

## 2019 Controlled Substance Prescribing in West Virginia: County Level Patient Data



### Executive Summary

West Virginia continues to lead the nation in the opioid epidemic. The West Virginia Board of Pharmacy (BOP), in collaboration with the West Virginia Department of Health and Human Resources (DHHR), Office of Maternal, Child and Family Health (OMCFH), Violence and Injury Prevention Program (WV VIPP), has conducted surveillance using data generated by the Controlled Substance Monitoring Program (CSMP). The CSMP, which is the state's Prescription Drug Monitoring Program (PDMP), collects data on all controlled substances dispensed in West Virginia.

Despite being at the forefront of the opioid epidemic, West Virginia has made significant strides to reduce this burden through public health surveillance. The WV VIPP received Centers for Disease Control and Prevention (CDC) funding through the Overdose Data to Action (OD2A) cooperative agreement in 2019. An activity under this grant is to improve PDMP infrastructure or information systems to support proactive reporting and data analysis, including enhancing reporting systems to increase frequency and quality of reporting. The CDC provided specific indicators to measure opioid prescribing behaviors during the previous cooperative agreement which continue to be used in the state. The BOP and WV VIPP were interested in modifying these indicators to establish state-specific measures. The results of this analysis were obtained using 2019 CSMP data. To align with the CDC specific indicators, drugs that contain buprenorphine were not included. This document contains a description of the modified indicators and a justification for that modification.

To access the 2018 report, click [here](#)

### Map Descriptions

#### **Maps 1-2: Rate of opioid doses per 1,000 state residents and average day supply per county**

This indicator was modified to evaluate the actual number of doses, or pills, that were distributed. This information is presented as a rate per 1,000 population. It is important to look at the number of prescriptions being written, as the original indicator measures. However, there is a recent push to write for fewer doses on each prescription, which could lead to an increase in the number of total prescriptions written. Therefore, it is prudent to consider the total number of doses being dispensed to get a more accurate measure of opioid prescribing practices.

Furthermore, the WV VIPP and BOP were interested in looking at the average day supply of opioids related to this indicator and sought to understand whether there was a correlation between the number of doses being prescribed and the average day supply. In early 2018, the West Virginia Legislature passed Senate Bill 273 (SB 273), which limits the total number of days for which a prescription for an opioid can be written. Looking at the average day supply will help WV VIPP and BOP to determine if SB 273 has an impact.

Compared to 2018, overall opioid doses prescribed decreased across all counties in West Virginia with an average decrease of 15% in 2019. The overall average day supply for opioid prescriptions decreased 2% from 2018-2019 and the percentage changes ranged from a 9% decrease to a 2% increase at the county level.

### **Map 3: Percent of patients receiving more than an average daily dose of 50 morphine milligram equivalents (MME)**

This indicator was modified to present another measure of MME. The CDC recommends a dose <50 MME/day and no more than 90 MME/day. The odds of overdose increase from 1.9 to 4.6 when going from 50 to <100 MME/day.<sup>1</sup> It is important to assess this modified indicator to obtain an accurate picture of what counties are at increased risk of overdose.

There was an 8% decrease in high-risk daily dose prescribing across the state. However, changes varied at the county level, with a range of a 25% decrease to 11% increase from 2018-2019.

### **Maps 4-5: Rate of multiple provider episodes for prescription opioids per 100,00 residents and with 3+ prescribers and with 4+ pharmacies**

The BOP has provided unsolicited reporting of patients with 8 or more prescribers and 5 or more pharmacies within a 6-month period for the past few years and was interested in comparing this to the CDC guidelines which is 5 or more prescribers and 5 or more pharmacies within a 6-month period. In December 2016, the WV DHHR, in collaboration with the BOP, produced a report of the 2016 overdose deaths. It was found that the decedents were 3 times more likely to have seen 3 or more prescribers and 70 times more likely to have used 4 or more pharmacies. WV VIPP and BOP were interested in evaluating this measure for the overall CSMP population.

Compared to 2018, the rate of patients seeing 3 or more prescribers decreased across all counties in the state with a percentage decrease of 17%. Moreover, the rate of patients that went to 4 or more pharmacies decreased 53% across the state.

### **Map 6: Percent of patients prescribed long-acting/extended release opioid prescriptions among opioid-naïve patients**

The CDC recommends the initial opioid prescription be short-acting/immediate release as a strategy to reduce the risk of overdose. The WV VIPP and BOP chose to review the percent of patients prescribed long-acting opioids when said patients were opioid-naïve (i.e., no opioids in the previous 45 days). The percent of patients who were opioid-naïve and prescribed short-acting opioids were also reviewed. Even at low doses of immediate release opioids, the potential for misuse and risk of overdose increases if the patient is not counseled on how to take the medication safely. However, it was determined that efforts should be focused on those patients who received long-acting opioids.

There was an overall increase in the percent of patients who were opioid-naïve from 2018 to 2019 with a 1% increase. Percentage changes ranged from a 26% decrease to a 58% increase among counties.

