

West Virginia Cancer Burden Report

2018



Report Prepared by:
WVU Cancer Institute for
the West Virginia Department of Health and Human Resources

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

This report is made possible thanks to the efforts of the WVCR staff, personnel at reporting facilities that see cancer patients throughout West Virginia, and the employees at other state central cancer registries who provided incidence data for this report.

www.cancerregistry.wv.gov
www.wvucancer.org/cancer-prevention-control/

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Preface

The 2018 West Virginia Cancer Burden Report reflects a collaborative effort between the office of Cancer Prevention and Control at the WVU Cancer Institute and the West Virginia Cancer Registry. We continue to partner together to better serve our state, maximize resources, build on the inherent strengths of staff, and generate a user-friendly document. Inside this edition, you will find the usual updates on incidence and mortality, but you will also discover highlighted cancers – breast, cervical, lung, colorectal (also known as colon and rectum), HPV-associated cancers, and new sections on obesity-related cancers and tobacco use. There are summaries, one page infographics, and WV resource pages that are easy to understand, replicate and use in the community. We also included a Frequently Asked Questions section that defines confusing terms and showcases Mountains of Hope, our statewide Cancer Coalition. We encourage everyone to consider joining this organization and assisting in the implementation of the WV Cancer Plan.

This report provides updated statewide, age-adjusted incidence rates and counts for cancers diagnosed among West Virginia residents from 2011 to 2015. The purpose of the report is to provide WV cancer data to cancer prevention and control partners, researchers, policy makers, and the public.

A total of 57,867 new cases (approximately 11,573 cases annually) of invasive (and in situ bladder) cancer was diagnosed among WV residents from 2011 to 2015. During this time period, 29,743 cases (51%) were diagnosed among males and 28,124 cases (49%) were diagnosed among females.

From 2011 to 2015, the most common cancers reported among WV residents were lung and bronchus (10,195; 18%), female breast (7,252; 13%), prostate (5,887; 10%), and colon and rectum (5,703; 10%). These four cancer sites accounted for over half of West Virginia's cancer burden. Other cancers commonly reported in our state included urinary bladder (2,895; 5%), melanoma of the skin (2,347; 4%), non-Hodgkin lymphoma (2,250; 4%), kidney and renal pelvis (2,241; 4%), corpus and uterus (1,987; 3%), leukemia (1,668; 3%), and thyroid (1,634; 3%). Prostate cancer was the most commonly diagnosed cancer in men and accounted for one-fifth (20%) of all cancers diagnosed among men. Breast cancer continues to be the most commonly diagnosed cancer among females accounting for more than a quarter (26%) of all cancers diagnosed in WV women. Lung and bronchus cancer and colon and rectum cancer were the second and third most commonly diagnosed cancers in both sexes, but have higher mortality rates.

Over the past five years there have been increasing and decreasing trends for certain kinds of cancers. Incidence and mortality trends are illustrated on pages 11 and 21 respectively.

Cancer can occur at any age, but is primarily a disease of aging. For most cancer sites the risk of developing cancer increases with age, from birth through ages 75-84. Cancer risk then decreases slightly among those aged 85 and older. However, this is not true for all cancers. Thyroid and testicular cancer, for example, peak at much younger ages. There are also cancers that affect children and data for pediatric cancers in WV can be found on page 19 of this report.

Statewide geographic differences in incidence rates were noted for specific cancer types. There are a variety of reasons why cancer incidence rates vary by county. These reflect random variation, differences in exposure to risk factors (e.g. smoking, diet, physical inactivity, environmental influences), genetics, and cancer screening practices. Appendix B includes county level data for 28 different cancers.



We hope that you find this information helpful and easy to read. We encourage you to use the data and infographic pages for presentations, reports, and grant applications. We truly enjoyed the process of developing this resource and hope the citizens of the Mountain State find it useful and informative.

Sincerely in service,

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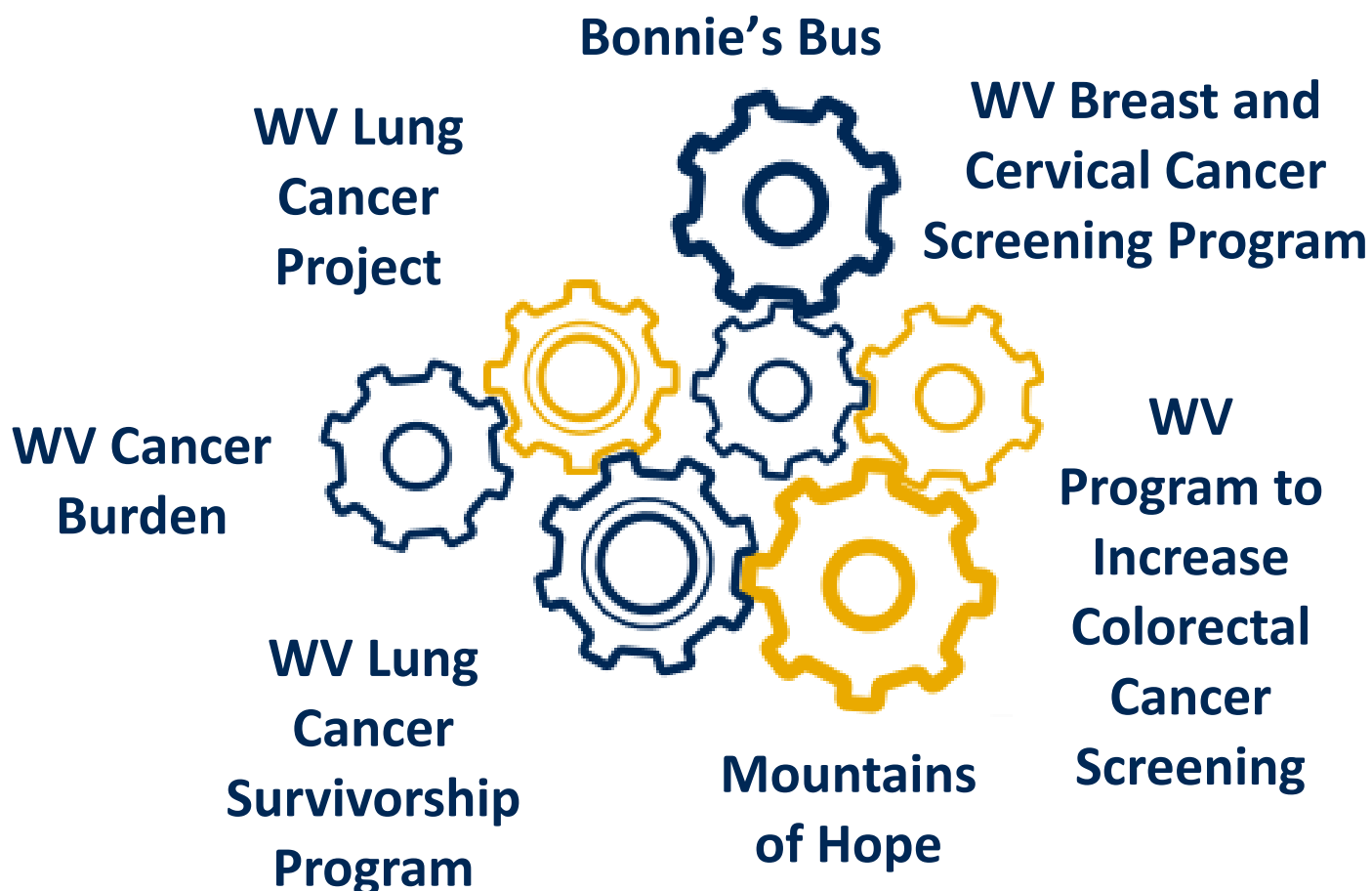
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Overview of Cancer Prevention and Control

Cancer Prevention and Control (CPC) at the West Virginia University Cancer Institute addresses cancer health disparities unique to WV and Appalachia. Central to the Institute's mission, CPC fosters relationships to promote community engagement and innovative service opportunities; develops culturally appropriate education and outreach initiatives; conducts community-based participatory research; and translates cancer-related science and research for WV communities. CPC has served the state with its innovative programs for more than 30 years and connects WV communities to the University and the Cancer Institute. CPC houses seven programs illustrated below. While each CPC program has unique goals, all come together as part of a strategic, comprehensive approach to empower West Virginians to become more active participants in their healthcare through cancer education, information, access to services, and community-based participatory research that benefit the Mountain state. For more information about CPC and specific programs, visit <http://wvucancer.org/cancer-prevention-control/>.

CPC Programs



Overview of West Virginia Cancer Registry

The West Virginia Cancer Registry (WVCR) was established by the West Virginia Department of Health and Human Resources in 1991 as a breast and cervical cancer registry. In 1993, the WVCR became an all-site registry, collecting data on all cancers except basal and squamous cell carcinoma of the skin and in situ cervical cancer. In 2002, the WVCR began collecting data on non-malignant brain and other central nervous system (CNS) tumors. WVCR is funded by both state and federal funding with the latter administered through a cooperative agreement with the Centers for Disease Control and Prevention's National Program of Cancer Registries. Chapter 16-5A-2a of the West Virginia Code and Title 64, West Virginia Administrative Rules, Division of Health, Cancer Registry, Series 68, provide the legal basis of the WVCR.

The mission of the WVCR is to collect and analyze cancer data to determine incidence rates by anatomical site, sex, race, geographic location, and other factors. Registry staff also monitor trends in cancer incidence among WV residents.

The WVCR collects information on all cancers diagnosed and/or treated in the state of WV and, through lawful, reciprocal data sharing agreements, cancers diagnosed and/or treated among WV residents by health care providers outside the state. A WV resident is defined as a person reporting a WV address at the time of a cancer diagnosis.

The WVCR's reference date (the date after which reportable cancer cases must be included in the Registry) is January 1, 1993, for all cancer sites. The reference date for benign brain and CNS neoplasms is January 1, 2002.

The WVCR is subject to certification by the North American Association of Central Cancer Registries (NAACCR). Certification is based on timeliness, completeness, and quality of data. WVCR was certified at the "silver" level for diagnosis years 1997 and 1998 and at the "gold" (highest) level for diagnosis years 1999 through 2015 (the most recent year for which certification results were available at the time of this writing). In addition, WVCR data met the 24-month standards of the National Program of Cancer Registries.

The WVCR is committed to the use of cancer incidence data as a critical component of cancer control and publishes this annual report on cancer incidence in West Virginia to be used by community-based, state, regional, and national cancer control groups. The WVCR provides de-identified data to the Centers for Disease Control and Prevention for the publication of the United States Cancer Statistics and to the North American Association of Central Cancer Registries for the Cancer in North America (CINA) publications. Researchers may obtain access to case level data under strict controls including approval by the relevant Institutional Review Board and the WV Cancer Advisory Committee.

WV Cancer Advisory Committee		
Mohammed Almubarak, MD Mary Babb Randolph Cancer Center	Chaste Truman Barclay American Lung Association of West Virginia	Steve Blankenship, MS DHHR, Bureau for Public Health
Sheryn Carey, BA DHHR, Bureau for Public Health	Michelle Chappell, MS American Cancer Society	Juliana Frederick Curry, MS American Cancer Society Cancer Action Network
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Frequently Asked Questions

1. What is a cancer registry?

A cancer registry is an information system for the collection, management, and analysis of data on people diagnosed with cancer. The registry collects detailed information about cancer patients and the treatments they receive, and stores it in a secure computer database. This information comes from patients' medical records. All names and data that could identify a patient are kept confidential. For every cancer case, the registry includes:

- When the cancer was diagnosed,
- Where the cancer occurred in the body,
- How far advanced the cancer was when it was found,
- The specific type of cancer,
- The type of treatment the patient received, and
- Demographics like age, race, gender, and county of residence.

The cancer registry information can help to answer questions like:

- Are more or fewer people getting colon cancer this year compared to last year?
- Is there a certain area of the state where women are finding out they have breast cancer at a later stage, when it is harder to treat?
- What groups of people are most likely to get lung cancer?

2. How will this report be used?

Public health professionals, researchers, the medical community, and policy makers need information about the number of newly diagnosed cancer cases (called **incidence**) and deaths from cancer (called **mortality**) to understand and address the nation's cancer burden.

Cancer registry information is used to:

- Monitor cancer trends over time,
- Show cancer patterns in various populations and identify high-risk groups,
- Guide planning and evaluation of cancer control programs,
- Help set priorities for allocating health resources, and
- Advance clinical, epidemiologic, and health services research.

The cancer registry information is used by many groups, like the state comprehensive cancer control coalition. Based on the registry data, cancer control partners may find that some people are not getting the cancer screening tests they need or they are making choices that increase their risk of cancer. They can then work with the community to fix the problem. Over time the cancer registry data will help show if their solution reduced the incidence of cancer.

3. How are the data obtained?

The figures and tables on the following pages summarize cancer incidence data for West Virginia for all cancers combined and select cancer types. The data are extracted from patient records and reported directly to the West Virginia Cancer Registry (WVCR). This report includes cases reported to the WVCR as of November 1, 2017. Data included in this report may change in future reports since missed cases are added to the WVCR database.

4. What is a cancer incidence rate?

A cancer incidence rate is defined as the number of new cancer cases that occur for a specified population at risk for developing the disease during a specified time period. Cancer rates are most commonly expressed as the number of cancers per 100,000 population. Rates allow us to compare groups of different population sizes.

5. What are age-adjusted rates?

An age-adjusted rate is statistically modified to account for the different age distributions among populations. Age-adjustment is important when looking at cancer rates because cancer is usually a disease of aging. This is, areas with a more elderly population generally have more cases of cancer, and age-adjustment accounts for this. The rates in this report are age-adjusted using the 2000 U.S. standard population, and are expressed as the rate per 100,000 unless otherwise noted.

6. What is a confidence interval?

A confidence interval is a range of values for a variable of interest (such as a rate) that has a specified probability of containing the true population value. The 95% confidence interval is one of the most common levels of confidence reported. Year to year fluctuations in case counts make the exact rate difficult to determine. With a 95% confidence interval, we can be 95% sure that the true rate lies within that range.

7. What are case counts?

State and county data are presented as total counts for the 5-year period (2011-2015) unless otherwise noted. For an average annual count, divide the 5-year count by 5. In this report, case counts are the number of people who have been diagnosed with an illness in a particular calendar year or span of years.

8. Why are some case counts not available?

Counts were suppressed (indicated by ^) in the tables if the number of cases was less than four. An important reason for suppressing counts is to protect the confidentiality of individuals whose data are included in the report.

9. How were the data analyzed?

SEER*Stat software (version 8.3.5) was used to calculate all cancer incidence rates and counts presented in this report. All rates were expressed per 100,000 population except for pediatric cancers which are shown as the rate per million population. Age-adjusted rates were standardized to the 2000 U.S. standard population (19 age groups).

10. How are the data explained and displayed?

Most of the data in this report are shown as rates per 100,000 people to allow for “apples to apples” comparisons of areas with different population sizes. Ninety-five percent confidence intervals are shown to allow for statistical comparisons. Average annual rates over a 5-year period are shown to provide a more stable estimate of incidence than would be possible with yearly incidence rates. Five-year case counts are provided to show the volume of cases diagnosed and treated each year.

11. What is cancer?

Cancer is a group of more than 100 diseases that develop when cells in the body grow and divide uncontrollably. If the growth and spread is not controlled, it can result in death. Uncontrolled cell growth is nearly the only common feature of different types of cancer. Lung and bronchus cancer, liver cancer, breast cancer, and leukemia, for example, all have very different causes, symptoms, treatments, and after-care requirements.

12. Who is at risk of developing cancer?

Anyone can develop cancer, but risk increases with age. In the United States, men and women combined have about a 1 in 3 lifetime risk of developing invasive cancer.

13. How is cancer staged?

For the purpose of this document we discuss cancer diagnosed at the **local**, **regional**, and **distant stages**. Cancer diagnosed at the **local stage**, otherwise known as a localized tumor, describes a tumor limited to only the tissue or organ where it began. Cancer diagnosed at the **regional stage** defines a tumor that has spread beyond the original tissue or organ into surrounding tissue, organs, or regional lymph nodes. Cancer diagnosed at the **distant stage** describes a tumor whose cells have broken away and traveled from the primary tumor to areas of the body distant from that primary tumor. The earlier a tumor is found, the easier it is to treat, and survival rates are usually higher. This demonstrates the importance of regular screening for these dangerous diseases.

14. What is Mountains of Hope?

Mountains of Hope WV Cancer Coalition (MOH) is dedicated to reducing the human and economic impact of cancer in our state. The founding members of the Coalition include the American Cancer Society, WV Breast and Cervical Cancer Screening Program, WV Comprehensive Cancer Program, and the WVU Cancer Institute.

Part of the Centers for Disease Control and Prevention's National Comprehensive Cancer Control Program, MOH Coalition members meet face-to-face to pool resources and collaborate to address the goals and priorities of the WV Cancer Plan. The WV Cancer Plan is the State's ambitious comprehensive cancer plan that serves as a blueprint to address the needs of the State to improve the overall health equity of all affected by cancer. It is designed to be used by communities, organizations, universities, and legislators who want to decrease the impact of cancer on WV residents. The Coalition selects priority areas to address every two years. The priority areas for 2018-2020 are:

1. Reduce the use of tobacco products and electronic nicotine delivery systems among adults, youth, and young adults.
2. Increase the immunization rates for vaccines shown to decrease the risk of cancer.
3. Increase risk-appropriate screening for colorectal cancer.
4. Increase risk-appropriate screening for lung cancer.
5. Improve the quality of life for cancer survivors in WV.

Coalition members include more than 350 health care professionals, volunteers, cancer survivors and community advocates representing over 200 community-based organizations, research and academic institutions, public and private agencies, coalitions, voluntary associations, patient advocacy groups, and other cancer-related organizations from West Virginia. Learn more about MOH by visiting www.moh.wv.gov.

15. Where can I find additional information on cancer?

Cancer information is available from a variety of credible resources including the following:

- Centers for Disease Control and Prevention—<https://www.cdc.gov/cancer/>,
- National Cancer Institute—<https://www.cancer.gov/about-cancer>,
- American Cancer Society—<http://www.cancer.org/cancer/index>, and
- WVU Cancer Institute—<http://wvucancer.org/>.

16. Where can I direct my questions or suggestions about the WV Cancer Burden Report?

Questions regarding data in the 2018 West Virginia Cancer Burden Report may be directed to 304.356.4953.

Questions or suggestions regarding the 2018 West Virginia Cancer Burden Report should be sent to cpc@hsc.wvu.edu.

References

- American Cancer Society—<http://www.cancer.org/cancer/index>
- Centers for Disease Control and Prevention—<https://www.cdc.gov/cancer/>
- Mountains of Hope WV Cancer Coalition—www.moh.wv.gov
- National Cancer Institute—<https://www.cancer.gov/about-cancer>
- West Virginia Cancer Registry—<http://dhhr.wv.gov/oeps/cancer>
- WVU Cancer Institute—<http://wvucancer.org/>

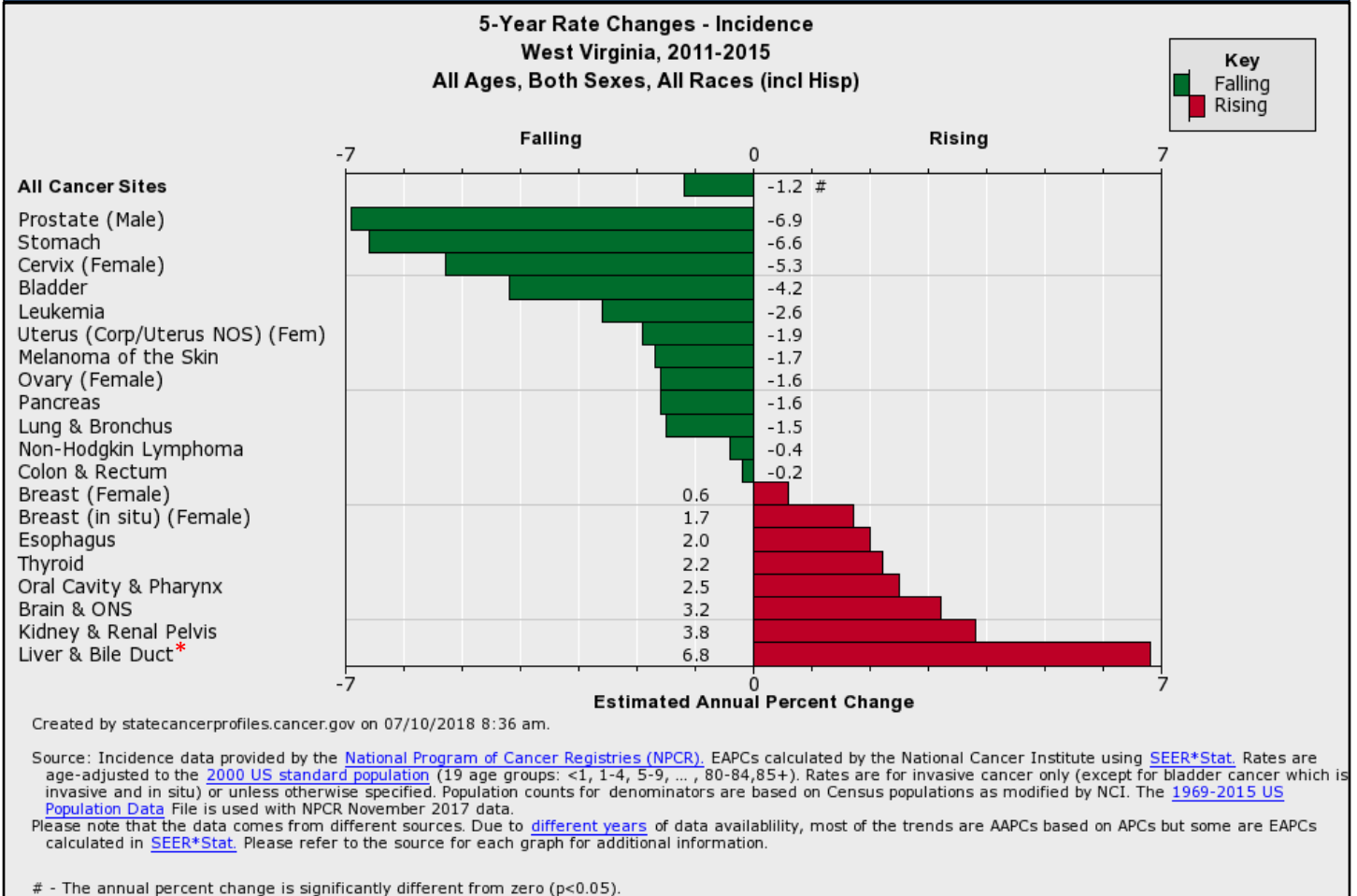
A decorative green vine wreath with intricate scrollwork and leaf patterns, framing the central text.

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2011-2015 Trends in Cancer Incidence

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5-Year Rate Changes – Incidence, West Virginia, 2011-2015

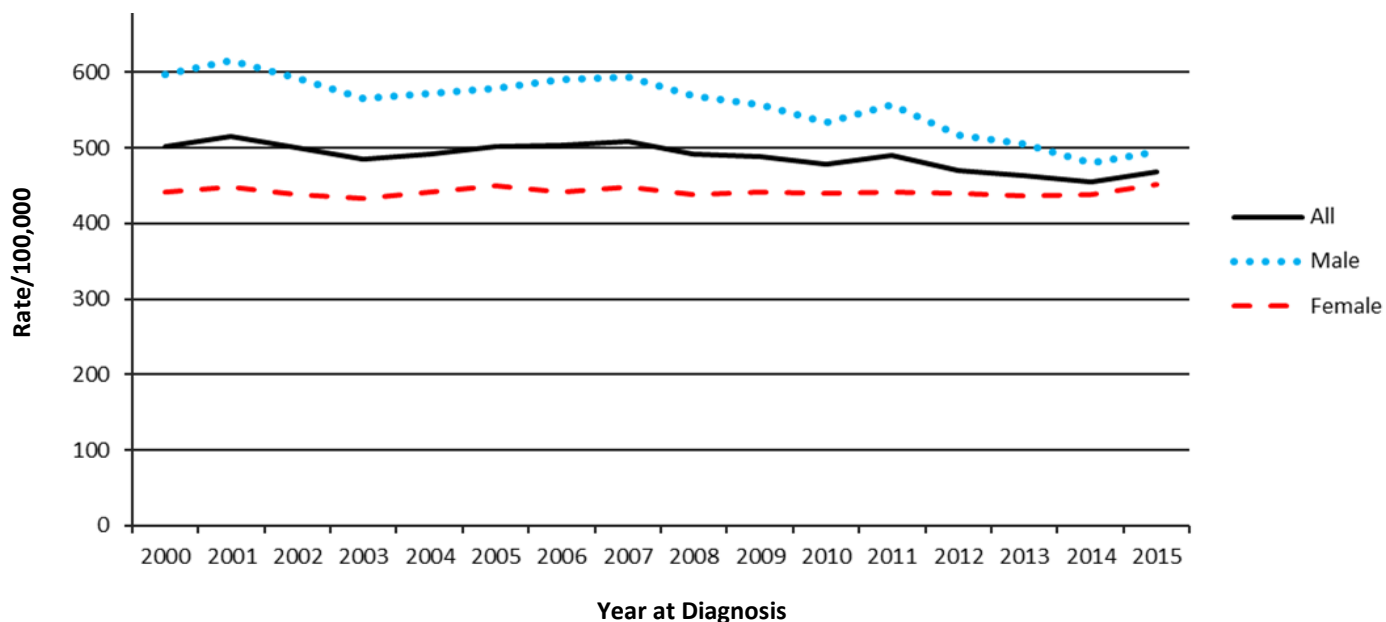


* Although this graphic shows the 6.8% annual rate increase in Liver & Bile Duct cancers is not statistically significant, this increasing trend has continued for several years. In light of high Hepatitis B and C rates in West Virginia, it is likely Liver & Bile Duct cancers will continue to increase in the foreseeable future.

Average Annual Age-Adjusted All Site Cancer Incidence Rate (per 100,000), by Gender, West Virginia, 2000-2015

Year	All	Male	Female
2000	502.4	598.1	442.2
2001	514.8	615.2	448.3
2002	500.8	592.9	438.8
2003	485.1	566.3	432.6
2004	491.8	571.6	441.2
2005	501.2	579.4	449.8
2006	503.1	590.8	441.8
2007	507.9	594.0	447.8
2008	491.5	568.3	437.9
2009	488.1	556.9	441.2
2010	477.7	533.8	440.5
2011	489.7	557.3	442.3
2012	470.7	516.2	439.4
2013	464.0	505.8	437.0
2014	454.4	479.6	438.9
2015	467.7	494.4	451.7

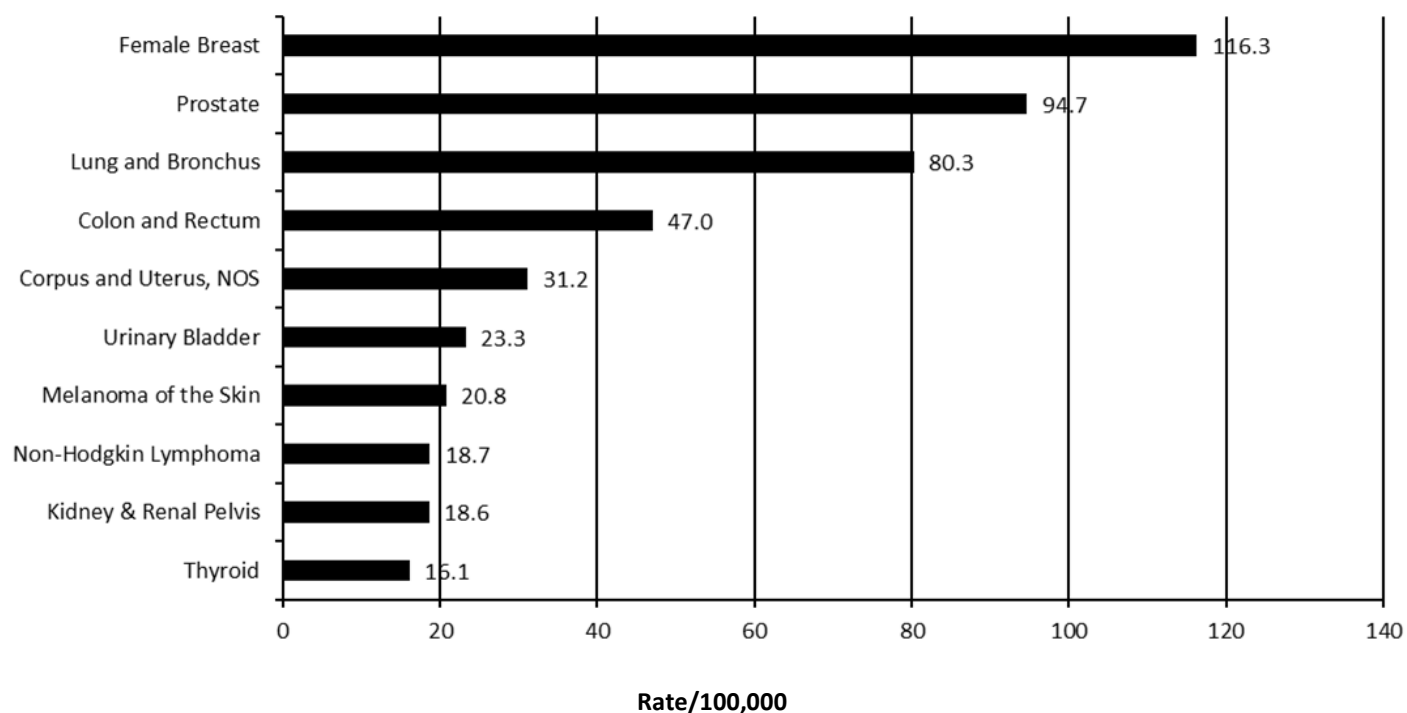
**Average Annual Age-Adjusted All Site Cancer Incidence Rate by Gender,
West Virginia, 2000-2015**



Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000), Top 10 Sites among Men and Women, West Virginia, 2011-2015

Female Breast	116.3
Prostate	94.7
Lung and Bronchus	80.3
Colon and Rectum	47.0
Corpus and Uterus, Not Otherwise Specified	31.2
Urinary Bladder	23.3
Melanomas of the Skin	20.8
Non-Hodgkin Lymphoma	18.7
Kidney and Renal Pelvis	18.6
Thyroid	16.1

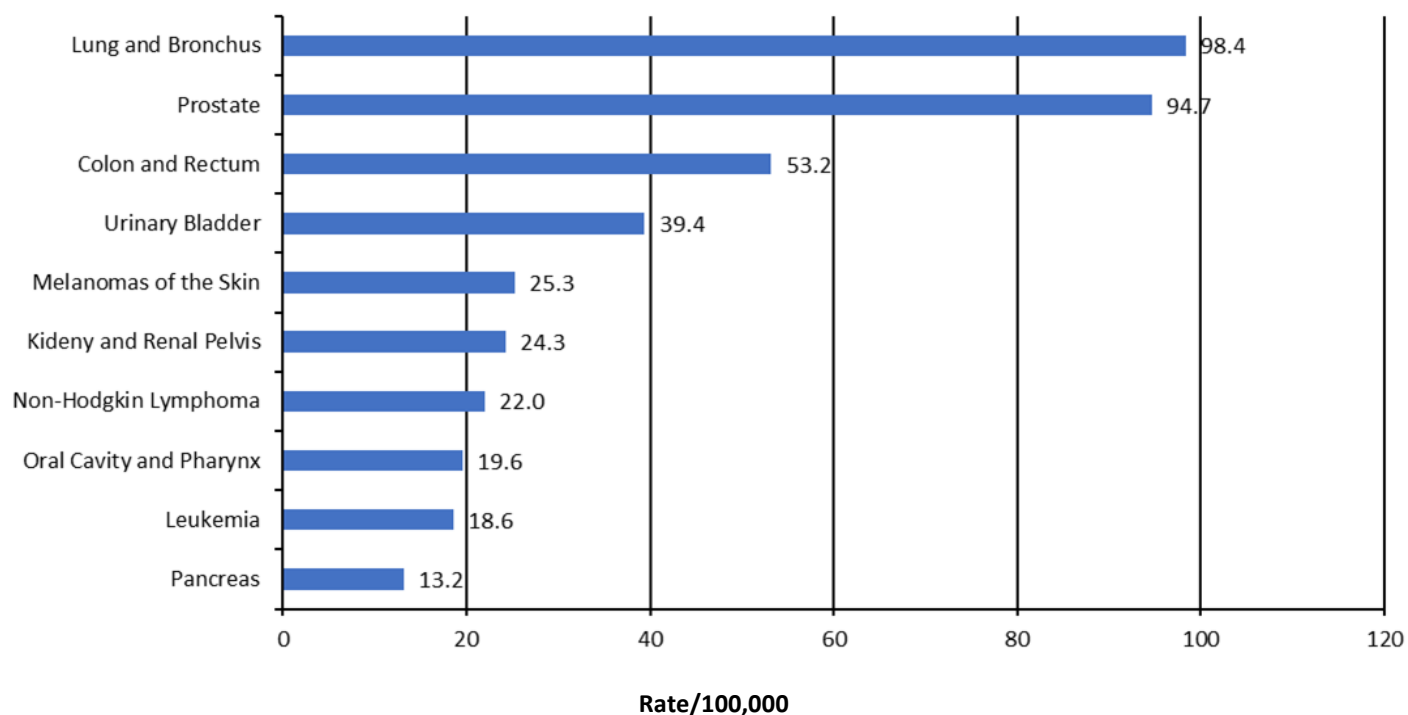
Average Annual Age-Adjusted Cancer Incidence Rates,
Top 10 Sites among Men and Women, West Virginia, 2011-2015



Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000), Top 10 Sites among Men, West Virginia, 2011-2015

Lung and Bronchus	98.4
Prostate	94.7
Colon and Rectum	53.2
Urinary Bladder	39.4
Melanomas of the Skin	25.3
Kidney and Renal Pelvis	24.3
Non-Hodgkin Lymphoma	22.0
Oral Cavity and Pharynx	19.6
Leukemia	18.6
Pancreas	13.2

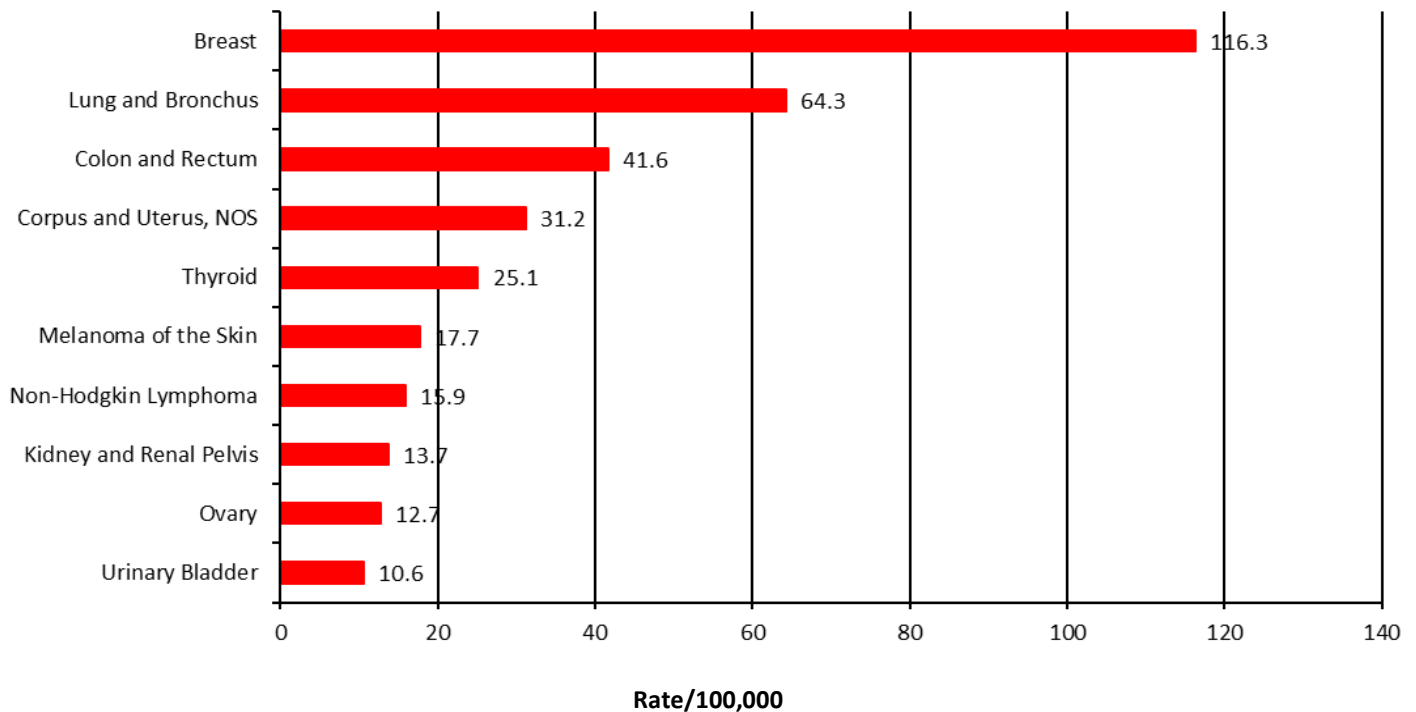
Average Annual Age-Adjusted Cancer Incidence Rates,
Top 10 Sites among Men, West Virginia, 2011-2015



Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),

Breast	116.3
Lung and Bronchus	64.3
Colon and Rectum	41.6
Corpus and Uterus, Not Otherwise Specified	31.2
Thyroid	25.1
Melanoma of the Skin	17.7
Non-Hodgkin Lymphoma	15.9
Kidney and Renal Pelvis	13.7
Ovary	12.7
Urinary Bladder	10.6

Average Annual Age-Adjusted Cancer Incidence Rates,
Top 10 Sites among Women, West Virginia, 2011-2015



