CREATING A CULTURE OF HEALTH IN RURAL WEST VIRGINIA: STATE RURAL HEALTH PLAN 2018-2022

A cooperative, on-going strategy developed by the West Virginia Department of Health and Human Resources, State Office of Rural Health and its statewide Advisory Council to address disparities and promote better health and well-being for the citizens of rural West Virginia.

WEST VIRGINIA
Department of
Health & Human Resources
BUREAU FOR PUBLIC HEALTH

State Office of Rural Health
Office of Community Health Systems and Health Promotion
January 2018

Creating a Culture of Health in Rural West Virginia: State Rural Health Plan 2018-2022

Jim Justice
Governor

Bill J. Crouch
Cabinet Secretary
West Virginia Department of Health and Human Resources

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Jim Justice
Governor

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January 16, 2018

Dear Rural Health Advocates and Stakeholders of West Virginia:

As the State Health Officer and Commissioner, I am pleased to introduce this rural health plan titled "*Creating a Culture of Health in Rural West Virginia*." This plan is a cooperative, ongoing strategy developed by the West Virginia Department of Health and Human Resources, Bureau for Public Health, State Office of Rural Health and its statewide Advisory Committee to address disparities and promote better health and well-being for the citizens of rural West Virginia.

The plan was developed with input from numerous stakeholders, and represents a collaboration among state government agencies, professional associations, and private organizations. The objectives and strategies in this plan are based on rural health stakeholders' input which reflects the individuals who work daily with rural healthcare issues in West Virginia.

The State Office of Rural Health (SORH) conducted meetings with the West Virginia Rural Health Advisory Council (WVRHAC), which is comprised of representatives from various sectors of rural healthcare in West Virginia such as government agencies, hospitals, health educators, and professional associations. WVRHAC members will continue to work on rural health strategy through continuing active work groups. A listing of the WVRHAC members is included in the plan.

The collaborators who wrote the plan thoroughly discussed the key objectives, which were chosen based on information compiled from the West Virginia State Plan, the West Virginia Behavioral Risk Factor Surveillance System, the Primary Care Needs Assessment, Community Needs Assessments, the West Virginia Cancer Plan, the West Virginia Obesity Plan, and the West Virginia State Health System Innovation Plan. In discussing these objectives, council members developed specific strategies to improve rural health issues.

This is a call to action for all West Virginians, from community members to healthcare providers to policymakers, that will require reflection, adaptation, and active involvement. Additionally, this plan is intended to work in conjunction with other health initiatives and strategies being utilized in the state. Cooperation and interaction among all interested stakeholders with the SORH is needed to promote the best healthcare for West Virginia's greatest asset – its people.

Sincerely,

Rahul Gupta, MD, MPH, MBA, FACP
Commissioner and State Health Officer

EXECUTIVE SUMMARY

The State Office of Rural Health (SORH) was established in 1990 by an Executive Order 8-90 issued by Governor Gaston Caperton. While the SORH is an entity of the West Virginia Department of Health and Human Resources (DHHR), the Commissioner of the Bureau for Public Health (BPH) is the SORH Executive Director. SORH is strategically located with the Bureau's Office of Community Health Systems and Health Promotion.

This plan represents the vision and goals for the health and well-being of the people in rural West Virginia. Advocates for the best healthcare for the people of West Virginia have offered their ideas through surveys, conference calls, meetings, and email correspondence. This plan focuses on key health problems, identifies objectives, and associated actions intended to address those problems.

The West Virginia Department of Health and Human Resources' Rural Health Plan focuses on the following key health conditions and health indicators:

- *Behavioral Health*, including substance abuse, addiction, and acute/chronic mental health disorders
- *Cardiovascular Disease*, including heart attack, angina, and coronary artery disease
- *Lung Disease*, including chronic obstructive pulmonary diseases (COPD), black lung, progressive massive fibrosis, and other smoking/occupational exposures
- *Obesity*, including physical inactivity, nutrition, and diabetes
- *Social Determinants of Health*, including social environment, physical environment, health services, and structural and societal factors

The overall vision and specific objectives to promote positive change identified include:

- *Access to Healthcare*: Improve rural healthcare delivery by reducing barriers and developing and diversifying the rural health workforce.
    - All citizens receive quality access to healthcare services without culture, distance, language, finances, or terrain being barriers.
- *Health Outcomes*: Prioritize known health conditions prevalent in rural areas.
    - Once conditions are identified, rural areas can implement processes that lead to improved health outcomes.
- *Workforce Development*: Increase providers in rural areas and focus continuing education on rural health concerns.
    - Build a strong foundation of rural health providers by increasing education specific to rural health issues and engaged recruitment.
- *Individual Accountability*: Encourage citizens to be proactive in their own healthcare.
    - Rural West Virginians will have the knowledge and resources to make informed decisions about all aspects of their healthcare including promoting healthy lifestyles for themselves and their families.
- *Community Engagement*: Promote active engagement by rural communities.

- Encourage rural community stakeholders to promote health equity by engaging local, regional, and state policymakers to consider rural health when making policies.

Ultimately, this plan is to remain an evolving continuous strategy to assist in better serving the citizens of rural West Virginia in their quest for maintaining good health.

INTRODUCTION

The purpose of the West Virginia State Rural Health Plan is to strengthen healthcare throughout rural communities. The plan will provide an analysis of current health disparities in rural areas and present practical solutions for improving health outcomes by broadening the development of rural healthcare and increasing the delivery of healthcare services statewide.

The overall goal of the West Virginia State Rural Health Plan is to reinforce the current and future rural health infrastructure in West Virginia. This plan allows for adaptation to changing conditions and is intended to build sustainable resources and ideas to continuously improve healthcare and health access for the people of rural West Virginia.

We envision a rural West Virginia where:

- People of all ages strive for healthy lifestyles.
- Residents are health literate.
- Every resident regardless of age, gender, ethnicity, impairments, socio-economic status, or resident location has equal access to high quality affordable healthcare.