### **Map 7: Percent of patients with overlapping opioid and benzodiazepine prescriptions**

This indicator was modified to assess the percent of patients who had overlapping opioid and benzodiazepine prescriptions. Overlapping opioids with benzodiazepines increase the risk of overdose. The WV VIPP and BOP wanted to determine the difference between overlapping days and distinct patients and whether the counties of interest were the same between the two.

<sup>1</sup> Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain—United States, 2016. MMWR Recomm Rep 2016; 65:1-46 DOI: <http://dx.doi.org/10.15585/mmwr.rr6501e1>

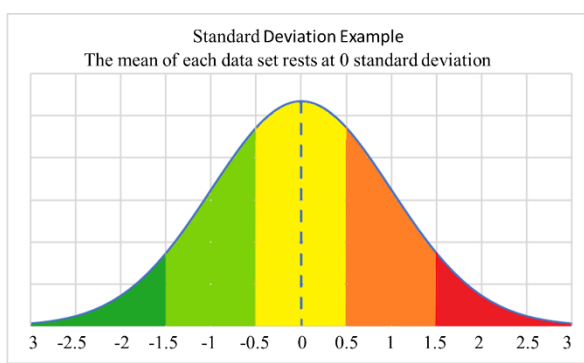
Compared to 2018, there was an overall decrease in the percent of patients who had an overlapping opioid and benzodiazepine prescription in 2019 with a 19% decrease. Percentage changes ranged from a 47% decrease to a 13% increase among counties.

## **Conclusion**

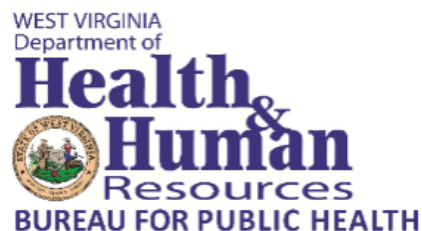
Modifying the CDC indicators to answer state specific measures and questions is important to get a better picture of the prescribing patterns in the state. The results of these modified indicators are different from the CDC required indicators. This will provide opportunities to conduct further research/analysis on certain topics of interest, determine high-risk areas in the state, and provide appropriate prescriber education and intervention.

## **Data Notes:**

The same methodology was used to classify all data. Percent and Rate ranges are based on the standard deviation (SD) from the mean. The SD is a number used to describe the distribution of measurements. A small SD indicates that most of the measurements are close to the mean, and a large SD indicates that the measurements are more widely spaced from one another. The SDs were used for these indicators to provide information about how each county-specific indicator compared to the others in the rest of the state.

