



WEST VIRGINIA MEDICAL CANNABIS: Patient and Physician Interest Survey and Other Available Data

West Virginia Medical Cannabis Report 2017

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INTRODUCTION

Following the passage of Senate Bill 386, the Medical Cannabis Act (MCA), WV§16A during the 2017 West Virginia Legislative Session, the West Virginia Department of Health and Human Resources (DHHR), Bureau for Public Health began addressing implementation of the legislation. An Office of Medical Cannabis was established, a Medical Cannabis Advisory Committee was selected and met two times, a data analysis project team was formed, and online surveys were developed. The data team, under the supervision of the State Epidemiologist, developed a methodology for assessing the interest of patients diagnosed with one or more of the 15 serious medical conditions listed in the MCA and physicians interested in participating as a recommending practitioner for use of medical cannabis. Data were gathered from these surveys to determine interest in medical cannabis treatment and location of diagnosed patients and physician practices. The physician and patient surveys also gathered descriptive epidemiologic data to describe these two relevant populations and areas within the state to potentially locate medical cannabis dispensaries. Other available data systems were contacted, provided ICD-9 and 10 code data of 15 serious medical conditions listed in Figure 1, and data were gathered from data coordinators of Public Employees Insurance Agency, Medicaid, Medicare data systems and statewide disease registries for HIV/AIDS and Cancer.

METHODOLOGY

Two online surveys with a set of relevant questions were designed using Survey Monkey and made available for completion by patients and health care providers. The data provided from these surveys were needed to identify statewide clustering of the 15 serious medical conditions identified in the MCA. Patients and a patient's caregiver respond to the survey if diagnosed with any of these serious medical conditions even if they had been diagnosed with more than one of the listed conditions. Data were gathered from these questions to identify potential medical cannabis dispensaries. The survey asked about the interest, age, zip code, diagnoses of a list of serious medical conditions, the willingness of driving to a dispensary and how far the patient, family member or care giver was willing to travel to purchase medical cannabis. Lastly, the patient survey gathered responses on their preferred form of medical cannabis.

The collection of completed survey results from licensed West Virginia physicians was distributed by the allelopathic and osteopathic medical licensing boards. These two medical licensing boards distributed an email on October 24, 2017, with the link to the physician's survey. They also sent a reminder email of the survey closure date of November 15, 2017, for completing the survey. This stimulated an increase in responses received. Physicians were asked to indicate their interest in using medical cannabis for treatment of a list of serious medical conditions and to identify the type of environment in which they worked and their specialty and the county in which they worked. The survey reminded the physicians that a 4-hour training course was required to be completed before participating in the Medical Cannabis Program.

Other data system coordinators were contacted to provide their most recent three years of their data. These data systems included insurance claims data by ICD- 9-10 codes for the serious medical conditions from Public Employees Insurance Agency (PEIA), Medicaid, and Medicare. These data systems were included to enhance the geographic location of persons diagnosed with any of the 15 MCA serious medical conditions provided from the patient surveys.

Lastly, two statewide registry systems administered within DHHR's Bureau for Public Health (BPH) made data available. The HIV/AIDS Registry pulled data on West Virginia residents reported at the time of diagnosis who were still living in 2017. To ensure that these cases were still living, these data went through a validation process that included an annual review of reported laboratory results indicating that the patient was still receiving care and living in West Virginia. A National Death match was also conducted twice in 2017 to document that the patient was still living. To ensure there were no duplicates, the BPH HIV Surveillance Program conducted an annual case comparison study with other states.

The West Virginia Cancer Registry, a Gold Standard population-based registry, was established in 1993. The data provided were all newly diagnosed cancer patients and reported during the years 2012-2014. Since cancer was one of the 15 serious medical conditions, these data added depth to identification of geographic location of the cases at the time of report. A six-month delay from diagnosis to case reporting for cancer incidence data caused these data from 2012-2014 to be their most recent three years of available data. These data provided were for all West Virginia incidence diagnoses of invasive cancers and in situ cancers by zip code.

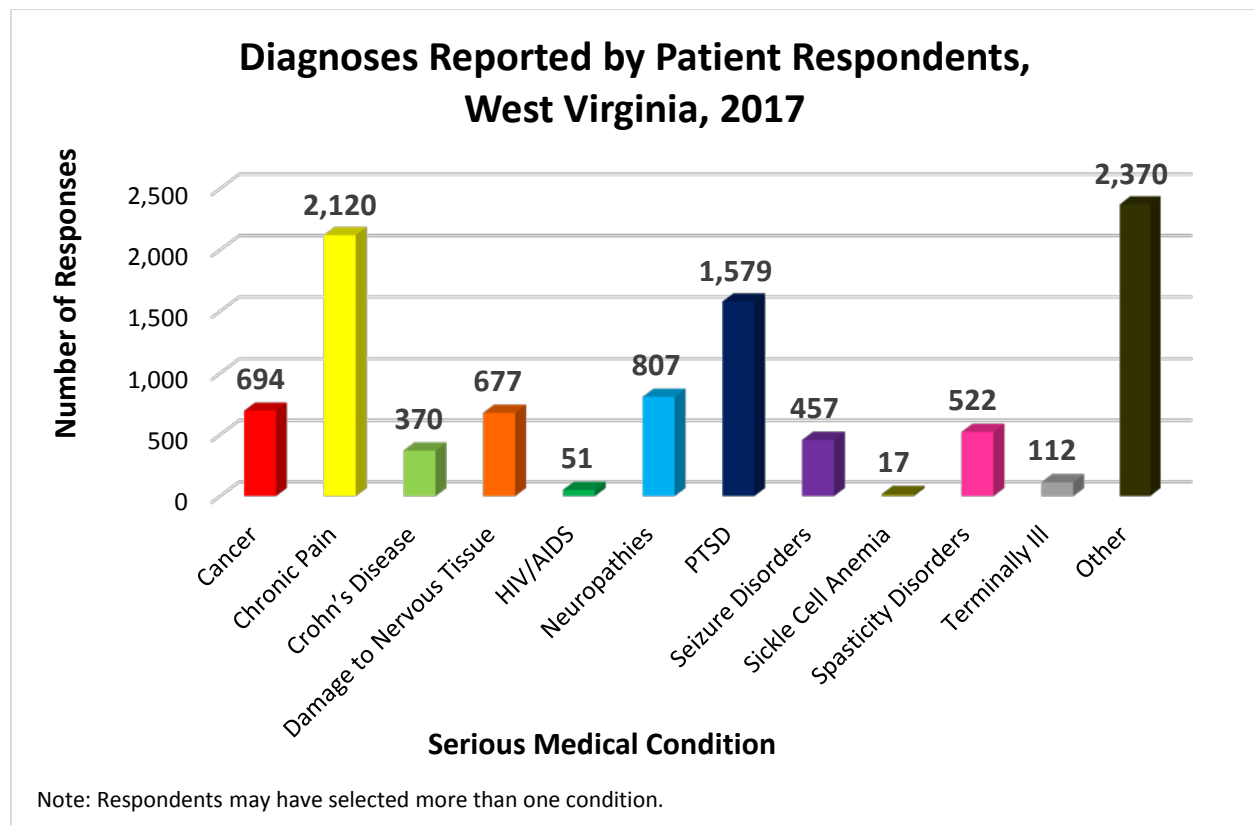
The maps included in this report were created using the program ESRI Maps for Office that is part of the ArcGIS platform and enabled mapping capabilities to be brought into Microsoft Excel and Microsoft PowerPoint. This method enabled location-based analyses of data provided with the approximate 800 West Virginia zip codes.