This West Virginia State Rural Health Plan intends to accomplish a multitude of goals:

- Compile ideas and insight from different stakeholders.
- Encourage collaborative relationships between communities, academic institutions, government, businesses, healthcare providers, healthcare consumers, and other healthcare resources.
- Bring areas of greatest need to the forefront and identify strategies to improve health outcomes.
- Identify areas of improvement for rural healthcare providers/advocates.
- Bring attention to health issues and needs of rural West Virginians.

This plan is a call to action for all West Virginians, from community members to healthcare providers to policymakers, that will require reflection, adaptation, and active involvement. Additionally, this plan is intended to work in conjunction with other initiatives and strategies being utilized in the state. Cooperation and interaction among all stakeholders in rural health is needed to promote the best healthcare for West Virginia's greatest asset, its people.

Healthy People 2020 defines health equity as "attainment of the highest level of health for all people." That definition and involving all public, private, and voluntary entities that impact the delivery of public health services in the state embodies the exact purpose of this plan.

HOW THIS PLAN WAS DEVELOPED

The plan was developed with input from numerous stakeholders. This plan represents a collaboration among state government agencies, professional associations, and both public and private organizations. The objectives and strategies in this plan are based on rural health stakeholders' input in 2017. These reflect the individuals who work daily with rural healthcare issues in West Virginia.

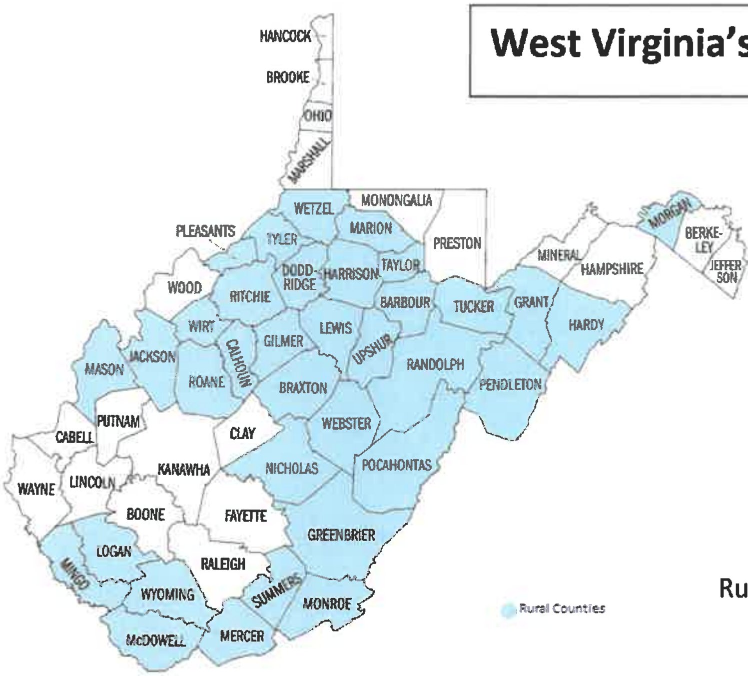
The SORH conducted meetings with the West Virginia Rural Health Advisory Council (WVRHAC). The WVRHAC is comprised of representatives from various sectors of rural healthcare in West Virginia such as government agencies, professional associations, and higher education. The advisory council discussed the key objectives, which were chosen based on information compiled from the West Virginia State Plan, the West Virginia Behavioral Risk Factor Surveillance System, the Primary Care Needs Assessment, the Community Needs Assessments, the West Virginia Cancer Plan, the West Virginia Obesity Plan, the West Virginia State Oral Health Plan and the West Virginia State Health System Innovation Plan. In discussing these objectives, council members developed specific strategies to improve them.

STATE OVERVIEW

West Virginia is 24,320 square miles and is bordered by Pennsylvania, Virginia, Ohio, Kentucky, and Maryland. It is the only state located entirely in the area known as Appalachia. Interstate 79 North provides access to Pittsburgh, Pennsylvania; Interstate 64 spans the state from Lewisburg to Charleston through Huntington and into southern Ohio; and Interstate 77 leads from northwest Virginia from Bluefield to Charleston to Parkersburg into northern Ohio. Winding secondary roads connect much of the state's population with limited public transportation between many of the small isolated counties and towns. According to the West Virginia Department of Transportation, only 30 of the 55 counties in the state have access to public transit systems and only 33 counties have taxi services. This lack of public transportation limits those living in rural areas from accessing healthcare and other social and educational services.

According to the United States Census Bureau, West Virginia is the 3rd most rural state in the nation with 51.8% of the state's population living in rural areas. The state had an estimated population of 1,831,102 in 2016 with 34 of its 55 counties[1] considered rural. The West Virginia State Health System Innovation Plan notes that there are higher rates of chronic disease among socioeconomically disadvantaged and rural populations.

West Virginia's Rural Counties - 2017



Rural Counties in West Virginia
Source: hrsa.gov

Compared to the rest of the nation, Appalachia faces disparities related to educational attainment, employment, income, and many adverse health outcomes. In 2017, the Appalachian Regional Commission (ARC) commissioned an investigation of "the impact of the deaths and diseases of despair" on mortality within the Appalachian Region.[2] ARC also partnered with the Robert Wood Foundation to produce a 404 page report titled "Creating a Culture of Health in Appalachia [August 2017]"[3] which included the following summary of Key Findings for West Virginia:[4]

MORTALITY IN WEST VIRGINIA

- Heart disease mortality rate is 19% higher than the national rate.
- Cancer mortality rate is 17% higher than the national rate.
- Diabetes mortality rate is 53% higher than the national rate.
- Chronic Obstructive Pulmonary Disease (COPD) mortality rate is 53% higher than the national rate.
- Injury mortality rate is 70% higher than the national rate.
- Stroke mortality rate is 19% higher than the national rate.

