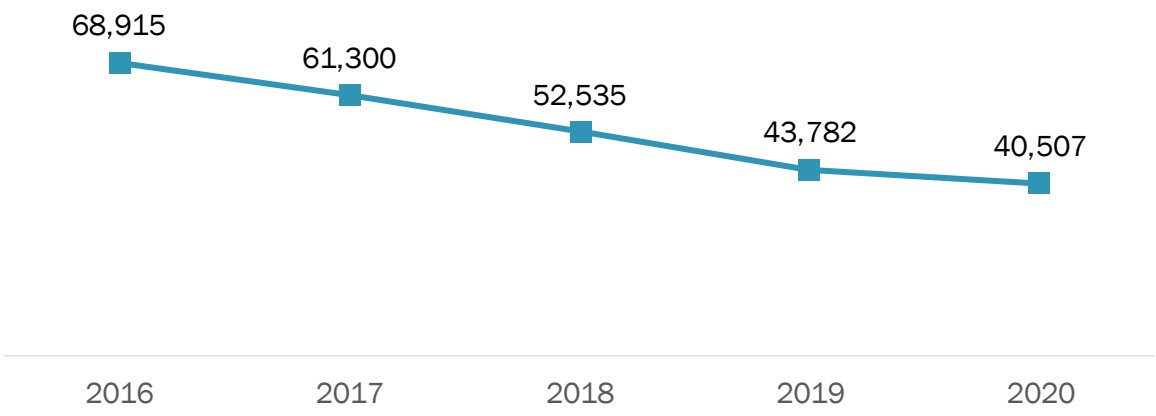
Opioid analgesics can be categorized as short acting (SA) or long acting (LA). Short-acting opioids are the opioids analgesics often used for acute or subacute outpatient opioid therapy as they have an immediate onset of pain medication. Long-acting opioid pain relievers are medicines used to relieve moderate to severe long-term pain and are intended to provide pain management over an extended time. Short acting opioid analgesics were the most prescribed opioid analgesics in Vermont in 2019 and 2020, led by Oxycodone SA at 30.6%, Tramadol SA at 21.6%, and Hydrocodone SA at 17.3%, (Fig. 13) in 2020. No other opioid analgesic made up more than seven percent of opioid analgesic prescriptions.

Figure 13: Ten Most Commonly Prescribed Opioid Analgesics



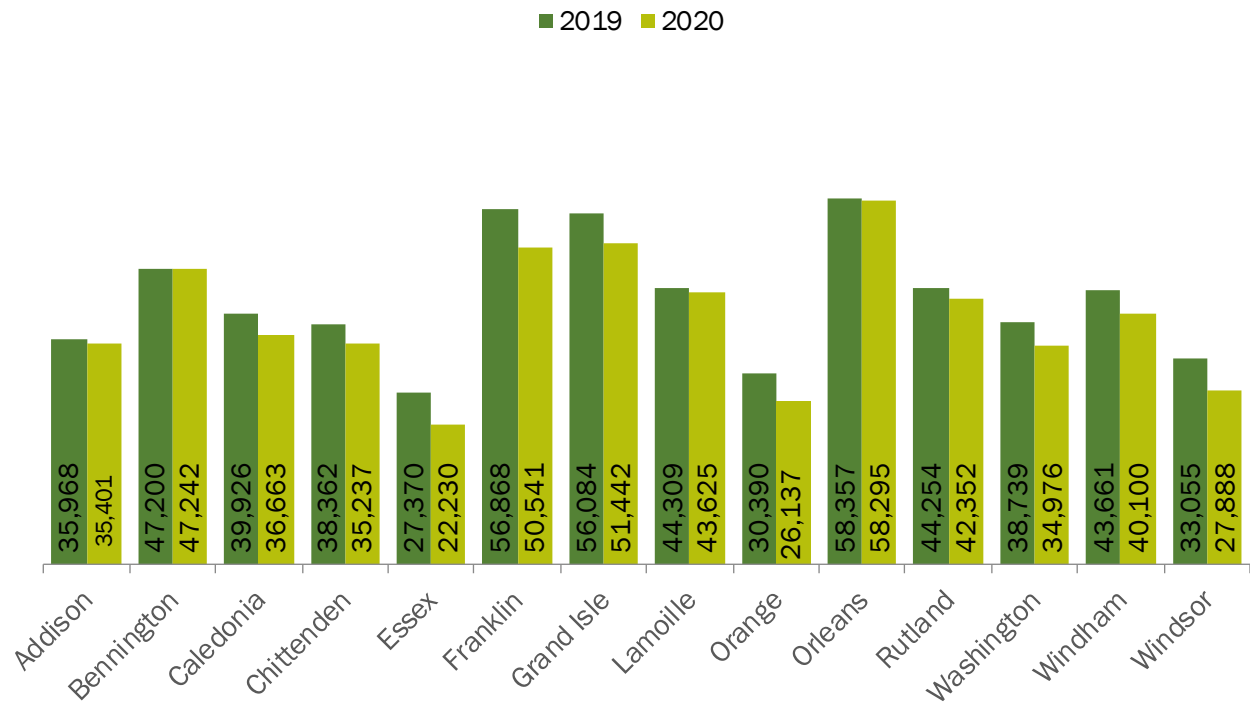
A standardized way to measure opioid analgesic prescriptions is the morphine milligram equivalents, or MME. Further information on opioid analgesics using this standardized measure is found in the definitions section of this report. The total MME prescribed per 100 residents declined from 68,915 in 2016 to 40,507 in 2020, a reduction of 41%.