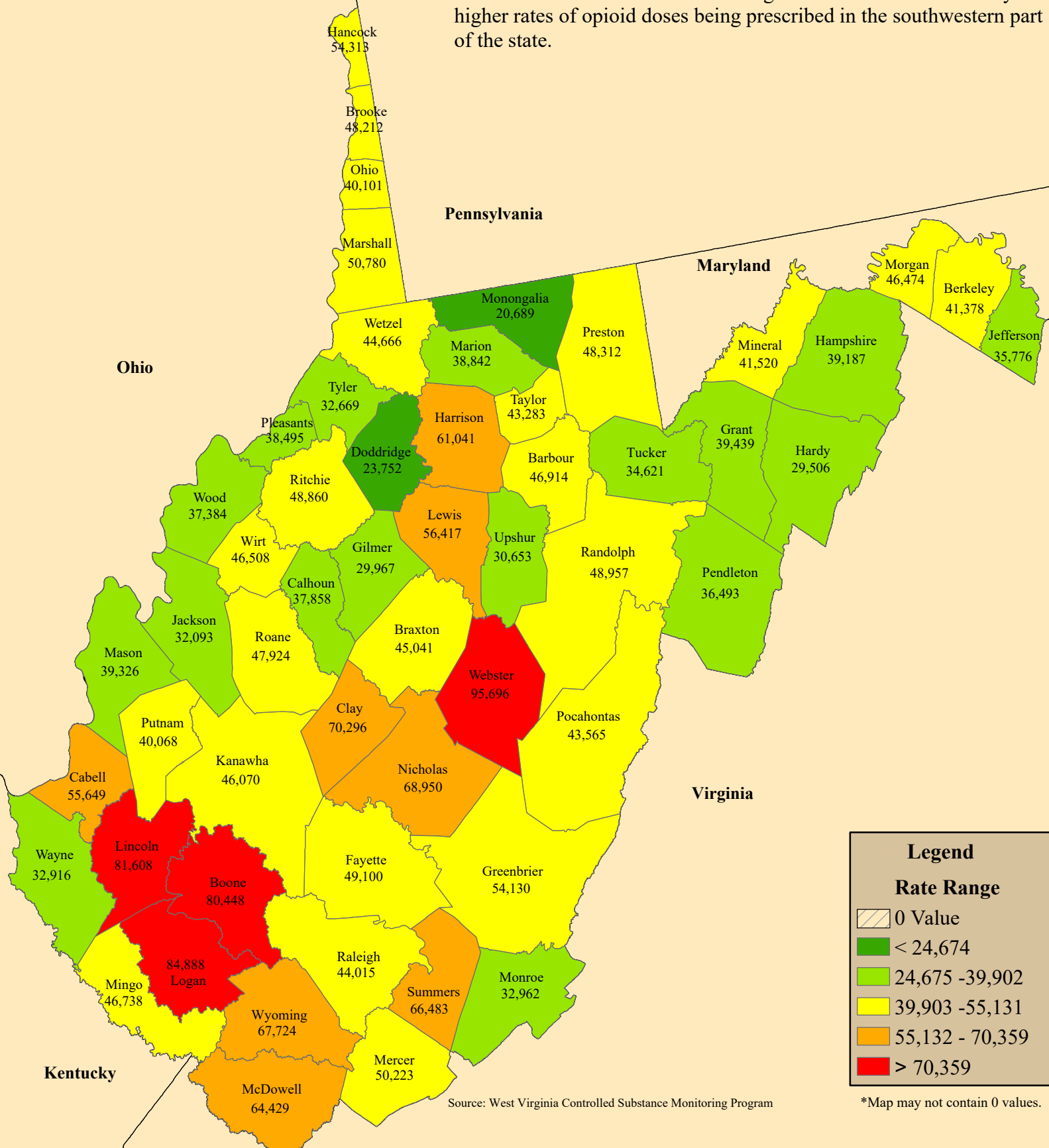


Dark green is < -1.5 SD from the mean, light green is -1.5 to -0.50 SD from the mean, yellow is -0.50 to 0.50 SD from the mean, Orange is 0.50 to 1.5 SD from the mean, and Red is > 1.5 SD from the mean.

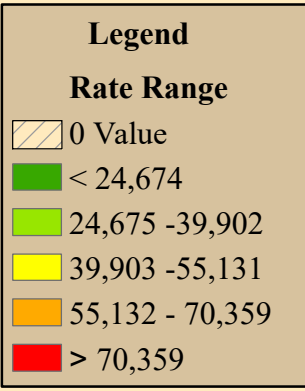


# Map 1: Opioid Doses per 1,000 State Residents by County, West Virginia, 2019

The rate of opioid doses (i.e., pills) helps identify where high prescribing may be occurring across the state. The highest rates are shown in red and the lowest rates in green. There are substantially higher rates of opioid doses being prescribed in the southwestern part of the state.



Source: West Virginia Controlled Substance Monitoring Program

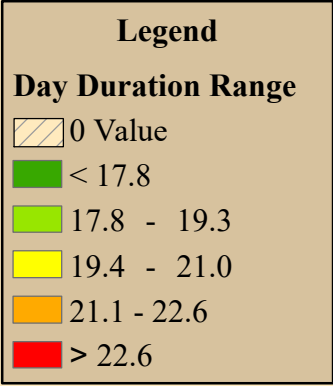
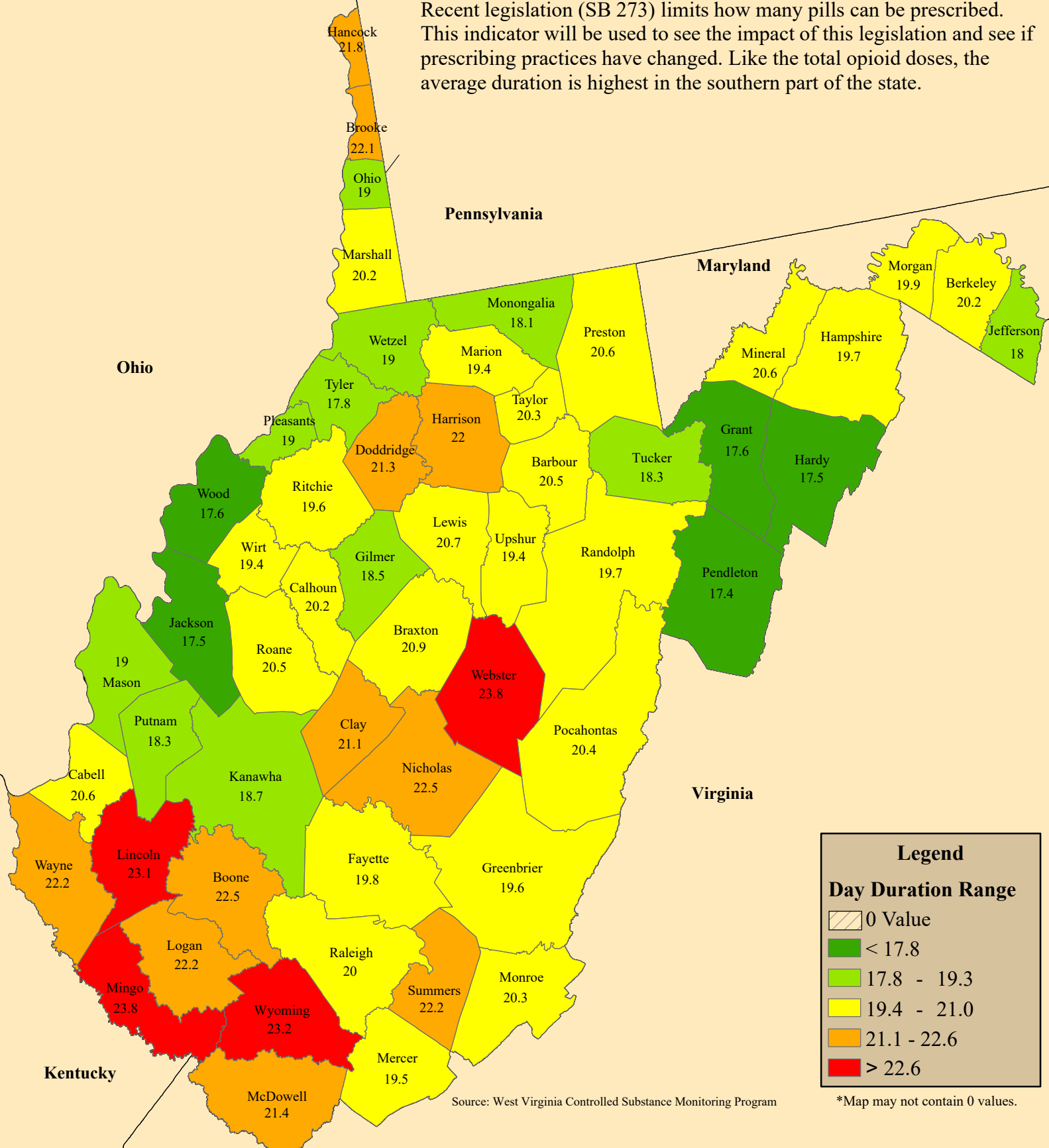