MORBIDITY IN WEST VIRGINIA

The average adult in West Virginia reports:

- Feeling physically unhealthy 33% more often than the average American
- Feeling mentally unhealthy 31% more often than the average American

Other morbidity-associated findings:

- The prevalence of adult diabetes is 13.1% compared to 9.8% nationally.
- The prevalence of adult obesity is 34.1% compared to 27.4% nationally.

BEHAVIORAL HEALTH

- The prevalence of depression among fee-for-service Medicare beneficiaries is 18.5% compared to 15.4% nationally.
- The suicide rate is 27% higher than the national rate.
- The poisoning mortality rate in West Virginia is 110% higher than the US rate.
- Of all Medicare prescription claims in West Virginia, 6.1% are for opioids compared to 5.3% nationally.

CHILD HEALTH

- The infant mortality rate is 23% higher compared to the national rate.
- The incidence of low birth weight in West Virginia is 9.3% of all newborns compared to 8.1% nationally.
- The teen birth rate in West Virginia is 33% higher than the national rate.

HEALTHCARE SYSTEMS

- The supply of mental health providers per 100,000 population in West Virginia is 45% lower than the national average.
- The supply of specialty physicians per 100,000 population in West Virginia is 21% lower than the national average.
- The supply of dentists per 100,000 population in West Virginia is 24% lower than the national average.
- The percentage of the population under age 65 that is uninsured is 17.1%, which is slightly worse than the national average of 16.8%.
- Hospitalization rates for heart disease are 32% higher than the national average.
- Hospitalization rates for COPD in West Virginia are 41% higher than the national average.

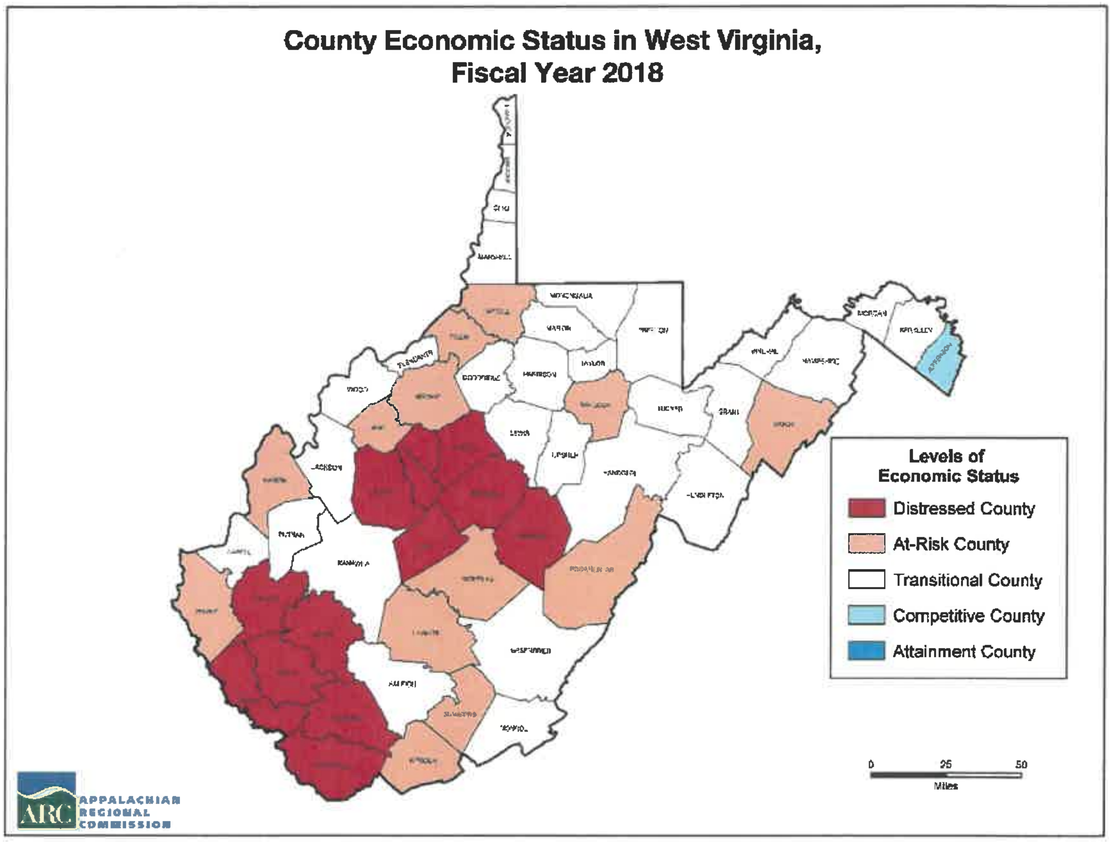
SOCIAL DETERMINANTS OF HEALTH

- The median household income in West Virginia is 25% less than the US median.
- The household poverty rate is 18.4% compared to 15.6% nationally.
- The percentage of people receiving disability benefits is 9.1% higher than the national average.
- 53.1% of adults ages 25 to 44 have some type of post-secondary education compared to 63.3% nationally.

In 2016, the West Virginia State Health Systems Innovation Plan[5] (WVSHSIP) was developed and aligned with the National Triple Aim[6] objectives of 1) improved population health, 2) improved experience of care, and 3) improved value through reductions in the overall cost of healthcare services. The plan's key, targeted areas of focus include:

- Obesity, as it contributes to many significant chronic diseases such as diabetes, hypertension, and heart disease.
- Tobacco use is another targeted area due to the high rates of use and the countless diseases associated with tobacco use.
- Behavioral health issues, including substance abuse, are also targeted due to co-morbidities and avoidable consequences.

For each of the targeted conditions or behaviors, prevention, patient engagement, and use of data to drive improvement are key objectives to improve outcomes.