Average Annual Age-Adjusted Cancer Incidence Rates, 95% Confidence Intervals, and 5-Year Counts by Select Sites and Gender, West Virginia, 2011-2015											
Cancer Site	Male and Female			Males			Females			Rate	5-Year Count
	Rate	Lower CI	Upper CI	Rate	Lower CI	Upper CI	Rate	Lower CI	Upper CI		
All Sites	476.8	472.8	480.8	519.5	513.4	525.7	448.2	442.8	453.7	448.2	29,743
Oral Cavity and Pharynx	12.8	12.2	13.5	19.6	18.5	20.8	6.6	6.0	7.3	6.6	1,147
Esophagus	5.4	5.0	5.9	9.4	8.6	10.3	1.9	1.6	2.3	1.9	564
Stomach	6.2	5.8	6.7	8.3	7.5	9.1	4.5	4.0	5.0	4.5	474
Small Intestine	2.2	2.0	2.5	2.5	2.1	2.9	2.1	1.7	2.5	2.1	141
Colon and Rectum	47.0	45.8	48.3	53.2	51.2	55.2	41.6	40.0	43.3	41.6	2,974
Liver and Intrahepatic Bile Duct	6.5	6.1	7.0	10.3	9.5	11.2	3.2	2.8	3.7	3.2	630
Gallbladder	0.9	0.7	1.1	0.7	0.5	1.0	1.1	0.8	1.4	1.1	37
Pancreas	11.8	11.2	12.5	13.2	12.2	14.2	10.5	9.8	11.4	10.5	761
Larynx	5.1	4.7	5.5	8.1	7.4	8.9	2.5	2.1	2.9	2.5	498
Lung and Bronchus	80.3	78.7	81.9	98.4	95.8	101.1	66.2	64.3	68.2	66.2	5,725
Bones and Joints	0.9	0.7	1.1	0.9	0.6	1.2	0.8	0.6	1.2	0.8	42
Soft Tissues including Heart	3.1	2.7	3.4	3.6	3.1	4.2	2.7	2.3	3.2	2.7	187
Melanoma of the Skin	20.8	19.9	21.7	25.3	24.0	26.8	17.7	16.5	18.9	17.7	1,364
Breast	61.7	60.2	63.2	1.2	0.9	1.5	116.3	113.5	119.1	116.3	68
Cervix Uteri	—	—	—	—	—	—	9.1	8.2	10.0	9.1	—
Corpus and Uterus, NOS	—	—	—	—	—	—	31.2	29.8	32.6	31.2	—
Ovary	—	—	—	—	—	—	12.7	11.8	13.7	12.7	—
Prostate	—	—	—	94.7	92.3	97.2	—	—	—	—	5,887
Testis	—	—	—	5.6	4.9	6.3	—	—	—	—	232
Urinary Bladder	23.3	22.4	24.2	39.4	37.7	41.1	10.6	9.8	11.4	10.6	2,185
Kidney and Renal Pelvis	18.6	17.9	19.5	24.3	23.0	25.7	13.7	12.7	14.6	13.7	1,370
Brain and Other Nervous System	6.9	6.4	7.4	7.8	7.1	8.7	6.1	5.4	6.8	6.1	407
Thyroid	16.1	15.3	17.0	7.1	6.4	7.9	25.1	23.6	26.6	25.1	383
Hodgkin Lymphoma	2.4	2.0	2.7	2.6	2.2	3.1	2.1	1.7	2.6	2.1	124
Non-Hodgkin Lymphoma	18.7	17.9	19.5	22.0	20.8	23.4	15.9	15.0	17.0	15.9	1,217
Myeloma	6.0	5.6	6.5	7.8	7.1	8.6	4.5	4.0	5.1	4.5	441
Leukemia	14.6	13.8	15.3	18.6	17.4	19.8	11.2	10.3	12.1	11.2	986

Average Annual Age-Adjusted Cancer Incidence Rates, 95% Confidence Intervals, and 5-Year Counts by Select Cancer Sites and Gender for Whites, West Virginia, 2011-2015

Cancer Site	White Males and Females				White Males				White Females			
	Rate	Lower CI	Upper CI	5-Year Count	Rate	Lower CI	Upper CI	5-Year Count	Rate	Lower CI	Upper CI	5-Year Count
All Sites	477.0	472.9	481.1	55,753	518.1	511.9	524.3	28,578	449.5	444.0	455.2	27,175
Oral Cavity and Pharynx	13.0	12.3	13.7	1,524	19.8	18.6	21.1	1,113	6.7	6.0	7.4	411
Esophagus	5.5	5.1	5.9	675	9.5	8.7	10.4	552	1.9	1.6	2.3	123
Stomach	6.1	5.6	6.5	726	8.2	7.4	9.0	451	4.2	3.7	4.8	275
Small Intestine	2.2	1.9	2.5	255	2.4	2.0	2.8	130	2.1	1.7	2.5	125
Colon and Rectum	47.0	45.7	48.3	5,492	52.9	51.0	55.0	2,855	41.7	40.1	43.4	2,637
Liver and Intrahepatic Bile Duct	6.2	5.8	6.7	773	9.9	9.0	10.7	574	3.0	2.6	3.5	199
Gallbladder	0.9	0.7	1.1	106	0.7	0.5	1.0	35	1.1	0.8	1.4	71
Pancreas	11.8	11.1	12.4	1,416	13.2	12.2	14.2	735	10.4	9.6	11.3	681
Larynx	5.2	4.8	5.6	641	8.2	7.5	9.0	485	2.5	2.1	2.9	156
Lung and Bronchus	80.6	79.0	82.3	9,895	98.4	95.8	101.1	5,539	66.9	64.8	68.9	4,356
Bones and Joints	0.9	0.7	1.1	77	0.9	0.6	1.2	38	0.9	0.6	1.2	39
Soft Tissues including Heart	3.1	2.7	3.4	324	3.5	3.0	4.1	177	2.7	2.3	3.2	147
Melanoma of the Skin	21.3	20.4	22.3	2,316	25.9	24.5	27.4	1,346	18.2	17.0	19.4	970
Breast	61.5	60.0	63.0	7,037	1.1	0.9	1.5	64	115.9	113.1	118.8	6,973
Cervix Uteri	—	—	—	—	—	—	—	—	9.1	8.3	10.1	425
Corpus and Uterus, NOS	—	—	—	—	—	—	—	—	31.4	30.0	33.0	1,924
Ovary	—	—	—	—	—	—	—	—	12.7	11.8	13.7	766
Prostate	—	—	—	—	92.4	89.9	95.0	5,537	—	—	—	—
Testis	—	—	—	—	5.9	5.2	6.8	232	—	—	—	—
Urinary Bladder	23.6	22.7	24.5	2,837	39.9	38.2	41.7	2,145	10.7	9.9	11.5	692
Kidney and Renal Pelvis	18.7	17.9	19.6	2,171	24.3	23.0	25.8	1,322	13.8	12.9	14.8	849
Brain and Other Nervous System	7.0	6.4	7.5	718	7.9	7.1	8.8	396	6.1	5.4	6.9	322
Thyroid	16.3	15.4	17.1	1,572	7.2	6.4	8.0	368	25.2	23.7	26.7	1,204
Hodgkin Lymphoma	2.4	2.1	2.8	219	2.7	2.2	3.2	121	2.1	1.7	2.6	98
Non-Hodgkin Lymphoma	18.8	18.0	19.6	2,186	22.1	20.8	23.4	1,178	16.1	15.1	17.2	1,008
Myeloma	5.8	5.4	6.3	702	7.5	6.8	8.3	411	4.4	3.9	4.9	291
Leukemia	14.5	13.8	15.2	1,599	18.4	17.2	19.7	945	11.2	10.3	12.1	654

Average Annual Age-Adjusted Cancer Incidence Rates, 95% Confidence Intervals, and 5-Year Counts by Select Cancer Sites and Gender for Blacks, West Virginia, 2011-2015													
Cancer Site	Black Males and Females				Black Males				Black Females				
	Rate	Lower CI	Upper CI	5-Year Count	Rate	Lower CI	Upper CI	5-Year Count	Rate	Lower CI	Upper CI	5-Year Count	
All Sites	453.3	430.3	477.1	1,571	529.2	492.0	568.4	891	389.4	359.9	420.7	680	
Oral Cavity and Pharynx	11.1	7.7	15.4	37	17.5	11.1	26.1	27	6.2	2.9	11.5	10	
Esophagus	2.7	1.3	5.2	10	3.5	1.3	7.6	7	1.8	0.3	5.3	3	
Stomach	10.2	6.9	14.4	34	10.7	6.1	17.4	19	9.0	4.9	14.9	15	
Small Intestine	4.6	2.4	7.7	14	8.0	3.8	14.6	11	1.9	0.4	5.6	3	
Colon and Rectum	49.4	41.9	57.8	167	56.5	44.6	70.4	93	41.9	32.7	52.9	74	
Liver and Intrahepatic Bile Duct	14.3	10.8	18.5	61	20.6	15.1	27.9	47	7.3	3.9	12.5	14	
Gallbladder	1.2	0.3	3.1	4	1.1	0.1	4.2	2	1.3	0.1	4.7	2	
Pancreas	13.9	10.0	18.7	46	13.1	7.8	20.4	22	13.4	8.5	20.2	24	
Larynx	4.1	2.2	6.9	15	5.1	2.3	9.9	10	2.9	0.9	6.9	5	
Lung and Bronchus	68.1	59.2	77.9	227	96.2	79.7	114.9	142	47.7	38.0	59.3	85	
Bones and Joints	1.1	0.3	2.8	4	1.5	0.3	4.8	3	0.6	0.0	3.3	1	
Soft Tissue including Heart	4.2	2.2	7.1	14	4.4	1.6	9.5	7	4.3	1.7	8.9	7	
Melanoma of the Skin	0.6	0.1	2.3	2	0.0	0.0	2.4	0	1.5	0.2	5.1	2	
Breast	64.0	55.4	73.5	213	2.5	0.5	7.0	4	123.8	107.1	142.3	209	
Cervix Uteri	—	—	—	—	—	—	—	—	2.3	0.6	5.9	4	
Corpus and Uterus, NOS	—	—	—	—	—	—	—	—	20.2	14.2	28.0	39	
Ovary	—	—	—	—	—	—	—	—	12.2	7.5	18.7	22	
Prostate	—	—	—	—	156.5	137.5	177.3	285	—	—	—	—	
Testis	—	—	—	—	0.0	0.0	2.4	0	—	—	—	—	
Urinary Bladder	11.9	8.3	16.4	38	19.1	12.2	28.3	28	5.5	2.6	10.4	10	
Kidney and Renal Pelvis	17.6	13.4	22.7	62	23.7	16.7	32.6	42	11.5	6.9	18.0	20	
Brain and Other Nervous System	2.4	1.0	4.8	8	2.9	0.9	6.9	5	1.8	0.4	5.3	3	
Thyroid	11.3	8.0	15.5	41	5.6	2.8	10.1	12	17.5	11.5	25.3	29	
Hodgkin Lymphoma	1.3	0.5	3.0	6	0.8	0.1	3.5	2	1.9	0.5	5.2	4	
Non-Hodgkin Lymphoma	12.5	8.9	17.0	43	15.6	9.8	23.5	26	9.4	5.4	15.3	17	
Myeloma	12.7	9.0	17.4	42	17.4	10.7	26.6	24	9.7	5.7	15.6	18	
Leukemia	15.4	11.3	20.4	51	20.8	13.7	30.1	32	10.9	6.4	17.2	19	

Average Annual Age-Adjusted Pediatric Cancer (Ages 0-19) Incidence Rates and 5-Year Counts, West Virginia and United States, 2011-2015

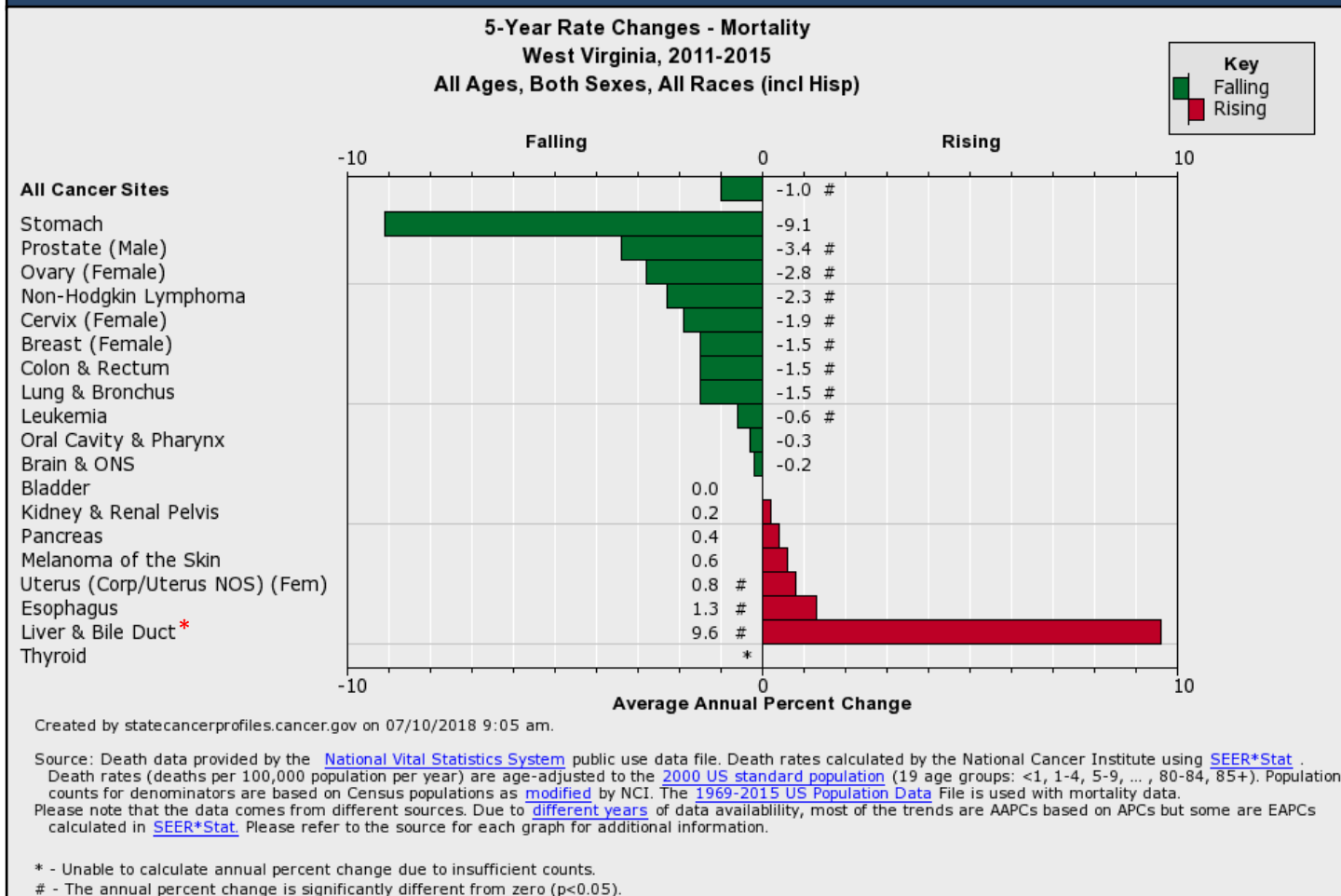
International Classification of Childhood Cancer Grouping	West Virginia		United States	
	Rate per Million	5-Year Count	Rate per Million	5-Year Count
All Pediatric Invasive Cancer Sites	178.5	384	186.1	76,943
Leukemias, myeloproliferative and myelodysplastic diseases	41.0	88	48.0	19,779
Lymphomas and reticuloendothelial neoplasms	25.8	56	29.4	12,169
Central nervous system and miscellaneous intracranial and intraspinal neoplasms	35.1	75	32.3	13,293
Neuroblastoma and other peripheral nervous cell tumors	12.7	27	9.0	3,719
Retinoblastoma	7.5	16	3.3	1,360
Renal tumors	8.0	17	7.4	3,033
Hepatic tumors	1.4	3	2.6	1,085
Malignant bone tumors	8.4	18	9.1	3,753
Soft tissue and other extraosseous sarcomas	10.3	22	12.1	4,982
Germ cell and trophoblastic tumors, and neoplasms of gonads	7.8	17	11.4	4,738
Other malignant epithelial neoplasms and melanomas	20.1	44	20.6	8,601
Other and unspecified malignant neoplasms	0.0	0	0.8	325
Not classified by International Classification of Childhood Cancer, or in situ	0.5	1	0.3	106

Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence, WOONDER Online Database. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2018. Accessed at <http://wonder.cdc.gov/cancerv2015.html> on Oct. 18, 2018 at 3:16 PM

2011-2015 Trends in Cancer Mortality

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5-Year Rate Changes for Select Cancers – Mortality, West Virginia, 2011-2015

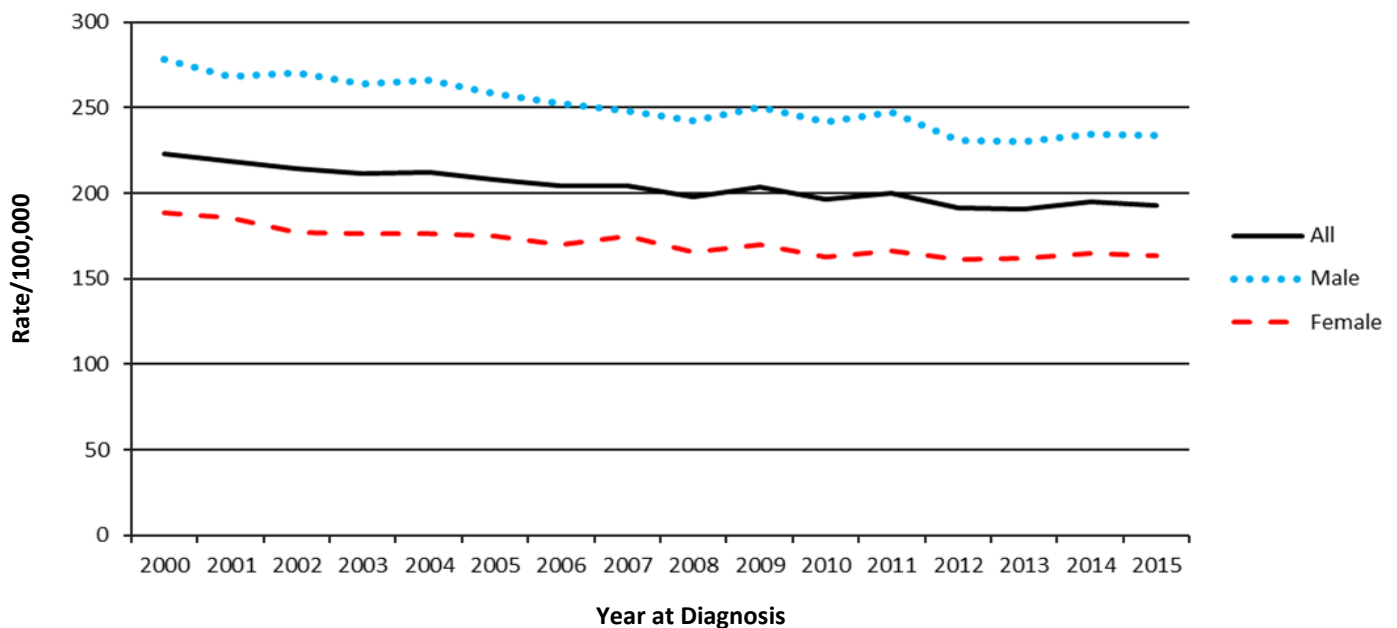


* As mentioned on page 11, Liver and Bile Duct cancers are increasing, and this graphic shows a significant increasing trend in deaths from this cancer. High Hepatitis B and C rates in West Virginia suggest this trend will continue to increase for the foreseeable future.

Average Annual Age-Adjusted All Site Cancer Mortality Rate (per 100,000), by Gender, West Virginia, 2000-2015

Year	All	Males	Females
2000	222.7	278.1	188.3
2001	218.5	268.4	185.6
2002	214.7	270.1	177.0
2003	211.2	263.7	176.2
2004	212.3	266.3	176.6
2005	207.6	258.1	175.1
2006	204.0	252.3	170.0
2007	204.3	248.0	174.6
2008	197.9	242.7	165.8
2009	203.3	250.6	170.2
2010	196.6	241.5	162.6
2011	199.7	247.7	166.1
2012	191.1	230.6	161.6
2013	190.5	229.9	161.7
2014	194.7	234.4	164.8
2015	193.1	233.5	163.2

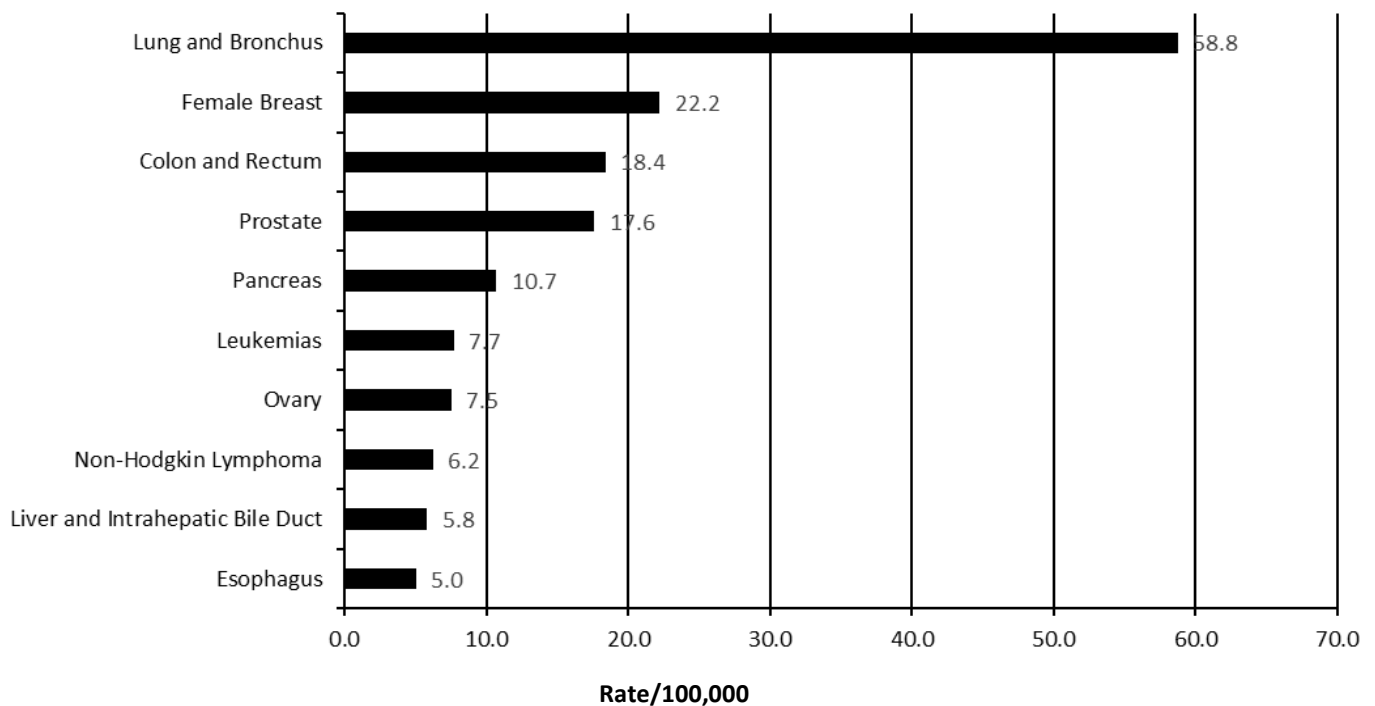
Average Annual Age-Adjusted All Site Cancer Mortality Rate by Gender,
West Virginia, 2000-2015



Average Annual Age-Adjusted Cancer Mortality Rates (per 100,000),

Site	Age-adjusted Rate	Deaths	Population
Lung and Bronchus	58.8	7,410	9,254,330
Female Breast	22.2	1,453	4,682,484
Colon and Rectum	18.4	2,254	9,254,330
Prostate	17.6	874	4,571,846
Pancreas	10.7	1,337	9,254,330
Leukemias	7.7	924	9,254,330
Ovary	7.5	512	4,682,484
Non-Hodgkin Lymphoma	6.2	770	9,254,330
Liver and Intrahepatic Bile Duct	5.8	736	9,254,330
Esophagus	5.0	639	9,254,330

Average Annual Age-Adjusted Cancer Mortality Rates,
Top 10 Sites among Men and Women, West Virginia, 2011-2015

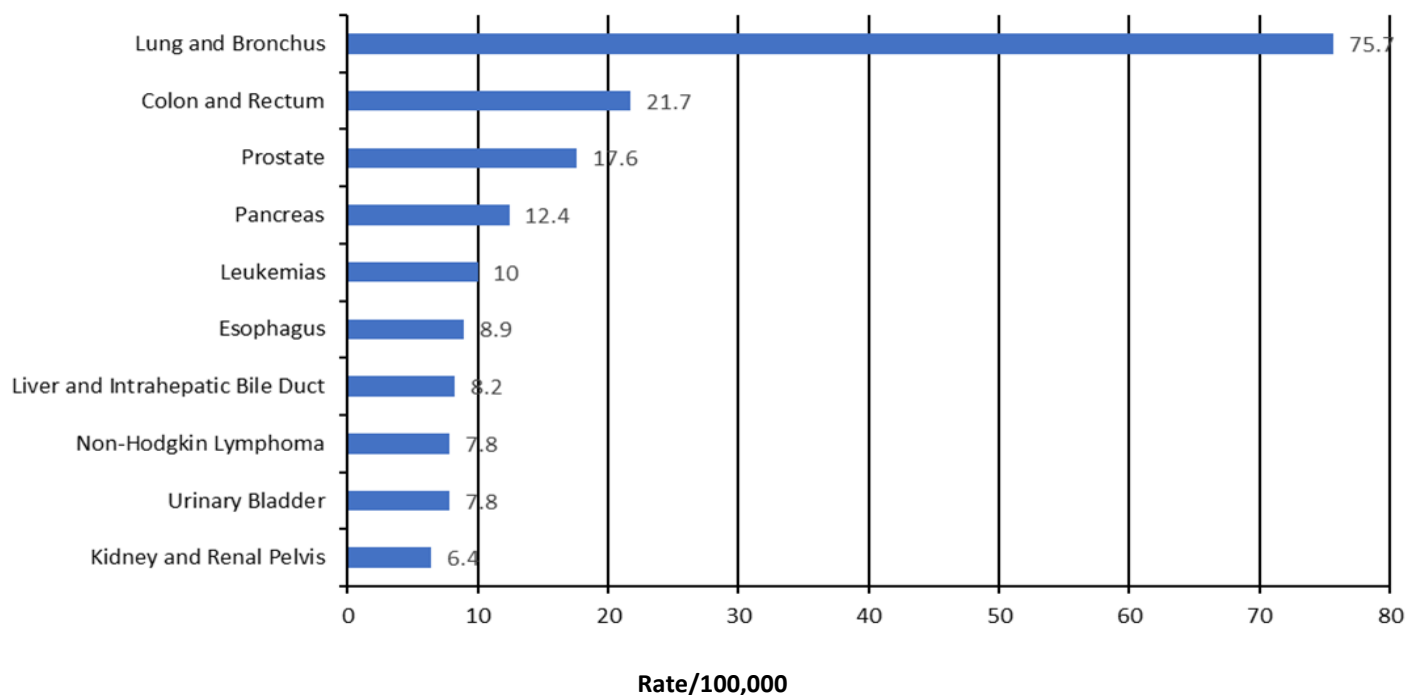


U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on November 2017 submission data (1999-2015): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/dataviz, June 2018.

Average Annual Age-Adjusted Cancer Mortality Rates (per 100,000), Top 10 Sites among Men, West Virginia, 2011-2015

Site	Age-adjusted Rate	Deaths	Population
Lung and Bronchus	75.7	4,311	4,571,846
Colon and Rectum	21.7	1,186	4,571,846
Prostate	17.6	874	4,571,846
Pancreas	12.4	707	4,571,846
Leukemias	10.0	515	4,571,846
Esophagus	8.9	520	4,571,846
Liver and Intrahepatic Bile Duct	8.2	490	4,571,846
Urinary Bladder	7.8	409	4,571,846
Non-Hodgkin Lymphoma	7.8	425	4,571,846
Kidney and Renal Pelvis	6.4	359	4,571,846

Average Annual Age-Adjusted Cancer Mortality Rates, Top 10 Sites among Men, West Virginia, 2011-2015

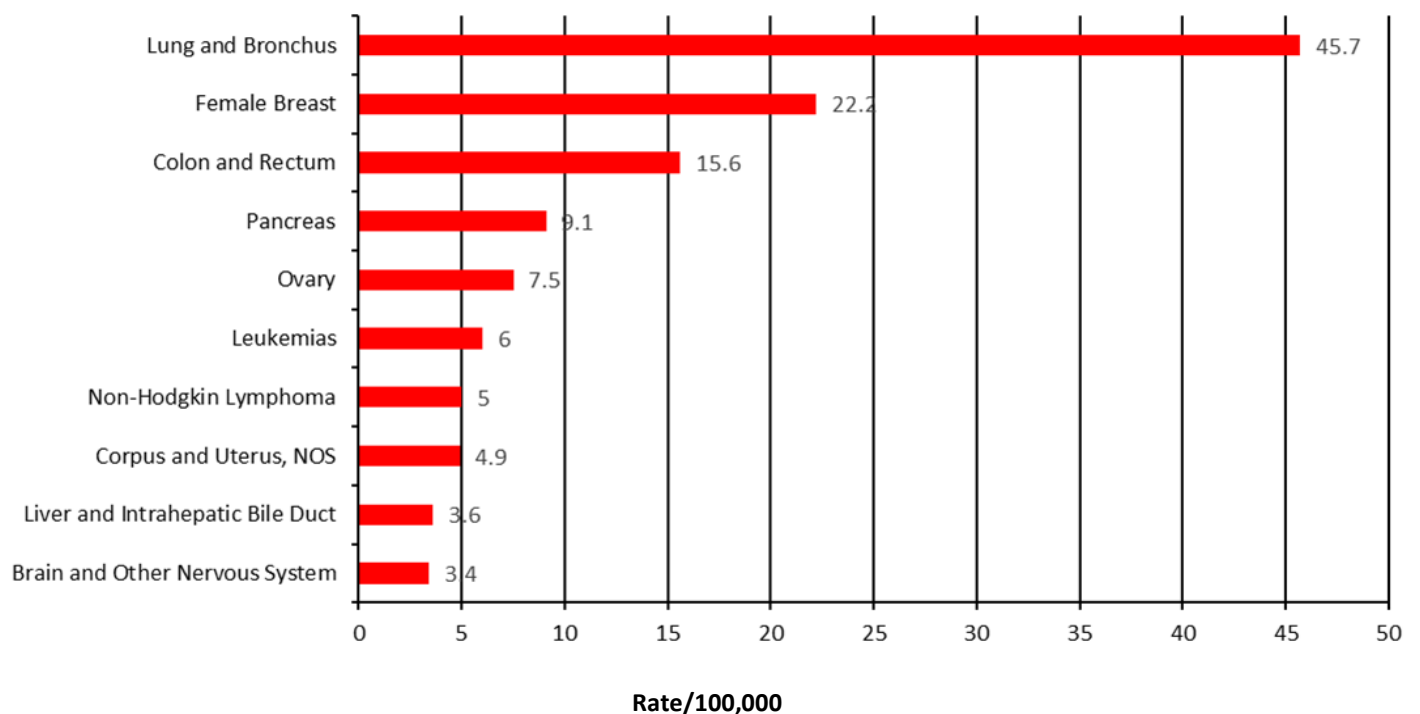


U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on November 2017 submission data (1999-2015): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/dataviz, June 2018.

Average Annual Age-Adjusted Cancer Mortality Rates (per 100,000),

Site	Age-adjusted Rate	Deaths	Population
Lung and Bronchus	45.7	3,099	4,682,484
Female Breast	22.2	1,453	4,682,484
Colon and Rectum	15.6	1,068	4,682,484
Pancreas	9.1	630	4,682,484
Ovary	7.5	512	4,682,484
Leukemias	6.0	409	4,682,484
Non-Hodgkin Lymphoma	5.0	345	4,682,484
Corpus and Uterus, Not Otherwise Specified	4.9	342	4,682,484
Liver and Intrahepatic Bile Duct	3.6	246	4,682,484
Brain and Other Nervous System	3.4	217	4,682,484

Average Annual Age-Adjusted Cancer Mortality Rates,
Top 10 Sites among Women, West Virginia, 2011-2015



U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on November 2017 submission data (1999-2015): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/dataviz, June 2018.

Summaries, Infographics, and Program Information

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Breast Cancer in West Virginia

Breast cancer starts when cells in the breast begin to grow out of control. These cells usually form a tumor that can often be seen on an x-ray, called a mammogram, or felt as a lump. Breast cancer occurs almost entirely in women, but men can get it, too.¹ An individual woman has a 1 in 8 chance of developing breast cancer over an 80-year lifespan.²

Not counting some types of skin cancer, breast cancer is the most common cancer diagnosed in women in the United States regardless of race and ethnicity. Getting mammograms regularly can lower the risk of dying from breast cancer.³ Mammograms are the best way to find breast cancer early, when it is easier to treat and before it is big enough to feel or cause symptoms.⁴ The screening guidelines for breast cancer vary from one national organization to another so women are encouraged to talk to their health care provider about what screening schedule is best for them.

Breast cancer is the most commonly diagnosed cancer and the second leading cause of cancer-related death in WV women.⁵ Each year in WV, approximately 1,450 women are diagnosed and 290 women die of breast cancer.⁶ Over half (55%) of the women with breast cancer in WV are diagnosed with localized breast cancer.⁵

Risk factors for breast cancer include being female, increased age, and certain genetic mutations. Other factors that increase risk include early menstrual period, late or no pregnancy, starting menopause after age 55, not being physically active, being overweight or obese after menopause, having dense breasts, using combination hormone therapy, taking oral contraceptives, personal history of breast cancer, personal history of certain non-cancerous breast diseases, family history of breast cancer, previous treatment using radiation therapy, exposure to diethylstilbestrol (DES), and drinking alcohol. Research suggests that other factors such as smoking, being exposed to chemical that can cause cancer (carcinogens), and night shift working may also increase breast cancer risk.⁷ Actions that a person can take to help lower their risk of breast cancer include: breastfeeding, limiting alcoholic drinks to no more than one per day, limiting exposure to carcinogens, limiting exposure to radiation, asking about the risks of hormone replacement therapy and oral contraceptives before taking them, engaging in regular physical activity, getting enough sleep, and maintaining a healthy weight.⁸

The bottom line is that breast cancer screening saves lives and mammograms are the best early detection test currently available.

1. American Cancer Society. Accessed at <http://www.cancer.org/cancer/breastcancer/detailedguide/breast-cancer-what-is-breast-cancer> on 8/23/18 at 12:26 AM.

2. National Cancer Institute. Accessed at <https://www.cancer.gov/types/breast/risk-fact-sheet> on 8/23/18 at 12:27 AM.

3. Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/cancer/breast/statistics> on 9/25/18 at 8:56 AM.

4. Centers for Disease Control and Prevention. Accessed at https://www.cdc.gov/cancer/breast/basic_info/screening.htm on 10/5/17 at 3:00 PM.

5. WV Cancer Registry.

6. United States Cancer Statistics: 2011 - 2015 Data Visualizations Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2018. Available at www.cdc.gov/uscs.

7. Centers for Disease Control and Prevention. Accessed at https://www.cdc.gov/cancer/breast/basic_info/risk_factors.htm on 8/23/18 at 11:52 AM.

8. Centers for Disease Control and Prevention. Accessed at https://www.cdc.gov/cancer/breast/basic_info/prevention.htm on 8/23/18 at 11:54 AM.

Breast Cancer in West Virginia

Breast Cancer Incidence in West Virginia per 100,000 women

116.3

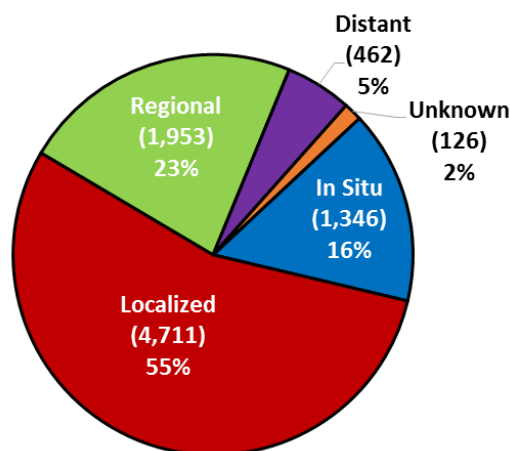
Breast Cancer Deaths in West Virginia per 100,000 women

22.2

ONLY
73.7%
OF WV WOMEN AGED 40 AND OLDER HAVE HAD A MAMMOGRAM WITHIN THE PAST 2 YEARS

<http://www.wvdhhr.org/bph/hsc/pubs/brfss/2014/BRFSS2014.pdf>

Percentage of Female Breast Cancer Cases by Stage at Diagnosis, West Virginia, 2011-2015



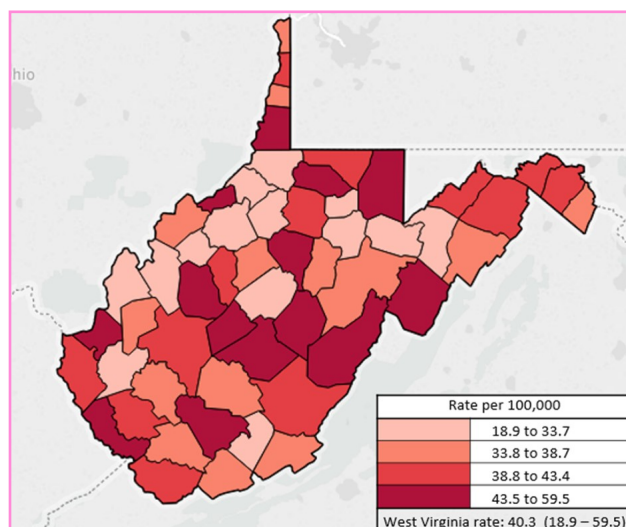
Breast Cancer Risk Factors

- Being female
- Increasing age
- Genetic mutations

Other factors that:

Decrease Risk	Increase Risk
Starting first period at a later age	Long-term use of HRT
Starting menopause at an earlier age	Family history of breast cancer
Giving birth to more children, being younger at birth of first child, and breastfeeding	Personal history of breast cancer and non-cancerous breast conditions
Engaging in regular physical activity	Treatment with radiation to the breast or chest
Maintaining a healthy weight	Exposure to diethylstilbestrol (DES)
Getting enough sleep	Alcohol intake

Average Annual Age-Adjusted Late Stage Breast Cancer Incidence Rates by County, West Virginia, 2011-2015



Breast cancer is the most commonly diagnosed cancer among women in our state.

Breast cancer screening saves lives and women are encouraged to talk with their health care provider about what screening schedule is best for them.

Breast Cancer Programs in West Virginia

WV BREAST AND CERVICAL CANCER SCREENING PROGRAM

The West Virginia Breast and Cervical Cancer Screening Program (WVBCCSP) is a public health program that helps uninsured and underinsured women gain access to free or low-cost breast and cervical cancer screening services. For the prevention of breast cancer, the WVBCCSP provides clinical breast exams and mammograms to eligible women, as well as diagnostic testing for those whose screening outcome is abnormal.

Who is eligible for these free or low-cost services?