\*Map may not contain 0 values.



## Map 2: Average Duration of Opioid Prescription in Days by County, West Virginia, 2019

The average, or mean, duration of a prescription helps identify where high prescribing or chronic use may be occurring across the state. Current guidelines recommend short duration prescriptions (i.e., fewer pills). Recent legislation (SB 273) limits how many pills can be prescribed. This indicator will be used to see the impact of this legislation and see if prescribing practices have changed. Like the total opioid doses, the average duration is highest in the southern part of the state.

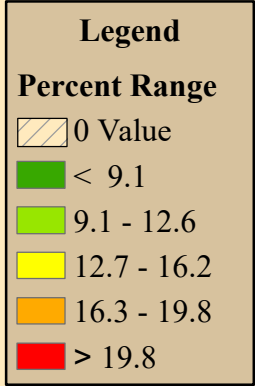
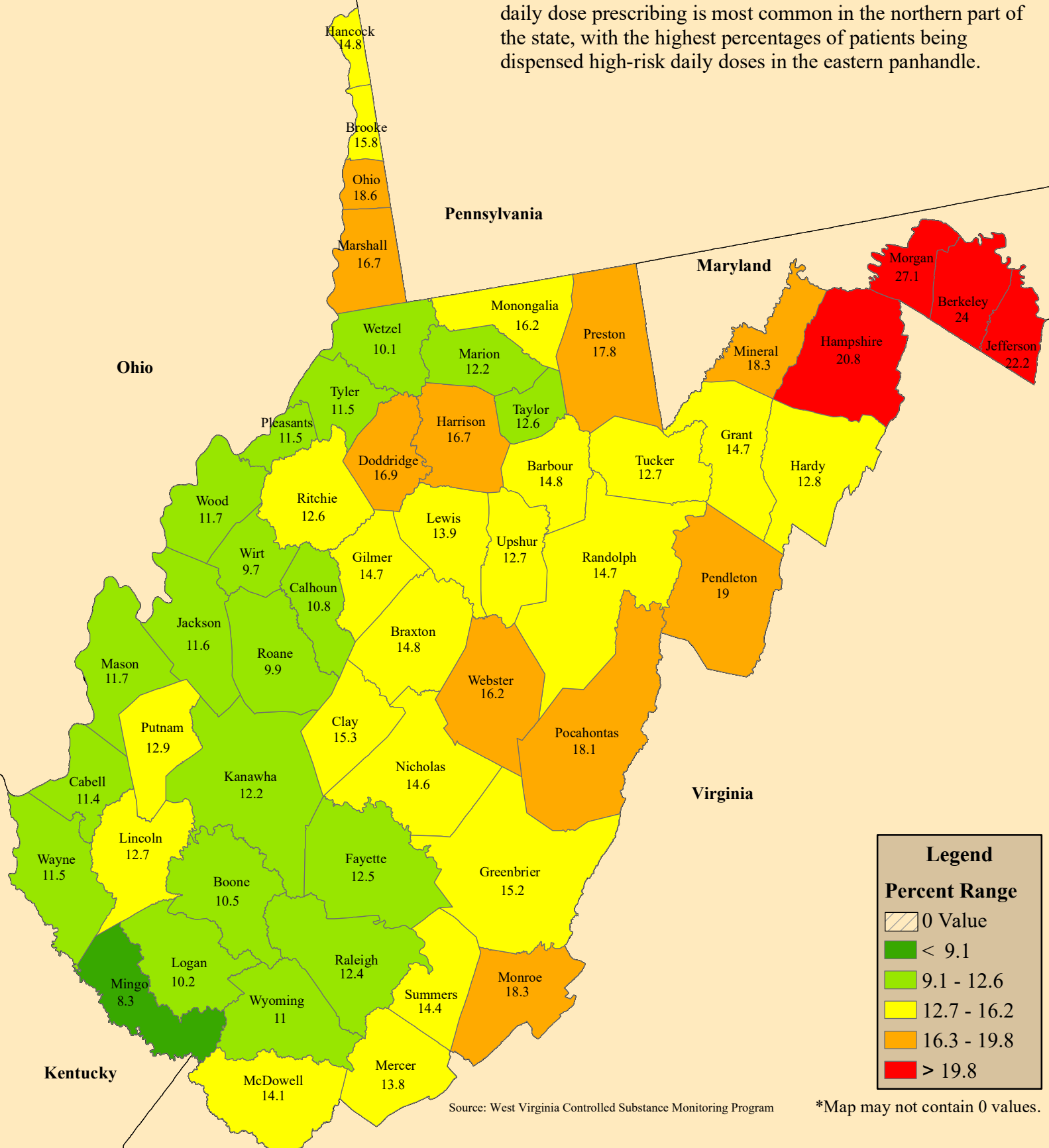