West Virginia is an impoverished state ranking 5th in the nation[7] in 2016 for residents living below the federal poverty line. According to the United States Census Bureau,[8] the percent of West Virginians living in poverty in 2016 was 17.9%. Additionally, the Appalachian Regional Commission (ARC)[9] classifies twelve West Virginia counties as "distressed", meaning that their severe economic depression ranks them among the nation's worst 10%. For example, McDowell County, in West Virginia, has one of the highest poverty rates in the nation at 36.3%[10] compared to the national average of 13.5%.

Many low-income and rural neighborhoods frequently lack full-service grocery stores and farmers' markets where a variety of healthy foods can be purchased. According to the USDA, West Virginia has the highest average in the nation with food insecurity. Currently in West Virginia, there are more than 40 counties that are considered food deserts.[11] The USDA defines food deserts as an area where people don't have access to fresh fruit, vegetables, and other healthful whole foods. Low-income and food insecure people are more vulnerable to obesity due to eating more non-nutritious foods. According to Addressing Obesity and Related Chronic Diseases report,[12] obesity among adults in West Virginia results in $1.4-$1.8 billion in preventable direct medical costs, half of which are for Medicare and Medicaid, and an estimated $5 billion in indirect costs.

Chronic conditions are more prevalent among rural populations with nearly half (47%) of the adult rural population having one or more chronic conditions compared to 39% in urban areas. In addition to a high number of rural residents, West Virginia also has a high percentage (18.8%) of elders (65 and older),[8] ranking third in the nation. Rural elders are more likely than urban elders to have chronic conditions, live in poorer housing, have limited personal transportation, and have less access to healthcare services.

West Virginia's high school graduation rate has improved from 78% in 2011 to 85% in 2015. Even with this improvement, the percent of West Virginians attaining post high school education remains poor. Of the population 25 years and older, 19.2% of West Virginians have a bachelor's degree or higher, compared to 29.3% nationally.[8]

The economic downturn in West Virginia is largely due to the severe recession in the coal and a less severe recession in natural gas industries. With this recession came a decline in household incomes, jobs, business loss, and loss of taxes for the state. In the first quarter of 2016, West Virginia experienced a 0.3% reduction in personal income while nationally there was a growth of 1.0%. Additionally, many communities have incurred significant population loss and county governments are suffering financially due to declining jobs and tax base. The 2016 State of Working West Virginia[13] report described West Virginia's economic decline: "West Virginia's weak economic performance since 2012 is primarily due to the collapse in natural gas prices, declining coal production, and continued deterioration in manufacturing, construction, and utilities sectors."

For example, the West Virginia education system has been affected by job losses among teachers and service personnel all over the state due to decreased enrollment and significant pay cuts from loss of coal severance tax revenue. The loss of jobs in the southern coal fields also has caused closure of retail companies such as a Walmart, Sears stores, and other independent stores. The State Office of Miner's Health, Safety and Training says West Virginia had 90 operating mines in January 2016, down from 544 a decade ago, and had 11,968 working miners, down from 41,000 a decade ago.

Substance abuse is a crucial public health crisis in West Virginia, and a key targeted health intervention for multiple state health improvement plans. The state is confronting dire substance abuse challenges and operates numerous public and private projects dedicated solely to substance abuse. This crisis involves the misuse of legal and illegal substances. Extensive abuse of legal prescription opioids is one of the most serious health problems.

West Virginia has the nation's highest per capita rate of deaths due to drug overdose: 356 in 2015.[14] Nine out of ten drug overdose deaths are the direct or indirect result of prescription drug use.[14] The increasing use of illegal opioids such as heroin and fentanyl is a great threat to West Virginia and its citizens. Access to appropriate mental healthcare and opioid overdoses reversing drugs is an on-going issue for West Virginia.

This epidemic often strains local communities and the ability of emergency personnel to respond and offer appropriate treatment causing both health and economic burdens.

Data from the Appalachian Regional Commission (ARC) indicates that the supply of mental health providers per 100,000 population in West Virginia is 45% lower than the national average. Mental Health Professional Shortage Area designations indicate that West Virginia needs to add an additional 22 psychiatrists to achieve an adequate population-to-psychiatrist ratio.[15]

With this increase in intravenous drug use comes other health concerns. The prevalence of communicable diseases such as Hepatitis B and C has drastically increased. From 2011-2015, West Virginia's reported rates of Hepatitis B and Hepatitis C increased by 146% and 36%,[16] respectively. Another issue is mothers using opioids during pregnancy. This can lead to neonatal abstinence syndrome (NAS) which causes the infant to experience withdrawal after birth. These pregnancies are both high-risk for mother and baby and often very costly due to neonatal intensive care.

West Virginia vs United States Demographic Data*		
	West Virginia	**United States**
Persons in Poverty	17.9%	13.5%
Median Household Income	$41,751	$53,889
Population Distribution by Age		
Children 18 and under	20.5%	22.8%
Adults 19-64		
65+	18.8%	15.2%
Population Percentage Change 2010-2016	-1.2%	+4.7%
Population Distribution by Race/Ethnicity		
White	93.6%	76.9%
Black	3.6%	13.3%
Hispanic	1.5%	17.8%
Education		
High School Graduate or higher	85.0%	86.7%
Bachelor's Degree or higher	19.2%	29.8%
Persons without health insurance under 65	7.2%	10.5%

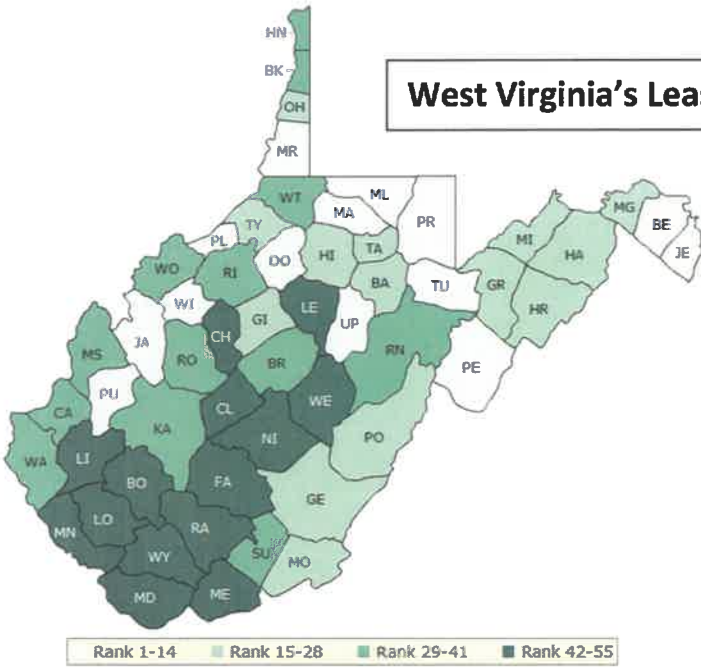
*Source: U.S. Census Bureau July 1, 2016[8]