Women:

- between the ages of 25 and 64
- with no health insurance or who are underinsured
- who meet income guidelines, and
- who are WV residents

WVBCCSP Income Guidelines

Family Size	Monthly	Yearly
1	\$2,529	\$30,348
2	\$3,429	\$41,148
3	\$4,329	\$51,948
4	\$5,229	\$62,748
5	\$6,129	\$73,548

Effective 6/30/2018-6/29/2019

CONTACT: WVBCCSP at 304.558.5388 or 1.800.642.8522 and ask to speak to someone in the Program

RESOURCES: <http://www.wvdhhr.org/bccsp/>

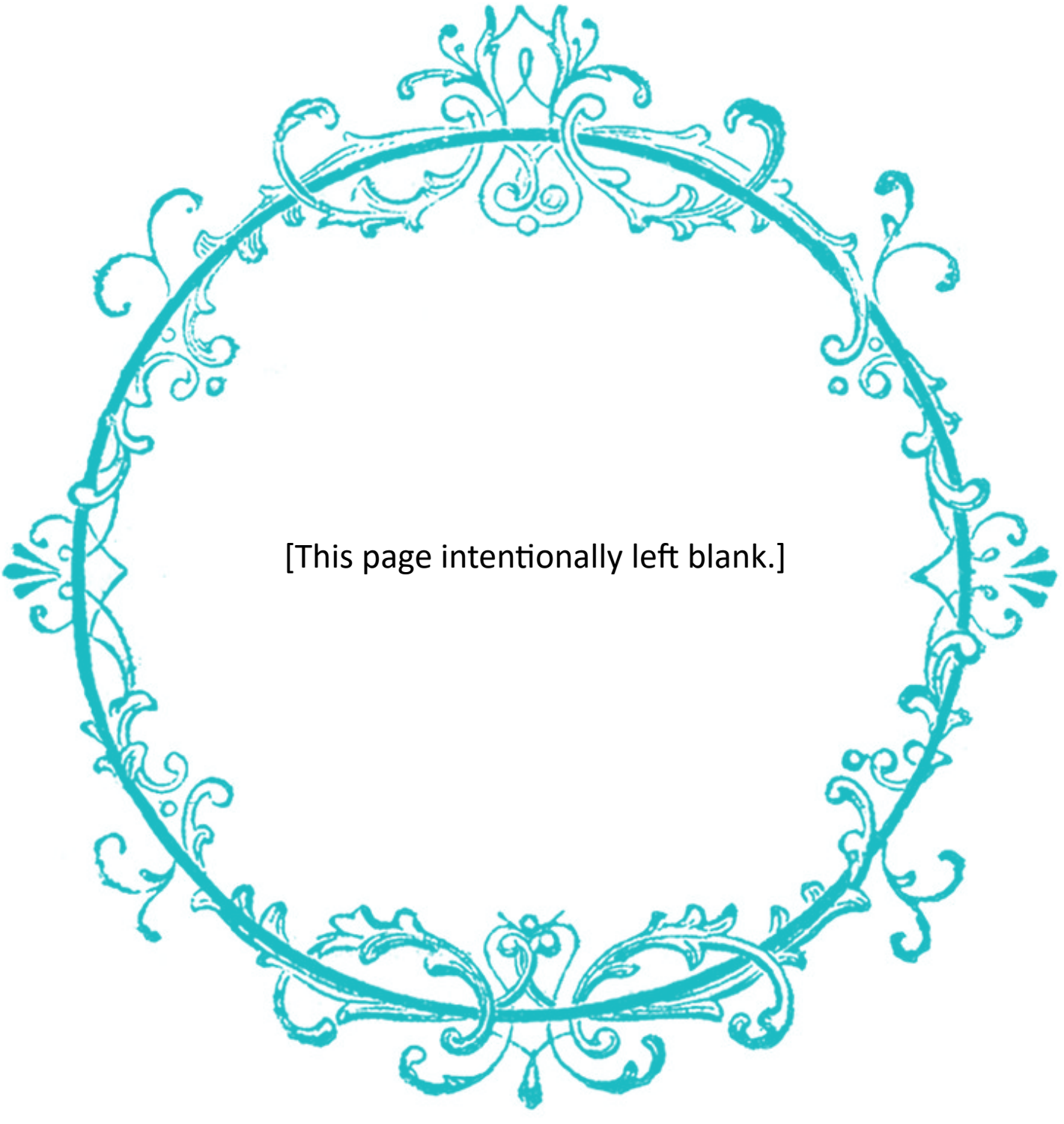
BONNIE'S BUS

Bonnie's Bus, a 3-D mobile mammography unit, travels across West Virginia providing breast cancer screening in a comfortable, easy to access environment close to a patient's home. The Bus serves women with private insurance, Medicare, Medicaid, and those enrolled in the West Virginia Breast and Cervical Cancer Screening Program. Grant funds and donations are available to pay for women without any other coverage, so no woman over the age of 40 is ever turned away. Bonnie's Bus is a program of the WVU Cancer Institute and WVU Medicine. It has served the state since 2009 and provided over 17,900 mammograms.

CONTACT: WVU Office of Cancer Prevention and Control at 304.293.2370 or 1.877.287.2272

RESOURCES: <http://wvucancer.org/cancer-prevention-control/bonnies-bus/>





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Cervical Cancer in West Virginia

Cancer of the cervix or cervical cancer is cancer that begins to grow in the lining of the cervix, the lower, narrow end of the uterus.¹ Cervical cancer usually begins as a pre-cancer and takes years to develop. A Pap test easily detects pre-cancerous or cancer cells, and when found early this cancer is highly treatable with good outcomes and long survival.²

Screening with Pap and Human Papillomavirus (HPV) tests is the easiest way to find cervical changes early. Cervical cancer screening saves lives and women should start getting a Pap test at age 21. Between the ages of 21 and 30, women should receive screening every three years. After age 30 women have a choice: Pap tests alone every three years or Pap tests plus HPV test every five years. All positive results require follow-up with a healthcare provider.³ Completing these screening tests from ages 21 through 65 aids in the prevention and early detection of cervical cancer. In fact, up to 93% of cervical cancer can be prevented by screening and HPV vaccination.⁴

In addition to the Pap test, another way to prevent this cancer is use of the HPV vaccine. This vaccine is recommended for both boys and girls starting at ages 11-12. The vaccine works best before exposure to HPV so the shot is given at these ages, prior to the initiation of any sexual contact. If not vaccinated at younger ages, catch up vaccines are suggested for males up to age 21 and females up to age 26.⁵

In 2015 in WV, 80 women were diagnosed with and 28 women died of cervical cancer.⁶ Although these numbers are small, WV usually ranks in the top five for both cervical cancer incidence and mortality when compared with other states. Over half (51%) of the women with cervical cancer in WV are diagnosed with regional or distant metastasis.⁷

Risk factors for cervical cancer include infection with HPV, smoking, using birth control for five years or more, giving birth to three or more children, having several sexual partners, or having human immunodeficiency virus.⁶

The bottom line is that cervical cancer is a preventable cancer that can be found early, even as a pre-cancer. Vaccination and screening lead to prevention and early detection of cervical cancer. No West Virginia woman should die of cervical cancer.

1. American Cancer Society. Accessed at <http://www.cancer.org/cancer/cervicalcancer/detailedguide/cervical-cancer-what-is-cervical-cancer> on 8/22/2018 at 12:31 PM.

2. Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/cancer/cervical/> on 8/22/2018 at 12:32 PM.

3. Centers for Disease Control and Prevention. Accessed at www.cdc.gov/cancer/cervical/basic_info/screening.htm on 8/15/2018 at 10:47 AM.

4. Vital Signs 2014, Centers for Disease Control and Prevention. Accessed at www.cdc.gov/vitalsigns/cervical-cancer/index.html on 8/15/2018 at 10:56 AM.

5. Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/std/HPV/STDFact-HPV.htm#a4> on 8/22/2018 at 1:13 PM.

6. Centers for Disease Control and Prevention. Accessed at www.cdc.gov/cancer/dataviz/ on 8/22/2018 at 1:45 PM.

7. North American Association of Central Cancer Registries. Accessed at <https://faststats.naaccr.org/selections.php?#Output> on 8/22/2018 at 1:17 PM.

Cervical Cancer in West Virginia

Cervical Cancer Incidence in West Virginia per 100,000 women

9.1

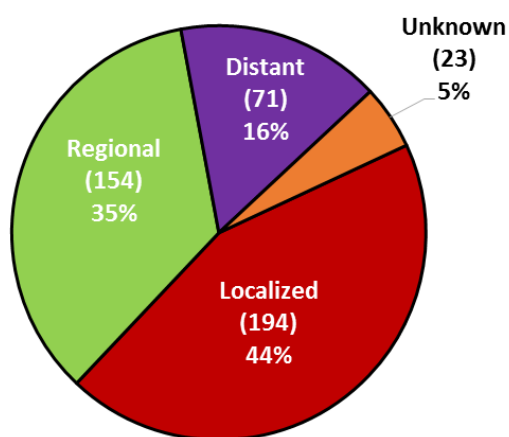
Cervical Cancer Deaths in West Virginia per 100,000 women

3.3

West Virginia has the fifth highest incidence rate and third highest death rate of cervical cancer in the nation.

Cervical cancer screening saves lives. Women should start getting a Pap test at age 21. Between the ages of 21 and 30, women should receive screening every 3 years. After age 30, women have a choice: Pap tests alone every 3 years or Pap tests plus HPV test every 5 years. All positive results require follow-up with a healthcare provider.

Percentage of Cervical Cancer Cases by Stage at Diagnosis, West Virginia, 2011-2015



Up to 93% of cervical cancer can be prevented by screening and HPV vaccination.

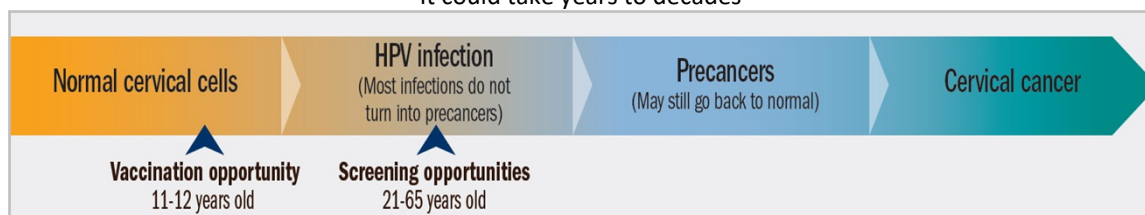
Cervical Cancer Risk Factors

- Infection with Human Papillomavirus
- Smoking
- Using birth control for five years or more
- Giving birth to three or more children
- Having several sexual partners

THIS YEAR, AN ESTIMATED 13,240 WOMEN WILL BE DIAGNOSED WITH CERVICAL CANCER AND A PREDICTED 4,170 WILL DIE FROM THE DISEASE NATIONALLY.

How HPV infection can lead to cervical cancer

It could take years to decades



Source: Saslow et al., *American Journal of Clinical Pathology*, 2012

Cervical Cancer Programs in West Virginia

WV IMMUNIZATION NETWORK

The West Virginia Immunization Network, a program of The Center for Rural Health Development, is a statewide coalition that works to foster comprehensive and sustained state and community programs to ensure residents are protected from vaccine-preventable diseases throughout their lifespan. The group is made up of more than 300 people from both the public and private sector making sure that every resident is appropriately immunized. Vaccination is safe, effective, and the best line of defense against certain illnesses, including HPV, one of the major causes of cervical cancer.

CONTACT: WV Immunization Network at 304.397.4071

RESOURCES: <https://dhhr.wv.gov/oeps/immunization/WIN/Pages/default.aspx>

WV DIVISION OF IMMUNIZATION SERVICES

The mission of the West Virginia Division of Immunization Services (WVDIS) is to prevent and control vaccine-preventable diseases among the children, adolescents, and adults of WV. WVDIS administers the Vaccines for Children (VFC) program that provides free vaccines to eligible children. Eligible children are those without health insurance, those enrolled in Medicaid, American Indian and Alaskan natives, and those with health insurance that does not cover some or all vaccines. This federally funded program is available at more than 400 health care provider locations across the state including all county health departments. Children with insurance through the Children's Health Insurance Program (CHIP) are also eligible for free vaccines at all the provider locations participating in the VFC program. WVDIS provides a limited amount of vaccines for uninsured adults through county health departments. Vaccines provided for adults include pneumococcal, tetanus-diphtheria-pertussis (Tdap), influenza, and shingles.

CONTACT: WV Division of Immunization Services at 304.558.2188 or 1.800.642.3634

RESOURCES: <http://www.dhhr.wv.gov/oeps/immunization/Pages/default.aspx>

WV BREAST AND CERVICAL CANCER SCREENING PROGRAM

The West Virginia Breast and Cervical Cancer Screening Program (WVBCCSP) is a public health program that helps uninsured and underinsured women gain access to free or low-cost cervical cancer and breast cancer screening services. For the prevention of cervical cancer, the WVBCCSP provides Pap tests and pelvic exams to eligible women, as well as diagnostic testing for those whose screening outcome is abnormal.

WVBCCSP Income Guidelines

Who is eligible for these free or low-cost services?

Women:

- between the ages of 25 and 64
- with no health insurance or who are underinsured
- who meet income guidelines, and
- who are WV residents

Family Size	Monthly	Yearly
1	\$2,529	\$30,348
2	\$3,429	\$41,148
3	\$4,329	\$51,948
4	\$5,229	\$62,748
5	\$6,129	\$73,548

Effective 6/30/2018-6/29/2019

CONTACT: WVBCCSP at 304.558.5388 or 1.800.642.8522 and ask to speak to someone in the Program

RESOURCES: <http://www.wvdhhr.org/bccsp/>





Colorectal Cancer in West Virginia

Colorectal cancer is cancer that starts in the colon or rectum.¹ Sometimes it is called colon cancer, for short. Most colorectal cancers begin as a growth on the inner lining of the colon or rectum called a polyp. Some types of polyps can change into cancer over several years, but not all polyps become cancer.

The type of polyp that sometimes turns into cancer is called an adenomatous polyp or adenoma. This type of polyp is called a pre-cancerous condition. Two other types of polyps that are more common are hyperplastic polyps and inflammatory polyps. In general, these types of polyps are not pre-cancerous.¹

Both men and women are at risk of colorectal cancer, but risk goes up with age. Ninety percent (90%) of colorectal cancer cases are found in people aged 50 and older.² Other risk factors include previous polyps in the colon or rectum; having had colorectal cancer or cancer of the ovary, uterus, or breast; having a parent, sibling, or child who has had colorectal cancer; having Ulcerative Colitis, Crohn's disease, or Lynch Syndrome; or smoking.

All men and women between the ages of 50 and 75 should be regularly screened for colorectal cancer. Colorectal cancer screening can find cancer early when it is smaller and easier to treat and cure. Colorectal screening can also find polyps and remove them before they have a chance to grow into cancer.

Each year in West Virginia, approximately 1,140 people are diagnosed with colorectal cancer, and 450 die from this cancer.³ In West Virginia, from 2011 to 2015, forty-five percent (45%) of colorectal cancers were diagnosed in the earlier stages of in situ (5%) or localized (40%) cancer. However, fifty-one percent (51%) of colorectal cancers in West Virginia during this time period were diagnosed at regional (31%) or distant (20%) stages.⁴

Regular screening saves lives. There are several screening options approved by the United States Preventive Services Task Force.⁵ The stool-based, at-home testing options include the 1) Guaiac Fecal Occult Blood Test (FOBT) done annually, 2) the Fecal Immunochemical Test (FIT) done annually, or the 3) Fecal Immunochemical Test-DNA (FIT-DNA) done either annually or every three years depending on the brand. The direct visualization tests, done in a doctor's office or at the hospital, include the 1) Colonoscopy done every ten years, 2) CT Colonography done every five years, 3) Flexible sigmoidoscopy without FIT done every five years, or 4) Flexible Sigmoidoscopy with FIT done every ten years with a FIT every year. Talk with your provider to discuss which screening test is right for you.

The bottom line is that colorectal cancer is a preventable cancer that can be found early, even as a precancer. No West Virginian should die of colorectal cancer.

1. American Cancer Society, Colorectal Cancer. Accessed at <https://www.cancer.org/cancer/colon-rectal-cancer/about/what-is-colorectal-cancer.html> on 8/23/18 at 5:17 PM.

2. Center for Disease Control and Prevention, Colorectal Cancer. Accessed at https://www.cdc.gov/cancer/colorectal/basic_info/risk_factors.htm on 8/23/18 at 5:25 PM.

3. United States Cancer Statistics: 2011 - 2015 Accessed at <https://gis.cdc.gov/Cancer/USCS/DataViz.html> on 8/29/18 at 9:30 AM.

4. WV Cancer Registry.

5. United States Preventive Services Task Force 2016 Colorectal Cancer Screening Guidelines. Accessed at <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/colorectal-cancer-screening2#tab> on 8/23/18 at 5:41 PM.

Colorectal Cancer in West Virginia

Colorectal Cancer Incidence in West Virginia per 100,000 people

47.0

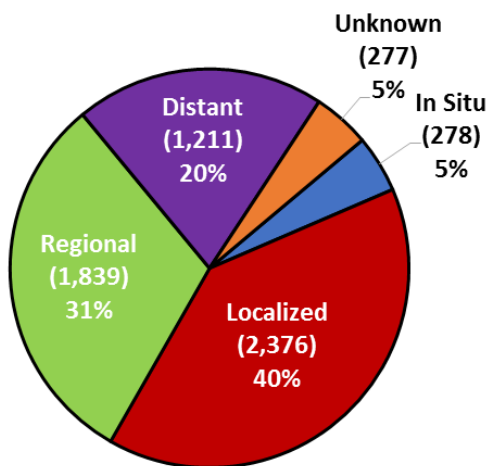
Colorectal Cancer Deaths in West Virginia per 100,000 people

18.4

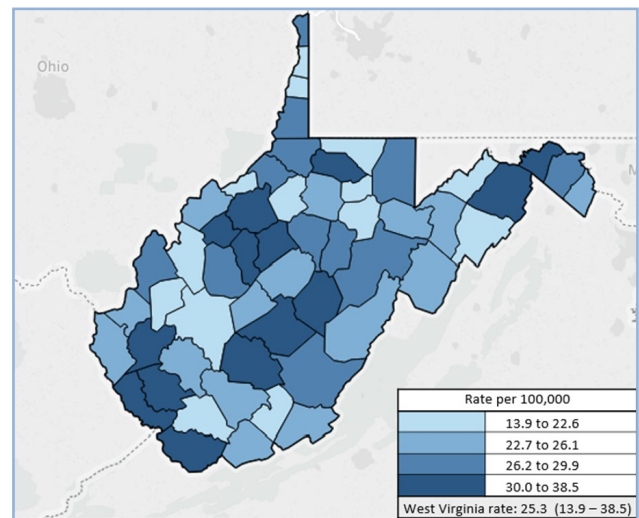
Colorectal cancer is the second leading cause of cancer related deaths in West Virginia.

Regular colorectal cancer screening can detect cancer early when it is easier to treat and cure.

Percentage of Colorectal Cancer Cases by Stage at Diagnosis, West Virginia, 2011-2015



Average Annual Age-Adjusted Late-Stage Colorectal Cancer Incidence Rates by County, 2011-2015



Colorectal Cancer Screening Guidelines: Seven Screening Options

Screening Method	Frequency
Stool Based Screening Tests	
Guaiac Fecal Occult Blood Test	Every year
Fecal Immunochemical Test (FIT)	Every year
Fecal Immunochemical Test-DNA (FIT-DNA)	Every 1 or 3 years
Direct Visualization Tests	
Colonoscopy	Every 10 years
CT Colonography	Every 5 years
Flexible Sigmoidoscopy without FIT	Every 5 years
Flexible Sigmoidoscopy with FIT	Flexible Sigmoidoscopy every 10 years with FIT every year

Current as of December 2017

Colorectal Cancer Risk Factors

Everyone is at risk of colorectal cancer. Risk increases if:

- Over age 50
- Polyps have been found in the colon or rectum
- History of cancer of the ovary, uterus, or breast
- History of colorectal cancer for a parent, sibling, or child

Colorectal Cancer Programs in West Virginia

MOUNTAINS OF HOPE WEST VIRGINIA CANCER COALITION

The Mountains of Hope WV Cancer Coalition (MOH), managed by Cancer Prevention and Control at the WVU Cancer Institute, is dedicated to reducing the human and economic impact of cancer in our state. WVU Cancer Institute, American Cancer Society (ACS), WV Breast and Cervical Cancer Screening Program (WVBCCSP), and WV Comprehensive Cancer Program (WVCCP) founded the Coalition in 1998. In 2016, the organization chose colorectal cancer screening as one of its primary aims. Educational resources and strategies for increasing screening and reducing the impact of colorectal cancer incidence and mortality are available to healthcare teams and community members.

CONTACT: WVU Office of Cancer Prevention and Control at 304.293.2370 or 1.877.287.2272

RESOURCES: www.moh.wv.gov

WEST VIRGINIA PROGRAM TO INCREASE COLORECTAL CANCER SCREENING

The West Virginia Program to Increase Colorectal Cancer Screening (WV PICCS) is directed by Cancer Prevention and Control at the WVU Cancer Institute. WV PICCS partners with health care systems to implement evidence-based interventions (EBIs) shown to increase colorectal cancer screening. Partnering clinics choose from a menu that includes: provider assessment and feedback; client reminders; provider recall; reducing structural barriers; and implement these over a two year period.

CONTACT: WVU Office of Cancer Prevention and Control at 304.293.2370 or 1.877.287.2272

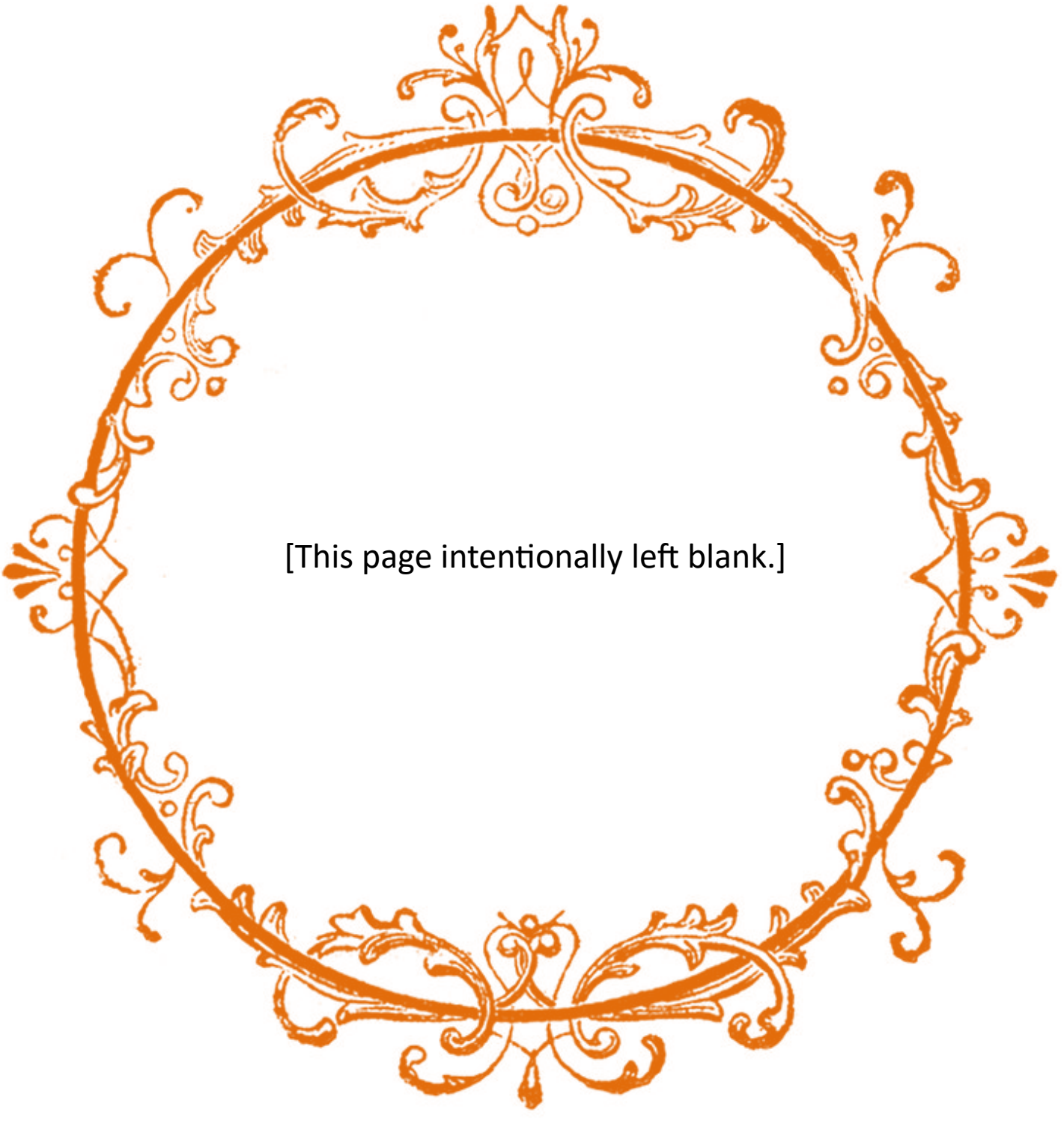
RESOURCES: <http://www.wvucancer.org/cancer-prevention-control/wv-program-to-increase-colorectal-cancer-screening/>

WEST VIRGINIA - AMERICAN CANCER SOCIETY AND THE “80% BY 2018” CAMPAIGN

The WV American Cancer Society leads the National Colorectal Cancer Roundtable (NCCRT) efforts in WV to increase colorectal cancer screening to “80% by 2018.” The “80% by 2018” campaign is committed to substantially reducing colorectal cancer as a major public health problem for those 50 and older. The WV American Cancer Society, in collaboration with hundreds of other organizations across the nation, works to share information, identify needs and opportunities for screening and prevention as well as address gaps in research, programs, activities and services. Staff and resources are available to all West Virginians.

CONTACT: American Cancer Society at 1.800.227.2345

RESOURCES: <http://nccrt.org/tools/80-percent-by-2018/> and <http://www.acscan.org/action/wv>



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Lung Cancer in West Virginia

Cancer happens when cells in the body begin to grow out of control. When this occurs in the lungs, it is called lung cancer. There are two main types of lung cancer: small cell and non-small cell. Although both occur in the lung, they grow very differently and are treated differently. Non-small cell lung cancer is the more common of the two and has many subtypes including adenocarcinoma, squamous cell carcinoma, and large cell carcinoma.¹

At present, the only recommended screening test for lung cancer is low-dose computed tomography (also known as a low-dose CT scan, or LDCT). An x-ray machine scans the body with low doses of radiation in order to create detailed pictures of the lungs.² The United States Preventive Services Task Force recommends annual screening with LDCT for individuals between 55 and 80 years old who have a 30 pack-year smoking history and currently smoke or have quit in the last 15 years.³ Therefore, an adult aged 55 or older who smoked an average of one pack of cigarettes a day for 30 years, or two packs a day for 15 years, or any combination that equals 30 pack-years or more, is eligible.

Lung cancer (all types combined) is the second most common cancer in both men and women⁴ and accounts for 18% of all new cancer cases diagnosed in West Virginia.⁵ Every year in WV, approximately 2,039 people are diagnosed with lung cancer and 1,482 will die from the disease.^{5, 6} Half of all people with lung cancer diagnoses have distant metastasis, meaning the cancer has spread. Because of this, more people die of lung cancer than colorectal, prostate, and breast cancer combined.⁷

In the United States, cigarette smoking is linked to 80% to 90% of lung cancers, making it the number one risk factor for the disease. Other factors include secondhand smoke, radon, other substances and pollutants (including asbestos, arsenic, diesel exhaust, and some forms of silica and chromium), personal family history of lung cancer, previous radiation therapy to the chest, and possibly diet.⁸

Most lung cancers can be prevented as they are connected to smoking, secondhand smoke, or exposure to radon or other environmental factors. Lung cancer screening using LDCT can help find lung cancer at an earlier stage when it is most treatable, thus improving quality of life and increasing life span for lung cancer survivors.⁷

1. American Cancer Society. Accessed at <https://www.cancer.org/cancer/non-small-cell-lung-cancer/about/what-is-non-small-cell-lung-cancer.html> on 8/21/18 at 1:01 PM.

2. Centers for Disease Control and Prevention. Accessed at https://www.cdc.gov/cancer/lung/basic_info/screening.htm on 8/21/18 at 1:05 PM.

3. U.S. Preventive Services Task Force (2014). Screening for Lung Cancer: U.S. Preventive Services Task Force Recommendation Statement. *Annals of Internal Medicine*, 160(5).

4. American Cancer Society. Accessed at <http://www.cancer.org/cancer/non-small-cell-lung-cancer/about/key-statistics.html> on 8/21/18 at 1:10 PM.

5. WV Cancer Registry.

6. United States Cancer Statistics: 1999 - 2014 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs. Accessed on 8/21/18 at 1:12 PM.

7. American Cancer Society. Accessed at <http://www.cancer.org/cancer/lung-cancer/prevention-and-early-detection.html> on 8/21/17 at 1:15 PM.

8. Centers for Disease Control and Prevention. Accessed at https://www.cdc.gov/cancer/lung/basic_info/risk_factors.htm on 8/21/17 at 1:20 PM.

Lung Cancer in West Virginia

Lung Cancer Incidence in West Virginia per 100,000 people

80.3

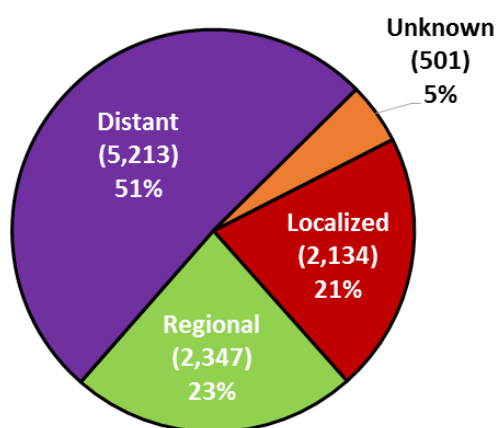
Lung Cancer Deaths in West Virginia per 100,000 people

58.8

Lung cancer is the leading cause of cancer related deaths in West Virginia.

Regular lung cancer screening can detect cancer early when it is easier to treat and cure.

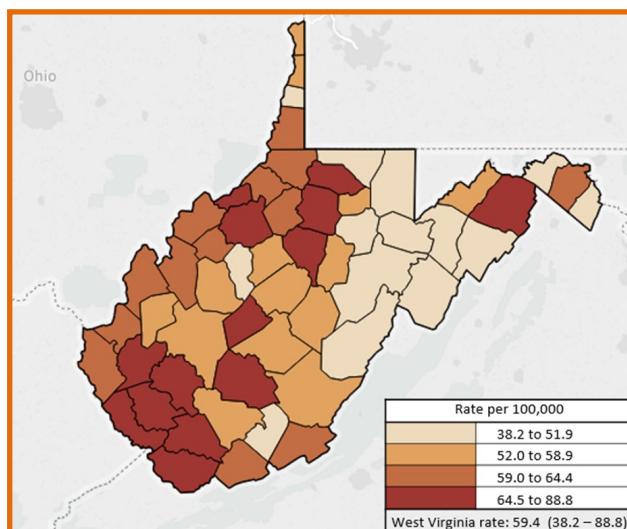
Percentage of Lung and Bronchus Cancer Cases by Stage at Diagnosis, West Virginia, 2011-2015



Lung Cancer Risk Factors

- Smoking
- Secondhand smoke
- Radon
- Environmental exposures
- Personal or family history of lung cancer

Average Annual Age-Adjusted Late Stage Lung Cancer Incidence Rates by County, West Virginia, 2011-2015



Lung Cancer Screening Guidelines:

Low-Dose Computed Tomography (CT)

Yearly CT (low-dose) is recommended for people who:

- Are 55 to 80 years old, and
- Have a 30 pack-year* smoking history, and
- Are either current smokers or smokers who quit in the past 15 years.

* pack-year = packs a day x number of years smoking
(ex: 2 packs a day x 15 years = 30 pack-year smoking history)

Lung Cancer Programs in West Virginia

WEST VIRGINIA TOBACCO QUITLINE

The biggest risk factor in the development of lung cancer is smoking. West Virginia's Tobacco Quitline has operated since July 2000 enrolling over 73,000 West Virginians. The Quitline offers smoking cessation services to residents over the age of 18 who are uninsured, underinsured, or whose insurance does not provide its own smoking cessation services. Participants are eligible for four free proactive coaching calls and a supply of free nicotine replacement therapy (NRT) with a choice of patches, gum, or lozenges. Medicaid patients are to receive an NRT prescription through their doctor.

CONTACT: 1.800.QUIT.NOW (1.800.784.8669) or 1.877.966.8784 to speak to a Quitline representative

RESOURCES: <http://www.dhhr.wv.gov/wvdtb/quitline/Pages/default.aspx>

WEST VIRGINIA LUNG CANCER PROJECT

WVU Cancer Institute's Cancer Prevention and Control (CPC) through a partnership with the Patient Advocate Foundation (PAF) addresses lung cancer disparities in WV. The overall goals are to decrease lung cancer mortality, improve early diagnosis of lung cancer, and to provide support services to lung cancer patients through the WV Lung Cancer CareLine. This multi-faceted approach works with Medicaid managed care organizations to identify their enrollees at need for lung cancer screening. The Project also works to educate health care providers and the general public about lung cancer screening benefits, guidelines, and eligibility. Finally, WV lung cancer patients are given access to the WV Lung Cancer CareLine, a resource specific to WV patients that assists with barriers to treatment and survivorship, including assistance with access to care, finances, insurance, and job retention. This service is provided by the PAF and is free for all patients diagnosed with lung cancer or in the process of being screened or diagnosed.

CONTACT: WVU Office of Cancer Prevention and Control at 304.293.2370 or 1.877.287.2272

RESOURCES: <http://www.wvucancer.org/cancer-prevention-control/wv-lung-cancer-project/> and <https://wvlungcancer.pafcareline.org/index.php>

BRIDGE PROGRAM

This Bridge Program, previously known as the West Virginia Lung Cancer Survivorship Program, based at the WVU Cancer Institute, is implementing an innovative model of care for lung cancer patients completing definitive curative treatment. The program goal is to improve the overall coordination of care and decrease the consequences of treatment for patients diagnosed with lung cancer in West Virginia. "Bridge to Good Living: Thriving beyond Lung Cancer" also aims to reach healthcare providers through conferences and podcasts, as well as disseminate information about lung cancer survivorship and the model to the community of patients, families, and advocates across WV.

CONTACT: WVU Office of Cancer Prevention and Control at 304.293.2370 or 1.877.287.2272

RESOURCES: <http://wvucancer.org/cancer-prevention-control/bridge-program/>



HPV-Associated Cancers in West Virginia

Human Papillomavirus (HPV) is a recognized cause of cancer. Although most HPV infections are asymptomatic and clear spontaneously, persistent infections can progress to pre-cancer or cancer. HPV causes most cervical cancers, as well as some cancers of the vagina, vulva, penis, anus, and oropharynx (cancers of the back of the throat, including the base of the tongue and tonsils).¹

Based on data from 2011 to 2015, approximately 42,700 new cases of HPV-associated cancers occurred in the United States each year, including an estimated 24,400 among women and 18,300 among men. Cervical cancer is the most common HPV-associated cancer among women, and oropharyngeal cancers are the most common among men.¹

HPV-associated cancers are estimated by examining cancer in parts of the body and cancer cell types that are more likely to be caused by HPV. Cancer registries do not collect data on the presence or absence of HPV in cancer tissue at the time of diagnosis. In general, HPV is thought to be responsible for more than 90% of anal and cervical cancers, about 70% of vaginal and vulvar cancers, and more than 60% of penile cancers. Studies also show that around 70% of cancers of the oropharynx may be linked to HPV or a combination of tobacco, alcohol, and HPV.²

There is no one way to prevent infection with all the different types of HPV, but there are things you can do to lower your chances of being infected.³ People who are not sexually active almost never develop genital HPV infections. Receiving the HPV vaccination before sexual activity can reduce the risk of infection by the HPV types targeted by the vaccine.⁴ Over 90% of all HPV cancers are preventable through HPV vaccination.¹

The Food and Drug Administration first approved three vaccines to prevent HPV infection for girls in 2006⁵ and for boys and girls in 2011. As of May 2017, Gardasil 9 is the only HPV vaccine available for use in the United States. This vaccine provides strong protection against new HPV infections, but is not effective at treating established HPV infections or disease caused by HPV.⁶ The National Cancer Institute has also identified a few factors with adequate evidence of an increased risk of oral cavity and oropharyngeal cancer. They are tobacco use, alcohol use, tobacco and alcohol use, and betel-quid chewing.⁷ Reducing or eliminating these factors may reduce the chances of developing a HPV-associated cancer.

1. Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/cancer/hpv/pdf/USCS-DataBrief-No4-August2018-508.pdf> on 9/18/18 at 12:53 PM.

2. Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/cancer/hpv/statistics/index.htm> on 8/21/18 at 5:15 PM.

3. American Cancer Society. Accessed at <https://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-and-cancer-info.html> on 8/21/18 at 5:20 PM.

4. National Cancer Institute. Accessed at <https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-fact-sheet> on 8/21/18 at 5:35 PM.

5. Centers for Disease Control and Prevention. Accessed at <https://www.cdc.gov/hpv/hcp/need-to-know.pdf> on 10/29/18 at 8:50 AM.

6. National Cancer Institute. Accessed at <https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-vaccine-fact-sheet> on 8/21/18 at 5:40 PM.

7. National Cancer Institute. Access at <https://www.cancer.gov/types/head-and-neck/hp/oral-prevention-pdq> on 8/21/18 at 5:45 PM.

HPV-Associated Cancers in West Virginia

HPV Vaccination Rates in West Virginia and the United States, Male and Female, 2018

	1 dose, male	Males who completed the series	1 dose, female	Females who completed the series
WV	54.7%	39.3%	67.5%	48.6%
US	62.6%	44.3%	68.6%	53.1%

National Immunization Survey-Teen, United States, 2018

Human papillomavirus (HPV) causes most cervical cancers, as well as some cancers of the vagina, vulva, penis, anus, rectum, and oropharynx (cancers of the back of the throat, including the base of the tongue and tonsils).

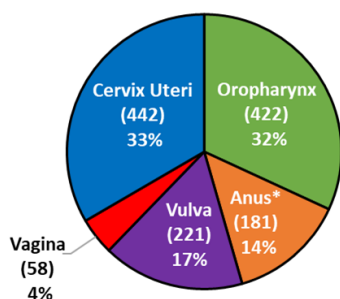
HPV vaccines are recommended for preteen girls and boys to protect against HPV infection.

Other factors that may increase the risk that an infection with a high-risk HPV type will persist and possibly develop into cancer include:

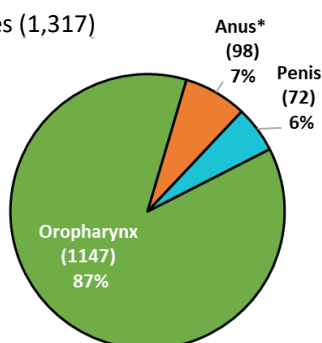
- Smoking or chewing tobacco (for ↑ risk of oropharyngeal cancer)
- Having a weakened immune system
- Having many children (for ↑ risk of cervical cancer)
- Poor oral hygiene (for ↑ risk of oropharyngeal cancer)
- Chronic inflammation

Percentage of HPV-Associated Cancers** by Site and Sex, West Virginia, 2011-2015

Females (1,324)



Males (1,317)

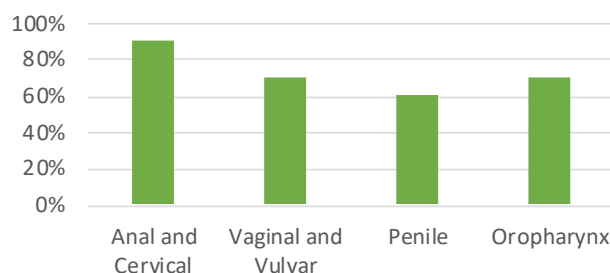


*Anus, Anal Canal, and Anorectum

**Not all incidence are directly attributed to the HPV virus

Myths:	Facts:
People with HPV always have symptoms.	You can have HPV even if you do not have any signs or symptoms.
You can get HPV from toilet seats, hugging or holding hands, swimming pools or hot tubs, sharing food or utensils, or by being unclean.	HPV is spread through skin-to-skin contact, not through an exchange of bodily fluid.
The HPV vaccine can cure the infection.	The HPV vaccine prevents infection in someone who has never had HPV but can not treat someone already infected.
HPV only affects women.	Both men and women are affected by the HPV viruses.
Smoking is not a risk-factor for cervical cancer.	Smoking raises your risk of HPV-associated cancer.
There is only one type of HPV.	There are approximately 100 types of HPV.

