S.C. Department of Health and Environmental Control

2021 Annual Report

South Carolina Prescription Drug Monitoring Program

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May 2022

2006

Legislation passed

- Legislation was passed mandating SC PMP.

February 2008

SCRIPTS Launched

- SC PMP was launched.

January 2014

Legislation passed

- Legislation was passed requiring dispensers to upload their dispensations daily to SC PMP.

November 2014

Revised Pain Management Guidlines

- 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 SC PMP "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 SC PMP into Emergency Departments' electronic health records were completed.

November 2015

Online registration

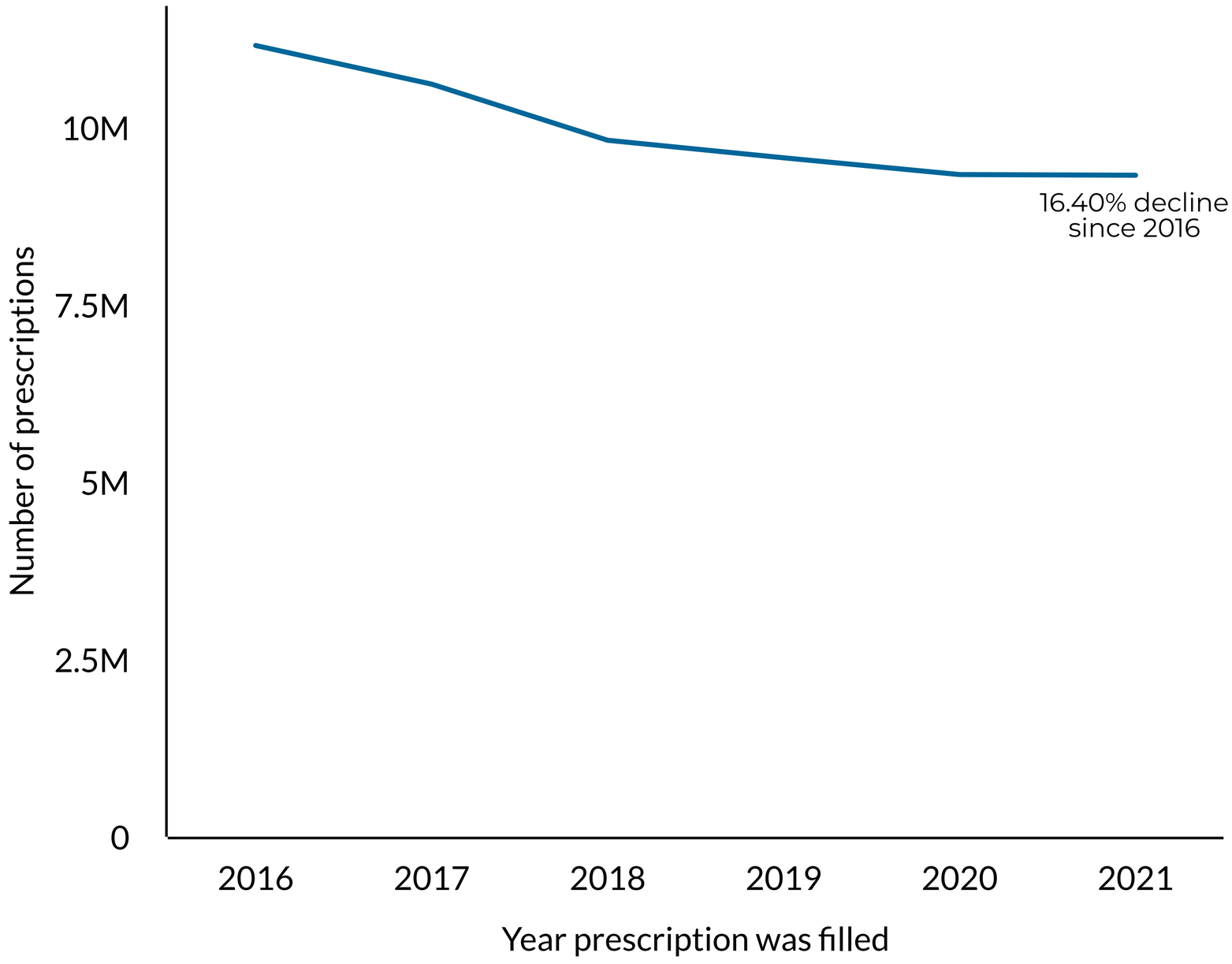
- SC PMP switched vendors and started online registration for users, registration of delegate accounts, and online password resets.

I. Executive Summary

The South Carolina Prescription Monitoring Program (SC PMP) became fully operational on February 1, 2008. The purpose of the PMP is intended 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 from 2016 to 2021 and (2) prescriber and pharmacist PMP utilization from 2017 to 2021. The full report provides details regarding the prescribing patterns of SC prescribers by drug schedule.

In 2021, the number of controlled substances dispensed in SC was 9,316,480. Fortunately, this number has declined by 16.40% since 2016 (Figure 1). Benzodiazepines and opioids have also continued to decrease since 2016 (Figure 2). However, stimulants have increased by 10.75% from 2016 to 2021. For further details regarding the characteristics of the controlled substances dispensed in SC, please see Table 1.

Figure 1. Number of controlled substances dispensed over time, 2016 - 2021



May 2017

Mandated prescriber use of PMP

- Mandated that prescribers must check the PMP prior to issuing any CII prescriptions greater than a 5-day supply. (S.C. Code Ann. § 44-53-1645)

August 2017

Quarterly prescriber reports

- Sent out first round of quarterly prescriber report cards of 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. (S.C. Code Ann. § 44-53-360)
- PMP began using NarxCare for prescribers and pharmacists to use for clinical decision support.

November 2018

Mandated prescriber reports

- Mandated quarterly prescriber report cards to provide a set of metrics of which included patient risk categories. (S.C. Code Ann. § 44-53-1655)

April 2020

Clinical alerts began

- Performed targeted education efforts to veterinarians regarding dispensation reporting requirements.
- Turned on clinical alerts to alert prescribers of potential risks including polypharmacy, multiple prescriber episodes, daily MME > 90, and overlapping opioid and benzodiazepine prescriptions.

Figure 2. Number of controlled substances dispensed by drug class, 2016 - 2021

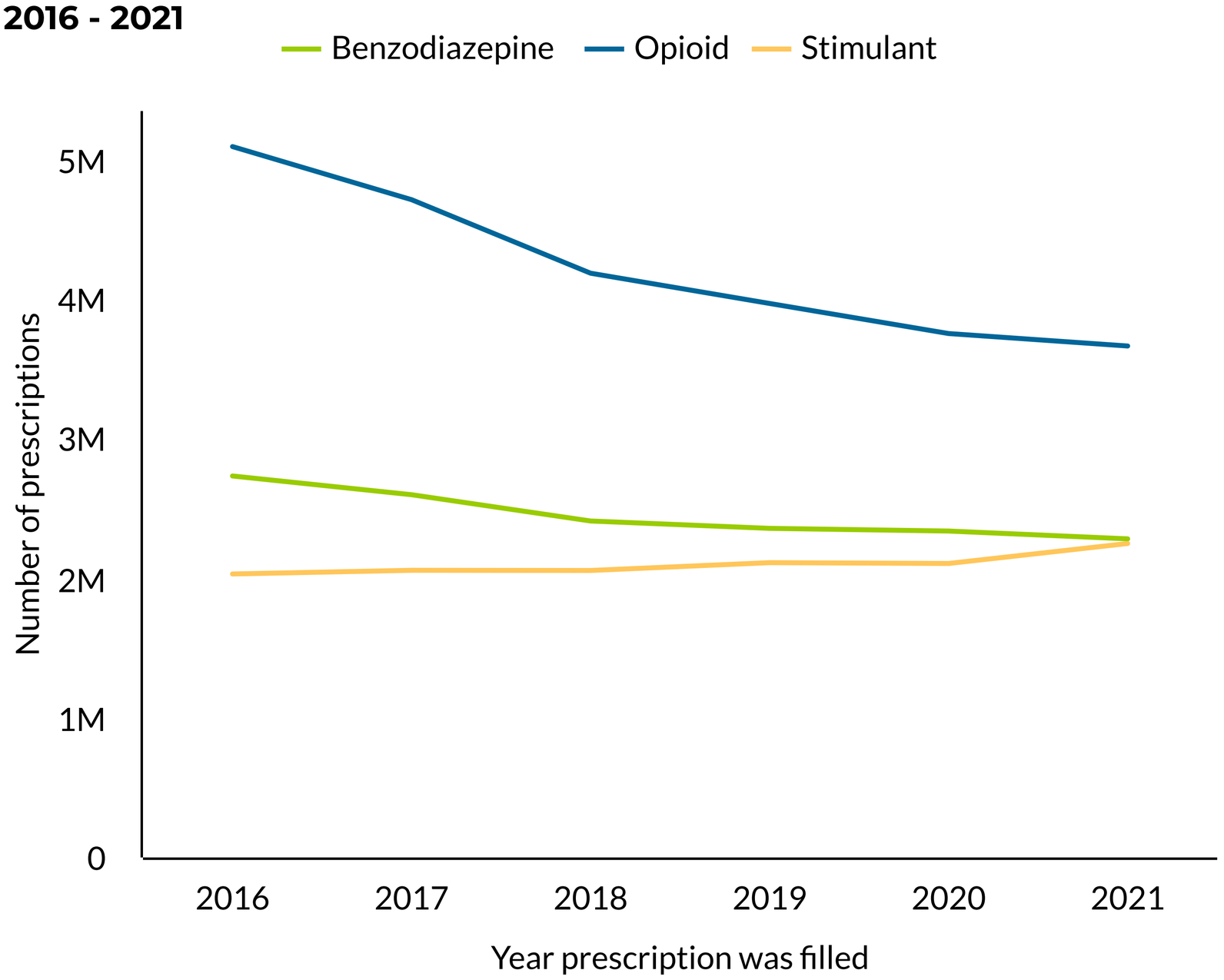


Table 1. Characteristics of controlled substance prescriptions dispensed in SC, 2016 - 2021

Characteristics	2016	2017	2018	2019	2020	2021
Number of Controlled Substance Prescriptions	11,143,825	10,599,521	9,809,089	9,562,073	9,326,122	9,316,480
Prescription Quantity[1]	605,838,447	568,553,537	508,907,541	474,834,478	461,623,854	452,022,092
Number of Unique Patients	1,894,172	1,818,150	1,689,610	1,621,775	1,549,124	1,568,367
Number of Unique Prescribers[2]	69,379	66,677	64,527	65,814	67,808	68,117
Number of Unique Pharmacies[3]	2,145	1,798	1,850	1,714	1,801	1,702

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

[2] Number of unique prescribers is determined based on the number of unique prescriber DEA numbers. A single prescriber can have multiple DEA numbers.

[3] The number of unique pharmacies is determined based on the number of unique pharmacy DEA numbers.

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.

January 2021

Opioid antidote administrations and electronic prescribing

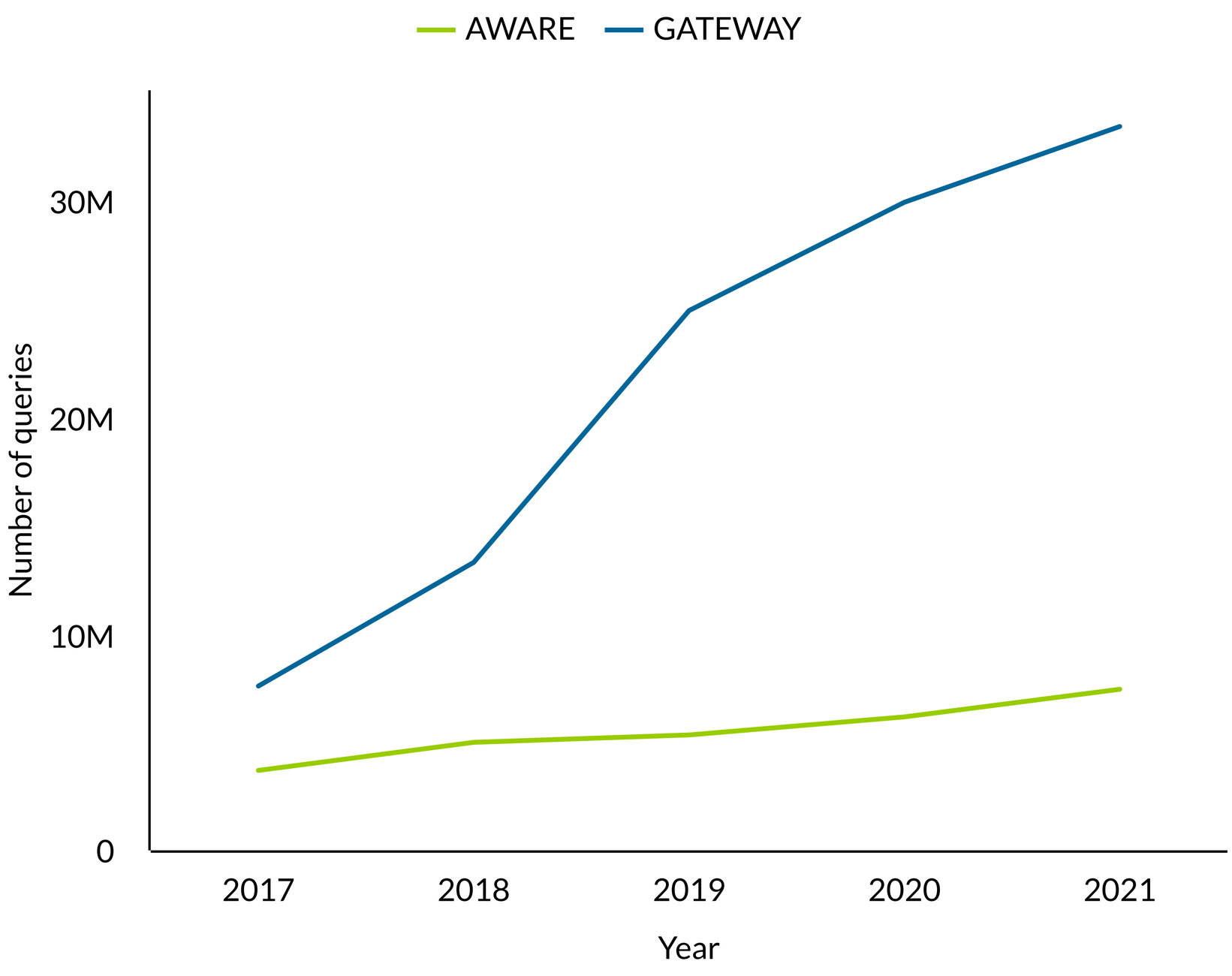
- Healthcare facilities and first responders are required to report opioid antidote administrations to DHEC. (S.C. Code Ann. § 44-130-60 & S.C. Code Ann. § 44-130-80)
- All controlled substances must be sent via electronic prescribing. (S.C. Code Ann. § 44-53-360)

