

Opioid Prescribing Trends in 2020

Introduction

National opioid prescribing rates have varied throughout 2020 in response to changes in healthcare utilization; studies show that people delayed elective procedures as well as avoided medical care due to fears surrounding the COVID-19 pandemic.¹ In the early spring of 2020, several states implemented stay-at-home orders, and elective medical procedures were only 15% of levels seen in past years during that time. New opioid prescriptions written in late March through April 2020 were also significantly lower than past years.^{2,3} During lockdown, the mean number of pills dispensed per prescription increased as well.³ As states across the nation reopened, prescribing rates as well as pills per prescription returned to at or close to 2019 levels. Montana appears to follow these prescribing trends as well.

The Montana Department of Public Health and Human Services (DPHHS) partnered with the Montana Board of Pharmacy to analyze data from the Montana Prescription Drug Registry (MPDR) to generate reports on opiate-related prescribing practices since 2012. These data were used to inform policies and programs that promote appropriate prescribing of opiate medications.^{4,5} Past reports added new years' data to prior years to create a continuous trend, however, the circumstances surrounding 2020 and the obvious changes in prescribing patterns make it incomparable to prior years or reports. Thus, this report will focus on 2020 alone, or as it compares to non-pandemic years. When compared to non-pandemic year baselines, we used a composite of 2018 and 2019.

The Montana Prescription Drug Registry

The Montana Legislature authorized the MPDR in 2011. In November 2012, the MPDR began functioning as an online tool that provides a list of controlled substance prescriptions (medications that can cause physical and mental dependence) to health care providers to improve patient care and safety.⁶ All pharmacies with an active Montana license, both in state and out of state, are required to report to the MPDR and must submit detailed prescription information on all controlled substances dispensed to Montana patients.^{7,8} Pharmacies under the auspices of the Indian Health Service began voluntarily reporting to the MPDR in 2014, and the Veterans Administration began in 2016.⁹

Methods

This report utilized MPDR data for year 2020 and compared the findings with prior analyses conducted in 2018 and 2019. MPDR data was provided by the Montana Board of Pharmacy through a memorandum of understanding between DPHHS and the Department of Labor and Industry. Data encompassed all scheduled prescriptions dispensed by pharmacies licensed in Montana from January 1, 2020 through December 31, 2020.

We used the probabilistic linkage program developed by the Centers for Disease Control and Prevention (CDC), Link Plus (Version 2.0), to link MPDR records by patient name and birthdate. Cases that were not exactly matched were manually reviewed for inclusion eligibility. Unique identifiers were then assigned to each individual. Patients without a reported sex or with sex listed as "unknown" were excluded from sex-stratified analysis.



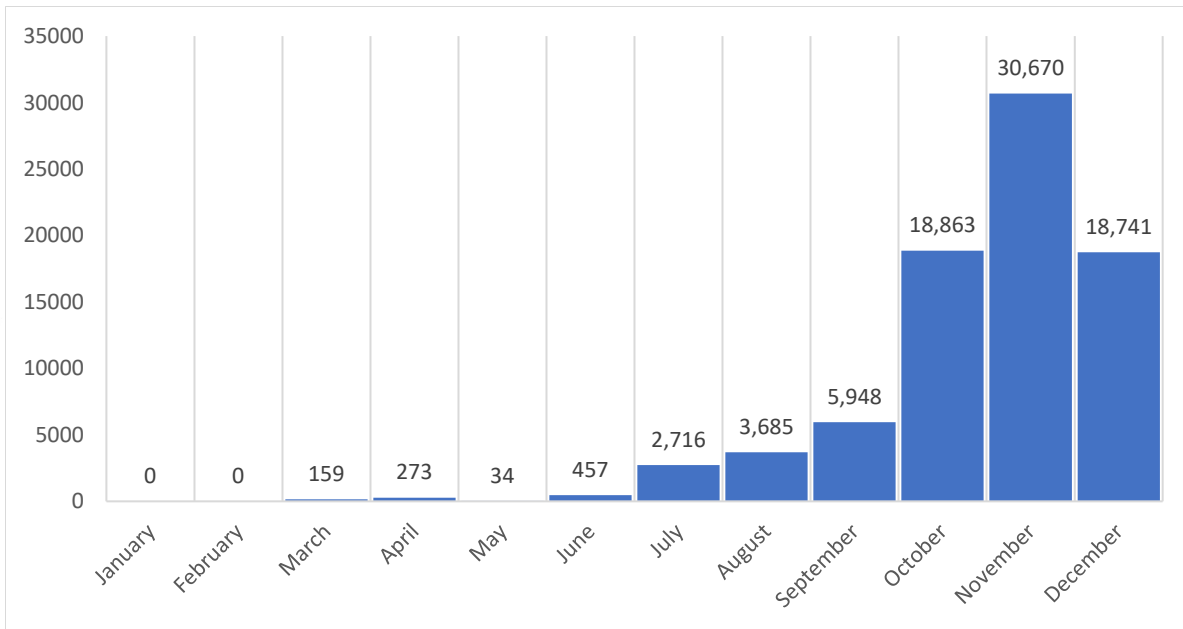
We calculated prescribing rates per 100 residents using population estimates for Montana residents from the Bridged Race Population Estimates produced by the National Center for Health Statistics.¹⁰ Annual prescribing rates were examined overall, by age group, and by sex. Overall prescribing rates were also examined by month.