% of Cancer Diagnosis that are HPV-Associated



Obesity-Related Cancers in West Virginia

Obesity is a prevalent problem throughout both West Virginia and the United States. In 2015-2016, the prevalence of obesity in the United States was 39.8%, and in 2016 in West Virginia, the prevalence of obesity was 37.7% which placed West Virginia first in the nation for obesity.^{1, 2} Obesity is linked to an increased cancer risk.³ In fact, it is estimated that one out of three cancer deaths that occur in the United States is linked to a combination of obesity, poor nutrition, and physical inactivity. Of these three factors, obesity, or excess body weight, shows the strongest link to cancer risk.³ The types of cancer linked to obesity include esophageal, pancreatic, colorectal, breast, ovarian, uterine, kidney, thyroid, and gallbladder.³

There are several mechanisms that may explain how obesity increases the risk of getting certain cancers. For example, obese individuals are more likely to have chronic inflammation in their bodies that can lead to DNA damage that leads to cancer.⁴ Chronic inflammation produces certain chemicals within the body's cells, and these chemicals damage the nucleic acids that make up DNA. This damage causes DNA to mutate at high rates eventually leading to the formation of cancer.⁴ This inflammation can appear in various forms such as gastroesophageal reflux disease, gallstones, or chronic ulcerative colitis.⁵ Also, excess fat tissue produces larger amounts of estrogen which is linked to breast, endometrial, and ovarian cancers.⁵ From 2011-2015, the most common obesity related cancers in West Virginia included post-menopausal breast (6,189 cases), colon and rectum (5,703 cases), and kidney and renal pelvis (2,241 cases).⁶

There is some evidence suggesting that weight loss reduces the risk of breast, endometrial, colon, and prostate cancers specifically.⁵ Further studies focused on determining the impact of weight loss on cancer risk are needed. When a person is already obese, losing weight creates changes in the body that reduce the risk of cancer.³ Mostly the change is a reduction in hormones such as excess estrogen that contributes to multiple types of cancer.³ There are many studies that show that individuals who maintain a lower, healthier weight throughout adulthood have a decreased cancer risk, specifically for colorectal cancer, kidney cancer, post-menopausal breast, endometrial, and ovarian cancers.⁵ Reaching and maintaining a healthy weight is important in working toward cancer prevention.

1. Centers for Disease Control and Prevention. Accessed at www.cdc.gov/obesity/data/adult/html on 8/13/2018 at 9:17 AM.

2. West Virginia Department of Health and Human Resources. Accessed at www.dhhr.wv.gov/dpcd/data-reports/Pages/Fast-Facts.aspx on 8/13/2018 at 10:34 AM.

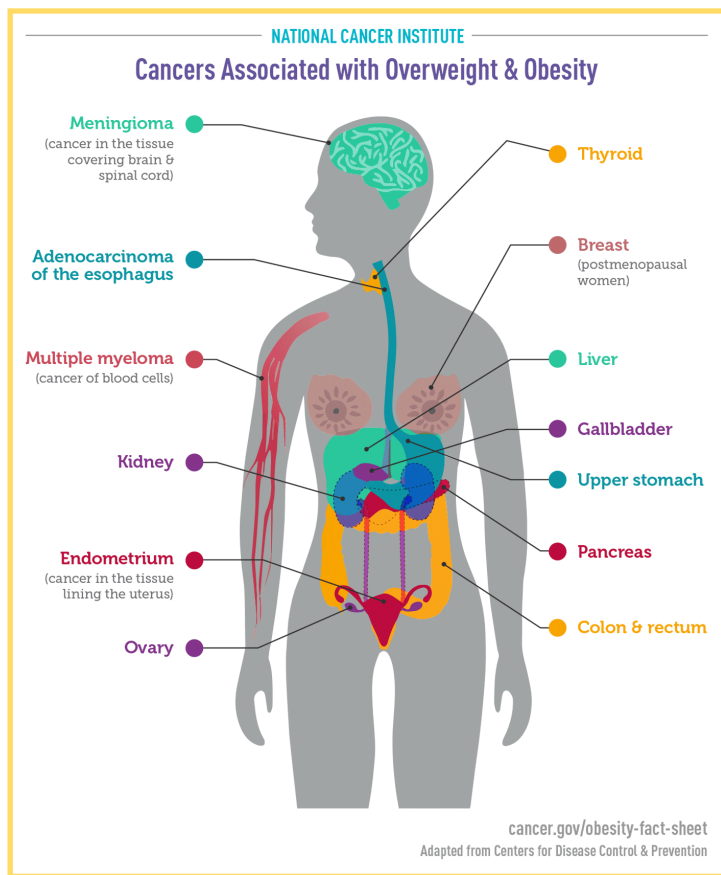
3. West Virginia Department of Health and Human Resources. Accessed at <https://dhhr.wv.gov/oeps/cancer/document/obesity-related-cancers.pdf> on 8/13/2018 at 10:15 AM.

4. Kawanishi, S., Ohnishi, S., Ma, N., Hiraku, Y., & Murata, M. (2017). Crosstalk between DNA Damage and Inflammation in the Multiple Steps of Carcinogenesis. *International Journal of Molecular Sciences*, 18(8), 1808. <http://doi.org/10.3390/ijms18081808>.

5. National Cancer Institute. Accessed at <https://www.cancer.gov/about-cancer/causes-prevention/risk/obesity/obesity-fact-sheet> on 8/13/2018 at 11:17 AM.

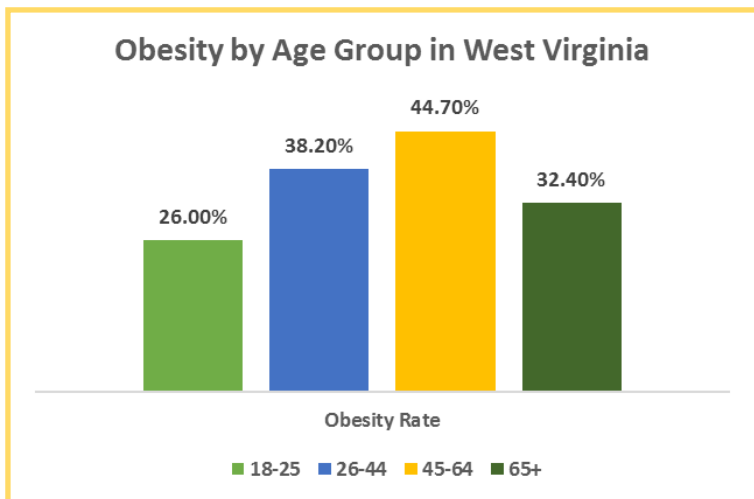
6. West Virginia Cancer Registry

Obesity-Related Cancers in West Virginia



Counts of Obesity-Related Cancers in West Virginia, 2011-2015

Post-Menopausal Breast (Female)	6,189
Colon and Rectum	5,703
Kidney and Renal Pelvis	2,241
Endometrium	1,863
Thyroid	1,634
Pancreas	1,475
Ovary	796
Liver	720
Multiple Myeloma	709
Adenocarcinoma of the Esophagus	480
Gallbladder	111
Upper Stomach	33
Meningiomas	8
TOTAL:	21,962



How do you find your BMI?

$$\frac{\text{Weight}}{(\text{Height in inches})^2} \times 730$$


Tobacco-Related Cancers in West Virginia

Tobacco use is the leading preventable cause of cancer and death from cancer.¹ There are many forms of tobacco available, but there is no safe form of tobacco use; all tobacco causes health problems. Smoking leads to disease and disability and harms nearly every organ in the body.² Smoking causes about one in five, or 20%, of all deaths in the United States.³

Tobacco use can lead to cancers of the lung, larynx (voice box), mouth, esophagus, throat, bladder, kidney, liver, stomach, pancreas, colon, rectum, cervix, and blood (acute myeloid leukemia). Use of smokeless tobacco increases the risk for cancers of the mouth, esophagus, and pancreas.¹

WV currently has the highest adult smoking rate in the country and there are clear health disparities related to smoking and tobacco use. The highest smoking rates are seen among those with less than a high school education and the lowest rates are among college graduates. As educational level increases, use of tobacco products significantly decreases; a nearly identical trend is seen for the US. A similar pattern is observed when looking at income levels. The highest smoking rates are observed among those with a household income less than \$30,000 per year (30.9%) and lowest among those with a household income of \$100,000 per year or more (11.4%).⁴

People who stop using tobacco products reduce their risk of developing cancer and experience health benefits. Heart rate and body temperature begin to change in as little as 20 minutes after someone stops smoking. Many people find quitting the use of tobacco products very hard and require both medical assistance and psychosocial support to stop. There are community, state, and national resources available to assist those interested in quitting. According to the Centers for Disease Control and Prevention, “Quitting smoking is a marathon, not a sprint.”

1. Tobacco. National Cancer Institute. Accessed at <https://www.cancer.gov/about-cancer/causes-prevention/risk/tobacco> on 8/29/18 at 1:00 PM.

2. Centers for Disease Control and Prevention. Accessed at https://www.cdc.gov/tobacco/data_statistics/fact_sheets/index.htm?s_cid=osh-stu-home-spotlight-001 on 8/29/18 at 1:05 PM.

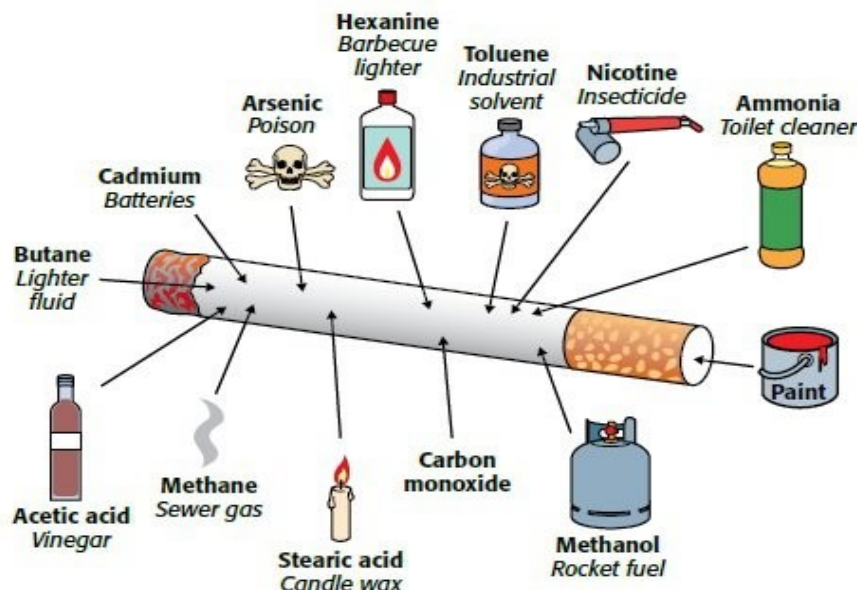
3. American Cancer Society. Accessed at <https://www.cancer.org/cancer/cancer-causes/tobacco-and-cancer/health-risks-of-smoking-tobacco.html> on 8/29/18 at 1:10 PM.

4. West Virginia Prevention Research Center. Findings from the 2014 West Virginia Adult Tobacco Survey.

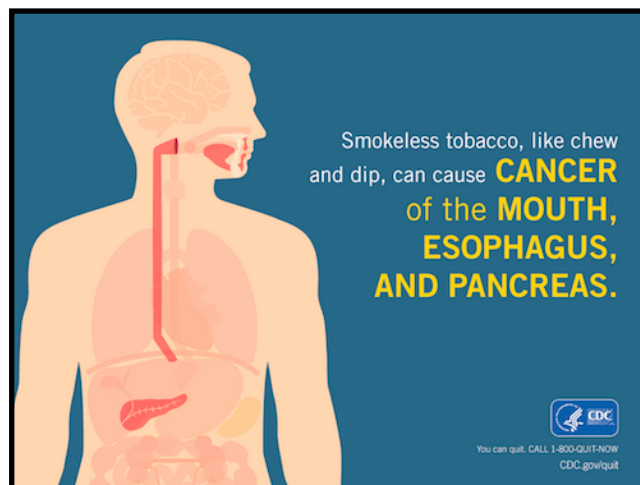
Tobacco-Related Cancers in West Virginia

Tobacco is the leading cause of cancer and death from cancer.

There is
NO safe
level of
tobacco
use!



**1 in 5 U.S. deaths
is related to
smoking**



Tobacco Causes These Cancers:

- | | |
|-----------------------|----------------------------|
| 1. Lung | 8. Liver |
| 2. Larynx (voice box) | 9. Stomach |
| 3. Mouth | 10. Pancreas |
| 4. Esophagus | 11. Colon and rectum |
| 5. Throat | 12. Cervix |
| 6. Bladder | 13. Acute Myeloid Leukemia |
| 7. Kidney | |



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How to Read These Tables

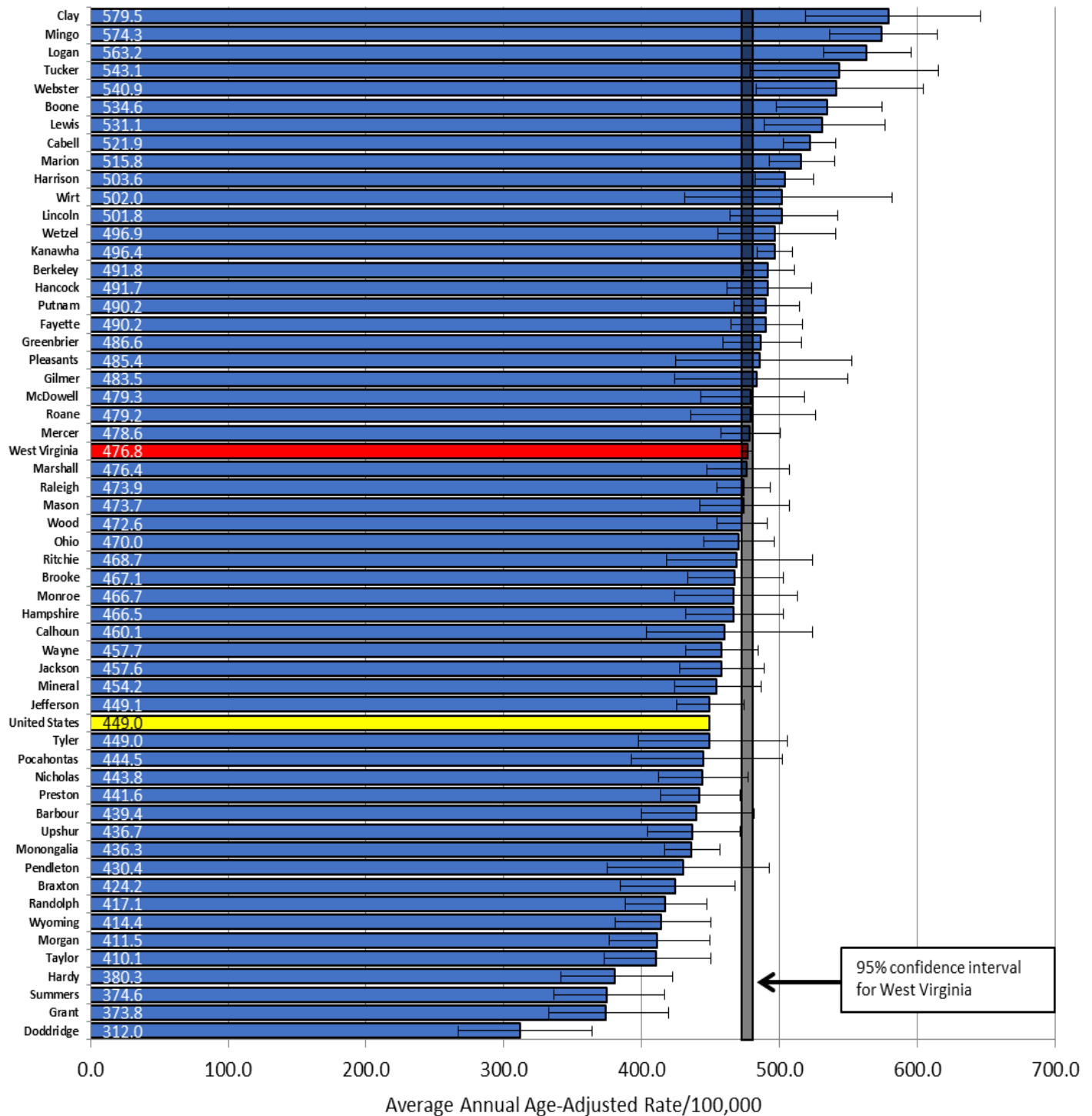
The county-level graphs on the following pages, arranged in alphabetical order by primary site, are packed with information. With a quick glance at these graphs, you can answer such questions as:

- **What is the lung and bronchus cancer incidence rate for Mingo County?**
 - The average annual incidence rate for each county is shown at the left margin of each bar. On page 82, you can see that Mingo County, at the top of the graph, has an annual average incidence rate of 114.7.
- **Which 5 counties have the highest breast cancer incidence rate?**
 - Each graph is arranged in order from the county with the highest average annual incidence rate to the lowest. On page 60, you can see that the 5 counties with the highest breast cancer incidence rates are Webster, Cabell, Marion, Ohio, and Greenbrier.
- **Is the melanoma skin cancer incidence rate for Putnam County significantly higher than the West Virginia average?**
 - The thin black lines extending from each bar are called “error bars,” and show the 95% confidence interval for each county’s average annual estimate. If the error bars for any two counties do not touch or overlap, then we can be 95% certain that the two average annual estimates are statistically different. The 95% confidence interval for West Virginia appears as a gray vertical bar to allow easy comparisons with any given county. On page 84, you can see that the average annual melanoma skin cancer rate for Putnam County (second from the top) is 32.2, compared to 20.8 for West Virginia (the red bar). Are they significantly different? Look at the left edge of the thin black error bar for Putnam County, and you can see that it does not overlap or touch the gray vertical bar. This means that the rate for Putnam County is significantly higher than the state average.
- **Is West Virginia higher or lower than the national average in lung and bronchus cancer incidence?**
 - The average annual incidence rate for West Virginia is shown as a red bar on the graphs. The average annual incidence rate for the United States is shown as a yellow bar. On page 82, you can see that the West Virginia rate for lung and bronchus cancer (80.3) is significantly higher than the United States rate (59.9).
- **How can I easily find rates for my county?**
 - For convenience, we have included a data table for each site that shows the average annual rates and 95% confidence intervals for each county arranged in alphabetical order. Your county will appear on the same line in each of the tables. The West Virginia average annual rate is shown as the first entry at the top left of each table.

**All Sites - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	476.8	472.8	480.8	57,867	Mercer	478.6	457.3	500.8	2,056
Barbour	439.4	399.9	481.9	486	Mineral	454.2	423.6	486.7	875
Berkeley	491.8	473.5	510.6	2,912	Mingo	574.3	536.3	614.5	911
Boone	534.6	497.4	574.1	822	Monongalia	436.3	416.8	456.5	1,995
Braxton	424.2	384.4	467.5	451	Monroe	466.7	423.7	513.3	477
Brooke	467.1	433.6	502.8	807	Morgan	411.5	376.4	449.4	544
Cabell	521.9	503.1	541.2	3,093	Nicholas	443.8	412.5	477.0	804
Calhoun	460.1	403.2	523.8	258	Ohio	470.0	445.0	496.1	1,449
Clay	579.5	518.6	646.1	353	Pendleton	430.4	374.9	492.8	256
Doddridge	312.0	266.6	363.8	180	Pleasants	485.4	425.0	552.6	245
Fayette	490.2	465.0	516.5	1,531	Pocahontas	444.5	392.8	502.0	298
Gilmer	483.5	424.3	549.3	245	Preston	441.6	413.6	471.1	980
Grant	373.8	332.7	419.2	329	Putnam	490.2	466.8	514.5	1,735
Greenbrier	486.6	458.8	515.8	1,265	Raleigh	473.9	454.8	493.7	2,481
Hampshire	466.5	432.2	503.0	749	Randolph	417.1	388.5	447.4	850
Hancock	491.7	461.6	523.5	1,083	Ritchie	468.7	418.0	524.4	338
Hardy	380.3	341.5	422.7	374	Roane	479.2	436.0	525.9	493
Harrison	503.6	482.7	525.1	2,316	Summers	374.6	336.2	416.8	382
Jackson	457.6	427.7	489.3	919	Taylor	410.1	372.8	450.5	468
Jefferson	449.1	425.1	474.2	1,401	Tucker	543.1	478.4	615.2	286
Kanawha	496.4	483.8	509.2	6,359	Tyler	449.0	397.7	505.9	302
Lewis	531.1	488.9	576.3	617	Upshur	436.7	404.1	471.3	707
Lincoln	501.8	463.9	542.0	698	Wayne	457.7	432.1	484.6	1,261
Logan	563.2	532.0	595.8	1,319	Webster	540.9	483.4	604.1	358
Marion	515.8	492.3	540.2	1,924	Wetzel	496.9	455.7	541.1	589
Marshall	476.4	447.5	507.0	1,098	Wirt	502.0	431.5	581.9	201
Mason	473.7	442.0	507.3	885	Wood	472.6	454.5	491.2	2,730
McDowell	479.3	442.7	518.4	692	Wyoming	414.4	381.2	449.9	629

All Sites - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

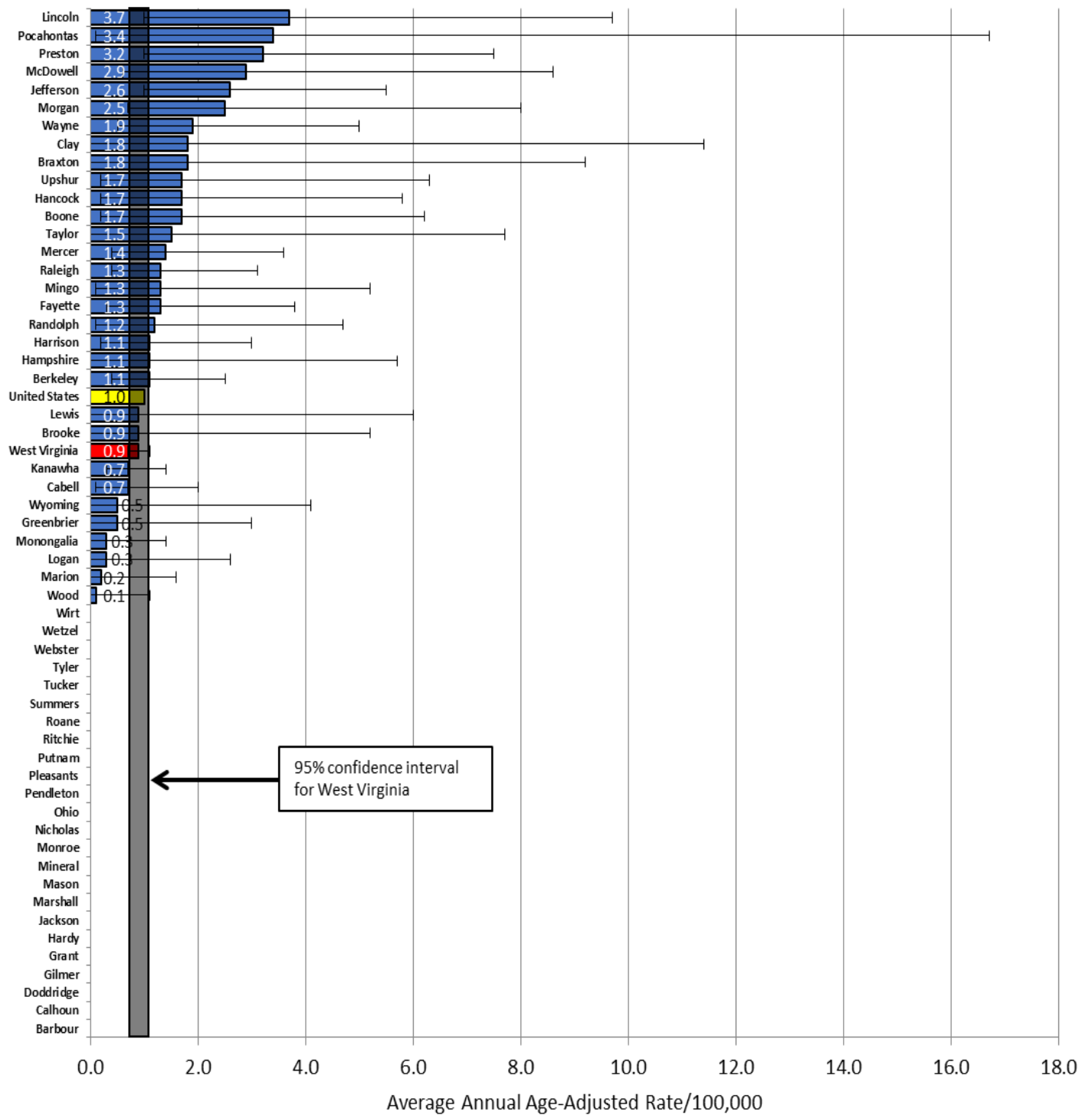


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Bones and Joints - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	0.9	0.7	1.1	82	Mercer	1.4	0.4	3.6	4
Barbour	0.0	0.0		0	Mineral	0.0	0.0		0
Berkeley	1.1	0.4	2.5	6	Mingo	1.3	0.1	5.2	^
Boone	1.7	0.2	6.2	^	Monongalia	0.3	0.0	1.4	^
Braxton	1.8	0.0	9.2	^	Monroe	0.0	0.0		0
Brooke	0.9	0.0	5.2	^	Morgan	2.5	0.7	8.0	4
Cabell	0.7	0.1	2.0	^	Nicholas	0.0	0.0		0
Calhoun	0.0	0.0		0	Ohio	0.0	0.0		0
Clay	1.8	0.0	11.4	^	Pendleton	0.0	0.0		0
Doddridge	0.0	0.0		0	Pleasants	0.0	0.0		0
Fayette	1.3	0.3	3.8	^	Pocahontas	3.4	0.1	16.7	^
Gilmer	0.0	0.0		0	Preston	3.2	1.0	7.5	5
Grant	0.0	0.0		0	Putnam	0.0	0.0		0
Greenbrier	0.5	0.0	3.0	^	Raleigh	1.3	0.4	3.1	5
Hampshire	1.1	0.0	5.7	^	Randolph	1.2	0.1	4.7	^
Hancock	1.7	0.2	5.8	^	Ritchie	0.0	0.0		0
Hardy	0.0	0.0		0	Roane	0.0	0.0		0
Harrison	1.1	0.2	3.0	^	Summers	0.0	0.0		0
Jackson	0.0	0.0		0	Taylor	1.5	0.0	7.7	^
Jefferson	2.6	1.0	5.5	7	Tucker	0.0	0.0		0
Kanawha	0.7	0.3	1.4	8	Tyler	0.0	0.0		0
Lewis	0.9	0.0	6.0	^	Upshur	1.7	0.2	6.3	^
Lincoln	3.7	1.0	9.7	4	Wayne	1.9	0.5	5.0	4
Logan	0.3	0.0	2.6	^	Webster	0.0	0.0		0
Marion	0.2	0.0	1.6	^	Wetzel	0.0	0.0		0
Marshall	0.0	0.0		0	Wirt	0.0	0.0		0
Mason	0.0	0.0		0	Wood	0.1	0.0	1.1	^
McDowell	2.9	0.6	8.6	^	Wyoming	0.5	0.0	4.1	^

Bones and Joints - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

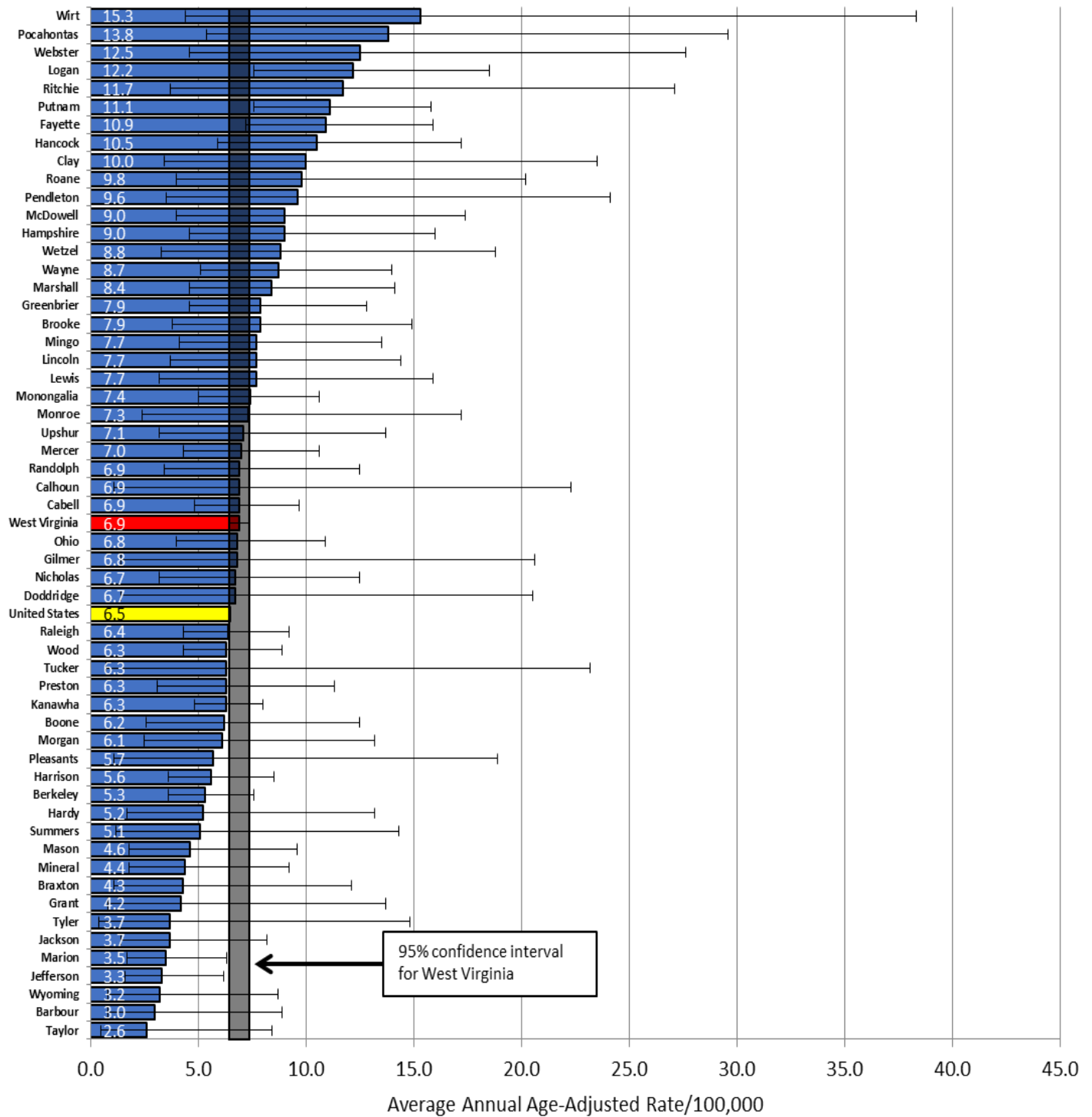


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Brain and Other Nervous System - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	6.9	6.4	7.4	737	Mercer	7.0	4.3	10.6	25
Barbour	3.0	0.8	8.9	4	Mineral	4.4	1.8	9.2	8
Berkeley	5.3	3.6	7.6	32	Mingo	7.7	4.1	13.5	14
Boone	6.2	2.6	12.5	8	Monongalia	7.4	5.0	10.6	31
Braxton	4.3	1.1	12.1	4	Monroe	7.3	2.4	17.2	6
Brooke	7.9	3.8	14.9	11	Morgan	6.1	2.5	13.2	8
Cabell	6.9	4.8	9.7	36	Nicholas	6.7	3.2	12.5	11
Calhoun	6.9	1.1	22.3	^	Ohio	6.8	4.0	10.9	19
Clay	10.0	3.4	23.5	6	Pendleton	9.6	3.5	24.1	6
Doddridge	6.7	1.4	20.5	^	Pleasants	5.7	1.1	18.9	^
Fayette	10.9	7.2	15.9	30	Pocahontas	13.8	5.4	29.6	8
Gilmer	6.8	1.4	20.6	^	Preston	6.3	3.1	11.3	12
Grant	4.2	0.8	13.7	^	Putnam	11.1	7.6	15.8	33
Greenbrier	7.9	4.6	12.8	19	Raleigh	6.4	4.3	9.2	32
Hampshire	9.0	4.6	16.0	13	Randolph	6.9	3.4	12.5	12
Hancock	10.5	5.9	17.2	18	Ritchie	11.7	3.7	27.1	5
Hardy	5.2	1.7	13.2	5	Roane	9.8	4.0	20.2	8
Harrison	5.6	3.6	8.5	25	Summers	5.1	1.2	14.3	4
Jackson	3.7	1.4	8.2	7	Taylor	2.6	0.5	8.4	^
Jefferson	3.3	1.6	6.2	11	Tucker	6.3	0.7	23.2	^
Kanawha	6.3	4.8	8.0	72	Tyler	3.7	0.4	14.8	^
Lewis	7.7	3.2	15.9	8	Upshur	7.1	3.2	13.7	9
Lincoln	7.7	3.7	14.4	11	Wayne	8.7	5.1	14.0	18
Logan	12.2	7.6	18.5	24	Webster	12.5	4.6	27.6	7
Marion	3.5	1.7	6.3	12	Wetzel	8.8	3.3	18.8	7
Marshall	8.4	4.6	14.1	16	Wirt	15.3	4.4	38.3	5
Mason	4.6	1.8	9.6	8	Wood	6.3	4.3	8.9	34
McDowell	9.0	4.0	17.4	9	Wyoming	3.2	0.8	8.7	4

Brain and Other Nervous System - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

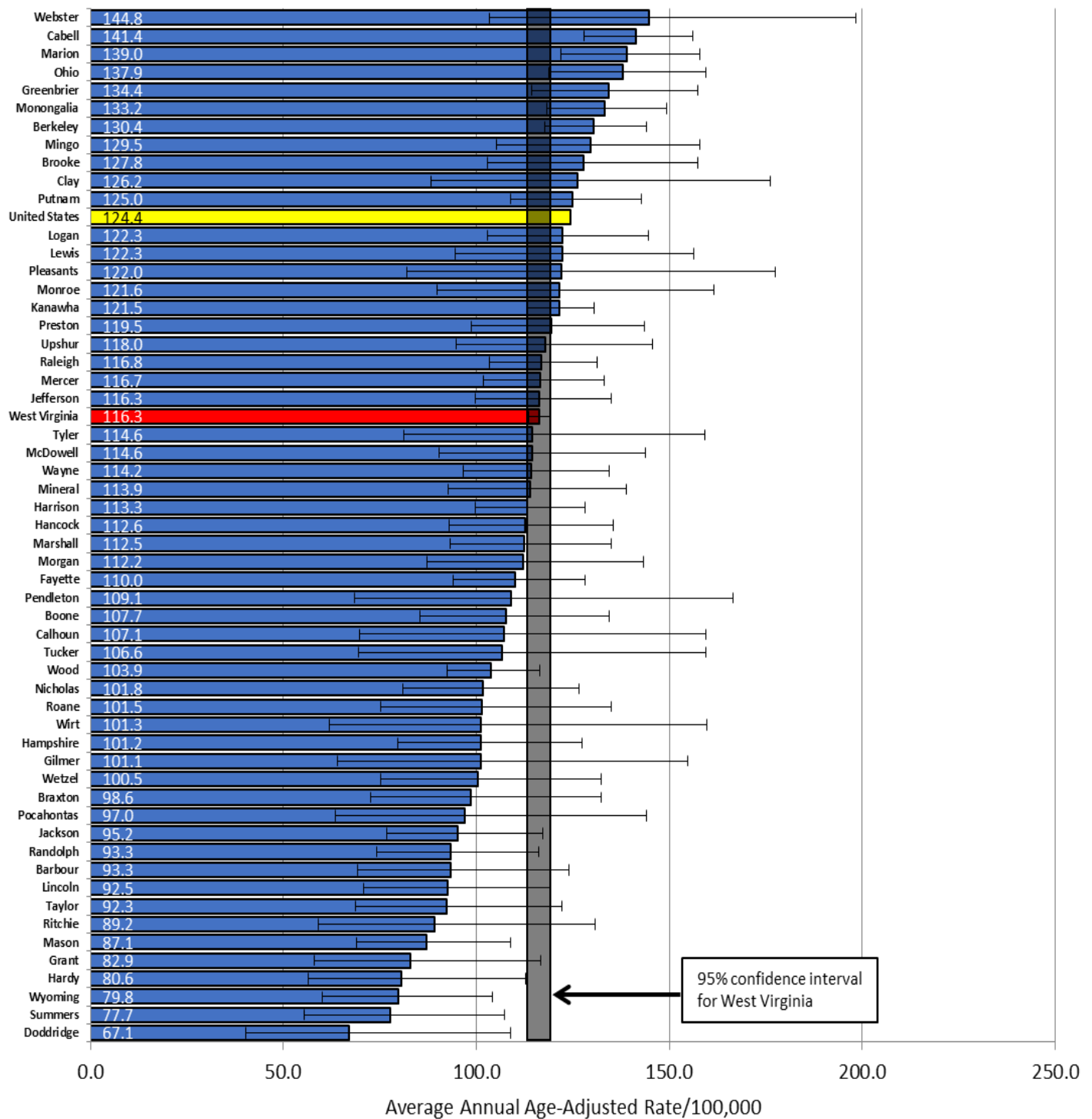


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Breast (Female) - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	116.3	113.5	119.1	7,252	Mercer	116.7	101.9	133.1	255
Barbour	93.3	69.1	123.9	53	Mineral	113.9	92.6	139.0	111
Berkeley	130.4	117.8	144.1	408	Mingo	129.5	105.3	157.9	107
Boone	107.7	85.5	134.4	87	Monongalia	133.2	118.4	149.4	312
Braxton	98.6	72.5	132.3	52	Monroe	121.6	89.9	161.6	57
Brooke	127.8	103.0	157.3	108	Morgan	112.2	87.1	143.3	74
Cabell	141.4	127.9	156.0	440	Nicholas	101.8	81.0	126.7	90
Calhoun	107.1	69.7	159.5	29	Ohio	137.9	118.9	159.4	214
Clay	126.2	88.2	176.2	38	Pendleton	109.1	68.5	166.5	28
Doddridge	67.1	40.2	108.8	20	Pleasants	122.0	81.9	177.5	31
Fayette	110.0	94.0	128.3	183	Pocahontas	97.0	63.5	144.0	31
Gilmer	101.1	63.9	154.7	25	Preston	119.5	98.6	143.6	126
Grant	82.9	57.9	116.8	40	Putnam	125.0	108.9	142.9	229
Greenbrier	134.4	114.4	157.3	182	Raleigh	116.8	103.5	131.4	311
Hampshire	101.2	79.7	127.3	82	Randolph	93.3	74.1	116.3	91
Hancock	112.6	93.0	135.5	130	Ritchie	89.2	59.0	130.7	31
Hardy	80.6	56.4	112.8	39	Roane	101.5	75.2	135.0	54
Harrison	113.3	99.7	128.3	270	Summers	77.7	55.3	107.4	42
Jackson	95.2	76.8	117.2	99	Taylor	92.3	68.8	122.2	55
Jefferson	116.3	99.7	134.9	186	Tucker	106.6	69.6	159.6	29
Kanawha	121.5	113.1	130.5	839	Tyler	114.6	81.3	159.3	41
Lewis	122.3	94.5	156.4	71	Upshur	118.0	94.7	145.7	97
Lincoln	92.5	70.7	119.4	65	Wayne	114.2	96.5	134.5	159
Logan	122.3	102.9	144.6	153	Webster	144.8	103.5	198.4	47
Marion	139.0	121.8	157.9	264	Wetzel	100.5	75.2	132.3	59
Marshall	112.5	93.1	135.1	133	Wirt	101.3	62.0	159.8	21
Mason	87.1	69.0	108.9	86	Wood	103.9	92.4	116.5	322
McDowell	114.6	90.4	143.8	85	Wyoming	79.8	60.2	104.2	61

