



ST. LOUIS COUNTY  
PRESCRIPTION DRUG  
MONITORING PROGRAM

# PRESCRIPTION DRUG MONITORING PROGRAM

CITY OF COLUMBIA  
Q2 2017

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## Executive Summary

St. Louis County enacted legislation on March 1, 2016, to establish and authorize the operation of a Prescription Drug Monitoring Program (PDMP) by Saint Louis County Department of Public Health (DPH). The St. Louis County PDMP is the first locally based PDMP in the country. DPH serves as the program administrator, and any Missouri jurisdiction may subscribe to the St. Louis County PDMP upon enacting authorizing legislation and signing a User Agreement with St. Louis County.

Chapter 602 of the St. Louis County Revised Ordinances (SLCRO) is known as the “St. Louis County Narcotics Control Act” or more commonly known as the PDMP ordinance.

The Saint Louis County PDMP monitors the prescribing and dispensing of schedule II-IV controlled substances to assist in the identification and prevention of prescription drug misuse and abuse.

The program’s goals are to: 1) improve controlled substance prescribing by providing critical information regarding a patient’s controlled substance prescription history, 2) inform clinical practice by identifying patients at high-risk who would benefit from early interventions, and 3) reduce the number of people who misuse, abuse, or overdose while making sure patients have access to safe, effective treatment.

The St. Louis County PDMP launched on April 25, 2017, with 14 jurisdictions participating in the initial implementation. As of September 30, 2017, 48 jurisdictions have enacted legislation to participate in the St. Louis County PDMP. Additional jurisdictions will continue to be added to the PDMP on a monthly basis. A list of all participating jurisdictions and links to enacted legislation can be found on the DPH PDMP website, [www.stlouisco.com/PDMP](http://www.stlouisco.com/PDMP).

Additional information on the PDMP can be found at [www.stlouisco.com/PDMP](http://www.stlouisco.com/PDMP) or by contacting DPH at [PDMP.DPH@stlouisco.com](mailto:PDMP.DPH@stlouisco.com) or 314-615-0522.

This report contains dispensation information for patients residing in City of Columbia submitted by dispensers (pharmacies) in any of the 14 jurisdictions participating in initial PDMP implementation. Quarter 2 (Q2) 2017 (April-June) is the first complete quarter the PDMP was operational, and this report contains only prescriptions dispensed in Q2 2017. As this report only contains one quarter of information, the findings are not necessarily indicative of average prescribing practices in City of Columbia. Pharmacy compliance is an ongoing focus of DPH. While over 90% of pharmacies are appropriately submitting data, not all pharmacies were submitting data at the time of this report. At the time of this report, all City of Columbia pharmacies are submitting data to the PDMP. DPH continues to work with pharmacies on data submission and increasing pharmacy compliance. [Appendix A](#) contains data tables used to create dispensation figures.

Figure 1 represents the initial PDMP implementation participation. Prescriptions dispensed from these 14 jurisdictions to City of Columbia residents are reflected in this report.

Figure 2 represents the PDMP participation status as of September 30, 2017. 48 jurisdictions are currently participating in the PDMP and cover 71% of the Missouri population and 88% of healthcare providers.

Figure 1. PDMP initial implementation participation map (as of 04/25/2017).

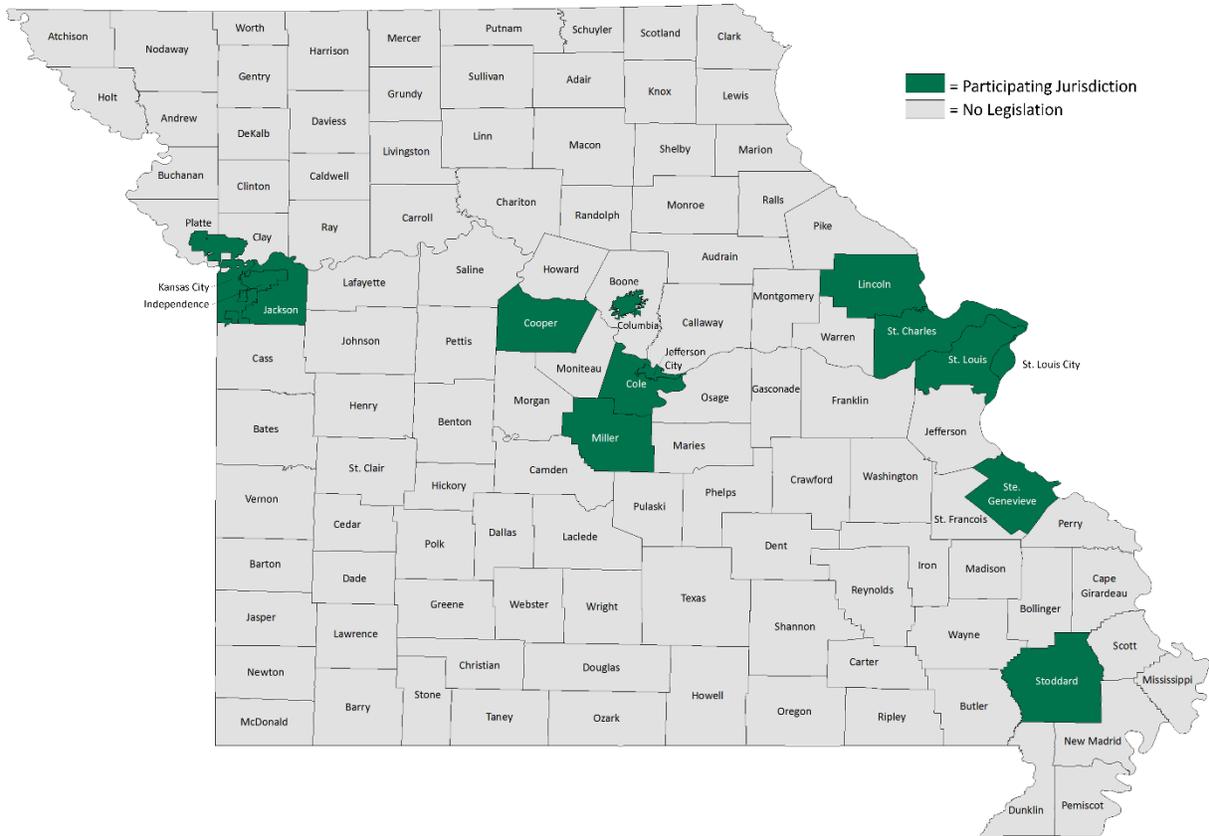
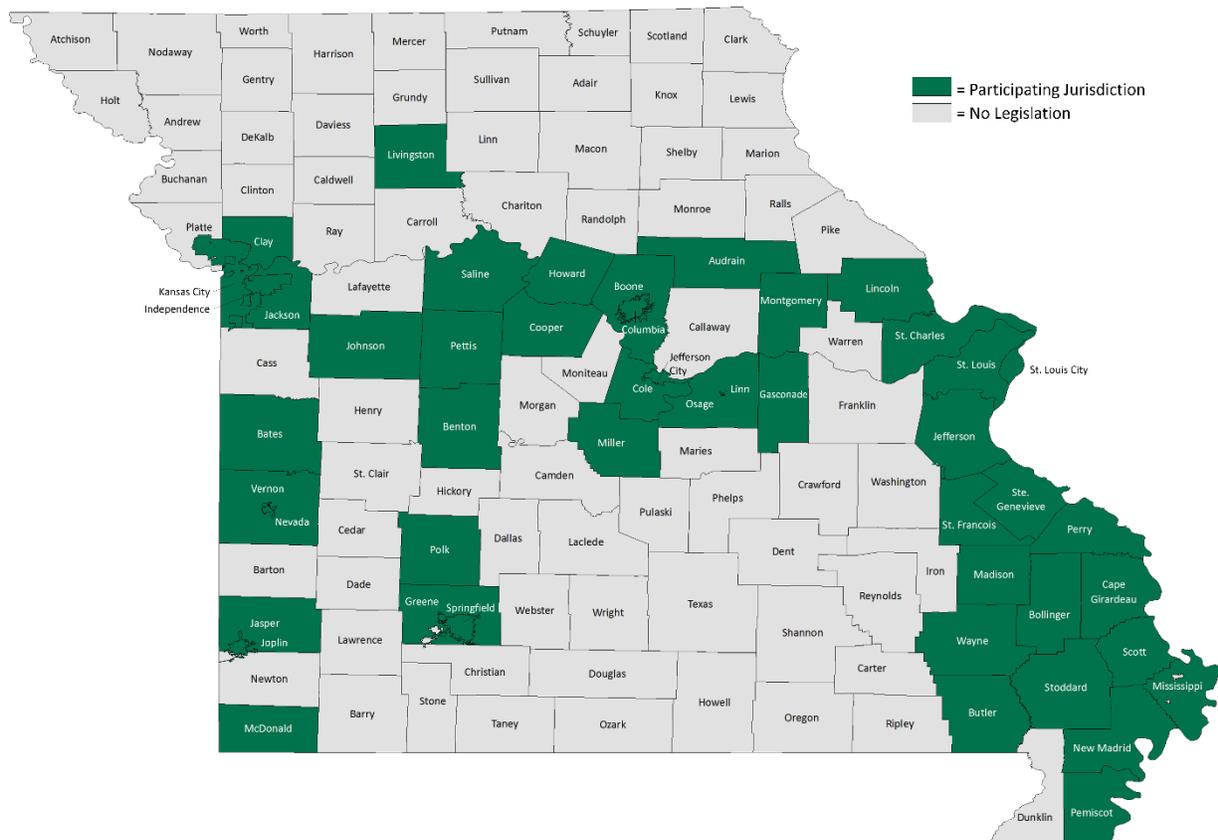


Figure 2. PDMP current participation map (as of 09/30/2017).



## User Registration & System Utilization

Section 602.806 SLCRO details persons authorized to be provided dispensation information or authorized users. Authorized users are divided into three categories with varying levels of access to the PDMP and to PDMP data.

- 1) Authorized users with direct, full access to the PDMP.
  - a. Healthcare providers accessing the PDMP for the purpose of providing medical or pharmaceutical care have direct, full access to the PDMP. Doctors, dentists, and pharmacists have the ability to supervise and delegate access to the PDMP but maintain all liability. Examples of delegate users include nurses, pharmacy technicians, and medical residents.
- 2) Authorized users with restricted or limited access to the PDMP.
  - a. These authorized users register in the PDMP and can submit search requests, but these requests require DPH approval and verification of additional ordinance requirements before authorized users are provided with any PDMP data. Authorized users with restricted PDMP access include state regulatory boards, law enforcement or prosecutorial officials, MO HealthNet, and judges or judicial officers.
- 3) Authorized users with ability to request PDMP data but do not directly access the PDMP.
  - a. Persons may request their own dispensation information in accordance with law. These requests are submitted directly to DPH and returned to the requestor.

Each user must register individually in the PDMP. Registration requires users provide personal and employer information along with validation documentation. Validation documentation is required for all users and varies by user type. Healthcare providers must provide a copy of their current professional license. DPH validates registration information prior to approving access to the PDMP.

User registration for the PDMP opened on April 4, 2017. As of September 30, 2017, there are over 4,150 approved users within the system. Figures 3 and 4 represent approved user counts by month and type, respectively. User registration has steadily increased since registration started in early April with approximately 50 new users are registering per day. Pharmacists represent approximately 48% of users and physicians represent 38%. Delegate users include medical residents, pharmacy technicians, nurses, etc. and comprise 12% of users. Pharmacists represent the largest user group as expected as pharmacists receive multiple rounds of communication and are required to submit dispensation to the PDMP. It is expected that the physician and delegate user groups will surpass pharmacist users as the PDMP progresses.

System utilization has increased as both the number of approved users and participating jurisdictions have increased. In May 2017, there was an average of 690 patient searches performed per day. In August 2017, over 1,300 patient searches were performed by approved users each day. This represents an 88% increase in system utilization in a 4 month period.

Figure 3. PDMP Approved User Counts by Month.

