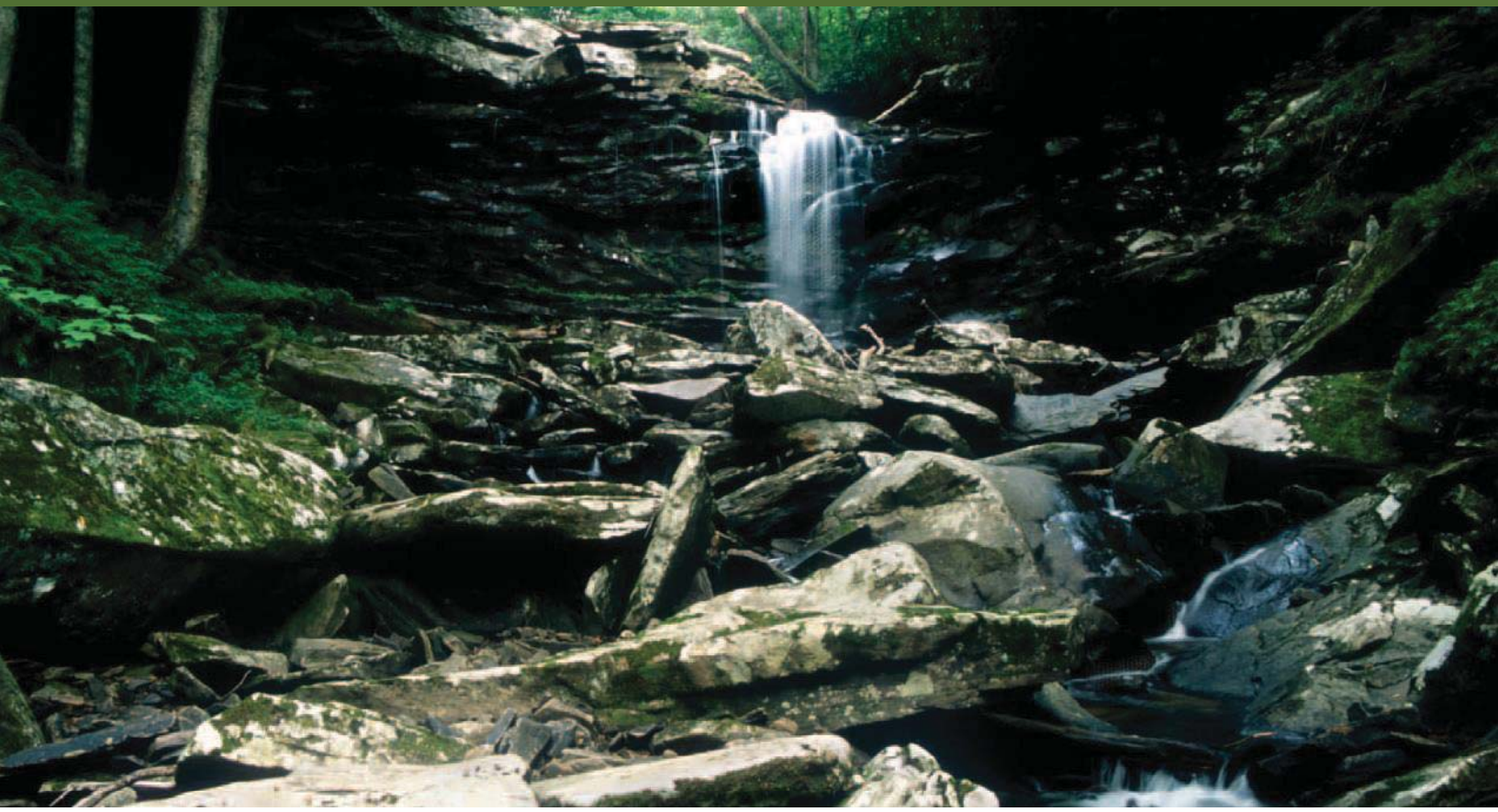
The West Virginia Cancer Control Plan



Authored by:
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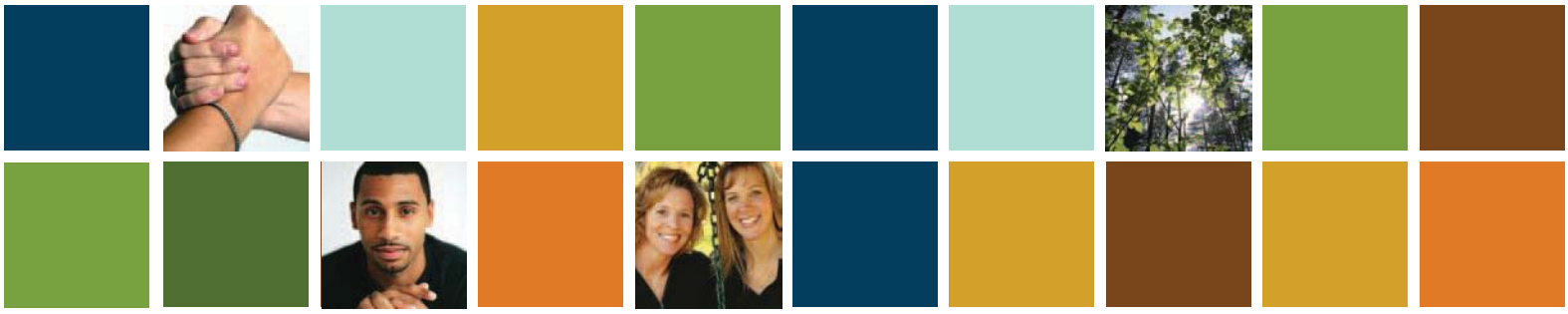
West Virginia Cancer Coalition
Collaborating to Conquer Cancer