April 2021

Naloxone and Schedule II prescriptions

- Prescribers must offer naloxone prescriptions to a patient if they prescribe: (1) an opioid greater than 50 morphine milligram equivalents per day, (2) an opioid concurrently with a benzodiazepine, or (3) to any patients that presents with an increased risk of an overdose. Naloxone counseling and education must be provided to the patient or patient's caregiver. (S.C. Code Ann. § 44-53-361)
- Schedule II controlled substance day supply limitation law was amended to exclude transdermal patches and surgical implanted drug delivery systems from the 31-day supply limitation. (S.C. Code Ann. § 44-53-360)

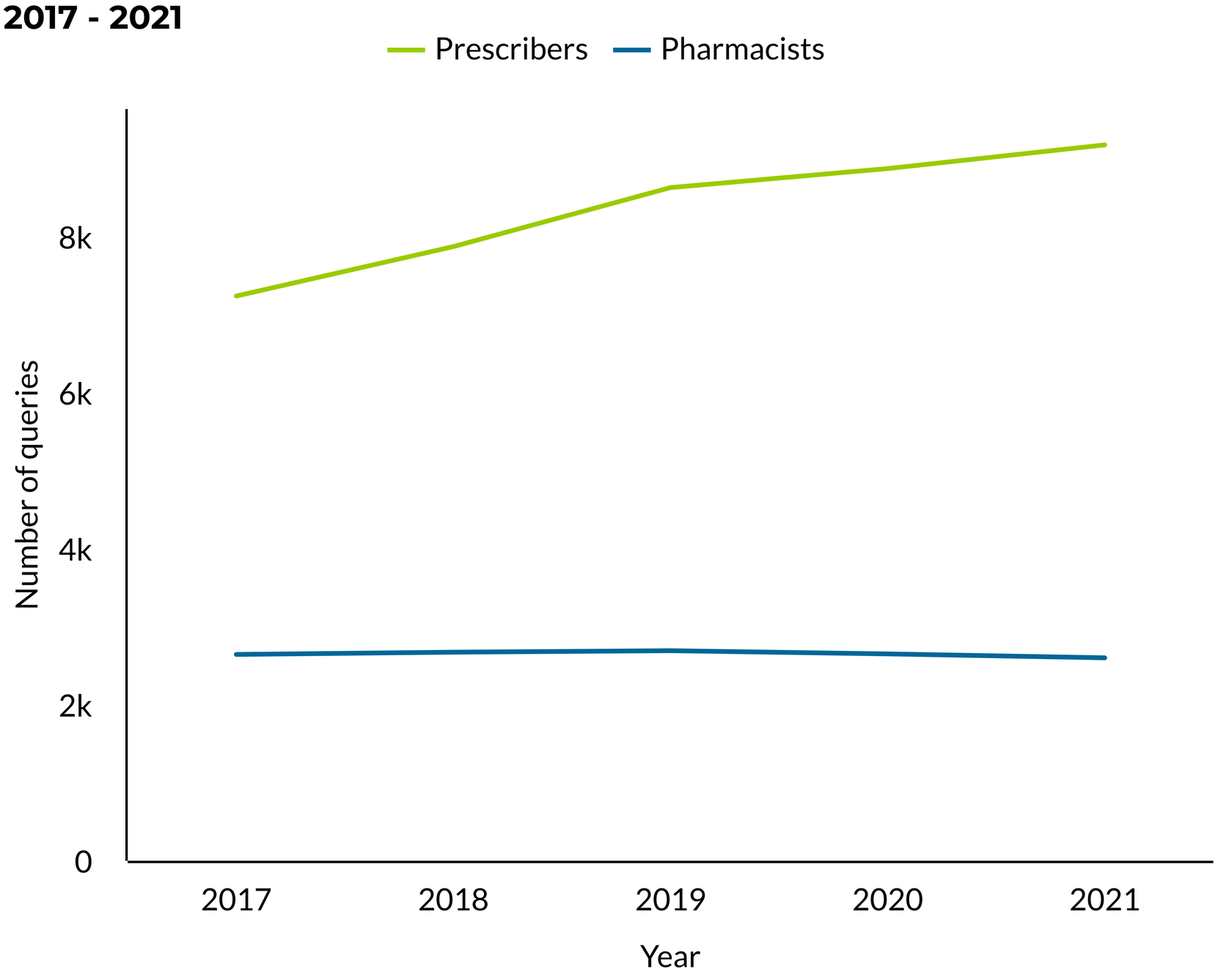
Figure 3. Number of PMP queries over time, 2017 - 2021



Bamboo Health, SC's current vendor, operates both PMP AWARxE and Gateway. PMP AWARxE users create profiles validated against the state and federal license and registration databases and must log into the web portal to perform a patient query. However, Gateway uses an Application Protocol Interface (API) that connects health information and pharmacy dispensing systems to the PMP. In 2017, the total number of queries conducted by pharmacists and prescribers increased by 262.4%. As of December 2021, 59% of SC health systems and pharmacy dispensing systems were integrated. Figure 3 shows the number of queries performed through both platforms, AWARxE and Gateway. Additionally, the number of prescribers that are registered and active in the PMP have increased by 26.76% since 2017, but the total number of pharmacists have decreased by 1.66% (Figure 4). However, despite the decrease in the number of pharmacists the number of total queries by pharmacists has increased by 647.9% and 205.5% for prescribers from 2017 to 2021.

January 1, 2021, a law went into effect (SC 44-130-60 and SC 44-130-80) requiring both healthcare facilities and first responders to report opioid antidote administrations to the Bureau of Drug Control for inclusion in the PMP. The PMP worked diligently with their vendor, Bamboo Health, to incorporate a system known as ERvive. This system allows healthcare facilities and first responders to report an opioid antidote administration and integrates with NarxCare to enable clinicians to see a record of the event in the patient's report.(Appriss Health, 2020) In 2021, the PMP onboarded 37 healthcare facilities into ERvive and as of December 2021, there have been 20,504 naloxone administration events reported to ERvive. The continual efforts of the PMP staff to create an efficient and streamlined program have increased the number of frontline workers that use this data as a clinical decision support making tool regarding the usage of controlled substances among their patients. Through these efforts, the Bureau of Drug Control's goal is to provide a solution to combat the opioid crisis and ensure that patients have better access to safe and effective treatment options.

Figure 4. Number of prescribers and pharmacists active in the PMP, 2017 - 2021



Top 5 Controlled Substances Dispensed in 2021

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

II. Introduction

In 2006, the SC PMP, also 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 daily data on Schedule II - IV controlled substances to the 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	• Dispenser DEA number
Prescriber data	• Prescriber DEA number
Patient data	• Name • Address • Date of birth
Prescription data	• NDC code • 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 PMP.(CDC, 2017) 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 on Schedule II - IV controlled substances with a special edition on stimulants. All drug classes were classified through Lexicomp, and all drug schedules discussed in this report were classified through the DEA and FDA.(FDA, 2022; United States Drug Enforcement Administration, 2022; Wolters Kluwer, 2022)

III. Schedule II

3.1 Overview

Schedule II prescriptions are defined as substances with a “high potential for abuse, with use potentially leading to severe psychological and physical dependence”.(United States Drug Enforcement Administration, 2022) This section reports on Schedule II controlled substances (CII) that were prescribed by a SC prescriber and dispensed in SC. In 2021, the most common CII prescriptions filled in SC were hydrocodone bitartrate/acetaminophen, dextroamphetamine sulf-saccharate/amphetamine sulf-asparate, oxycodone HCl/acetaminophen, oxycodone HCl, and methylphenidate HCl. From 2016 to 2021, the number of filled CII prescriptions decreased by 17.02% (4,866,385 to 4,038,264, respectively) (Figure 5). Additionally, the average quantity dispensed of CII prescriptions decreased by 11.80% during the same time period (Figure 6).

Figure 5. Number of filled CII prescriptions prescribed by SC prescribers over time, 2016 - 2021