Figure 14: Total Opioid Analgesic MME Dispensed per 100 Residents



Most counties saw a decline in opioid analgesic MME per 100 residents between 2019 and 2020. Franklin and Grand Isle Counties show reductions during this time but still have some of the highest rates in the state, while Essex County had the lowest rate in both 2019 and 2020 (Fig. 15).

Figure 15: Total Opioid Analgesic MME Dispensed per 100 Residents by County (2019, 2020)



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

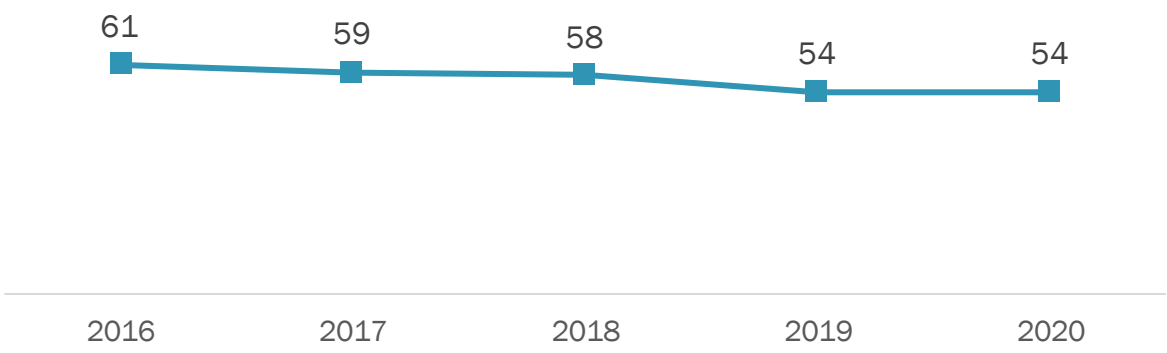
[2] Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: http://dx.doi.org/10.15585/mmwr.rr6501e1.

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.

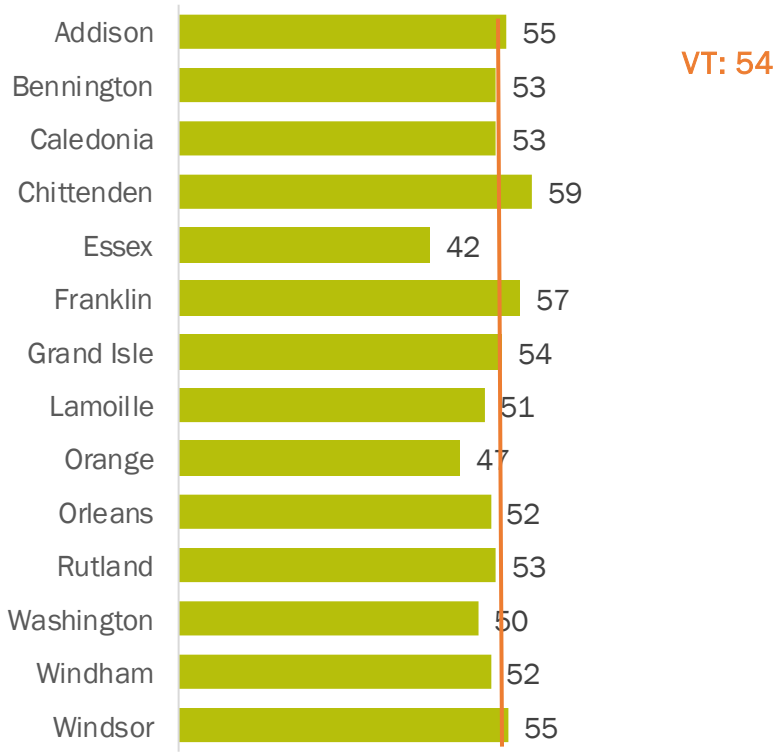
The average daily MME dispensed for opioid analgesics declined approximately 11% from 61 in 2016 to 54 in 2020 (Fig. 16).

Figure 16: Average Daily MME Dispensed for Opioid Analgesic Prescriptions



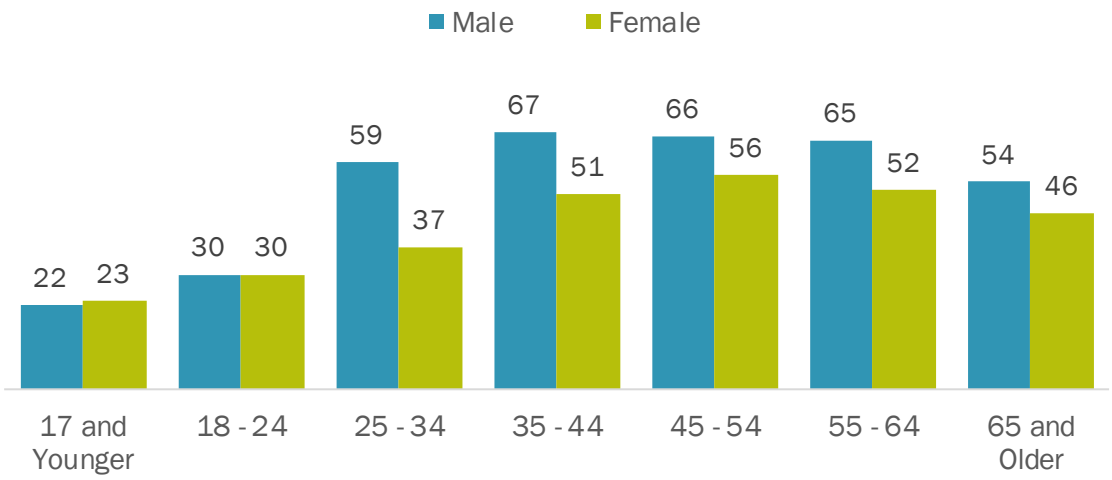
In 2020, Chittenden County had the highest average daily MME dispensed at 59 followed by Franklin at 57. Essex and Orange Counties had the lowest average daily MME dispensed. (Fig. 17). In 2019, Windsor County had the highest average daily MME followed by Chittenden and Franklin.