RURAL HEALTH STATUS

Rural areas in West Virginia have significant disparities in health outcomes and social determinants of health compared to other states in the nation. According to the following 2017 County Health Rankings,[17] the southern coal field areas of the state have a cluster of the least healthy counties in terms of morbidity and mortality in West Virginia. The overall rankings in health outcomes represent how healthy counties are within the state.

The healthiest county in the state is ranked #1. The rankings are based on two types of measures: how long people live and how healthy people feel while alive.

West Virginia's Least Healthy Counties – 2017



Source:
countyhealthrankings.org[18]

West Virginia Health Status: Latest Data

Key Health Condition/Risk Factor	Year	WV%	Rank[2]	US%
Diabetes	2016	15.0%	2	10.8%
Currently Smoking	2016	24.8%	2	16.3%
Obesity	2016	37.7%	1	29.6%
Fair or Poor Health Status	2016	26.3%	2	18.0%
Heavy Drinking	2016	3.5%	54	6.4%
Depression	2016	23.8%	2	16.6%
Cancer	2016	14.0%	3	11.2%
High Blood Pressure	2015	42.7%	1	32.0%
Cardiovascular Disease	2016	14.6%	1	8.7%
Chronic Obstructive Pulmonary Disease	2016	13.9%	1	6.5%
Disability	2015	28.3%	1	20.3%
Less than 5 Servings of Fruits/Vegetables Daily	2015	91.7%	2	83.4%
No Leisure Time Physical Exercise	2016	28.5%	11	24.4%

[1]Source: West Virginia Health Statistics Center, 2016 Behavioral Risk Factor Surveillance System (BRFSS)
[2]Rank among 54 BRFSS participants (50 states, D.C., Guam, Puerto Rico, and the Virgin Islands); one indicates the highest prevalence

West Virginia exhibits some of the worst population health indicators in the country, consistently holding the ranking of last or next to last in many factors reported in the West Virginia Behavioral Risk Factor Surveillance System.

CURRENT HEALTHCARE INFRASTRUCTURE
Healthcare Delivery System

The rural healthcare delivery system in West Virginia consists of a network of clinics, hospitals, local health departments, emergency medical service providers, long-term care facilities, behavioral health, and other healthcare providers.

Clinics

- **Rural Health Clinics (RHCs):** RHCs are certified by Centers for Medicare and Medicaid Services (CMS) to provide increased access to primary care services in rural areas. These clinics must utilize physician assistants, nurse practitioners, or certified nurse midwives at least 50% of the time. Currently, West Virginia has 51 RHCs.
- **Federally Qualified Health Centers (FQHCs):** FQHCs are community health centers which serve low income and underserved populations. They provide services regardless of ability to pay, have sliding fee scales, are community-based, nonprofit organizations, and operate ongoing quality assurance programs. They may provide medical care, dental care, behavioral health, vision, and school based health services. Additionally, they offer discounted medications through the federal 340B program. West Virginia has 27 FQHCs, which also operate approximately 278 satellite sites.
- **Free Clinics:** These clinics offer a variety of free of charge healthcare and Medicaid services to West Virginia residents with limited access to healthcare. These clinics place a high priority on building and maintaining broad based community support. There are 6 free clinics in West Virginia.
- **School Based Health Centers (SBHCs):** West Virginia has 147 SBHCs. A range of services are offered to children, adolescents, and the school community. SBHCs are housed within a school site. SBHCs provides preventive and immediate care, behavioral health services, health education, and sometimes dental care. SBHCs are housed within schools or via mobile vans and managed by FQHCs or hospitals.

Hospitals

There are 68 licensed hospitals[18] in West Virginia.

- **Critical Access Hospitals (CAHs):** West Virginia has 20 CAHs. CAHs are certified by the CMS to serve patients in rural areas with limited access to healthcare. These facilities vary in size and services offered. While inpatient volumes may be limited, the CAH designation allows many communities to retain these hospitals.
- **Small Rural Hospitals:** There are three different types: Disproportionate Share Hospital, Rural Referral Center, and Sole Community Hospital.[19]
- **Urban Hospitals:** Hospitals located in metropolitan areas.