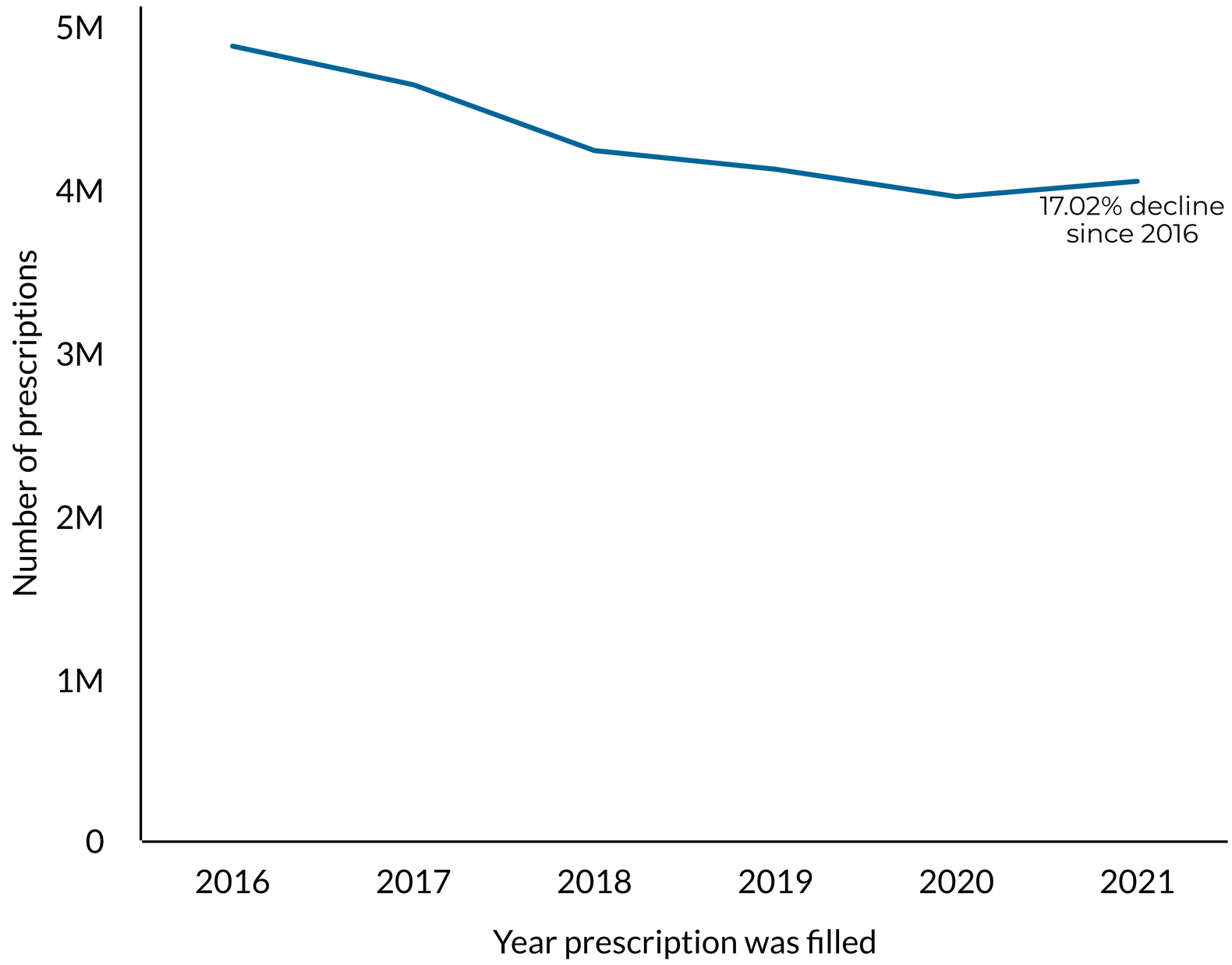
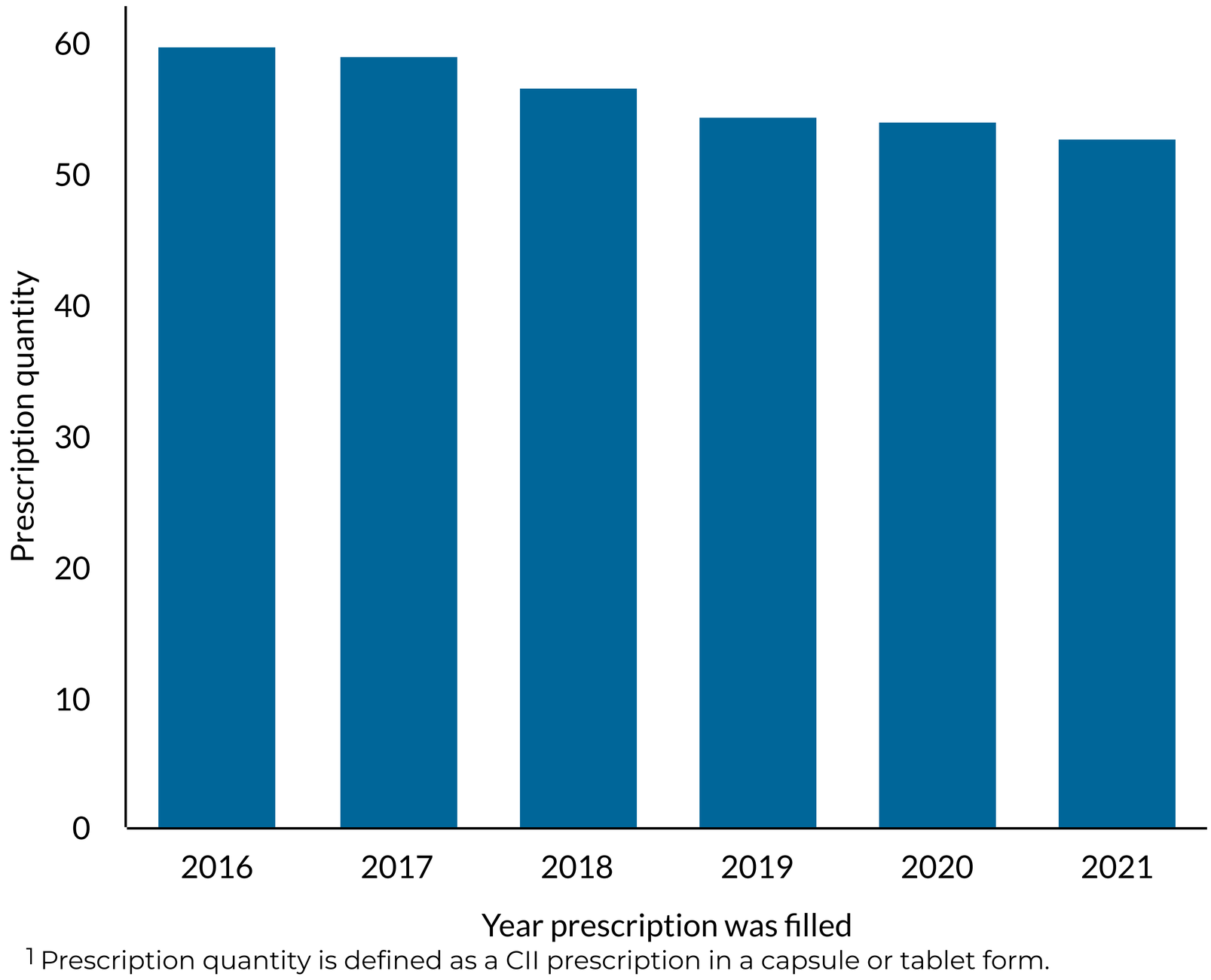


Figure 6. Average prescription quantity[1] dispensed for CII prescriptions over time, 2016 - 2021

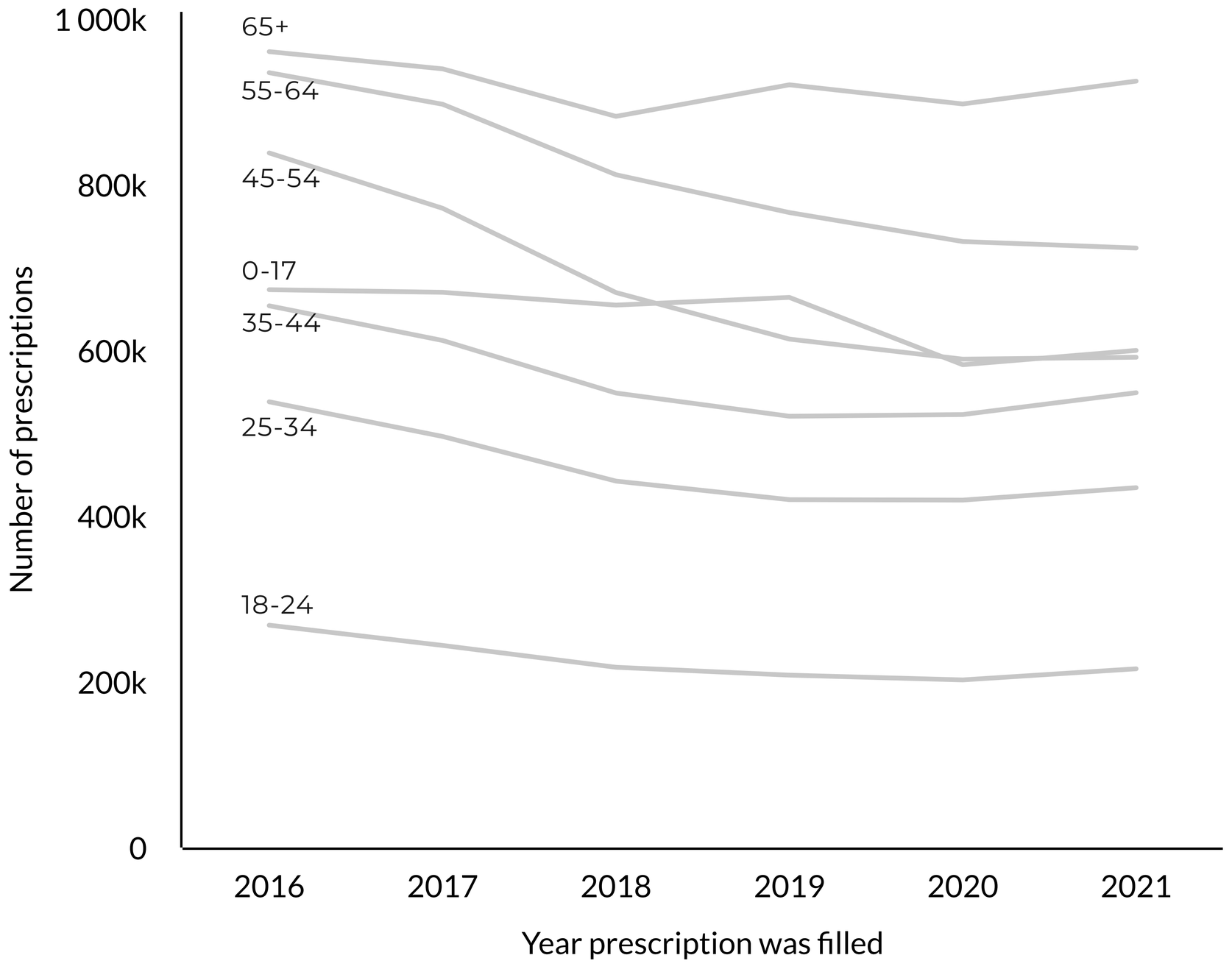


[1] Prescription quantity is defined as a CII prescription in a capsule or tablet form.

3.2 Patient Demographics

In 2021, the average age of patients receiving CII prescriptions from SC prescribers was 46. Patients in all age groups filled less CII prescriptions in 2021 compared to 2016 from SC prescribers (Figure 7). Additionally, more females than males received a CII prescription in 2021 (502,112 versus 403,146, respectively). However, CII prescriptions decreased by more than 15% among both males and females from 2016 to 2021. The number of patients filling CII prescriptions from SC prescribers has decreased for both in-state and out-of-state patients from 2016 to 2021. In 2021, the number of patients with a SC address filling a CII prescription in SC and from a SC prescriber was 875,436, while the number of patients with an address outside of SC was 33,462.

Figure 7. Number of filled CII prescriptions prescribed by SC prescribers by patient age,[1] 2016 - 2021



[1] Age may be 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 2016, while a gray line indicates a decrease.

3.3 Geographic Location (Prescriber County)

The rate of filled CII prescriptions prescribed by SC prescribers has declined from 981.5 per 1,000 people in 2016 to 773.9 per 1,000 people in 2021. The rate of CII prescriptions was higher than the SC rate in Bamberg and Richland county in 2021, while this was not the case in 2016 (Figure 8 and 9). Additionally, from 2016 to 2021, the number of CII prescriptions increased by more than 95% in Calhoun and Bamberg, while in 41 other counties in SC there was a decrease in the number of prescriptions over time. In 2021, Charleston, Florence, Greenville, Darlington, and Greenwood county had the highest rate of filled CII prescriptions.

Figure 8. Rate of CII prescriptions per 1,000 by prescriber county for 2016

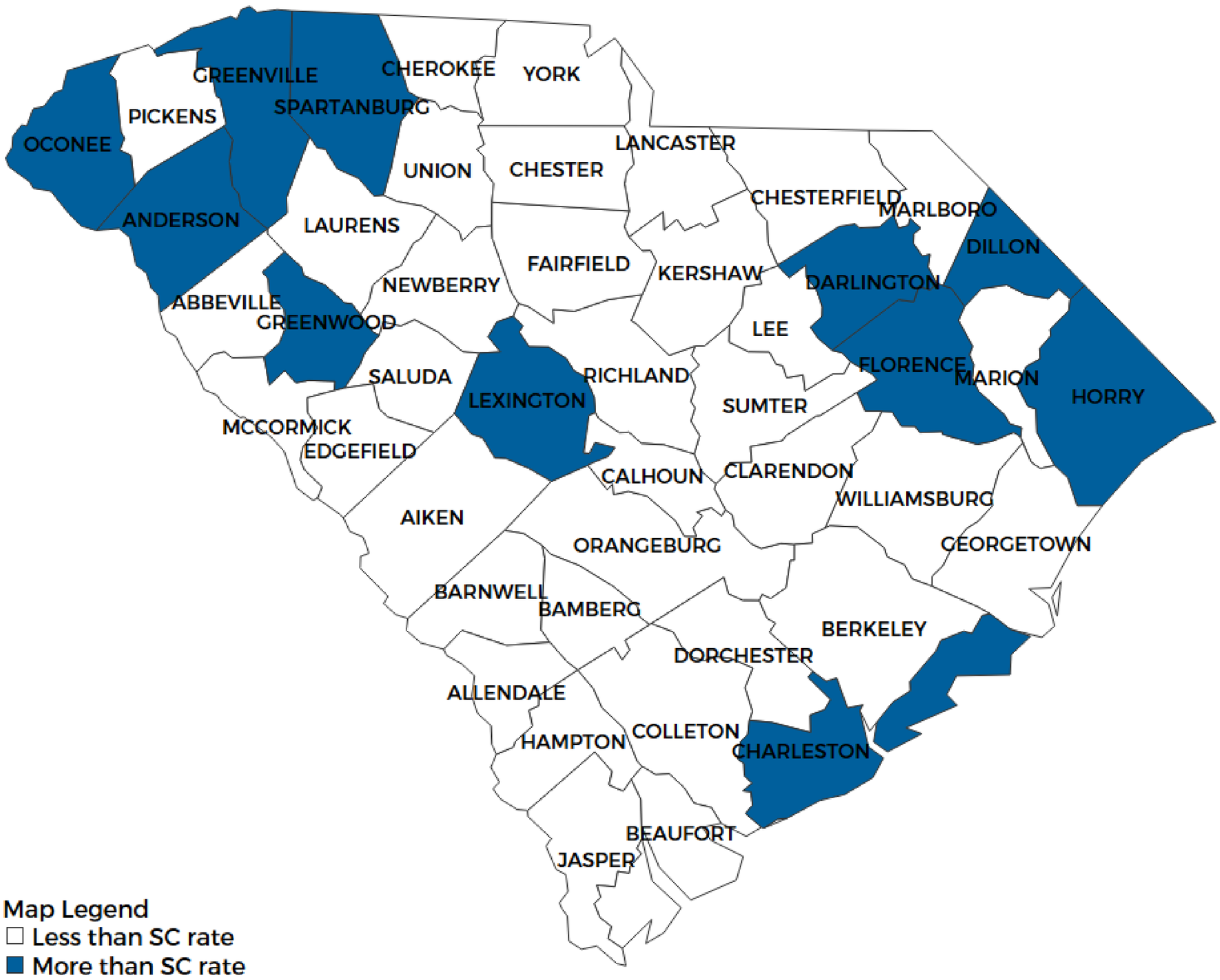
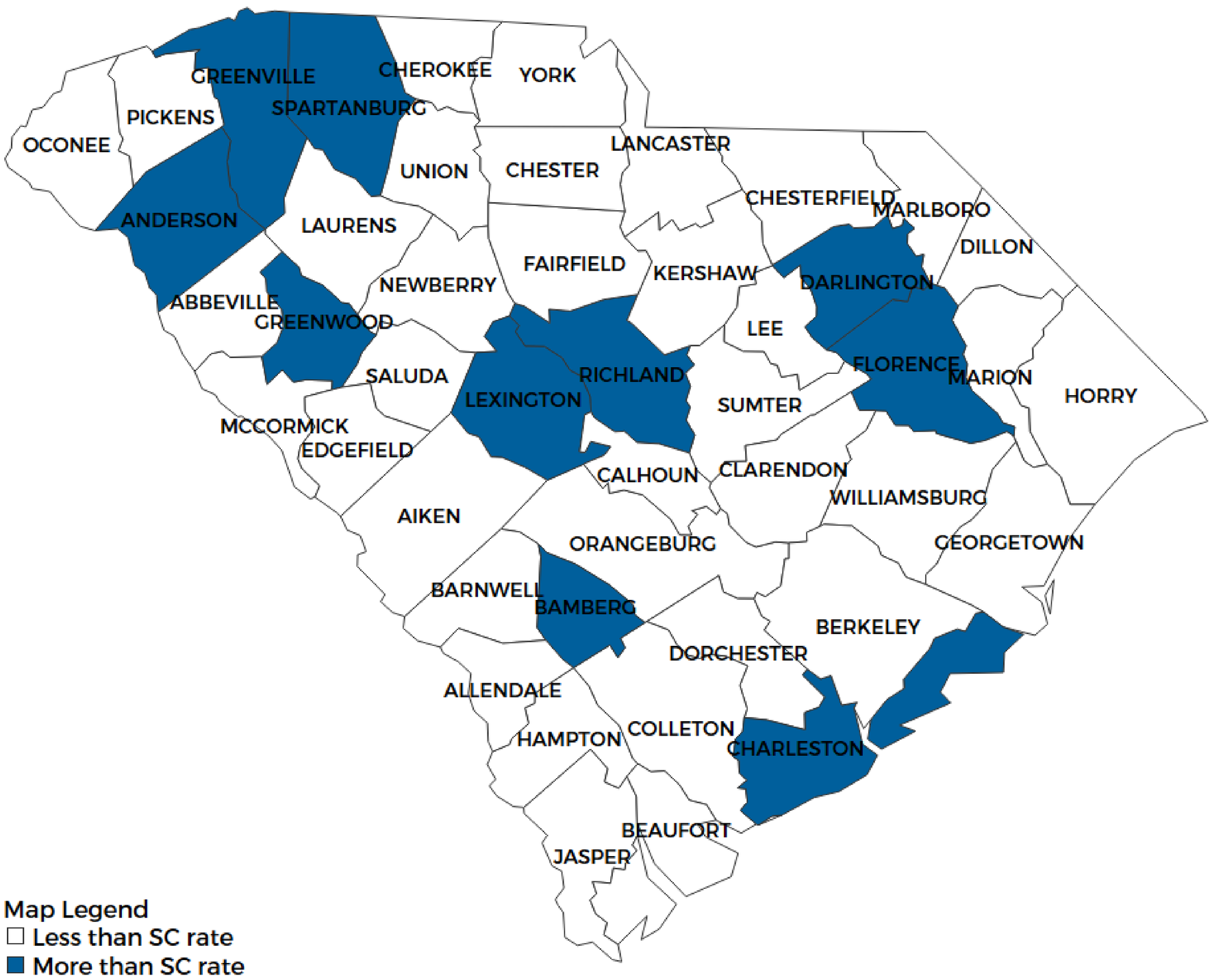