The West Virginia Cancer Plan



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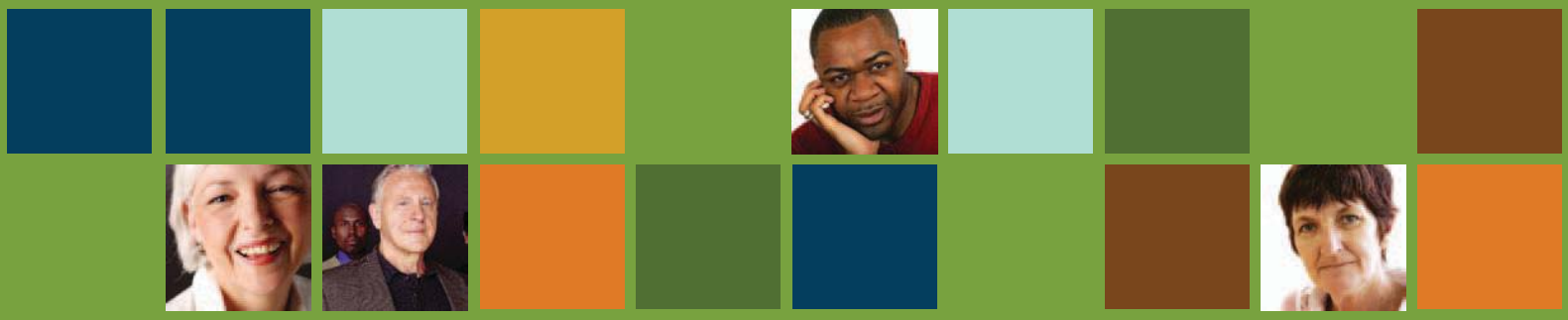

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Foreword

Honorable Joe Manchin III
Governor

The 2007 *West Virginia Cancer Plan* contains important information for each of us about the significant human and economic burden that cancer, West Virginia's second leading cause of death, places upon the people of our state. Some of what you read here will distress you since each year more than 10,000 West Virginians are diagnosed with cancer. But there is also hope that one day, if we work together, we will conquer cancer in the Mountain State.

The members of the Mountains of Hope Cancer Coalition, the authors of this statewide plan, engaged in an open process to develop a comprehensive document that lays out the challenges we face and provides us with a set of goals and objectives to show us how to overcome those challenges.

No one individual, group, or government agency alone could possibly do all that needs to be done. The *Plan*, which focuses on cancer prevention, early detection, and ways to improve each cancer survivor's quality of life, invites health professionals, public health personnel, academics, advocates, and consumers, along with legislators and policymakers, to find effective ways to overcome these great challenges. The *Plan's* successful implementation depends on it being viewed in the context of the larger issues facing the state and national health care system.

We are grateful to the more than 260 members of Mountains of Hope, who represent over 130 different organizations, for their hard work in creating this plan. Congratulations, Mountains of Hope, for taking the first steps to make us all more aware of what still needs to be done. Yes, there is much to accomplish, but I believe West Virginians are up to the task. Each of us has a vital role to play in the effort to conquer cancer, and I urge you to do your share.

Joe Manchin III, Governor

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For more than a year and a half, over 135 citizens representing more than 65 organizations from around the state of West Virginia donated their time, expertise and experience to revise the *West Virginia Cancer Plan*. Thanks must first go to the individuals who participated with the Prevention, Early Detection and Quality of Life workgroups and the chairs and co-chairs of these groups. The combined efforts of the researchers, lay citizens, public health professionals and health care providers who served on these workgroups resulted in a plan that focuses on the current issues and challenges of cancer control and prevention in West Virginia and offers strategies to overcome them.

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Mountains of Hope

ur mission

To facilitate and coordinate collaborations, statewide and at the community level, to address Mountains of Hope's designated priority areas.

Our vision

To reduce the human and economic impact of cancer in West Virginia.

Guiding Principles

The *West Virginia Cancer Plan* is guided by the following principles:

Cancer control is the responsibility of all West Virginians – its institutions, organizations, individual citizens, families, businesses, governments, and communities;

All West Virginians may join the Mountains of Hope Cancer Coalition;

Coordination and collaboration are essential to achieving the goals of this plan and assuring successful implementation;

Decision making will be driven by the best available data;

Data will be used to identify disparities in the cancer burden;

Application of state-of-the-art knowledge, technology, and practices is the foundation for all strategies and actions the plan promotes;

Cancer control priorities are established by the Coalition. They are based upon a combination of opportunity, data, current resources, and the potential to significantly reduce cancer incidence, mortality, and morbidity through prevention, detection, treatment, rehabilitation, and/or palliation;

The *West Virginia Cancer Plan* actively supports the complementary recommendations and strategies found in other statewide plans;

Resources will be effectively utilized;

Evaluation is a critical component of the *Plan*; and

The *West Virginia Cancer Plan* will be reviewed periodically to ensure its relevance and reflection of the latest evidence-based data.

Introduction

Introduction to Comprehensive Cancer Control

What is Comprehensive Cancer Control?

Comprehensive cancer control is a collaborative process through which all of a state's cancer-fighting resources work together to fight cancer in every community, on all fronts, from prevention and early detection to treatment, rehabilitation, and end-of-life care. The efforts of this process encourage healthy lifestyles, promote recommended cancer screening guidelines and tests, increase access to quality cancer care, and improve quality of life for cancer survivors.

What is the Mountains of Hope Cancer Coalition?

The Mountains of Hope Cancer Coalition (MOH) evolved in the late 1990s from the West Virginia Breast and Cervical Cancer Coalition. Mountains of Hope's four founding members are the American Cancer Society (ACS), Mary Babb Randolph Cancer Center (MBRCC), WV Breast and Cervical Cancer Screening Program (WVBCCSP), and WV Comprehensive Cancer Program (WVCCP). Coalition members include more than 260 health care professionals, volunteers, cancer survivors and community advocates representing over 130 community-based organizations, research and academic institutions, public and private agencies, coalitions, voluntary associations, patient advocacy groups, and other cancer-related organizations. Mountains of Hope is the author of the *West Virginia Cancer Plan.*

During the past five years Mountains of Hope concentrated on capacity-building priorities such as ensuring continued broad participation from the cancer control community; maintaining and growing an effective network of cancer control partners, and strengthening the bonds among West Virginia communities, the Coalition, and its members. The Coalition seeks to enhance communication throughout the state's cancer community; to maximize scarce resources; to identify gaps in services and resources, and to identify common challenges in the fight against cancer. In seeking to coordinate cancer control activities statewide, Mountains of Hope will focus its ongoing efforts on the development and maintenance of cancer control activities in the Mountain State, while encouraging effective partnerships among cancer control advocates and their allies.

Who are the Agents of Hope?

Agents of Hope are community volunteers who actively promote cancer awareness in their local communities and support and promote the mission and vision of Mountains of Hope. Agents of Hope encourage positive behavior change, especially in rural and isolated communities.

What is the *West Virginia Cancer Plan*?