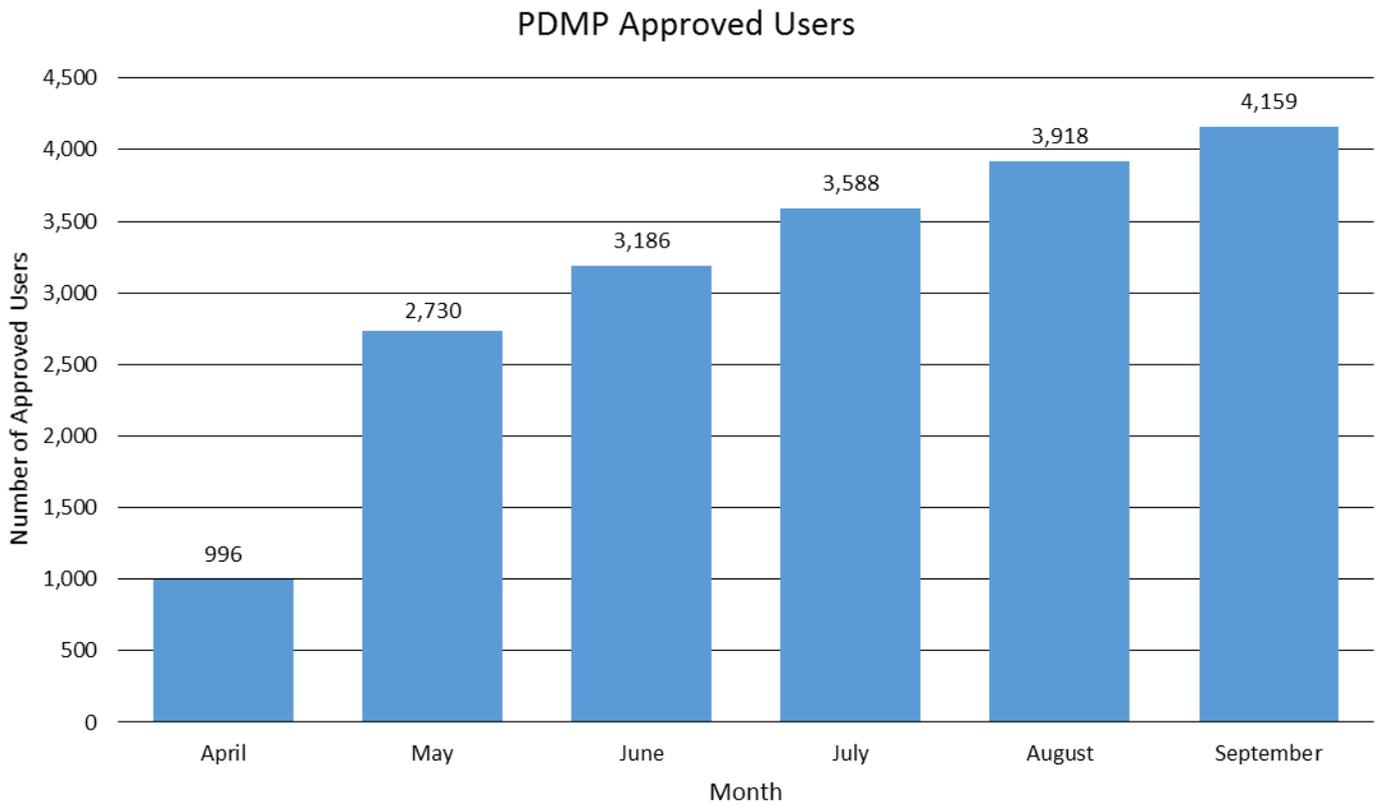
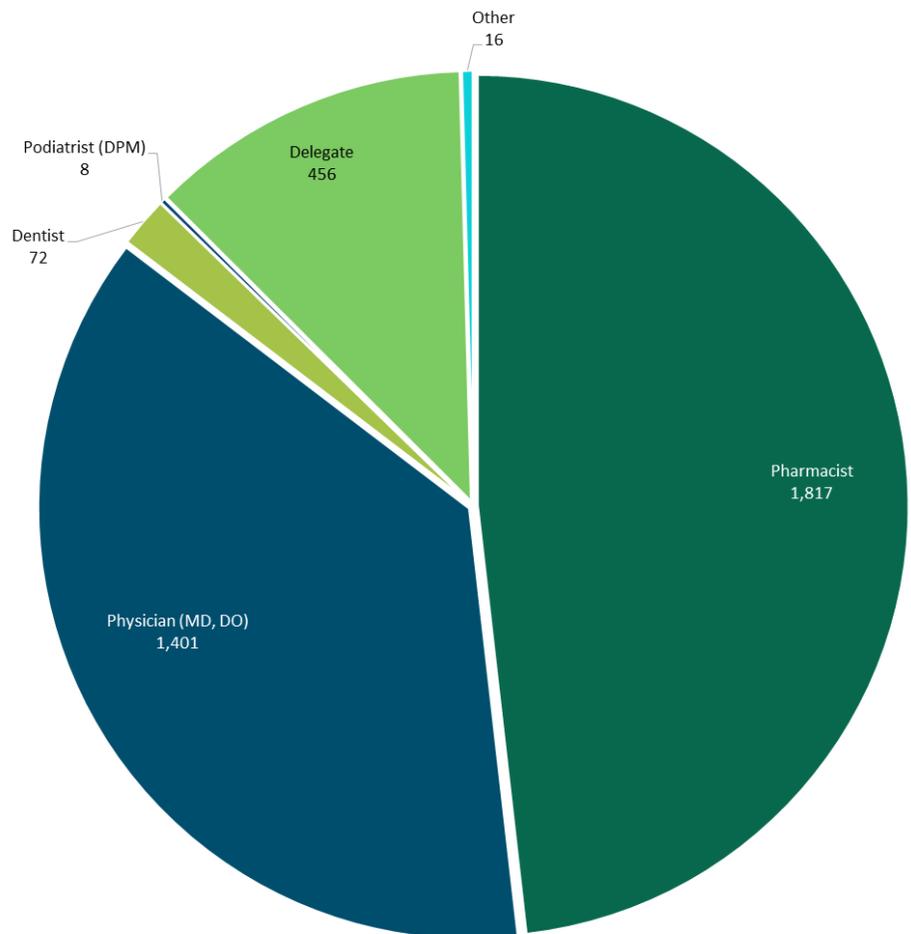


Figure 4. PDMP Approved User Counts by User Type.



## Dispensation Rates

Throughout this report, rates will be represented per 1,000 population. Population counts were identified from the 2010 census. [Appendix A](#) contains dispensation data tables. Suppressed rates indicate too few dispensations to report; counts less than or equal to 5 were suppressed per DPH policy. The total or overall rate means the rate of all 14 jurisdictions participating in the initial PDMP implementation. Overall rates include dispensations to those with a gender of male, female, and unknown. Rates for those with an unknown gender are not separately displayed but are included in the total rates.

While 14 jurisdictions enacted legislation to participate in the initial implementation, for the purpose of this report, Cole County and Jefferson City are reported collectively as Cole County.

Again, pharmacy compliance is a continued focus of DPH, and not all pharmacies were appropriately reporting data at the time of this report.

### Dispensation Rates by Geography

Dispensation rates vary by patient residence. The schedule II-IV controlled substance dispensation rate of the total system is 1,546.4 prescriptions per 1,000 population. Lincoln County residents receive the highest rates of controlled substance dispensations (2,030.1 prescriptions per 1,000 population). Cooper County residents receive the lowest rates of controlled substances (882.4 prescriptions per 1,000 population). City of Columbia residents receive significantly higher controlled substance prescriptions than the total system (1,637.0 prescriptions per 1,000 population).

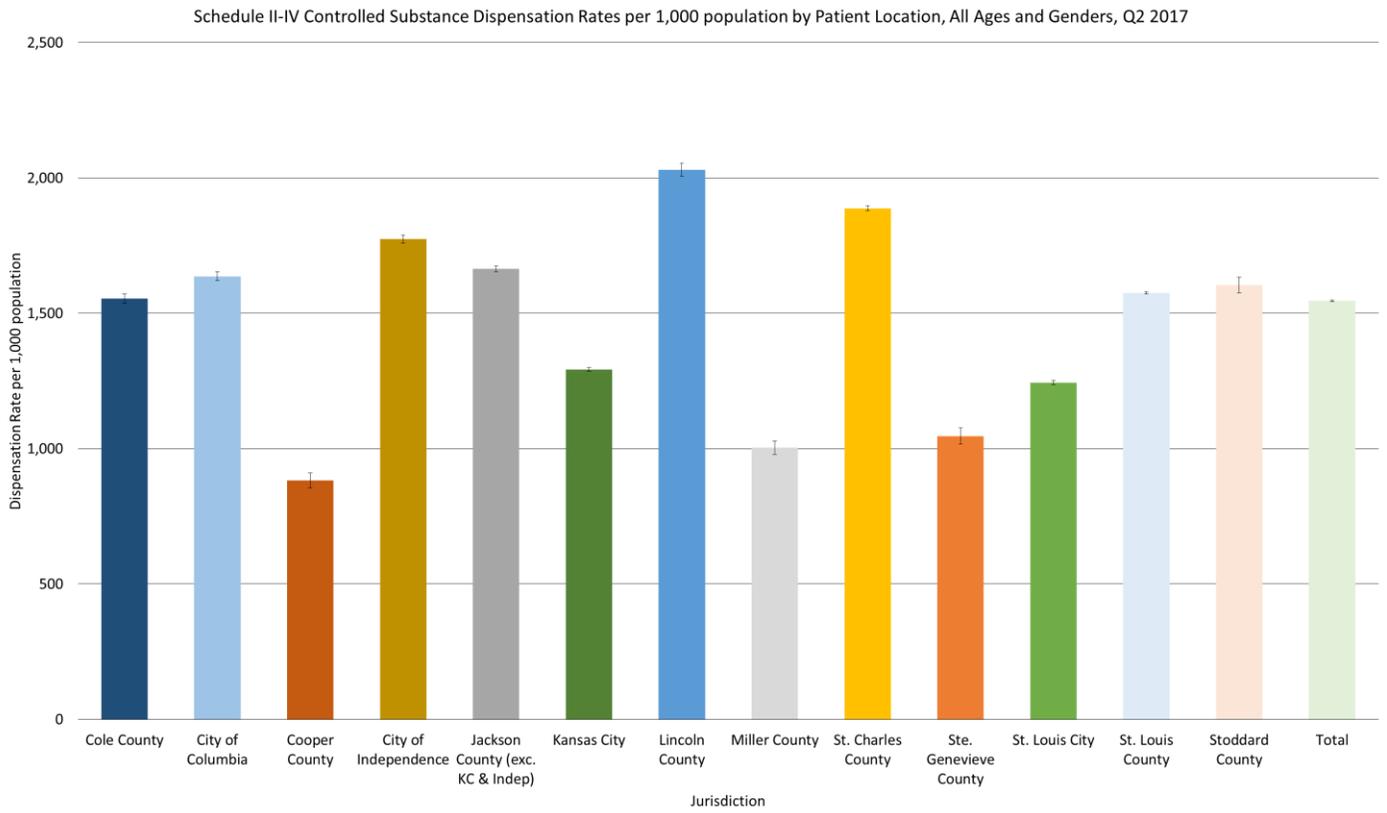
When compared to the total system (all jurisdictions combined), 7 jurisdictions have significantly higher dispensation rates. In descending order of dispensation rates, these 7 jurisdictions are: Lincoln County, St. Charles County, City of Independence, Jackson County (excluding Kansas City & Independence), City of Columbia, Stoddard County, and St. Louis County.

5 jurisdictions have significantly lower rates (again in descending order): Kansas City, St. Louis City, Ste. Genevieve County, Miller County, and Cooper County.

Cole County dispensation rates are not significantly different than the overall system.

Figure 5 represents the dispensation rates per 1,000 population for each jurisdiction. Further figures compare City of Columbia to the entire system. Note that not all figures are on the same scale.