Figure 17: Average Daily MME for Opioid Analgesic Prescriptions Dispensed by County (2020)



Males typically had higher average daily MME dispensed than females, except in the youngest age group. Among Vermonters under the age of 18, the average daily MME dispensed was similar for males and females. Average daily MME peaked at age 35-44 for men and 45-54 for women (Fig. 18). This overall trend is similar for 2019.

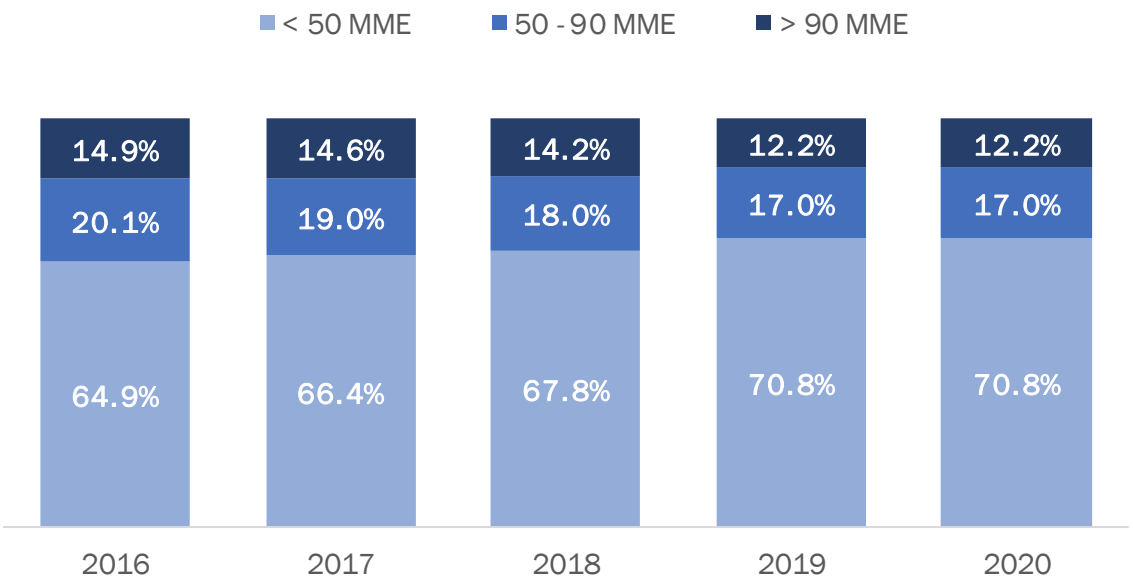
Figure 18: Opioid Analgesic Average Daily MME Dispensed by Age and Gender (2020)



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 2020, over 70% of opioid analgesic prescriptions dispensed in Vermont had an average daily MME under 50, an increase of over 9% from 2016. High daily MME prescribing (>90 MME) decreased 18% in the same period (Fig. 19). Without diagnosis information, interpreting these trends can be challenging.

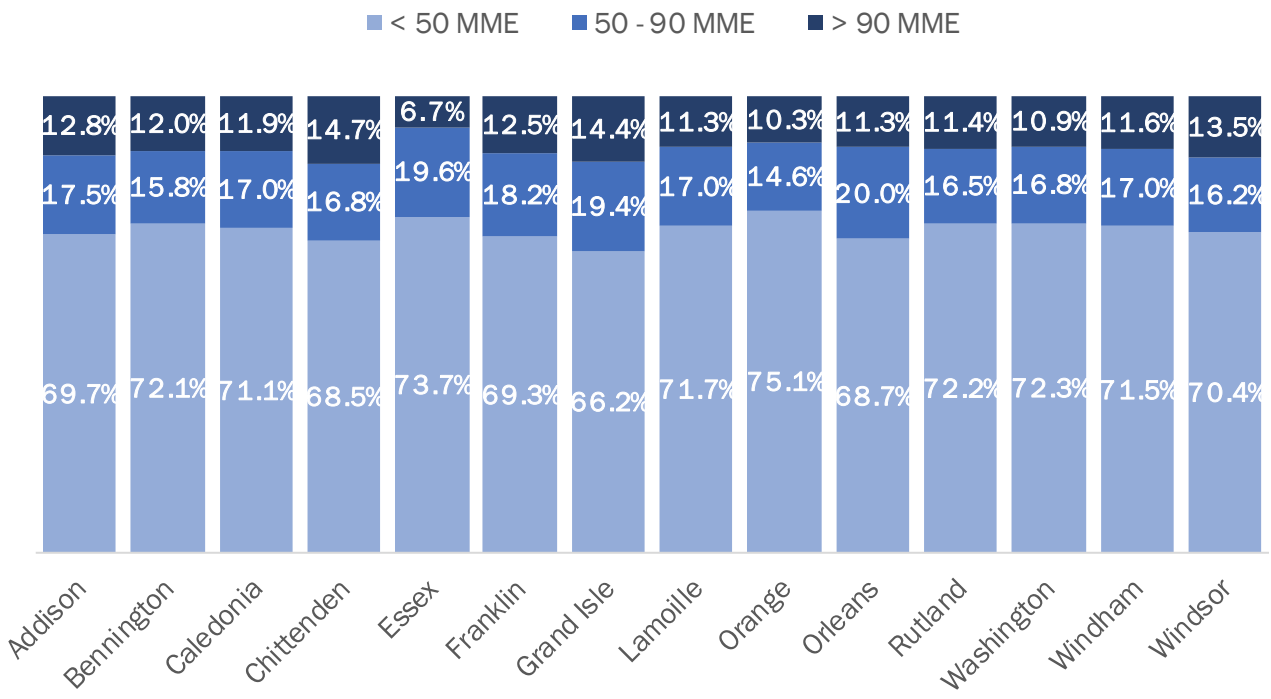
Figure 19: Percent of Opioid Analgesic Prescriptions by Average Daily MME Category (2020)