RESULTS

1. Patient Survey Results

There were 6,174 patient survey respondents (6,112 online and 62 submitted by mail that were entered online). Access to the patient survey was available from October 18, 2017 to November 20, 2017 to maximize response time. Since the internet survey was easily accessible, there were 171 individuals completing it who were not West Virginia residents and had to be excluded from the data analysis. Therefore, data were analyzed from 6,003 completed patient surveys. The diagnoses listed below in Figure 1 display any of the serious medical conditions of the patient respondents.

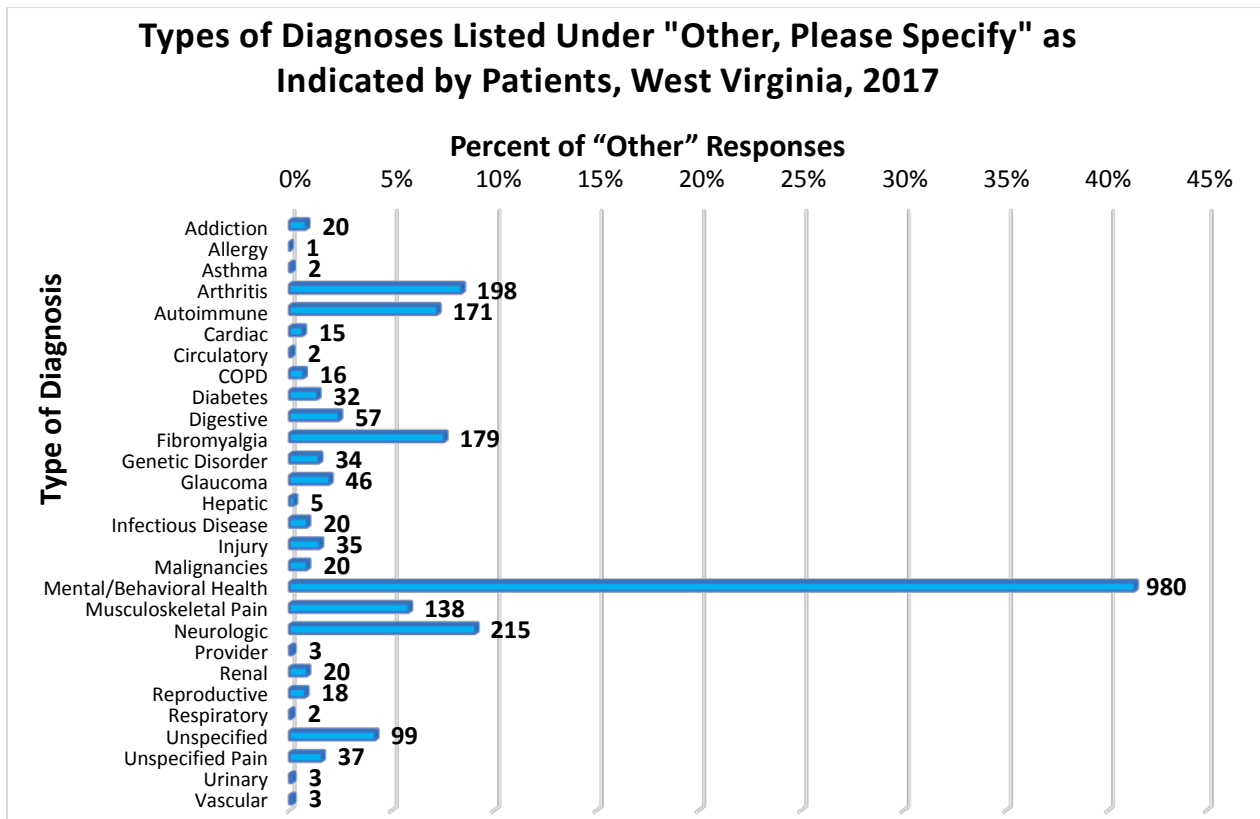
Figure 1. Patient Reported Diagnoses



Before analysis began some of the related serious medical condition disorders were combined by similar symptomatology. Epilepsy and Intractable Seizures were combined in a category of Seizure Disorders. Amyotrophic Lateral Sclerosis (ALS), Huntington's Disease, Parkinson's Disease, and Multiple Sclerosis (MS) were combined as Spasticity Disorders as seen in Figure 1. There were 2,370 "Other" conditions diagnosed that included mental and behavioral health diagnoses, other neurologic conditions, autoimmune disease, arthritis, and fibromyalgia in Figure 2.

Map 1 displays the county from which patient respondent reported. Most of the patients who completed the survey were from Kanawha County (704 or 11.8%) and Raleigh County (435 or 7.3%). The next counties with the highest number of respondents who completed the survey included Wood County with 364 respondents (6.1%), 360 from Marion County, 326 (5.5%) respondents from Berkeley County, and 304 (5.1%) of the respondents from Monongalia County. These results do not include the respondents who had invalid West Virginia zip codes; only the responses used in the rest of the analyses are included on this map.

Figure 2. "Other" Diagnoses



Map 1. Counties of Patient Respondents to 2017 Survey of Interest

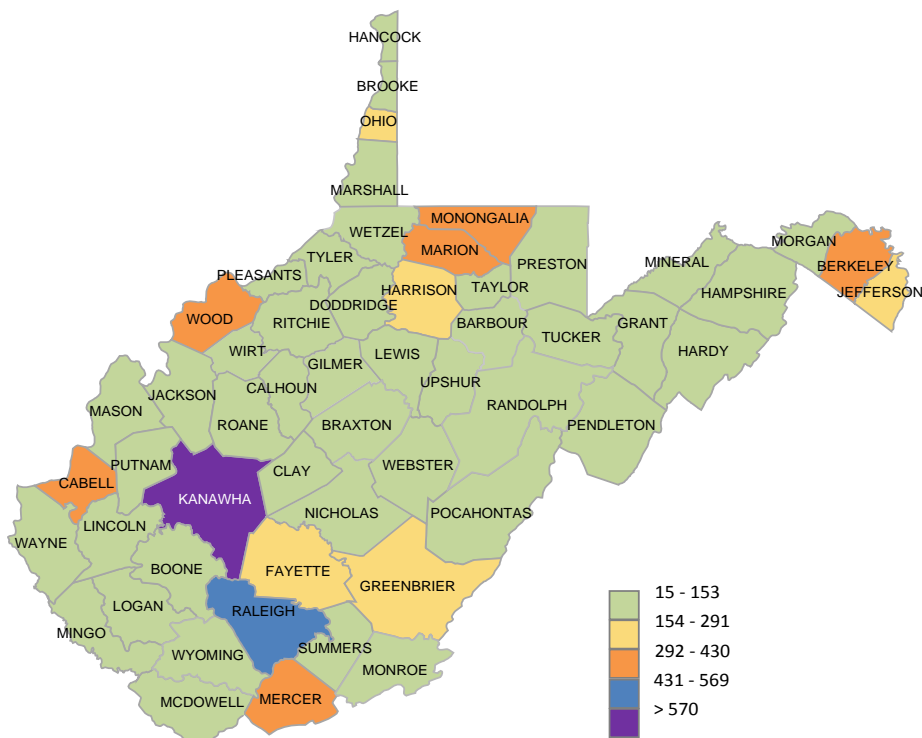
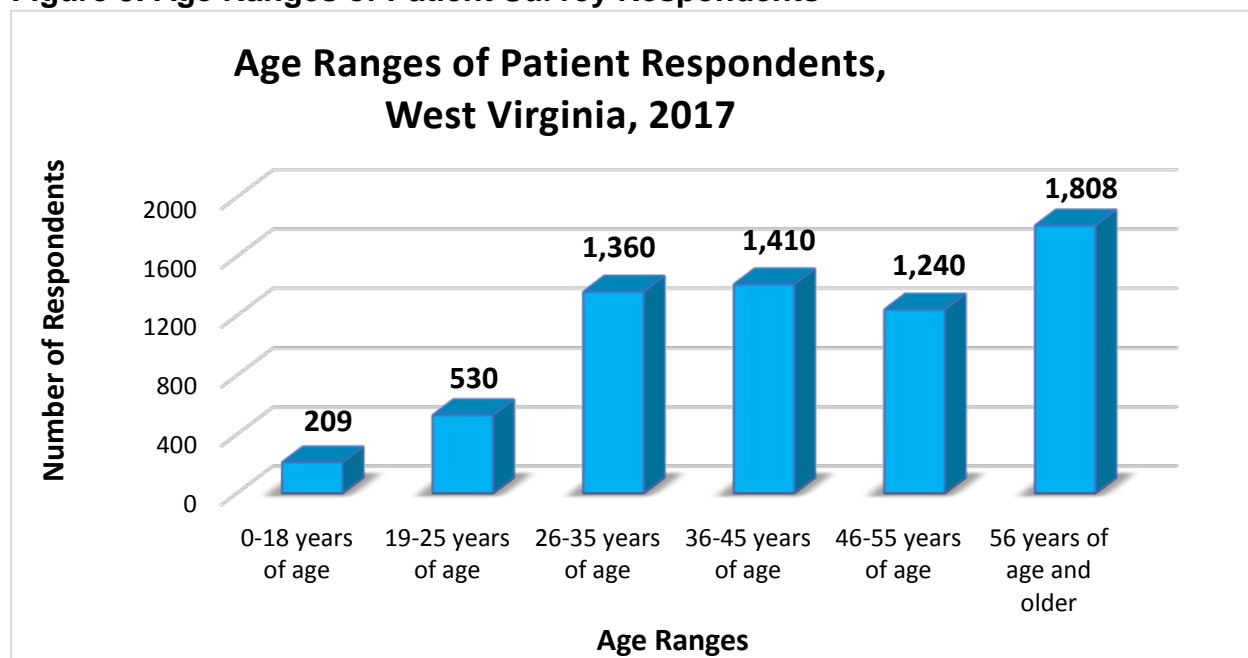