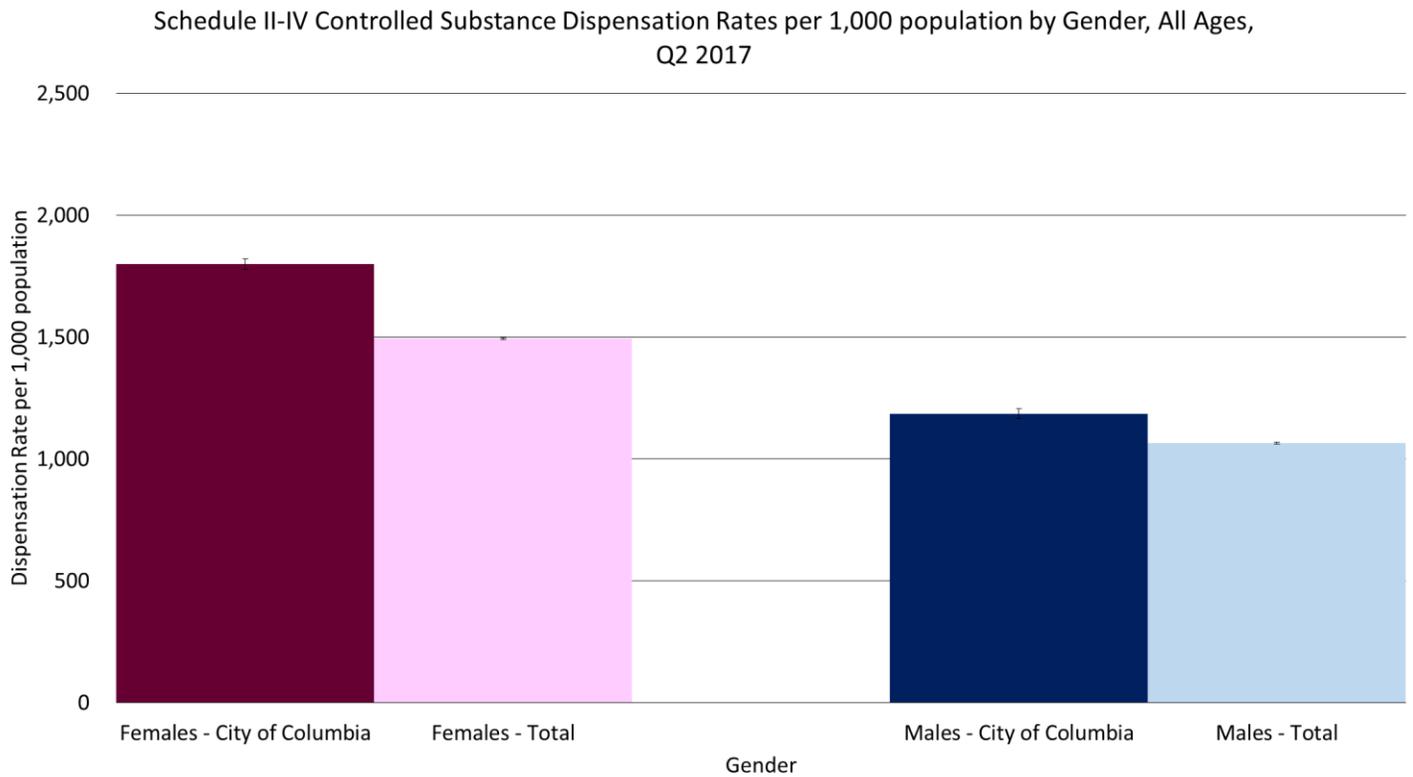
Figure 5. Dispensation rates per 1,000 by patient residence.



## Dispensation Rates by Gender

Females receive controlled substance prescriptions at significantly higher rates than males in both City of Columbia and the entire system (Figure 6). The dispensation rate for City of Columbia females is 1,803.4 prescriptions per 1,000 population compared to 1,402.6 prescriptions per 1,000 population for males. Both females and males in City of Columbia receive significantly higher rates of controlled substance prescriptions compared to the overall system.

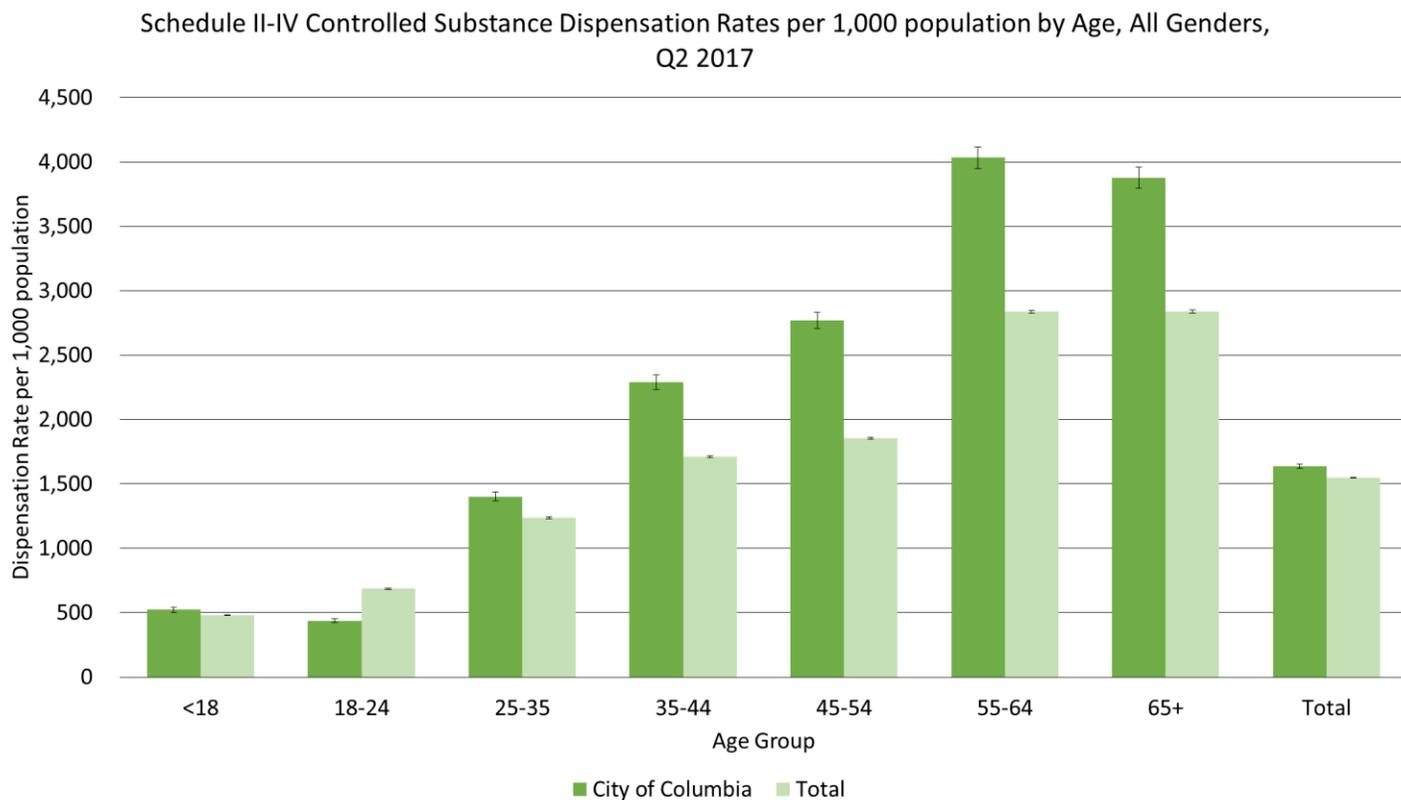
Figure 6. Controlled substance dispensation rates per 1,000 population by gender.



## Dispensation Rates by Age

Overall, dispensation rates increase with age (Figure 7). While the City of Columbia dispensation rate decreases from 55-64 year olds to 65+ (4,032.6 dispensations per 1,000 population to 3,875.3, respectively), the dispensation rates between these two age groups is not significantly different. City of Columbia residents receive significantly higher rates than the total system for all age groups except for 18-24 year olds.

Figure 7. Controlled substance dispensation rates per 1,000 population by age.

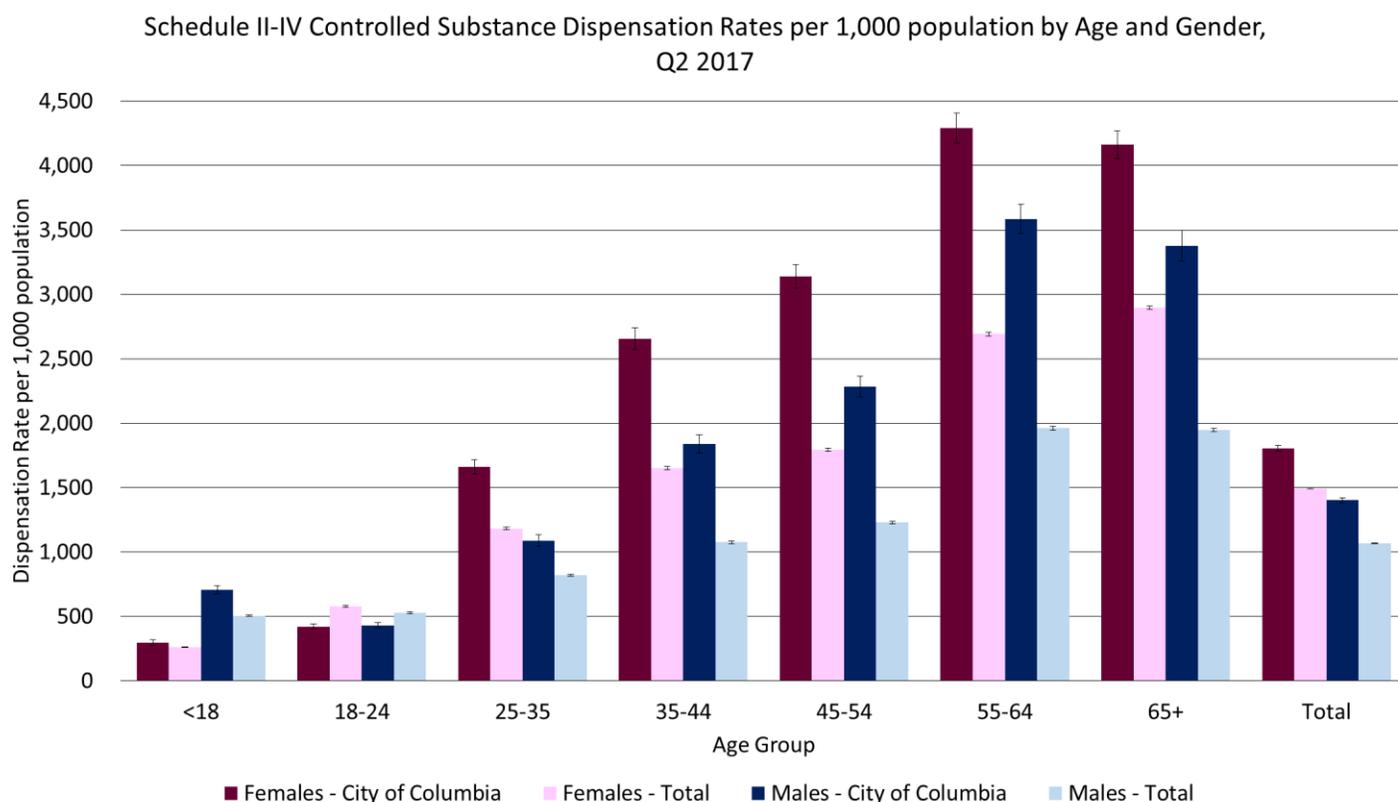


## Dispensation Rates by Age and Gender

Across all schedule II-IV controlled substances, females receive higher rates of controlled substances for all ages, except for minors. Figure 8 demonstrates that, across both genders, dispensation rates increase with age for the overall system, but City of Columbia experiences a slight (non-significant) decrease from 55-64 to 65+. City of Columbia females aged 55-64 receive the highest rates of controlled substances at 4,290.6 prescriptions per 1,000 population. For City of Columbia males, those aged 55-64 receive the highest rates of controlled substances at 3,585.5 prescriptions per 1,000 population.

Across all age groups, females in City of Columbia receive 1,803.4 prescriptions per 1,000 population, and males receive 1,402.6 prescriptions per 1,000 population. These rates are significantly higher than the total system with rates of 1,494.2 and 1,066.0, respectively.

Figure 8. Controlled substance dispensation rates per 1,000 population by age and gender.



