

2020 Annual Report

South Carolina Prescription Drug Monitoring Program

Samantha Truman, Prescription Drug Monitoring Program, Epidemiologist
Christie Frick, Prescription Drug Monitoring Program, Director
Lisa Thomson, Bureau of Drug Control, Director

Publication Date:

April 2021



2006
Legislation passed
• Legislation was passed mandating SCRIPTS.

February 2008
SCRIPTS Launched
• SCRIPTS was launched.

January 2014
Legislation passed
• Legislation was passed requiring dispenser to upload data to SCRIPTS on a daily basis

November 2014
Revised Pain Management Guidelines
• Joint revised Pain Management Guidelines approved by the SC State Medical Board, SC Board of Dentistry, and SC Board of Nursing consider registration and utilization of SCRIPTS "mandatory for prescribers to provide safe, adequate pain treatment."

December 2014
State Plan to Prevent and Treat Prescription Drug Abuse
• The Governor's Prescription Drug Abuse Prevention Council released the State Plan to Prevent and Treat Prescription Drug Abuse.

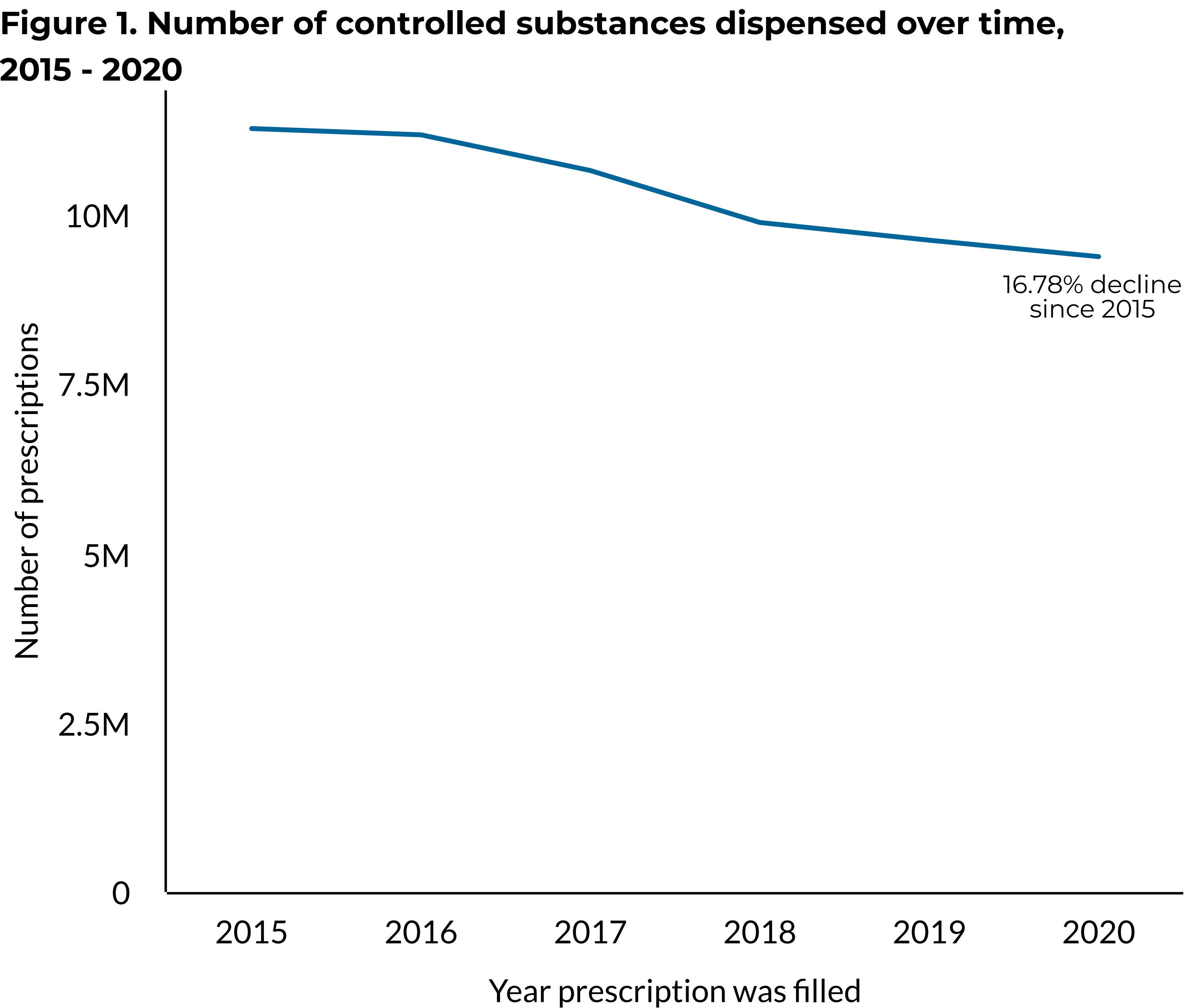
September 2015
First integrations
• First two integrations of SCRIPTS into Emergency Departments' electronic health records were completed.

November 2015
Online registration
• SCRIPTS switched vendors and started online registration for users, registration of delegate accounts, and online password resets.

I. Executive Summary

The South Carolina Prescription Monitoring Program (SC PMP) became fully operational on February 1, 2008. The purpose of the PMP is to improve the state’s ability to identify and stop diversion of prescription drugs in an efficient and cost-effective manner that will not impede the appropriate medical utilization of licit controlled substances. This summary highlights trends in (1) prescription and patient volume and (2) prescriber and pharmacist utilization from 2015 to 2020. The full report provides details regarding the prescribing patterns of SC prescribers.

In 2020, the number of controlled substance prescriptions dispensed in SC was 9,358,829. Fortunately, this number has declined by 16.78% since 2015 (Figure 1). Benzodiazepines and opioids have also continued to decrease since 2015 (Figure 2). However, stimulants have increased by 12.23% from 2015 to 2020. For further details regarding the characteristics of the controlled substances dispensed in SC, please see Table 1.



May 2017

Mandated prescriber use of PMP

- Mandated prescriber use of PMP, for practitioners to check PMP before issuing a CII prescription (S.C. Code Ann. § 44-53-1645).

August 2017

Quarterly prescriber reports

- Sent out first round of quarterly prescriber reports to approximately 8,000 prescribers.

May 2018

NarxCare began

- Limited initial opioid prescriptions for acute pain management or postoperative pain management to not exceed a seven-day supply, except when clinically indicated.
- PMP began using NarxCare.

April 2020

Clinical alerts began

- Required veterinarians to report all CII-CIV daily.
- Turned on clinical alerts to alert providers of patients seeing multiple providers, patients receiving an opioid prescription that had an MME>90, or if a patient was receiving an overlap of opioids and benzodiazepines.

May 2020

Interactive prescriber reports

- Prescriber reports are interactive when viewed in the PMP Aware portal.

December 2020

Interstate data sharing

- SCRIPTS users can access data from 44 other state PMPs, plus the District of Columbia, Puerto Rico and the Military Health System.

Figure 2. Number of controlled substances dispensed by drug class, 2015 - 2020

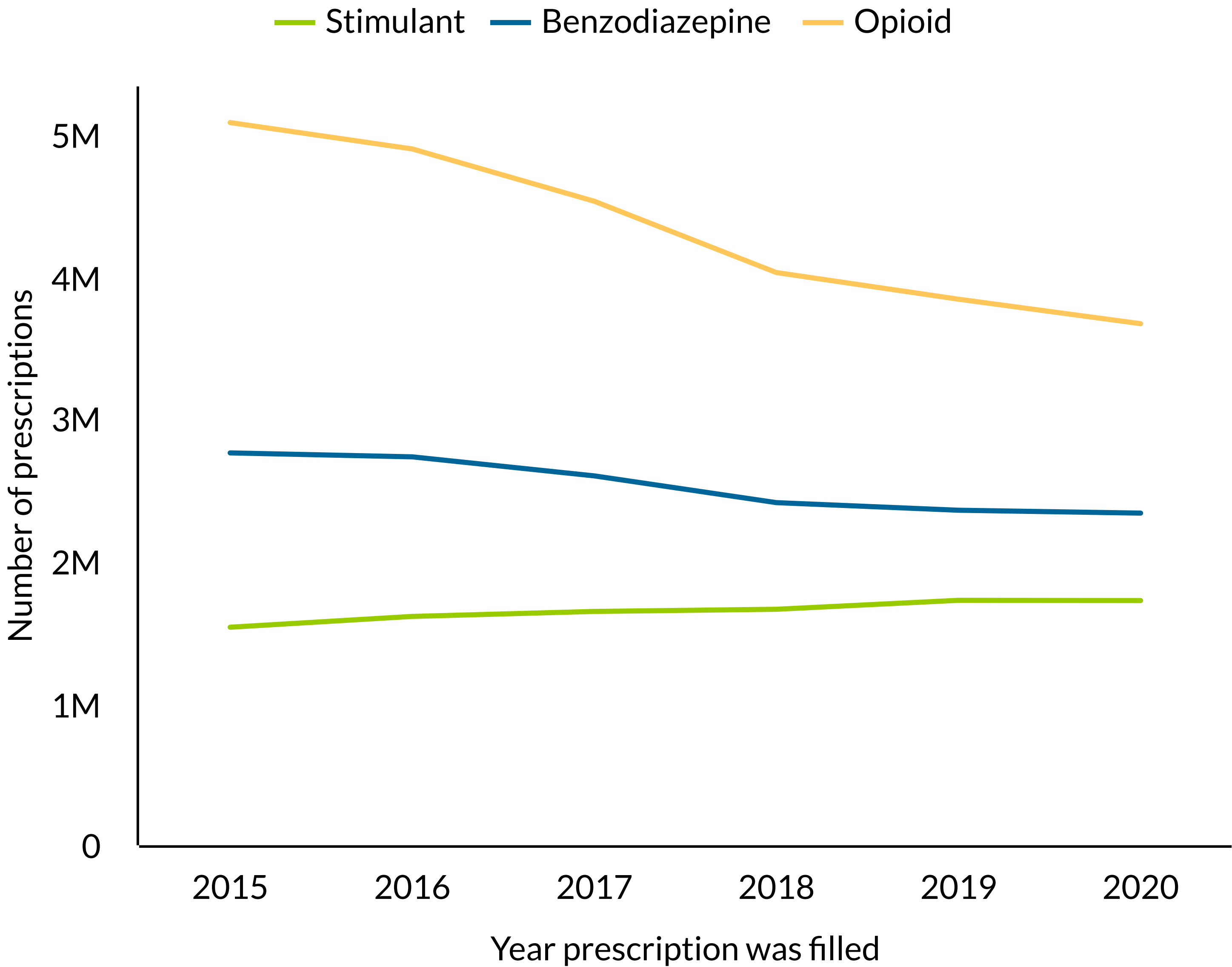


Table 1. Characteristics of controlled substance prescriptions dispensed in SC, 2015 - 2020

Characteristics	2015	2016	2017	2018	2019	2020
Number of Controlled Substance Prescriptions	11,245,364	11,153,135	10,626,721	9,861,690	9,600,903	9,358,829
Prescription Quantity ¹	620,492,739	607,661,115	571,150,075	512,987,076	479,033,085	466,577,961
Number of Unique Patients	1,927,722	1,902,724	1,831,052	1,706,888	1,644,259	1,556,625
Number of Unique Prescribers	65,261	69,326	66,711	64,576	65,844	67,773
Number of Unique Pharmacies	1,812	2,151	1,796	1,850	1,713	1,793

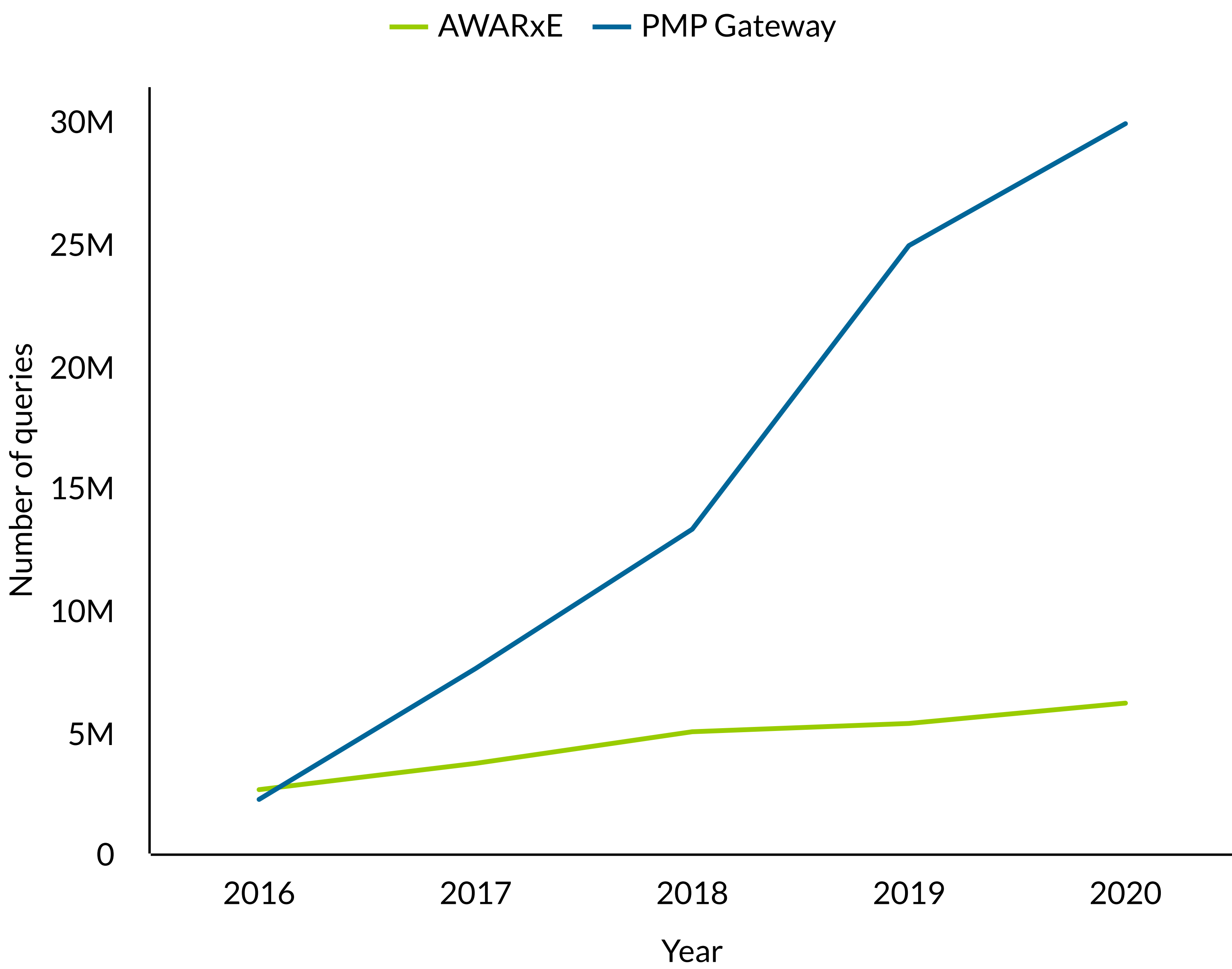
¹ Prescription quantity only includes controlled substances that were capsules or tablets.