Breast (Female) - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

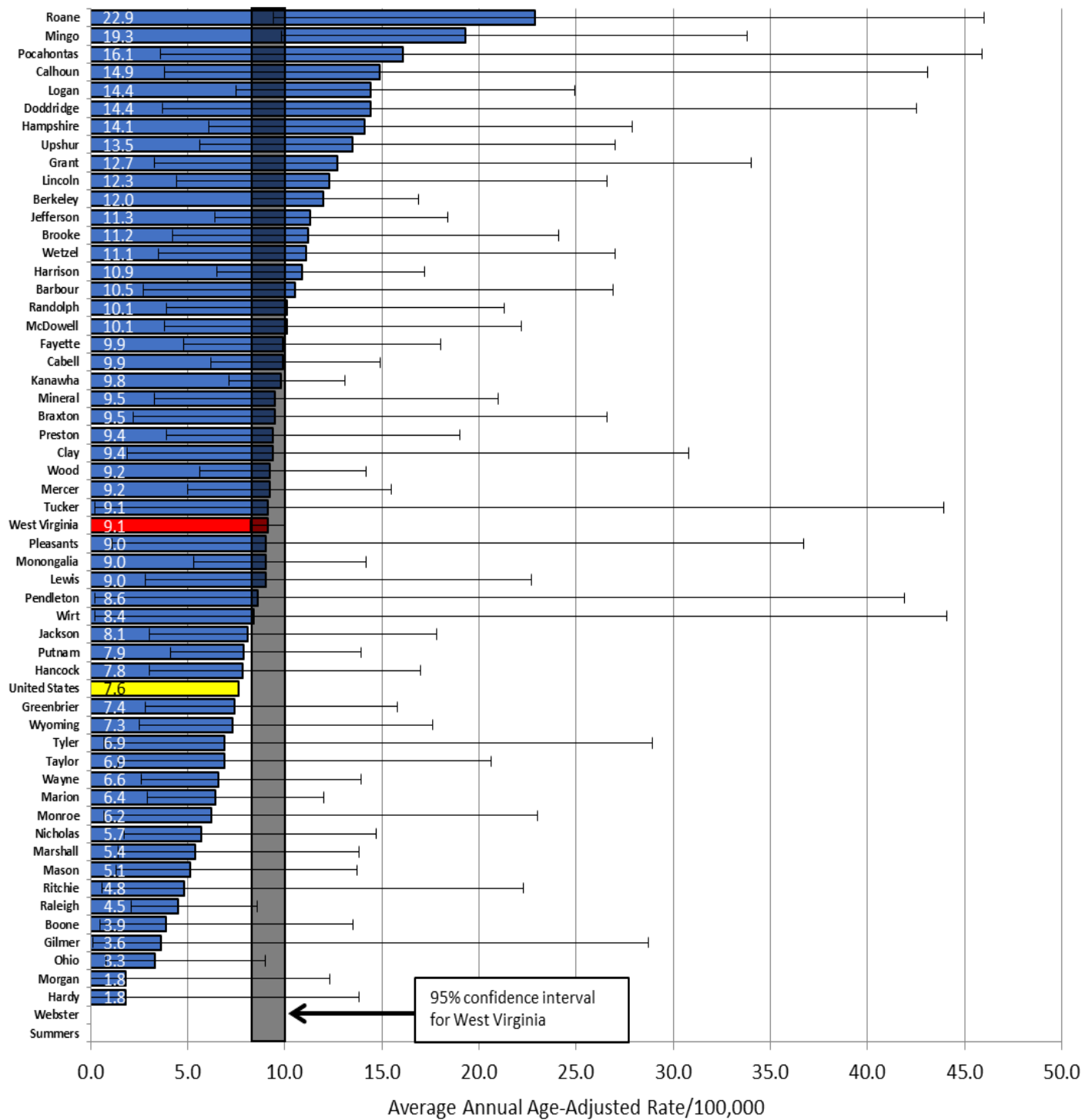


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Cervix Uteri - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	9.1	8.2	10.0	442	Mercer	9.2	5.0	15.5	16
Barbour	10.5	2.7	26.9	4	Mineral	9.5	3.3	21.0	6
Berkeley	12.0	8.3	16.9	34	Mingo	19.3	9.8	33.8	12
Boone	3.9	0.5	13.5	^	Monongalia	9.0	5.3	14.2	18
Braxton	9.5	2.2	26.6	4	Monroe	6.2	0.7	23.0	^
Brooke	11.2	4.2	24.1	7	Morgan	1.8	0.0	12.3	^
Cabell	9.9	6.2	14.9	24	Nicholas	5.7	1.7	14.7	5
Calhoun	14.9	3.8	43.1	4	Ohio	3.3	0.8	9.0	4
Clay	9.4	1.9	30.8	^	Pendleton	8.6	0.2	41.9	^
Doddridge	14.4	3.7	42.5	4	Pleasants	9.0	1.1	36.7	^
Fayette	9.9	4.8	18.0	11	Pocahontas	16.1	3.6	45.9	4
Gilmer	3.6	0.1	28.7	^	Preston	9.4	3.9	19.0	8
Grant	12.7	3.3	34.0	4	Putnam	7.9	4.1	13.9	13
Greenbrier	7.4	2.8	15.8	7	Raleigh	4.5	2.1	8.6	10
Hampshire	14.1	6.1	27.9	9	Randolph	10.1	3.9	21.3	7
Hancock	7.8	3.0	17.0	7	Ritchie	4.8	0.6	22.3	^
Hardy	1.8	0.0	13.8	^	Roane	22.9	9.4	46.0	8
Harrison	10.9	6.5	17.2	20	Summers	0.0	0.0		0
Jackson	8.1	3.0	17.8	7	Taylor	6.9	1.4	20.6	^
Jefferson	11.3	6.4	18.4	17	Tucker	9.1	0.2	43.9	^
Kanawha	9.8	7.1	13.1	49	Tyler	6.9	0.7	28.9	^
Lewis	9.0	2.8	22.7	5	Upshur	13.5	5.6	27.0	8
Lincoln	12.3	4.4	26.6	6	Wayne	6.6	2.6	13.9	7
Logan	14.4	7.5	24.9	14	Webster	0.0	0.0		0
Marion	6.4	2.9	12.0	10	Wetzel	11.1	3.5	27.0	5
Marshall	5.4	1.4	13.8	4	Wirt	8.4	0.2	44.1	^
Mason	5.1	1.3	13.7	4	Wood	9.2	5.6	14.2	21
McDowell	10.1	3.8	22.2	7	Wyoming	7.3	2.5	17.6	6

Cervix Uteri - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

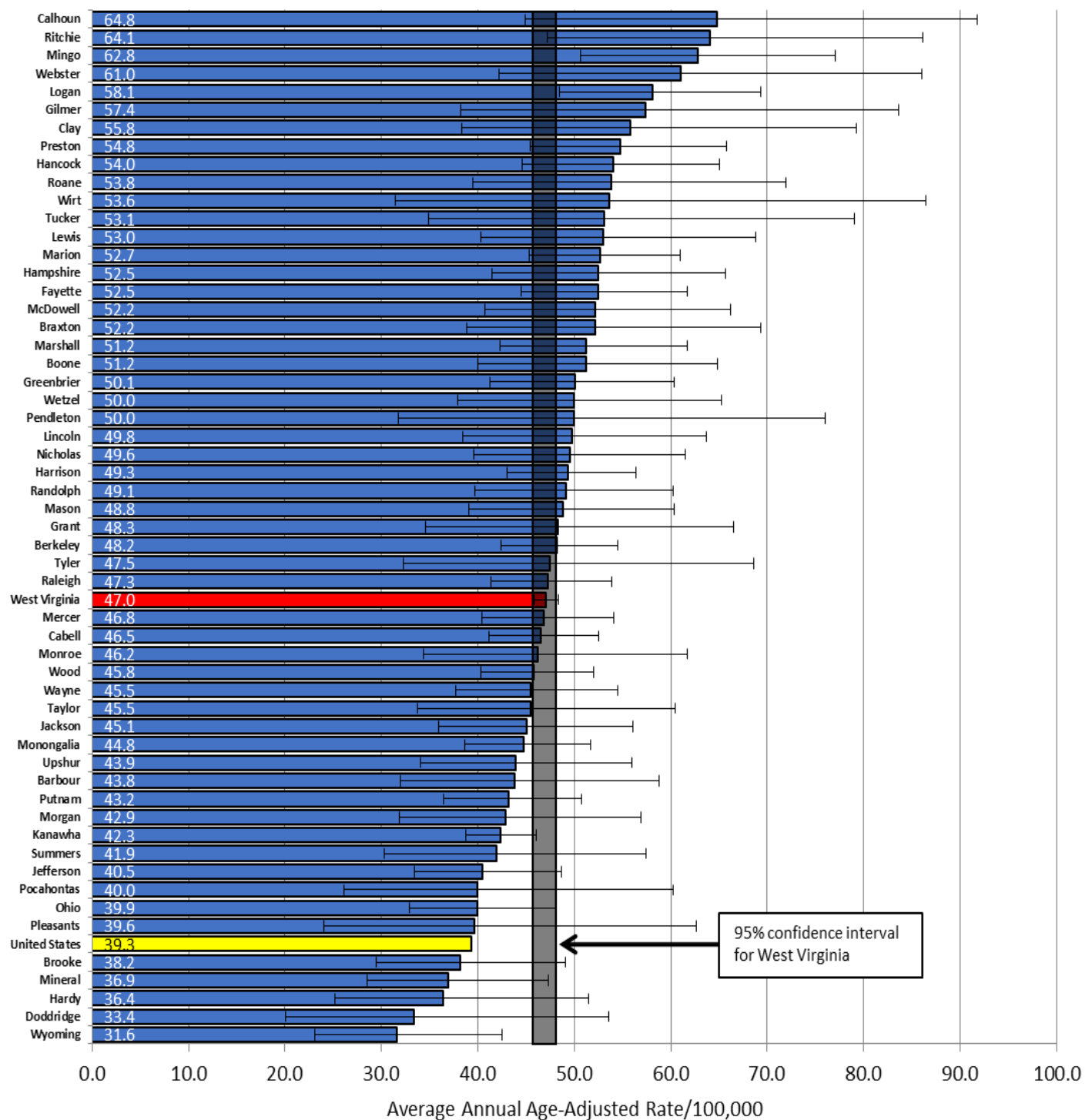


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Colon and Rectum - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	47.0	45.8	48.3	5,703	Mercer	46.8	40.4	54.1	204
Barbour	43.8	32.0	58.8	48	Mineral	36.9	28.5	47.3	68
Berkeley	48.2	42.4	54.5	274	Mingo	62.8	50.6	77.1	99
Boone	51.2	40.0	64.8	75	Monongalia	44.8	38.6	51.7	194
Braxton	52.2	38.9	69.3	55	Monroe	46.2	34.4	61.7	52
Brooke	38.2	29.5	49.1	70	Morgan	42.9	31.9	56.9	55
Cabell	46.5	41.1	52.5	281	Nicholas	49.6	39.6	61.5	91
Calhoun	64.8	44.9	91.8	37	Ohio	39.9	32.9	48.0	126
Clay	55.8	38.3	79.2	34	Pendleton	50.0	31.8	76.0	29
Doddridge	33.4	20.1	53.6	20	Pleasants	39.6	24.0	62.6	20
Fayette	52.5	44.5	61.7	161	Pocahontas	40.0	26.1	60.2	29
Gilmer	57.4	38.2	83.6	29	Preston	54.8	45.4	65.8	124
Grant	48.3	34.6	66.5	43	Putnam	43.2	36.5	50.8	154
Greenbrier	50.1	41.3	60.4	126	Raleigh	47.3	41.4	53.9	244
Hampshire	52.5	41.5	65.7	85	Randolph	49.1	39.7	60.3	101
Hancock	54.0	44.6	65.1	122	Ritchie	64.1	47.2	86.1	49
Hardy	36.4	25.2	51.5	36	Roane	53.8	39.5	71.9	51
Harrison	49.3	43.0	56.4	228	Summers	41.9	30.3	57.4	45
Jackson	45.1	35.9	56.1	88	Taylor	45.5	33.7	60.5	51
Jefferson	40.5	33.4	48.7	123	Tucker	53.1	34.9	79.0	29
Kanawha	42.3	38.7	46.1	548	Tyler	47.5	32.3	68.6	32
Lewis	53.0	40.3	68.8	62	Upshur	43.9	34.0	56.0	70
Lincoln	49.8	38.4	63.7	68	Wayne	45.5	37.7	54.5	126
Logan	58.1	48.5	69.3	137	Webster	61.0	42.2	86.0	39
Marion	52.7	45.3	61.0	193	Wetzel	50.0	37.9	65.3	61
Marshall	51.2	42.3	61.7	120	Wirt	53.6	31.4	86.4	20
Mason	48.8	39.1	60.4	91	Wood	45.8	40.3	52.0	261
McDowell	52.2	40.7	66.2	76	Wyoming	31.6	23.1	42.5	49

Colon and Rectum - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

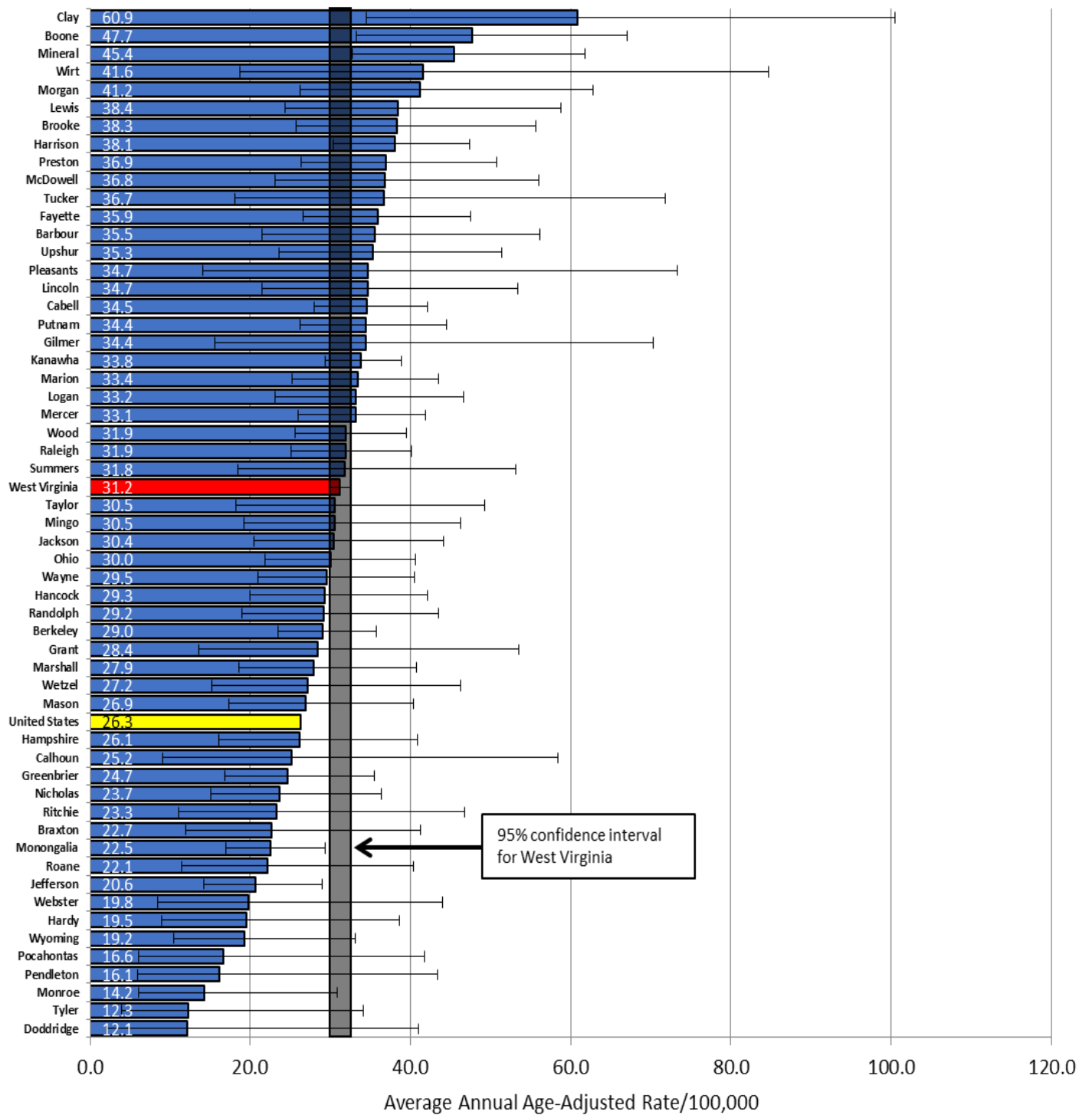


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Corpus and Uterus, NOS - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	31.2	29.8	32.6	1,987	Mercer	33.1	25.9	41.9	79
Barbour	35.5	21.4	56.1	21	Mineral	45.4	32.7	61.8	47
Berkeley	29.0	23.4	35.7	95	Mingo	30.5	19.2	46.2	25
Boone	47.7	33.2	67.0	38	Monongalia	22.5	16.9	29.4	57
Braxton	22.7	11.9	41.3	13	Monroe	14.2	6.1	30.8	8
Brooke	38.3	25.7	55.7	35	Morgan	41.2	26.2	62.8	26
Cabell	34.5	27.9	42.1	106	Nicholas	23.7	15.1	36.4	24
Calhoun	25.2	9.0	58.4	7	Ohio	30.0	21.8	40.6	50
Clay	60.9	34.5	100.5	17	Pendleton	16.1	5.9	43.4	6
Doddridge	12.1	2.0	41.0	^	Pleasants	34.7	14.1	73.3	8
Fayette	35.9	26.6	47.5	57	Pocahontas	16.6	6.0	41.8	6
Gilmer	34.4	15.5	70.3	9	Preston	36.9	26.3	50.8	43
Grant	28.4	13.6	53.5	11	Putnam	34.4	26.2	44.5	63
Greenbrier	24.7	16.8	35.5	36	Raleigh	31.9	25.1	40.1	86
Hampshire	26.1	16.1	40.9	23	Randolph	29.2	18.9	43.5	29
Hancock	29.3	20.0	42.1	35	Ritchie	23.3	11.0	46.7	10
Hardy	19.5	8.9	38.6	10	Roane	22.1	11.4	40.4	13
Harrison	38.1	30.4	47.4	91	Summers	31.8	18.4	53.1	18
Jackson	30.4	20.4	44.1	31	Taylor	30.5	18.2	49.2	19
Jefferson	20.6	14.2	29.0	36	Tucker	36.7	18.1	71.8	11
Kanawha	33.8	29.4	38.9	229	Tyler	12.3	3.9	34.1	^
Lewis	38.4	24.3	58.8	24	Upshur	35.3	23.6	51.4	31
Lincoln	34.7	21.4	53.4	23	Wayne	29.5	21.0	40.5	42
Logan	33.2	23.1	46.6	39	Webster	19.8	8.4	44.0	8
Marion	33.4	25.2	43.5	63	Wetzel	27.2	15.2	46.3	16
Marshall	27.9	18.6	40.7	34	Wirt	41.6	18.7	84.7	9
Mason	26.9	17.3	40.4	27	Wood	31.9	25.6	39.5	95
McDowell	36.8	23.1	56.0	25	Wyoming	19.2	10.4	33.1	15

Corpus and Uterus, NOS - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

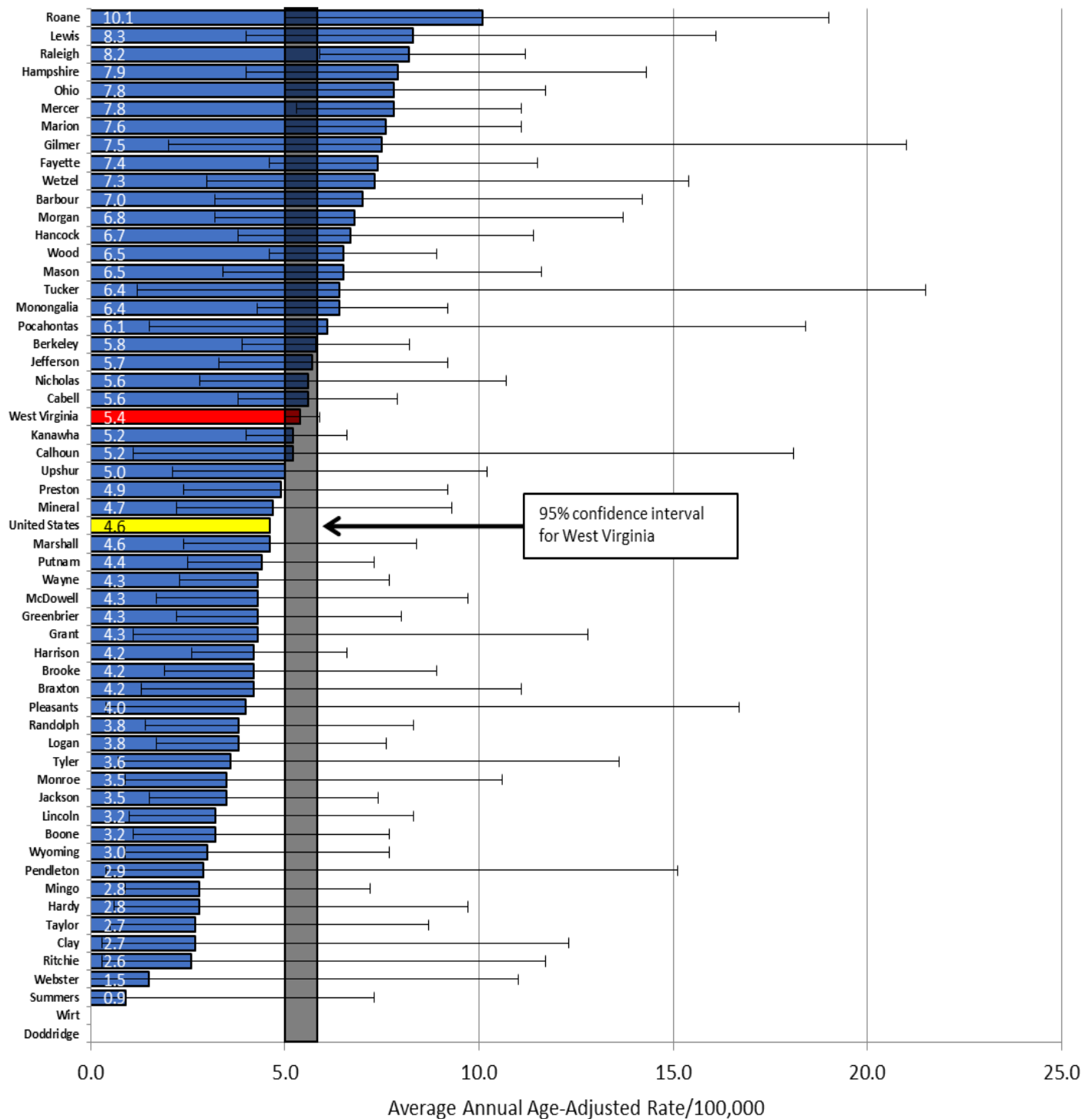


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Esophagus - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	5.4	5.0	5.9	691	Mercer	7.8	5.3	11.1	34
Barbour	7.0	3.2	14.2	9	Mineral	4.7	2.2	9.3	10
Berkeley	5.8	3.9	8.2	34	Mingo	2.8	0.9	7.2	5
Boone	3.2	1.1	7.7	6	Monongalia	6.4	4.3	9.2	30
Braxton	4.2	1.3	11.1	5	Monroe	3.5	0.9	10.6	4
Brooke	4.2	1.9	8.9	9	Morgan	6.8	3.2	13.7	10
Cabell	5.6	3.8	7.9	34	Nicholas	5.6	2.8	10.7	11
Calhoun	5.2	1.1	18.1	^	Ohio	7.8	5.0	11.7	26
Clay	2.7	0.3	12.3	^	Pendleton	2.9	0.4	15.1	^
Doddridge	0.0	0.0		0	Pleasants	4.0	0.4	16.7	^
Fayette	7.4	4.6	11.5	23	Pocahontas	6.1	1.5	18.4	4
Gilmer	7.5	2.0	21.0	4	Preston	4.9	2.4	9.2	11
Grant	4.3	1.1	12.8	4	Putnam	4.4	2.5	7.3	16
Greenbrier	4.3	2.2	8.0	12	Raleigh	8.2	5.9	11.2	43
Hampshire	7.9	4.0	14.3	12	Randolph	3.8	1.4	8.3	7
Hancock	6.7	3.8	11.4	16	Ritchie	2.6	0.3	11.7	^
Hardy	2.8	0.6	9.7	^	Roane	10.1	5.0	19.0	11
Harrison	4.2	2.6	6.6	21	Summers	0.9	0.0	7.3	^
Jackson	3.5	1.5	7.4	8	Taylor	2.7	0.5	8.7	^
Jefferson	5.7	3.3	9.2	18	Tucker	6.4	1.2	21.5	^
Kanawha	5.2	4.0	6.6	67	Tyler	3.6	0.7	13.6	^
Lewis	8.3	4.0	16.1	10	Upshur	5.0	2.1	10.2	8
Lincoln	3.2	1.0	8.3	5	Wayne	4.3	2.3	7.7	13
Logan	3.8	1.7	7.6	9	Webster	1.5	0.0	11.0	^
Marion	7.6	5.0	11.1	29	Wetzel	7.3	3.0	15.4	8
Marshall	4.6	2.4	8.4	13	Wirt	0.0	0.0		0
Mason	6.5	3.4	11.6	14	Wood	6.5	4.6	8.9	41
McDowell	4.3	1.7	9.7	7	Wyoming	3.0	0.9	7.7	5

Esophagus - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

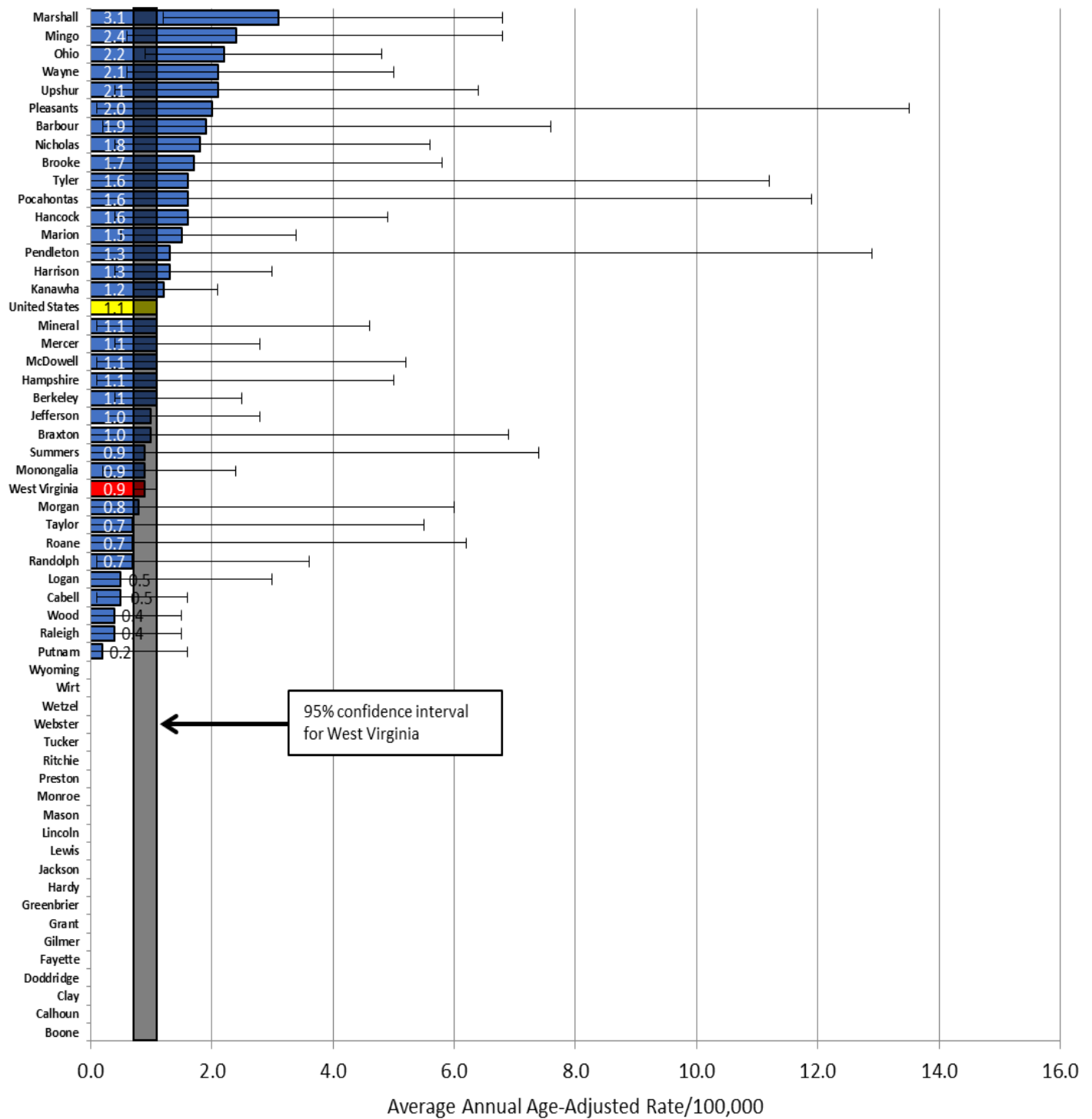


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Gallbladder - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	0.9	0.7	1.1	111	Mercer	1.1	0.4	2.8	5
Barbour	1.9	0.2	7.6	^	Mineral	1.1	0.1	4.6	^
Berkeley	1.1	0.4	2.5	7	Mingo	2.4	0.6	6.8	4
Boone	0.0	0.0		0	Monongalia	0.9	0.2	2.4	4
Braxton	1.0	0.0	6.9	^	Monroe	0.0	0.0		0
Brooke	1.7	0.3	5.8	^	Morgan	0.8	0.0	6.0	^
Cabell	0.5	0.1	1.6	^	Nicholas	1.8	0.4	5.6	^
Calhoun	0.0	0.0		0	Ohio	2.2	0.9	4.8	7
Clay	0.0	0.0		0	Pendleton	1.3	0.0	12.9	^
Doddridge	0.0	0.0		0	Pleasants	2.0	0.1	13.5	^
Fayette	0.0	0.0		0	Pocahontas	1.6	0.0	11.9	^
Gilmer	0.0	0.0		0	Preston	0.0	0.0		0
Grant	0.0	0.0		0	Putnam	0.2	0.0	1.6	^
Greenbrier	0.0	0.0		0	Raleigh	0.4	0.0	1.5	^
Hampshire	1.1	0.1	5.0	^	Randolph	0.7	0.1	3.6	^
Hancock	1.6	0.4	4.9	4	Ritchie	0.0	0.0		0
Hardy	0.0	0.0		0	Roane	0.7	0.0	6.2	^
Harrison	1.3	0.4	3.0	6	Summers	0.9	0.0	7.4	^
Jackson	0.0	0.0		0	Taylor	0.7	0.0	5.5	^
Jefferson	1.0	0.3	2.8	4	Tucker	0.0	0.0		0
Kanawha	1.2	0.7	2.1	15	Tyler	1.6	0.0	11.2	^
Lewis	0.0	0.0		0	Upshur	2.1	0.4	6.4	^
Lincoln	0.0	0.0		0	Wayne	2.1	0.6	5.0	5
Logan	0.5	0.0	3.0	^	Webster	0.0	0.0		0
Marion	1.5	0.5	3.4	6	Wetzel	0.0	0.0		0
Marshall	3.1	1.2	6.8	7	Wirt	0.0	0.0		0
Mason	0.0	0.0		0	Wood	0.4	0.0	1.5	^
McDowell	1.1	0.1	5.2	^	Wyoming	0.0	0.0		0

Gallbladder - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

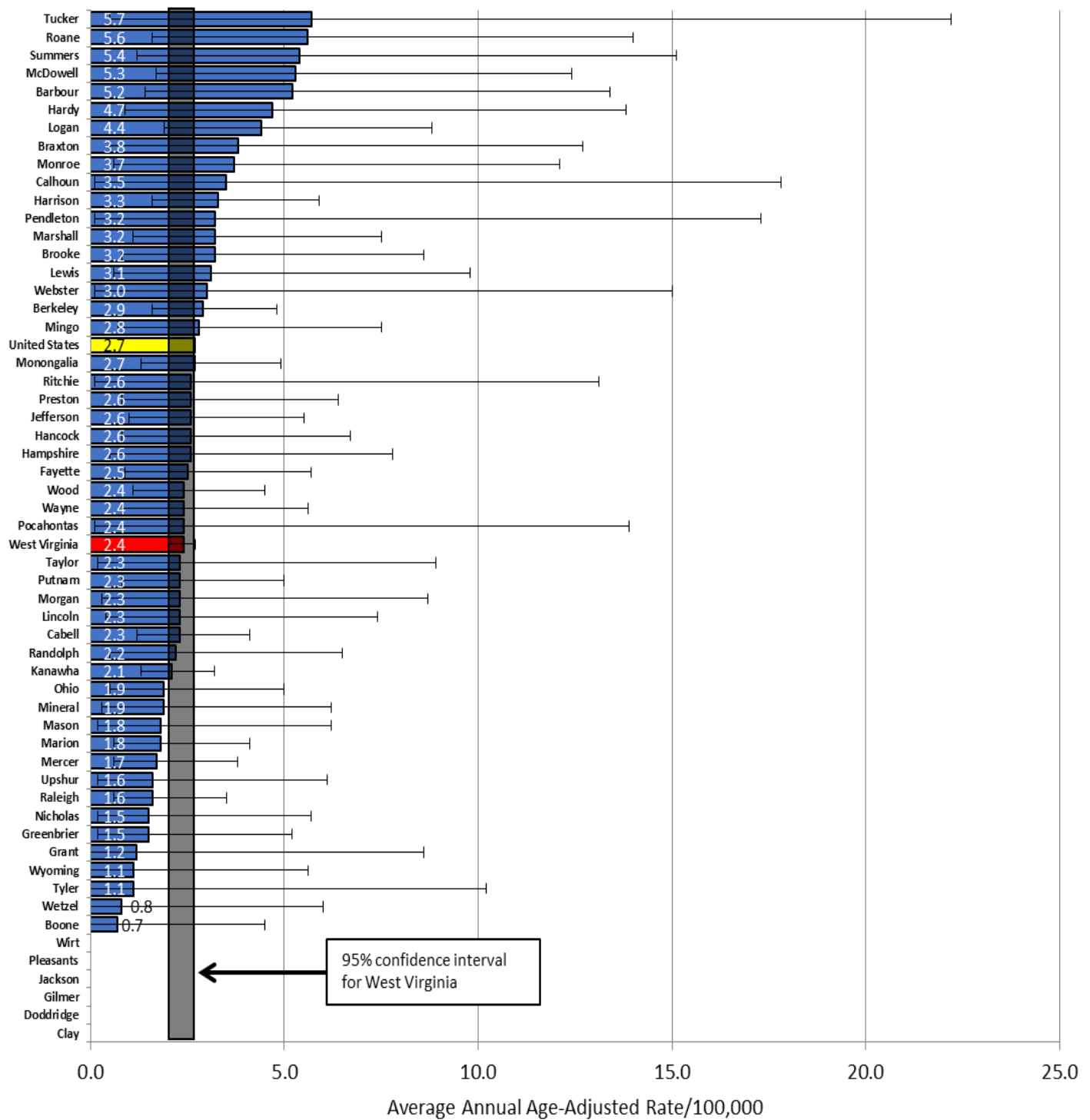


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Hodgkin Lymphoma - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	2.4	2.0	2.7	227	Mercer	1.7	0.6	3.8	6
Barbour	5.2	1.4	13.4	4	Mineral	1.9	0.3	6.2	^
Berkeley	2.9	1.6	4.8	15	Mingo	2.8	0.7	7.5	4
Boone	0.7	0.0	4.5	^	Monongalia	2.7	1.3	4.9	12
Braxton	3.8	0.5	12.7	^	Monroe	3.7	0.6	12.1	^
Brooke	3.2	0.8	8.6	4	Morgan	2.3	0.3	8.7	^
Cabell	2.3	1.2	4.1	13	Nicholas	1.5	0.2	5.7	^
Calhoun	3.5	0.1	17.8	^	Ohio	1.9	0.5	5.0	4
Clay	0.0	0.0		0	Pendleton	3.2	0.1	17.3	^
Doddridge	0.0	0.0		0	Pleasants	0.0	0.0		0
Fayette	2.5	0.9	5.7	6	Pocahontas	2.4	0.1	13.9	^
Gilmer	0.0	0.0		0	Preston	2.6	0.8	6.4	5
Grant	1.2	0.0	8.6	^	Putnam	2.3	0.8	5.0	6
Greenbrier	1.5	0.2	5.2	^	Raleigh	1.6	0.6	3.5	7
Hampshire	2.6	0.5	7.8	^	Randolph	2.2	0.5	6.5	^
Hancock	2.6	0.8	6.7	5	Ritchie	2.6	0.1	13.1	^
Hardy	4.7	0.9	13.8	^	Roane	5.6	1.6	14.0	5
Harrison	3.3	1.6	5.9	12	Summers	5.4	1.2	15.1	4
Jackson	0.0	0.0		0	Taylor	2.3	0.2	8.9	^
Jefferson	2.6	1.0	5.5	7	Tucker	5.7	0.5	22.2	^
Kanawha	2.1	1.3	3.2	22	Tyler	1.1	0.0	10.2	^
Lewis	3.1	0.6	9.8	^	Upshur	1.6	0.2	6.1	^
Lincoln	2.3	0.4	7.4	^	Wayne	2.4	0.8	5.6	5
Logan	4.4	1.9	8.8	8	Webster	3.0	0.1	15.0	^
Marion	1.8	0.6	4.1	6	Wetzel	0.8	0.0	6.0	^
Marshall	3.2	1.1	7.5	6	Wirt	0.0	0.0		0
Mason	1.8	0.2	6.2	^	Wood	2.4	1.1	4.5	9
McDowell	5.3	1.7	12.4	5	Wyoming	1.1	0.0	5.6	^