Figure 9. Rate of CII prescriptions per 1,000 by prescriber county for 2021



IV. Schedule III

4.1 Overview

Schedule III prescriptions are defined as substances with a "moderate to low potential for physical and psychological dependence. Schedule III drugs abuse potential is less than Schedule I and Schedule II drugs but more than Schedule IV." (United States Drug Enforcement Administration, 2022) This section reports on Schedule III controlled substances (CIII) that were prescribed by a SC prescriber and dispensed in SC. In 2021, the most common CIII prescriptions filled in SC were buprenorphine HCl/naloxone HCl, testosterone cypionate, acetaminophen with codeine phosphate, buprenorphine HCl, and testosterone micronized. From 2016 to 2021, the number of

Figure 10. Number of filled CIII prescriptions prescribed by SC prescribers over time, 2016 - 2021

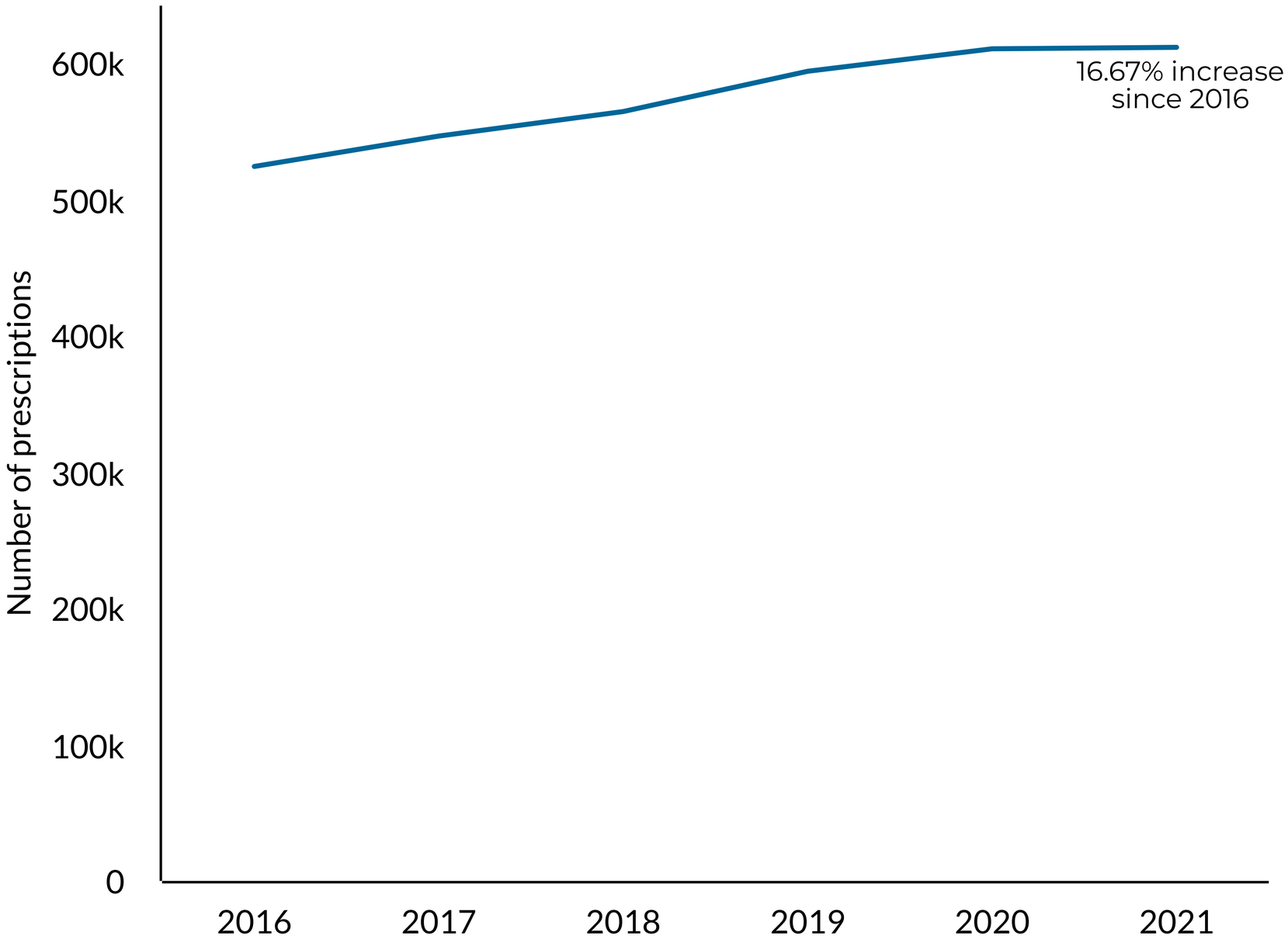
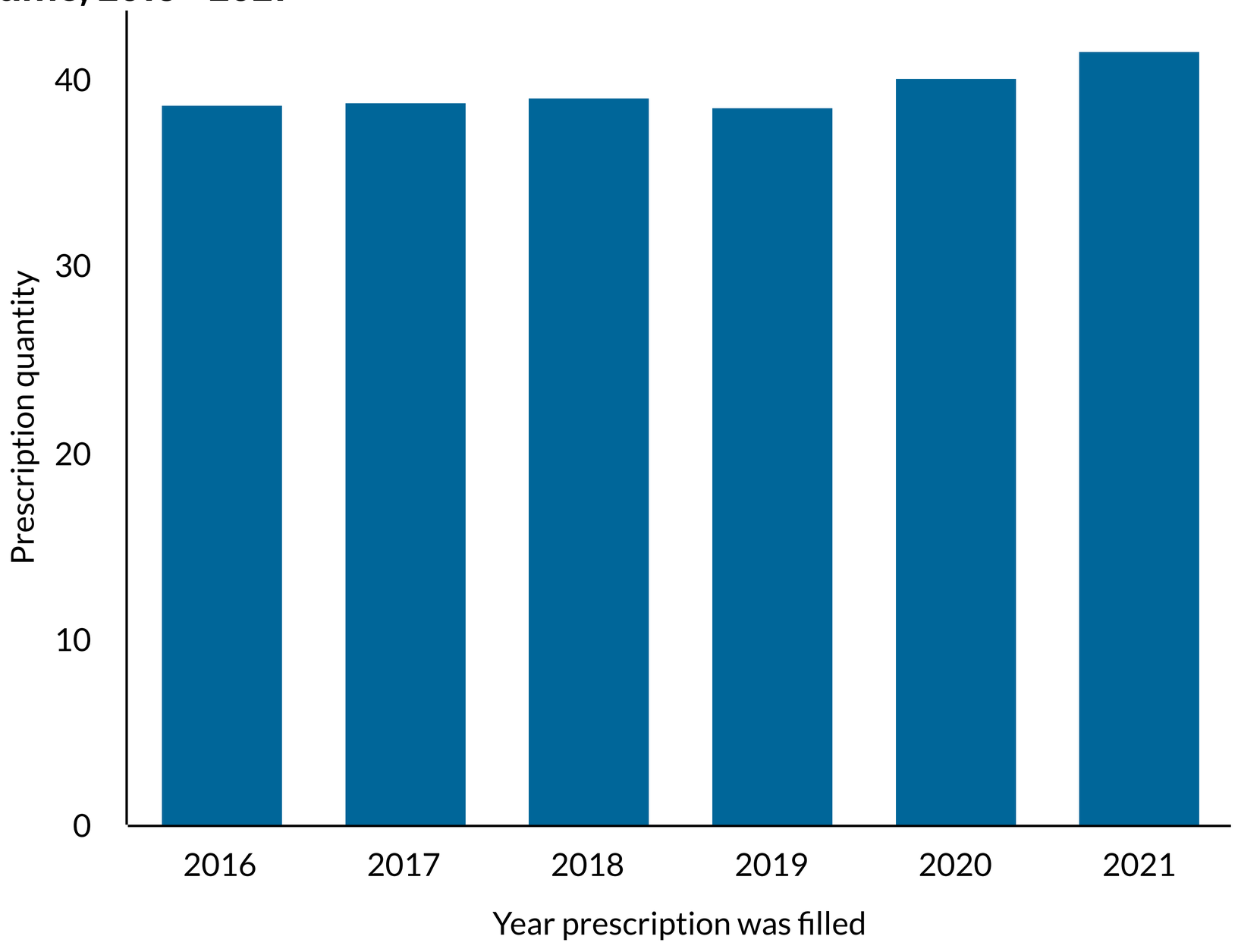


Figure 11. Average prescription quantity[1] for CIII prescriptions over time, 2016 - 2021