Appriss, SC's current vendor, operates both PMP AWARe and Gateway. PMP AWARe users create profiles validated against the state licensing system and must log into the web portal to perform a patient search. While this allowed licensed users to easily access PMP data, having to log in each time to view PMP data proved to be a major barrier. Therefore, in 2013, the SC PMP was awarded a grant by the Substance Abuse and Mental Health Services Administration (SAMSHA) to

integrate the PMP into healthcare systems, so that users no longer have to sign in each time to access PMP data. These integrations are enabled using an Application Protocol Interface (API) known as Gateway. This translation service connects health information systems to the PMP. In September 2015, the first two integrations were completed. Since that time, the total number of PMP queries conducted by pharmacists and prescribers has increased by 646.81% from 2016 to 2020. Since not all health systems are integrated, Figure 3 shows the number of queries by both AWARe and PMP Gateway.

A goal of the PMP is to inform prescribers about possible drug misuse at the time of prescribing. Frequent use of the PMP has been shown to aid prescribers in detecting likely prescription drug abusers and multiple provider episodes.¹ We defined multiple provider episodes as visiting 10 or more prescribers during a 90-day period.² From 2015 to 2020, there was an 88.51% decrease in the number of patients that filled a prescription in SC from 10 or more prescribers (Figure 4).

Figure 3. Number of PMP queries over time, 2016 - 2020



Top 5 Controlled Substances Dispensed in 2020

1. hydrocodone bitrate/acetaminophen (Vicodin, Lortab)
2. dextroamphetamine sulf-saccharate/amphetamine sulf-aspartate (Adderall)
3. tramadol HCL (Ultram)
4. alprazolam (Xanax)
5. zolpidem tartrate (Ambien)

The continual efforts of the Bureau of Drug Control to create an efficient and streamlined program have increased the number of frontline workers that use this data as an informative tool regarding the use of controlled substances among their patients (Figure 5). These efforts will continue to reduce the number of people who misuse, abuse, or overdose on these substances and ensure that patients have better access to safe and effective treatment.

Figure 4. Patients seeing 10 or more prescribers in a 90-day period, 2015 - 2020

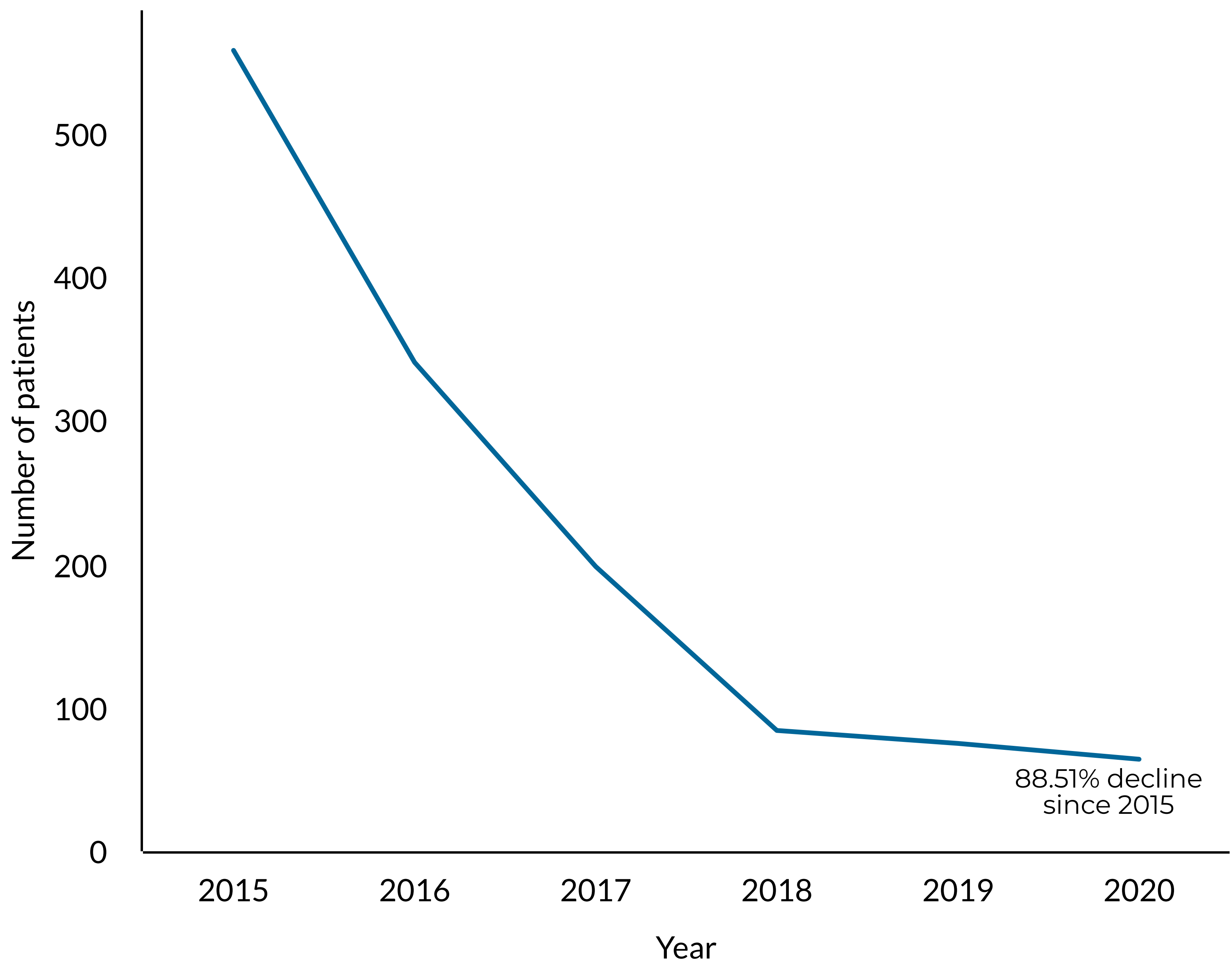
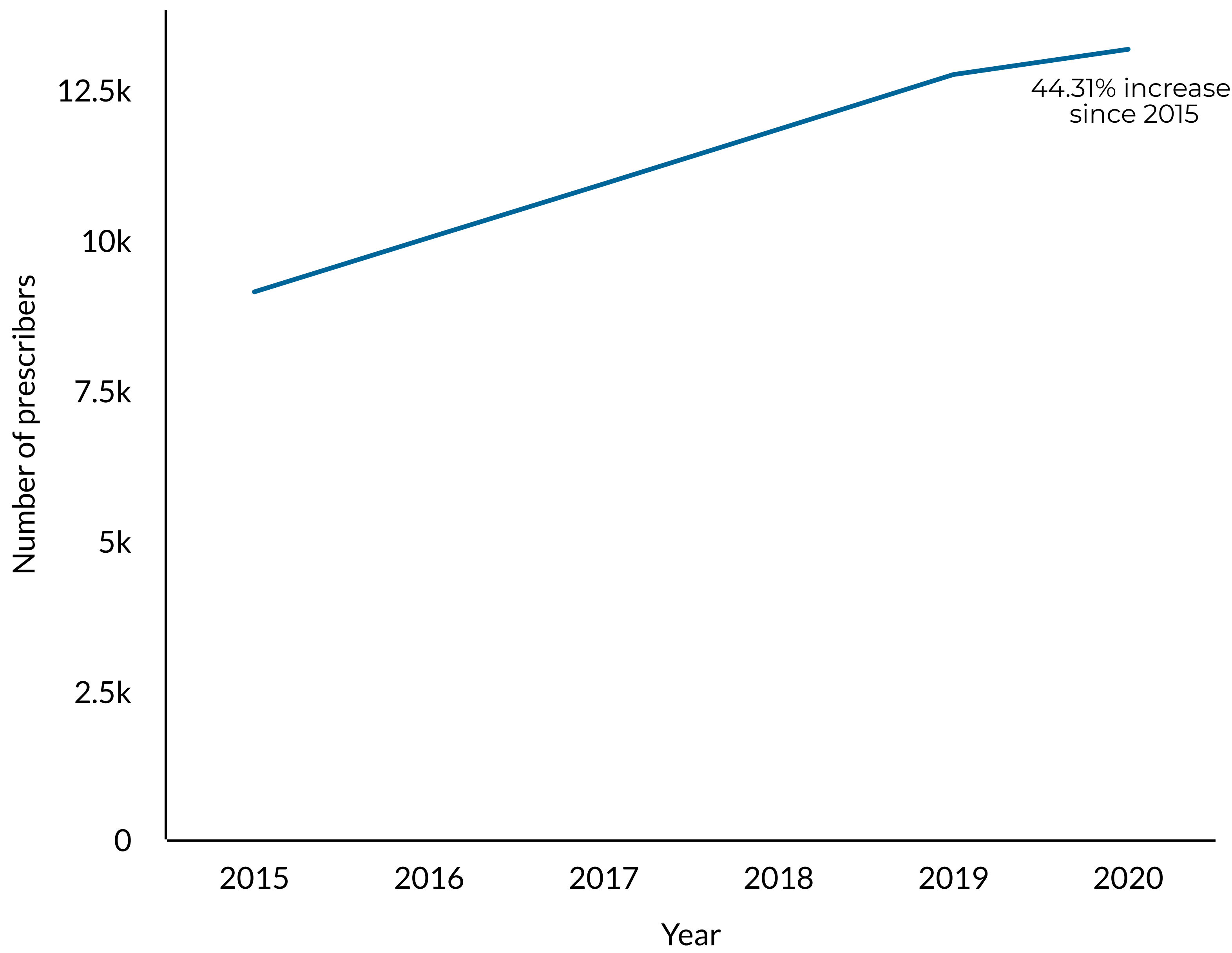


Figure 5. Number of prescribers active in the PMP, 2015 - 2020



II. Introduction

In 2006, the SC PMP, known as SCRIPTS (South Carolina Reporting & Identification Prescription Tracking System), was mandated by the South Carolina General Assembly. S.C. Code Ann. § 44-53-1640 to require in-state and nonresident South Carolina licensed dispensers to submit data on Schedule II - IV controlled substances to the Bureau of Drug Control, Department of Health and Environmental Control (DHEC). For details on the information required for each prescription, please see Table 2.

Table 2. Required prescription information	
Category	Domain Fields
Dispenser data	<ul style="list-style-type: none">• Dispenser DEA number
Prescriber data	<ul style="list-style-type: none">• Prescriber DEA number
Patient data	<ul style="list-style-type: none">• Name• Address• Date of birth
Prescription data	<ul style="list-style-type: none">• Name• Strength• Prescription number• Date the prescription was issued by prescriber• Date the prescription was dispensed• If the prescription was a refill or new prescription• Quantity dispensed• Estimated days of supply

A promising strategy for addressing the prescription opioid overdose epidemic is to improve the use of the PMP³. The PMP is a state-run database that collects patient-specific prescription information at the point of dispensation. This report focuses on the prescribing patterns of SC prescribers and provides details for the following drug classes: benzodiazepines, opioids, and stimulants. These drug classes were identified based on the Center for Disease Control and Prevention (CDC) definition.

III. Benzodiazepines

3.1 Overview

Benzodiazepines are a class of central nervous system depressant drugs approved to treat a diverse set of medical conditions, which include anxiety, insomnia, seizures, and acute alcohol withdrawal.⁴ This section reports on benzodiazepines that were prescribed by a SC provider and dispensed in SC. In 2020, the most common prescriptions filled of benzodiazepines in SC were alprazolam, lorazepam, clonazepam, diazepam, and temazepam. From 2015 to 2020, the number of dispensed benzodiazepine prescriptions decreased by 13.71% (2,543,840 to 2,195,204, respectively) (Figure 6). Additionally, the total quantity of benzodiazepine prescriptions decreased by 20.81% during the same time period (Figure 7).