Source: West Virginia Controlled Substance Monitoring Program

\*Map may not contain 0 values.

### Map 3: Percent of Patients Receiving a High-Risk Daily Dose of Prescribed Opioids by County, West Virginia, 2019

The average high-risk daily dose (i.e.,  $\geq 50$  Morphine Milligram Equivalents (MME)) helps identify where high and possible problematic prescribing is occurring across the state. High-risk daily dose prescribing is most common in the northern part of the state, with the highest percentages of patients being dispensed high-risk daily doses in the eastern panhandle.



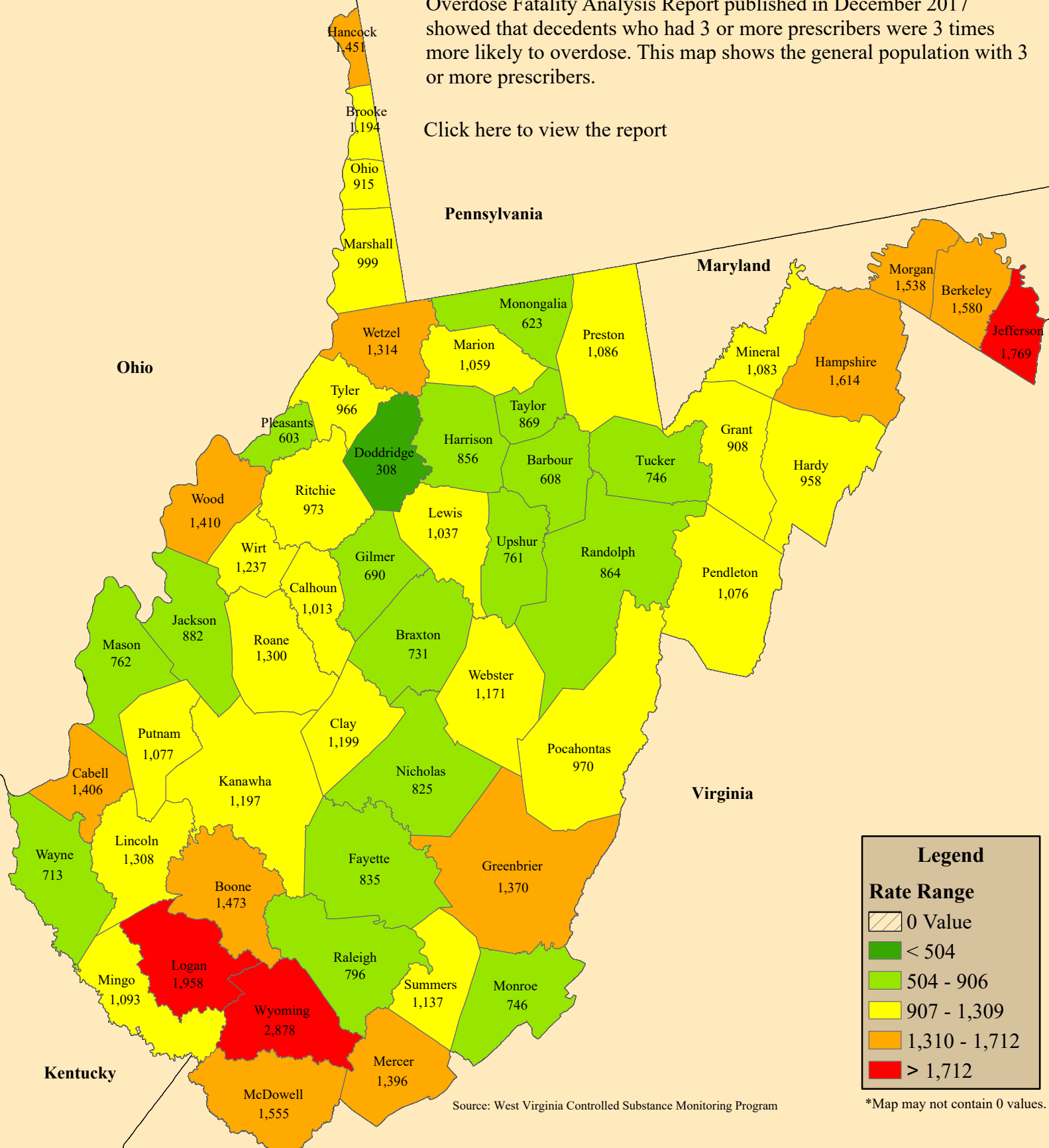
Source: West Virginia Controlled Substance Monitoring Program

\*Map may not contain 0 values.