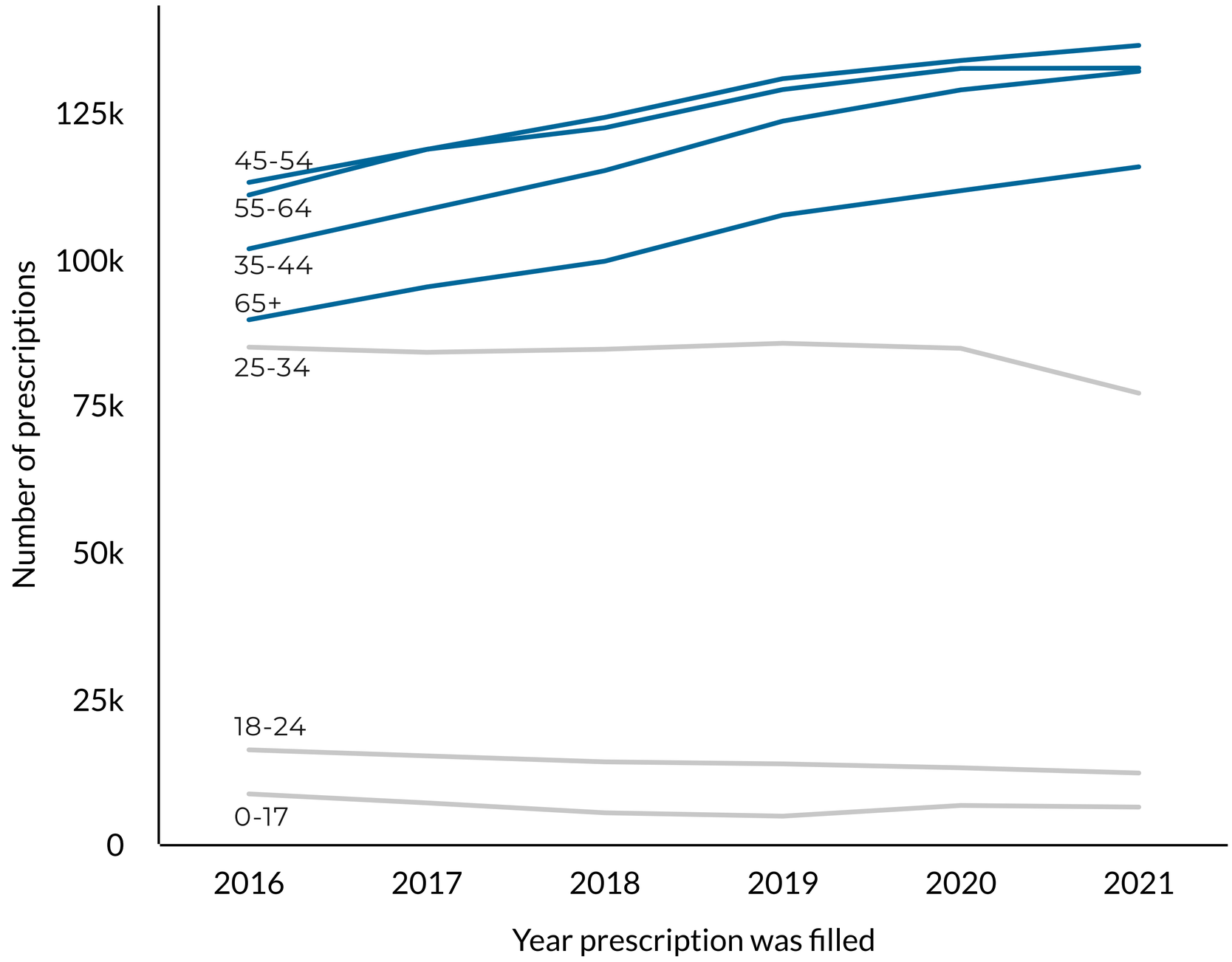
[1] Prescription quantity is defined as a CIII prescription in a capsule or tablet form.

filled CIII prescriptions increased by 16.67% (523,966 to 611,325, respectively) (Figure 10). Additionally, the average quantity of CIII prescriptions increased by 7.39% during the same time period (Figure 11). It is important to note that this increase in CIII prescriptions is due to the increase in buprenorphine, which has increased by 60.25% from 2016 to 2021. Buprenorphine is a controlled substance that has been approved by the Food and Drug Administration (FDA) to be used as a medication-assisted treatment (MAT) to treat Opioid Use Disorder.(SAMHSA, 2022)

4.2 Patient Demographics

In 2021, the average age of patients receiving CIII prescriptions from SC prescribers was 51. Patients 35 and older filled more CIII prescriptions in 2021 compared to 2016 from SC prescribers (Figure 12). Additionally, more males than females received a CIII prescription in 2021 (69,462 versus 59,015, respectively). CIII prescriptions increased by 9% for females and 23% for males from 2016 to 2021. The number of patients filling CIII prescriptions from SC prescribers has decreased for in-state patients but increased for out-of-state patients from 2016 to 2021. In 2021, the number of patients with a SC address filling a CIII prescription in SC and from a SC prescriber was 126,985, while the number of patients with an address outside of SC was 4,372.

Figure 12. Number of filled CIII prescriptions prescribed by SC prescribers by patient age, 2016 - 2021[1]



Age may be 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 2016, while a gray line indicates a decrease.

4.3 Geographic Location (Prescriber County)

The rate of filled CIII prescriptions prescribed by SC prescribers has increased from 105.68 per 1,000 people in 2016 to 117.16 per 1,000 people in 2021. The rate of CIII prescriptions was higher than the SC rate in Cherokee, Marlboro, Dillon, and Bamberg county in 2021, while this was not the case in 2016 (Figure 13 and 14). Additionally, from 2016 to 2021, the number of CIII prescriptions increased by more than 100% in Marlboro, Lee, Union, Bamberg, Cherokee, Laurens, Dillon, and Edgefield, while in 18 other counties in SC there was a decrease in the number of prescriptions over time. In 2021, Florence, Charleston, Bamberg, Marlboro, and Greenville county had the highest rate of filled CIII prescriptions.

Figure 13. Rate of CIII prescriptions per 1,000 residents by prescriber county for 2016

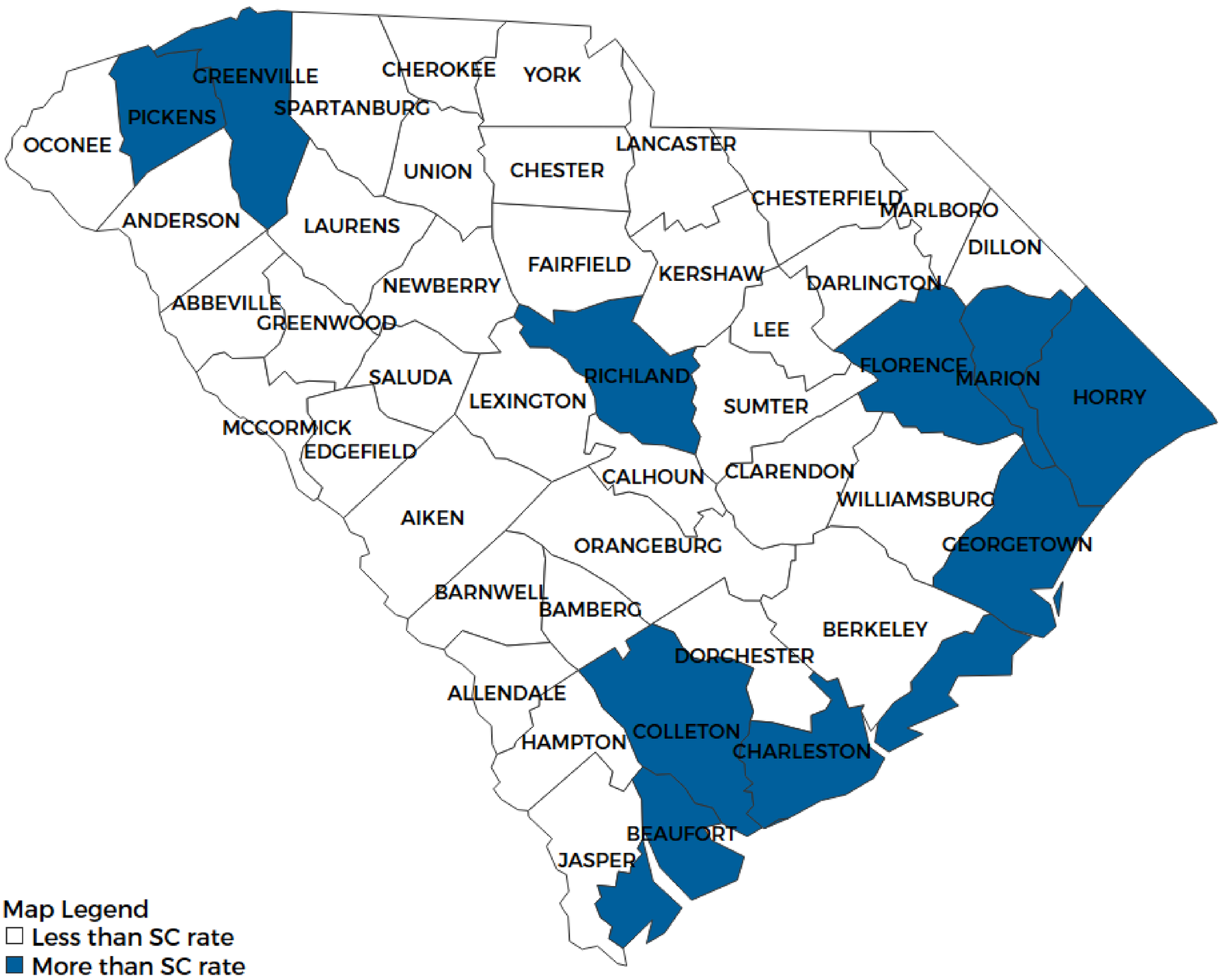
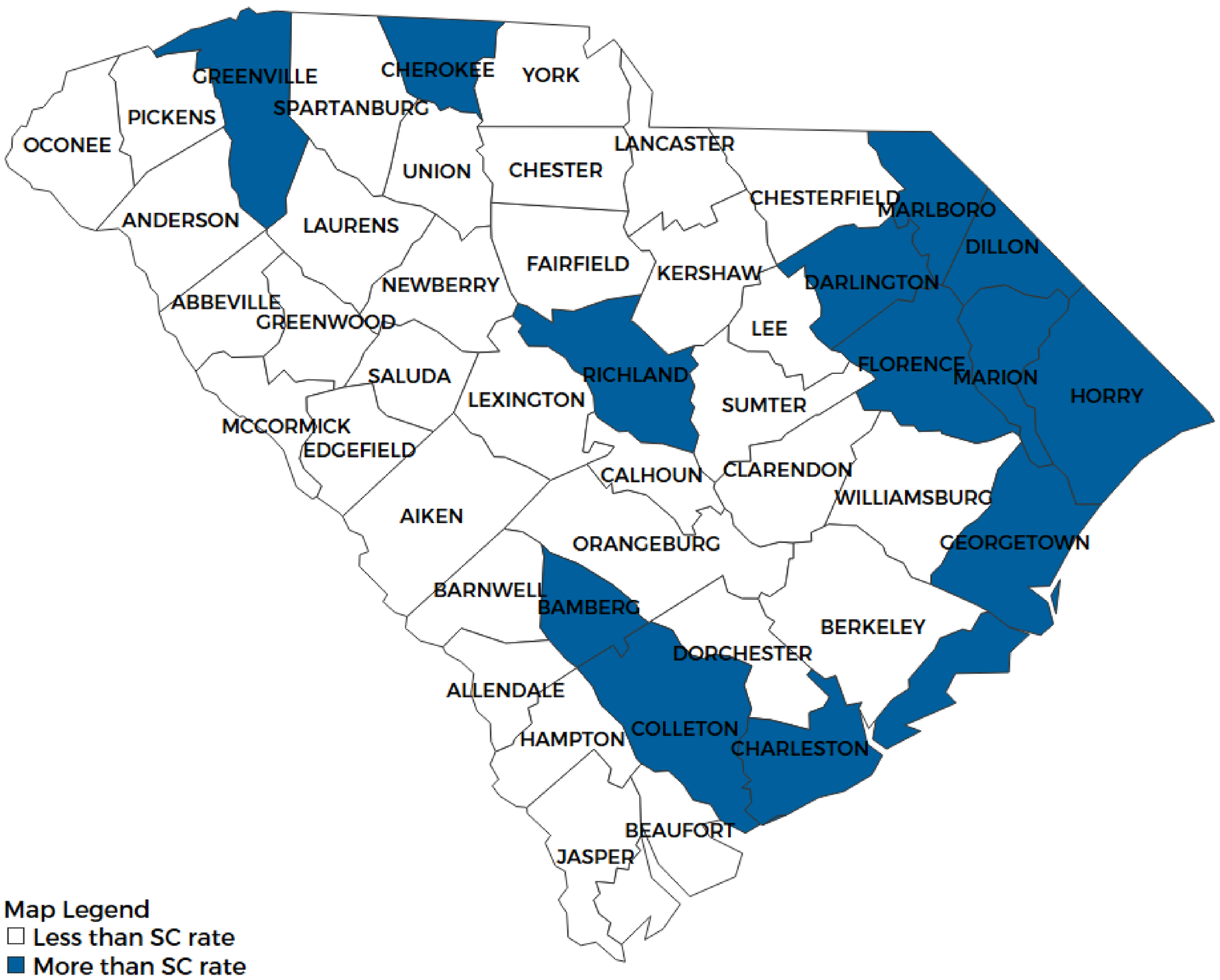


Figure 14. Rate of CIII prescriptions per 1,000 residents by prescriber county for 2021



V. Schedule IV

5.1 Overview

Schedule IV prescriptions are defined as substances with a “low potential for abuse and low risk of dependence”.(United States Drug Enforcement Administration, 2022) This section reports on Schedule IV controlled substances (CIV) that were prescribed by a SC prescriber and dispensed in SC. In 2021, the most common CIV prescriptions filled in SC were tramadol HCl, alprazolam, zolpidem tartrate, lorazepam, and clonazepam. From 2016 to 2021, the number of filled CIV prescriptions decreased by 16.18% (4,809,806 to 4,031,763, respectively) (Figure 15). Additionally, the average quantity dispensed of CIV prescriptions decreased by 10.14% during the same time period (Figure 16).