Figure 6. Number of filled benzodiazepine prescriptions prescribed by SC prescribers over time

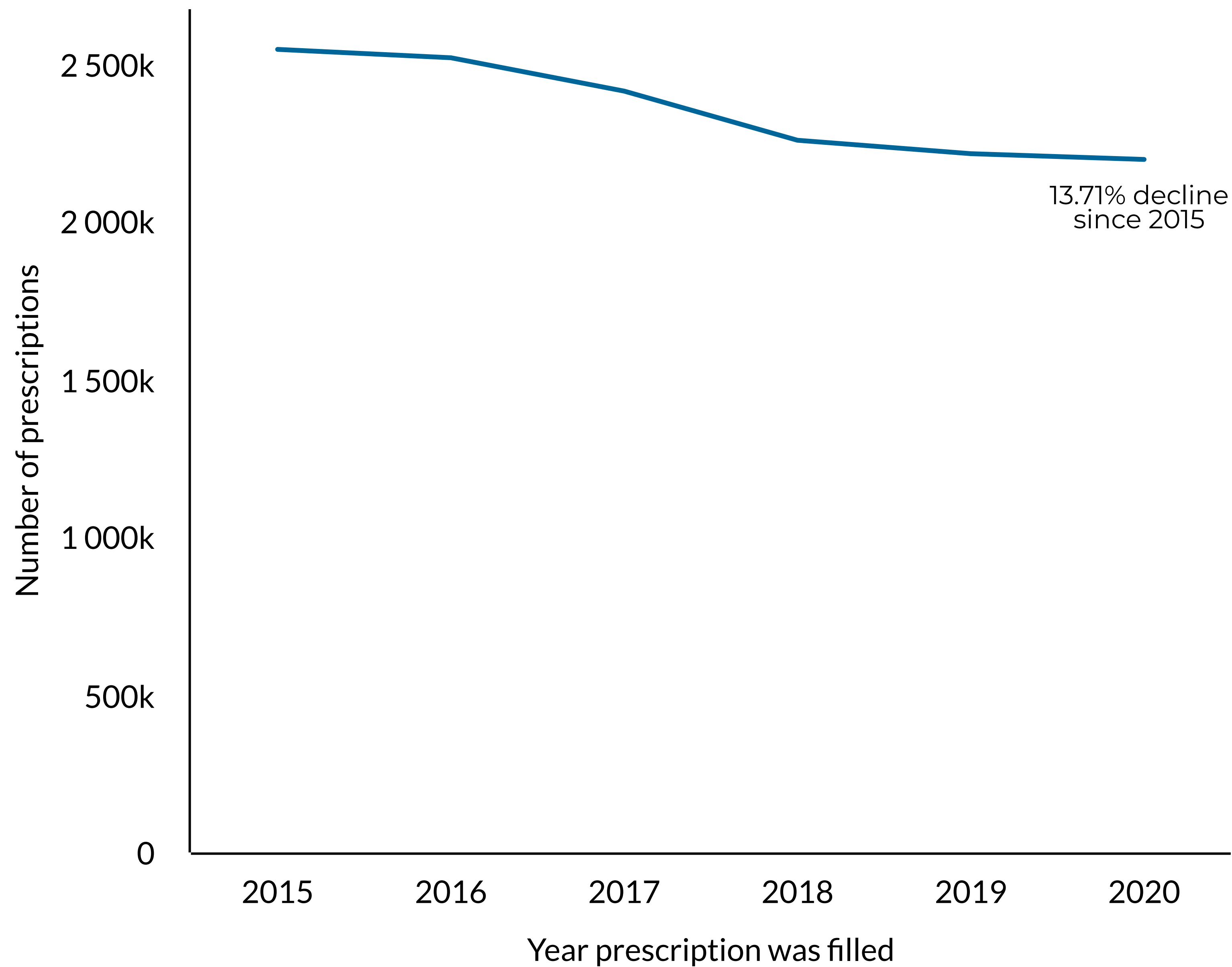
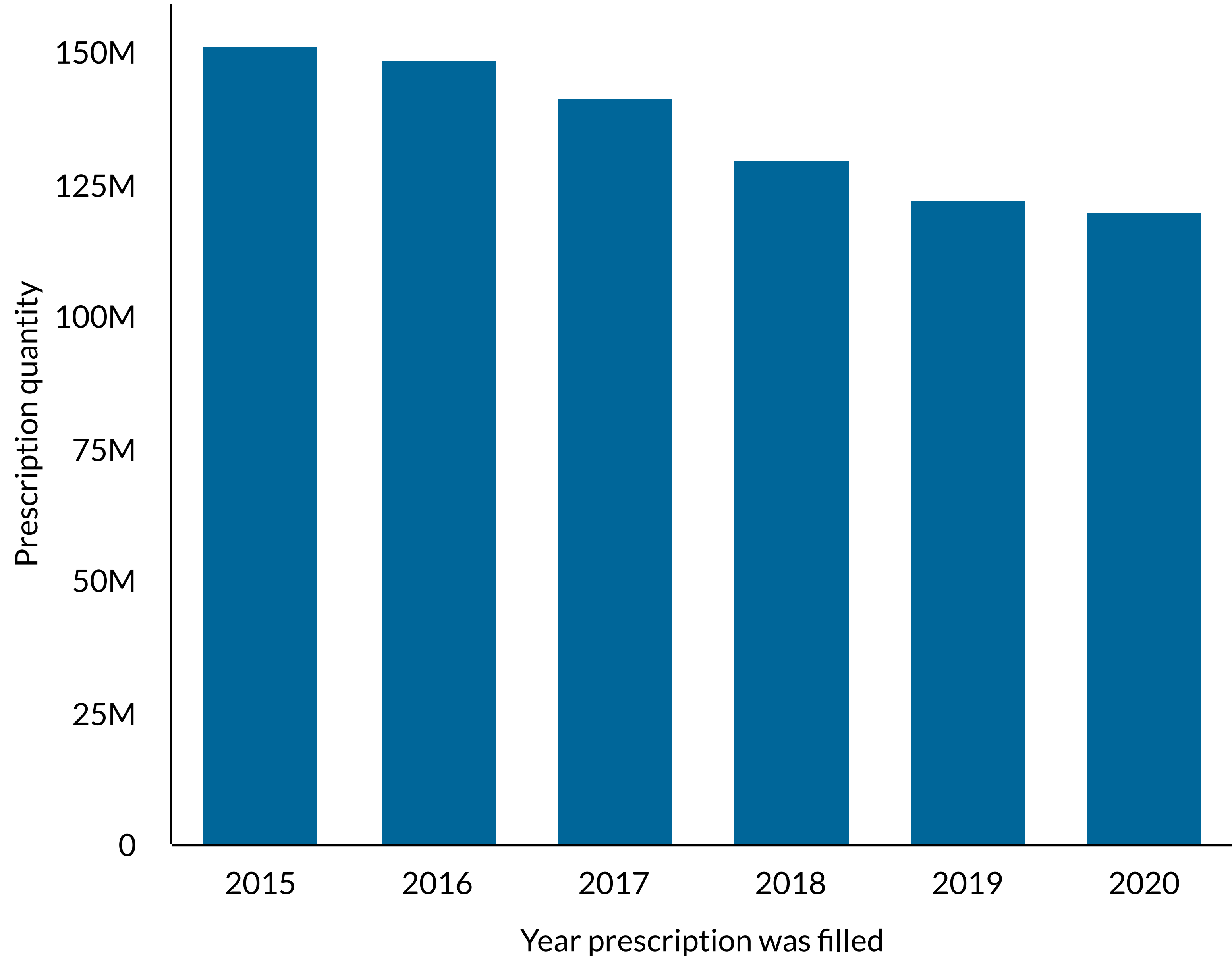


Figure 7. Total prescription quantity for benzodiazepines over time¹

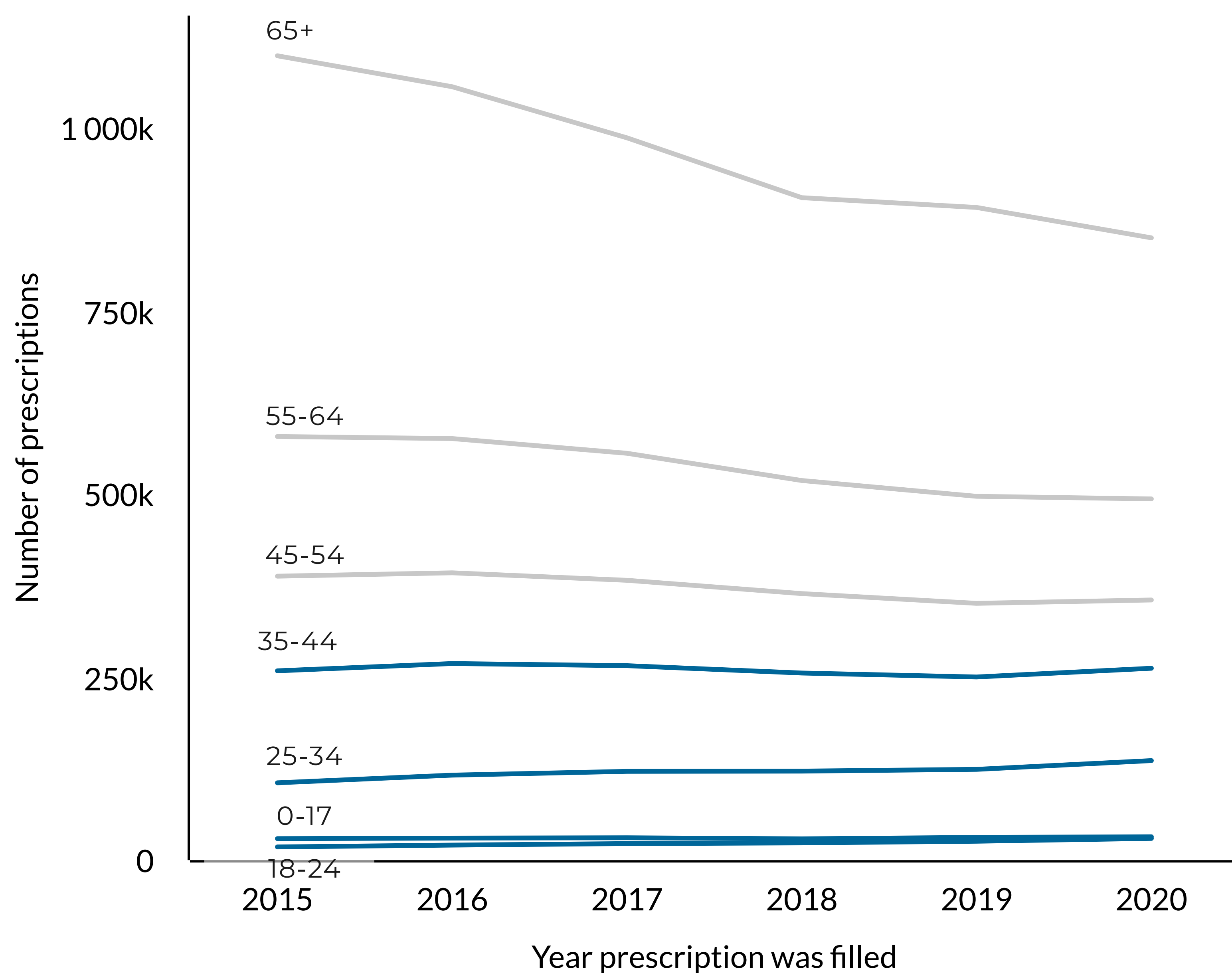


¹ Prescription quantity is defined as a benzodiazepines in a capsule or tablet form.

3.2 Patient Demographics

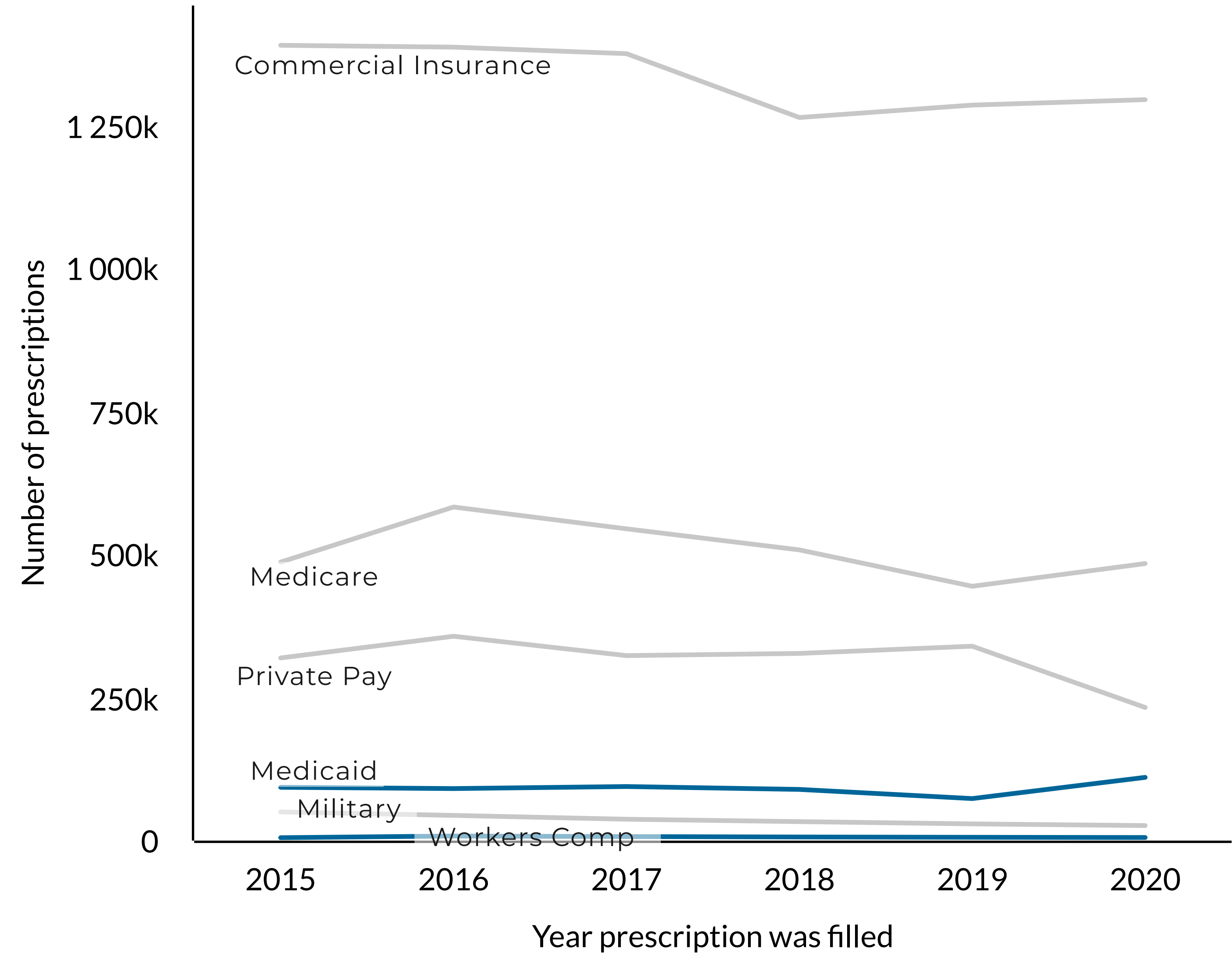
In 2020, the average age of patients receiving benzodiazepines from SC prescribers was 56. While SC has seen a decline over the years in benzodiazepine prescriptions among several age groups, from 2015 to 2020, there was over a 10% increase in prescriptions among those 18-24 and 25-34 years of age (Figure 8). Additionally, more females than males received a benzodiazepine prescription in 2020 (279,270 versus 142,908, respectively). The number of individuals that filled a benzodiazepine prescription decreased by more than 10% among both males and females from 2015 to 2020. From 2015 to 2020, SC prescribers prescribed fewer benzodiazepine prescriptions among all payment types except for Medicaid and Workers Comp (Figure 9). With the exception of controlled substance prescriptions dispensed under a commercial insurance payment provider, Medicare patients filled the most benzodiazepine prescriptions compared to any other insurance type in 2020. The number of patients filling benzodiazepine prescriptions from SC prescribers has decreased for both in-state and out-of-state patients from 2015 to 2020. In 2020, the number of patients with a SC address filling a benzodiazepine prescription in SC and from a SC prescriber was 425,077, while the number of patients with an address outside of SC was 9,212.