Hodgkin Lymphoma - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



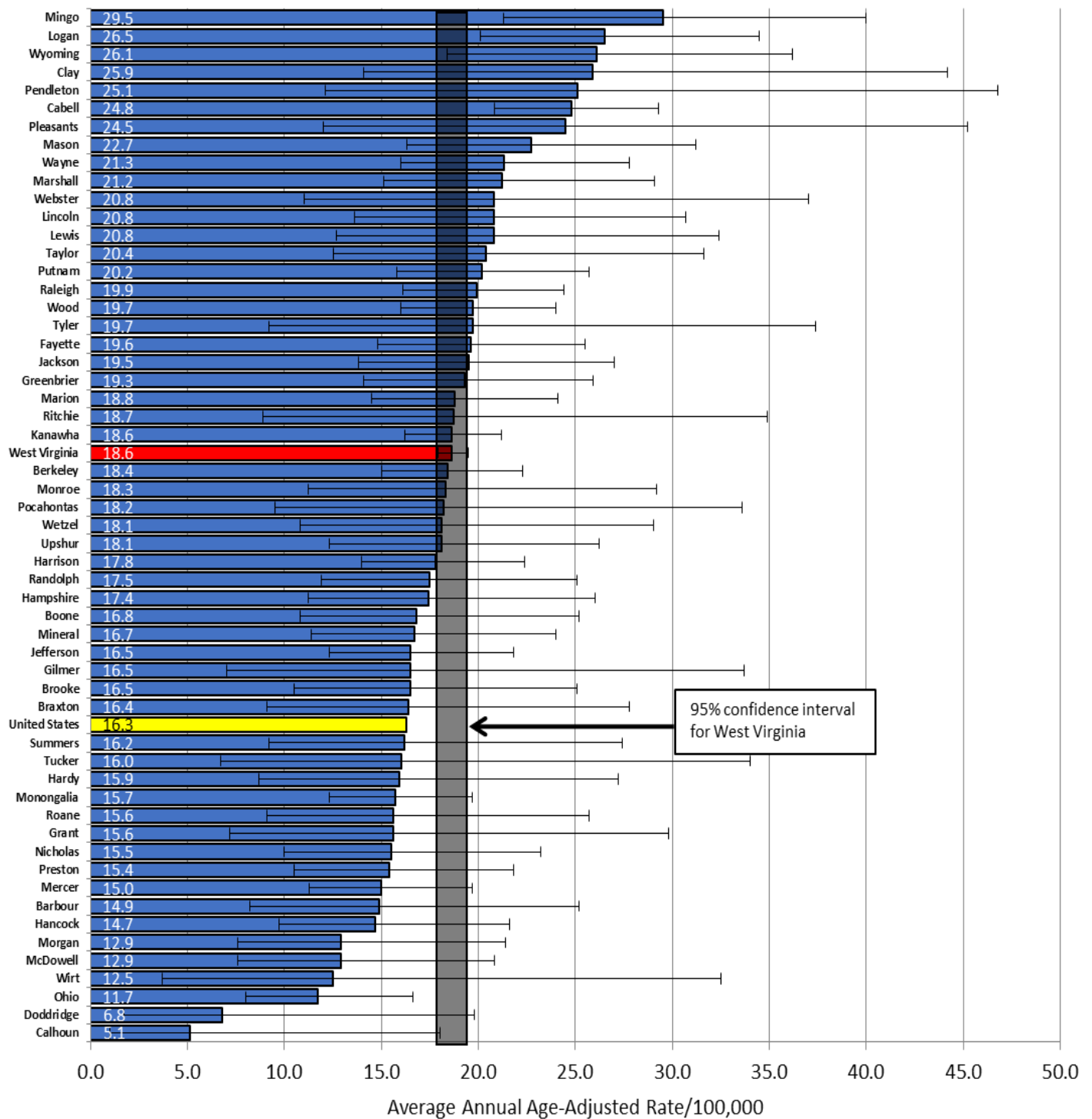
Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Kidney and Renal Pelvis - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	18.6	17.9	19.5	2,241	Mercer	15.0	11.3	19.7	61
Barbour	14.9	8.2	25.2	15	Mineral	16.7	11.4	24.0	34
Berkeley	18.4	15.0	22.3	111	Mingo	29.5	21.3	40.0	45
Boone	16.8	10.8	25.2	26	Monongalia	15.7	12.3	19.7	78
Braxton	16.4	9.1	27.8	16	Monroe	18.3	11.2	29.2	21
Brooke	16.5	10.5	25.1	27	Morgan	12.9	7.6	21.4	18
Cabell	24.8	20.8	29.3	148	Nicholas	15.5	10.0	23.2	27
Calhoun	5.1	1.0	18.0	^	Ohio	11.7	8.0	16.6	35
Clay	25.9	14.1	44.2	15	Pendleton	25.1	12.1	46.8	13
Doddridge	6.8	1.7	19.8	^	Pleasants	24.5	12.0	45.2	11
Fayette	19.6	14.8	25.5	61	Pocahontas	18.2	9.5	33.6	13
Gilmer	16.5	7.0	33.7	8	Preston	15.4	10.5	21.8	34
Grant	15.6	7.2	29.8	11	Putnam	20.2	15.8	25.7	74
Greenbrier	19.3	14.1	25.9	51	Raleigh	19.9	16.1	24.4	105
Hampshire	17.4	11.2	26.0	27	Randolph	17.5	11.9	25.1	34
Hancock	14.7	9.7	21.6	30	Ritchie	18.7	8.9	34.9	11
Hardy	15.9	8.7	27.2	15	Roane	15.6	9.1	25.7	18
Harrison	17.8	14.0	22.4	80	Summers	16.2	9.2	27.4	17
Jackson	19.5	13.8	27.0	40	Taylor	20.4	12.5	31.6	22
Jefferson	16.5	12.3	21.8	54	Tucker	16.0	6.7	34.0	9
Kanawha	18.6	16.2	21.2	239	Tyler	19.7	9.2	37.4	11
Lewis	20.8	12.7	32.4	22	Upshur	18.1	12.3	26.2	32
Lincoln	20.8	13.6	30.7	28	Wayne	21.3	16.0	27.8	59
Logan	26.5	20.1	34.5	63	Webster	20.8	11.0	37.0	14
Marion	18.8	14.5	24.1	69	Wetzel	18.1	10.8	29.0	21
Marshall	21.2	15.1	29.1	44	Wirt	12.5	3.7	32.5	5
Mason	22.7	16.3	31.2	43	Wood	19.7	16.0	24.0	108
McDowell	12.9	7.6	20.8	20	Wyoming	26.1	18.4	36.2	41

^ indicates suppressed data for counties with 3 or fewer cases over the 5-year period

Kidney and Renal Pelvis - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

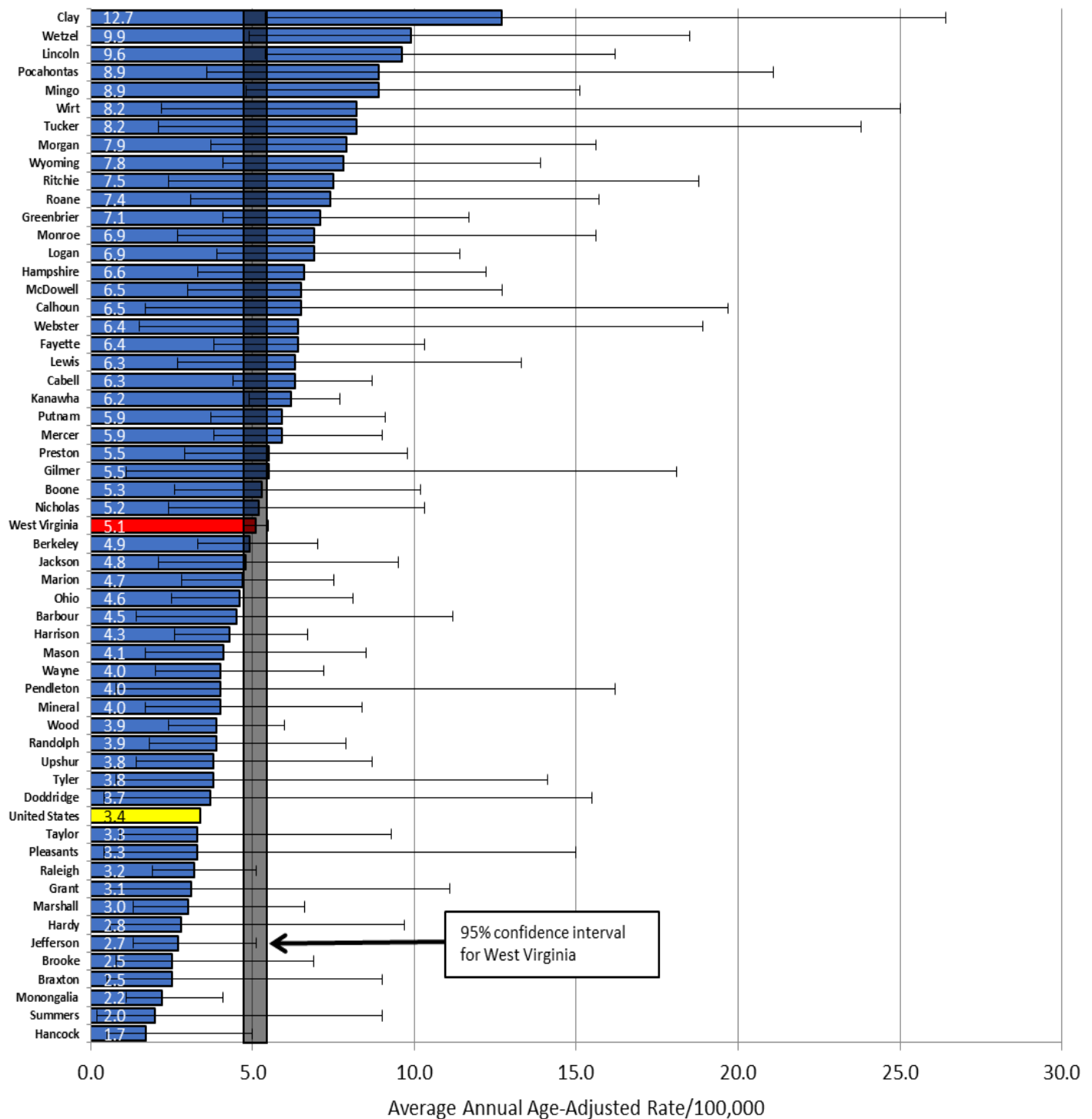


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Larynx - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	5.1	4.7	5.5	660	Mercer	5.9	3.8	9.0	25
Barbour	4.5	1.4	11.2	5	Mineral	4.0	1.7	8.4	8
Berkeley	4.9	3.3	7.0	32	Mingo	8.9	4.8	15.1	15
Boone	5.3	2.6	10.2	11	Monongalia	2.2	1.1	4.1	11
Braxton	2.5	0.5	9.0	^	Monroe	6.9	2.7	15.6	7
Brooke	2.5	0.8	6.9	5	Morgan	7.9	3.7	15.6	10
Cabell	6.3	4.4	8.7	39	Nicholas	5.2	2.4	10.3	10
Calhoun	6.5	1.7	19.7	4	Ohio	4.6	2.5	8.1	14
Clay	12.7	5.4	26.4	8	Pendleton	4.0	0.8	16.2	^
Doddridge	3.7	0.4	15.5	^	Pleasants	3.3	0.4	15.0	^
Fayette	6.4	3.8	10.3	20	Pocahontas	8.9	3.6	21.1	7
Gilmer	5.5	1.1	18.1	^	Preston	5.5	2.9	9.8	13
Grant	3.1	0.6	11.1	^	Putnam	5.9	3.7	9.1	22
Greenbrier	7.1	4.1	11.7	18	Raleigh	3.2	1.9	5.1	20
Hampshire	6.6	3.3	12.2	12	Randolph	3.9	1.8	7.9	9
Hancock	1.7	0.5	5.0	4	Ritchie	7.5	2.4	18.8	5
Hardy	2.8	0.6	9.7	^	Roane	7.4	3.1	15.7	8
Harrison	4.3	2.6	6.7	21	Summers	2.0	0.2	9.0	^
Jackson	4.8	2.1	9.5	9	Taylor	3.3	0.9	9.3	4
Jefferson	2.7	1.3	5.1	10	Tucker	8.2	2.1	23.8	4
Kanawha	6.2	4.9	7.7	84	Tyler	3.8	0.8	14.1	^
Lewis	6.3	2.7	13.3	8	Upshur	3.8	1.4	8.7	6
Lincoln	9.6	5.4	16.2	16	Wayne	4.0	2.0	7.2	12
Logan	6.9	3.9	11.4	18	Webster	6.4	1.5	18.9	4
Marion	4.7	2.8	7.5	19	Wetzel	9.9	4.9	18.5	12
Marshall	3.0	1.3	6.6	8	Wirt	8.2	2.2	25.0	4
Mason	4.1	1.7	8.5	8	Wood	3.9	2.4	6.0	23
McDowell	6.5	3.0	12.7	10	Wyoming	7.8	4.1	13.9	14

Larynx - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

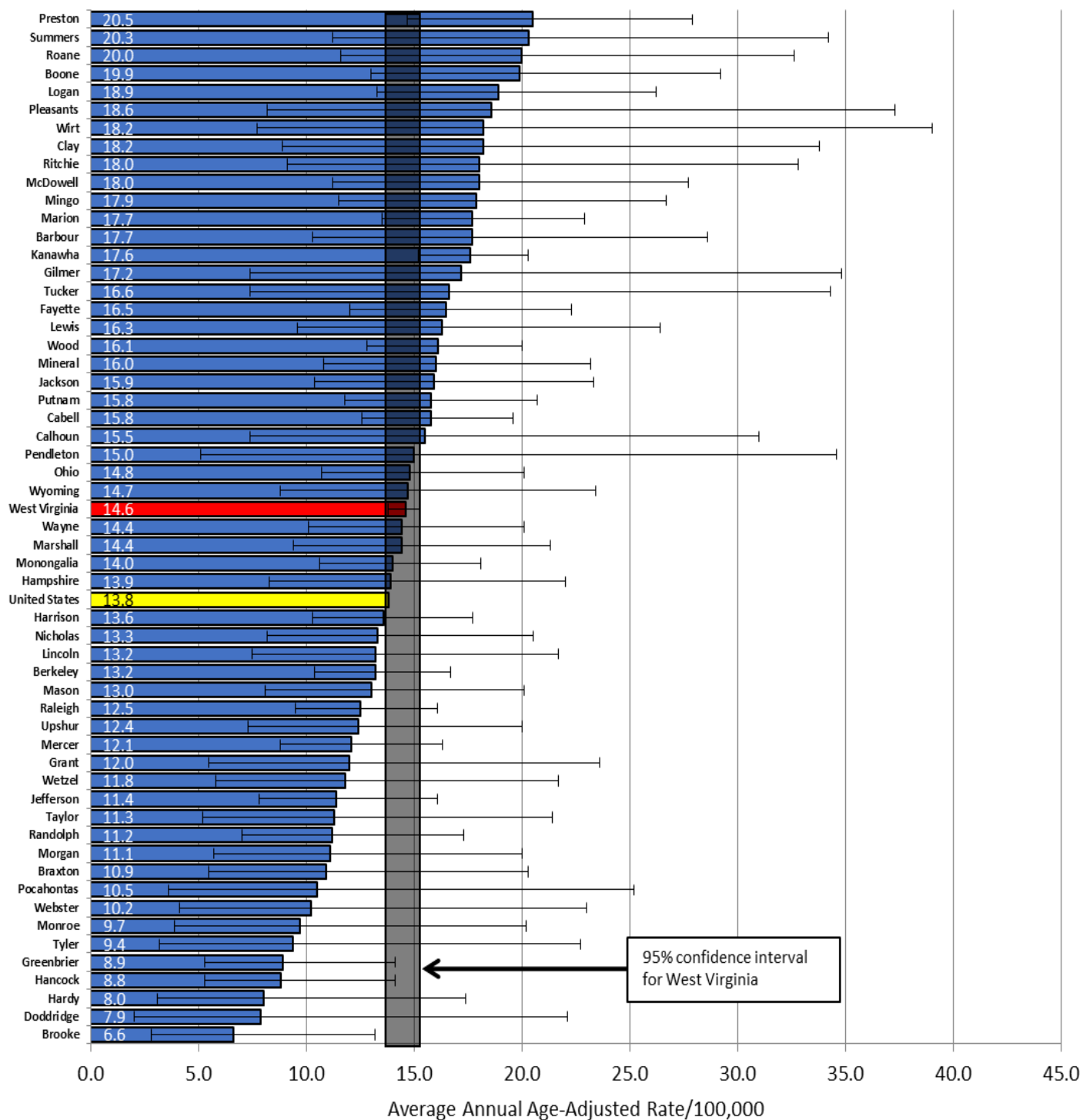


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Leukemia - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	14.6	13.8	15.3	1,668	Mercer	12.1	8.8	16.3	48
Barbour	17.7	10.3	28.6	19	Mineral	16.0	10.8	23.2	32
Berkeley	13.2	10.4	16.7	76	Mingo	17.9	11.5	26.7	26
Boone	19.9	13.0	29.2	28	Monongalia	14.0	10.6	18.1	61
Braxton	10.9	5.5	20.3	12	Monroe	9.7	3.9	20.2	8
Brooke	6.6	2.8	13.2	9	Morgan	11.1	5.7	20.0	13
Cabell	15.8	12.6	19.6	90	Nicholas	13.3	8.2	20.5	23
Calhoun	15.5	7.4	31.0	10	Ohio	14.8	10.7	20.1	47
Clay	18.2	8.9	33.8	11	Pendleton	15.0	5.1	34.6	7
Doddridge	7.9	2.0	22.1	4	Pleasants	18.6	8.2	37.3	9
Fayette	16.5	12.0	22.3	47	Pocahontas	10.5	3.6	25.2	6
Gilmer	17.2	7.4	34.8	8	Preston	20.5	14.7	27.9	43
Grant	12.0	5.5	23.6	10	Putnam	15.8	11.8	20.7	55
Greenbrier	8.9	5.3	14.1	21	Raleigh	12.5	9.5	16.1	64
Hampshire	13.9	8.3	22.0	21	Randolph	11.2	7.0	17.3	23
Hancock	8.8	5.3	14.1	20	Ritchie	18.0	9.1	32.8	12
Hardy	8.0	3.1	17.4	7	Roane	20.0	11.6	32.6	18
Harrison	13.6	10.3	17.7	60	Summers	20.3	11.2	34.2	17
Jackson	15.9	10.4	23.3	29	Taylor	11.3	5.2	21.4	10
Jefferson	11.4	7.8	16.1	35	Tucker	16.6	7.4	34.3	9
Kanawha	17.6	15.2	20.3	207	Tyler	9.4	3.2	22.7	6
Lewis	16.3	9.6	26.4	19	Upshur	12.4	7.3	20.0	18
Lincoln	13.2	7.5	21.7	17	Wayne	14.4	10.1	20.1	38
Logan	18.9	13.3	26.2	39	Webster	10.2	4.1	23.0	7
Marion	17.7	13.5	22.9	63	Wetzel	11.8	5.8	21.7	12
Marshall	14.4	9.4	21.3	30	Wirt	18.2	7.7	39.0	8
Mason	13.0	8.1	20.1	23	Wood	16.1	12.8	20.0	89
McDowell	18.0	11.2	27.7	24	Wyoming	14.7	8.8	23.4	20

Leukemia - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

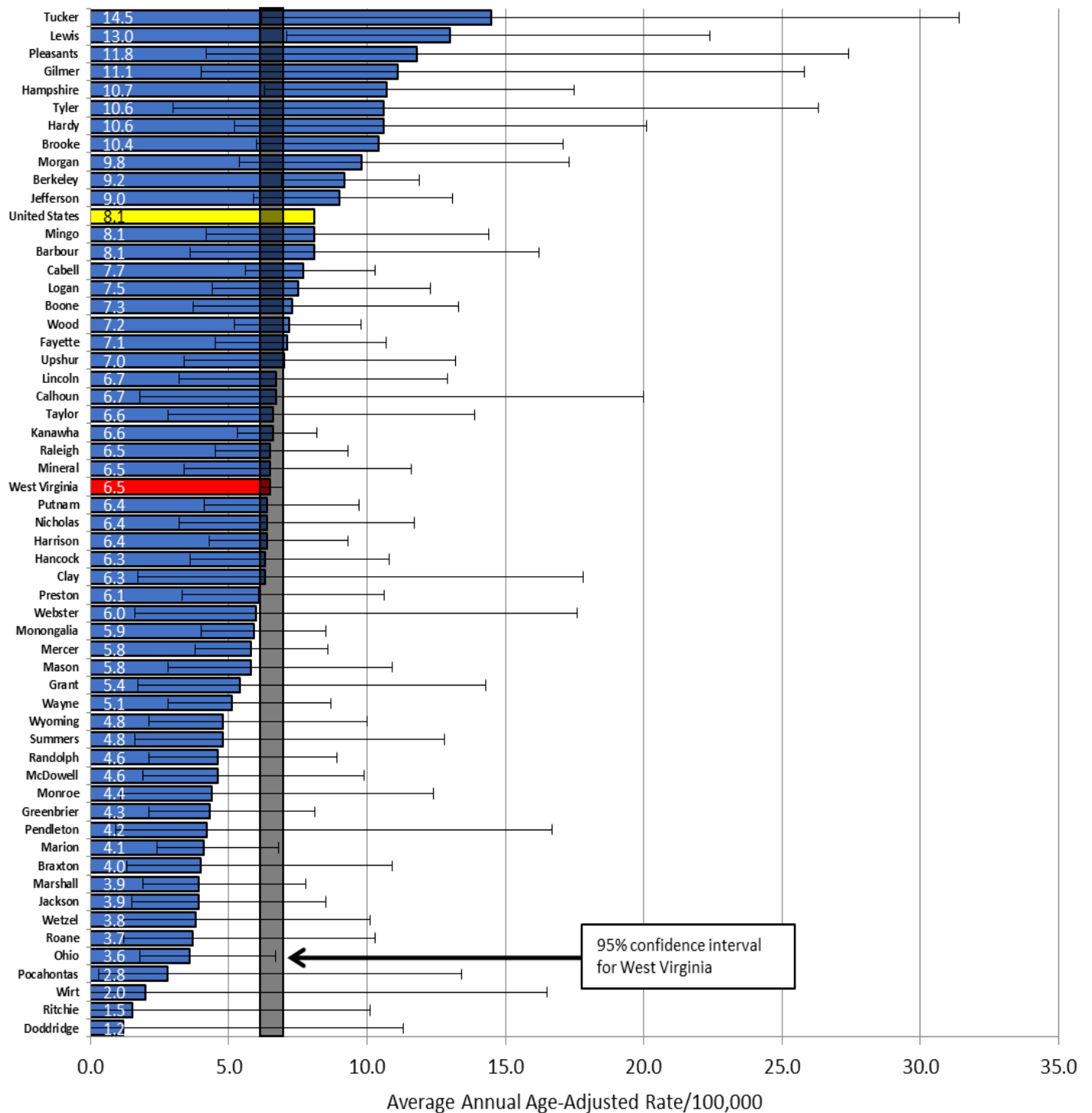


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Liver and Intrahepatic Bile Duct - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	6.5	6.1	7.0	846	Mercer	5.8	3.8	8.6	28
Barbour	8.1	3.6	16.2	9	Mineral	6.5	3.4	11.6	13
Berkeley	9.2	6.9	11.9	61	Mingo	8.1	4.2	14.4	13
Boone	7.3	3.7	13.3	12	Monongalia	5.9	4.0	8.5	31
Braxton	4.0	1.3	10.9	5	Monroe	4.4	1.1	12.4	4
Brooke	10.4	6.0	17.1	19	Morgan	9.8	5.4	17.3	15
Cabell	7.7	5.6	10.3	48	Nicholas	6.4	3.2	11.7	12
Calhoun	6.7	1.8	20.0	4	Ohio	3.6	1.8	6.7	12
Clay	6.3	1.7	17.8	4	Pendleton	4.2	0.9	16.7	^
Doddridge	1.2	0.0	11.3	^	Pleasants	11.8	4.2	27.4	6
Fayette	7.1	4.5	10.7	25	Pocahontas	2.8	0.3	13.4	^
Gilmer	11.1	4.0	25.8	6	Preston	6.1	3.3	10.6	14
Grant	5.4	1.7	14.3	5	Putnam	6.4	4.1	9.7	25
Greenbrier	4.3	2.1	8.1	12	Raleigh	6.5	4.5	9.3	35
Hampshire	10.7	6.3	17.5	19	Randolph	4.6	2.1	8.9	10
Hancock	6.3	3.6	10.8	16	Ritchie	1.5	0.0	10.1	^
Hardy	10.6	5.2	20.1	11	Roane	3.7	1.2	10.3	5
Harrison	6.4	4.3	9.3	31	Summers	4.8	1.6	12.8	5
Jackson	3.9	1.5	8.5	7	Taylor	6.6	2.8	13.9	8
Jefferson	9.0	5.9	13.1	29	Tucker	14.5	6.2	31.4	8
Kanawha	6.6	5.3	8.2	90	Tyler	10.6	3.0	26.3	5
Lewis	13.0	7.1	22.4	15	Upshur	7.0	3.4	13.2	11
Lincoln	6.7	3.2	12.9	10	Wayne	5.1	2.8	8.7	15
Logan	7.5	4.4	12.3	18	Webster	6.0	1.6	17.6	4
Marion	4.1	2.4	6.8	17	Wetzel	3.8	1.2	10.1	5
Marshall	3.9	1.9	7.8	10	Wirt	2.0	0.0	16.5	^
Mason	5.8	2.8	10.9	11	Wood	7.2	5.2	9.8	43
McDowell	4.6	1.9	9.9	8	Wyoming	4.8	2.1	10.0	9

Liver and Intrahepatic Bile Duct - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

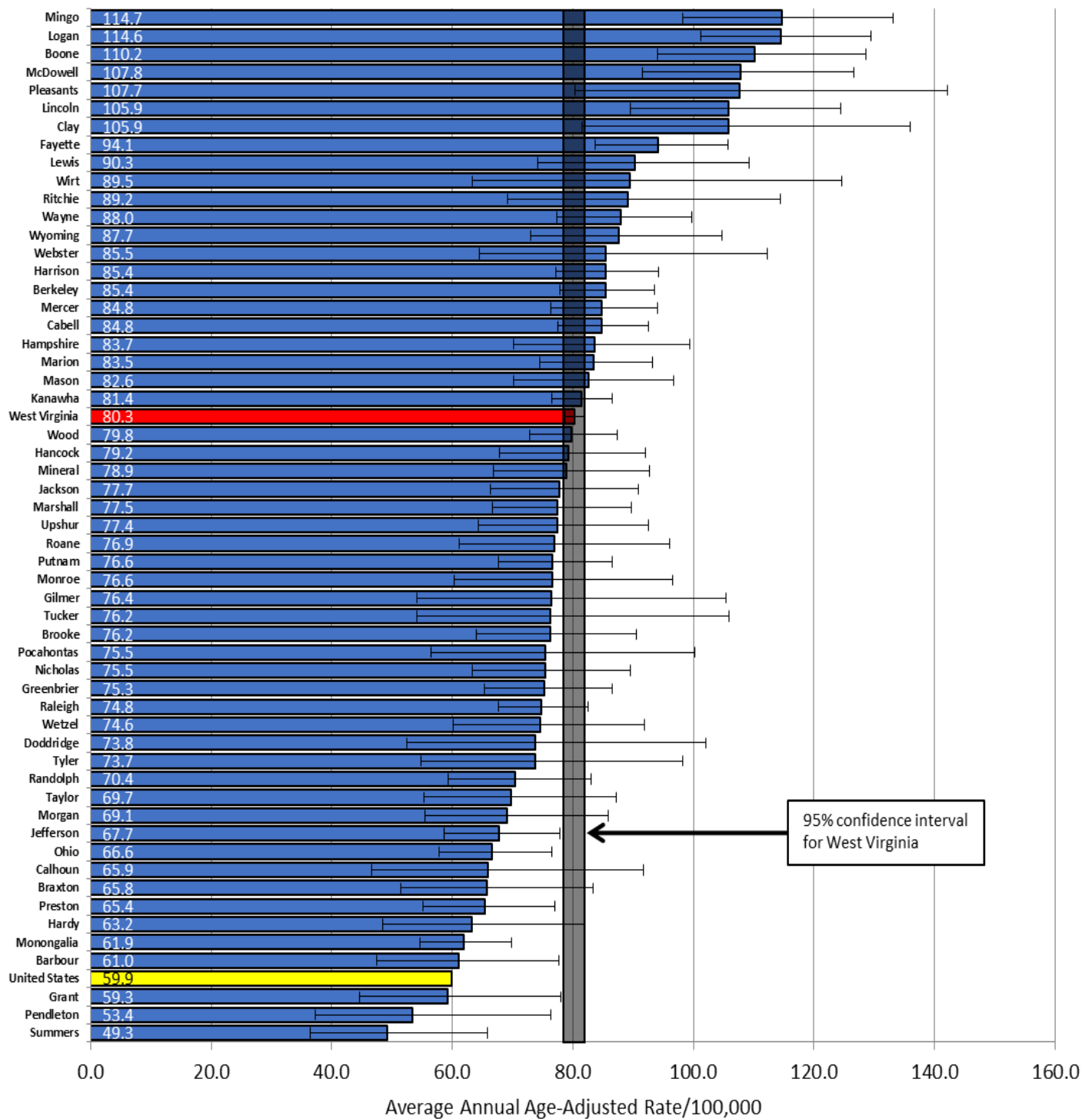


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Lung and Bronchus - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	80.3	78.7	81.9	10,195	Mercer	84.8	76.3	94.1	382
Barbour	61.0	47.4	77.7	71	Mineral	78.9	66.9	92.7	159
Berkeley	85.4	77.8	93.5	498	Mingo	114.7	98.3	133.2	185
Boone	110.2	94.0	128.6	174	Monongalia	61.9	54.7	69.8	278
Braxton	65.8	51.5	83.4	75	Monroe	76.6	60.4	96.6	81
Brooke	76.2	64.0	90.5	144	Morgan	69.1	55.5	85.8	92
Cabell	84.8	77.6	92.6	525	Nicholas	75.5	63.4	89.6	143
Calhoun	65.9	46.7	91.8	40	Ohio	66.6	57.8	76.6	218
Clay	105.9	81.5	135.9	68	Pendleton	53.4	37.2	76.4	36
Doddridge	73.8	52.5	102.0	41	Pleasants	107.7	80.4	142.1	54
Fayette	94.1	83.7	105.7	307	Pocahontas	75.5	56.5	100.3	55
Gilmer	76.4	54.2	105.5	39	Preston	65.4	55.2	77.1	152
Grant	59.3	44.7	78.0	57	Putnam	76.6	67.6	86.5	274
Greenbrier	75.3	65.4	86.6	214	Raleigh	74.8	67.6	82.6	414
Hampshire	83.7	70.1	99.4	143	Randolph	70.4	59.3	83.1	149
Hancock	79.2	67.9	92.0	185	Ritchie	89.2	69.1	114.4	70
Hardy	63.2	48.4	81.8	64	Roane	76.9	61.2	96.0	86
Harrison	85.4	77.2	94.3	410	Summers	49.3	36.5	65.8	52
Jackson	77.7	66.3	90.9	166	Taylor	69.7	55.3	87.2	83
Jefferson	67.7	58.6	77.9	211	Tucker	76.2	54.2	105.9	42
Kanawha	81.4	76.5	86.5	1,098	Tyler	73.7	54.9	98.2	53
Lewis	90.3	74.2	109.3	113	Upshur	77.4	64.4	92.5	129
Lincoln	105.9	89.6	124.5	159	Wayne	88.0	77.4	99.7	258
Logan	114.6	101.3	129.4	284	Webster	85.5	64.5	112.2	59
Marion	83.5	74.6	93.3	329	Wetzel	74.6	60.2	91.9	97
Marshall	77.5	66.7	89.8	192	Wirt	89.5	63.4	124.6	40
Mason	82.6	70.2	96.8	162	Wood	79.8	72.8	87.4	485
McDowell	107.8	91.5	126.6	164	Wyoming	87.7	73.1	104.7	136

Lung and Bronchus - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



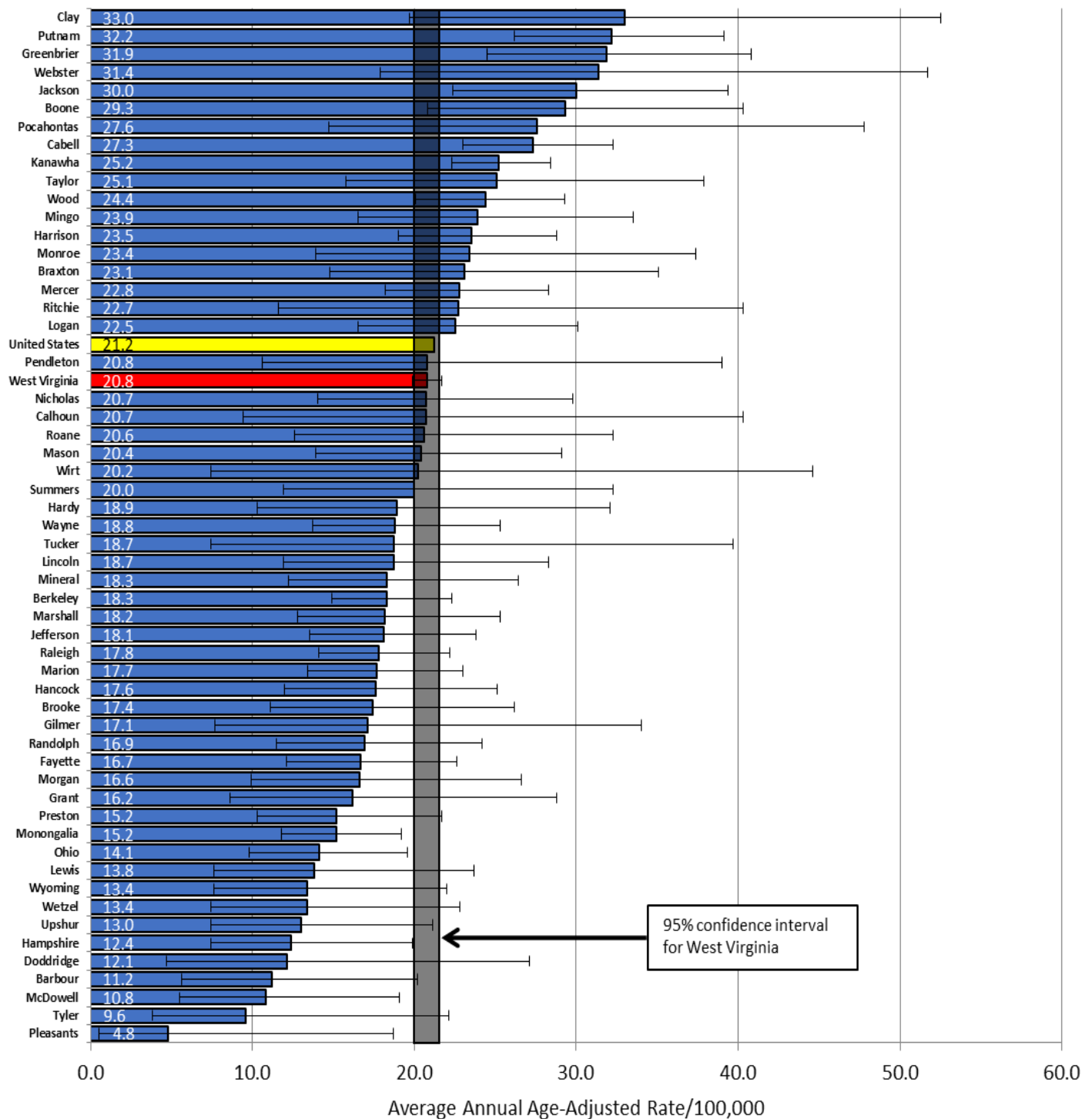
Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Melanoma of the Skin - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	20.8	19.9	21.7	2,347	Mercer	22.8	18.2	28.3	94
Barbour	11.2	5.6	20.2	12	Mineral	18.3	12.2	26.4	31
Berkeley	18.3	14.9	22.3	106	Mingo	23.9	16.5	33.5	37
Boone	29.3	20.8	40.3	42	Monongalia	15.2	11.8	19.2	74
Braxton	23.1	14.8	35.1	25	Monroe	23.4	13.9	37.4	21
Brooke	17.4	11.1	26.2	28	Morgan	16.6	9.9	26.6	20
Cabell	27.3	23.0	32.3	149	Nicholas	20.7	14.0	29.8	33
Calhoun	20.7	9.4	40.3	10	Ohio	14.1	9.8	19.6	40
Clay	33.0	19.7	52.5	20	Pendleton	20.8	10.6	39.0	13
Doddridge	12.1	4.7	27.1	7	Pleasants	4.8	0.5	18.7	^
Fayette	16.7	12.1	22.6	47	Pocahontas	27.6	14.7	47.8	15
Gilmer	17.1	7.7	34.0	9	Preston	15.2	10.3	21.7	33
Grant	16.2	8.6	28.8	14	Putnam	32.2	26.2	39.1	108
Greenbrier	31.9	24.5	40.8	74	Raleigh	17.8	14.1	22.2	86
Hampshire	12.4	7.4	19.9	20	Randolph	16.9	11.5	24.2	34
Hancock	17.6	12.0	25.1	35	Ritchie	22.7	11.6	40.3	13
Hardy	18.9	10.3	32.1	15	Roane	20.6	12.6	32.3	22
Harrison	23.5	19.0	28.8	101	Summers	20.0	11.9	32.3	20
Jackson	30.0	22.4	39.4	56	Taylor	25.1	15.8	37.9	24
Jefferson	18.1	13.5	23.8	55	Tucker	18.7	7.4	39.7	8
Kanawha	25.2	22.3	28.4	299	Tyler	9.6	3.8	22.1	^
Lewis	13.8	7.6	23.7	15	Upshur	13.0	7.4	21.1	18
Lincoln	18.7	11.9	28.3	25	Wayne	18.8	13.7	25.3	48
Logan	22.5	16.5	30.1	50	Webster	31.4	17.9	51.7	18
Marion	17.7	13.4	23.0	61	Wetzel	13.4	7.4	22.8	16
Marshall	18.2	12.8	25.3	40	Wirt	20.2	7.4	44.6	7
Mason	20.4	13.9	29.1	35	Wood	24.4	20.1	29.3	125
McDowell	10.8	5.5	19.1	13	Wyoming	13.4	7.6	22.0	17