Figure 15. Number of CIV prescriptions prescribed by SC prescribers over time, 2016 - 2021

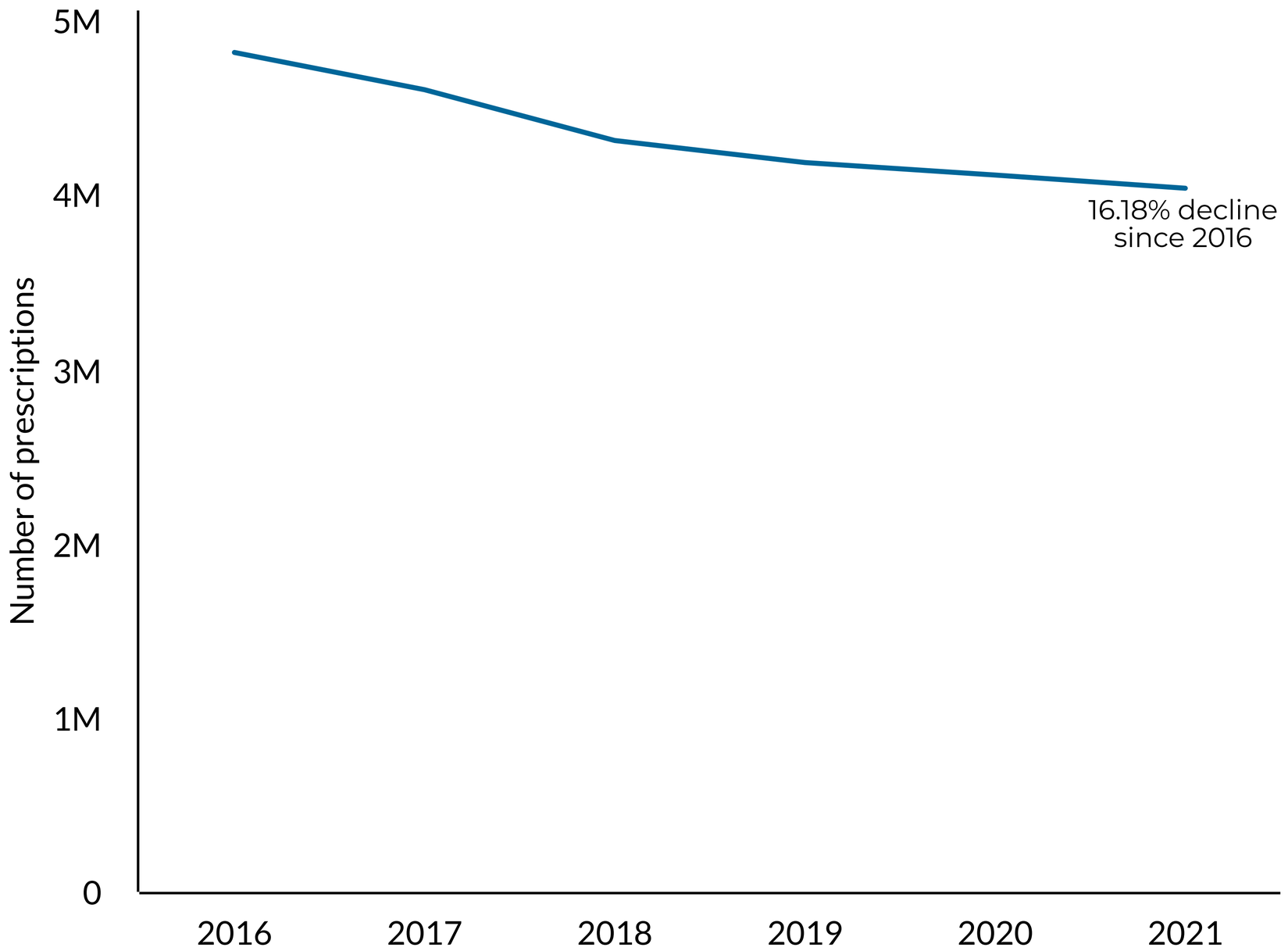
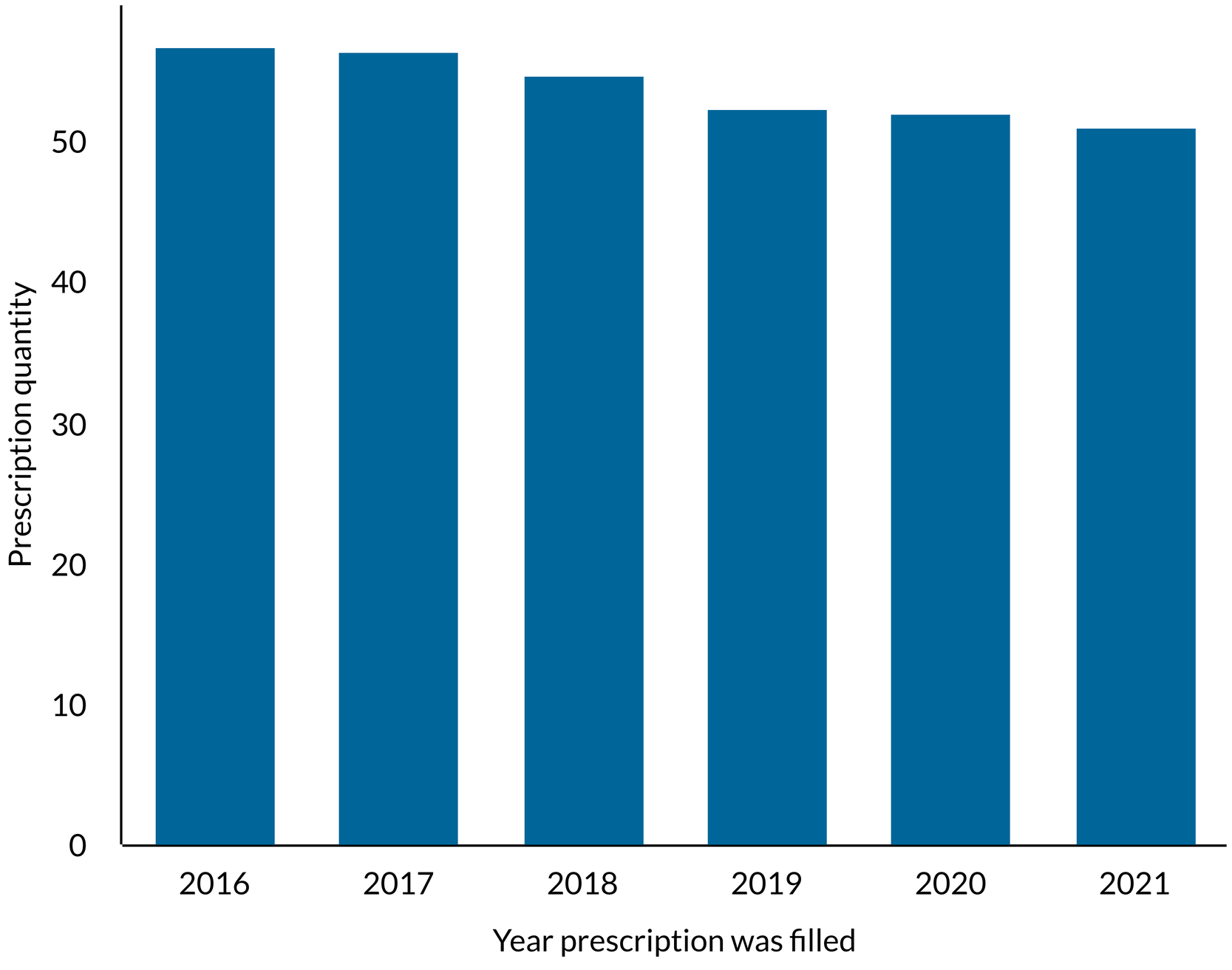


Figure 16. Average prescription quantity[1] for CIV prescriptions over time, 2016 - 2021

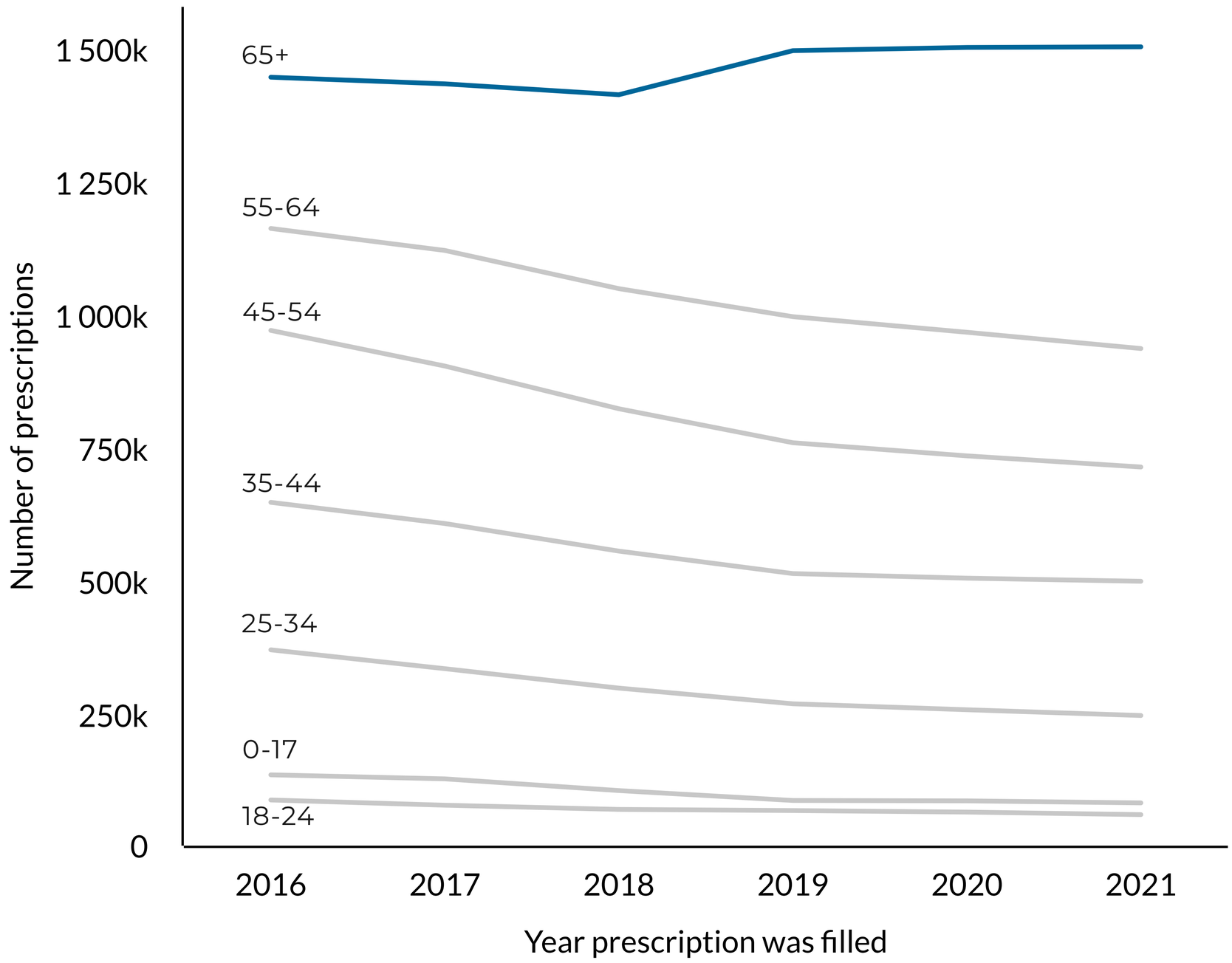


[1] Prescription quantity is defined as a CIV prescription in a capsule or tablet form.

5.2 Patient Demographics

In 2021, the average age of patients receiving CIV prescriptions from SC prescribers was 58. Patients 65 and older filled more CIV prescriptions in 2021 compared to 2016 from SC prescribers (Figure 17). Additionally, more females than males received a CIV prescription in 2021 (496,652 versus 265,647, respectively). CIV prescriptions decreased by more than 14% for females and males from 2016 to 2021. The number of patients filling CIV prescriptions from SC prescribers has decreased for both in-state and out-of-state patients from 2016 to 2021. In 2021, the number of patients with a SC address filling a CIV prescription in SC and from a SC prescriber was 757,641, while the number of patients with an address outside of SC was 21,275.

Figure 17. Number of filled CIV prescriptions prescribed by SC prescribers by patient age,[1] 2016 - 2021



Age may be 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 2016, while a gray line indicates a decrease.

5.3 Geographic Location (Prescriber County)

The rate of filled CIV prescriptions prescribed by SC prescribers has decreased from 970.1 per 1,000 people in 2016 to 772.7 per 1,000 people in 2021. The rate of CIV prescriptions was higher than the SC rate in Richland, Bamberg, and Hampton county in 2021, while this was not the case in 2016 (Figure 18 and 19). Additionally, from 2016 to 2021, the number of CIV prescriptions increased more than 25% in Calhoun, Barnwell, Bamberg, Edgefield, and Hampton, while in 40 other counties in SC there was a decrease in the number of prescriptions over time. In 2021, Florence, Charleston, Greenville, Lexington, and Hampton county had the highest rate of filled CIV prescriptions.