Figure 8. Number of filled benzodiazepine prescriptions prescribed by SC prescribers by patient age¹



¹ Age is self-reported from the patient to the pharmacist. Please note that if age was unknown, it was not included in this analysis. The blue line indicates an increase in the number of prescriptions from 2015, while a gray line indicates a decrease.

Figure 9. Number of filled benzodiazepine prescriptions prescribed by SC prescribers by patient insurance type¹



¹ Insurance type is self-reported from the patient to the pharmacist. Please note that if the insurance type was not specified it was not included in this analysis. Private pay refers to those that did not pay with insurance. The blue line indicates an increase in the number of prescriptions from 2015, while a gray line indicates a decrease.

3.3 Geographic Location (Prescriber County)

The average rate of dispensed benzodiazepines prescriptions prescribed by SC prescribers has declined from 520.3 per 1,000 people in 2015 to 426.4 per 1,000 people in 2020. From 2015 to 2020, the rate of benzodiazepine prescriptions shifted from the Upstate region of SC to the Midlands and Low Country regions. The rate of benzodiazepine prescriptions was higher than the SC rate in Kershaw and Bamberg county in 2020, while this was not the case in 2015 (Figure 10 and 11). Additionally, from 2015 to 2020, the number of benzodiazepine prescriptions increased more than 10% in Calhoun and Bamberg county, while decreasing in 38 other counties in SC over time. In 2020, Charleston, Greenville, Florence, Darlington, and Lexington had the highest rate of dispensed benzodiazepine prescriptions.

Figure 10. Rate of benzodiazepine prescriptions per 1,000 residents by prescriber county for 2015

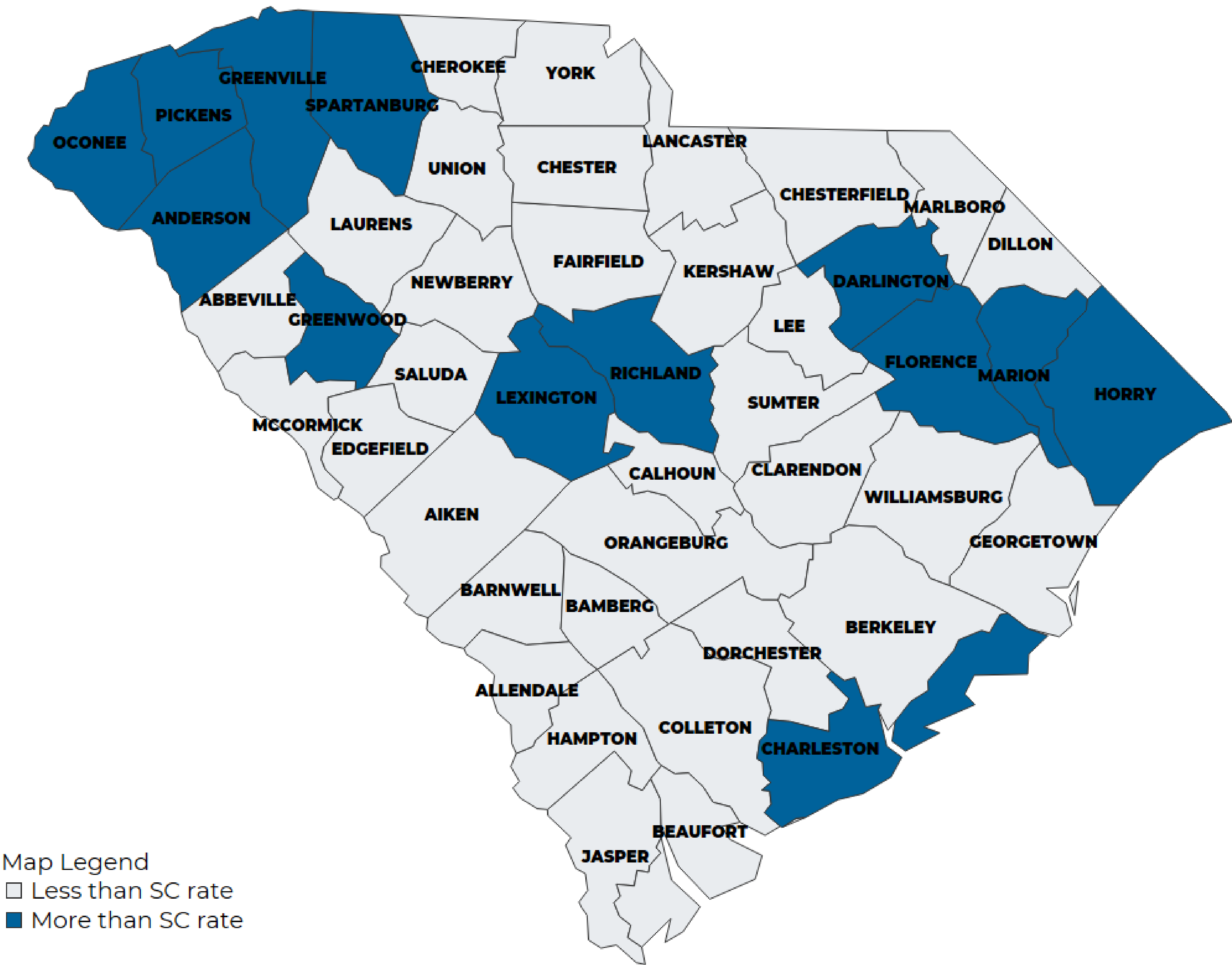
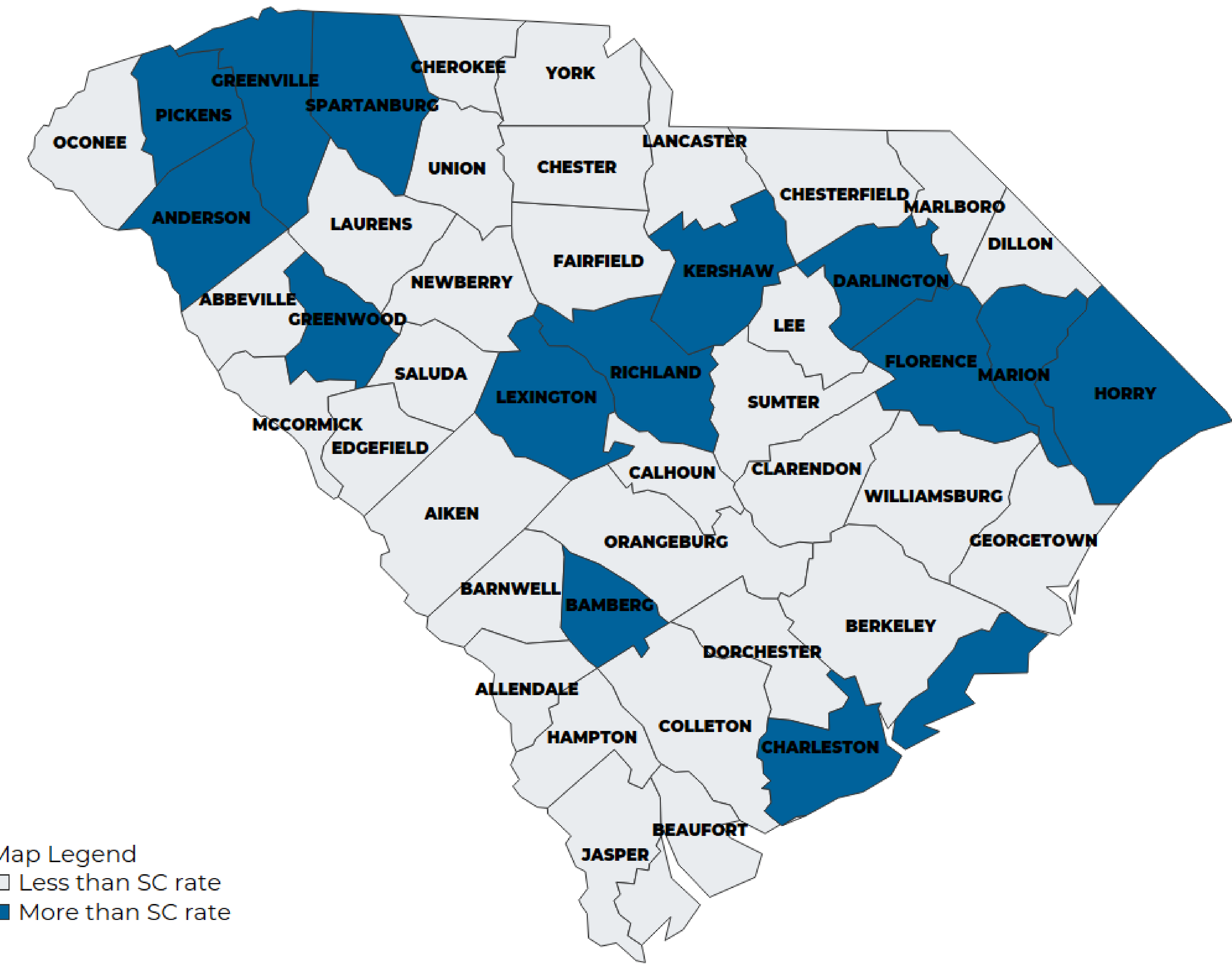


Figure 11. Rate of benzodiazepine prescriptions per 1,000 residents by prescriber county for 2020