The *Plan* is a collaborative, consensus-based, statewide blueprint for cancer prevention and control activities. With the significant growth of cancer prevention and control activities, there is a need for greater coordination. This collaborative plan is intended to assist state, regional, and local cancer prevention and control partners as they battle cancer over the next 10 years. The *Plan* will be used as a road map to direct future cancer control activity.

How was this plan revised?
The revision process took place over 18 months and involved the hard work and commitment of over 135 people representing more than 65 organizations. Beginning in September 2005 the MOH membership divided into three workgroups, Prevention, Early Detection, and Quality of Life, where the goals, objectives, and key strategies of the *Plan* were developed. Through this collaborative effort there will be an increase in community support for local implementation of the *Plan*. Priority goals will be identified on a yearly basis by the Coalition membership and a yearly progress report will update the Coalition on progress made in achieving the *Plan's* goals and objectives. Periodically the goals, objectives, and strategies will be reviewed and updated.

Why should you get involved?
The goals and objectives in this plan cannot be achieved without the coordinated participation of all West Virginians dedicated to reducing the human and economic impact of cancer in West Virginia.

How can you get involved?
Mountains of Hope membership, both individual and organization, is open to all who support the Coalition's mission and vision. For information contact:

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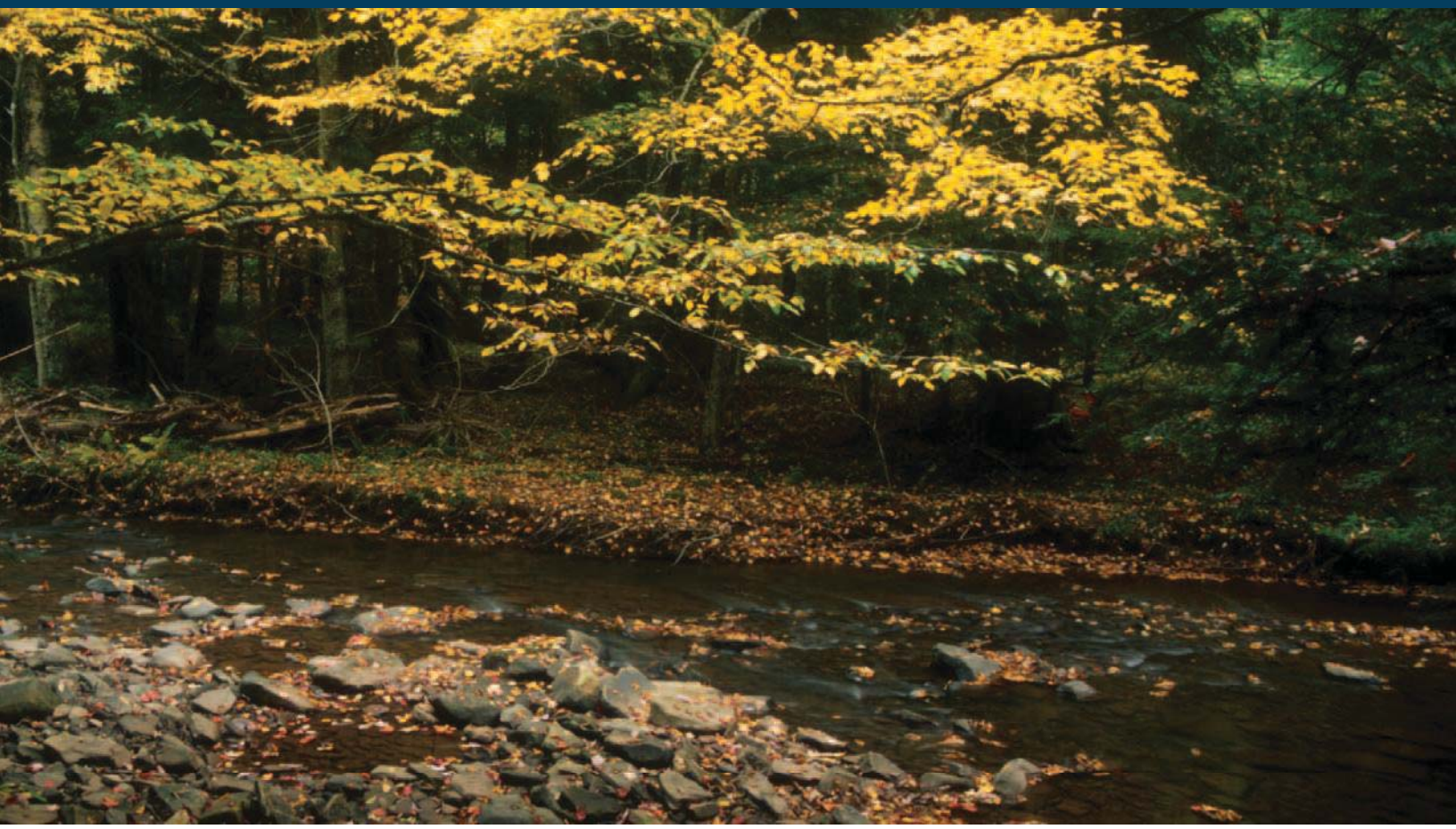
"Mountains of Hope connects clinicians, consumers and community resources. I can learn what's new, what works, and what's needed. I enjoy the exchange of ideas and networking with colleagues."

-Julie Lejeune, M.S.
WV Medical Institute



Demographics

Demographics

Key Points

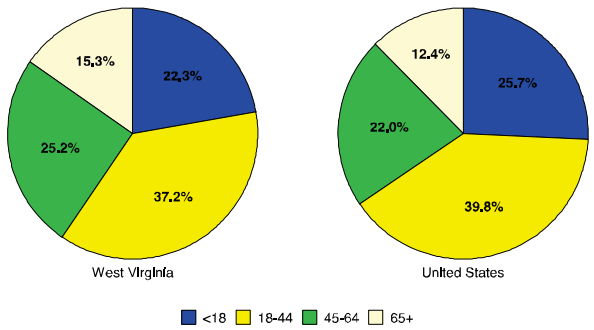
- In 2005, West Virginia tied as the state with the second oldest median age in the nation (40.7). In addition, West Virginia was second in the nation in the percentage of its population aged 65 and older (15.0%).
- The proportion of the state's population aged 45 and older increased from 35% of the population in 1990 to 40% in 2000.
- In 2000, only 75.2% of West Virginia's adult population had a high school education and only 14.8% were college graduates.
- The state's average median household income in 2004 was $32,589, the lowest in the country (U.S. average: $44,374). Sixteen percent (16.3%) of the state's residents live in poverty.
- In 2004, 23.6% of West Virginians over the age of four reported having at least one disability, compared with only 14.3% of the same population nationwide. Twenty-nine percent (28.9%) of disabled West Virginians live in poverty.