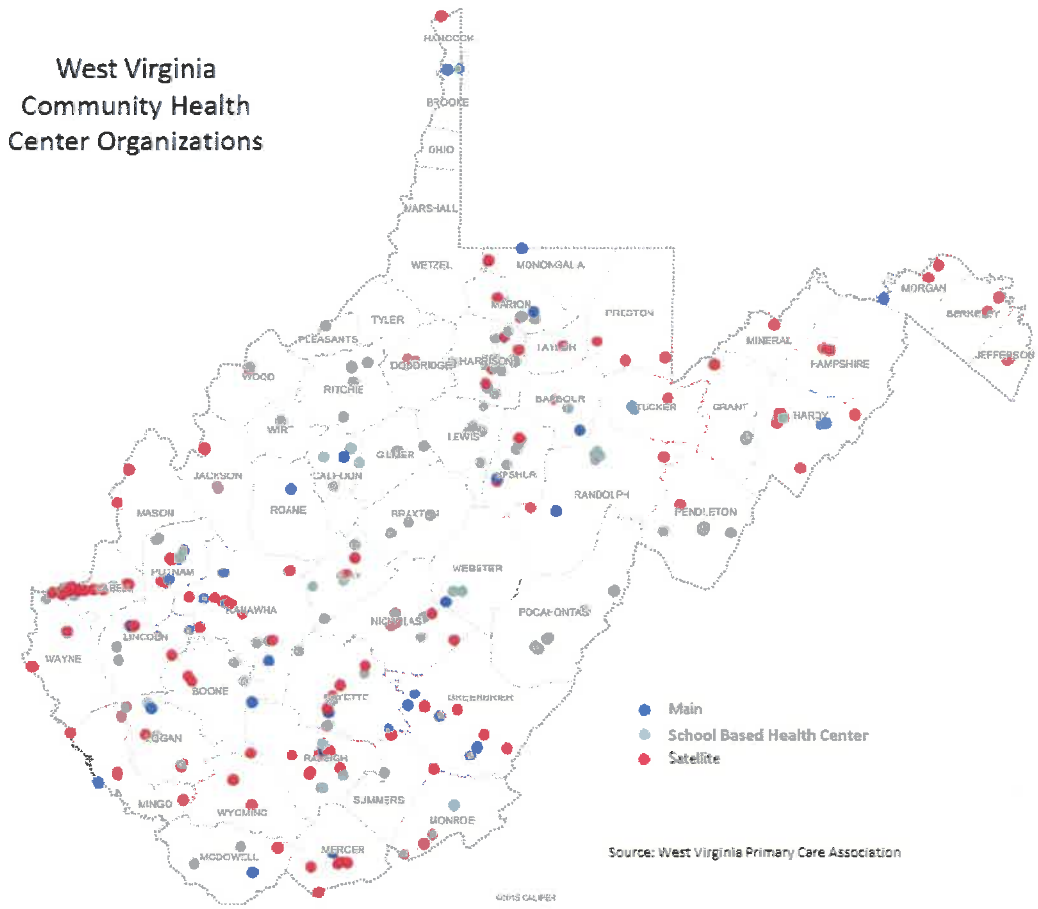
Local Health Departments
There are 49 local health departments serving 55 counties in West Virginia. These facilities perform functions related to sanitation, immunization, health promotion, disease surveillance, physical, behavioral, and dental services, and disease outbreak.

Emergency Medical Services (EMS)
EMS offers stabilizing care to patients in emergency situations and provide transport to hospitals and tertiary facilities. These healthcare providers are composed of paid and volunteer personnel. Rural areas are especially dependent on these providers for front-line and often lifesaving care.

Private Practices
Healthcare providers who provide healthcare services in a setting independent from other organizations/entities. In rural areas, private practices tend to be primary care specialties.

Behavioral Health Centers
Behavioral health centers in West Virginia are comprised of both private and public healthcare facilities and programs. These facilities provide prevention, treatment, and rehabilitation services for those with mental health disorders, developmental disabilities, and/or substance abuse.

Ancillary Healthcare Providers
Services delivered may include physical therapy, home health, long-term care facilities, occupational therapy, respiratory therapy, pharmacies, dieticians, and many others.



KEY OBJECTIVES AND PRIORITIES FOR ACTION

The key objectives were chosen based on information compiled from the West Virginia State Plan, the West Virginia Behavioral Risk Factor Surveillance System, the Primary Care Needs Assessment, Community Needs Assessments, the West Virginia Cancer Plan, the West Virginia Obesity Plan, and the West Virginia State Health System Innovation Plan. These objectives and accompanying strategies were modeled after Healthy People 2020 and are intended to help improve and plan for a more positive rural health status in West Virginia.

Overall Goals of the West Virginia State Rural Health Plan

The goals of the plan are:

- Compile ideas and insight from different stakeholders.
- Encourage collaborative relationships between communities, academic institutions, government, businesses, healthcare providers, healthcare consumers, and other healthcare resources.
- Bring areas of greatest need to the forefront and identify strategies to improve health outcomes.

- Identify areas of improvement for rural healthcare providers/advocates.
- Bring attention to health issues and needs of rural West Virginians.

Key Objectives

- **Access to Healthcare**: Improve rural healthcare delivery by reducing barriers and promoting rural health workforce.
- **Health Outcomes**: Prioritize known health conditions in rural areas.
- **Workforce Development**: Increase providers in rural areas and focus continuing education on rural health concerns.
- **Individual Accountability**: Encourage citizens to be proactive in their own healthcare.
- **Community Engagement**: Promote active engagement by rural communities.

Objective 1: Access to Healthcare - Improve rural healthcare delivery by reducing barriers and promoting rural health workforce

The vision is for all citizens to have access to quality healthcare services without culture, distance, language, or accessibility being barriers.

West Virginians experience substantial barriers in accessing healthcare. Both personal and public barriers exist. Personal barriers include income level, education level, health literacy, finances, lack of personal transportation, and cultural stigmas. Public barriers include lack of public transportation in West Virginia, distance to providers, and some providers refusing to accept Medicaid and/or Medicare.

Cultural factors cause barriers due to many Appalachians not wanting to seek medical care until it is necessary. Many people will wait until the medical problem is affecting their work daily instead of seeking preventative services before the problem becomes severe. Additionally, many residents with mental or behavioral health issues do not want to seek treatment due to societal stigmas or fear of being "labeled."

In 2013, West Virginia expanded Medicaid leading to insurance status becoming less of an issue because more West Virginians are insured. Although the Medicaid expansion has had a positive impact on insurance status, many healthcare providers do not accept Medicaid/Medicare which may prevent patients from receiving care at the facility closest to their home. Insurance is still a significant barrier for dental services. Many West Virginians do not have dental insurance and many dentists do not accept Medicaid/Medicare. In dental health, there is a lack of patients keeping up with preventive care and many residents wait until problems are so severe their teeth need to be extracted. According to BRFSS, West Virginia has the highest average (30.4% compared to the national average of 15%) of adults age 65+ who have all their natural teeth removed.