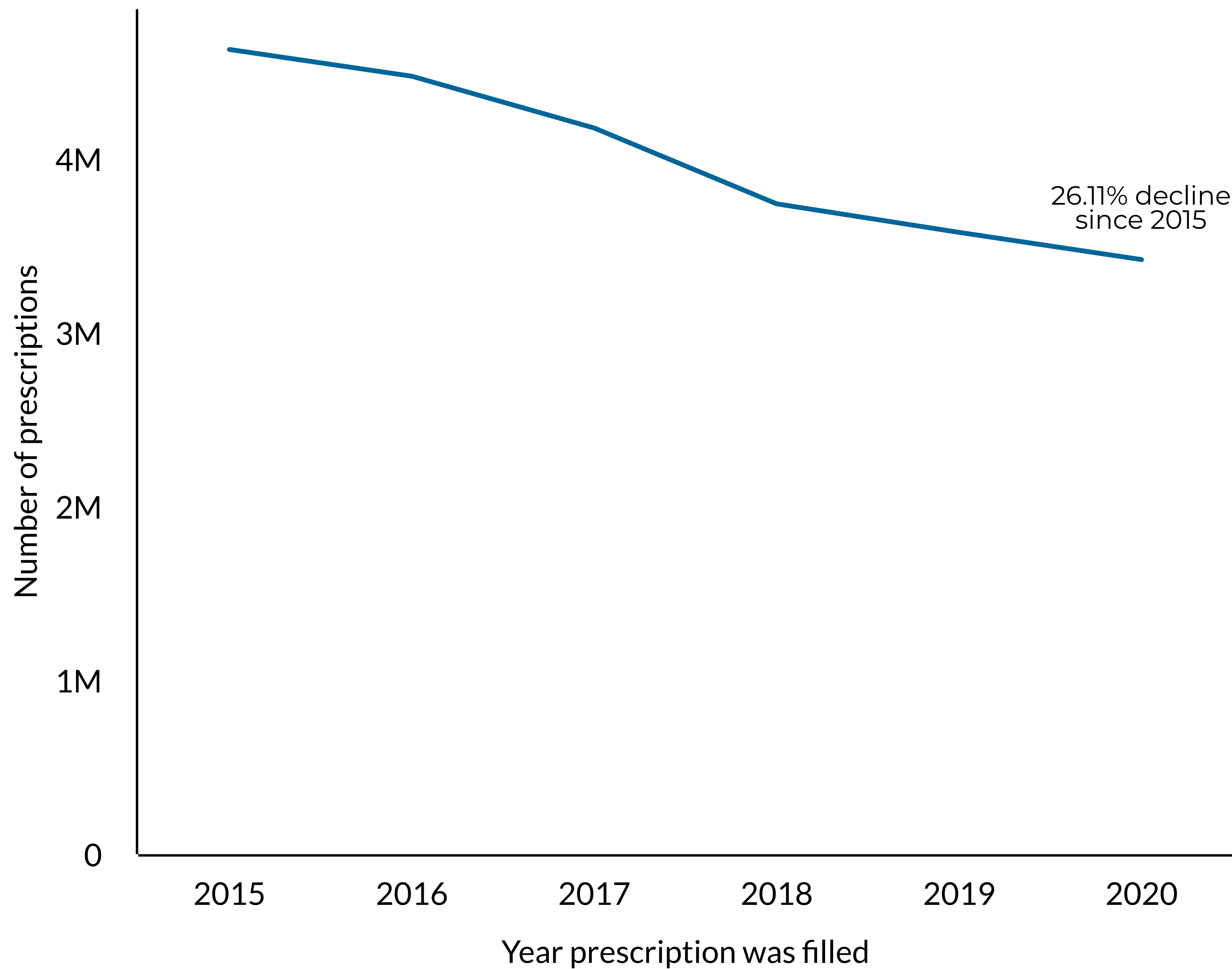


IV. Opioids

4.1 Overview

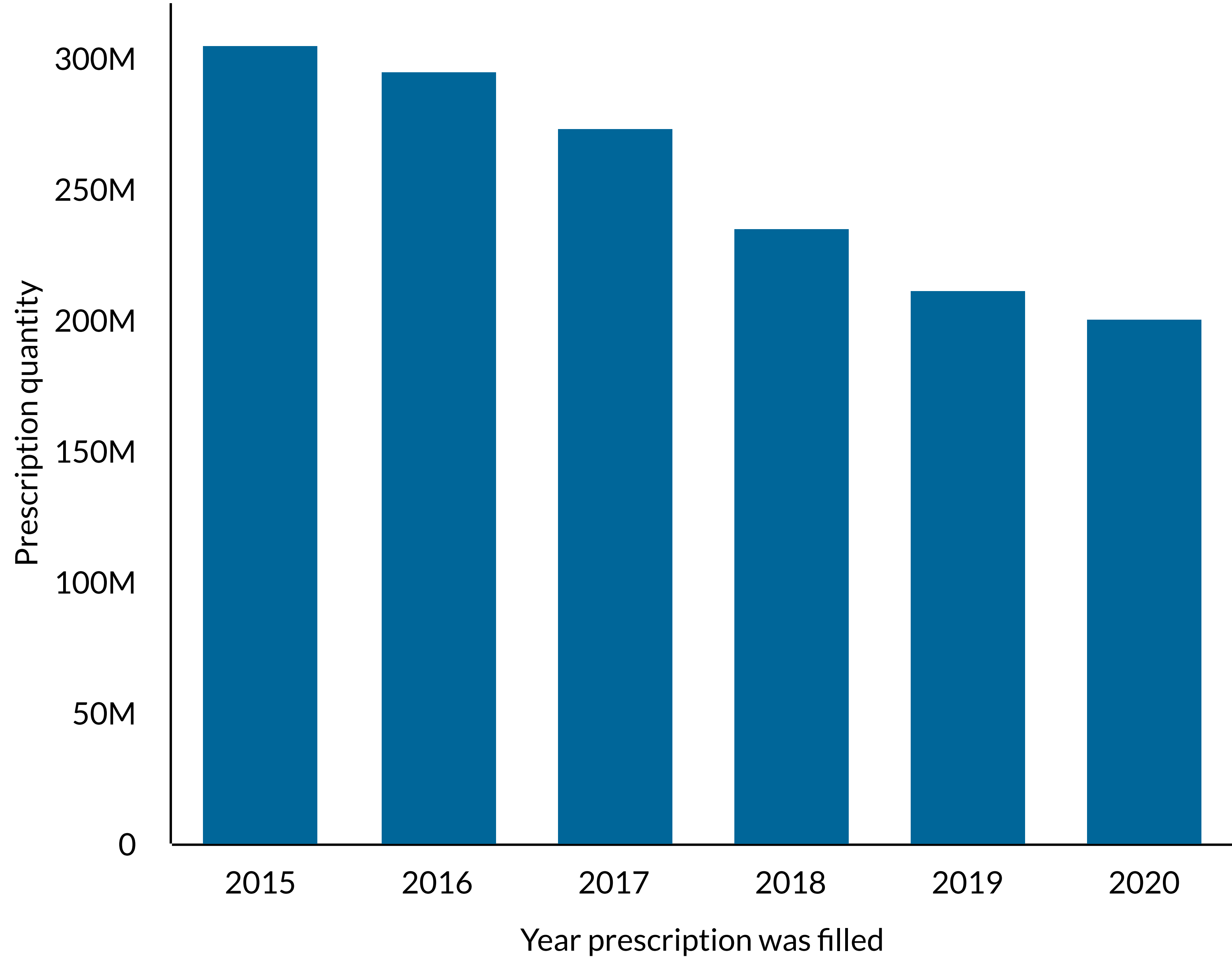
Opioids are a class of drugs used to treat pain and is often prescribed after surgery, an injury, or for a variety of other health conditions.⁵ This section reports on opioids dispensed in SC and prescribed by a SC prescriber. In 2020, the most common prescriptions filled of opioids in SC were hydrocodone bitartrate/acetaminophen, tramadol HCL, oxycodone HCL/acetaminophen, oxycodone HCL, and buprenorphine HCL/naloxone HCL. From 2015 to 2020, the number of dispensed

Figure 12. Number of filled opioid prescriptions prescribed by SC prescribers over time



opioid prescriptions decreased by 26.11% (4,619,103 to 3,413,038, respectively) (Figure 12). Additionally, the total quantity of opioid prescriptions decreased by 34.33% during the same time period (Figure 13).

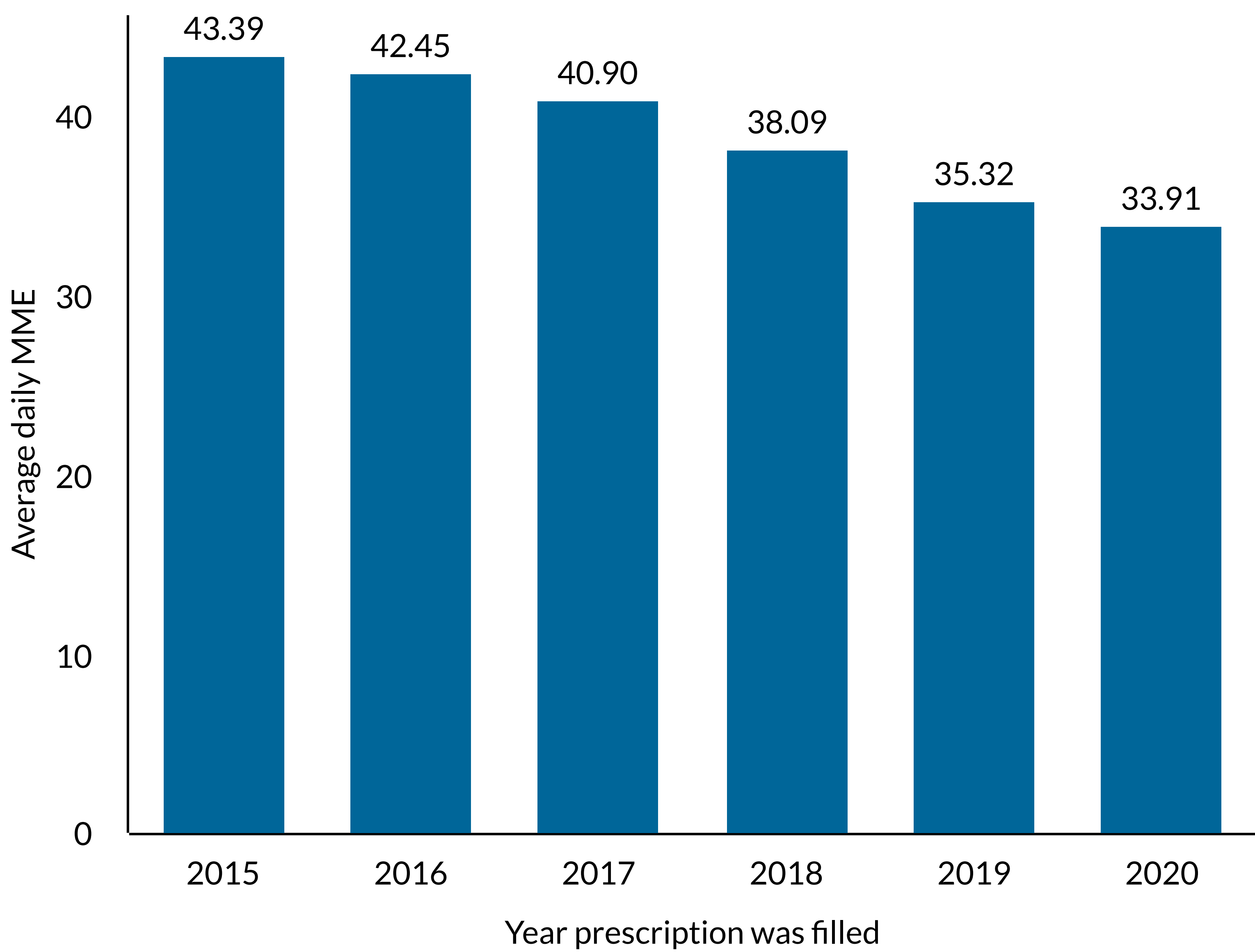
Figure 13. Total prescription quantity for opioids over time ¹



¹ Prescription quantity is defined as an opioid in a capsule or tablet form.

The CDC recommends prescribing the lowest effective opioid dosage possible.⁶ To quantify an opioid’s dosage, morphine milligram equivalents (MME) are used.⁷ Daily MME is a metric used to gauge overdose potential and identify patients that may benefit from closer monitoring.⁷ From 2015 to 2020, the average daily MME prescribed by SC prescribers decreased by 21.84% (43.39 to 33.91, respectively) (Figure 14).

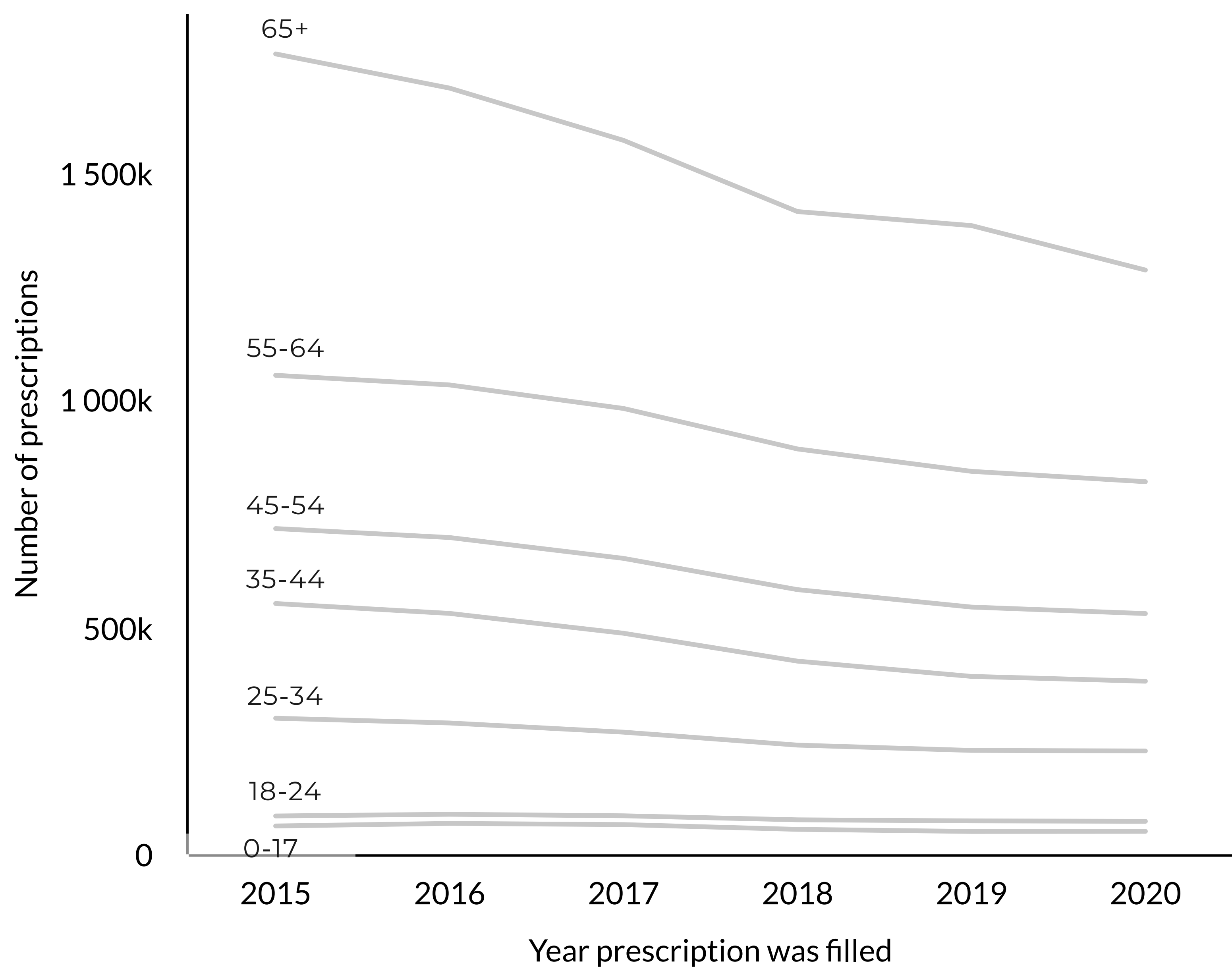
Figure 14. Average daily MME for opioids over time