West Virginia's overall population size has changed little since 1990. In that year, there were 1,793,477 state residents, compared with 1,808,344 in 2000, an increase of only 0.8%. The West Virginia Health Statistics Center (WVHSC) estimates the 2004 population to be 1,815,354, an additional increase of 0.4%. According to the 2004 estimates, 95% of state residents are white, with 3.2% African-American and 0.6% Asian. An estimated 0.8% of residents are Hispanic.

AGE

While the overall population size remained relatively consistent over the past 15 years, the distribution of the state's population by age changed, with older residents representing a larger proportion of the population as time passes. The age group represented by residents aged 45 and older increased from 35% of the total population in 1990 to 40% in 2000. Figure 1 illustrates the difference in the proportions made up by different age groups in the state and the nation in 2000, showing the older age groups (44-64 and 65+) constituting a larger proportion of the population in West Virginia compared with the nation.

Figure 1. Distribution of Population by Age
West Virginia and United States, 2000



Source: U.S. Census Bureau

In 2005, West Virginia tied as the state with the second oldest median age in the nation (40.7). In addition, West Virginia was second in the nation in the percentage of its population aged 65 and older (15.0%). As the incidence of most cancers increases with advancing age, this indicates a potentially serious problem facing the state.

SOCIOECONOMIC STATUS

Lower educational attainment and lower income are associated with some types of cancer, due in part to health behaviors such as smoking and poor nutrition and in part to poorer access to or use of available health care, including screening for early detection of cancers. The Census Bureau reported that in 2000 only 75.2% of West Virginia adults older than 25 were high school graduates and 14.8% were college graduates, compared with 80.4% and 24.4%, respectively, in the United States as a whole.

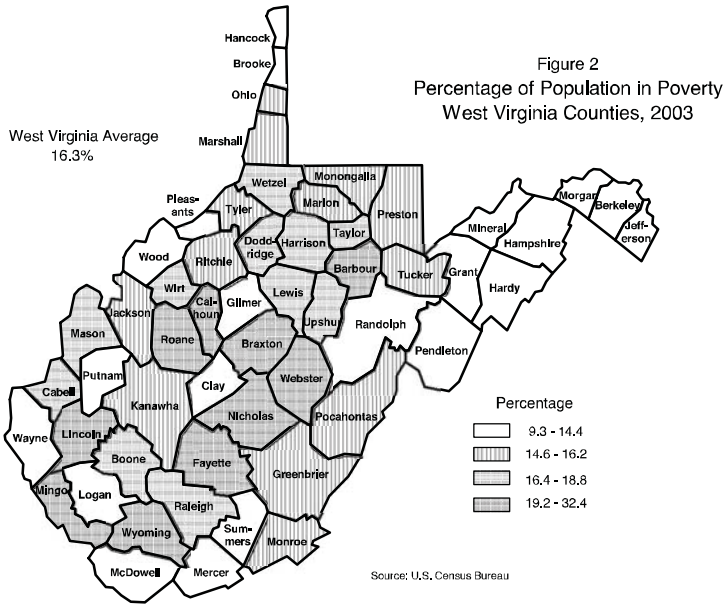


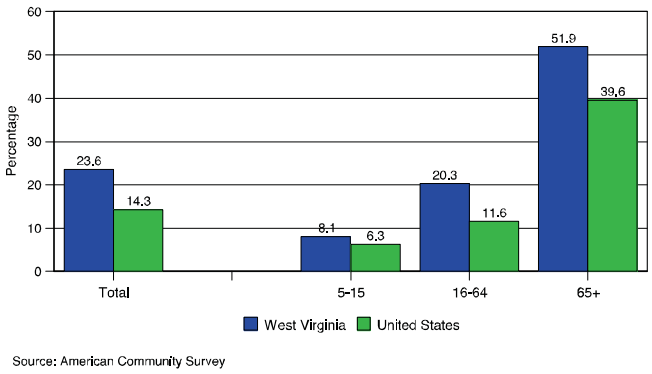
Figure 2
Percentage of Population in Poverty
West Virginia Counties, 2003

The state's lower educational attainment is reflected in the Census Bureau's 2004 income statistics. West Virginia's average median household income from 2002-2004 was $32,589, the lowest in the country, and much lower than the U.S. average of $44,374. According to the Census Bureau's small area income and poverty estimates for 2003, 16.3% of West Virginia's population lives in poverty. By county, the percentage of the population that lives in poverty ranges from a high of 32.4% in McDowell County to a low of 9.3% in Jefferson County, as shown on the map (Figure 2). (The percentage of population that lives in poverty by individual county can be found in Appendix B.)

DISABILITIES

According to the 2004 American Community Survey, West Virginia has a markedly higher percentage of residents over the age of four who have at least one disability than the United States as a whole. Twenty-four percent (23.6%) of West Virginians report a disability; 8.8% have one disability, while 14.8% have two or more disabilities. Nationwide, 14.3% of the population has at least one disability, with 6.7% of the population reporting one disability and 7.6% reporting at least two disabilities. Figure 3 shows the percentages of persons having at least one disability by age group in the state and the nation. West Virginians are more likely than their counterparts nationally to have a disability in each age group.

Figure 3. Percentage of Population Having at least One Disability, by Age
West Virginia and United States, 2004



Among West Virginians having at least one disability, 28.9% have household incomes below the poverty level, 26.3% of men and 31.3% of women. In the United States, 20.4% of the disabled population reports a household income below the poverty level, 18.0% of men and 22.6% of women.