[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 2020, average daily MME by county was similar to the state level. However, Grand Isle and Chittenden Counties had the greatest percentage of high MME opioid analgesic use and Essex County had the lowest (Fig. 20). In 2019, the counties with the greatest percentage of high MME prescriptions were Windsor and Chittenden counties.

Figure 20: Percent of Opioid Analgesic Prescriptions by MME Category and County (2020)

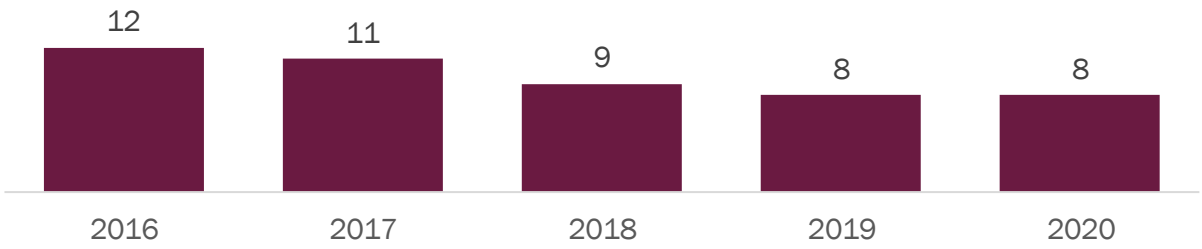


Long-term opioid use often begins with treatment of acute pain. The CDC notes that in cases of acute pain, more than a few days of exposure to opioid analgesics significantly increases hazards and risk of overdose.[5] Supplying three or fewer days of opioids in an initial opioid analgesic prescription 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 addiction 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.

The 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 2019 and 2020, the total days' supply of opioid analgesics dispensed in VT was enough for each resident to use opioids for 8 days a year (Fig. 21). This has been decreasing since 2016. 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

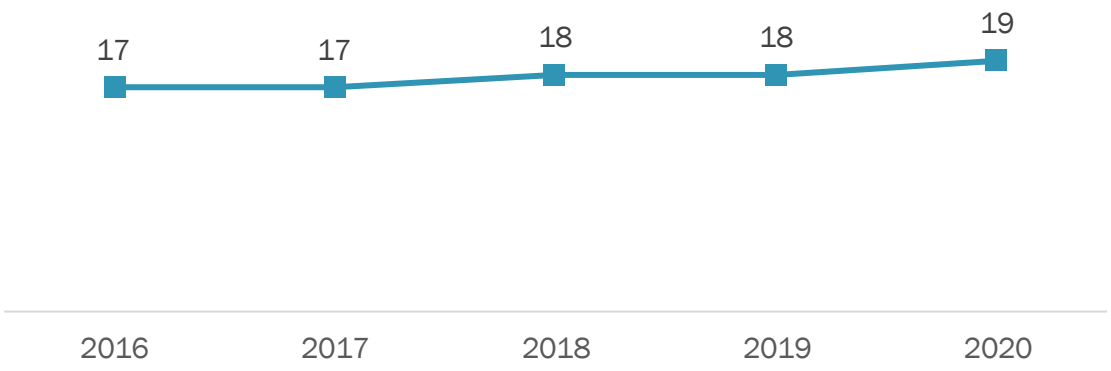


[5] Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: http://dx.doi.org/10.15585/mmwr.rr6501e1.

[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

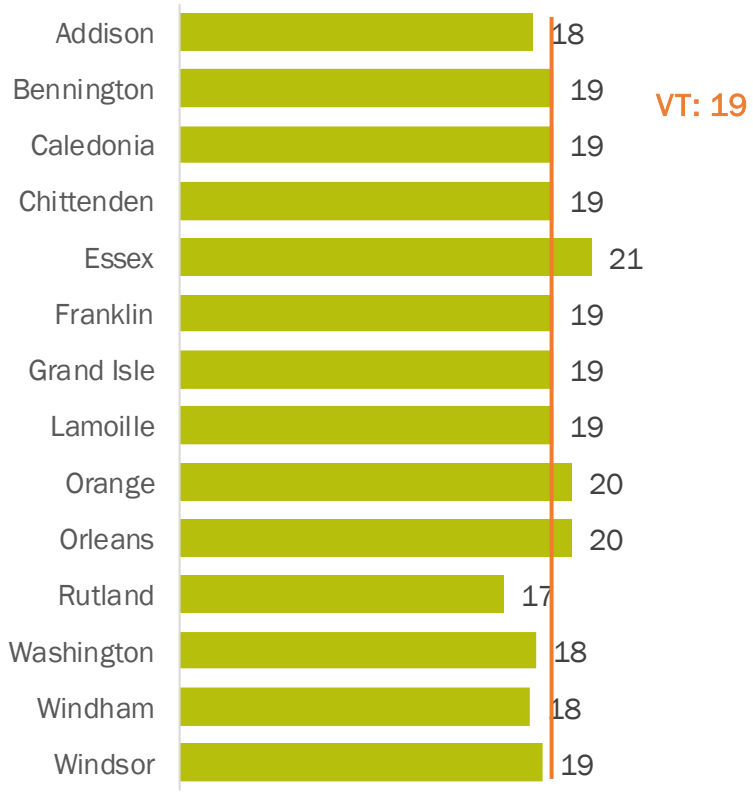
Since 2016, the average days' supply per opioid analgesic prescription has increased from 17 days to 19 days (Fig. 22). While it is not possible to fully understand why the average days' supply has increased without diagnosis information, it is likely the increase is due to less frequent prescribing of opioid analgesics for acute pain in response to the Rule, resulting in an observed increase in the portion of prescriptions associated with chronic pain (which are typically longer). In this situation, the increased average days' supply would be an expected result.