^ indicates suppressed data for counties with 3 or fewer cases over the 5-year period

Melanoma of the Skin - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

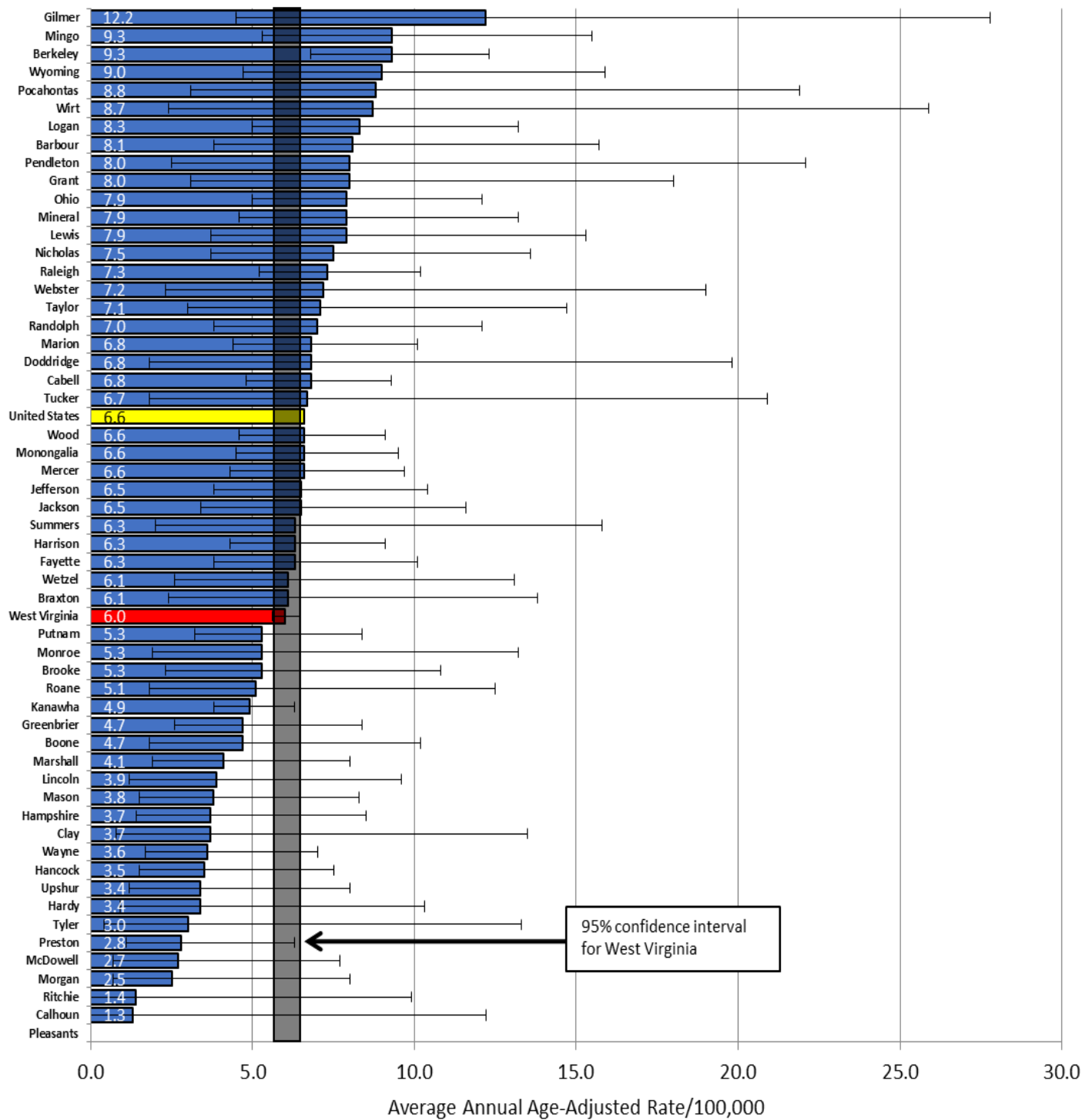


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Myeloma - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	6.0	5.6	6.5	752	Mercer	6.6	4.3	9.7	29
Barbour	8.1	3.8	15.7	10	Mineral	7.9	4.6	13.2	17
Berkeley	9.3	6.8	12.3	50	Mingo	9.3	5.3	15.5	17
Boone	4.7	1.8	10.2	7	Monongalia	6.6	4.5	9.5	31
Braxton	6.1	2.4	13.8	7	Monroe	5.3	1.9	13.2	6
Brooke	5.3	2.3	10.8	9	Morgan	2.5	0.7	8.0	4
Cabell	6.8	4.8	9.3	41	Nicholas	7.5	3.7	13.6	12
Calhoun	1.3	0.0	12.2	^	Ohio	7.9	5.0	12.1	25
Clay	3.7	0.8	13.5	^	Pendleton	8.0	2.5	22.1	5
Doddridge	6.8	1.8	19.8	4	Pleasants	0.0	0.0		0
Fayette	6.3	3.8	10.1	19	Pocahontas	8.8	3.1	21.9	6
Gilmer	12.2	4.5	27.8	6	Preston	2.8	1.1	6.3	7
Grant	8.0	3.1	18.0	7	Putnam	5.3	3.2	8.4	20
Greenbrier	4.7	2.6	8.4	14	Raleigh	7.3	5.2	10.2	39
Hampshire	3.7	1.4	8.5	7	Randolph	7.0	3.8	12.1	15
Hancock	3.5	1.5	7.5	8	Ritchie	1.4	0.0	9.9	^
Hardy	3.4	0.9	10.3	4	Roane	5.1	1.8	12.5	6
Harrison	6.3	4.3	9.1	31	Summers	6.3	2.0	15.8	5
Jackson	6.5	3.4	11.6	13	Taylor	7.1	3.0	14.7	8
Jefferson	6.5	3.8	10.4	18	Tucker	6.7	1.8	20.9	4
Kanawha	4.9	3.8	6.3	67	Tyler	3.0	0.4	13.3	^
Lewis	7.9	3.7	15.3	10	Upshur	3.4	1.2	8.0	6
Lincoln	3.9	1.2	9.6	5	Wayne	3.6	1.7	7.0	10
Logan	8.3	5.0	13.2	20	Webster	7.2	2.3	19.0	5
Marion	6.8	4.4	10.1	26	Wetzel	6.1	2.6	13.1	8
Marshall	4.1	1.9	8.0	10	Wirt	8.7	2.4	25.9	4
Mason	3.8	1.5	8.3	7	Wood	6.6	4.6	9.1	39
McDowell	2.7	0.7	7.7	4	Wyoming	9.0	4.7	15.9	13

Myeloma - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



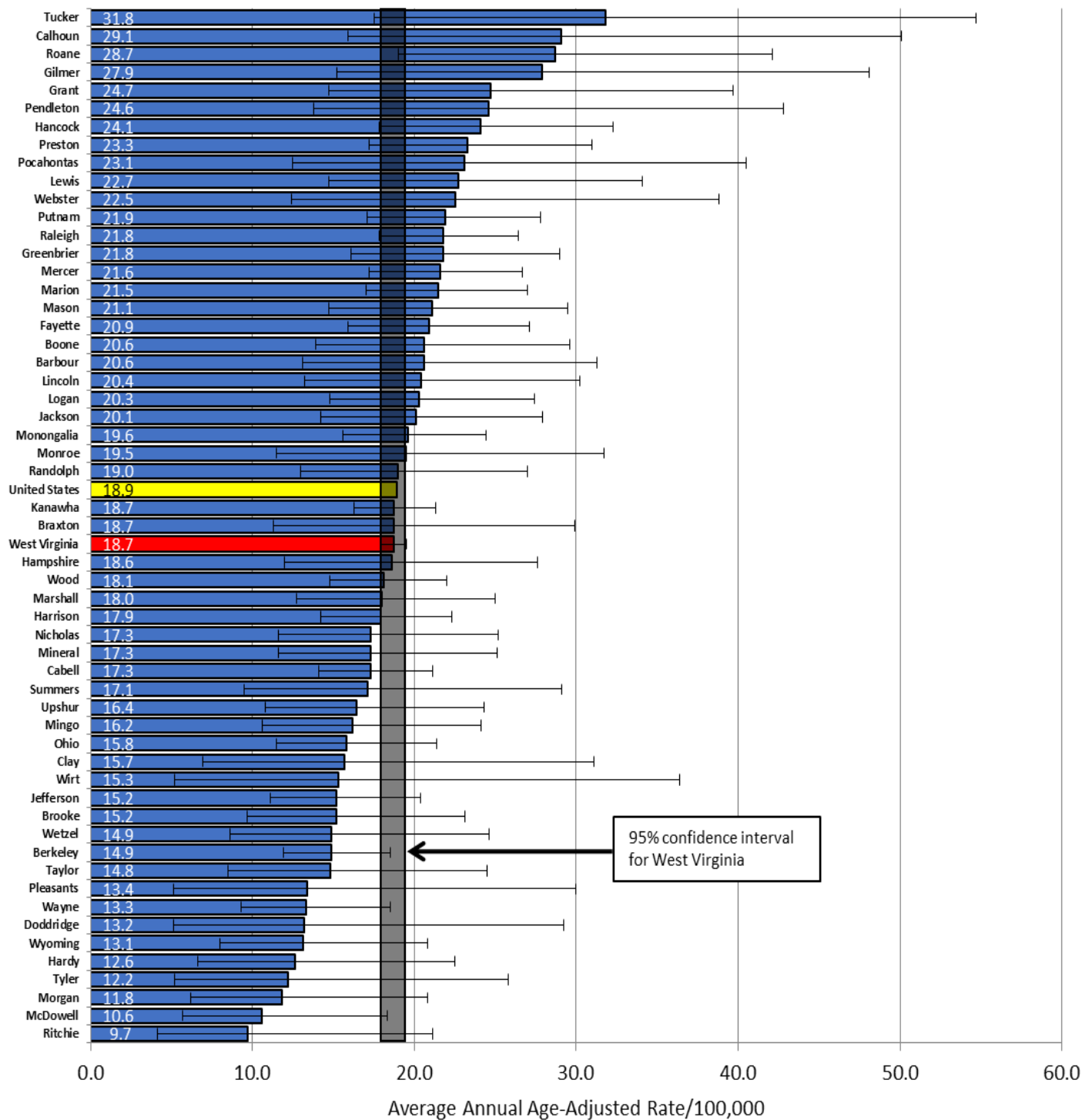
Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Non-Hodgkin Lymphoma - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	18.7	17.9	19.5	2,250	Mercer	21.6	17.2	26.7	92
Barbour	20.6	13.1	31.3	24	Mineral	17.3	11.6	25.1	31
Berkeley	14.9	11.9	18.5	87	Mingo	16.2	10.6	24.1	28
Boone	20.6	13.9	29.6	32	Monongalia	19.6	15.6	24.4	88
Braxton	18.7	11.3	29.9	21	Monroe	19.5	11.5	31.7	20
Brooke	15.2	9.7	23.1	26	Morgan	11.8	6.2	20.8	15
Cabell	17.3	14.1	21.1	104	Nicholas	17.3	11.6	25.2	30
Calhoun	29.1	15.9	50.1	15	Ohio	15.8	11.5	21.4	48
Clay	15.7	6.9	31.1	9	Pendleton	24.6	13.8	42.8	16
Doddridge	13.2	5.1	29.2	7	Pleasants	13.4	5.1	30.0	7
Fayette	20.9	15.9	27.1	64	Pocahontas	23.1	12.5	40.5	15
Gilmer	27.9	15.2	48.1	14	Preston	23.3	17.2	31.0	51
Grant	24.7	14.7	39.7	21	Putnam	21.9	17.1	27.8	74
Greenbrier	21.8	16.1	29.0	54	Raleigh	21.8	17.8	26.4	112
Hampshire	18.6	12.0	27.6	28	Randolph	19.0	13.0	27.0	35
Hancock	24.1	17.8	32.3	52	Ritchie	9.7	4.1	21.1	8
Hardy	12.6	6.6	22.5	13	Roane	28.7	19.0	42.1	29
Harrison	17.9	14.2	22.3	85	Summers	17.1	9.5	29.1	16
Jackson	20.1	14.2	27.9	40	Taylor	14.8	8.5	24.5	17
Jefferson	15.2	11.1	20.4	48	Tucker	31.8	17.5	54.7	16
Kanawha	18.7	16.3	21.3	240	Tyler	12.2	5.2	25.8	8
Lewis	22.7	14.7	34.1	26	Upshur	16.4	10.8	24.3	28
Lincoln	20.4	13.2	30.2	27	Wayne	13.3	9.3	18.5	38
Logan	20.3	14.8	27.4	48	Webster	22.5	12.4	38.8	16
Marion	21.5	17.0	27.0	80	Wetzel	14.9	8.6	24.6	18
Marshall	18.0	12.7	25.0	40	Wirt	15.3	5.2	36.4	6
Mason	21.1	14.7	29.5	39	Wood	18.1	14.8	22.0	107
McDowell	10.6	5.7	18.3	15	Wyoming	13.1	8.0	20.8	22

^ indicates suppressed data for counties with 3 or fewer cases over the 5-year period

Non-Hodgkin Lymphoma - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



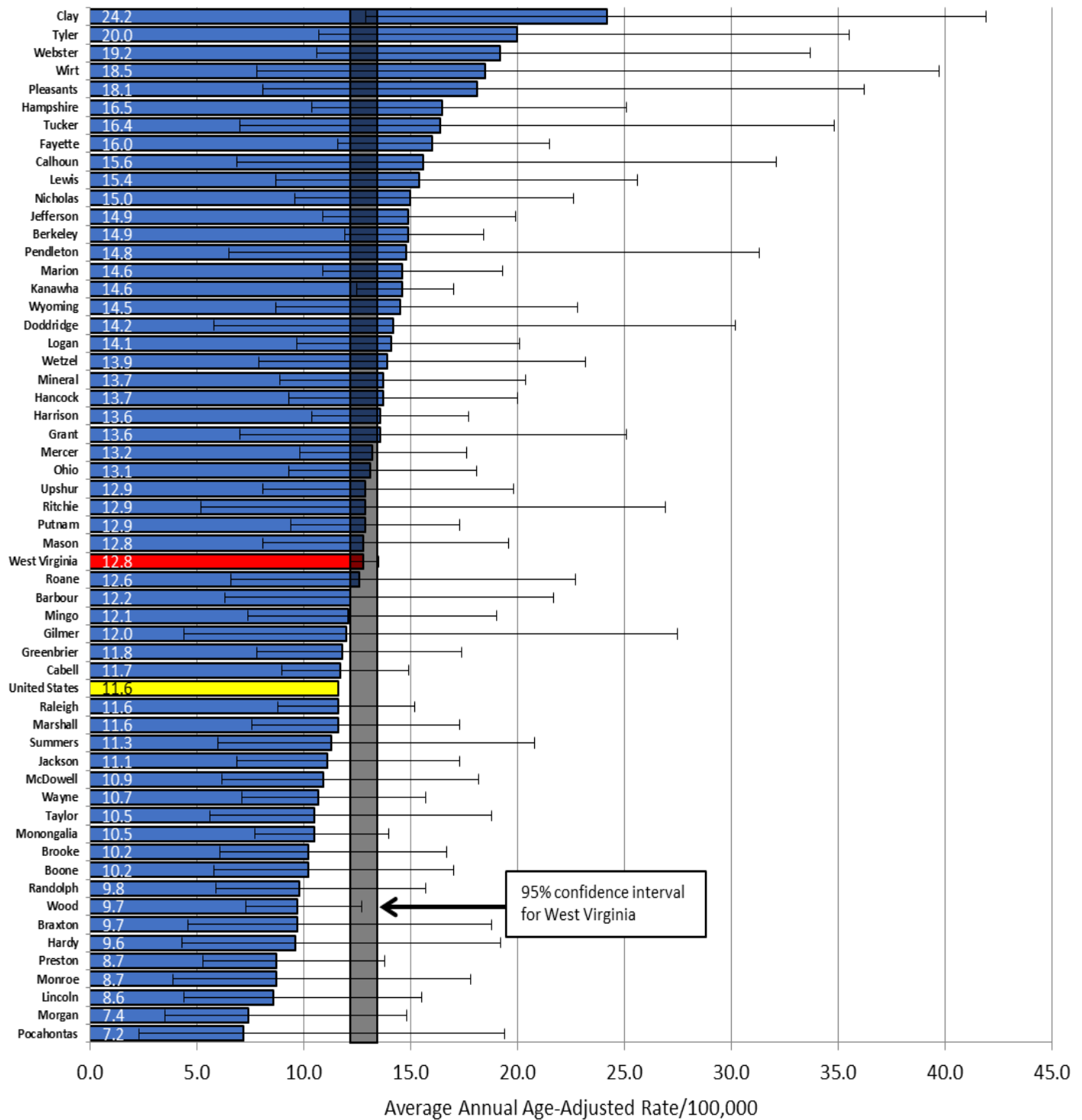
Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Oral Cavity and Pharynx – Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	12.8	12.2	13.5	1,569	Mercer	13.2	9.8	17.6	54
Barbour	12.2	6.3	21.7	13	Mineral	13.7	8.9	20.4	27
Berkeley	14.9	11.9	18.4	92	Mingo	12.1	7.4	19.0	21
Boone	10.2	5.8	17.0	17	Monongalia	10.5	7.7	14.0	48
Braxton	9.7	4.6	18.8	10	Monroe	8.7	3.9	17.8	9
Brooke	10.2	6.1	16.7	19	Morgan	7.4	3.5	14.8	10
Cabell	11.7	9.0	14.9	70	Nicholas	15.0	9.6	22.6	27
Calhoun	15.6	6.9	32.1	9	Ohio	13.1	9.3	18.1	42
Clay	24.2	12.9	41.9	14	Pendleton	14.8	6.5	31.3	9
Doddridge	14.2	5.8	30.2	8	Pleasants	18.1	8.1	36.2	9
Fayette	16.0	11.6	21.5	48	Pocahontas	7.2	2.3	19.4	5
Gilmer	12.0	4.4	27.5	6	Preston	8.7	5.3	13.8	21
Grant	13.6	7.0	25.1	12	Putnam	12.9	9.4	17.3	47
Greenbrier	11.8	7.8	17.4	30	Raleigh	11.6	8.8	15.2	60
Hampshire	16.5	10.4	25.1	25	Randolph	9.8	5.9	15.7	20
Hancock	13.7	9.3	20.0	32	Ritchie	12.9	5.2	26.9	8
Hardy	9.6	4.3	19.2	9	Roane	12.6	6.6	22.7	13
Harrison	13.6	10.4	17.7	62	Summers	11.3	6.0	20.8	13
Jackson	11.1	6.9	17.3	22	Taylor	10.5	5.6	18.8	13
Jefferson	14.9	10.9	19.9	49	Tucker	16.4	7.0	34.8	9
Kanawha	14.6	12.5	17.0	187	Tyler	20.0	10.7	35.5	14
Lewis	15.4	8.7	25.6	16	Upshur	12.9	8.1	19.8	23
Lincoln	8.6	4.4	15.5	12	Wayne	10.7	7.1	15.7	29
Logan	14.1	9.7	20.1	35	Webster	19.2	10.6	33.7	15
Marion	14.6	10.9	19.3	55	Wetzel	13.9	7.9	23.2	17
Marshall	11.6	7.6	17.3	27	Wirt	18.5	7.8	39.7	8
Mason	12.8	8.1	19.6	24	Wood	9.7	7.3	12.7	57
McDowell	10.9	6.2	18.2	17	Wyoming	14.5	8.7	22.8	21

^ indicates suppressed data for counties with 3 or fewer cases over the 5-year period

Oral Cavity and Pharynx - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

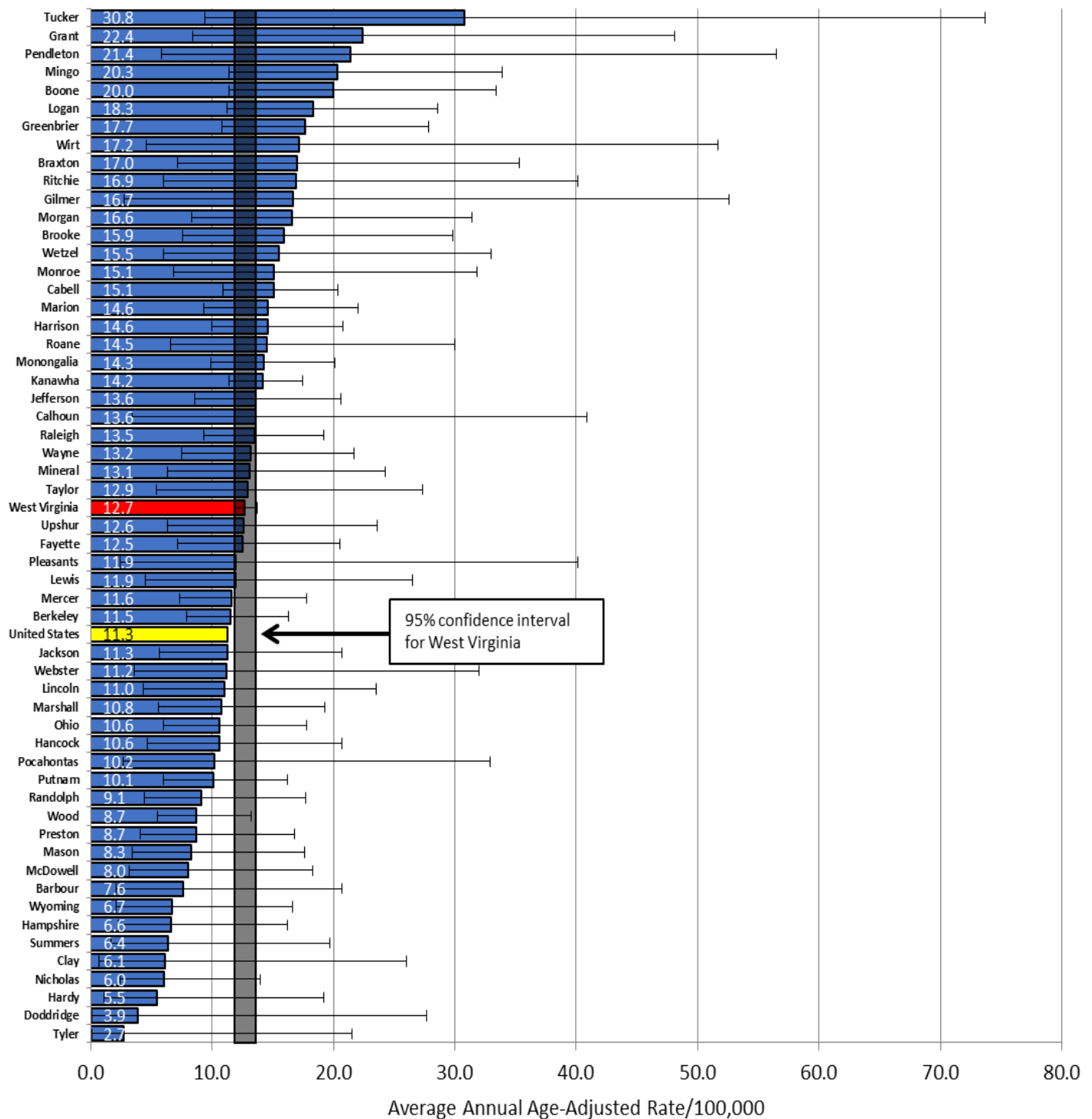


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Ovary - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	12.7	11.8	13.7	796	Mercer	11.6	7.3	17.8	25
Barbour	7.6	2.1	20.7	4	Mineral	13.1	6.3	24.3	12
Berkeley	11.5	7.9	16.3	33	Mingo	20.3	11.4	33.9	16
Boone	20.0	11.4	33.4	17	Monongalia	14.3	9.9	20.1	36
Braxton	17.0	7.2	35.3	9	Monroe	15.1	6.8	31.8	9
Brooke	15.9	7.6	29.8	12	Morgan	16.6	8.3	31.4	12
Cabell	15.1	10.9	20.4	48	Nicholas	6.0	2.4	14.0	7
Calhoun	13.6	3.4	40.9	4	Ohio	10.6	6.0	17.8	18
Clay	6.1	0.7	26.0	^	Pendleton	21.4	5.8	56.5	5
Doddridge	3.9	0.1	27.7	^	Pleasants	11.9	2.4	40.1	^
Fayette	12.5	7.2	20.5	19	Pocahontas	10.2	2.7	32.9	4
Gilmer	16.7	2.8	52.6	^	Preston	8.7	4.1	16.8	11
Grant	22.4	8.4	48.1	7	Putnam	10.1	6.0	16.2	19
Greenbrier	17.7	10.8	27.8	23	Raleigh	13.5	9.3	19.2	36
Hampshire	6.6	2.3	16.2	6	Randolph	9.1	4.4	17.7	11
Hancock	10.6	4.7	20.7	10	Ritchie	16.9	6.0	40.1	6
Hardy	5.5	1.1	19.2	^	Roane	14.5	6.6	30.0	9
Harrison	14.6	10.0	20.8	35	Summers	6.4	1.7	19.7	4
Jackson	11.3	5.7	20.7	12	Taylor	12.9	5.4	27.3	8
Jefferson	13.6	8.6	20.6	24	Tucker	30.8	9.4	73.7	6
Kanawha	14.2	11.4	17.5	100	Tyler	2.7	0.1	21.5	^
Lewis	11.9	4.5	26.5	7	Upshur	12.6	6.3	23.6	11
Lincoln	11.0	4.3	23.5	7	Wayne	13.2	7.5	21.7	17
Logan	18.3	11.2	28.6	22	Webster	11.2	3.6	32.0	5
Marion	14.6	9.3	22.0	26	Wetzel	15.5	6.0	33.0	8
Marshall	10.8	5.6	19.3	14	Wirt	17.2	4.6	51.7	4
Mason	8.3	3.4	17.6	8	Wood	8.7	5.5	13.2	25
McDowell	8.0	3.2	18.3	7	Wyoming	6.7	2.1	16.6	5

Ovary - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



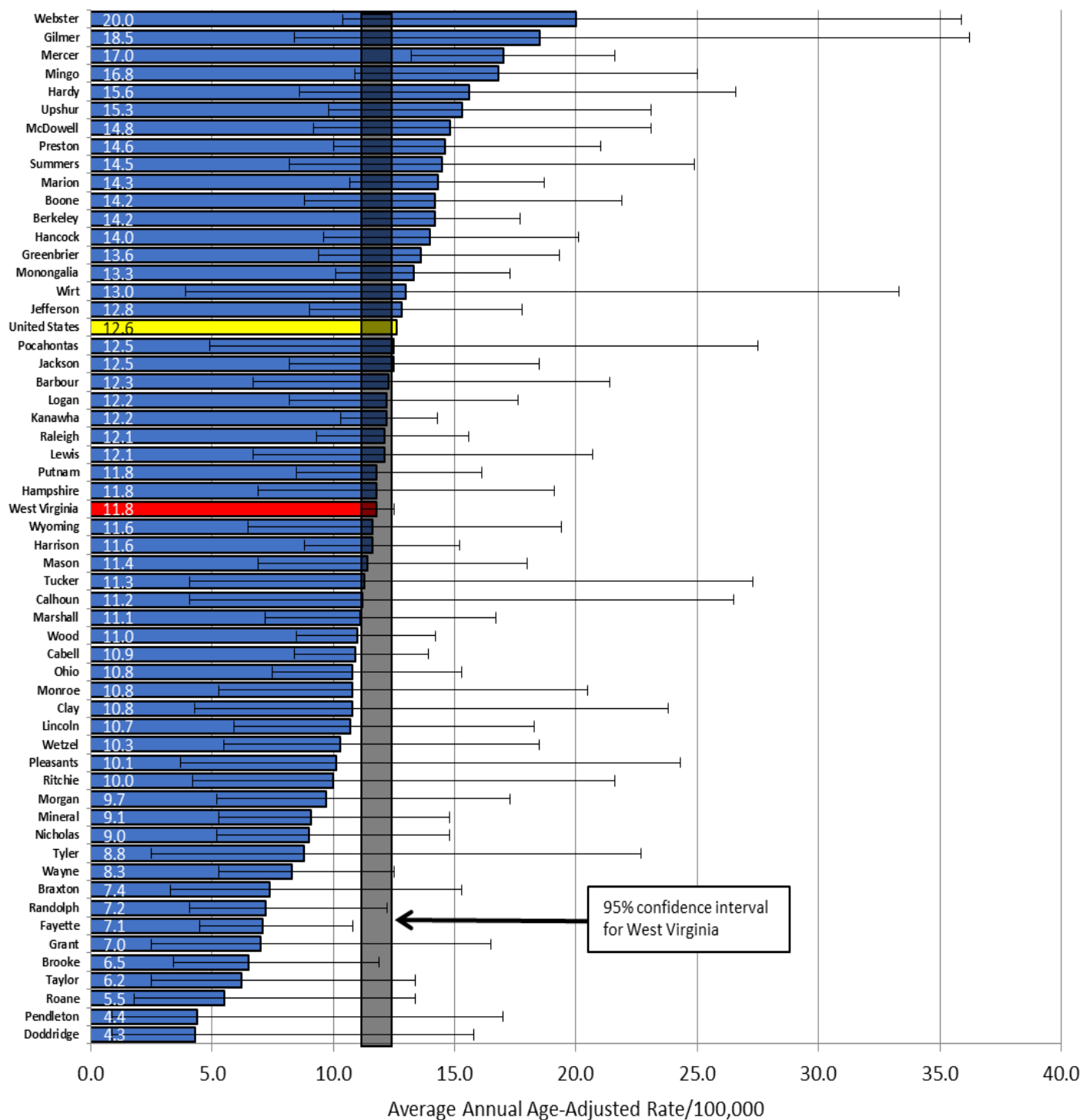
Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Pancreas - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	11.8	11.2	12.5	1,475	Mercer	17.0	13.2	21.6	74
Barbour	12.3	6.7	21.4	14	Mineral	9.1	5.3	14.8	18
Berkeley	14.2	11.2	17.7	81	Mingo	16.8	10.9	25.0	27
Boone	14.2	8.8	21.9	23	Monongalia	13.3	10.1	17.3	58
Braxton	7.4	3.3	15.3	9	Monroe	10.8	5.3	20.5	11
Brooke	6.5	3.4	11.9	13	Morgan	9.7	5.2	17.3	14
Cabell	10.9	8.4	13.9	69	Nicholas	9.0	5.2	14.8	18
Calhoun	11.2	4.1	26.5	6	Ohio	10.8	7.5	15.3	36
Clay	10.8	4.3	23.8	7	Pendleton	4.4	0.9	17.0	^
Doddridge	4.3	0.9	15.8	^	Pleasants	10.1	3.7	24.3	6
Fayette	7.1	4.5	10.8	24	Pocahontas	12.5	4.9	27.5	8
Gilmer	18.5	8.4	36.2	9	Preston	14.6	10.0	21.0	32
Grant	7.0	2.5	16.5	6	Putnam	11.8	8.5	16.1	43
Greenbrier	13.6	9.4	19.3	37	Raleigh	12.1	9.3	15.6	66
Hampshire	11.8	6.9	19.1	18	Randolph	7.2	4.1	12.2	16
Hancock	14.0	9.6	20.1	33	Ritchie	10.0	4.2	21.6	8
Hardy	15.6	8.6	26.6	15	Roane	5.5	1.8	13.4	6
Harrison	11.6	8.8	15.2	59	Summers	14.5	8.2	24.9	16
Jackson	12.5	8.2	18.5	27	Taylor	6.2	2.5	13.4	7
Jefferson	12.8	9.0	17.8	38	Tucker	11.3	4.1	27.3	6
Kanawha	12.2	10.3	14.3	155	Tyler	8.8	2.5	22.7	5
Lewis	12.1	6.7	20.7	15	Upshur	15.3	9.8	23.1	25
Lincoln	10.7	5.9	18.3	15	Wayne	8.3	5.3	12.5	25
Logan	12.2	8.2	17.6	32	Webster	20.0	10.4	35.9	13
Marion	14.3	10.7	18.7	57	Wetzel	10.3	5.5	18.5	13
Marshall	11.1	7.2	16.7	26	Wirt	13.0	3.9	33.3	5
Mason	11.4	6.9	18.0	21	Wood	11.0	8.5	14.2	66
McDowell	14.8	9.2	23.1	22	Wyoming	11.6	6.5	19.4	16

^ indicates suppressed data for counties with 3 or fewer cases over the 5-year period.

Pancreas - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

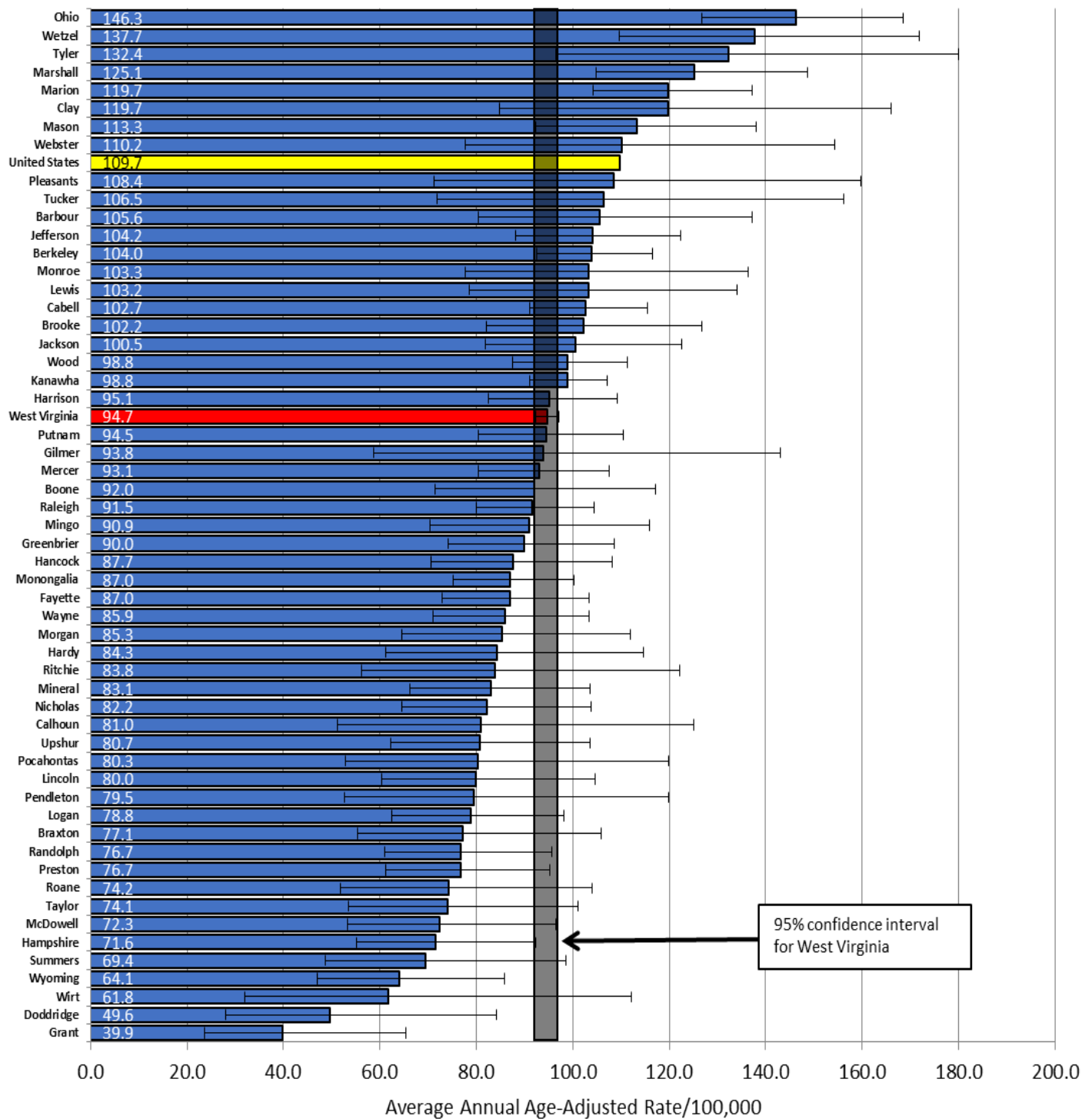


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Prostate - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	94.7	92.3	97.2	5,887	Mercer	93.1	80.4	107.6	201
Barbour	105.6	80.5	137.1	62	Mineral	83.1	66.3	103.6	88
Berkeley	104.0	92.6	116.6	326	Mingo	90.9	70.3	116.0	74
Boone	92.0	71.5	117.1	75	Monongalia	87.0	75.1	100.3	207
Braxton	77.1	55.3	105.9	44	Monroe	103.3	77.7	136.3	57
Brooke	102.2	82.0	126.8	92	Morgan	85.3	64.5	112.0	59
Cabell	102.7	91.1	115.4	296	Nicholas	82.2	64.6	103.8	79
Calhoun	81.0	51.2	125.0	24	Ohio	146.3	126.7	168.5	212
Clay	119.7	84.9	166.0	40	Pendleton	79.5	52.7	119.8	28
Doddridge	49.6	28.0	84.2	16	Pleasants	108.4	71.3	159.7	29
Fayette	87.0	73.0	103.4	144	Pocahontas	80.3	52.9	119.8	29
Gilmer	93.8	58.8	143.0	23	Preston	76.7	61.2	95.2	90
Grant	39.9	23.6	65.3	19	Putnam	94.5	80.4	110.5	171
Greenbrier	90.0	74.2	108.6	119	Raleigh	91.5	80.0	104.4	241
Hampshire	71.6	55.1	92.4	68	Randolph	76.7	61.1	95.6	87
Hancock	87.7	70.7	108.1	97	Ritchie	83.8	56.3	122.2	31
Hardy	84.3	61.3	114.6	46	Roane	74.2	51.9	104.1	40
Harrison	95.1	82.6	109.3	214	Summers	69.4	48.6	98.6	38
Jackson	100.5	81.8	122.6	104	Taylor	74.1	53.5	101.0	45
Jefferson	104.2	88.2	122.4	166	Tucker	106.5	71.8	156.3	32
Kanawha	98.8	91.0	107.1	624	Tyler	132.4	96.4	180.0	48
Lewis	103.2	78.5	134.1	61	Upshur	80.7	62.2	103.5	68
Lincoln	80.0	60.4	104.7	60	Wayne	85.9	71.0	103.3	121
Logan	78.8	62.5	98.2	89	Webster	110.2	77.7	154.3	40
Marion	119.7	104.2	137.1	223	Wetzel	137.7	109.6	171.9	86
Marshall	125.1	104.8	148.6	143	Wirt	61.8	31.9	112.2	13
Mason	113.3	92.4	138.1	107	Wood	98.8	87.5	111.4	285
McDowell	72.3	53.3	96.5	53	Wyoming	64.1	47.1	85.9	53