Burden of Cancer Overview

Burden of Cancer Overview

Key Points

- If present trends continue, by 2016 cancer will become the state's leading cause of death; currently the state leads the nation in lung cancer deaths.
- The American Cancer Society estimates that West Virginia will have the **highest** crude rate of overall mortality in the nation in 2005, due primarily to high rates of death from lung and colorectal cancers.
- In 2002, West Virginia had the 4th highest age-adjusted cancer mortality rate in the nation.
- In 2002, West Virginia men had higher rates of death from lung, prostate, and colorectal cancer than men nationwide. West Virginia women had a higher rate of lung cancer than their national counterparts.
- African-Americans in West Virginia have consistently died from cancer at a higher rate than white residents. Whites in West Virginia have died from cancer at a higher rate than whites nationally since 1981.
- Each year from 1999 through 2003, an average of 10,423 West Virginians were diagnosed with cancer. Lung cancer is the most frequently diagnosed cancer, with an average of 1,942 new cases diagnosed each year. An average of 1,328 new cases of breast cancer, 1,397 new cases of prostate cancer, and 1,314 new cases of colorectal cancer are diagnosed annually among West Virginians.
- From 1999-2003, African-Americans in West Virginia were more likely to be diagnosed with prostate, colorectal, pancreatic cancer, and multiple myeloma. than the state's white residents.

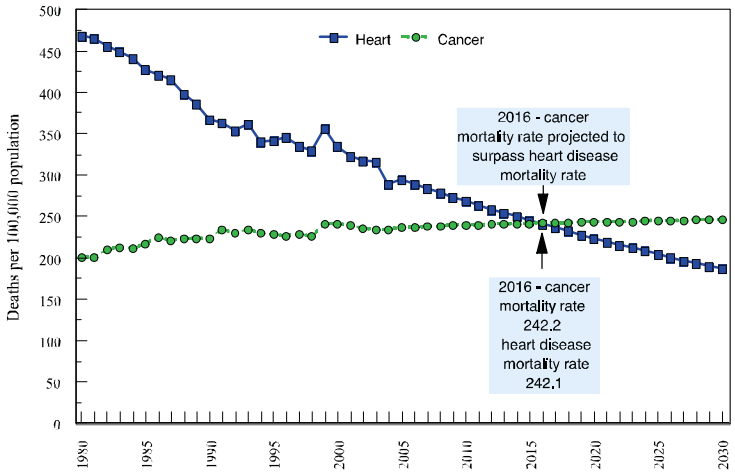
CANCER MORTALITY

On average, there were 4,679 cancer deaths in the state each year from 2000 through 2004. The four most deadly cancers in West Virginia, as well as in the United States, are lung and bronchus (an average of 1,521 deaths per year), colorectal (477 deaths per year), breast (300 deaths per year), and prostate (210 deaths per year). Together, these cancers accounted for 54% of all cancer deaths in the state in those years.

Since 1945, cancer has been the second leading cause of death in West Virginia, following heart disease. The age-adjusted mortality rate for cancer in 2003 was 218.4 deaths per 100,000 population,

compared with a rate of 294.3 for heart disease mortality. Heart disease deaths have been declining for the past two decades, however, while cancer deaths have been increasing, a trend that will lead to cancer becoming the leading cause of death in the state by the year 2016 if the trend continues, as shown in Figure 4.

Figure 4. Heart Disease and Cancer Mortality Rates*
West Virginia 1980-2004 (Actual) and 2005-2030 (Projected)



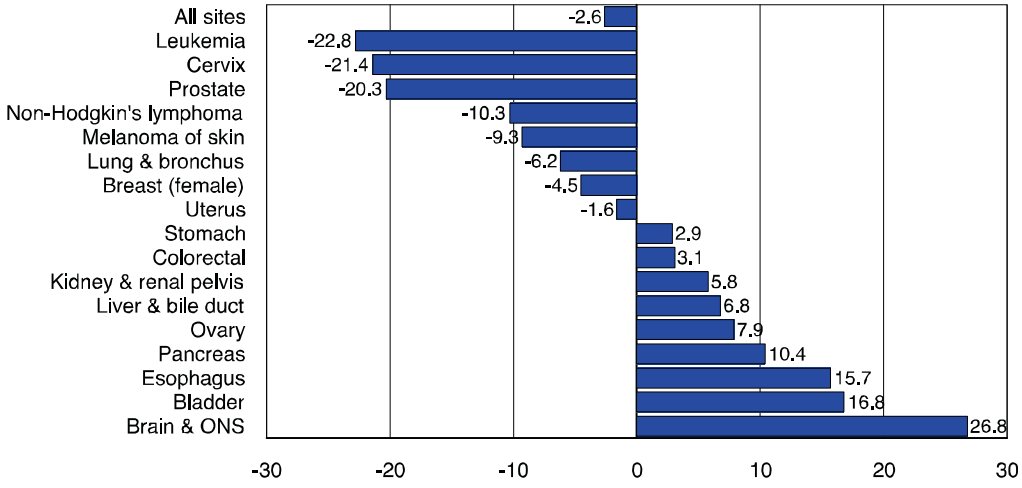
*Rates adjusted by age to the 2000 US standard million.
Source: WVHSC

The statistics on cancer mortality in West Virginia are alarming. The American Cancer Society (ACS) estimates that the state will have the **highest** crude rate of overall cancer mortality in the nation in 2005, due primarily to high rates of death from lung and colorectal cancers. The most recent state rankings, published in *Health Care State Rankings 2006*, showed the state to be 4th in the nation in age-adjusted cancer death rates in 2002, surpassed only by the District of Columbia, Kentucky, Louisiana, and Mississippi.

> The American Cancer Society estimates that the state will have the **highest** crude rate of overall cancer mortality in the nation in 2005.

Figure 5 shows the percentage change in mortality rates for selected cancer sites in the state between 2000 and 2004. The largest percentage decrease was found for leukemia (-22.8%), while the largest percentage increase occurred with brain and other nervous system (ONS) cancers (26.8%).