Figure 3. Age Ranges of Patient Survey Respondents



Respondents to the patient survey checked more than one age range in a drop-down box to denote an age range while completing the survey for family members or friends for whom they were caregivers. Results of patient survey respondents indicated that 1,808 (28%) of the individuals were 56 years of age and older. There were 1,410 (21%) respondents 36-45 years of age; 1,360 (21%) were 25-35 years of age; 1,240 (19%) were 35-45 years of age.

From another question, the results showed that most (49%) of the patients did not want caregivers to obtain their medical cannabis from a dispensary; 22% were comfortable with caregivers obtaining their medical cannabis, and 29% were unsure. Most patients (2,175, 32%) were willing to drive 26-50 miles, 1,959 (29%) would drive 11-25 miles and 1,456 (21%) were willing to drive 50 or more miles to purchase medical cannabis.

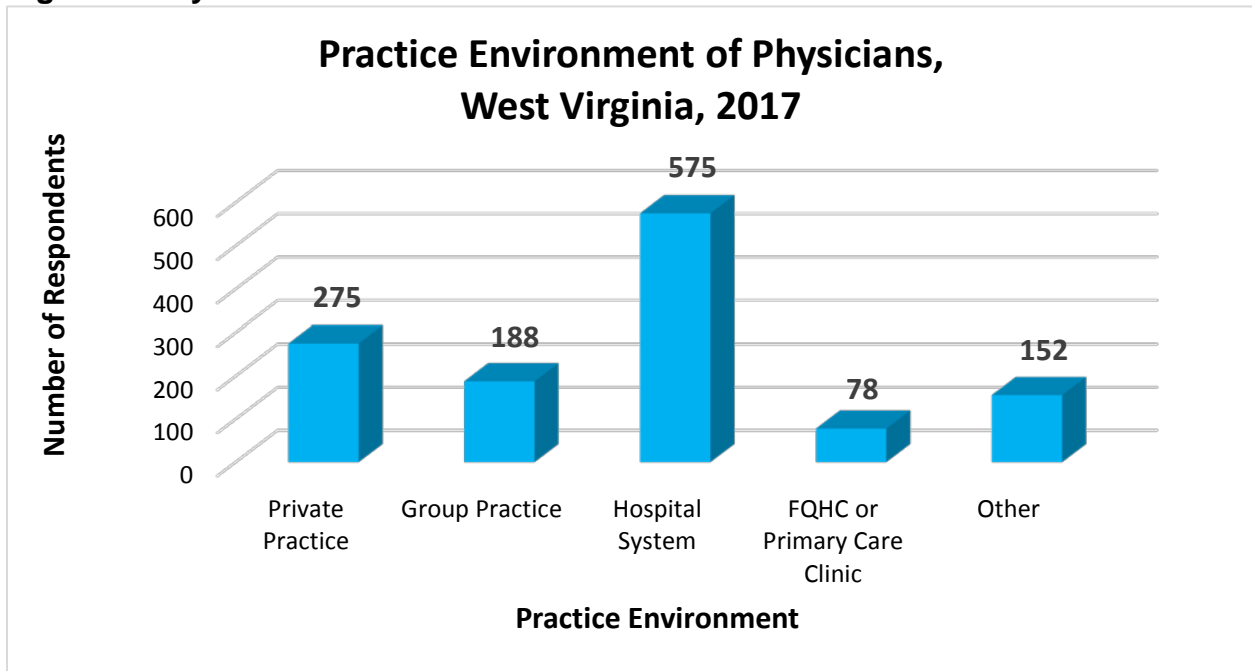
Patients selected multiple forms of their preferred form of medical cannabis. The results showed 3,029 responses selecting vaporization or nebulization was the preferred form to be purchased; 2,264 patient responses selected the oil form of medical cannabis, and 2,058 had no preference with the type of medical cannabis. Individuals completing the survey were able to select more than one form.

Physician Survey Results

Physician survey results were gathered (3.5 weeks) online from completed surveys by 1,455 physicians. Of these physicians, 1,190 or 82% were interested and 265 or 18% were not interested in certifying for use of medical cannabis treatment. Most (575) responding physicians worked in the hospital system, followed by 275 in private practice,

and 188 in a group practice in Figure 4. The least number of respondents practiced in a FQHC or Primary Care Clinic environment