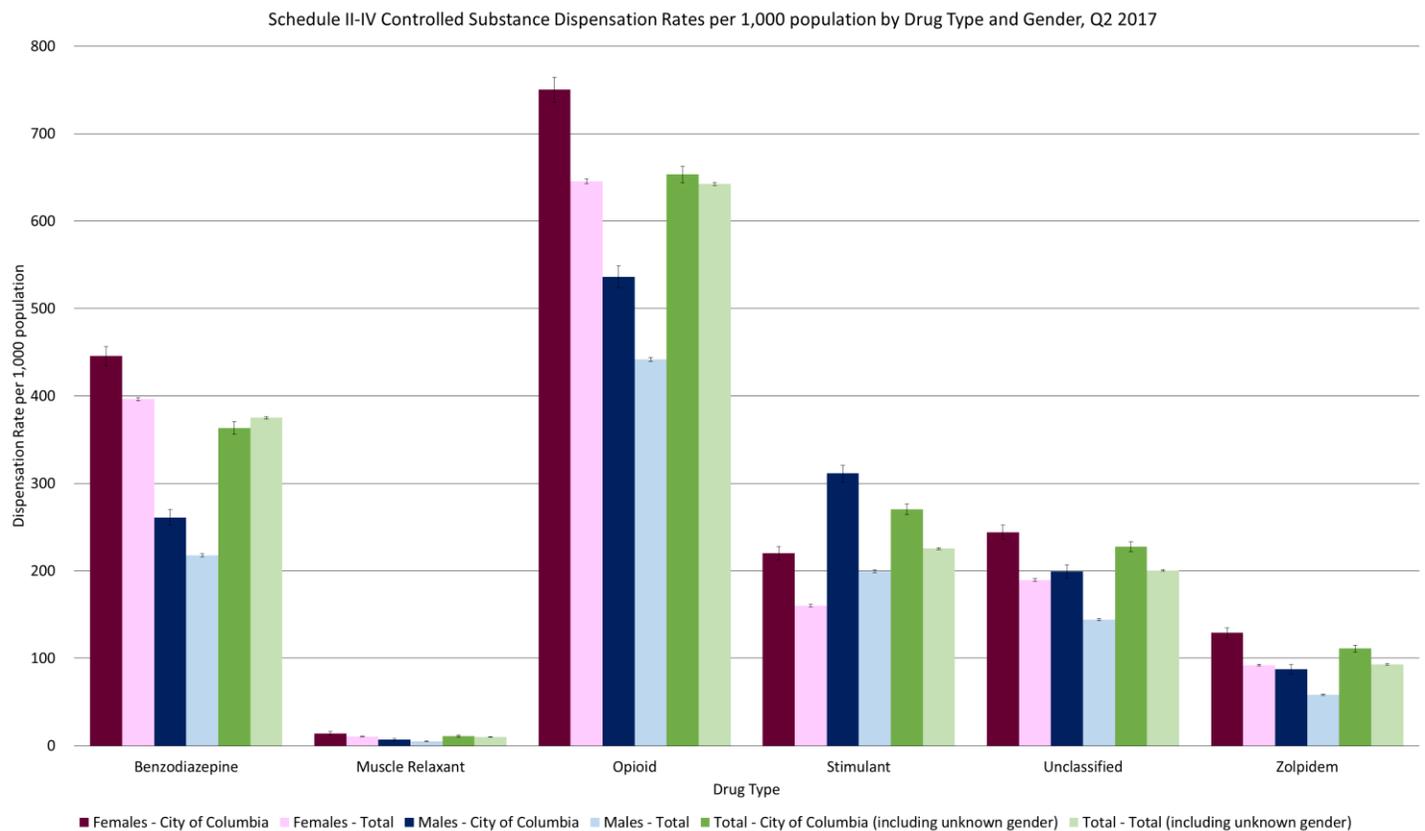
## Dispensation Rates by Age, Gender, and Drug Type

The group 'Unclassified' contains schedule II-IV controlled substances not classified as opioids, benzodiazepines, muscle relaxants, stimulants, or zolpidem. Steroids and hormones are two examples of unclassified controlled substances.

### All Ages

Across all age groups, opioids are the most frequently prescribed drug type (Figure 9). Benzodiazepines are the second most frequently prescribed drug type, followed by stimulants, unclassified, zolpidem, and muscle relaxants. Females receive higher rates of all drug types than males, except stimulants. Opioids comprise approximately 40% of all controlled substances dispensed.

Figure 9. Dispensation rates per 1,000 by gender and drug type, all ages.



## Opioid Dispensations

### Opioid Dispensation Rates by Geography

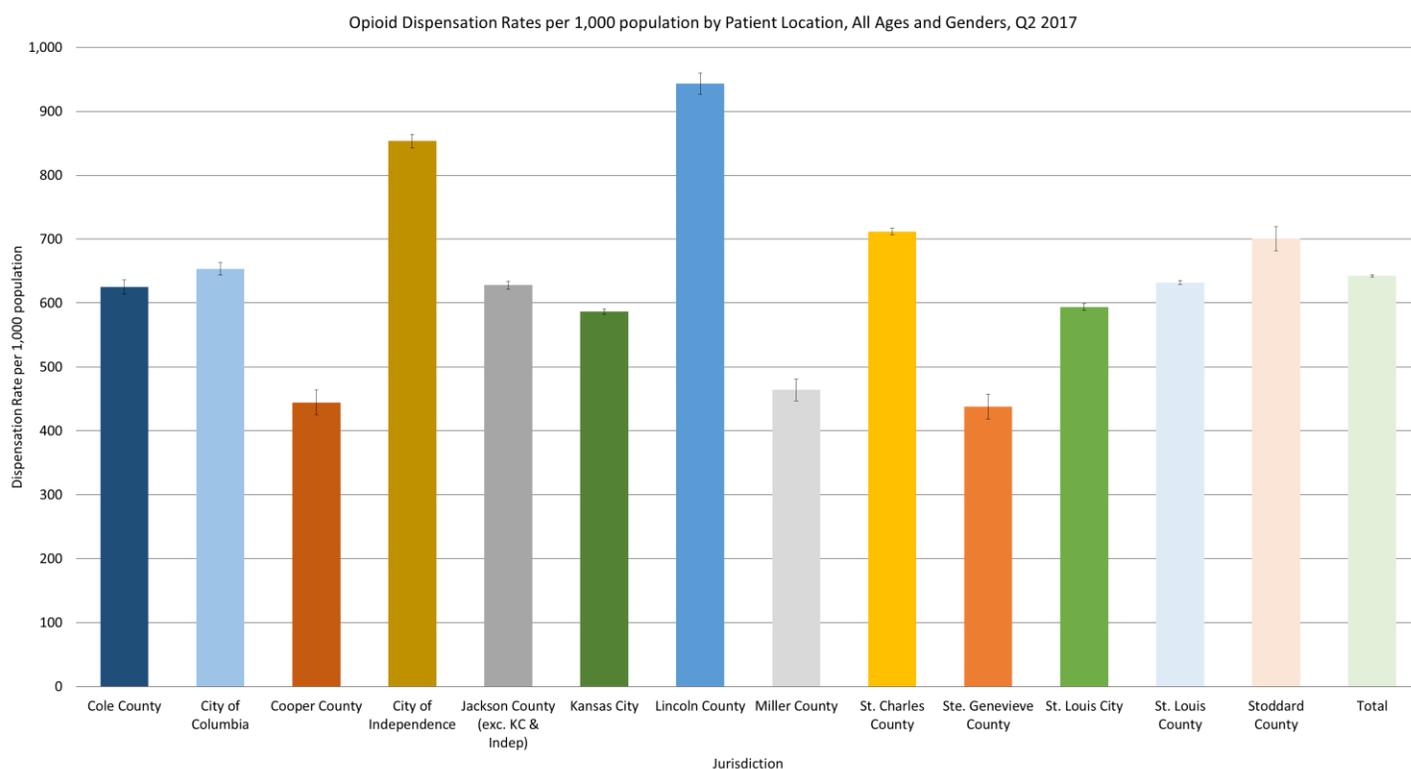
Opioid dispensation rates per 1,000 population are represented in Figure 10. Like all schedule II-IV controlled substances, Lincoln County residents receive the highest rates of opioid dispensations (943.3 prescriptions per 1,000 population). Ste. Genevieve County residents receive the lowest rates of opioid dispensations (437.8 prescriptions per 1,000 population). There is no significant difference in opioid dispensation rates for City of Columbia compared to total system (653.2 and 642.5 prescriptions per 1,000 population, respectively).

When compared to the total system (all jurisdictions combined), 4 jurisdictions have significantly higher opioid dispensation rates. In descending order of dispensation rates, these 4 jurisdictions are: Lincoln County, City of Independence, St. Charles County, and Stoddard County.

8 jurisdictions have significantly lower rates (again in descending order): St. Louis County, Jackson County (excluding Kansas City & Independence), Cole County, St. Louis City, Kansas City, Miller County, Cooper County, and Ste. Genevieve County.

City of Columbia opioid dispensation rates are not significantly different than the overall system.

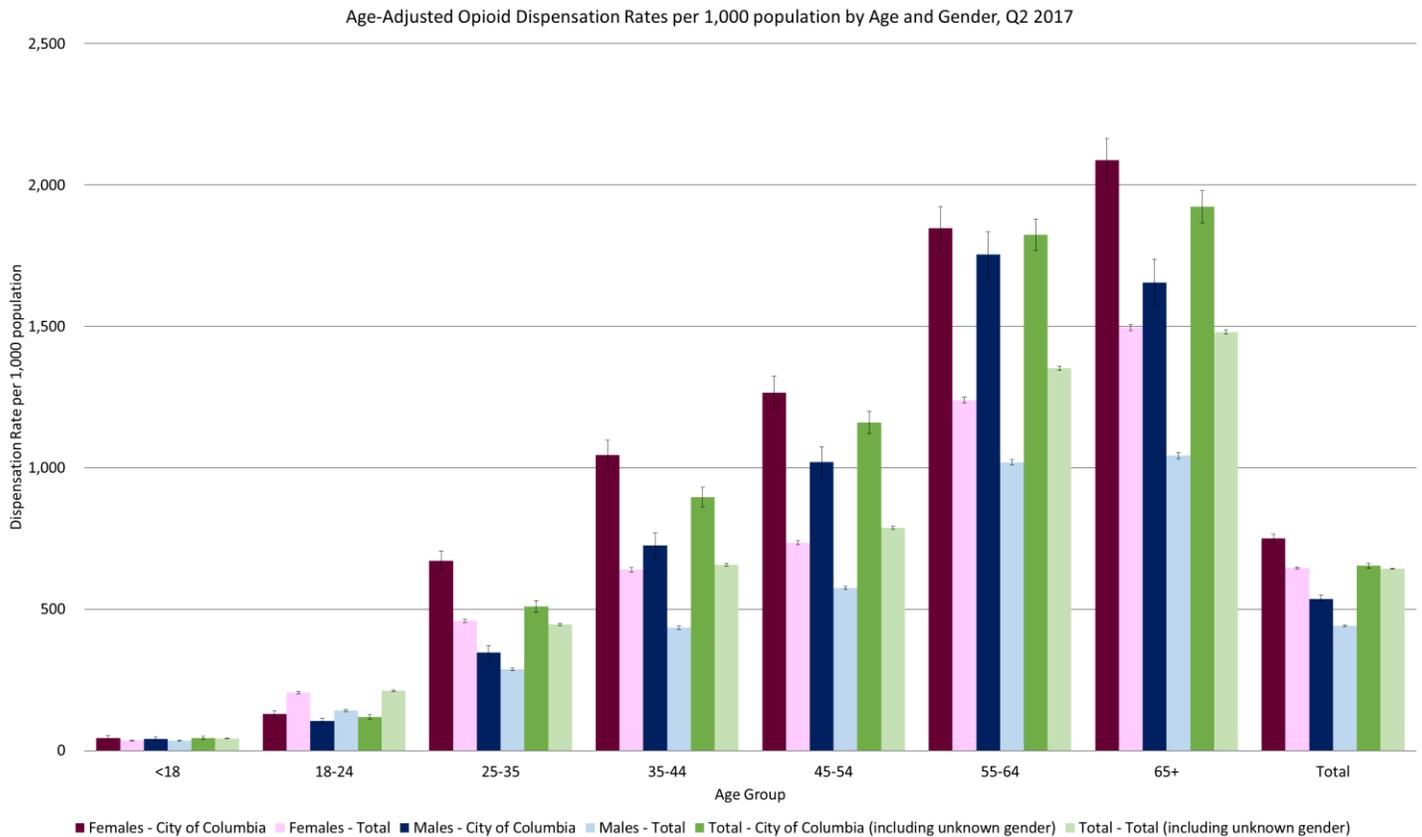
Figure 10. Opioid dispensation rates per 1,000 by patient location.