Distance and transportation are significant challenges for rural West Virginians. There is minimal public transportation throughout the entire state, let alone rural West Virginia.

In addition to the lack of public transport, many residents do not have vehicles, have nonfunctioning or improperly maintained vehicles, or share a vehicle among family. Specialty care is often even further away from rural residents.

Strategy 1.1 Promote stronger linkages between social institutions and healthcare delivery.

Strategy 1.2 Identify and reevaluate areas to consolidate or rearrange resources for optimal access and delivery of care.

Strategy 1.3 Promote coordination between all healthcare providers (physical, behavioral, and dental).

Strategy 1.4 Assess barriers to adopting telehealth technology and develop solutions that will lower barriers.

Strategy 1.5 Promote policy change to increase funding to promote lifelong healthy living.

Objective 2: Health Outcomes - Prioritize known health conditions in rural areas

Once identified, rural areas can implement processes to improve these health conditions leading to improved health outcomes.

Key health conditions identified for this plan include:

- *Behavioral Health*, including substance abuse, addiction, and acute/chronic mental health disorders
- *Cardiovascular Disease*, including heart attack, angina, and coronary artery disease
- *Lung Disease*, including COPD, black lung, progressive massive fibrosis, and other smoking/occupational exposures
- *Obesity*, including physical inactivity, nutrition, and diabetes
- *Social Determinants of Health*, including income, education, social, and environments

Top health conditions and behaviors identified by the 2016 BRFSS and 2010 White House West Virginia Drug Control Update.

- Top Health Conditions
    - Arthritis (40.0%)
    - Obesity (37.7%)
    - Disability (28.3%)
    - Poor General Health (26.3%)
    - Diabetes (15.0%)
    - Cardiovascular Disease (14.6%)
    - Cancer (14.0%)

- COPD (13.9%)

- Top Health Behaviors
    - Not Eating ≥5 Servings of Fruits and Vegetables (91.7%)
    - Cigarette Smoking (24.8%)
    - No Physical Exercise (28.5%)
    - Illegal Drug Use (8.4%)[20]
    - Heavy Drinking (3.5%)

In recent years, growing awareness of social determinants of health has elevated the idea that health behaviors and health outcomes should be discussed together is increasingly popular. As defined by the World Health Organization, social determinants of health are "complex, integrated, and overlapping social structures and economic systems that include the social environment, physical environment, and health services; structural and societal factors that are responsible for most health inequities. Social determinants of health are shaped by the distribution of money, power, and resources at global, national, and local levels, which are themselves influenced by policy choices." These are the conditions in which people are born, grow, live, work, and age. Social determinants of health include socioeconomic status, discrimination, housing, physical environment, food security, child development, culture, social support, healthcare services, transportation, working conditions, and democratic participation.

Additionally, Adverse Childhood Experiences or ACE, has been increasingly researched and found to be associated with poor health and well-being during adulthood. ACE includes exposure to abuse, domestic violence, substance abuse, mental illness, and other stressors or traumatic events. The West Virginia DHHR BPH Health Statistics Center has compiled data using this methodology since 2014.[21]

Strategy 2.1 Implement school based programs to foster lifelong health. Examples include:

- Dental Health
- Prediabetes/Diabetes Education
- Physical Activity
- Nutrition/Nutrition Labels

Strategy 2.2 Support community food development systems (community food hubs, Farm to Table, Farm to School, Farmer's Markets, community gardens, etc.).

Strategy 2.3 Set target goals for program processes and/or outcomes related to priority health conditions.

Strategy 2.4 Promote awareness about both illegal and legal drug use and tobacco dependence.

Strategy 2.5 Promote both mental and physical healthcare.

Objective 3: Workforce Development - Increase providers in rural areas and focus continuing education on rural health concerns

The vision is to build a strong foundation of rural health providers by increasing education specific to rural health issues and problems and to identify workforce gaps in order to plan strategies that will strengthen the workforce.

Rural communities need and deserve a workforce large enough to meet their demand. In many areas of rural West Virginia, that demand is not met. Not only is a workforce with adequate numbers needed but an appropriate mix of primary, specialty, and ancillary services are needed as well.

Currently, West Virginia has multiple services to help with creating and maintaining a robust healthcare workforce within the state. The following are just a few examples of programs to aid in workforce development.

In West Virginia, the State Office of Rural Health (SORH) has programs to aid with recruiting healthcare providers to rural communities. These programs all require a health professional shortage area designation (HPSA) or a medically underserved area/population (MUA/P) designation. These are the J-1 Visa Waiver Program, National Health Service Corp ambassadorship, State Loan Repayment, and the Recruitment and Retention Community Project. In addition to funding, many healthcare workers feel rural communities lack the amenities they want for their families.

West Virginia higher education institutions offer an array of health professional training programs. Many of these programs place emphasis on primary care training and the importance of providing care in rural and underserved areas of the state. For example, the Area Health Education Centers (AHEC) recruit, train, and retain health professionals committed to providing healthcare to underserved populations. Although these programs aid in placing and training many physicians in rural areas, funding resources limit the number of physicians that can be placed. The Rural Health Initiative, a state funded rural healthcare program for some health profession students and residents, is to increase interest, recruitment, and retention in rural areas and to support involvement of rural areas in the state in the health education process. The initiative allows the West Virginia Higher Education Policy Commission (WVHEPC) to grant funding to the state's three academic health centers: Marshall University, West Virginia School of Osteopathic Medicine, and West Virginia University.