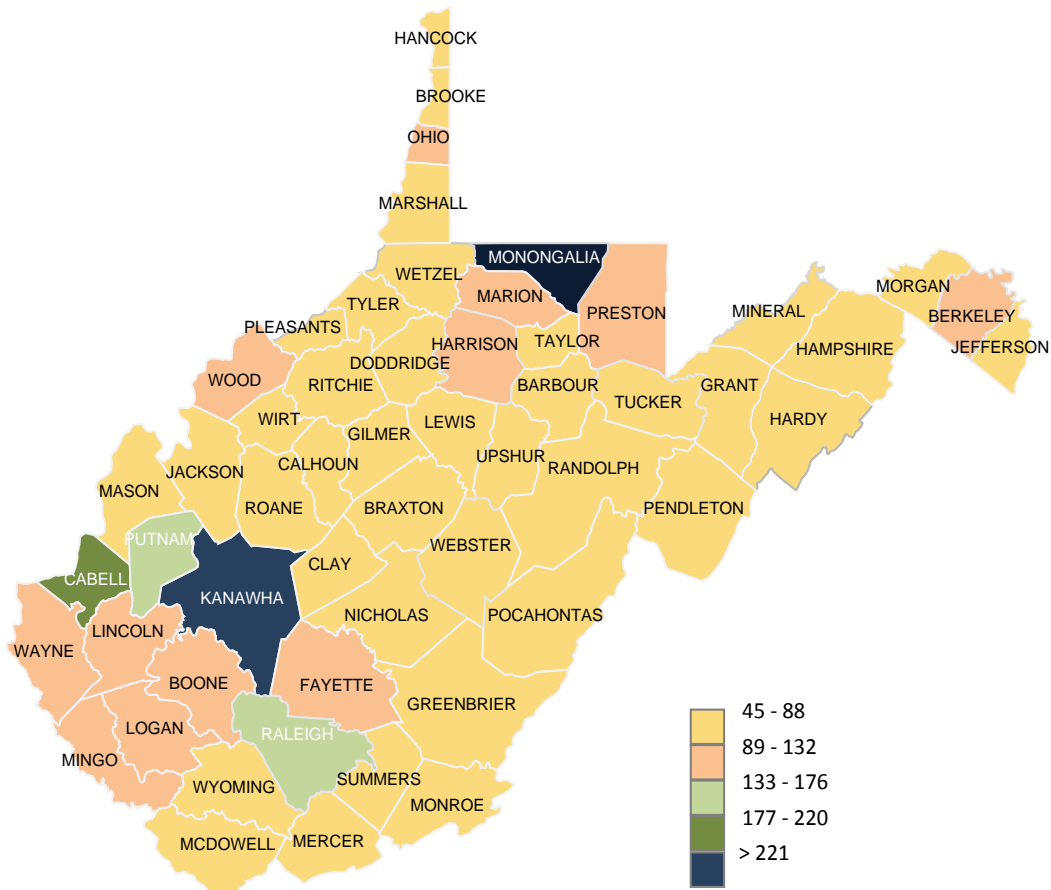
Figure 4. Physician Practice Environment



Of the 28 medical specialties, most (238) of the responding physicians were Family Practitioners, followed by 183 that were Internal Medicine specialists, and 117 were Emergency Medicine specialists.

Map 2 displays counties in which physician respondents practice. The counties in which respondents most often indicated practicing were Monongalia County with 242 (5.5%), Kanawha and Cabell Counties with 244 (5.2%) and 213 (4.5%) respectively. These are the three West Virginia counties that provide tertiary care service facilities. These areas of the state are also the largest population centers, so it is not surprising that most respondents indicated practicing in these three counties. Forty-four or 80% of the counties had fewer than 100 respondents practice, and 3 (0.5%) had more than 200. Counties following these population centers included Putnam and Raleigh counties where respondent physicians practiced. Wood, Berkeley, Ohio, Harrison, Marion, Preston, Fayette, Boone, Lincoln, Wayne, Logan and Mingo counties were next.

Map 2. Counties Where Physicians Practice



PEIA Active Members' Data System Results

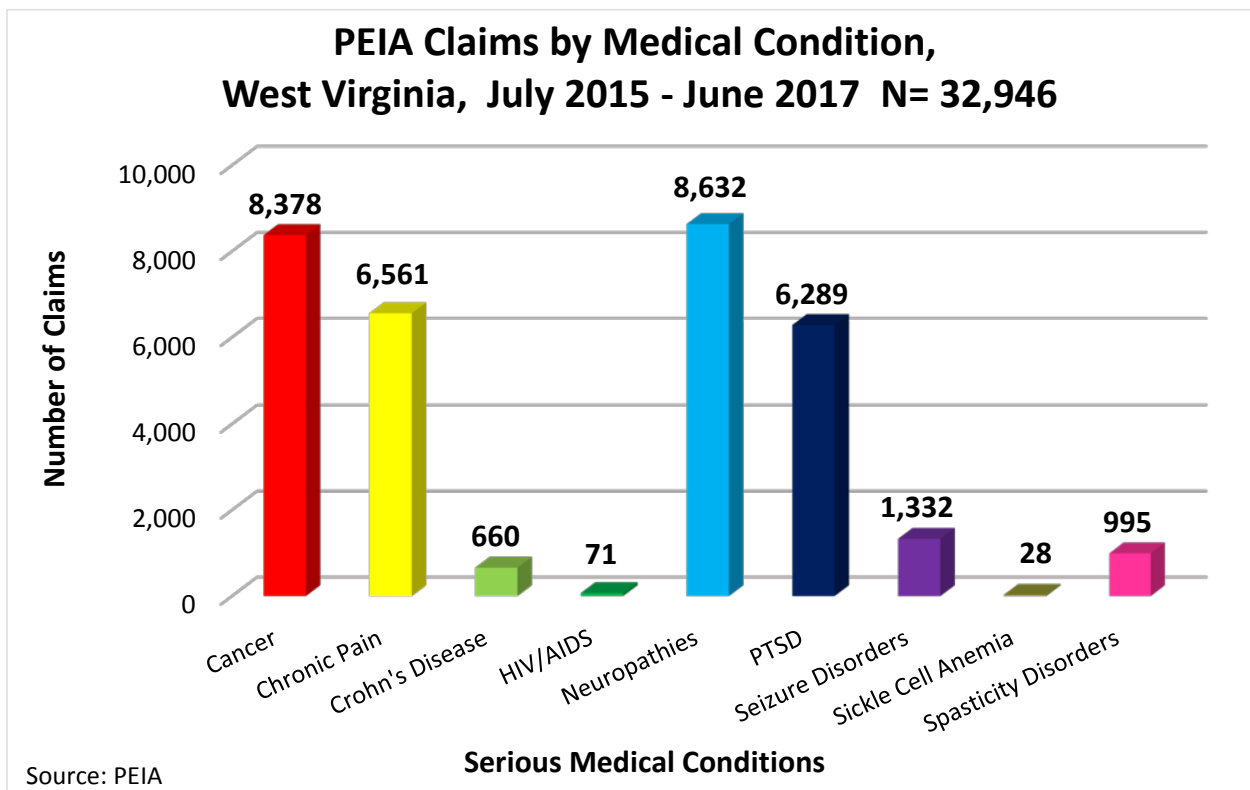
Public Employees Insurance Agency (PEIA) active member data was provided for a total of approximately 152,000 individuals. PEIA provided these data from July 2015-June 2017. Patient duplicates were removed from each condition claim count, however, patients with multiple conditions were counted for each diagnosed condition within each condition total. The 15 diagnosed serious medical conditions in Figure 5 totaled 22% (32,946) claims.

Claims for these serious MCA medical conditions by ICD 9-10 codes shown in Figure 5 were provided by PEIA. Neuropathy and cancer claims were highest with 8,632 (26.2%), 8,378 (25.4%). There were 6,561 (19.9%) claims for chronic pain, and 6,289 (19.1%)

were for post-traumatic stress disorder (PTSD), while 9.4% of the claims were from other serious medical conditions among PEIA active membership.