Figure 5. Percentage Change in Cancer Mortality Rates between 2000 and 2004
All Sites and Selected Sites, West Virginia

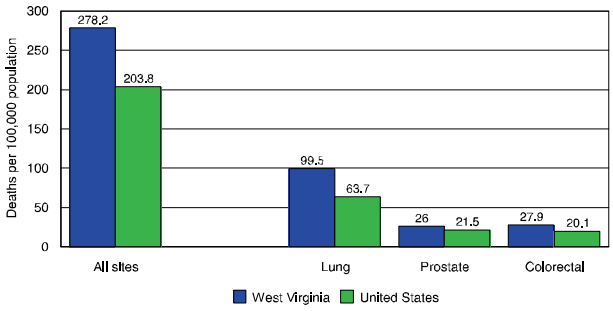


NOTE: Breast, cervical, and ovarian cancer rates calculated using female population only; prostate cancer rate using male population only.
Source: WVHSC

CANCER MORTALITY IN WEST VIRGINIA AND THE UNITED STATES

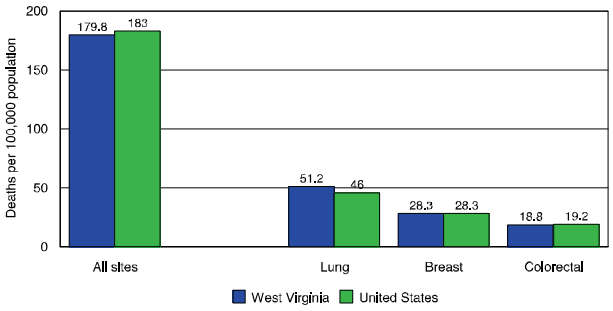
In 2002, the West Virginia overall rate of cancer mortality was 14% higher than the U.S. rate, 215.3 deaths per 100,000 population versus 193.5. The state's overall rates for lung and colorectal cancer were higher than the comparable national rates (71.0 vs. 54.7 and 22.7 vs. 19.7, respectively). As shown in Figures 6 and 7, higher rates of lung cancer were found among both men and women in the state, with the rate among state men markedly higher than that among their national counterparts. West Virginia men also had higher rates of mortality for colorectal and prostate cancers than men nationwide. While West Virginia and U.S. breast cancer mortality rates are similar, more than a quarter (27.3%) (15 out of 55 counties) have mortality rates higher than the national average. WV women have a slightly lower rate of colorectal cancer death.

Figure 6. Selected Cancer Mortality Rates* among Men
West Virginia and United States, 2002



*Rates age-adjusted to the US standard million.
Source: WVHSC

Figure 7. Selected Cancer Mortality Rates* among Women
West Virginia and United States, 2002

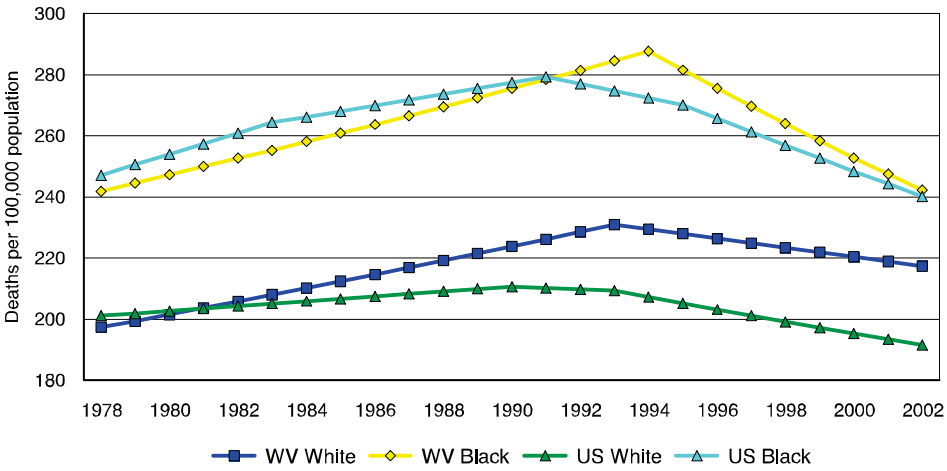


*Rates age-adjusted to the 2000 US standard million.
Source: WVHSC

DISPARITIES

Figure 8 illustrates the gaps in cancer mortality between whites and African-Americans in the state and the nation, as well as the gap in mortality between whites in West Virginia and nationwide from 1978 through 2002. African-Americans in the state and the nation have consistently died from cancer at a higher rate than whites, and whites in West Virginia have had higher mortality rates than whites nationally since 1981.

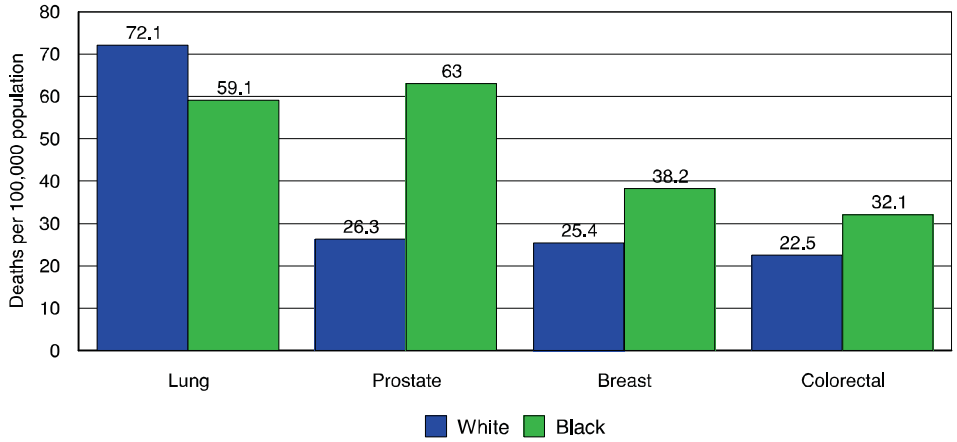
Figure 8. Cancer Mortality Rates*, All Sites, by Race
West Virginia and United States, 1978-2002



*Rates age adjusted to the 2000 US standard million.
Source: NCI, Surveillance, Epidemiology and End Results (SEER) Program

African-Americans in West Virginia had an average annual age-adjusted rate of overall cancer mortality that was 11% higher than that for whites from 2000-2004 (246.2 deaths per 100,000 population vs. 222.2, respectively). African-Americans had death rates that were higher than those for whites for three of the four deadliest cancers over that period, as shown in Figure 9.