Figure 22: Average Days' Supply per Opioid Analgesic Prescription



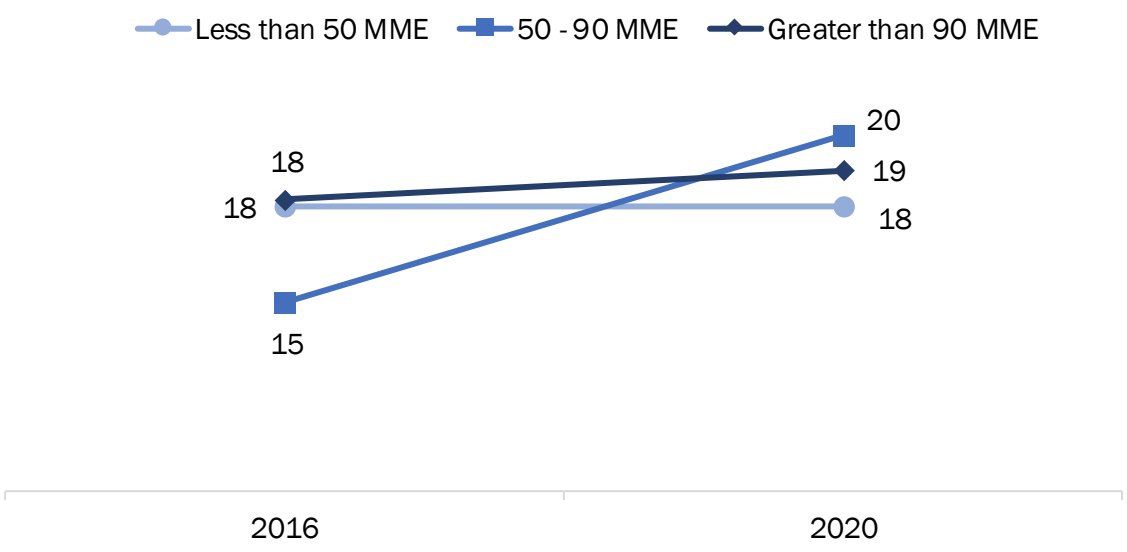
In 2020, Essex County had the highest average days' supply at 21 days (Fig. 23). In 2019, Orange County had the highest average days' supply.

Figure 23: Opioid Analgesic Average Days' Supply by County (2020)



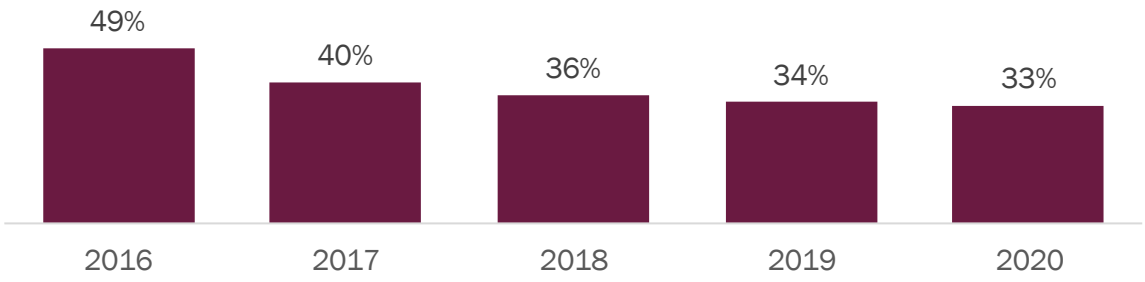
Average days' supply has been stable over time for > 90 MME prescriptions and lower MME prescriptions, while the days' supply of the middle MME category prescriptions has increased (Fig. 24).

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 2020, one-third of long-acting opioid prescription recipients were opioid-naïve when they received their prescription, down from the high of 49% in 2016 (Fig. 25). This is a decrease of nearly 33%.