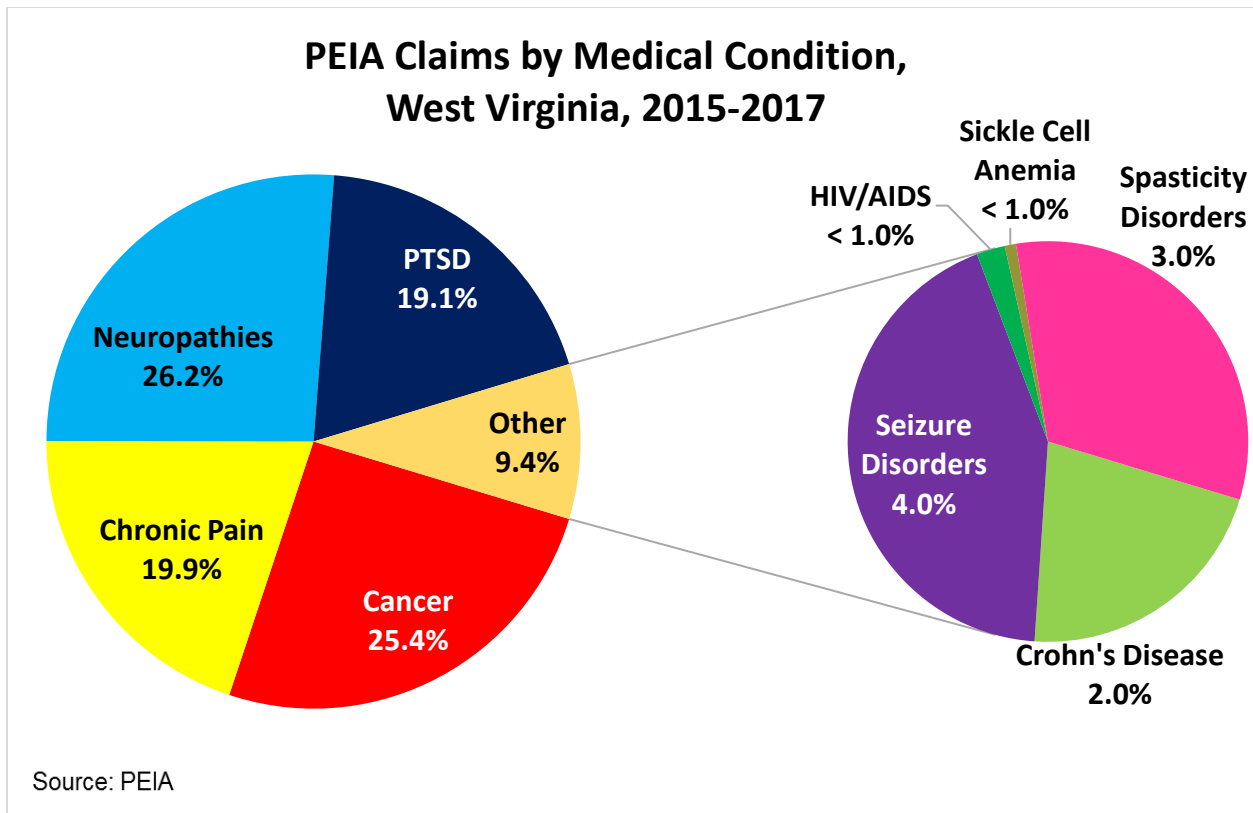
The smallest geographic level that the PEIA data could be broken down to was state-level due to the HIPAA Privacy Rule. It did not allow PEIA to provide diagnostic information by geographic area in a unit smaller than a state. (Reference: Health and Human Services HIPAA Privacy Rule Guidance. <https://www.hhs.gov/hipaa/for-professionals/privacy/special-topics/de-identification/index.html#standard>)

Figure 5. PEIA Serious Medical Conditions Data



Other serious medical conditions are shown in Figure 6 and included 4% Seizure Disorders, 3% Spasticity Disorders (Parkinson's Disease, Multiple Sclerosis and Huntington's Disease), 2% Crohn's Disease, and less than 1% for both HIV/AIDS and Sickle Cell Anemia.

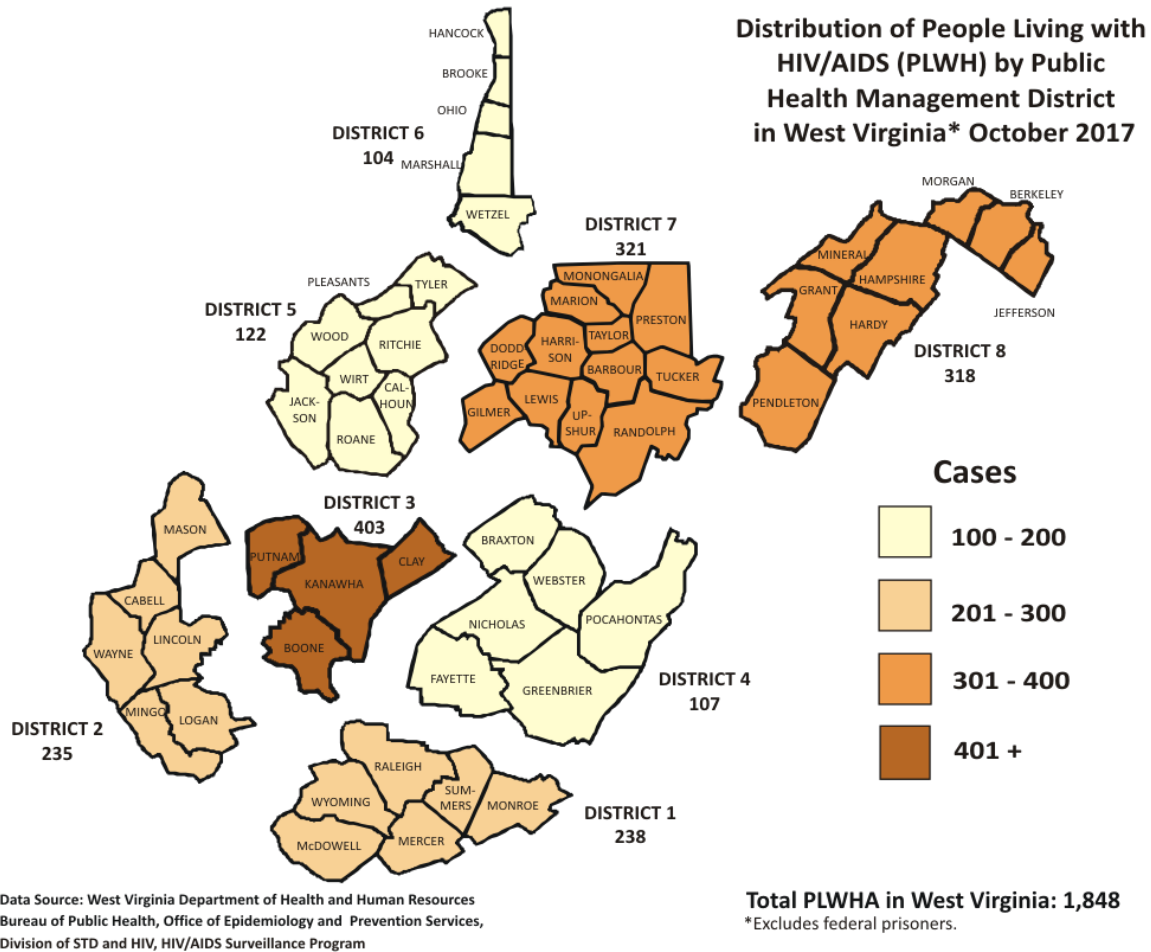
Figure 6. PEIA Other Serious Medical Conditions Data



HIV/AIDS Registry Results

The data coordinator for the HIV/AIDS Registry provided data results of 1,848 patients still living in West Virginia with HIV/AIDS in 2017. AIDS became reportable in West Virginia in 1984 and HIV in 1989. Map 3 was displayed by using public health district management grouping from the HIV/AIDS confidential patient record by patient address. Most of the patients who were residents at the time of diagnosis lived in Kanawha County with greater than 401 residents, District 3. The counties in Districts 7 (Monongalia, Harrison, Marion, Preston, etc.) and District 8 counties in the eastern panhandle (Berkeley, Mineral, and Hampshire) were the next concentrated areas of the state where patients living with HIV/AIDS resided at the time of diagnosis.