Figure 18. Rate of CIV prescriptions per 1,000 residents by prescriber county for 2016

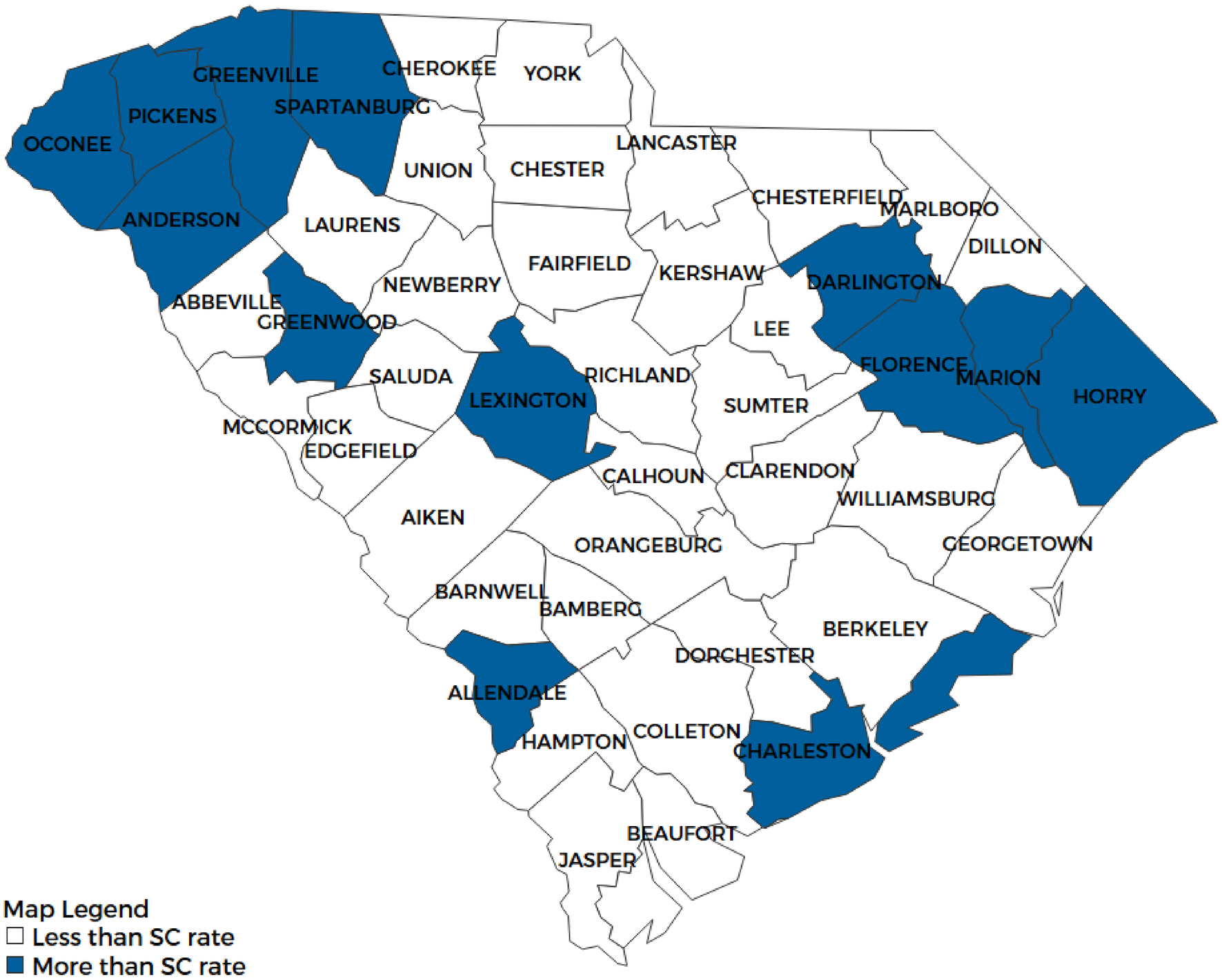
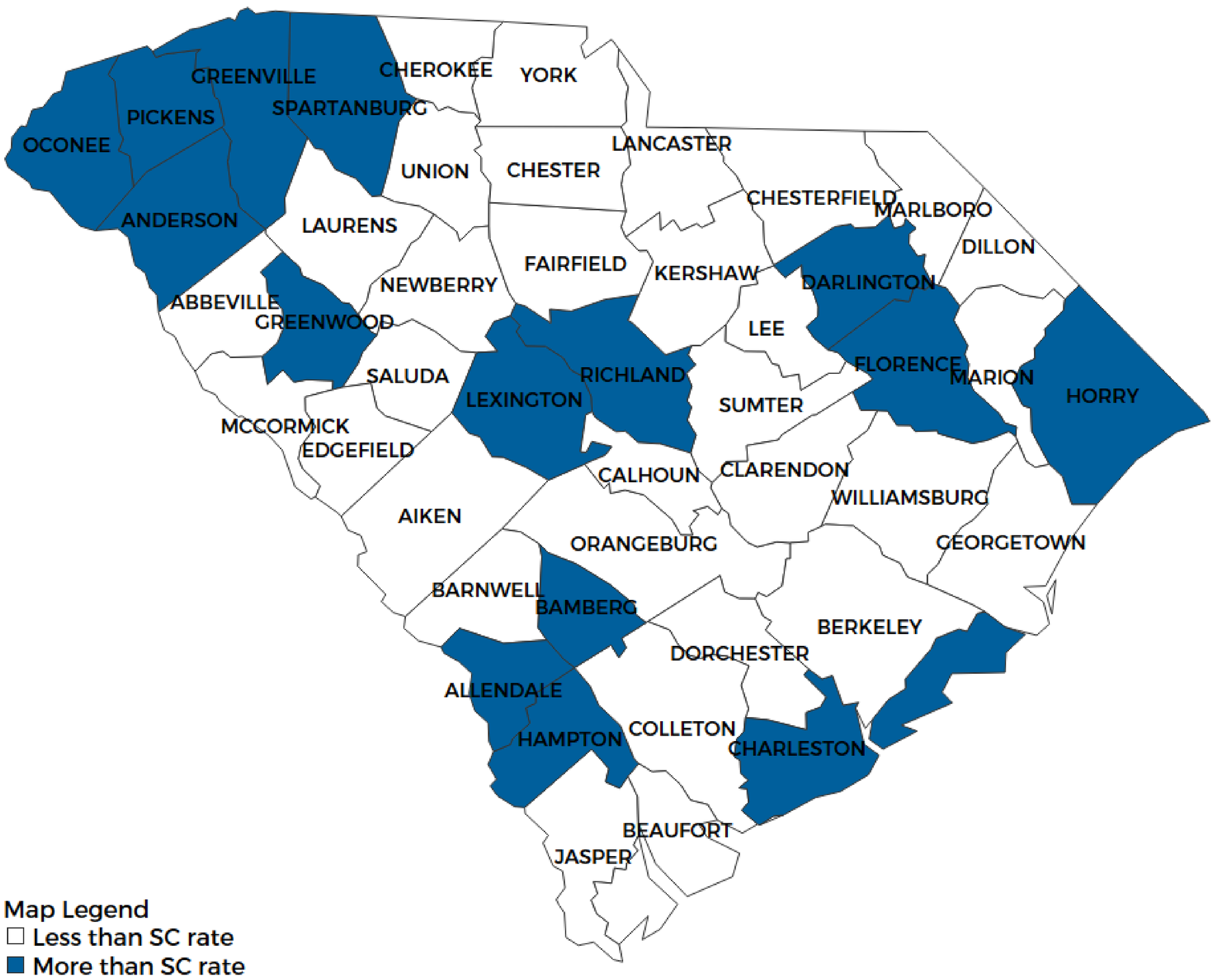


Figure 19. Rate of CIV prescriptions per 1,000 residents by prescriber county for 2021

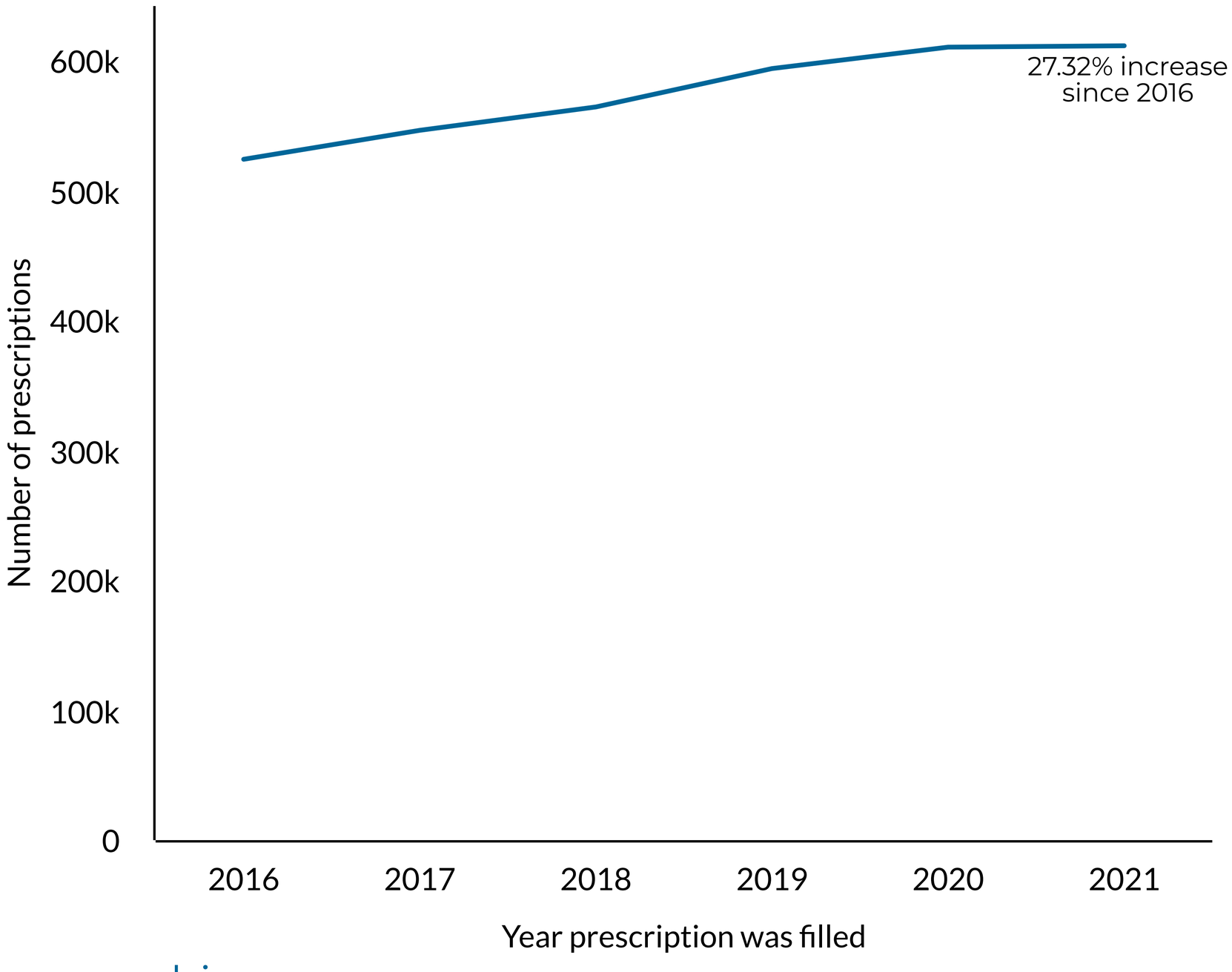


VI. Stimulants

6.1 Overview

Stimulants are a class of drugs used to increase alertness, attention, and energy for conditions such as attention-deficit hyperactivity disorder and narcolepsy.(NIDA, 2018) In 2021, the most common stimulant prescribed and filled in SC was dextroamphetamine sulf-saccharate/amphetamine sulf-asparate. Therefore, this section focuses on dextroamphetamine sulf-saccharate/amphetamine sulf-asparate, more commonly known as Adderall, Adderall XR, or Mydayis, that was prescribed by a SC prescriber and dispensed in SC. For the purposes of this report, references to this drug will be reflected as dextroamphetamine/amphetamine from this point forward in the report. From 2016 to 2021, the number of filled dextroamphetamine/amphetamine prescriptions increased by 27.32% (785,820 to 1,000,499, respectively) (Figure 20).