4.2 Patient Demographics

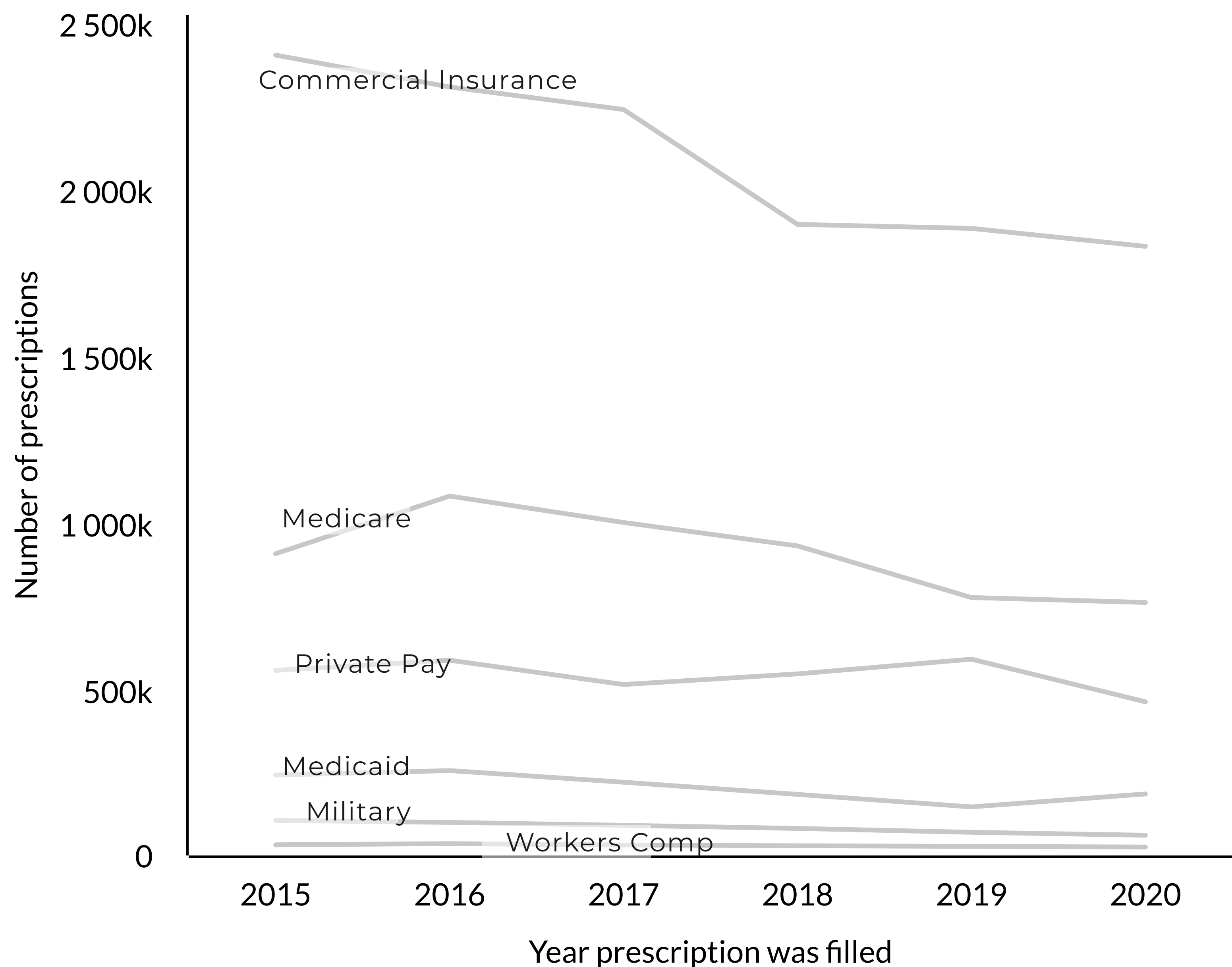
In 2020, the average age of patients receiving opioids from SC prescribers was approximately 53. SC has seen a decline over time in opioid prescriptions among all age groups (Figure 15). Additionally, more females than males received an opioid prescription in 2020 (500,825 versus 371,210, respectively). However, the number of individuals that received an opioid prescription decreased by more than 25% among both males and females from 2015 to 2020. From 2015 to 2020, SC prescribers prescribed fewer opioids among all payment types. With the exception of controlled substances prescriptions dispensed under a commercial insurance payment provider, Medicare continues to be one of the top forms of payment for patients receiving opioids (Figure 16). The number of patients receiving opioid prescriptions from SC prescribers has decreased for both in-state and out-of-state patients from 2015 to 2020. In 2020, the number of patients with a SC address receiving an opioid prescription in SC from a SC prescriber was 861,491, while the number of patients with an address outside of SC was 31,418.

Figure 15. Number of filled opioid prescriptions prescribed by SC prescribers by patient age¹



¹ Age is self-reported from the patient to the pharmacist. Please note that if age was unknown, it was not included in this analysis. The blue line indicates an increase in the number of prescriptions from 2015, while a gray line indicates a decrease.

Figure 16. Number of filled opioid prescriptions prescribed by SC prescribers by patient insurance type¹



¹ Insurance type is self-reported from the patient to the pharmacist. Please note that if the insurance type was not specified it was not included in this analysis. Private pay refers to those that did not pay with insurance. The blue line indicates an increase in the number of prescriptions from 2015, while a gray line indicates a decrease.

4.3 Geographic Location (Prescriber County)

The average rate of dispensed opioid prescriptions prescribed by SC prescribers has declined from 944.2 per 1,000 people in 2015 to 662.9 per 1,000 people in 2020. From 2015 to 2020, there was a shift in the rate of opioids in the Pee Dee region of SC. When compared to 2015, fewer counties in the Pee Dee region had a higher rate of opioid prescriptions compared to the state's average rate in 2020 (Figure 17 and 18). Additionally, from 2015 to 2020, the number of opioid prescriptions increased more than 10% in Calhoun and Barnwell county, while decreasing in 43 other SC counties over time. In 2020, Florence, Charleston, Darlington, Greenwood, and Greenville county had the highest rate of dispensed opioid prescriptions.

Figure 17. Rate of opioid prescriptions per 1,000 residents by prescriber county for 2015

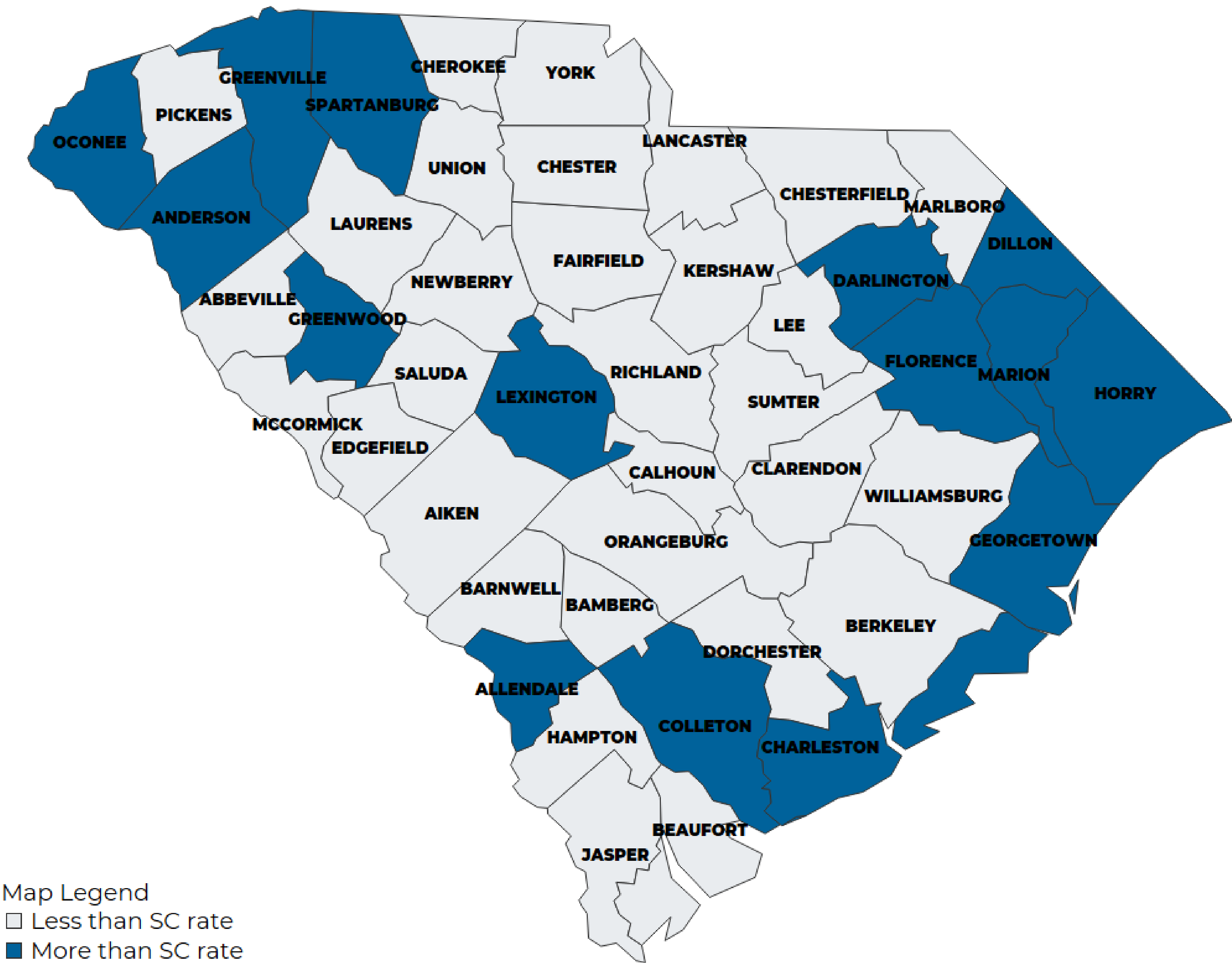
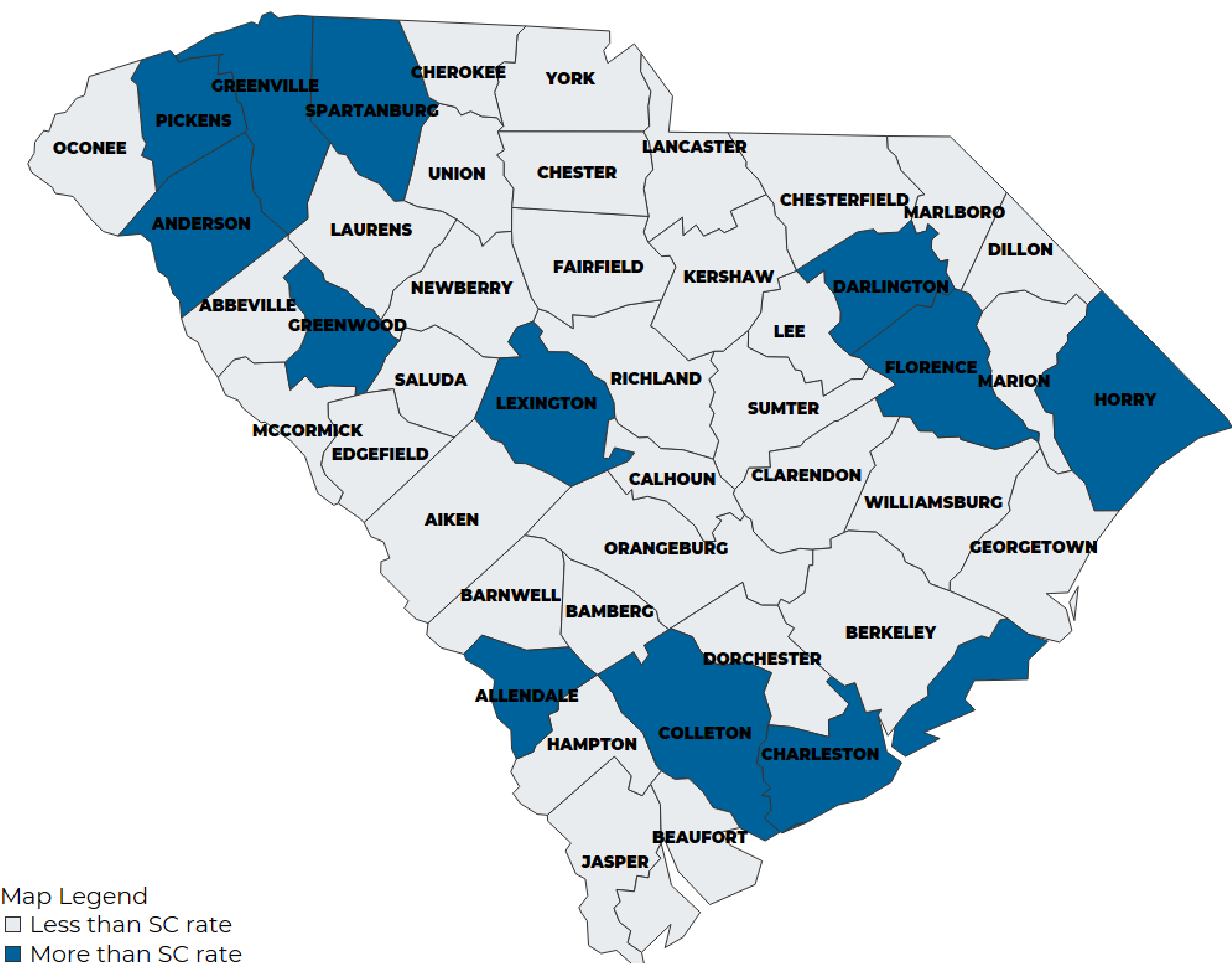


Figure 18. Rate of opioid prescriptions per 1,000 residents by prescriber county for 2020



V. Stimulants

5.1 Overview

Stimulants are a class of drugs used to increase alertness, attention, and energy for conditions such as attention-deficit hyperactivity disorder and narcolepsy.⁸ This section reports on stimulants dispensed in SC and prescribed by a SC provider. In 2020, the most common stimulant prescriptions dispensed in SC were dextroamphetamine sulf-saccharate/amphetamine sulf-aspartate, lisdexamfetamine dimesylate, methylphenidate HCL, dexamethylphenidate HCL, and dextroamphetamine sulfate. From 2015 to 2020, the number of dispensed stimulant prescriptions increased by 13.26% (1,420,059 to 1,608,376, respectively) (Figure 19). Additionally, the total quantity of stimulant prescriptions increased by 13.58% during the same time period (Figure 20).