The West Virginia Rural Health Association (WVRHA) recognized a need to conduct an environmental assessment of current healthcare workforce supply in West Virginia. They contracted with the National Center for the Analysis of Healthcare Data (NCAHD) to generate a report; Healthcare in West Virginia A Workforce Supply and Demand Analysis Report.[22] This report provides data and maps to illustrate the healthcare demands around West Virginia. In 2015, NCAHD updated the report and expanded its scope to Dietitians, Diabetic Educators, Paramedics, Behavioral Health Clinic locations, Family Resource Network locations, county unemployment rates, children in poverty, and the percent of children being raised by grandparents. The report was most recently updated in 2017. This information can help citizens, rural health stakeholders, policy makers, and government officials to identify areas of need and improvement.

The Center for Rural Health Development has an Oral Health Development Program that "supports strengthened dental health capacity, such as equipment, technology, succession planning, building renovations, etc.[23]" Practices in dental health professional shortage areas (DHPSAs) are especially considered. This is a collaborative project funded by the West Virginia Oral Health Program.

The programs above highlight only a few of the ways West Virginia's rural health stakeholders are attempting to improve the rural health workforce. Healthcare workforce is not only a healthcare issue; it requires involvement in community economic development and other sectors. For example, input from those in business, education, and health.

Strategy 3.1 Promote healthcare training such as increased training for home health workers handling mental health disorders and community paramedicine to prevent overutilization of emergency departments.

Strategy 3.2 Seek appropriate and monitored increases in the scope of practice and licensure.

- Reduce barriers in regulation and policy to allow healthcare workers to practice at an optimal level by license.
- Address licensure issues to allow providers to work across state lines to help telehealth accessibility and affordability.
- Review the scope of practice regulations.

Strategy 3.3 Foster collaboration with technical schools, higher education institutions, residency programs, and other state and private agencies to promote a better healthcare workforce in West Virginia.

Strategy 3.4 Promote the impact of population health enhancing economy, education, and other population disparities to positively impact healthcare.

Strategy 3.5 Reinstating the Coordinated Placement Group: A collaborative effort among placement professionals in the state, and others within West Virginia's medical schools, and the Bureau for Public Health to more efficiently link potential candidates with practice opportunities in the state.

Objective 4: *Individual Accountability* - Encourage citizens to be proactive in their own healthcare

The anticipation is that rural West Virginians will have the knowledge and resources to make informed decisions about all aspects of their healthcare including promoting healthy lifestyles for themselves and their families.

West Virginia residents need not only knowledge but resources to make healthy choices for themselves and their families daily. It isn't knowledge that gives individuals the ability to enact healthy choices. It is a combination of appropriate health literacy, personal, community, environment, and community values and norms that shape an individual. For example, patient education classes such as those on diabetes, nutrition, exercise, and other education outreach programs promote improved health literacy.

There are many predisposing factors that affect West Virginian's health literacy and health values, including social and cultural factors. Many of these factors are included when discussing social determinants of health. For example, residents can be well informed about healthy eating and want to eat well, but, if they do not live close to a grocery store, their ability to do so becomes challenged. Many rural communities have unaffordable or inaccessible options for healthy foods or recreational activities.

Many health issues in West Virginia are a product of cultural and socioeconomic factors outside of the control of the healthcare delivery system. Social and cultural factors in rural West Virginia lead to increased likelihood for residents to pick up unhealthy behaviors. These behaviors include tobacco use, lack of physical activity, and substance abuse. Generational poverty, income level, and low priority on education can often span generations. Many children are now being raised by grandparents, other extended family members, or foster parents due to drug addiction, drug overdoses, or incarceration. These social and cultural factors are the areas that can be hardest to change but are the most changeable factors. For example, people cannot change that they have a family history of heart disease but can change the fact they smoke or the food they choose to consume.

Healthy communities involve many facets that all work together to promote a high quality of life. Culture, education, economy, and ecology are all part of healthy communities. This idea correlates with the ideas of social determinants of health. Promoting all of these ideas involves a broader group of stakeholders to encourage positive change.

The behaviors mentioned above overlap with the social determinants of health. General areas for concern include:

- Alcohol, substance, and tobacco dependence/abuse
- Insufficient physical activity
- Poor nutrition (food access, diet choices, income)
- Risky sexual behaviors
- Violence (child abuse, intimate partner abuse)

This plan aims to promote positive health behaviors by West Virginians. These not only include the behaviors mentioned above but any behaviors that can add to quality and longevity of life.

Strategy 4.1 Promote medication and safety adherence.

Strategy 4.2 Promote awareness about both legal and illegal drug use, substance abuse, and harm reduction programs.

Strategy 4.3 Continue to enhance and promote patient educational resources that promote health.

Strategy 4.4 Engage whole communities in identifying and implementing strategies to change local culture associated with key personal behaviors.

Strategy 4.5 Promote lifelong physical activity and exercise.

Objective 5: *Community Engagement* - Promote active engagement by rural communities

Encourage rural community stakeholders to promote health equity by engaging local, regional, and state policymakers to focus on rural health when making policies. The Health Impact in 5 Years (HI-5) Initiative by the CDC highlights[24] non-clinical, community-wide approaches that have evidence reporting: 1) positive health impacts, 2) results within 5 years, and 3) cost effectiveness or cost savings over the lifetime of the population or earlier.

When policy is being made, it is vital for rural health stakeholders to communicate with policy makers in all sectors to advocate for favorable policies and resource allocation on areas of greatest need. Currently, there is widespread uncertainty about how potential changes to the Affordable Care Act (ACA) will affect rural West Virginians from patients to providers. It is vital for rural health advocates to pay attention to the changing health policies and to improve health equity for West Virginia residents.

Strategy 5.1 Encourage good health from all policies by promoting economic development and job creation.

Strategy 5.2 Develop collaborations that include schools aimed at preventing and coping with substance abuse, homelessness, and healthy lifestyles.

Strategy 5.3 Develop resources, including communication and advocacy skills training to help local and regional health related coalitions grow stronger.

Strategy 5.4 Advocate for communities to understand their role in building and maintaining healthy communities and the role of their residents' health and well-being.

Strategy 5.5 Promote the effect social determinants of health has on individuals' health.

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West Virginia Rural Health Advisory Council
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