Figure 9. Average Annual Cancer Mortality Rates*
Selected Sites, by Race
West Virginia, 2000-2004



*Rates age adjusted to the US 2000 standard million.
Source: WVHSC

CANCER INCIDENCE

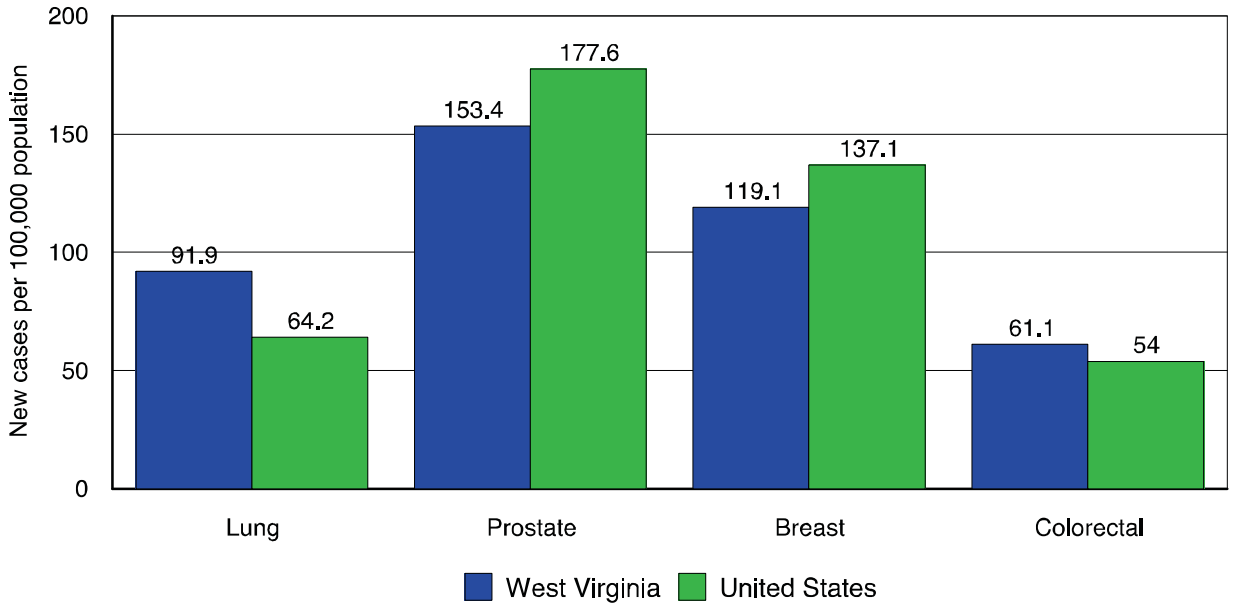
Each year from 1999 through 2003, an average of 10,423 West Virginians were diagnosed with invasive cancer, an increase of 6.6% from an annual average of 9,986 from 1994 through 1998, according to data from the West Virginia Cancer Registry (WVCR). The most frequently diagnosed cancers were lung, prostate, breast, and colorectal, in that order. The largest increase in number of cases occurred among men diagnosed with prostate cancer, from an average of 1,236 new cases diagnosed each year from 1994 through 1998 to an average of 1,397 new cases between 1999 and 2003.

Table 1: Average Annual Number of Cases of Invasive Cancer Diagnosed in West Virginia
Selected Sites, 1994-1998 and 1999-2003

Primary Site	1994-1998	1999-2003	% Change
Lung and bronchus	1,906	1,942	+1.9
Prostate	1,236	1,397	+13.0
Breast	1,302	1,328	+2.0
Colorectal	1,210	1,314	+8.6

Figure 10 compares average annual age-adjusted rates of cancer incidence for lung and bronchus, prostate, breast, and colorectal cancers for West Virginia and the United States for the time period 1998-2002. The overall average incidence rate in West Virginia for those years was 495.5 cases of invasive cancer per 100,000 population, significantly higher than the corresponding national rate of 480.4. Incidence rates for lung and colorectal cancers were also significantly higher in West Virginia than in the United States. (Appendix C lists the 1998-2002 incidence rates for all cancer sites for West Virginia and the United States.)

Figure 10. Average Annual Cancer Incidence Rates* for Selected Cancers
West Virginia and United States, 1998-2002



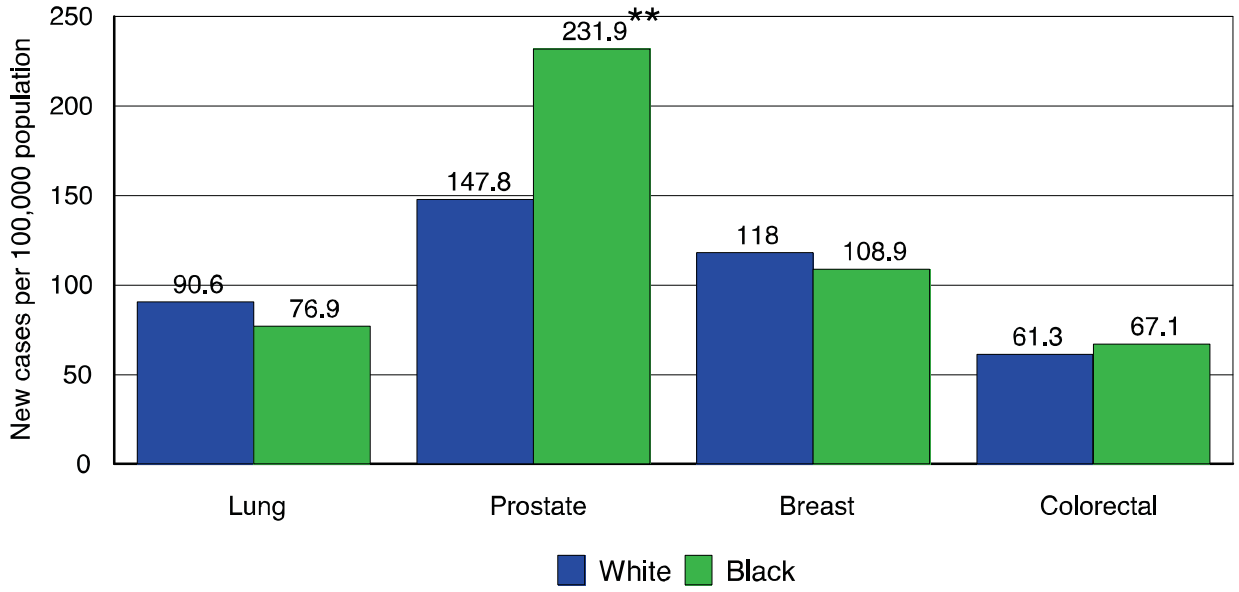
*Rates age adjusted to the US 2000 standard million
Source: WVCR; US rates from NCI, SEER

DISPARITIES

Incidence rates for the four leading cancers diagnosed in West Virginia from 1999-2003 show the same pattern as the mortality rates previously discussed. African-Americans were diagnosed with significantly higher rates of prostate cancer (see Figure 11), and at higher rates of colorectal cancer (67.1 cases per 100,000 population vs. 61.3), pancreatic cancer (15.2 vs. 9.1), and multiple myeloma (15.0 vs. 4.7) than their white counterparts. (Appendix D lists West Virginia 1999-2003 incidence rates for all sites by race.)