Figure 19. Number of filled stimulant prescriptions prescribed by SC prescribers over time

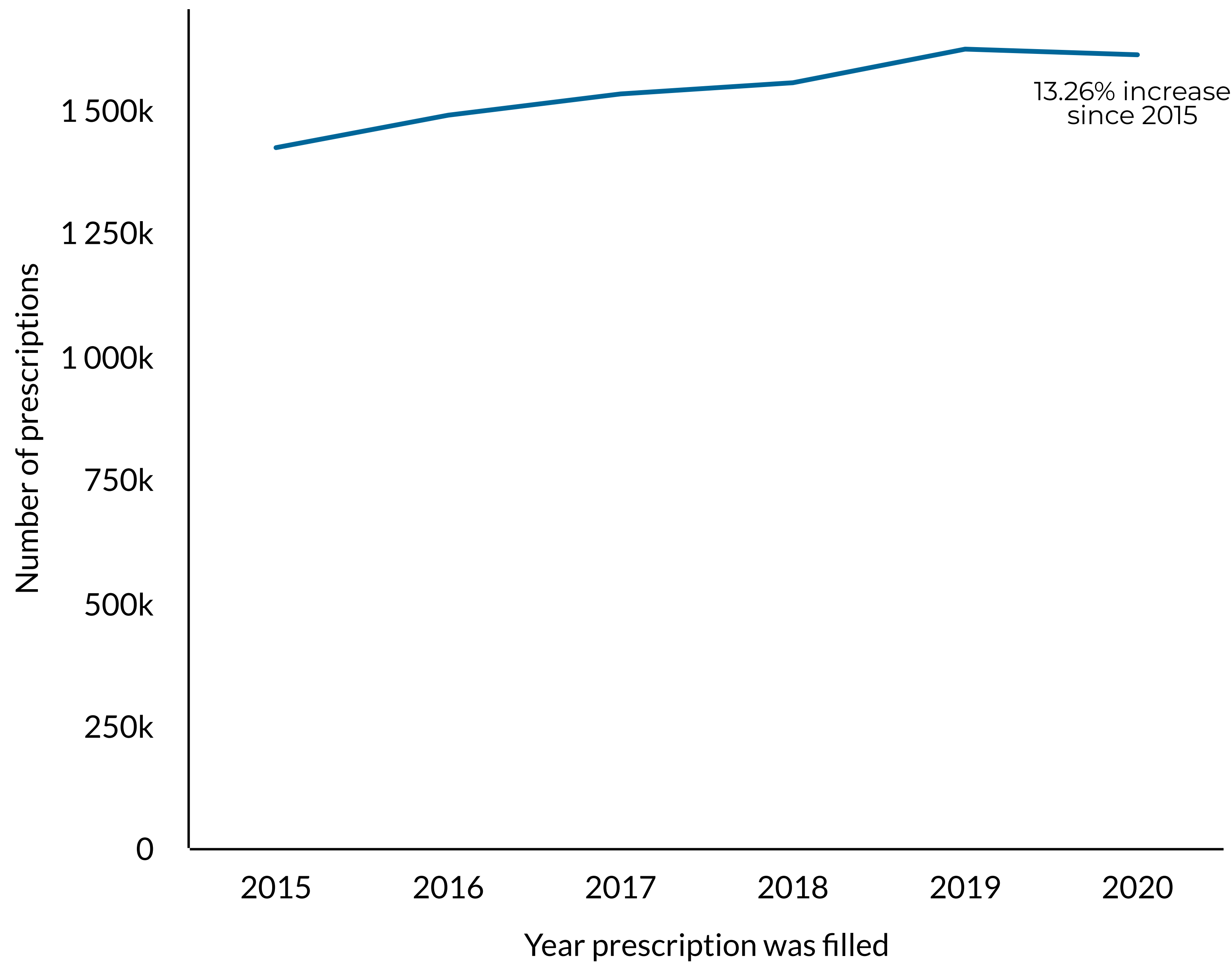
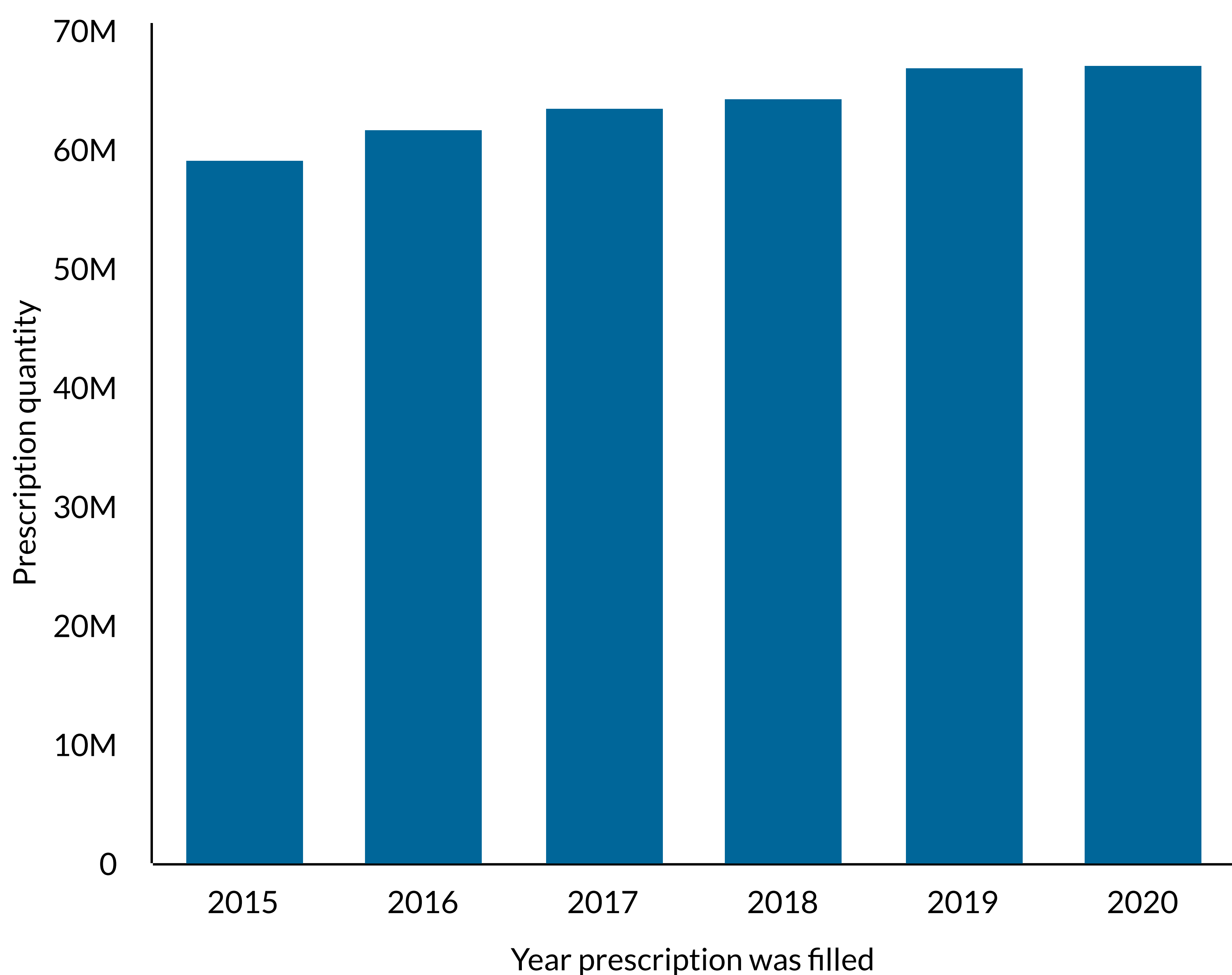


Figure 20. Total prescription quantity for stimulants over time¹

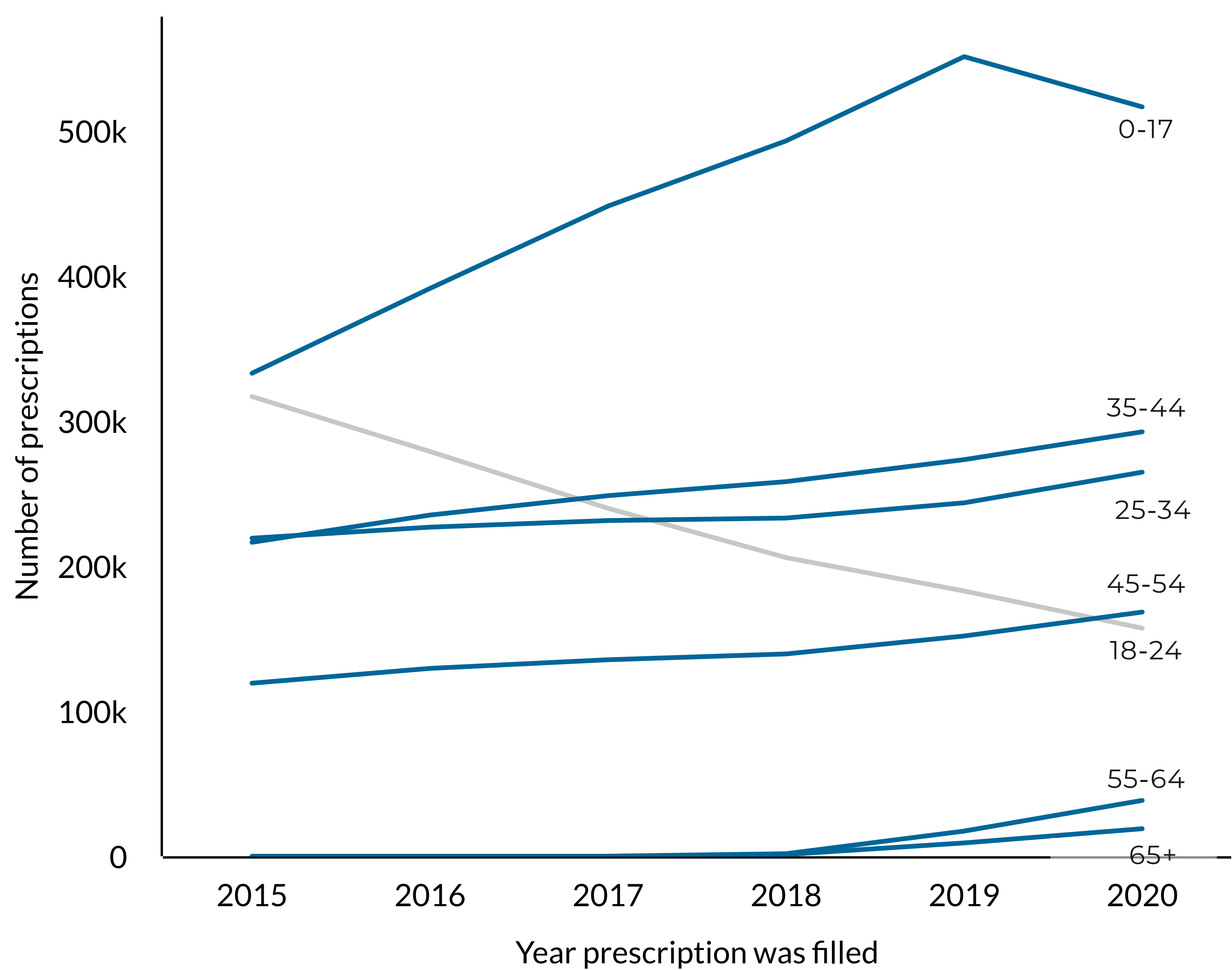


¹ Prescription quantity is defined as a stimulant in a capsule or tablet form.