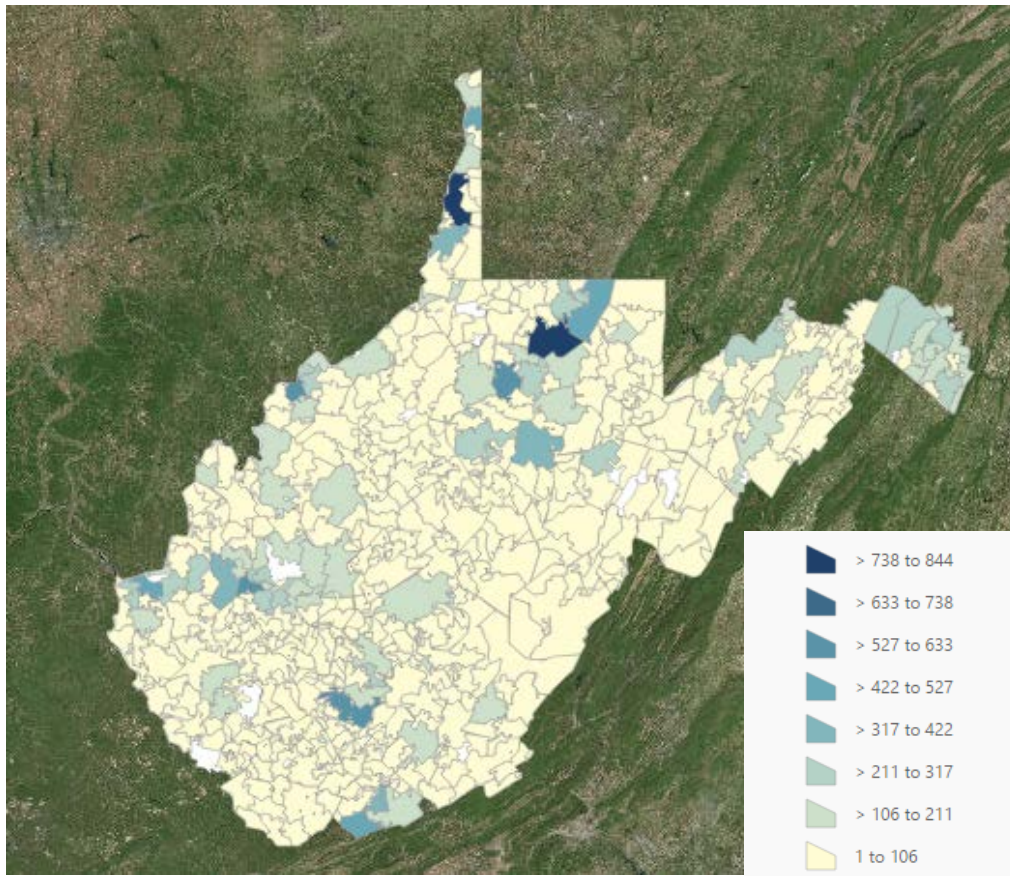
Map 3. People Living with HIV/AIDS by Health Management District in 2017



West Virginia Cancer Registry Result

As with the HIV/AIDS Registry, the West Virginia Cancer Registry incidence data were reported based on the patient's address at the time of diagnosis. This incidence registry was established in 1993. These cancer data were provided for invasive cancer and in situ cancer for the years of 2012-2014. Most of the reported newly diagnosed cancer cases were concentrated in Ohio County and the zip codes locations just south of Monongalia County. Such mapping enables the ability to visualize, analyze, and interpret data to the zip code level and assist with identifying locations throughout the state where the serious medical conditions were clustered, thereby providing information for the location of medical cannabis dispensaries.

Map 4. West Virginia Cancer Registry by Zip Code, 2012-2014



Medicaid Claims Data Results

The Bureau for Medical Services (Medicaid) is a bureau within the West Virginia Department of Health and Human Resources. Medicaid’s Data Warehouse Coordinator for West Virginia claims data were provided with ICD 9-10 codes for 15 serious medical conditions identified in the MCA. These data were generated from the number of claims of active members associated with the diagnoses for these serious medical conditions, January 2015 through June 2017. Fees for Service (FFS) and Managed Care Organization (MCO) total claims were gathered for active members and displayed in Table 1. Six percent of total FFS and MCO member claims for all three years were associated with diagnoses of the MCA 15 serious medical conditions.

Table 1. Total Number of Medicaid Claims by Year, 2015-2017

| Year | FFS | MCO | Totals | # MCA Diagnoses |
|--------------|------------|------------|---------------|------------------------|
| 2015 | 6,109,082 | 2,699,815 | 8,808,897 | 46,787 |
| 2016 | 3,539,462 | 6,089,969 | 9,629,331 | 68,117 |
| 2017 | 582,808 | 4,456,793 | 5,029,601 | 20,819 |
| Total | 10,231,352 | 13,246,577 | 23,477,929 | 135,723 |

Medicaid claims for active members by serious medical condition(s) were graphed by condition in Figure 7. Cancer accounts for 41% of the Medicaid claims for these 15 serious medical conditions, followed by 18% each for Seizure Disorders and Chronic Pain. There were 23% of the Medicaid claims grouped as Other. These other serious medical conditions were graphed in the pie chart on the right side in Figure 8.