## Opioid Dispensation Rates by Age

When examining opioid dispensation rates, females receive higher rates than males across all age groups as displayed in Figure 10. City of Columbia females aged 65+ receive the highest rates of opioids compared to all other age and gender groups (2,089.2 prescriptions per 1,000 population). For City of Columbia residents, opioid dispensation rates increase as patient age increases with drastic jumps in dispensation rates from minors to 18-24 year olds and from 45-54 year olds to 55-64 year olds, increases of 170% and 57%, respectively.

Figure 10. Opioid dispensation rates per 1,000 by age and gender.



## Morphine Milligram Equivalents (MME)

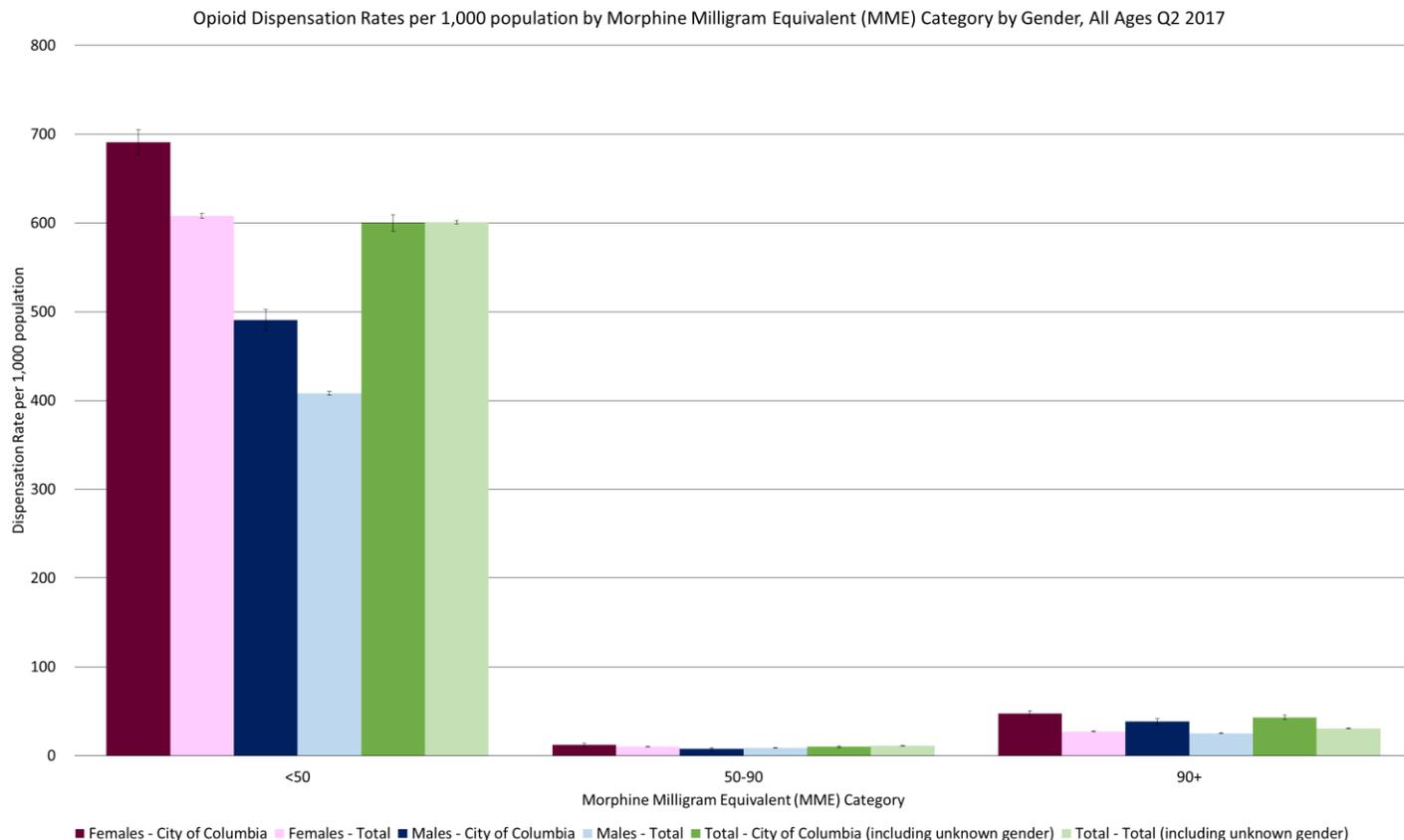
Opioid dispensations were categorized into one of three morphine milligram equivalent (MME) groupings using CDC’s prescribing guidelines. Per CDC’s guidelines, prescribers are to prescribe the lowest dosage possible, use caution when writing prescriptions for 50-90 MME, and use extreme caution when exceeding 90 MME. From these guidelines, opioid dispensations were categorized into <50 MME (low dose), 50-90 MME (medium dose), and >90 MME (high dose).

Of note, this data represents individual opioid prescriptions, not a cumulative patient total. It is possible for patients to receive multiple opioid prescriptions that combine to a daily MME greater than 90.

As displayed in Figure 11, the low dose opioids (MME<50) are the most commonly prescribed MME dosage category, comprising over 90% of opioid dispensations. Across all genders, low dose opioids (<50 MME) have the highest dispensation rates compared to all other dosage categories (600.1 prescriptions per 1,000 population for City of Columbia residents). Opioid dispensations >90 MME have higher dispensation rates than opioid dispensations 50-90 MME. City of Columbia dispensation rates are 43.2 prescriptions per 1,000 population for >90 MME, and 9.9 prescriptions per 1,000 population for 50-90 MME.

High dose opioid (>90 MME) dispensation rates being higher than medium dose opioids (50-90 MME) can partially be attributed to medication assisted treatment (MAT) and end of life/palliative care. As shown in Figure 12, buprenorphine and methadone are in the top ten opioids dispensed. These drugs are typically used in MAT and have high MME conversions. For end of life/palliative care, high dose opioids are commonly prescribed.

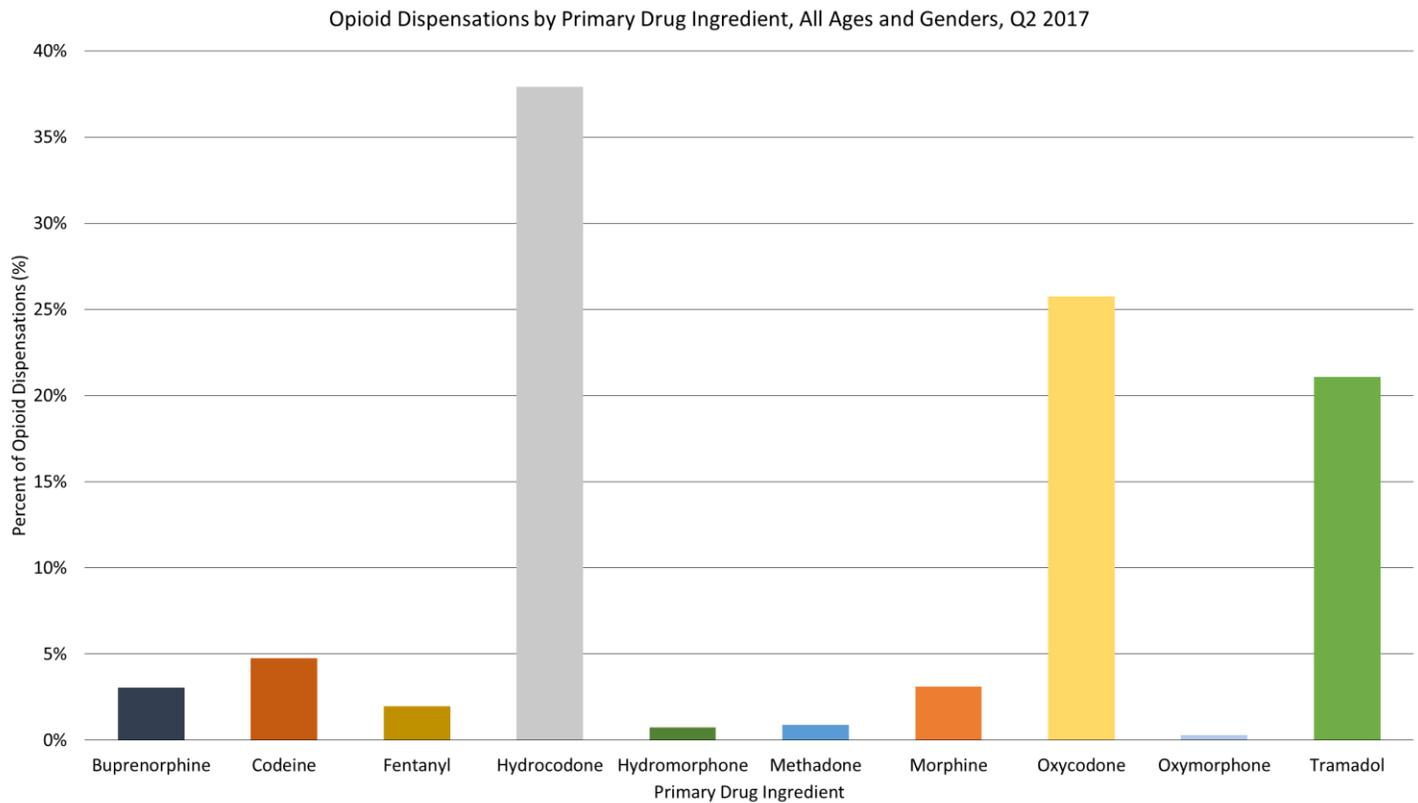
Figure 11. Opioid dispensations by MME category.



## Primary Drug Ingredient

Figure 12 displays the top ten opioids dispensed by primary drug ingredient for the overall system. In descending order, hydrocodone, oxycodone, and tramadol are the three most frequently prescribed opioids. These three drugs comprise 85% of all opioids dispensed. Buprenorphine and methadone are in the top 10 dispensed opioids; these opioids are typically used in medication assisted treatment (MAT) for opioid use disorder.

Figure 12. Percent of opioid dispensations by top 10 primary drug ingredients.



## Appendix A: Data Tables

Table 1. Schedule II-IV controlled substance dispensation rates per 1,000 population by jurisdiction.