# Map 4: Rate of Patients Who Saw 3 or More Prescribers in a 6-Month Period for Prescription Opioids per 100,000 Residents by County, West Virginia, 2019

The multiple provider episodes (MPE) indicator helps identify where possible doctor shopping activity is occurring. The 2016 West Virginia Overdose Fatality Analysis Report published in December 2017 showed that decedents who had 3 or more prescribers were 3 times more likely to overdose. This map shows the general population with 3 or more prescribers.

[Click here to view the report](#)



Source: West Virginia Controlled Substance Monitoring Program

**Legend**

**Rate Range**

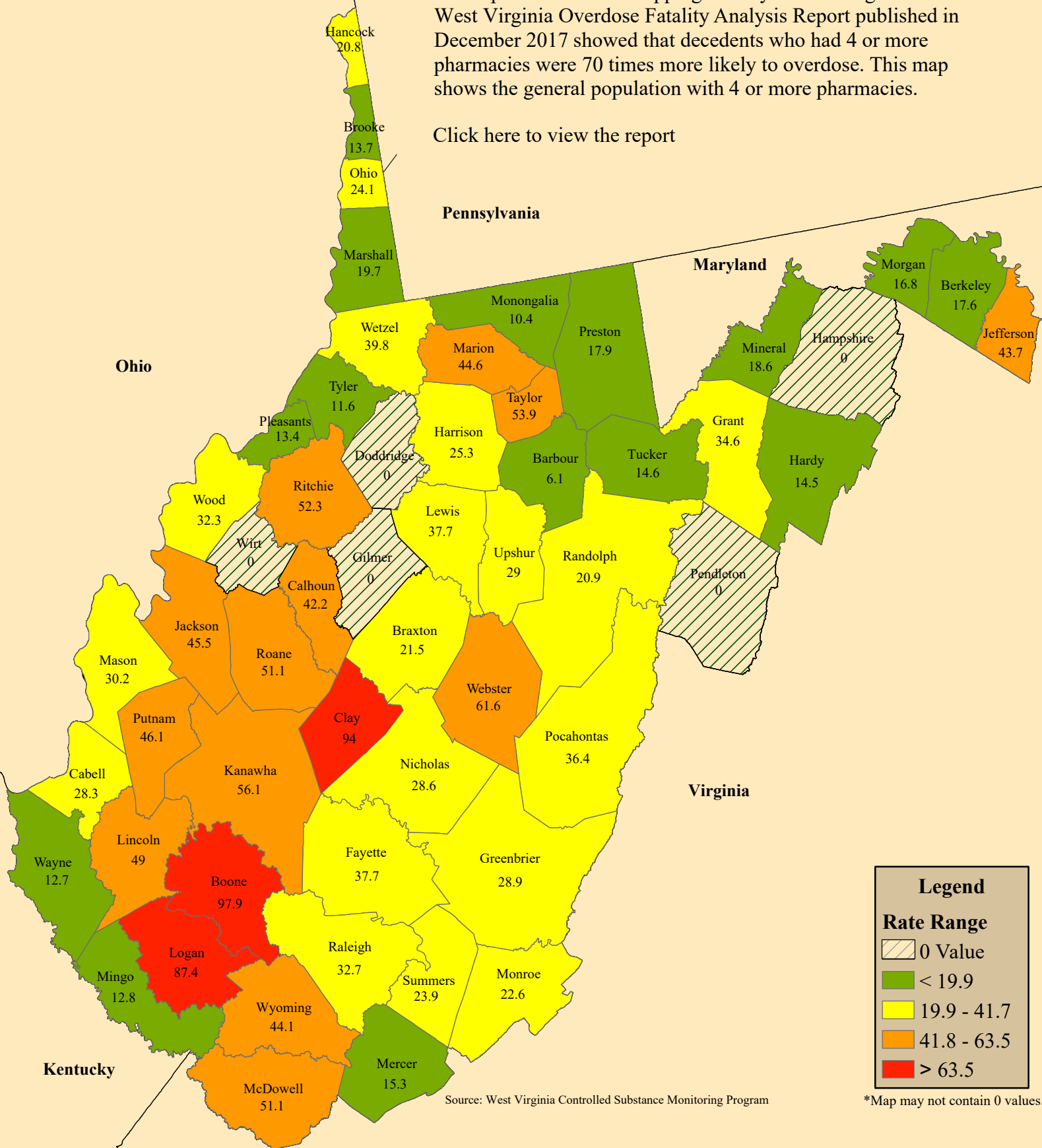
- 0 Value
- < 504
- 504 - 906
- 907 - 1,309
- 1,310 - 1,712
- > 1,712

\*Map may not contain 0 values.