Figure 7. Medicaid Serious Medical Condition Claims Data, 2015-2017

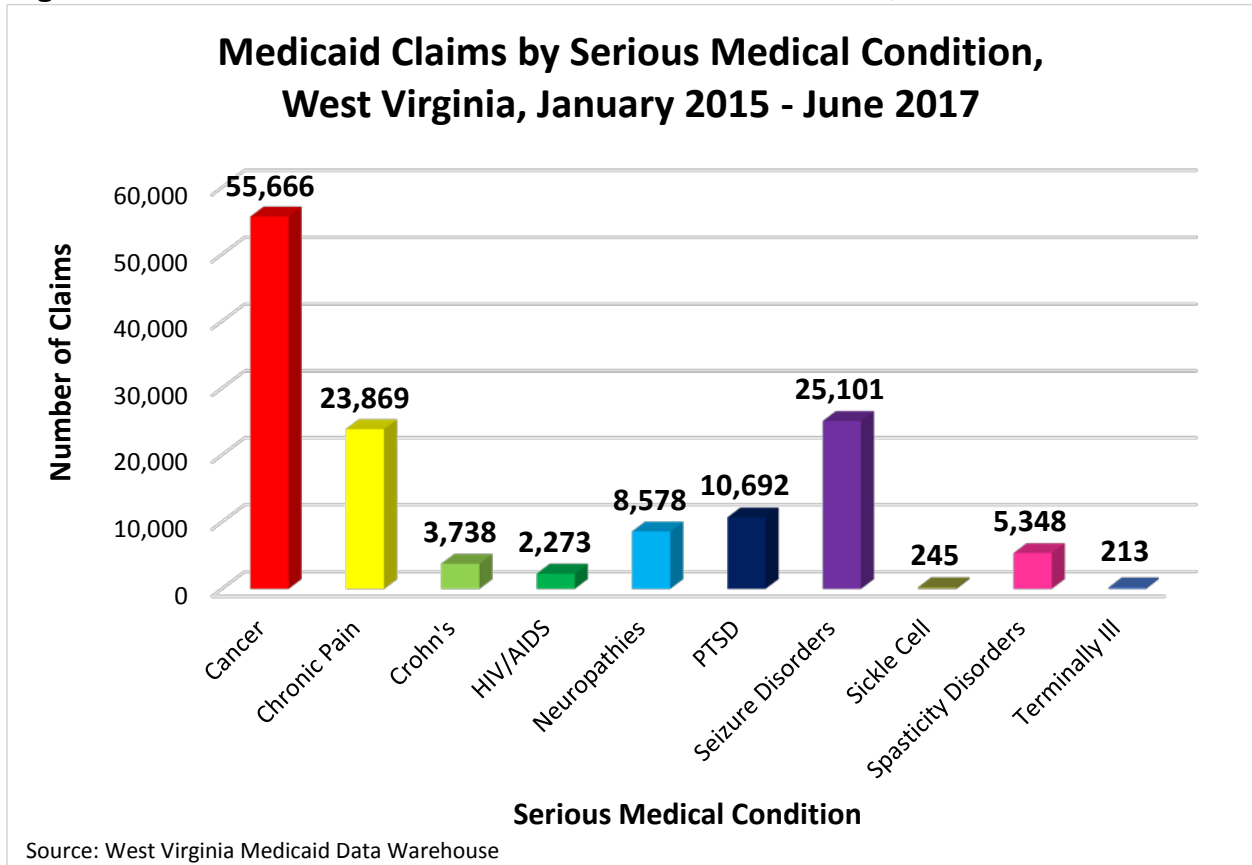
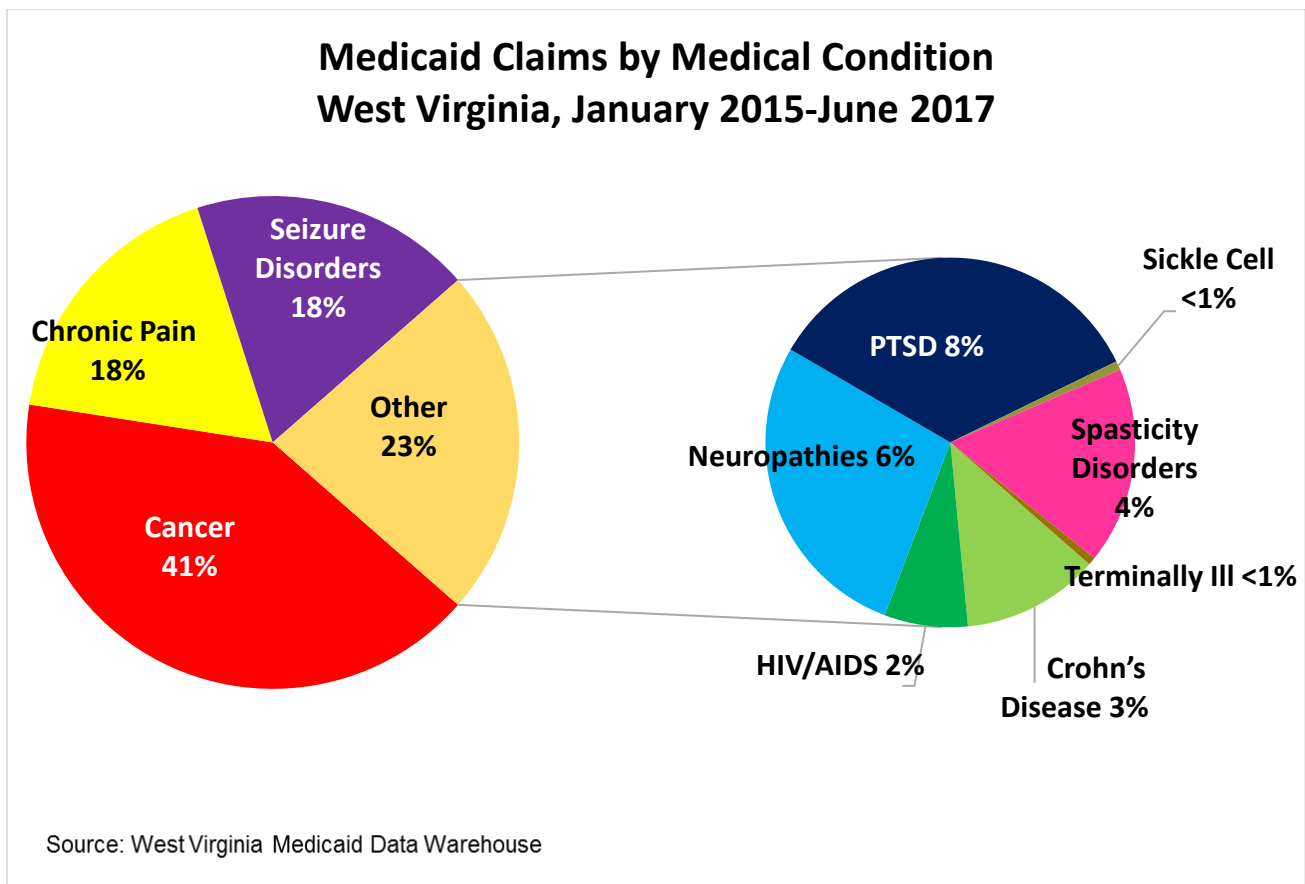


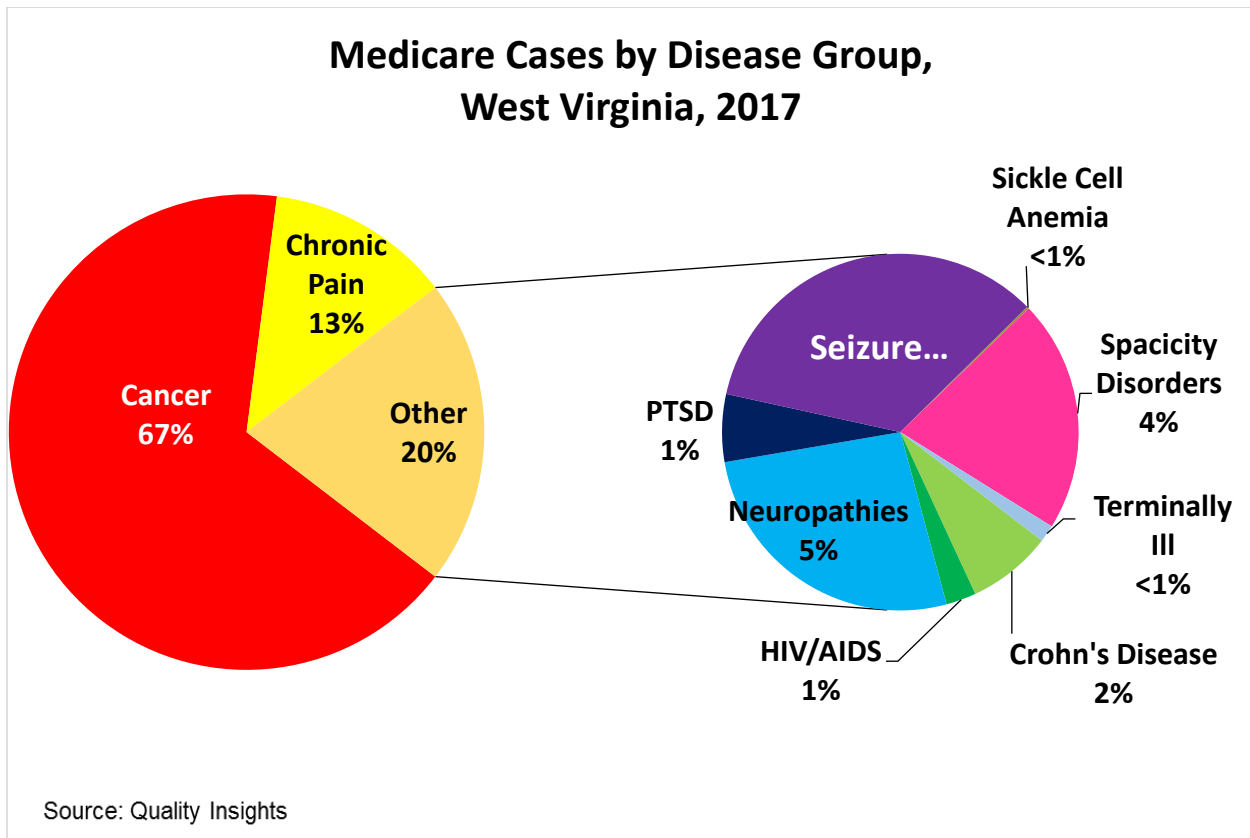
Figure 8. Percentage of Medicaid Serious Medical Claims Data, 2015-2017



Medicare Data Results

Medicare beneficiary data was provided after sharing the ICD 9-10 codes for the 15 serious medical conditions listed in the MCA from Quality Insights, Inc. The count of active members that reflects the diagnostic codes for the applicable serious medical conditions at the state level are displayed in Figure 9. Zip codes and counts less than 12 cases were suppressed. Patient duplicates were removed for each condition claim count. However, patients with multiple conditions are represented within each condition total. There were 347,871 total Medicare claims with 82,603 claims for the serious medical conditions, or 23.7%. These claims, as was seen among Medicaid claims, were primarily for cancer (67%), followed by 20% from other disease groups, then chronic pain comprised 13% of the claims. The “Other” category is also identified by disease group in Figure 9.