Schedule II-IV	<18		18-24		25-35		35-44		45-54		55-64		65+		Total	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
Cole County	524.9	(503.7, 546.2)	649.6	(611.7, 687.6)	1,103.6	(1063.3, 1143.8)	1,615.5	(1566.2, 1664.7)	1,888.0	(1837.8, 1938.2)	2,647.4	(2582.2, 2712.6)	3,112.1	(3040.5, 3183.7)	1,554.2	(1536.5, 1571.9)
City of Columbia	523.2	(503.3, 543.0)	435.4	(420.4, 450.5)	1,399.7	(1364.8, 1434.6)	2,290.6	(2235.0, 2346.2)	2,766.8	(2705.3, 2828.4)	4,032.6	(3950.0, 4115.3)	3,875.3	(3794.8, 3955.7)	1,637.0	(1621.8, 1652.2)
Cooper County	246.3	(215.5, 277.1)	318.2	(264.5, 371.9)	689.7	(623.3, 756.0)	1,244.3	(1148.1, 1340.5)	1,231.5	(1146.2, 1316.7)	1,653.0	(1544.1, 1761.8)	1,120.7	(1040.8, 1200.5)	882.4	(854.7, 910.2)
City of Independence	448.6	(432.5, 464.6)	711.0	(678.2, 743.7)	1,416.8	(1379.2, 1454.3)	2,140.0	(2090.9, 2189.1)	2,216.4	(2172.3, 2260.4)	3,389.8	(3329.7, 3449.9)	2,620.7	(2574.4, 2667.0)	1,774.5	(1759.2, 1789.8)
Jackson County (exc. KC & Indep)	426.0	(415.9, 436.0)	685.2	(664.5, 705.8)	1,071.0	(1050.3, 1091.6)	1,992.3	(1962.4, 2022.3)	2,084.4	(2054.9, 2113.8)	2,945.1	(2905.1, 2985.0)	3,993.3	(3946.1, 4040.5)	1,664.9	(1654.9, 1674.9)
Kansas City	305.1	(298.6, 311.6)	516.6	(503.5, 529.8)	962.5	(948.5, 976.5)	1,480.1	(1460.8, 1499.4)	1,662.3	(1642.5, 1682.2)	2,543.9	(2516.2, 2571.7)	2,700.3	(2671.7, 2728.9)	1,292.7	(1286.2, 1299.3)
Lincoln County	533.2	(509.6, 556.8)	816.6	(762.5, 870.8)	1,537.6	(1479.1, 1596.0)	2,334.6	(2262.8, 2406.3)	2,688.0	(2617.5, 2758.5)	4,485.7	(4375.3, 4596.2)	3,637.4	(3538.5, 3736.3)	2,030.1	(2005.7, 2054.4)
Miller County	197.3	(175.1, 219.5)	363.3	(309.1, 417.4)	749.3	(685.1, 813.5)	938.6	(869.9, 1007.2)	1,451.5	(1374.4, 1528.7)	1,737.3	(1646.0, 1828.6)	1,789.1	(1705.1, 1873.1)	1,003.9	(978.9, 1028.8)
St. Charles County	688.9	(678.2, 699.6)	1,037.2	(1014.5, 1059.8)	1,668.6	(1645.3, 1691.8)	2,113.3	(2088.0, 2138.6)	2,161.4	(2137.3, 2185.5)	3,431.2	(3395.3, 3467.1)	3,325.6	(3290.0, 3361.1)	1,888.0	(1879.0, 1897.0)
Ste. Genevieve County	446.3	(406.0, 486.6)	379.3	(313.6, 445.0)	856.2	(773.2, 939.3)	1,124.6	(1035.1, 1214.1)	1,134.5	(1059.5, 1209.6)	1,929.8	(1821.0, 2038.5)	1,441.4	(1354.2, 1528.7)	1,046.9	(1017.1, 1076.7)
St. Louis City	340.5	(331.7, 349.3)	346.0	(334.4, 357.7)	1,021.0	(1004.5, 1037.5)	1,424.1	(1400.8, 1447.4)	1,625.0	(1601.4, 1648.6)	2,720.3	(2685.5, 2755.0)	2,206.3	(2175.3, 2237.4)	1,244.7	(1236.9, 1252.4)
St. Louis County	538.4	(532.4, 544.3)	904.7	(892.0, 917.4)	1,369.7	(1356.6, 1382.8)	1,580.9	(1566.9, 1595.0)	1,699.7	(1686.7, 1712.6)	2,631.3	(2613.6, 2649.1)	2,716.5	(2699.8, 2733.2)	1,575.9	(1571.0, 1580.8)
Stoddard County	438.0	(406.6, 469.4)	577.2	(517.3, 637.2)	1,297.5	(1221.2, 1373.8)	1,882.2	(1793.4, 1971.0)	2,356.5	(2265.6, 2447.5)	2,800.9	(2695.2, 2906.6)	2,099.5	(2021.8, 2177.2)	1,605.0	(1576.4, 1633.7)
<b>Total</b>	<b>478.9</b>	<b>(475.6, 482.2)</b>	<b>685.7</b>	<b>(679.7, 691.8)</b>	<b>1,237.5</b>	<b>(1230.6, 1244.3)</b>	<b>1,711.7</b>	<b>(1703.1, 1720.2)</b>	<b>1,854.4</b>	<b>(1846.2, 1862.6)</b>	<b>2,836.5</b>	<b>(2825.1, 2847.9)</b>	<b>2,838.0</b>	<b>(2827.0, 2849.0)</b>	<b>1,546.4</b>	<b>(1543.5, 1549.3)</b>

Table 2. Dispensation rates per 1,000 population for City of Columbia by age, gender, and drug type.

City of Columbia	<18		18-24		25-35		35-44		45-54		55-64		65+		Total	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
<b>Benzodiazepine</b>	<b>30.5</b>	<b>(25.7, 35.3)</b>	<b>60.1</b>	<b>(54.5, 65.7)</b>	<b>269.5</b>	<b>(254.1, 284.8)</b>	<b>576.6</b>	<b>(548.7, 604.5)</b>	<b>681.2</b>	<b>(650.7, 711.7)</b>	<b>952.0</b>	<b>(911.9, 992.2)</b>	<b>1,024.9</b>	<b>(983.5, 1066.3)</b>	<b>363.4</b>	<b>(356.2, 370.6)</b>
Female	25.7	(19.4, 32.0)	55.3	(47.9, 62.6)	339.8	(315.1, 364.5)	688.4	(645.6, 731.2)	867.1	(819.5, 914.8)	1,122.9	(1063.4, 1182.4)	1,176.3	(1118.7, 1233.9)	445.5	(434.5, 456.6)
Male	30.5	(23.8, 37.2)	62.1	(53.8, 70.4)	183.8	(166.1, 201.4)	441.2	(406.4, 476.0)	458.8	(422.6, 495.1)	710.8	(659.8, 761.8)	780.4	(723.8, 836.9)	261.2	(252.4, 269.9)
<b>Muscle Relaxant</b>	*	*	*	*	<b>5.4</b>	<b>(3.3, 7.6)</b>	<b>19.7</b>	<b>(14.5, 24.9)</b>	<b>25.6</b>	<b>(19.7, 31.6)</b>	<b>37.9</b>	<b>(29.9, 45.9)</b>	<b>23.9</b>	<b>(17.6, 30.2)</b>	<b>11.0</b>	<b>(9.7, 12.2)</b>
Female	*	*	*	*	9.3	(5.3, 13.4)	25.6	(17.4, 33.9)	35.5	(25.8, 45.1)	47.6	(35.4, 59.9)	19.1	(11.7, 26.4)	14.1	(12.1, 16.0)
Male	*	*	*	*	*	*	12.9	(6.9, 18.8)	11.2	(5.5, 16.8)	25.7	(16.0, 35.4)	30.9	(19.7, 42.2)	7.0	(5.6, 8.4)
<b>Opioid</b>	<b>44.0</b>	<b>(38.3, 49.8)</b>	<b>118.6</b>	<b>(110.8, 126.5)</b>	<b>509.9</b>	<b>(488.8, 531.0)</b>	<b>896.4</b>	<b>(861.6, 931.2)</b>	<b>1,159.8</b>	<b>(1120.0, 1199.6)</b>	<b>1,824.3</b>	<b>(1768.7, 1879.9)</b>	<b>1,924.6</b>	<b>(1867.9, 1981.3)</b>	<b>653.2</b>	<b>(643.6, 662.9)</b>
Female	44.2	(35.9, 52.5)	128.8	(117.5, 140.0)	671.2	(636.5, 705.9)	1,045.0	(992.3, 1097.7)	1,266.2	(1208.6, 1323.9)	1,847.7	(1771.4, 1924.1)	2,089.2	(2012.4, 2165.9)	750.2	(735.8, 764.5)
Male	40.4	(32.7, 48.1)	104.2	(93.5, 114.9)	345.9	(321.7, 370.1)	725.1	(680.4, 769.7)	1,019.7	(965.7, 1073.8)	1,755.1	(1675.0, 1835.3)	1,655.7	(1573.3, 1738.0)	536.3	(523.2, 548.8)
<b>Stimulant</b>	<b>396.4</b>	<b>(379.1, 413.6)</b>	<b>202.0</b>	<b>(191.8, 212.3)</b>	<b>377.0</b>	<b>(358.9, 395.1)</b>	<b>342.0</b>	<b>(320.5, 363.5)</b>	<b>205.5</b>	<b>(188.7, 222.2)</b>	<b>180.4</b>	<b>(162.9, 197.8)</b>	<b>85.2</b>	<b>(73.3, 97.1)</b>	<b>270.4</b>	<b>(264.2, 276.6)</b>
Female	193.7	(176.4, 210.9)	178.6	(165.3, 191.9)	358.5	(333.1, 383.9)	344.9	(314.6, 375.2)	214.9	(191.2, 238.6)	176.5	(152.9, 200.1)	83.7	(68.3, 99.0)	220.3	(212.5, 228.0)
Male	572.8	(543.8, 601.8)	218.3	(202.9, 233.8)	372.4	(347.3, 397.5)	322.5	(292.7, 352.3)	192.9	(169.4, 216.4)	175.3	(150.0, 200.7)	85.3	(66.6, 104.0)	311.4	(301.9, 321.0)
<b>Unclassified</b>	<b>52.2</b>	<b>(46.0, 58.5)</b>	<b>46.2</b>	<b>(41.3, 51.1)</b>	<b>189.8</b>	<b>(177.0, 202.7)</b>	<b>321.9</b>	<b>(301.0, 342.8)</b>	<b>469.7</b>	<b>(444.3, 495.0)</b>	<b>639.0</b>	<b>(606.1, 671.9)</b>	<b>456.4</b>	<b>(428.8, 484.0)</b>	<b>227.8</b>	<b>(221.9, 233.4)</b>
Female	32.5	(25.5, 39.6)	50.6	(43.6, 57.7)	233.7	(213.2, 254.2)	379.5	(347.7, 411.3)	489.2	(453.4, 525.0)	664.9	(619.1, 710.7)	417.5	(383.2, 451.8)	244.2	(236.1, 252.4)
Male	62.5	(53.0, 72.1)	36.6	(30.3, 43.0)	140.1	(124.7, 155.5)	249.6	(223.4, 275.7)	431.3	(396.2, 466.4)	579.3	(533.3, 625.4)	497.9	(452.7, 543.0)	199.2	(191.6, 206.9)
<b>Zolpidem</b>	*	*	<b>7.9</b>	<b>(5.8, 9.9)</b>	<b>48.1</b>	<b>(41.6, 54.6)</b>	<b>134.0</b>	<b>(120.6, 147.5)</b>	<b>225.1</b>	<b>(207.5, 242.6)</b>	<b>399.1</b>	<b>(373.1, 425.1)</b>	<b>360.3</b>	<b>(335.8, 384.8)</b>	<b>111.2</b>	<b>(107.3, 115.2)</b>
Female	*	*	7.7	(5.0, 10.5)	48.1	(38.8, 57.4)	172.4	(151.0, 193.9)	267.4	(241.0, 293.9)	430.9	(394.1, 467.8)	375.0	(342.5, 407.5)	129.2	(123.2, 135.1)
Male	*	*	7.4	(4.6, 10.3)	45.8	(37.0, 54.6)	88.7	(73.1, 104.3)	170.6	(148.5, 192.7)	339.2	(304.0, 374.4)	328.4	(291.7, 365.0)	87.5	(82.4, 92.5)
<b>Total</b>	<b>523.2</b>	<b>(503.3, 543.0)</b>	<b>435.4</b>	<b>(420.4, 450.5)</b>	<b>1,399.7</b>	<b>(1364.8, 1434.6)</b>	<b>2,290.6</b>	<b>(2235.0, 2346.2)</b>	<b>2,766.8</b>	<b>(2705.3, 2828.4)</b>	<b>4,032.6</b>	<b>(3950.0, 4115.3)</b>	<b>3,875.3</b>	<b>(3794.8, 3955.7)</b>	<b>1,637.0</b>	<b>(1621.8, 1652.2)</b>
Female	296.1	(274.7, 317.5)	422.0	(401.6, 442.4)	1,660.7	(1606.1, 1715.3)	2,655.8	(2571.8, 2739.9)	3,140.4	(3049.6, 3231.1)	4,290.6	(4174.3, 4406.9)	4,160.7	(4052.4, 4269.0)	1,803.4	(1781.2, 1825.7)
Male	706.3	(674.1, 738.4)	428.7	(407.0, 450.4)	1,089.3	(1046.4, 1132.3)	1,839.8	(1768.7, 1910.9)	2,284.5	(2203.7, 2365.4)	3,585.5	(3471.0, 3700.1)	3,378.5	(3260.8, 3496.1)	1,402.6	(1382.3, 1422.8)

\* indicates the rate has been suppressed.