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

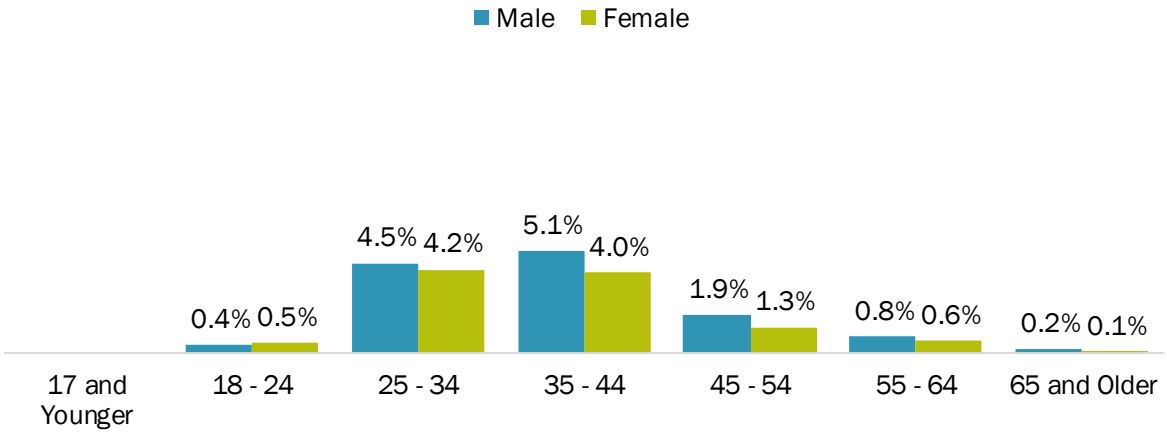


Medication Assisted Treatment (MAT) Prescribing Patterns

These numbers do not include information about people who receive treatment in specialty treatment facilities that dispense buprenorphine or methadone, known as "hubs." Buprenorphine or methadone used in "hubs" are dispensed 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, also known as a "spoke," are reflected in VPMS data because the prescriptions are dispensed by a pharmacy.

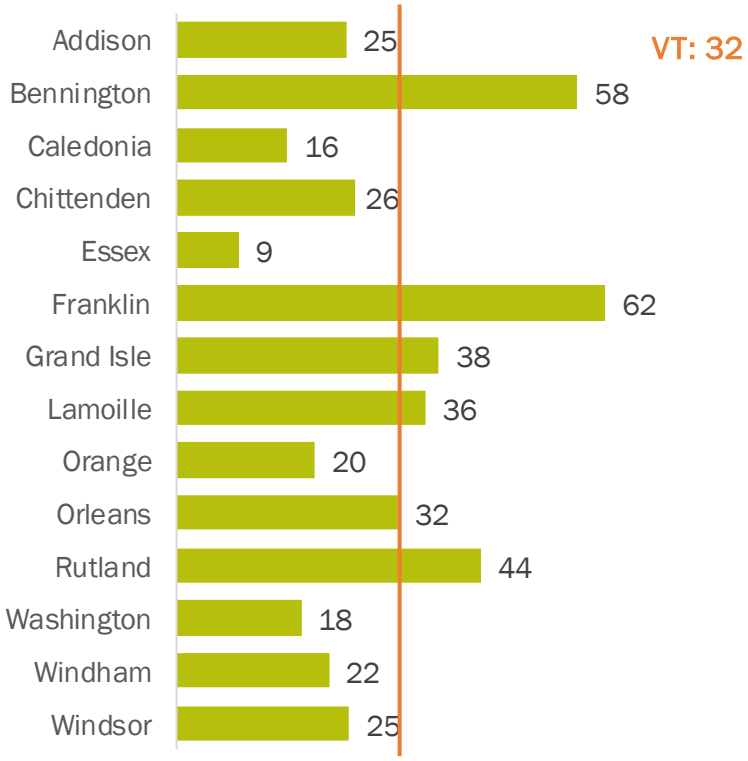
Males and females were nearly equally likely to be prescribed MAT drugs in every age category. People aged 25-44 were most likely to receive a MAT prescription (Fig. 26.). The overall interpretation is similar for 2019 data.

Figure 26: Percent of Population Receiving at Least One MAT Prescription by Age and Gender (2020)



MAT 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 MAT prescriptions is Franklin County. This is the same for 2019 data.

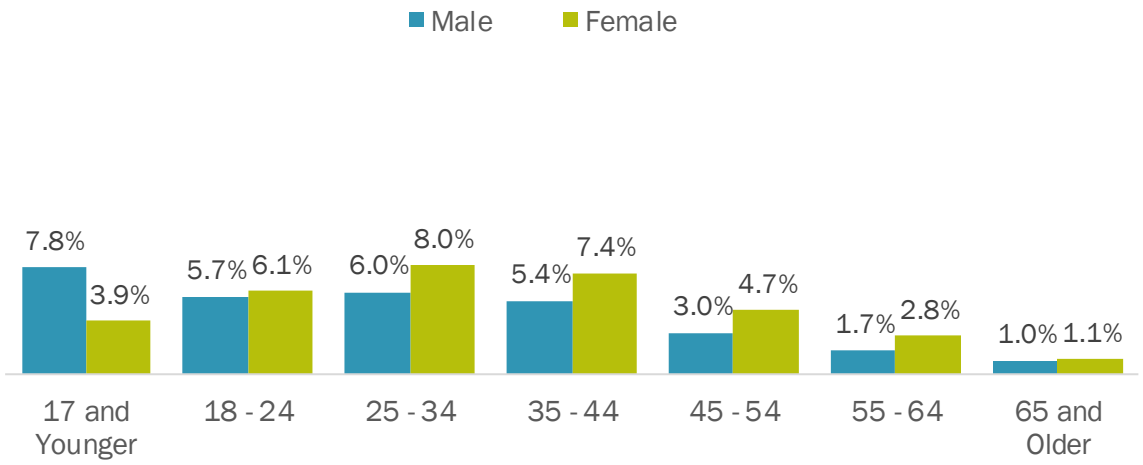
Figure 27: Number of MAT Prescriptions per 100 Residents by County (2020)