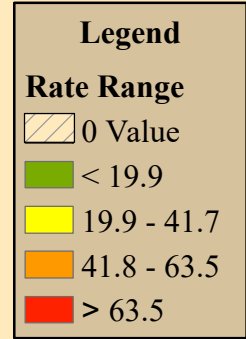
## Map 5: Rate of Patients Who Saw 4 or More Pharmacies in a 6-Month Period for Prescription Opioids per 100,000 Residents by County, West Virginia, 2019

The multiple provider episodes (MPE) indicator helps identify where possible doctor shopping activity is occurring. The 2016 West Virginia Overdose Fatality Analysis Report published in December 2017 showed that decedents who had 4 or more pharmacies were 70 times more likely to overdose. This map shows the general population with 4 or more pharmacies.

[Click here to view the report](#)



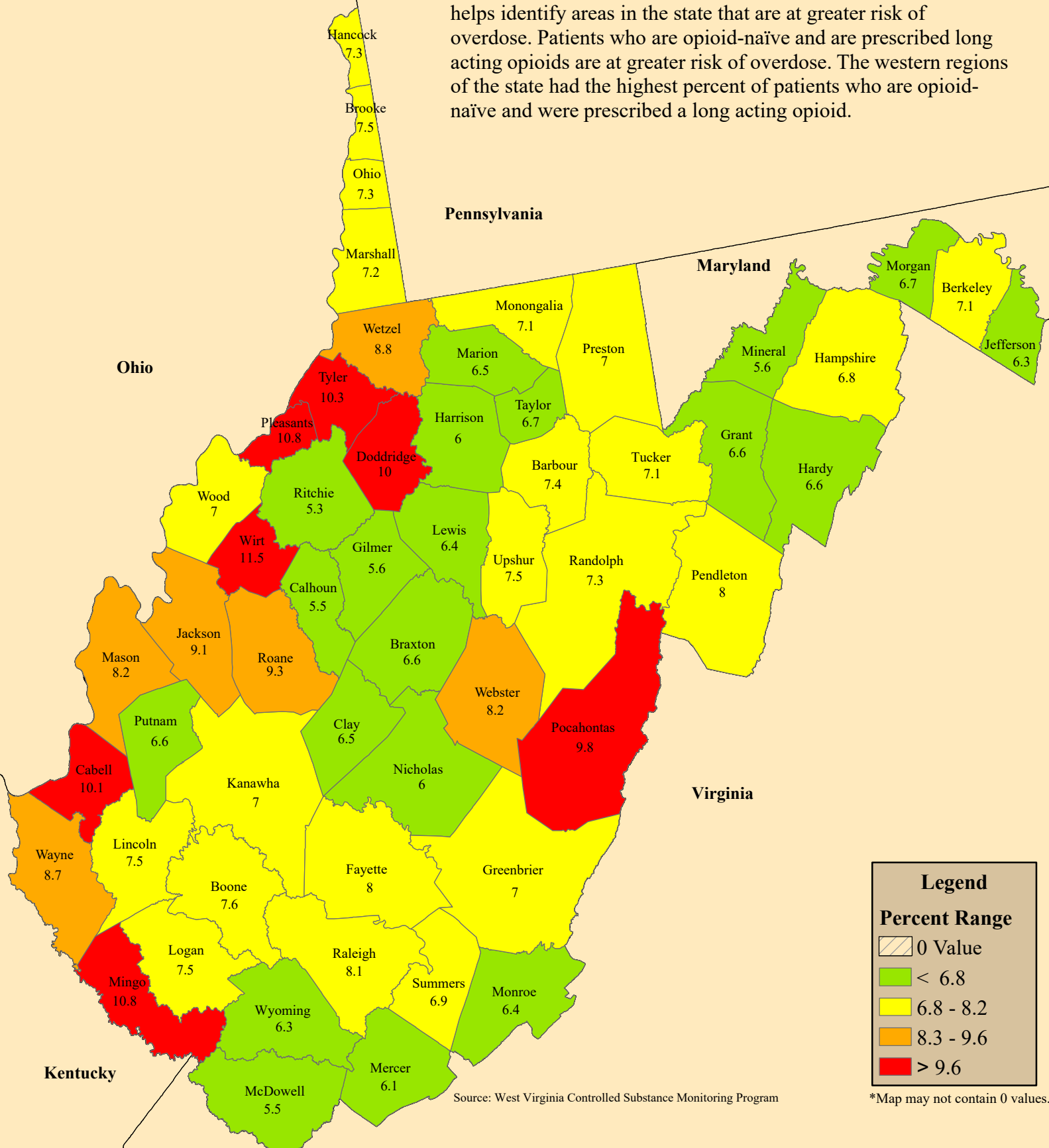
Source: West Virginia Controlled Substance Monitoring Program



\*Map may not contain 0 values.

**Map 6: Among Opioid-Naïve Patients (i.e., Patients Who Have Not Taken Opioids in 45 Days), Percent of Patients Prescribed Long-Acting/Immediate-Release Opioids by County, West Virginia, 2019**

Looking at opioid-naïve patients (i.e., no opioids for 45 days) helps identify areas in the state that are at greater risk of overdose. Patients who are opioid-naïve and are prescribed long acting opioids are at greater risk of overdose. The western regions of the state had the highest percent of patients who are opioid-naïve and were prescribed a long acting opioid.