Table 3. Dispensation rates per 1,000 population for total PDMP by age, gender, and drug type.

Total	<18		18-24		25-35		35-44		45-54		55-64		65+		Total	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
<b>Benzodiazepine</b>	<b>25.8</b>	<b>(25.0, 26.6)</b>	<b>97.8</b>	<b>(95.5, 100.1)</b>	<b>268.1</b>	<b>(264.9, 271.3)</b>	<b>434.9</b>	<b>(430.7, 439.2)</b>	<b>486.9</b>	<b>(482.7, 491.2)</b>	<b>761.1</b>	<b>(755.2, 767.0)</b>	<b>815.2</b>	<b>(809.3, 821.1)</b>	<b>375.0</b>	<b>(373.6, 376.5)</b>
Female	21.8	(20.8, 22.8)	87.3	(84.3, 90.3)	254.7	(250.3, 259.0)	431.5	(425.5, 437.5)	505.6	(499.6, 511.6)	770.7	(762.5, 778.9)	873.5	(865.5, 881.4)	396.5	(394.4, 398.5)
Male	19.8	(18.8, 20.7)	68.6	(65.8, 71.3)	170.3	(166.6, 173.9)	247.1	(242.5, 251.8)	280.3	(275.7, 284.9)	449.2	(442.6, 455.8)	493.7	(486.7, 500.7)	217.7	(216.1, 219.3)
<b>Muscle Relaxant</b>	<b>0.1</b>	<b>(0.0, 0.1)</b>	<b>1.0</b>	<b>(0.8, 1.3)</b>	<b>4.4</b>	<b>(4.0, 4.8)</b>	<b>12.5</b>	<b>(11.7, 13.2)</b>	<b>18.0</b>	<b>(17.2, 18.9)</b>	<b>28.6</b>	<b>(27.4, 29.7)</b>	<b>11.6</b>	<b>(10.9, 12.3)</b>	<b>9.8</b>	<b>(9.6, 10.1)</b>
Female	*	*	0.8	(0.5, 1.1)	4.7	(4.1, 5.3)	12.4	(11.4, 13.4)	18.7	(17.6, 19.9)	30.9	(29.3, 32.6)	11.0	(10.1, 11.8)	10.4	(10.0, 10.7)
Male	*	*	0.6	(0.3, 0.9)	2.0	(1.6, 2.3)	6.6	(5.9, 7.4)	8.8	(8.0, 9.6)	14.9	(13.7, 16.1)	7.9	(7.0, 8.8)	5.1	(4.9, 5.4)
<b>Opioid</b>	<b>42.1</b>	<b>(41.1, 43.0)</b>	<b>210.5</b>	<b>(207.2, 213.9)</b>	<b>445.4</b>	<b>(441.3, 449.5)</b>	<b>656.4</b>	<b>(651.1, 661.7)</b>	<b>787.9</b>	<b>(782.6, 793.3)</b>	<b>1,351.8</b>	<b>(1343.9, 1359.7)</b>	<b>1,480.4</b>	<b>(1472.4, 1488.3)</b>	<b>642.5</b>	<b>(640.6, 644.3)</b>
Female	35.3	(34.0, 36.6)	204.7	(200.1, 209.4)	457.8	(451.9, 463.6)	639.1	(631.8, 646.4)	734.6	(727.4, 741.8)	1,239.1	(1228.7, 1249.5)	1,496.2	(1485.8, 1506.6)	645.4	(642.8, 648.0)
Male	34.7	(33.5, 36.0)	141.7	(137.7, 145.7)	287.2	(282.5, 291.9)	434.7	(428.6, 440.8)	574.9	(568.4, 581.5)	1,019.3	(1009.4, 1029.2)	1,042.8	(1032.6, 1052.9)	441.6	(439.4, 443.8)
<b>Stimulant</b>	<b>332.4</b>	<b>(329.7, 335.2)</b>	<b>273.3</b>	<b>(269.5, 277.2)</b>	<b>313.6</b>	<b>(310.1, 317.0)</b>	<b>256.4</b>	<b>(253.1, 259.7)</b>	<b>152.2</b>	<b>(149.8, 154.5)</b>	<b>122.0</b>	<b>(119.7, 124.4)</b>	<b>41.1</b>	<b>(39.8, 42.4)</b>	<b>225.5</b>	<b>(224.4, 226.6)</b>
Female	157.5	(154.8, 160.2)	196.1	(191.6, 200.7)	261.9	(257.5, 266.4)	221.2	(216.9, 225.5)	147.7	(144.5, 150.9)	118.3	(115.1, 121.5)	36.5	(34.9, 38.2)	160.3	(159.0, 161.6)
Male	369.9	(365.9, 374.0)	242.4	(237.2, 247.6)	235.2	(230.9, 239.4)	176.3	(172.4, 180.2)	93.7	(91.1, 96.4)	75.4	(72.7, 78.1)	34.2	(32.4, 36.1)	199.4	(198.0, 200.9)
<b>Unclassified</b>	<b>78.3</b>	<b>(76.9, 79.6)</b>	<b>93.6</b>	<b>(91.4, 95.9)</b>	<b>164.3</b>	<b>(161.8, 166.8)</b>	<b>252.4</b>	<b>(249.1, 255.7)</b>	<b>267.2</b>	<b>(264.1, 270.4)</b>	<b>333.5</b>	<b>(329.6, 337.4)</b>	<b>299.1</b>	<b>(295.6, 302.7)</b>	<b>200.4</b>	<b>(199.4, 201.5)</b>
Female	45.8	(44.4, 47.3)	81.4	(78.5, 84.3)	161.5	(158.0, 165.0)	246.5	(242.0, 251.0)	250.7	(246.5, 254.9)	306.9	(301.7, 312.1)	303.7	(299.0, 308.4)	189.5	(188.1, 190.9)
Male	81.1	(79.2, 83.0)	69.0	(66.2, 71.7)	101.9	(99.1, 104.7)	157.6	(153.9, 161.3)	185.8	(182.1, 189.6)	246.1	(241.2, 251.0)	228.6	(223.9, 233.4)	144.1	(142.8, 145.4)
<b>Zolpidem</b>	<b>0.3</b>	<b>(0.2, 0.4)</b>	<b>9.4</b>	<b>(8.7, 10.1)</b>	<b>41.8</b>	<b>(40.5, 43.0)</b>	<b>99.0</b>	<b>(96.9, 101.0)</b>	<b>142.1</b>	<b>(139.8, 144.4)</b>	<b>239.5</b>	<b>(236.2, 242.9)</b>	<b>190.6</b>	<b>(187.8, 193.5)</b>	<b>93.1</b>	<b>(92.4, 93.8)</b>
Female	0.3	(0.2, 0.4)	8.4	(7.4, 9.3)	41.4	(39.6, 43.1)	101.7	(98.8, 104.7)	136.8	(133.6, 139.9)	226.0	(221.5, 230.4)	176.3	(172.7, 179.9)	92.2	(91.2, 93.2)
Male	0.2	(0.1, 0.3)	6.9	(6.0, 7.8)	25.2	(23.8, 26.6)	54.2	(52.1, 56.4)	86.2	(83.7, 88.8)	154.9	(151.0, 158.7)	140.7	(136.9, 144.4)	58.0	(57.2, 58.8)
<b>Total</b>	<b>478.9</b>	<b>(475.6, 482.2)</b>	<b>685.7</b>	<b>(679.7, 691.8)</b>	<b>1,237.5</b>	<b>(1230.6, 1244.3)</b>	<b>1,711.7</b>	<b>(1703.1, 1720.2)</b>	<b>1,854.4</b>	<b>(1846.2, 1862.6)</b>	<b>2,836.5</b>	<b>(2825.1, 2847.9)</b>	<b>2,838.0</b>	<b>(2827.0, 2849.0)</b>	<b>1,546.4</b>	<b>(1543.5, 1549.3)</b>
Female	260.8	(257.3, 264.3)	578.8	(571.0, 586.6)	1,182.0	(1172.6, 1191.5)	1,652.4	(1640.7, 1664.2)	1,794.1	(1782.8, 1805.4)	2,691.9	(2676.5, 2707.2)	2,897.1	(2882.6, 2911.6)	1,494.2	(1490.3, 1498.2)
Male	505.8	(501.0, 510.6)	529.1	(521.5, 536.7)	821.6	(813.7, 829.6)	1,076.5	(1066.9, 1086.2)	1,229.8	(1220.3, 1239.4)	1,959.8	(1946.1, 1973.6)	1,947.9	(1934.0, 1961.8)	1,066.0	(1062.5, 1069.4)

Table 4. Opioid dispensation rates per 1,000 population by jurisdiction.

Opioids	<18		18-24		25-35		35-44		45-54		55-64		65+		Total	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
Cole County	45.9	(39.7, 52.2)	307.5	(281.4, 333.6)	449.5	(423.8, 475.1)	647.4	(616.2, 678.5)	732.4	(701.1, 763.7)	1,174.9	(1131.4, 1218.3)	1,451.6	(1402.7, 1500.5)	625.1	(613.8, 636.3)
City of Columbia	44.0	(38.3, 49.8)	118.6	(110.8, 126.5)	509.9	(488.8, 531.0)	896.4	(861.6, 931.2)	1,159.8	(1120.0, 1199.6)	1,824.3	(1768.7, 1879.9)	1,924.6	(1867.9, 1981.3)	653.2	(643.6, 662.9)
Cooper County	27.1	(16.9, 37.4)	143.8	(107.7, 179.9)	360.6	(312.6, 408.6)	611.5	(544.1, 678.9)	672.6	(609.6, 735.5)	863.8	(785.1, 942.5)	642.5	(582.0, 702.9)	444.5	(424.8, 464.2)
City of Independence	46.1	(40.9, 51.2)	336.2	(313.7, 358.8)	645.3	(619.9, 670.6)	925.6	(893.3, 957.9)	1,058.0	(1027.6, 1088.4)	1,725.9	(1683.0, 1768.8)	1,545.7	(1510.2, 1581.3)	853.5	(842.9, 864.1)
Jackson County (exc. KC & Indep)	44.0	(40.7, 47.2)	234.0	(221.9, 246.1)	405.4	(392.7, 418.1)	735.2	(717.0, 753.4)	811.7	(793.3, 830.1)	1,335.1	(1308.2, 1362.0)	1,553.8	(1524.4, 1583.3)	627.9	(621.8, 634.1)
Kansas City	32.8	(30.7, 35.0)	195.7	(187.6, 203.8)	355.4	(346.9, 363.9)	572.7	(560.7, 584.8)	746.1	(732.9, 759.4)	1,324.4	(1304.3, 1344.4)	1,571.7	(1549.9, 1593.6)	586.6	(582.1, 591.0)
Lincoln County	42.1	(35.5, 48.7)	317.7	(283.9, 351.5)	727.2	(687.0, 767.4)	984.8	(938.2, 1031.4)	1,296.6	(1247.6, 1345.5)	2,275.1	(2196.4, 2353.8)	2,115.1	(2039.7, 2190.5)	943.3	(926.7, 959.9)
Miller County	26.0	(18.0, 34.1)	197.4	(157.5, 237.3)	399.7	(352.8, 446.6)	385.6	(341.6, 429.6)	691.1	(637.8, 744.3)	825.0	(762.1, 887.9)	877.6	(818.8, 936.4)	464.0	(447.1, 481.0)
St. Charles County	50.5	(47.6, 53.4)	256.6	(245.3, 267.8)	530.5	(517.4, 543.6)	745.4	(730.3, 760.4)	841.1	(826.0, 856.1)	1,527.7	(1503.7, 1551.7)	1,743.1	(1717.4, 1768.9)	711.6	(706.1, 717.1)
Ste. Genevieve County	40.7	(28.6, 52.9)	163.0	(119.9, 206.0)	340.0	(287.6, 392.3)	396.5	(343.4, 449.6)	540.8	(488.9, 592.6)	927.4	(852.0, 1002.8)	704.9	(643.9, 765.9)	437.8	(418.6, 457.1)
St. Louis City	34.2	(31.4, 37.0)	148.4	(140.8, 156.0)	396.7	(386.4, 406.9)	613.0	(597.7, 628.3)	802.3	(785.7, 818.9)	1,508.1	(1482.2, 1533.9)	1,299.9	(1276.1, 1323.7)	593.8	(588.4, 599.1)
St. Louis County	45.2	(43.5, 46.9)	229.8	(223.4, 236.2)	453.3	(445.8, 460.9)	590.0	(581.4, 598.6)	696.8	(688.5, 705.1)	1,196.2	(1184.2, 1208.1)	1,411.3	(1399.3, 1423.4)	632.0	(628.9, 635.1)
Stoddard County	22.3	(15.2, 29.3)	192.9	(158.3, 227.6)	579.8	(528.8, 630.8)	844.1	(784.6, 903.5)	1,071.0	(1009.7, 1132.3)	1,318.5	(1245.9, 1391.0)	1,032.5	(978.1, 1087)	700.7	(681.8, 719.7)
<b>Total</b>	<b>42.1</b>	<b>(41.1, 43.0)</b>	<b>210.5</b>	<b>(207.2, 213.9)</b>	<b>445.4</b>	<b>(441.3, 449.5)</b>	<b>656.4</b>	<b>(651.1, 661.7)</b>	<b>787.9</b>	<b>(782.6, 793.3)</b>	<b>1,351.8</b>	<b>(1343.9, 1359.7)</b>	<b>1,480.4</b>	<b>(1472.4, 1488.3)</b>	<b>642.5</b>	<b>(640.6, 644.3)</b>

Table 5. Opioid dispensation rates per 1,000 population for City of Columbia by MME category.