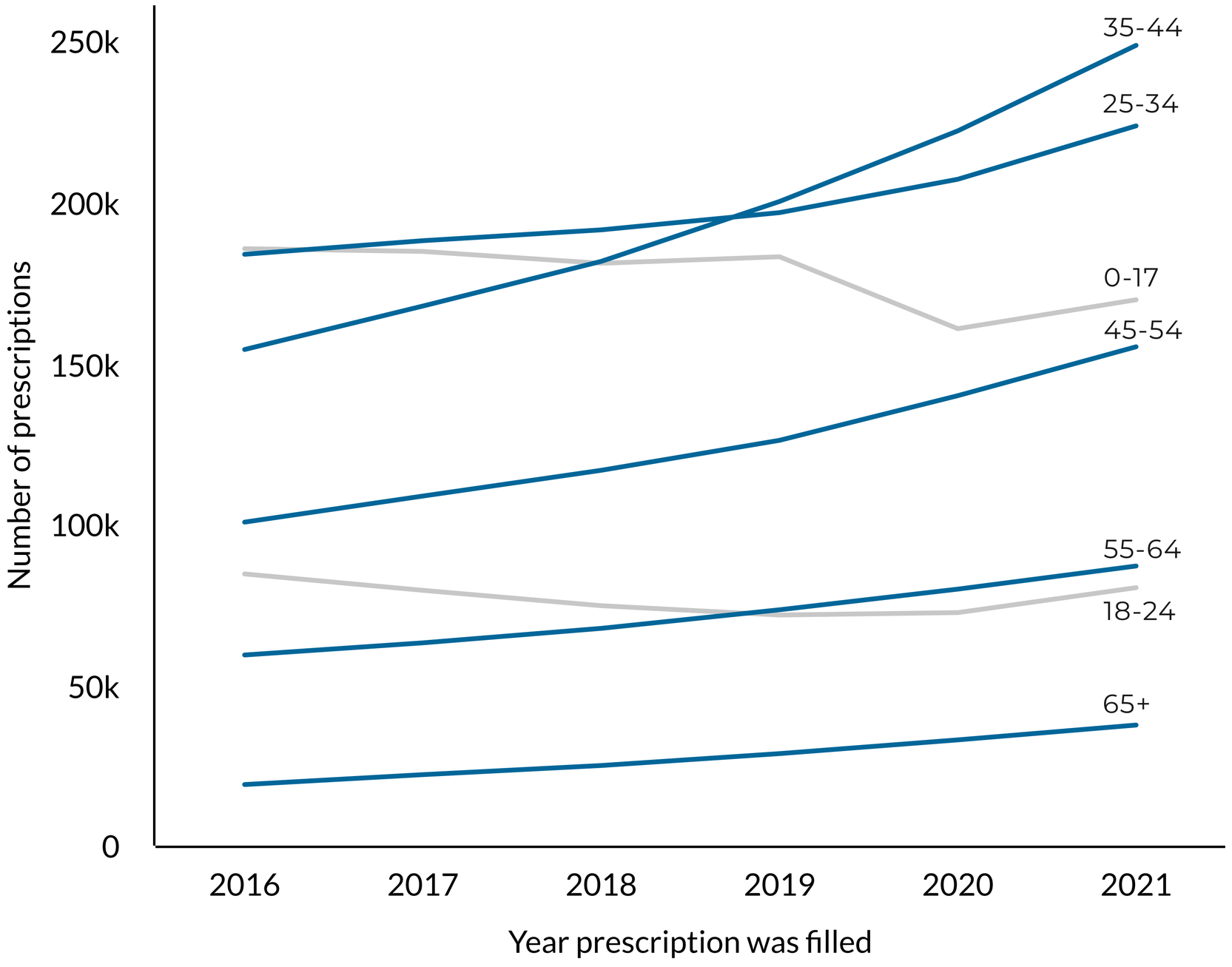
Figure 20. Number of filled dextroamphetamine/amphetamine prescriptions prescribed by SC prescribers over time, 2016 - 2021



6.2 Patient Demographics

In 2021, the average age of patients receiving dextroamphetamine/amphetamine prescriptions from SC prescribers was 35. Patients 25 and older filled more dextroamphetamine/amphetamine prescriptions in 2021 compared to 2016 from SC prescribers (Figure 21). Additionally, more females than males received a dextroamphetamine/amphetamine prescription in 2021 (71,886 versus 57,888, respectively). Dextroamphetamine/amphetamine prescriptions increased by 34% for females and 20% for males from 2016 to 2021. The number of patients filling dextroamphetamine/amphetamine prescriptions from SC prescribers has increased for both in-state and out-of-state patients from 2016 to 2021. In 2021, the number of patients with a SC address filling a dextroamphetamine/amphetamine prescription in SC and from a SC prescriber was 126,392, while the number of patients with an address outside of SC was 3,588.

Figure 21. Number of filled dextroamphetamine/amphetamine prescriptions prescribed by SC prescribers by patient age[1], 2016 - 2021



Age may be 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 2016, while a gray line indicates a decrease.

6.3 Geographic Location (Prescriber County)

The rate of filled dextroamphetamine/amphetamine prescriptions prescribed by SC prescribers has increased from 158.49 per 1,000 people in 2016 to 191.74 per 1,000 people in 2021. The rate of dextroamphetamine/amphetamine prescriptions was higher than the SC rate in Bamberg county in 2021, while this was not the case in 2016 (Figure 22 and 23). Additionally, from 2016 to 2021, the number of dextroamphetamine/amphetamine prescriptions increased more than 50% in Calhoun, Bamberg, Williamsburg, Edgefield, and Berkeley, while in 6 other counties in SC there was a decrease in the number of prescriptions over time. In 2021, Charleston, Greenville, Florence, Richland, and Lexington had the highest rate of filled dextroamphetamine/amphetamine prescriptions.

Figure 22. Rate of dextroamphetamine/amphetamine prescriptions per 1,000 residents by prescriber county for 2016

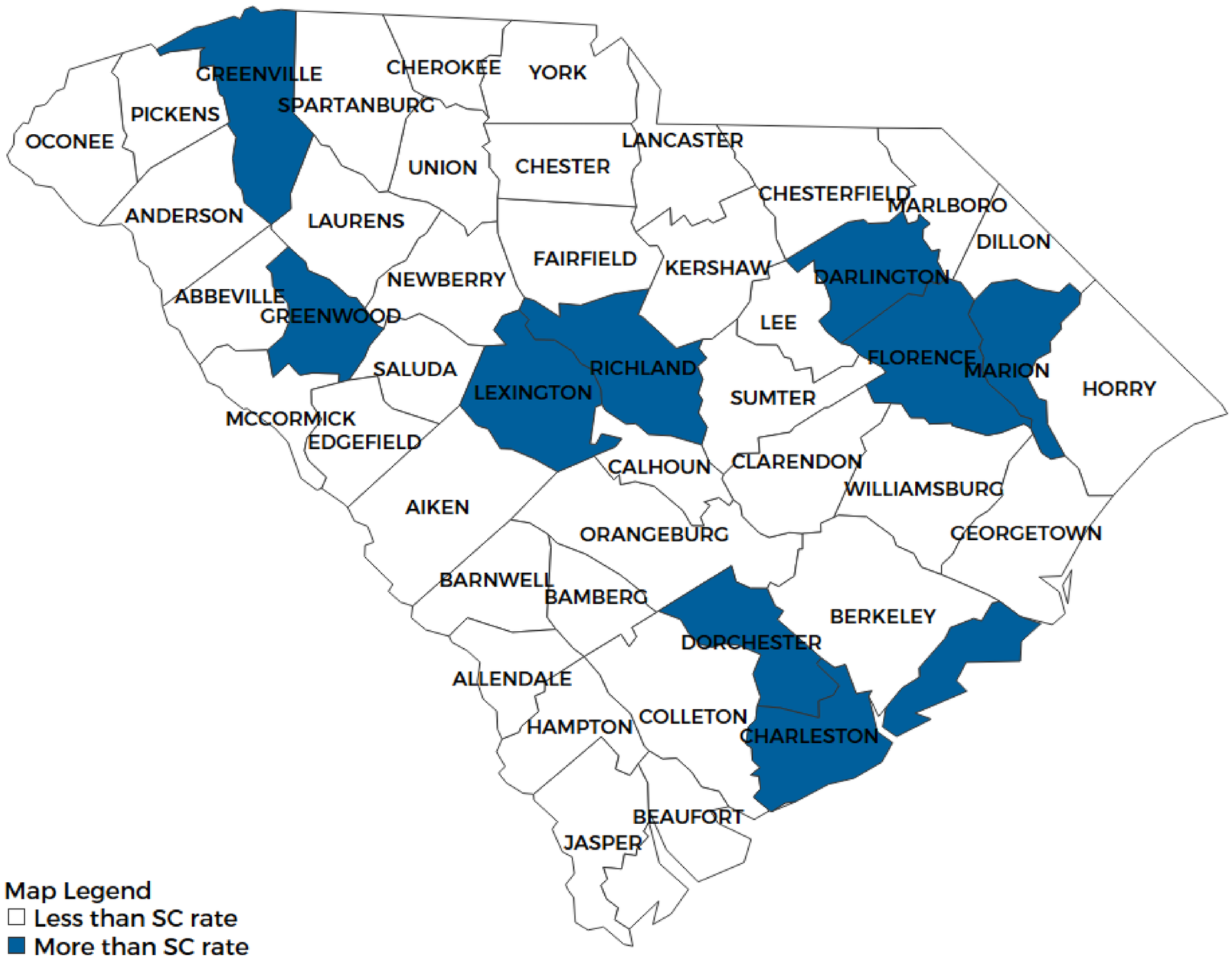
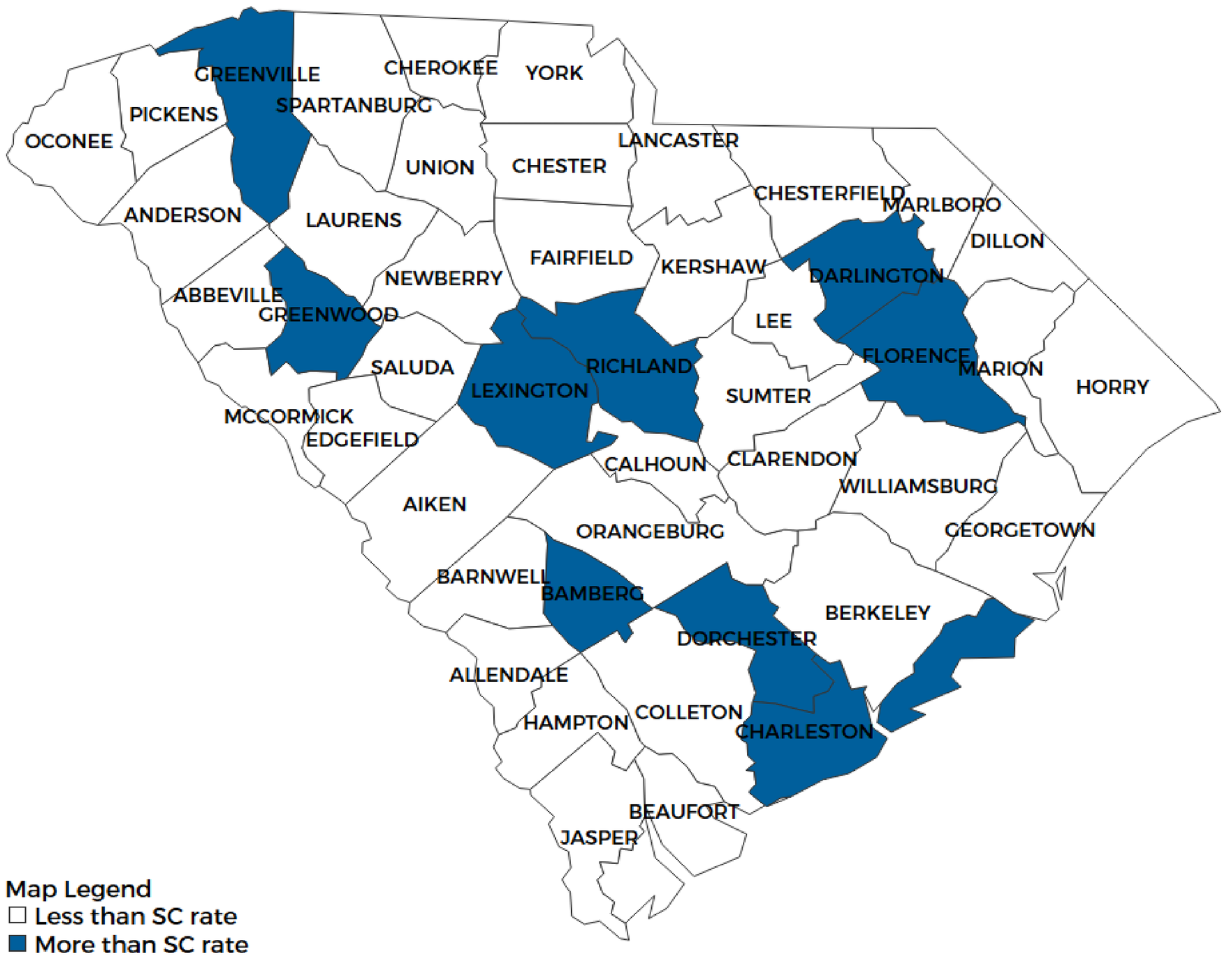


Figure 23. Rate of dextroamphetamine/amphetamine prescriptions per 1,000 residents by prescriber county for 2021



VII. Summary

The PMP is rapidly developing as a clinical and public health surveillance tool. As hundreds of deaths are attributed to drug overdoses each year in SC, increasing the usage of the PMP to assist in making clinical decisions is critical in addressing this continuing opioid epidemic.(DAODAS, 2022) With SC being ranked 10th in the country for the rate of opioid dispensing, our work at the PMP is more important now than ever to assist in reducing the curve.(Centers for Disease Control and Prevention, 2021) The Bureau of Drug Control will strive to work alongside other state agencies and assist in data dissemination and education efforts across the state. The impact of previous and on-going efforts by the SC PMP can be shown in yearly increases in prescriber PMP utilization and in the overall decreases in the total number of controlled substance prescriptions. The Bureau of Drug Control PMP staff will continue to advance and expand the program in 2022 and provide education to maintain positive data trends.

VII. References

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