5.2 Patient Demographics

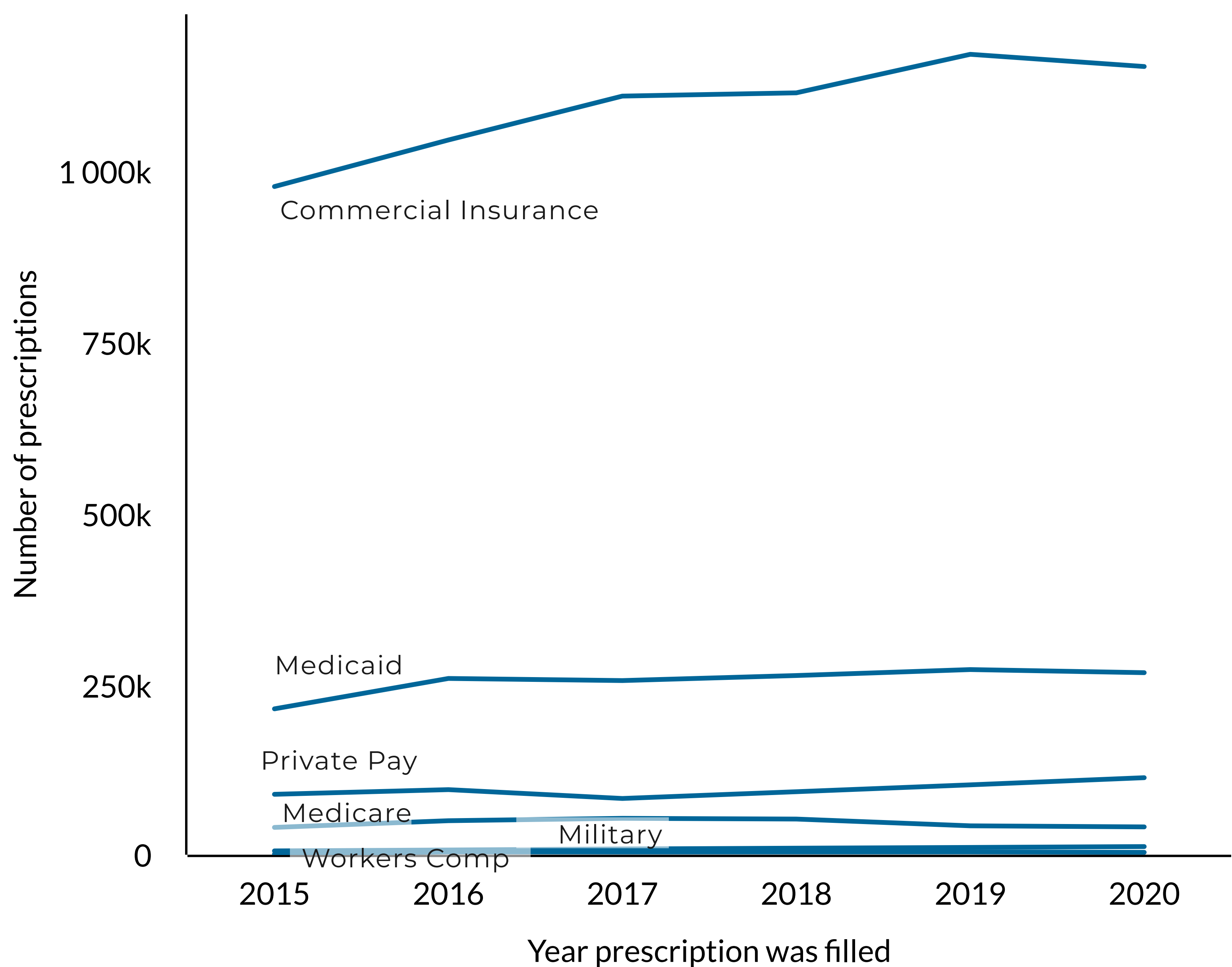
In 2020, the average age of patients receiving stimulant prescriptions from SC prescribers was approximately 27. SC has seen an increase over the years in stimulant prescriptions among all age groups except for those 18-24 (Figure 21). Patients 0-17 years of age continue to be prescribed the majority of stimulant prescriptions compared to any other age group. Additionally, more males than females received a stimulant prescription in 2020 (101,382 versus 93,003, respectively). The number of individuals that receive stimulant prescriptions has increased by 29.34% for females and 8.11% for males from 2015 to 2020. From 2015 to 2020, prescriptions for stimulants from SC practitioners have increased among all payment types (Figure 22). In addition to commercial insurance, Medicaid continues to be the top form of payment for patients receiving stimulants. The number of patients filling stimulant prescriptions from SC prescribers has increased for both in-state and out-of-state patients from 2015 to 2020. In 2020, the number of patients with a SC address filling a stimulant prescription in SC and from a SC prescriber was 203,460, while the number of patients with an address outside of SC was 4,836.

Figure 21. Number of filled stimulant prescriptions prescribed by SC prescribers by patient age ¹



¹ Age is self-reported from the patient to the pharmacist. Please note that if age was unknown, it was not included in this analysis. The blue line indicates an increase in the number of prescriptions from 2015, while a gray line indicates a decrease.

Figure 22. Number of filled stimulant prescriptions prescribed by SC prescribers by patient insurance type¹



¹ Insurance type is self-reported from the patient to the pharmacist. Please note that if the insurance type was not specified it was not included in this analysis. Private pay refers to those that did not pay with insurance. The blue line indicates an increase in the number of prescriptions from 2015, while a gray line indicates a decrease.

5.3 Geographic Location (Prescriber County)

The average rate of dispensed stimulant prescriptions prescribed by SC prescribers has increased from 290.3 per 1,000 people in 2015 to 312.4 per 1,000 people in 2020. From 2015 to 2020, there was no difference observed between the years when comparing the county rate to the state’s average rate of stimulant prescriptions (Figure 23 and 24). From 2015 to 2020, the following counties experienced a greater than 10% increase in the number of stimulant prescriptions prescribed by a SC prescriber: Calhoun, Clarendon, McCormick, Bamberg, Berkeley, Dorchester, Greenville, York, Saluda, Abbeville, Williamsburg, Charleston, Beaufort, Richland, Dillon, Anderson, Lexington, Kershaw, Horry, Hampton, and Edgefield county. In 2020, Charleston, Greenville, Richland, Lexington, and Florence county had the highest rate of dispensed stimulant prescriptions.

Figure 23. Rate of stimulant prescriptions per 1,000 residents by prescriber county for 2015

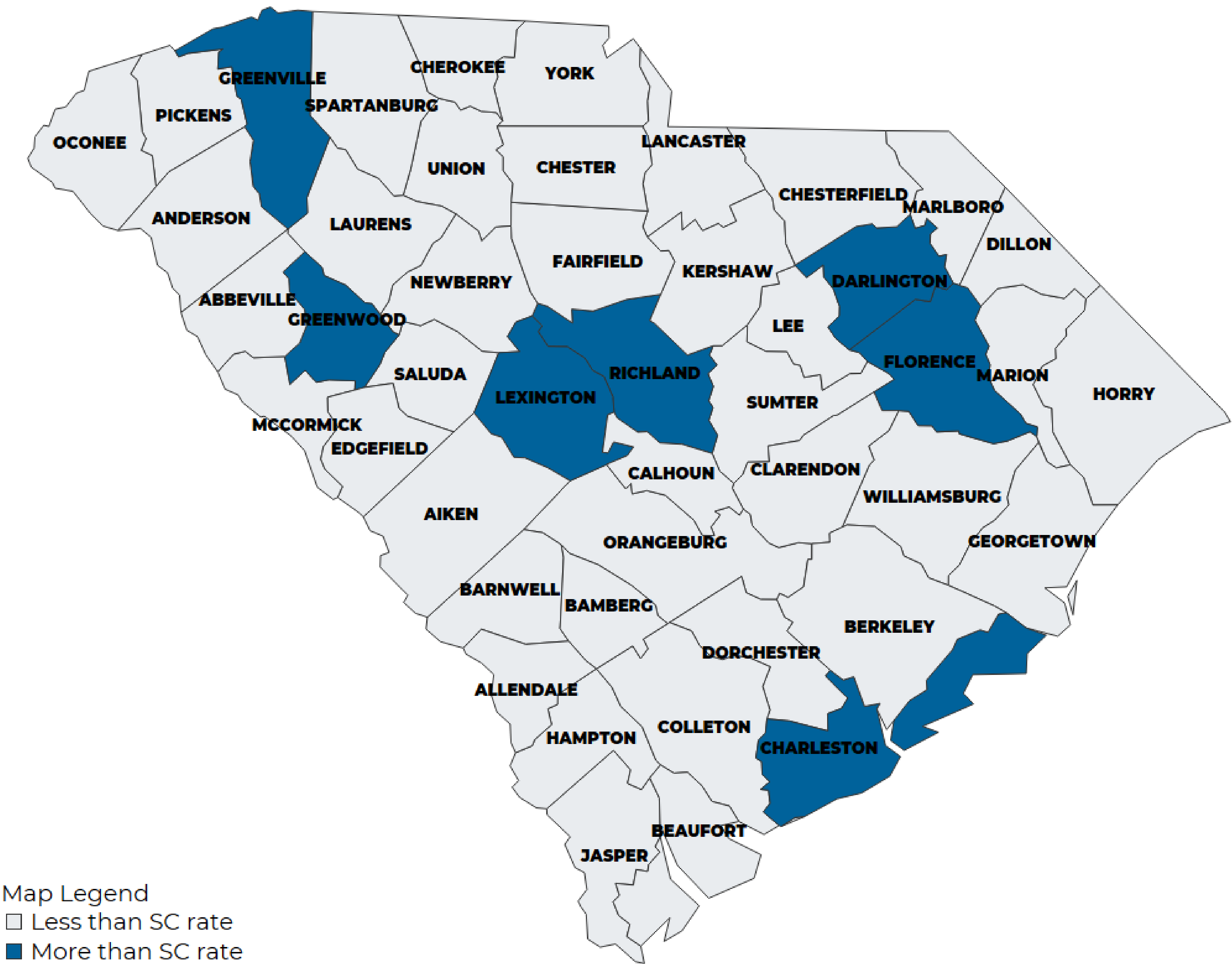
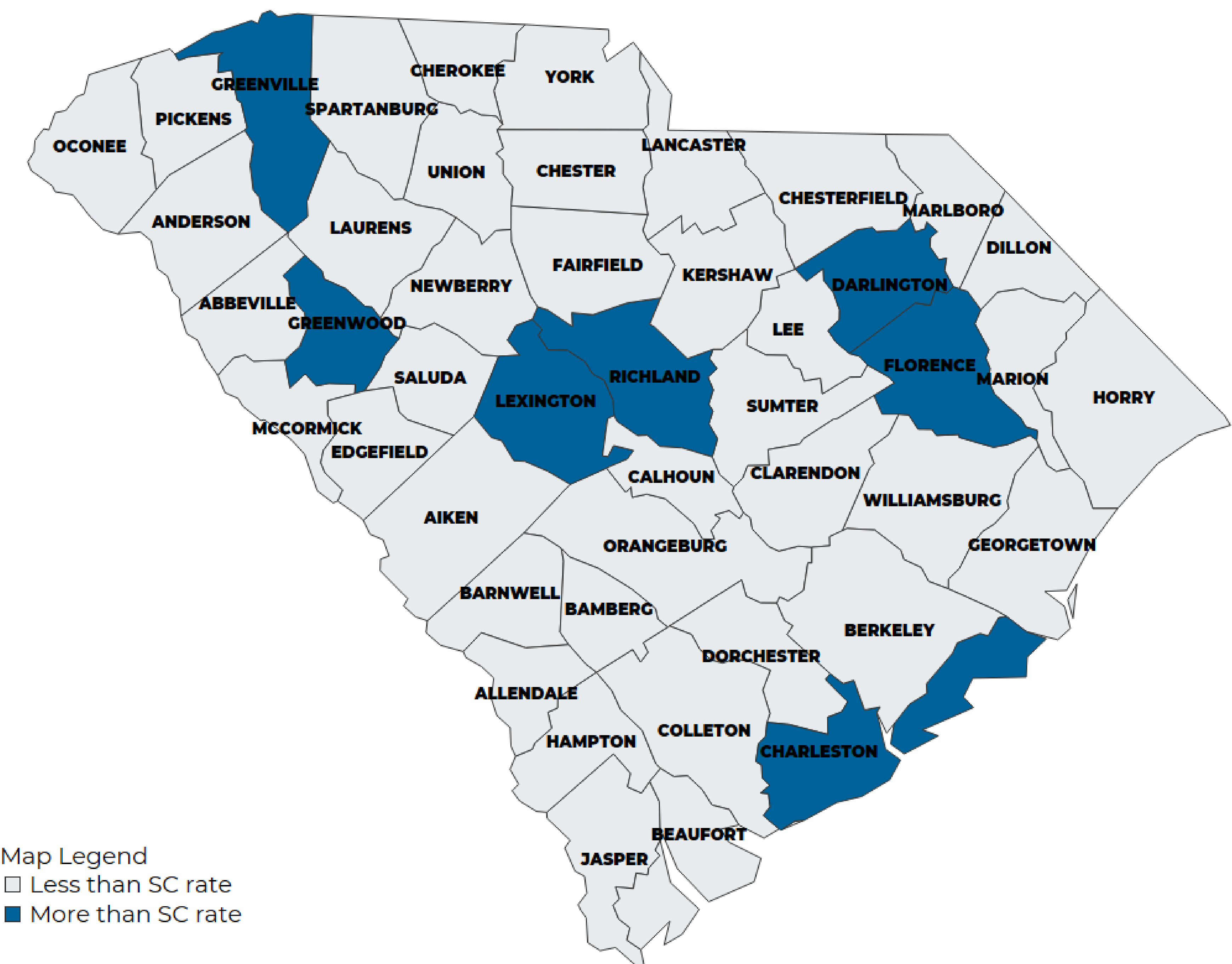


Figure 24. Rate of stimulant prescriptions per 1,000 residents by prescriber county for 2020



VI. Summary

The PMP is evolving as a clinical and public health surveillance tool. As thousands of deaths are attributed to drug overdoses each year, increasing the usage of the PMP to inform clinical decisions is instrumental in addressing this public health crisis. The impact of previous and on-going efforts by the SC PMP can be shown in yearly increases in provider PMP utilization and in the overall decreases in the total number of controlled substance prescriptions. The Bureau of Drug Control will continue to enhance the program and provide education to maintain the positive data trends for controlled substances prescribed in SC.

VII. References

1. Ponnappalli A, Grando A, Murcko A, Wertheim P. Systematic Literature Review of Prescription Drug Monitoring Programs. AMIA . Annu Symp proceedings AMIA Symp. Published online 2018:1478-1487.
2. Arkansas Department of Health. Arkansas Prescription Monitoring Program FY 2018 First Quarter Report. Published online 2018.
3. CDC. Integrating & Expanding Prescription Drug Monitoring Program Data: Lessons from Nine States; 2017.
4. Lembke A, Papac J, Humphreys K. Our Other Prescription Drug Problem. N Engl J Med. 2018;378(8).
5. Centers for Disease Control and Prevention. Prescription Opioids. 2017.
<https://www.cdc.gov/drugoverdose/opioids/prescribed.html>
6. Centers for Disease Control and Prevention. Calculating Total Daily Dose of Opioids for Safer Dosage.
<https://www.cdc.gov/drugoverdose/prescribing/guideline.html>
7. Centers for Disease Control and Prevention. Module 6: Dosing and Titration of Opioids: How Much, How Long, and How and When to Stop?
[https://www.cdc.gov/drugoverdose/training/dosing/accessibile/index.html#:~:text=Morphine milligram equivalents \(MME\) is,given at a particular time.](https://www.cdc.gov/drugoverdose/training/dosing/accessibile/index.html#:~:text=Morphine milligram equivalents (MME) is,given at a particular time.)
8. NIDA. Drug Facts - Prescription Stimulants. 2018;(June):1-4.
<https://d14rmgtrwzf5a.cloudfront.net/sites/default/files/drugfacts-prescriptionstimulants.pdf>