Stimulant Prescribing Patterns

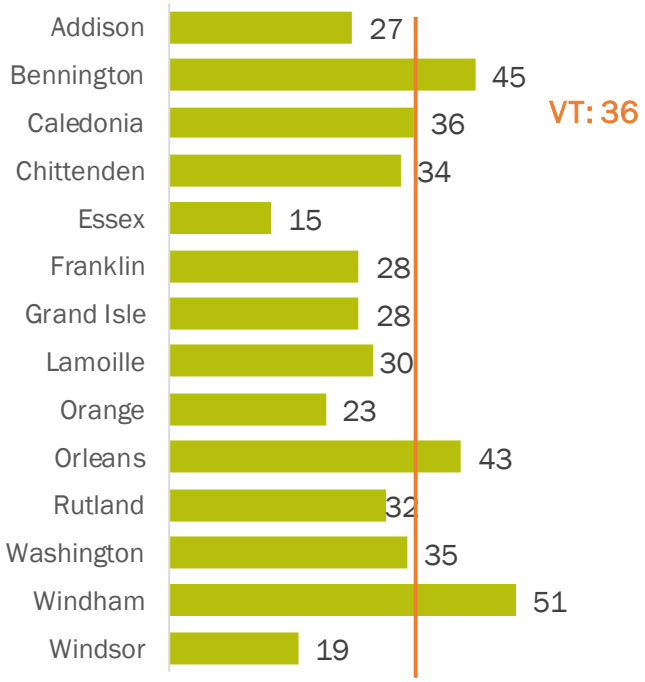
Males under the age of 18 were prescribed stimulants at twice the rate of females. Between 18 and 24 years of age, both genders were prescribed stimulants at a similar rate. In all categories over the age of 18, females were more likely to be prescribed stimulants. (Fig. 28). The trend is the same for 2019 data.

Figure 28: Percent of Population Receiving At Least One Stimulant Prescription by Age and Gender (2020)



There is significant county to county variation in the number of stimulant prescriptions per 100 residents, with Windham County 42% higher than the state average of 36 stimulant prescriptions per 100 residents (Fig. 29). This is the same for 2019 data.

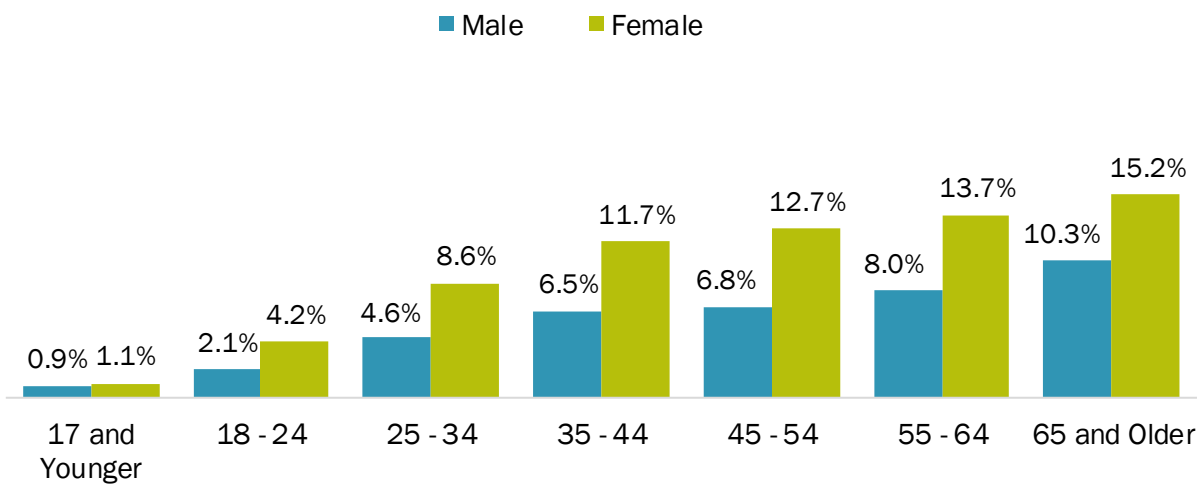
Figure 29: Number of Stimulant Prescriptions per 100 Residents by County (2020)



Benzodiazepine Prescribing Patterns

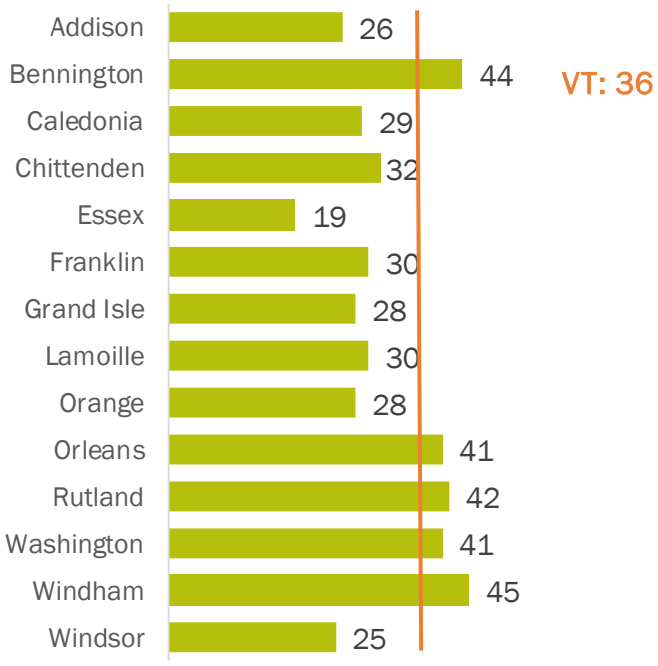
Females in all age categories were more likely to receive prescriptions for benzodiazepines than men. Benzodiazepines dispensed increased as people age (Fig. 30). This is the same for 2019 data.