Data were analyzed using SAS 9.4 with code provided by CDC’s Opioid Overdose Indicator Support Toolkit (Version 1.0).¹¹ Standardized dosage information was derived using the CDC-provided 2018 MME conversion file to calculate Morphine Milligram Equivalents (MME).¹² MMEs represent “the amount of morphine an opioid dose is equal to when prescribed, often used as a gauge of the abuse and overdose potential of the amount of opioid that is given at a particular time.”¹³ The 2016 CDC opioid prescribing guidelines recommended that clinicians prescribe the lowest effective dose of an opioid and cautioned against increasing dosages to ≥ 90 MMEs/day without justification. An established body of scientific evidence shows that overdose risk increases with higher opioid dosages.¹³

Montana’s COVID-19 Timeline

Montana’s first reported COVID-19 case occurred on March 11, 2020, and a stay-at-home directive was placed on March 28, 2020. At that point, 23 other states had directed their citizens to shelter in place.¹⁴ Montana became one of the first states to lift lockdown restrictions and begin a phased reopening on April 26, 2020.¹⁴ For this analysis, the month of April was defined as the stay-at-home period and months May through December were defined as the ‘post-stay-at-home period.’ Daily COVID-19 cases in Montana remained relatively low during stay-at-home and through the summer months. However, cases increased drastically in the fall, peaking in November with over 30,000 COVID-19 cases. (Figure 1).¹⁵

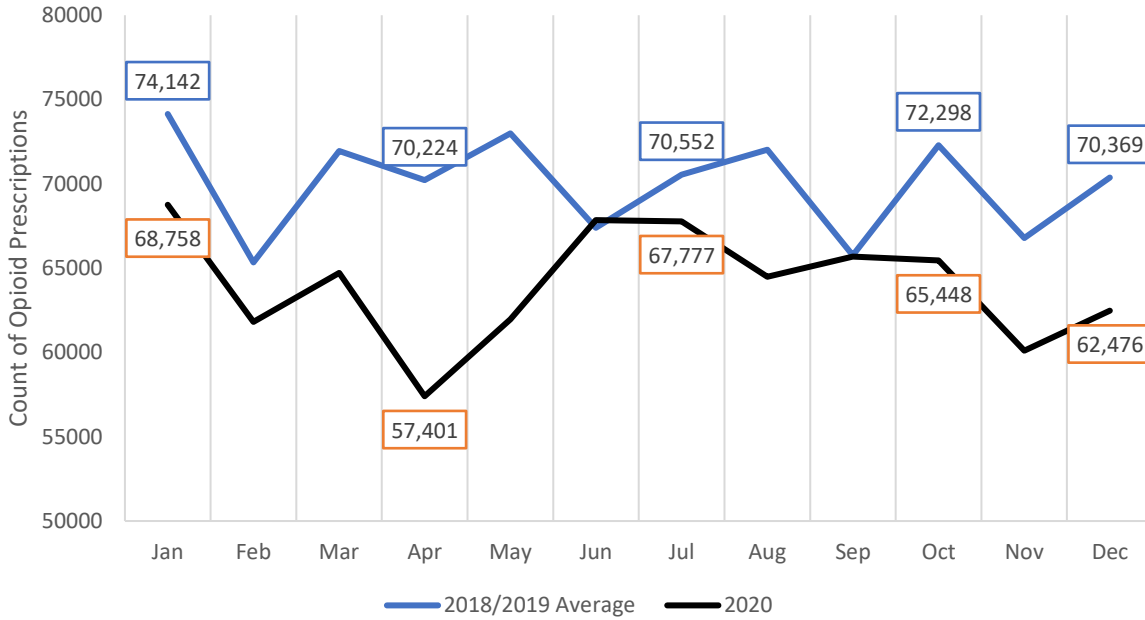
Figure 1. Monthly COVID-19 Case Count, Montana, 2020



Source: Montana Department of Public Health and Human Services, Montana Infectious Disease Information System