Figure 9. Percentage of Medicare Serious Medical Conditions, 2017



Seven percent of the Other disease groups were due to seizure disorders, 5% to neuropathies, 4% for spasticity disorders, 2% for Crohn’s Disease, 1% each for PTSD and HIV/AIDS, and less than 1% for both Sickle Cell Anemia and Terminally Ill patients.

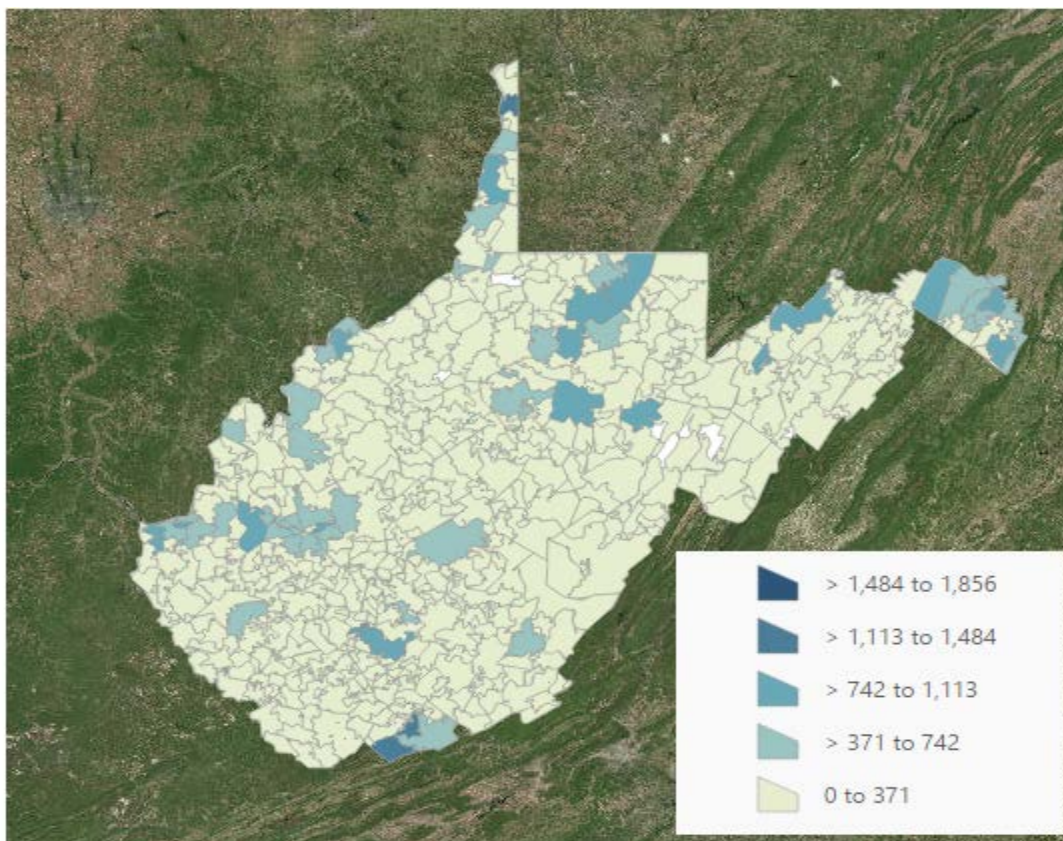
The total number of Medicaid and Medicare claims was 23,825,800 (see Table 2). The Medicaid and Medicare claims associated with the 15 serious medical conditions were combined resulting in a total of 218,326 claims. The 218,326 claims were 0.92% of the total combined Medicaid and Medicare claims that were associated with the MCA 15 serious medical conditions. However, this is an estimate, since the Medicaid data included individuals being counted more than once if they had multiple claims for a different disease/condition. Medicare claims were associated with 82,603 MCA diagnoses or 23.75% of the total 347,871 claims. Medicaid had 135,723 MCA associated diagnosis claims resulting in 0.58% of the 23,477,929 total claims filed from January 2015-June 2017.

Table 2. Medicare-Medicaid Total Claims and MCA Medical Conditions, 2015-2017

| Percentage of Total WV 2015-2017 Medicare and Medicaid Claims Associated with 15 MCA Diagnoses | | | |
|--|-----------------|-----------------|---------------------|
| | Medicare Claims | Medicaid Claims | All Claims Combined |
| Claims Assoc. with 15 MCA Diagnoses | 82,603 | 135,723 | 218,326 |
| Total Claims | 347,871 | 23,477,929 | 23,825,800 |
| Percent of Claims | 23.75% | 0.58% | 0.92% |

Map 5 was produced using zip codes from all who participated in the survey. These data were from all newly diagnosed cancer cases reported from 2012-2014, WV Medicare, and WV Medicaid. There was a potential that people can be counted more than once if they have multiple diagnosed conditions and have coverage from more than one insurance. This can confound the data results.

Map 5. MCA Serious Medical Conditions by Zip Code



CONCLUSION:

This report was an attempt to assess all data available, gathered, and analyzed. The analyses for the available data were gathered to identify potential locations for Medical Cannabis dispensaries. All data analyzed focused on gathering data for the 15 serious medical conditions listed in the Medical Cannabis Act, WV§16A that was passed in the 2017 Legislative Session on April 6, 2017. The Office of Medical Cannabis will rely on data from respondents who completed the survey, patients diagnosed with one or more of the serious medical conditions and physicians who were interested in using medical cannabis for treatment of such conditions. The graphics were developed to explain the data needed for describing the impacted populations that may be treated with medical cannabis. The combined zip code map (Map 5) was displayed in equal interval categories to assign fairness and equality to zip code results.

This report explained that, in 2017:

1. The survey of patients was available for four weeks. However, the response rate for the patient population was low. Patient respondents were approximately 3.3% of the state's population.
2. The physician survey response rate was higher than the patients' survey results at 18.2% of the approximately 8,000 licensed West Virginia physicians.
3. Eighty-two percent of physicians who responded were interested in medical cannabis treatment.
4. These data were not precise as there would be duplicates when combining the data, such as Map 5. For example, if someone was diagnosed with MS and cancer and was insured by PEIA, that person would be counted three times in this map.

LIMITATIONS:

1. Due to a small response from patients and less than a 20% response from physicians, results are not representative and may not be generalized.
2. The most recent three years of data available for analysis in this report were not all from the same time due to reporting requirements and legal restrictions.
3. These analyses, though descriptive in nature, did not lend well to a scientifically designed study.
4. These data will possibly be utilized to position medical cannabis dispensaries. However, WV§16A gave approval from the county commission for dispensaries location. The county commission can support or not support a dispensary being in their county.
5. Convenience sampling with the surveys being open for limited time periods and not enough time for patient respondents to participate. Other patients may not have known or no opportunity to participate.
6. There is an inability to de-duplicate the patient responses.

REFERENCES:

Public Employees Insurance Agency, State-level Data Warehouse: Andrew V. Spangler
West Virginia Electronic HIV/AIDS Reporting system (eHARS): William C. Hoffman
West Virginia Cancer Registry: Steven E. Blankenship
West Virginia Medicaid Data Warehouse: Richard D. Sorvig
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