Figure 30: Percent of Population Receiving At Least One Benzodiazepine Prescription by Age and Gender (2020)



There are significant differences in benzodiazepine prescribing rates by county with Windham, Bennington, Rutland, Washington, and Orleans counties all higher than the state rate of 36 prescriptions per 100 residents (Fig.31). These counties also had the highest rates in 2019.

Figure 31: Benzodiazepine Prescriptions Dispensed per 100 Residents by County (2020)

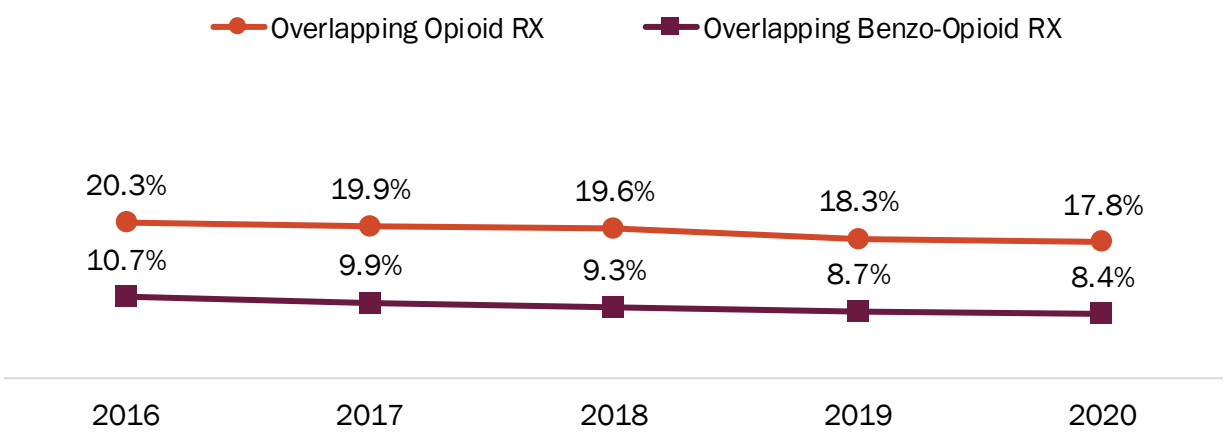


Prescription Issues of Concern

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, 17.8% of prescription days overlapped with a second opioid analgesic prescription. Less than one in ten opioid analgesic prescription days overlapped with a benzodiazepine prescription (8.4%) (Fig. 32).

These trends have decreased since 2016. This may be due to increased use of VPMS and decreases in opioid prescribing.

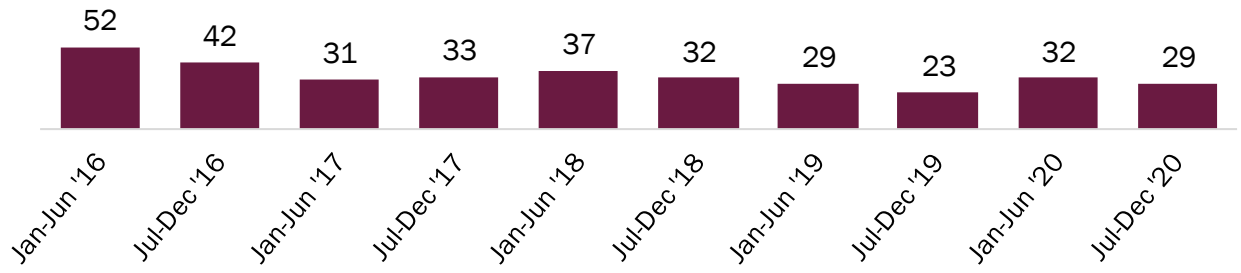
Figure 32: Percent of Opioid Analgesic Prescription Days with Overlapping Prescriptions



Receiving prescriptions from multiple prescribers and pharmacies within a given period, or a "Multiple Provider Episodes," has historically been used as a measure of potential misuse or diversion, as it may show that an individual is purposefully receiving prescriptions from multiple providers without a clinical need. However, there may be legitimate reasons for seeing multiple providers at one time or receiving prescriptions from multiple pharmacies, such as patients with cancer or in hospice.

During the first half of 2020, 32 individuals exceeded the multiple provider episode thresholds set by the VPMS program. This means that these individuals received prescriptions filled at multiple pharmacies and were prescribed by multiple prescribers within the first six months of the year. In the second half of 2020, 29 individuals exceeded the thresholds. These numbers have been generally decreasing since 2016 (Fig. 33).

Figure 33: Individuals Exceeding Multiple Provider Thresholds in a Six-Month Period



Conclusion

In 2020, the coronavirus disease (COVID-19) pandemic caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) impacted healthcare systems dramatically. Elective surgeries were delayed, and healthcare visits were restricted as the healthcare system pivoted to respond to the COVID-19 pandemic. In general, acute injuries may have diminished as less people were traveling and delaying elective surgeries. While this likely had an impact on prescribing, for many metrics it is not possible to say whether the decrease in prescriptions related to these issues was attributable to COVID-19 or was a continuation of previous trends.

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 assisted treatment (MAT) for opioid use disorders as shown in the increase in MAT 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 are showing increased use of stimulants and stimulant prescriptions. 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 such as the increasing dispensing of prescription stimulants. Analysis of the use of short-acting and long-acting opioid analgesics may provide insight and opportunities to inform changes in prescribing practices.

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.

If you would like to provide feedback on this report, please click here to complete a short survey: https://survey.alchemer.com/s3/6586450/2020-VPMS-Annual-Report-Feedback