Results

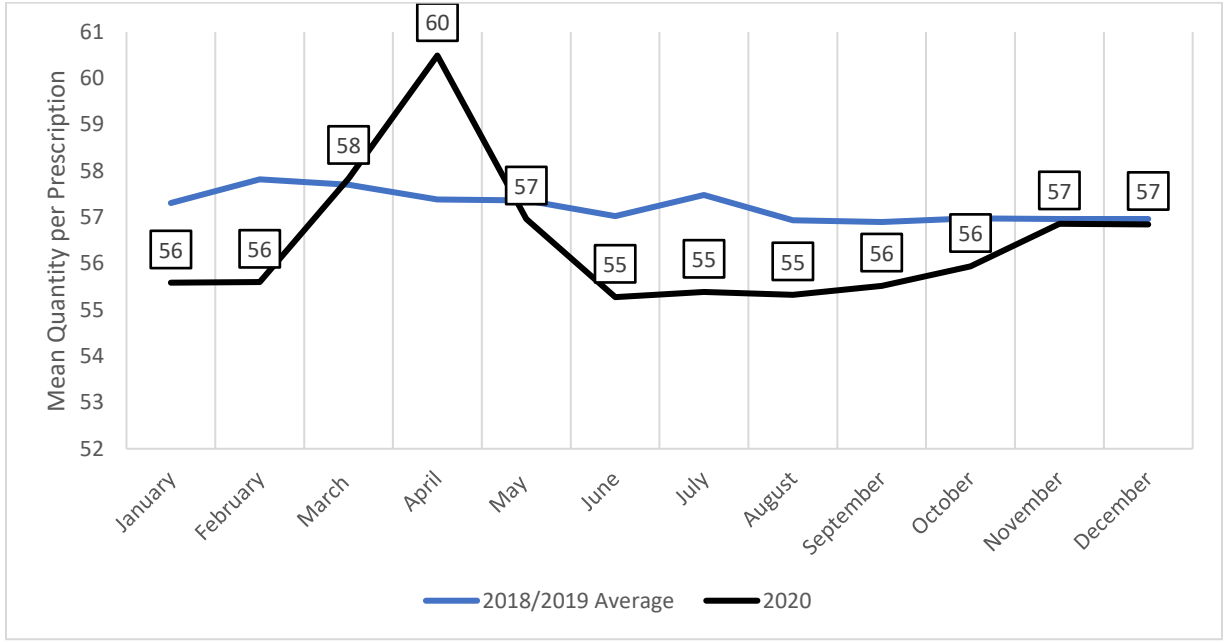
Figure 2. Number of opioid prescriptions by month—Montana Prescription Drug Registry, 2018-2020



Overall, 8% fewer opioid prescriptions were filled in 2020 compared with prior the average number in 2018-2019 (768,494 and 839,820, respectively). The number of prescriptions in 2020 declined greatly in April during lockdown; there were 18% fewer opioid prescriptions filled in April 2020 compared with the 2018-2019 average in April. While the number of opioid prescriptions appeared to recover by summer, they declined again in the fall when COVID-19 case counts were the highest (Figure 2).



Figure 3. Mean quantity of pills per opioid prescription, Montana Prescription Drug Registry, 2018-2020



The quantity of pills filled for each opioid prescription was also affected by COVID-19. While prior years had an average of 57-58 pills per prescription throughout the year, lockdown in 2020 saw an increase in the average number of pills per prescription (Figure 3). While April saw fewer prescriptions filled, prescriptions were for larger quantities.

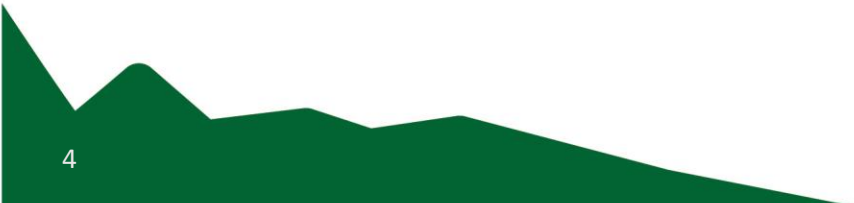
Average daily MME and high MME

Average daily MME in 2020 was lower than 2018-2019. The average daily MME has steadily declined since 2012.⁴ The average MME for the entire population in 2020 was 38.8, with men having slightly higher daily MME than women (40.6 vs. 38.1, respectively). In 2020, the average MME increased with increasing age groups (ages 1-17: 28.7 MME; ages 18-44: 31.9 MME; ages 45-64: 40.1 MME; and ages 65+: 41.0 MME).

The proportion of people on high and very high MMEs in 2020 (≥ 90 MME and ≥ 180 MME, respectively) decreased as well. Males had a greater percentage of high and very high MME prescriptions compared with females. The percent of people on high and very high MMEs increased with increasing age (data not shown).

Limitations

While assigning unique identification numbers to each patient in the MPDR, we were unable to link some cases to an individual even after manual inspection. These individuals were excluded from the dataset.





Variables in the MPDR were used to reassign a National Drug Code (NDC) to each prescription, which is a 10- or 11-digit 3-segment number that is a universal product identifier for drugs in the United States. This number provides information on the specific strength, dosage form, and formulation of a prescription.¹⁶ During the reassignment process, there was a possibility of misclassifying the NDC or missing it entirely, leading to underreporting.

Conclusions

The COVID-19 pandemic led to a disruption in healthcare utilization in 2020, reflected in opioid prescription trends in Montana. Major declines in prescriptions filled during the month of stay-at-home directive and shortly thereafter may have been associated with a reduction in elective surgeries and avoidance of medical care secondary to COVID-19-related fears. Clinicians likely adjusted the size of prescriptions to compensate for reductions in the number of prescriptions filled without increasing the average daily MMEs for the population, showing a resiliency in the face of unknowns surrounding the evolving pandemic.



Citations

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