Prostate - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

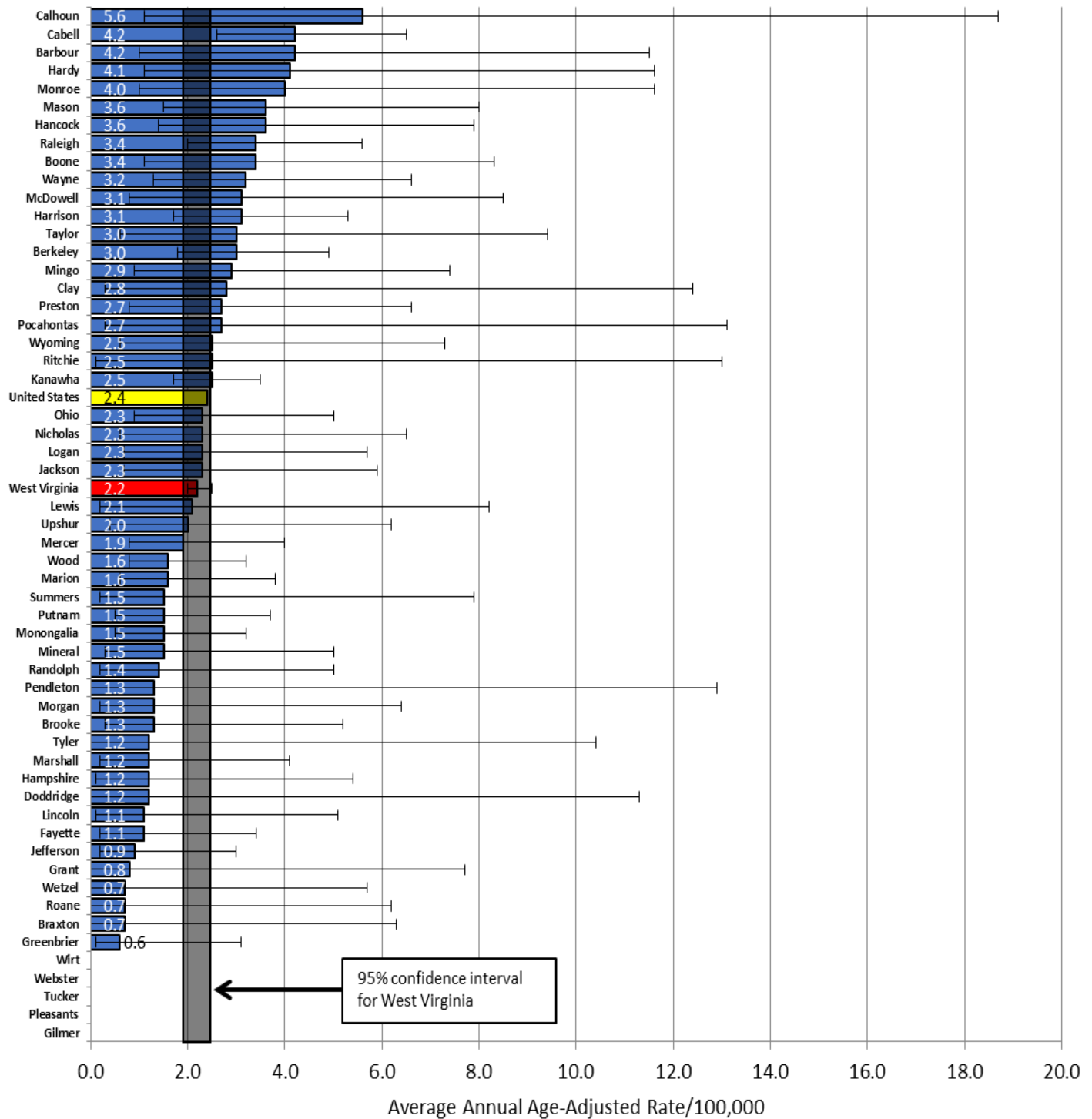


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

**Small Intestine - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015**

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	2.2	2.0	2.5	269	Mercer	1.9	0.8	4.0	8
Barbour	4.2	1.0	11.5	4	Mineral	1.5	0.3	5.0	^
Berkeley	3.0	1.8	4.9	18	Mingo	2.9	0.9	7.4	5
Boone	3.4	1.1	8.3	5	Monongalia	1.5	0.5	3.2	6
Braxton	0.7	0.0	6.3	^	Monroe	4.0	1.0	11.6	4
Brooke	1.3	0.3	5.2	^	Morgan	1.3	0.2	6.4	^
Cabell	4.2	2.6	6.5	22	Nicholas	2.3	0.6	6.5	4
Calhoun	5.6	1.1	18.7	^	Ohio	2.3	0.9	5.0	7
Clay	2.8	0.3	12.4	^	Pendleton	1.3	0.0	12.9	^
Doddridge	1.2	0.0	11.3	^	Pleasants	0.0	0.0		0
Fayette	1.1	0.2	3.4	^	Pocahontas	2.7	0.3	13.1	^
Gilmer	0.0	0.0		0	Preston	2.7	0.8	6.6	5
Grant	0.8	0.0	7.7	^	Putnam	1.5	0.5	3.7	5
Greenbrier	0.6	0.1	3.1	^	Raleigh	3.4	2.0	5.6	18
Hampshire	1.2	0.1	5.4	^	Randolph	1.4	0.2	5.0	^
Hancock	3.6	1.4	7.9	7	Ritchie	2.5	0.1	13.0	^
Hardy	4.1	1.1	11.6	4	Roane	0.7	0.0	6.2	^
Harrison	3.1	1.7	5.3	15	Summers	1.5	0.2	7.9	^
Jackson	2.3	0.7	5.9	5	Taylor	3.0	0.6	9.4	^
Jefferson	0.9	0.2	3.0	^	Tucker	0.0	0.0		0
Kanawha	2.5	1.7	3.5	33	Tyler	1.2	0.0	10.4	^
Lewis	2.1	0.2	8.2	^	Upshur	2.0	0.4	6.2	^
Lincoln	1.1	0.1	5.1	^	Wayne	3.2	1.3	6.6	8
Logan	2.3	0.7	5.7	5	Webster	0.0	0.0		0
Marion	1.6	0.6	3.8	6	Wetzel	0.7	0.0	5.7	^
Marshall	1.2	0.2	4.1	^	Wirt	0.0	0.0		0
Mason	3.6	1.5	8.0	7	Wood	1.6	0.8	3.2	10
McDowell	3.1	0.8	8.5	4	Wyoming	2.5	0.6	7.3	4

Small Intestine - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

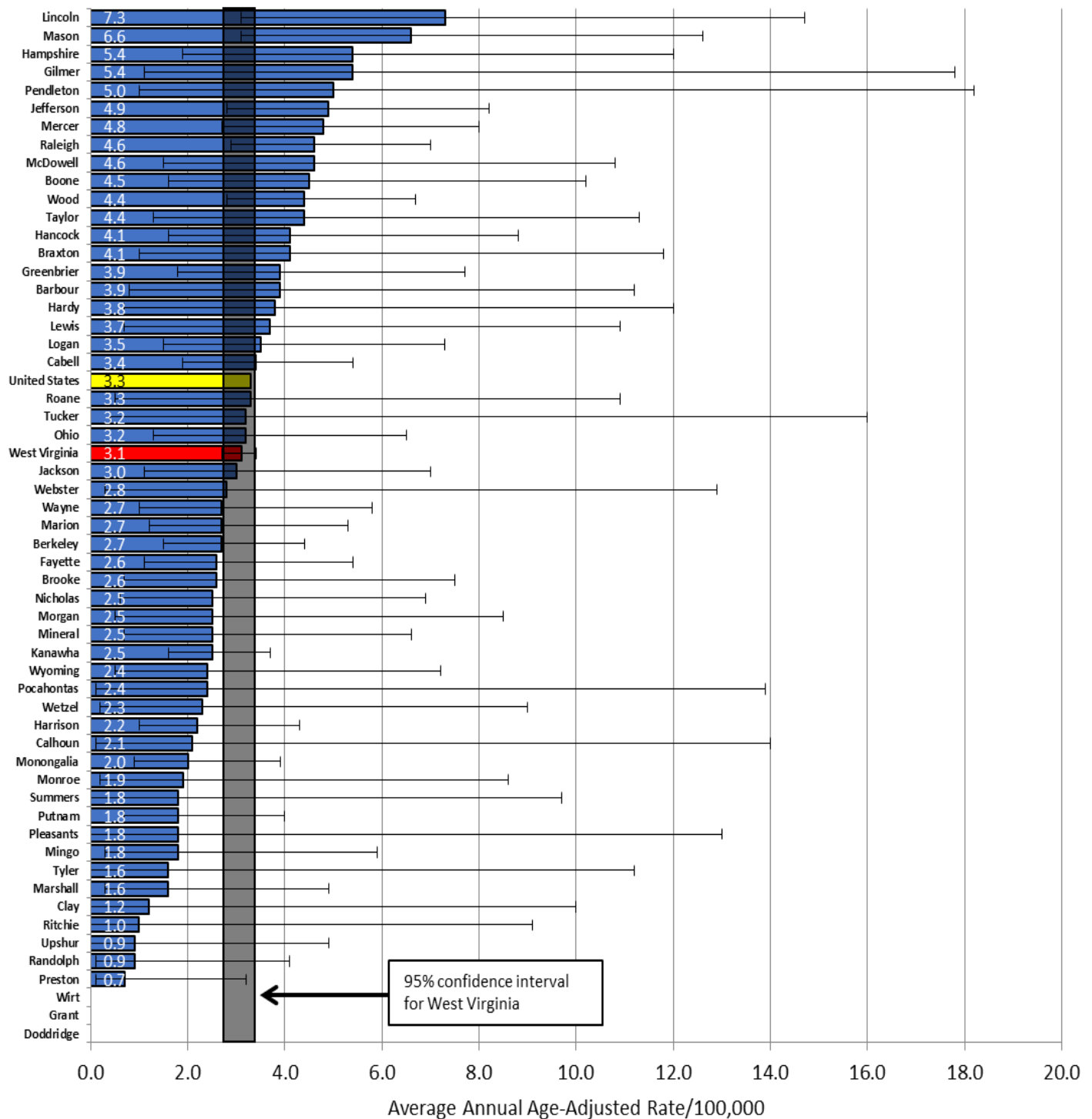


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Soft Tissue including Heart - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	3.1	2.7	3.4	341	Mercer	4.8	2.7	8.0	17
Barbour	3.9	0.8	11.2	^	Mineral	2.5	0.7	6.6	4
Berkeley	2.7	1.5	4.4	17	Mingo	1.8	0.3	5.9	^
Boone	4.5	1.6	10.2	6	Monongalia	2.0	0.9	3.9	10
Braxton	4.1	1.0	11.8	4	Monroe	1.9	0.2	8.6	^
Brooke	2.6	0.7	7.5	4	Morgan	2.5	0.5	8.5	^
Cabell	3.4	1.9	5.4	18	Nicholas	2.5	0.6	6.9	4
Calhoun	2.1	0.1	14.0	^	Ohio	3.2	1.3	6.5	8
Clay	1.2	0.0	10.0	^	Pendleton	5.0	1.0	18.2	^
Doddridge	0.0	0.0		0	Pleasants	1.8	0.0	13.0	^
Fayette	2.6	1.1	5.4	8	Pocahontas	2.4	0.1	13.9	^
Gilmer	5.4	1.1	17.8	^	Preston	0.7	0.1	3.2	^
Grant	0.0	0.0		0	Putnam	1.8	0.7	4.0	7
Greenbrier	3.9	1.8	7.7	10	Raleigh	4.6	2.9	7.0	24
Hampshire	5.4	1.9	12.0	6	Randolph	0.9	0.1	4.1	^
Hancock	4.1	1.6	8.8	8	Ritchie	1.0	0.0	9.1	^
Hardy	3.8	0.7	12.0	^	Roane	3.3	0.5	10.9	^
Harrison	2.2	1.0	4.3	9	Summers	1.8	0.0	9.7	^
Jackson	3.0	1.1	7.0	6	Taylor	4.4	1.3	11.3	5
Jefferson	4.9	2.8	8.2	16	Tucker	3.2	0.4	16.0	^
Kanawha	2.5	1.6	3.7	28	Tyler	1.6	0.0	11.2	^
Lewis	3.7	0.7	10.9	^	Upshur	0.9	0.0	4.9	^
Lincoln	7.3	3.1	14.7	8	Wayne	2.7	1.0	5.8	7
Logan	3.5	1.5	7.3	8	Webster	2.8	0.3	12.9	^
Marion	2.7	1.2	5.3	9	Wetzel	2.3	0.2	9.0	^
Marshall	1.6	0.3	4.9	^	Wirt	0.0	0.0		0
Mason	6.6	3.1	12.6	10	Wood	4.4	2.8	6.7	24
McDowell	4.6	1.5	10.8	6	Wyoming	2.4	0.5	7.2	^

Soft Tissue including Heart - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

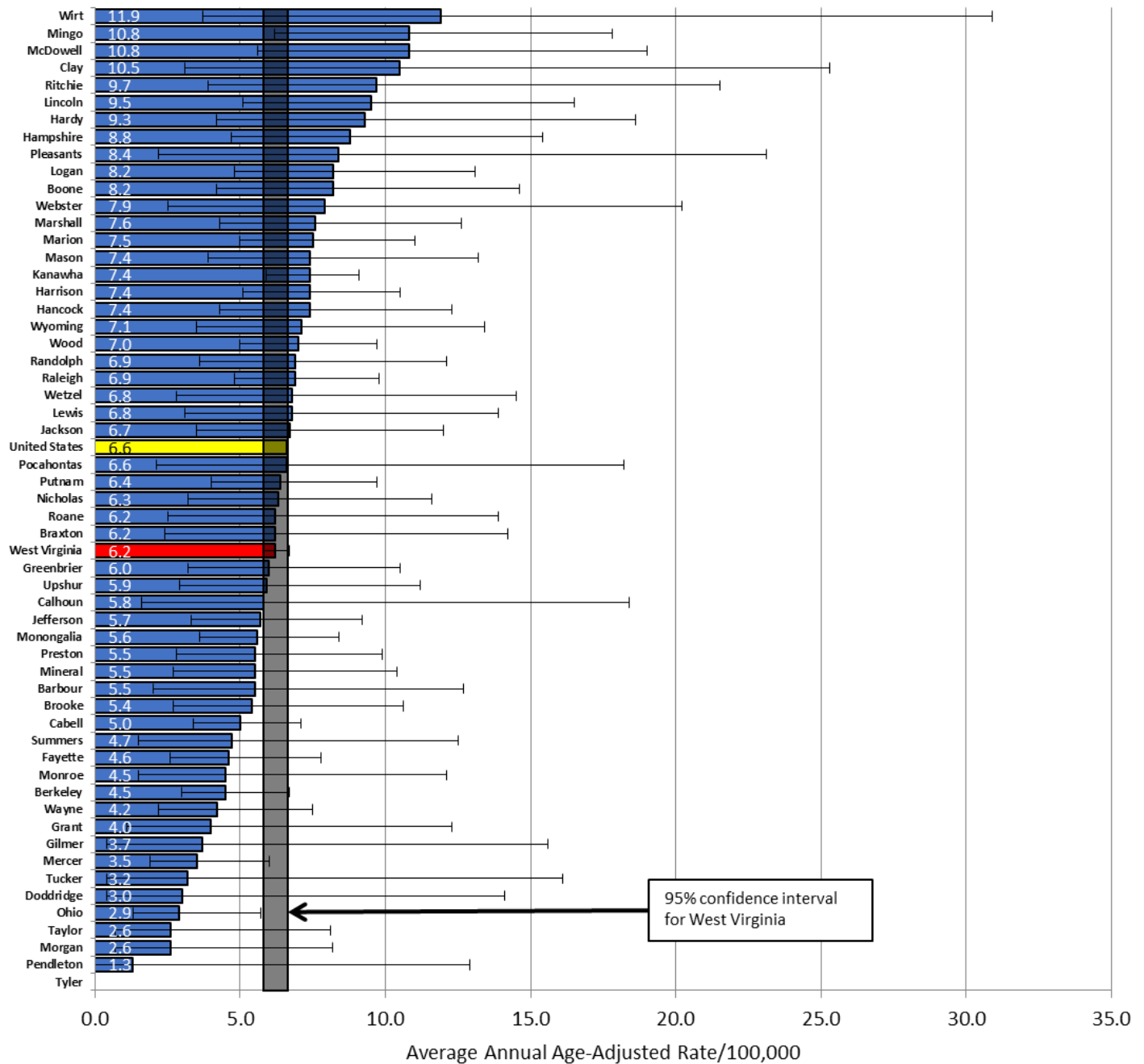


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Stomach - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	6.2	5.8	6.7	772	Mercer	3.5	1.9	6.0	16
Barbour	5.5	2.0	12.7	6	Mineral	5.5	2.7	10.4	11
Berkeley	4.5	3.0	6.7	28	Mingo	10.8	6.2	17.8	17
Boone	8.2	4.2	14.6	13	Monongalia	5.6	3.6	8.4	24
Braxton	6.2	2.4	14.2	7	Monroe	4.5	1.5	12.1	5
Brooke	5.4	2.7	10.6	11	Morgan	2.6	0.7	8.2	4
Cabell	5.0	3.4	7.1	32	Nicholas	6.3	3.2	11.6	12
Calhoun	5.8	1.6	18.4	4	Ohio	2.9	1.3	5.7	10
Clay	10.5	3.1	25.3	5	Pendleton	1.3	0.0	12.9	^
Doddridge	3.0	0.4	14.1	^	Pleasants	8.4	2.2	23.1	4
Fayette	4.6	2.6	7.8	16	Pocahontas	6.6	2.1	18.2	5
Gilmer	3.7	0.4	15.6	^	Preston	5.5	2.8	9.9	12
Grant	4.0	1.1	12.3	4	Putnam	6.4	4.0	9.7	24
Greenbrier	6.0	3.2	10.5	14	Raleigh	6.9	4.8	9.8	35
Hampshire	8.8	4.7	15.4	14	Randolph	6.9	3.6	12.1	13
Hancock	7.4	4.3	12.3	18	Ritchie	9.7	3.9	21.5	7
Hardy	9.3	4.2	18.6	9	Roane	6.2	2.5	13.9	7
Harrison	7.4	5.1	10.5	34	Summers	4.7	1.5	12.5	5
Jackson	6.7	3.5	12.0	13	Taylor	2.6	0.7	8.1	4
Jefferson	5.7	3.3	9.2	18	Tucker	3.2	0.4	16.1	^
Kanawha	7.4	5.9	9.1	96	Tyler	0.0	0.0		0
Lewis	6.8	3.1	13.9	9	Upshur	5.9	2.9	11.2	11
Lincoln	9.5	5.1	16.5	14	Wayne	4.2	2.2	7.5	13
Logan	8.2	4.8	13.1	19	Webster	7.9	2.5	20.2	5
Marion	7.5	5.0	11.0	29	Wetzel	6.8	2.8	14.5	8
Marshall	7.6	4.3	12.6	17	Wirt	11.9	3.7	30.9	5
Mason	7.4	3.9	13.2	13	Wood	7.0	5.0	9.7	41
McDowell	10.8	5.6	19.0	13	Wyoming	7.1	3.5	13.4	11

Stomach - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

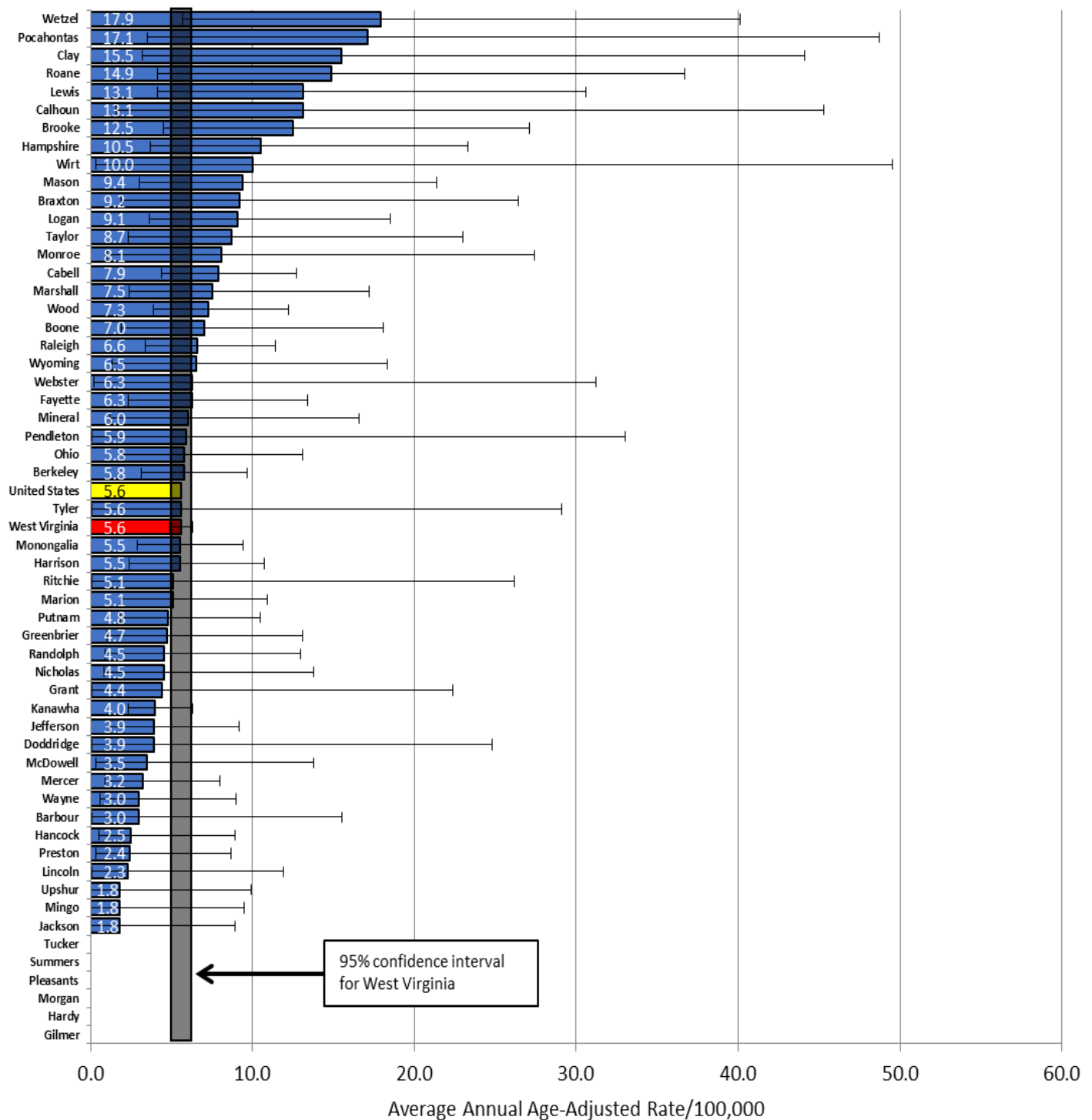


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Testis - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	5.6	4.9	6.3	232	Mercer	3.2	0.9	8.0	4
Barbour	3.0	0.1	15.5	^	Mineral	6.0	1.2	16.6	^
Berkeley	5.8	3.1	9.7	14	Mingo	1.8	0.0	9.5	^
Boone	7.0	1.9	18.1	4	Monongalia	5.5	2.9	9.4	16
Braxton	9.2	1.9	26.4	^	Monroe	8.1	1.0	27.4	^
Brooke	12.5	4.5	27.1	6	Morgan	0.0	0.0		0
Cabell	7.9	4.4	12.7	16	Nicholas	4.5	0.8	13.8	^
Calhoun	13.1	1.6	45.3	^	Ohio	5.8	2.0	13.1	6
Clay	15.5	3.2	44.1	^	Pendleton	5.9	0.1	33.0	^
Doddridge	3.9	0.1	24.8	^	Pleasants	0.0	0.0		0
Fayette	6.3	2.3	13.4	6	Pocahontas	17.1	3.5	48.7	^
Gilmer	0.0	0.0		0	Preston	2.4	0.3	8.7	^
Grant	4.4	0.1	22.4	^	Putnam	4.8	1.8	10.5	6
Greenbrier	4.7	1.0	13.1	^	Raleigh	6.6	3.4	11.4	12
Hampshire	10.5	3.7	23.3	6	Randolph	4.5	0.9	13.0	^
Hancock	2.5	0.5	8.9	^	Ritchie	5.1	0.1	26.2	^
Hardy	0.0	0.0		0	Roane	14.9	4.1	36.7	4
Harrison	5.5	2.4	10.7	8	Summers	0.0	0.0		0
Jackson	1.8	0.0	8.9	^	Taylor	8.7	2.3	23.0	4
Jefferson	3.9	1.2	9.2	5	Tucker	0.0	0.0		0
Kanawha	4.0	2.3	6.3	18	Tyler	5.6	0.1	29.1	^
Lewis	13.1	4.1	30.6	5	Upshur	1.8	0.0	9.9	^
Lincoln	2.3	0.1	11.9	^	Wayne	3.0	0.6	9.0	^
Logan	9.1	3.6	18.5	7	Webster	6.3	0.2	31.2	^
Marion	5.1	1.9	10.9	6	Wetzel	17.9	5.7	40.1	5
Marshall	7.5	2.4	17.2	5	Wirt	10.0	0.3	49.5	^
Mason	9.4	3.0	21.4	5	Wood	7.3	3.9	12.2	14
McDowell	3.5	0.3	13.8	^	Wyoming	6.5	1.3	18.3	^

Testis - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



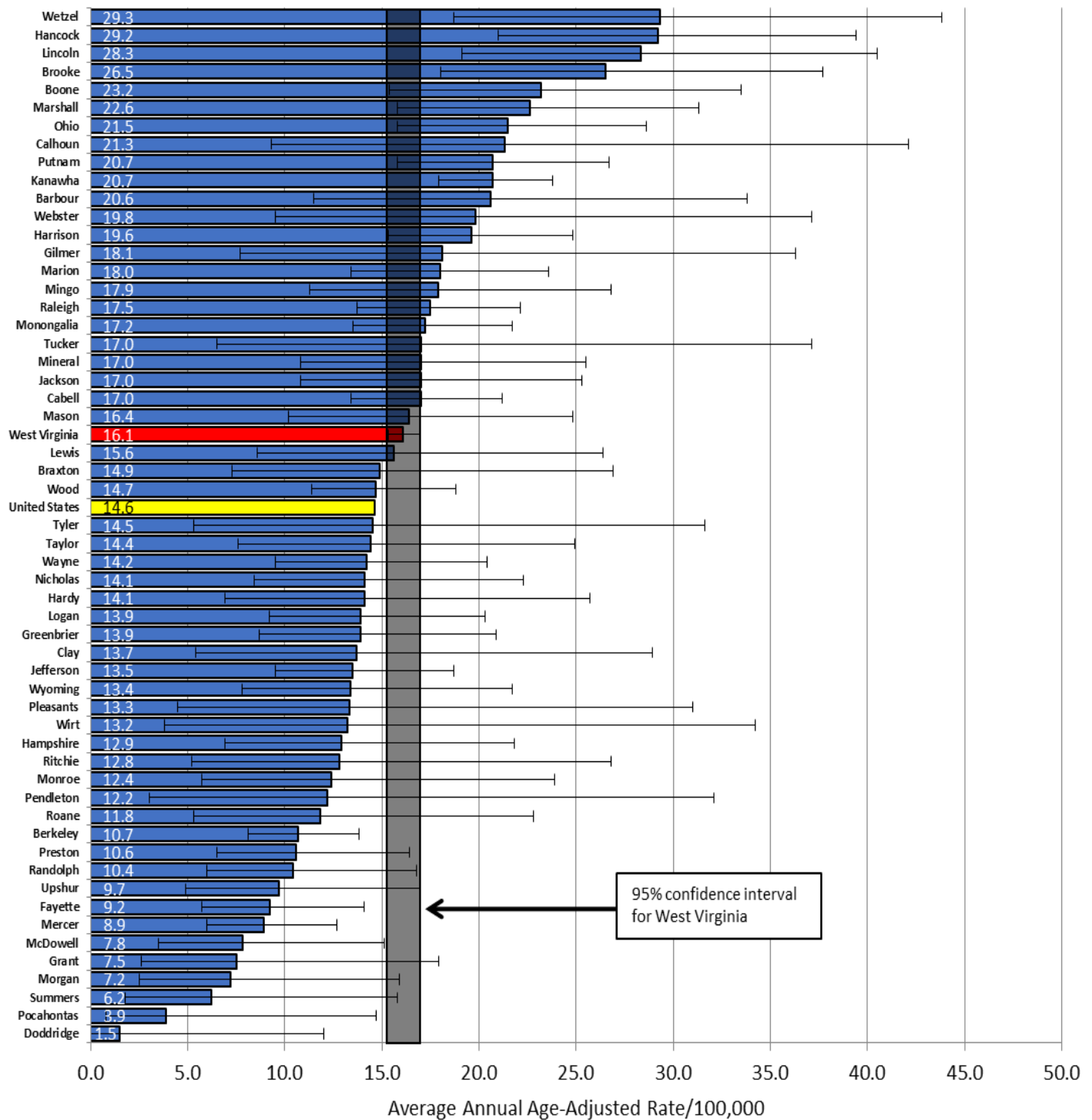
Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Thyroid - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	16.1	15.3	17.0	1,634	Mercer	8.9	6.0	12.7	34
Barbour	20.6	11.5	33.8	16	Mineral	17.0	10.8	25.5	26
Berkeley	10.7	8.1	13.8	61	Mingo	17.9	11.3	26.8	25
Boone	23.2	15.4	33.5	31	Monongalia	17.2	13.5	21.7	79
Braxton	14.9	7.3	26.9	12	Monroe	12.4	5.7	23.9	11
Brooke	26.5	18.0	37.7	36	Morgan	7.2	2.5	15.9	7
Cabell	17.0	13.4	21.2	83	Nicholas	14.1	8.4	22.3	21
Calhoun	21.3	9.3	42.1	10	Ohio	21.5	15.8	28.6	53
Clay	13.7	5.4	28.9	8	Pendleton	12.2	3.0	32.1	4
Doddridge	1.5	0.0	12.0	^	Pleasants	13.3	4.5	31.0	6
Fayette	9.2	5.7	14.1	23	Pocahontas	3.9	0.8	14.7	^
Gilmer	18.1	7.7	36.3	8	Preston	10.6	6.5	16.4	22
Grant	7.5	2.6	17.9	6	Putnam	20.7	15.8	26.7	65
Greenbrier	13.9	8.7	20.9	26	Raleigh	17.5	13.7	22.1	78
Hampshire	12.9	6.9	21.8	14	Randolph	10.4	6.0	16.8	18
Hancock	29.2	21.0	39.4	48	Ritchie	12.8	5.2	26.8	8
Hardy	14.1	6.9	25.7	12	Roane	11.8	5.3	22.8	10
Harrison	19.6	15.3	24.8	76	Summers	6.2	1.8	15.8	5
Jackson	17.0	10.8	25.3	26	Taylor	14.4	7.6	24.9	14
Jefferson	13.5	9.5	18.7	39	Tucker	17.0	6.5	37.1	7
Kanawha	20.7	17.9	23.8	210	Tyler	14.5	5.3	31.6	7
Lewis	15.6	8.6	26.4	15	Upshur	9.7	4.9	17.0	13
Lincoln	28.3	19.1	40.5	32	Wayne	14.2	9.5	20.4	31
Logan	13.9	9.2	20.3	30	Webster	19.8	9.5	37.1	11
Marion	18.0	13.4	23.6	56	Wetzel	29.3	18.7	43.8	27
Marshall	22.6	15.8	31.3	41	Wirt	13.2	3.8	34.2	5
Mason	16.4	10.2	24.8	24	Wood	14.7	11.4	18.8	71
McDowell	7.8	3.5	15.1	10	Wyoming	13.4	7.8	21.7	19

^ indicates suppressed data for counties with 3 or fewer cases over the 5-year period.

Thyroid - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015

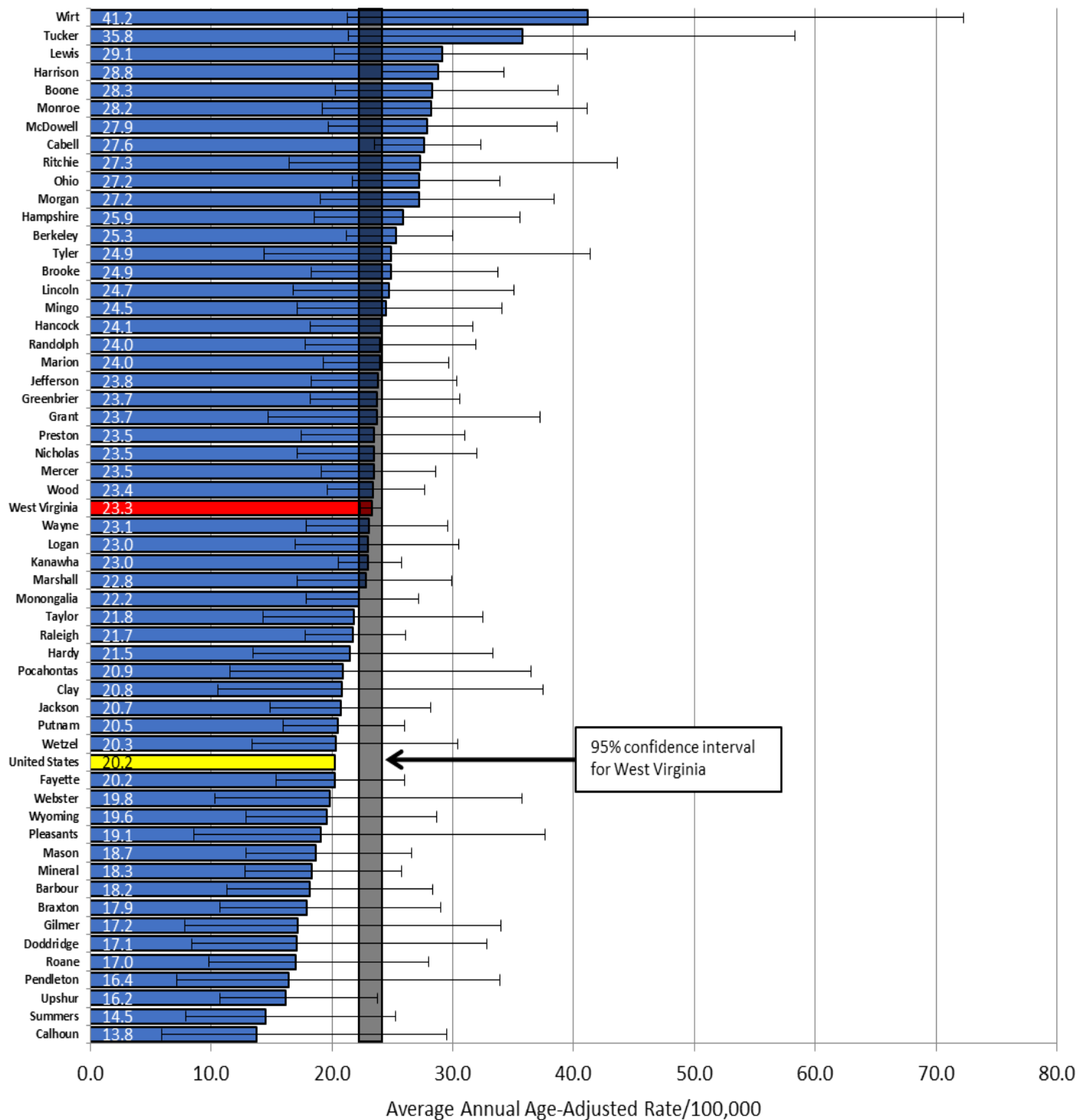


Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.

Urinary Bladder - Average Annual Age-Adjusted Cancer Incidence Rates (per 100,000),
95% Confidence Intervals, and 5-Year Counts by County, West Virginia, 2011-2015

County	Rate	Lower CI	Upper CI	5-yr Count	County	Rate	Lower CI	Upper CI	5-yr Count
West Virginia	23.3	22.4	24.2	2,895	Mercer	23.5	19.1	28.6	105
Barbour	18.2	11.3	28.3	22	Mineral	18.3	12.8	25.8	36
Berkeley	25.3	21.2	30.0	141	Mingo	24.5	17.1	34.1	37
Boone	28.3	20.3	38.7	43	Monongalia	22.2	17.9	27.2	96
Braxton	17.9	10.7	29.0	19	Monroe	28.2	19.2	41.1	32
Brooke	24.9	18.3	33.7	49	Morgan	27.2	19.0	38.4	37
Cabell	27.6	23.5	32.3	166	Nicholas	23.5	17.1	32.0	45
Calhoun	13.8	5.9	29.5	8	Ohio	27.2	21.7	33.9	89
Clay	20.8	10.6	37.5	12	Pendleton	16.4	7.2	33.9	10
Doddridge	17.1	8.4	32.8	11	Pleasants	19.1	8.6	37.6	9
Fayette	20.2	15.4	26.0	64	Pocahontas	20.9	11.6	36.5	15
Gilmer	17.2	7.8	34.0	9	Preston	23.5	17.5	31.0	53
Grant	23.7	14.7	37.2	22	Putnam	20.5	16.0	26.0	74
Greenbrier	23.7	18.2	30.6	65	Raleigh	21.7	17.8	26.1	116
Hampshire	25.9	18.5	35.6	42	Randolph	24.0	17.8	31.9	52
Hancock	24.1	18.2	31.7	57	Ritchie	27.3	16.5	43.6	20
Hardy	21.5	13.5	33.3	23	Roane	17.0	9.8	28.0	18
Harrison	28.8	24.1	34.2	137	Summers	14.5	7.9	25.3	15
Jackson	20.7	14.9	28.2	43	Taylor	21.8	14.3	32.5	27
Jefferson	23.8	18.3	30.3	70	Tucker	35.8	21.4	58.3	20
Kanawha	23.0	20.5	25.8	306	Tyler	24.9	14.4	41.4	17
Lewis	29.1	20.2	41.1	35	Upshur	16.2	10.7	23.8	28
Lincoln	24.7	16.8	35.1	34	Wayne	23.1	17.9	29.6	67
Logan	23.0	17.0	30.5	51	Webster	19.8	10.3	35.7	13
Marion	24.0	19.3	29.7	92	Wetzel	20.3	13.4	30.4	27
Marshall	22.8	17.1	29.9	57	Wirt	41.2	21.3	72.3	13
Mason	18.7	12.9	26.6	35	Wood	23.4	19.6	27.7	140
McDowell	27.9	19.7	38.6	41	Wyoming	19.6	12.9	28.7	30

Urinary Bladder - Average Annual Age-Adjusted Cancer Incidence Rates and 95% Confidence Intervals by County, West Virginia, 2011-2015



Sources: West Virginia rates provided by the West Virginia Cancer Registry; United States rates provided by United States Cancer Statistics: 1999-2015 Incidence and Mortality Web-based Report. United States Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; 2017. Available at www.cdc.gov/uscs.