City of Columbia	<18		18-24		25-35		35-44		45-54		55-64		65+		Total	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
<50	<b>44.0</b>	<b>(38.3, 49.8)</b>	<b>107.0</b>	<b>(99.5, 114.4)</b>	<b>422.3</b>	<b>(403.2, 441.5)</b>	<b>784.5</b>	<b>(752.0, 817.1)</b>	<b>1,086.1</b>	<b>(1047.5, 1124.6)</b>	<b>1,718.4</b>	<b>(1664.5, 1772.4)</b>	<b>1,836.4</b>	<b>(1781.0, 1891.7)</b>	<b>600.1</b>	<b>(590.9, 609.4)</b>
Female	44.2	(35.9, 52.5)	120.8	(109.9, 131.7)	554.3	(522.8, 585.9)	934.9	(885.0, 984.8)	1,186.4	(1130.7, 1242.2)	1,746.8	(1672.6, 1821.0)	1,980.6	(1905.8, 2055.3)	691.1	(677.3, 704.8)
Male	40.4	(32.7, 48.1)	88.4	(78.6, 98.3)	286.9	(264.8, 308.9)	612.8	(571.8, 653.8)	954.9	(902.7, 1007.2)	1,647.5	(1569.8, 1725.1)	1,597.0	(1516.1, 1677.9)	490.4	(478.5, 502.4)
<b>50-90</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>*</b>	<b>10.0</b>	<b>(7.0, 12.9)</b>	<b>13.4</b>	<b>(9.1, 17.6)</b>	<b>18.5</b>	<b>(13.5, 23.5)</b>	<b>28.2</b>	<b>(21.3, 35.1)</b>	<b>29.1</b>	<b>(22.1, 36.1)</b>	<b>9.9</b>	<b>(8.7, 11.1)</b>
Female	*	*	*	*	14.0	(9.0, 19.0)	18.0	(11.1, 24.9)	19.1	(12.0, 26.2)	28.7	(19.2, 38.2)	35.2	(25.3, 45.2)	11.9	(10.1, 13.7)
Male	*	*	*	*	6.2	(2.9, 9.4)	7.2	(2.7, 11.6)	17.9	(10.7, 25.0)	26.7	(16.8, 36.6)	20.3	(11.1, 29.4)	7.5	(6.1, 9.0)
<b>90+</b>	<b>*</b>	<b>*</b>	<b>11.1</b>	<b>(8.7, 13.5)</b>	<b>77.6</b>	<b>(69.4, 85.8)</b>	<b>98.5</b>	<b>(87.0, 110.0)</b>	<b>55.2</b>	<b>(46.5, 63.9)</b>	<b>77.6</b>	<b>(66.1, 89.1)</b>	<b>59.1</b>	<b>(49.2, 69.0)</b>	<b>43.2</b>	<b>(40.7, 45.6)</b>
Female	*	*	8.0	(5.2, 10.8)	102.8	(89.2, 116.4)	92.1	(76.5, 107.8)	60.7	(48.1, 73.3)	72.2	(57.1, 87.3)	73.4	(59.0, 87.8)	47.2	(43.6, 50.8)
Male	*	*	14.6	(10.6, 18.6)	52.9	(43.4, 62.3)	105.1	(88.1, 122.1)	46.9	(35.3, 58.5)	81.0	(63.8, 98.2)	38.4	(25.8, 50.9)	38.3	(34.9, 41.6)
<b>Total</b>	<b>44.0</b>	<b>(38.3, 49.8)</b>	<b>118.6</b>	<b>(110.8, 126.5)</b>	<b>509.9</b>	<b>(488.8, 531.0)</b>	<b>896.4</b>	<b>(861.6, 931.2)</b>	<b>1,159.8</b>	<b>(1120.0, 1199.6)</b>	<b>1,824.3</b>	<b>(1768.7, 1879.9)</b>	<b>1,924.6</b>	<b>(1867.9, 1981.3)</b>	<b>653.2</b>	<b>(643.6, 662.9)</b>
Female	44.2	(35.9, 52.5)	128.8	(117.5, 140.0)	671.2	(636.5, 705.9)	1,045.0	(992.3, 1097.7)	1,266.2	(1208.6, 1323.9)	1,847.7	(1771.4, 1924.1)	2,089.2	(2012.4, 2165.9)	750.2	(735.8, 764.5)
Male	40.4	(32.7, 48.1)	104.2	(93.5, 114.9)	345.9	(321.7, 370.1)	725.1	(680.4, 769.7)	1,019.7	(965.7, 1073.8)	1,755.1	(1675.0, 1835.3)	1,655.7	(1573.3, 1738.0)	536.3	(523.7, 548.8)

Table 6. Opioid dispensation rates per 1,000 population for total PDMP by MME category.

Total	<18		18-24		25-35		35-44		45-54		55-64		65+		Total	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
<50	<b>41.9</b>	<b>(40.9, 42.8)</b>	<b>197.7</b>	<b>(194.4, 200.9)</b>	<b>395.2</b>	<b>(391.3, 399.1)</b>	<b>594.7</b>	<b>(589.7, 599.7)</b>	<b>736.8</b>	<b>(731.6, 742.0)</b>	<b>1,274.0</b>	<b>(1266.3, 1281.6)</b>	<b>1,412.7</b>	<b>(1404.9, 1420.4)</b>	<b>600.8</b>	<b>(599.0, 602.6)</b>
Female	35.0	(33.7, 36.3)	196.5	(191.9, 201.1)	418.5	(412.9, 424.1)	588.1	(581.1, 595.1)	690.9	(683.9, 697.8)	1,175.3	(1165.1, 1185.4)	1,423.4	(1413.2, 1433.5)	608.0	(605.5, 610.6)
Male	34.6	(33.4, 35.9)	127.8	(124.1, 131.6)	241.3	(237.0, 245.7)	382.4	(376.7, 388.1)	532.9	(526.6, 539.2)	953.4	(943.8, 963.0)	999.8	(989.8, 1009.8)	408.1	(405.9, 410.2)
<b>50-90</b>	<b>0.0</b>	<b>(0.0, 0.1)</b>	<b>2.1</b>	<b>(1.8, 2.5)</b>	<b>7.8</b>	<b>(7.3, 8.4)</b>	<b>13.5</b>	<b>(12.7, 14.2)</b>	<b>15.4</b>	<b>(14.6, 16.1)</b>	<b>26.2</b>	<b>(25.1, 27.3)</b>	<b>20.8</b>	<b>(19.8, 21.7)</b>	<b>11.1</b>	<b>(10.8, 11.3)</b>
Female	0.1	(0.0, 0.1)	1.6	(1.2, 2.0)	6.4	(5.7, 7.1)	12.3	(11.2, 13.3)	13.6	(12.6, 14.6)	21.2	(19.9, 22.6)	21.6	(20.3, 22.8)	10.3	(9.9, 10.6)
Male	*	*	2.4	(1.9, 3.0)	7.6	(6.9, 8.4)	9.7	(8.8, 10.6)	11.6	(10.7, 12.5)	21.5	(20.1, 23.0)	14.6	(13.4, 15.8)	8.5	(8.2, 8.8)
<b>90+</b>	<b>0.2</b>	<b>(0.1, 0.2)</b>	<b>10.8</b>	<b>(10.0, 11.5)</b>	<b>42.4</b>	<b>(41.1, 43.6)</b>	<b>48.2</b>	<b>(46.8, 49.7)</b>	<b>35.7</b>	<b>(34.6, 36.9)</b>	<b>51.6</b>	<b>(50.1, 53.1)</b>	<b>46.9</b>	<b>(45.5, 48.3)</b>	<b>30.6</b>	<b>(30.2, 31.0)</b>
Female	0.2	(0.1, 0.3)	6.6	(5.8, 7.5)	32.9	(31.3, 34.5)	38.7	(36.9, 40.5)	30.1	(28.7, 31.6)	42.6	(40.7, 44.5)	51.2	(49.3, 53.2)	27.1	(26.6, 27.6)
Male	0.1	(0.0, 0.2)	11.4	(10.3, 12.6)	38.3	(36.5, 40.0)	42.6	(40.7, 44.5)	30.5	(29.0, 32.0)	44.3	(42.2, 46.4)	28.4	(26.7, 30.0)	25.1	(24.5, 25.6)
<b>Total</b>	<b>42.1</b>	<b>(41.1, 43.0)</b>	<b>210.5</b>	<b>(207.2, 213.9)</b>	<b>445.4</b>	<b>(441.3, 449.5)</b>	<b>656.4</b>	<b>(651.1, 661.7)</b>	<b>787.9</b>	<b>(782.6, 793.3)</b>	<b>1,351.8</b>	<b>(1343.9, 1359.6)</b>	<b>1,480.4</b>	<b>(1472.4, 1488.3)</b>	<b>642.5</b>	<b>(640.6, 644.3)</b>
Female	35.3	(34.0, 36.6)	204.7	(200.1, 209.4)	457.8	(451.9, 463.6)	639.1	(631.8, 646.4)	734.6	(727.4, 741.8)	1,239.1	(1228.7, 1249.5)	1,496.2	(1485.8, 1506.6)	645.4	(642.8, 648.0)
Male	34.7	(33.5, 36.0)	141.7	(137.7, 145.7)	287.2	(282.5, 291.9)	434.7	(428.6, 440.8)	574.9	(568.4, 581.5)	1,019.3	(1009.4, 1029.2)	1,042.8	(1032.6, 1052.9)	441.6	(439.4, 443.8)

Table 7. Opioid dispensation counts for total PDMP by primary drug ingredient.

Primary Drug Ingredient	Dispensation Count
Buprenorphine	13,893
Butorphanol	305
Codeine	21,650
Dihydrocodeine	7
Fentanyl	8,955
Hydrocodone	172,883
Hydromorphone	3,386
Levorphanol	64
Meperidine	240
Methadone	4,115
Morphine	14,184
Opium	25
Oxycodone	117,421
Oxymorphone	1,287
Pentazocine	67
Tapentadol	1,263
Tramadol	96,063
<b>Total</b>	<b>455,808</b>

## Appendix B: Sources & Calculations

Population counts obtained from U.S. Census Bureau, 2010 Census.

Dispensation data pulled from the St. Louis County PDMP by DPH staff.

Morphine milligram equivalent (MME) was calculated using the CDC calculation (formula below).

$$MME = strength * \left( \frac{units}{days\ supply} \right) * MME\ conversion\ factor$$

## Appendix C: Suggested Citation

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