**Legend**

**Percent Range**

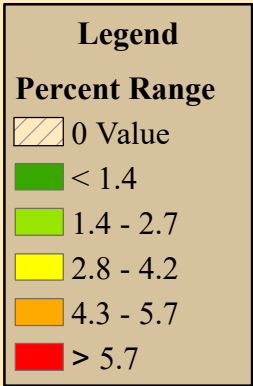
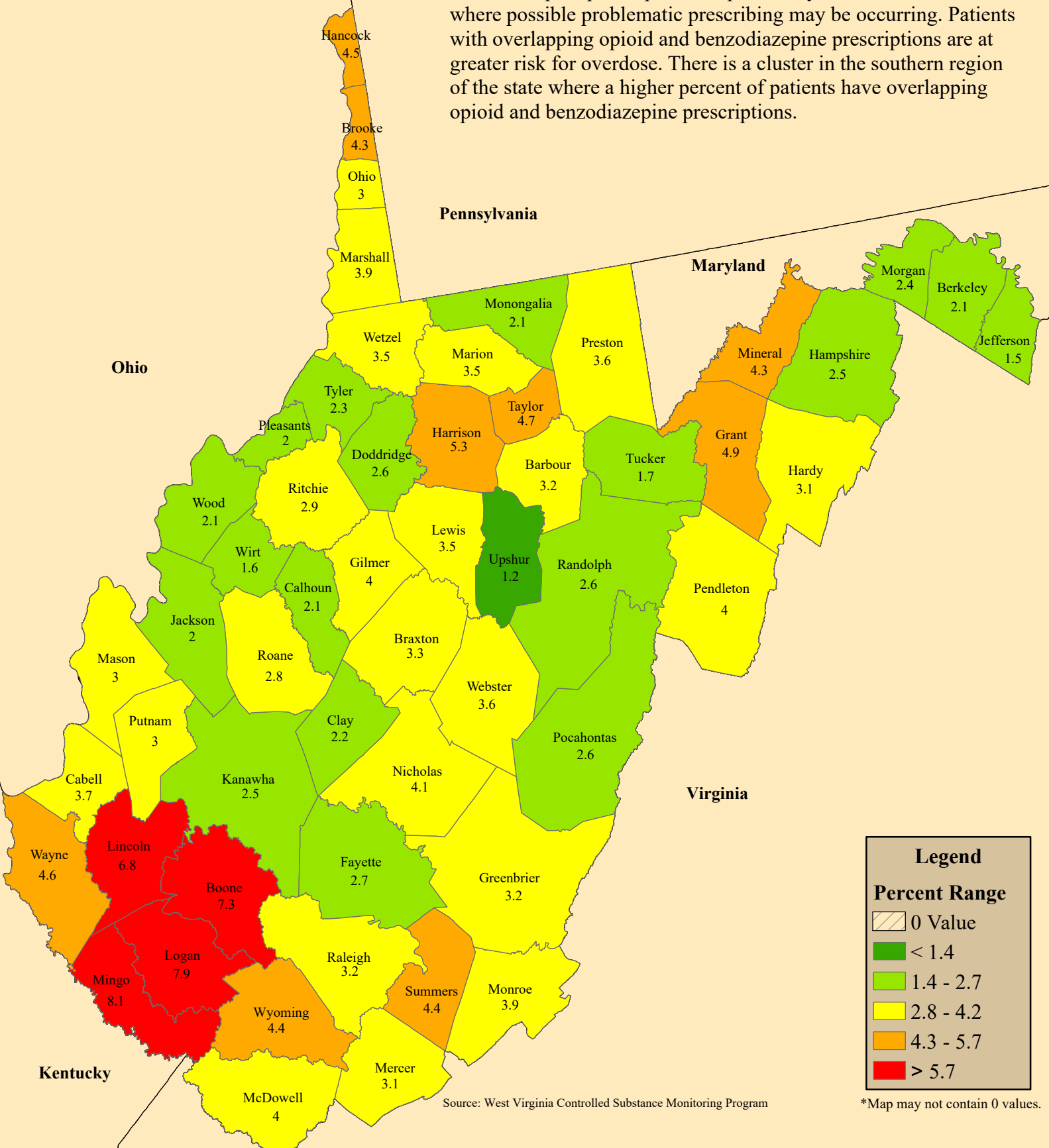
- 0 Value
- < 6.8
- 6.8 - 8.2
- 8.3 - 9.6
- > 9.6

Source: West Virginia Controlled Substance Monitoring Program

\*Map may not contain 0 values.

# Map 7: Percent of Patients with Overlapping Opioid and Benzodiazepine Prescriptions by County, West Virginia 2019

Looking at the percent of patients with overlapping opioid and benzodiazepine prescriptions helps identify areas in the state where possible problematic prescribing may be occurring. Patients with overlapping opioid and benzodiazepine prescriptions are at greater risk for overdose. There is a cluster in the southern region of the state where a higher percent of patients have overlapping opioid and benzodiazepine prescriptions.



Source: West Virginia Controlled Substance Monitoring Program

\*Map may not contain 0 values.



For more information regarding this report or the West Virginia Board of Pharmacy's Controlled Substance Monitoring Program (CSMP), please see contact information below.

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