African-Americans in West Virginia were significantly more likely than whites to be diagnosed with prostate cancer from 1999 through 2003.

Figure 11. Average Annual Cancer Incidence Rates*
Selected Sites, by Race
West Virginia, 1999-2003



*Rates age adjusted to the US 2000 standard million.
**A statistically significant difference
Source: WVCR

Health Disparities:

The Unequal Burden of Cancer in West Virginia

Health Disparities:
The Unequal Burden of Cancer in West Virginia

Since 2002 cancer health disparities, population-specific differences in incidence, disease outcomes, and access to high-quality care throughout the cancer experience, have been a Mountains of Hope (MOH) priority. These health disparities negatively challenge the well-being of our communities, despite efforts to allocate scarce financial and other resources wisely. MOH recognizes this continuing challenge and commits to actions to help us better understand and, whenever possible, overcome these disparities. As the partnership moves forward to implement the *West Virginia Cancer Plan's* goals and objectives, finding effective and cost-efficient ways to address the state's cancer health disparities challenges is crucial.

Health disparities impact specific underserved population segments, often those with the fewest resources, human or material, to cope with disease. Not all West Virginians have equal access to cancer resources including information, prevention, early detection, diagnostic, or treatment services. Many West Virginians share characteristics of the "underserved." These include being: 1) uninsured; 2) a member of the working poor without adequate health insurance; 3) institutionalized; 4) homeless; 5) literacy challenged; 6) indigent; 7) physically or mentally disabled, or 8) someone whose cultural or religious beliefs and practices preclude seeking care through established medical channels. In West Virginia, health disparities most often refer to the differences individuals experience because of poverty, lack of health insurance, being medically underserved, elderly, disabled, a racial or ethnic minority, or living in a rural environment.

West Virginia ranks 33rd among the states in the percentage of adults at Level 1, the lowest literacy level. Adults scoring at this level generally have difficulty performing everyday tasks such as locating an intersection on a map and reading and comprehending a short newspaper article. Over 40% of rural West Virginians may be functionally illiterate and in some counties an equal number read at a fifth-grade level. Health literacy is "…the capacity of the individual to obtain, interpret, and understand basic health information and services and the competence to use [them] in ways which are health-enhancing." It encompasses general along with numerical/computational abilities, as well as computer literacy skills. Research has demonstrated that those with limited literacy skills report poorer overall health; are less likely to be screened; present in later stages of disease; are more likely to be hospitalized; have poorer understanding of treatment, and have lower adherence to medical regimens.

Health disparities are also often complicated by lifestyle behaviors such as tobacco use and obesity. The combination of lifestyle behaviors and systems barriers, such as poverty and lack of education, may contribute to reasons why those affected by health disparities are more likely to get cancer, be diagnosed at later stages, and perhaps even die sooner than their more affluent neighbors. This combination exacerbates the Mountain State's continuing challenge to eliminate its cancer burden.

Lack of access to care, especially because of lack of insurance, contributes greatly to a disproportionate vulnerability of special populations nationally and in West Virginia. In 2004 18.5% of West Virginia adults reported having no health care coverage. Even for those with insurance, meeting deductibles and other out-of-pocket costs can be a significant problem. West Virginia's uninsured adults are less likely to see a doctor when they should because of financial constraints than are adults with insurance coverage. Those uninsured who do see a doctor may

not receive the same level of care as insured patients. Stereotyping may play a role in patient/provider communication. Provider assumptions or inexperience may lead them to believe that poorer rural patients will not comply with a treatment regimen because they may not understand medical or drug-taking directives, or may not be able to travel for care that is more specialized.

These differences, compounded by the shortage of available health care providers, create complex decision-making dilemmas for physicians who must balance the needs of all patients. For example, because discussions about prevention can be time consuming yet rarely billable, patient/provider communication may suffer. Because of this and other system realities, patients may be denied opportunities to participate in effective decision-making regarding their health; sometimes patients may not even be aware that there are multiple screening, diagnostic, or treatment options to consider.

The dilemma over inequitable care, as determined by insurance coverage, is supported by the findings reported by the Institute of Medicine's Committee on Consequences of Uninsurance. The report, *Care without Coverage; Too Little, Too Late* (2002), states that "Uninsured patients only receive one half the health care of insured patients and usually die sooner because of delayed diagnosis. The uninsured are less likely to receive screening mammograms, Pap tests, and colorectal exams." In 2004, the committee issued its final report and recommended that health care be universal, continuous, affordable, sustainable to the economy, and promote access to quality care.

Rural Americans tend to be older, poorer, less educated, and more likely to be uninsured than their urban counterparts. Rural communities have higher rates of chronic illness and disability and report poorer overall health status than do residents of urban communities. Systemic factors such as lack of public transportation, fewer community services, and a shortage of health care providers contribute to sub-optimal care. While these characteristics are commonly found throughout rural America, there are many extreme examples of this phenomenon throughout rural West Virginia.

The most rural counties in West Virginia are among the most medically underserved, distressed, and economically disadvantaged areas in the United States. Seventy percent of West Virginia's 55 counties are categorized as "rural." Fifty-one of West Virginia's counties have full or partial designations as health professions shortage areas. Although the number of physicians has grown in West Virginia, they tend to cluster in more prosperous and urban counties. From 1990-1999, the average distressed county experienced a net increase of only two primary care physicians. Local community hospitals are struggling to remain operational and some have had to cut essential services, exacerbating difficulties in accessing routine care.

There is little public transportation and limited community services in most rural areas of West Virginia. Sixty-four percent of residents live in communities of fewer than 2,500 people. Cancer mortality rates are elevated in these rural areas, as are the incidence rates for lung, cervical, and colorectal cancers. This suggests that addressing access-to-care issues and other barriers leading to delayed or late-stage diagnoses may be the single, best hope for reducing many of the state's cancer health disparities.

Poverty in West Virginia manifests itself in many ways, including dilapidated and crowded housing; lack of adequate plumbing and clean running water; poor roads, and limited access to public utilities. Poverty often runs in families, passed along successive generations connected by common threads of limited education and few job skills. There is also a lack of available good jobs, because it would require significant investment to develop an improved infrastructure to replace the one that characterizes our state's poorest communities.

The historical development of West Virginia is rooted in people fleeing oppression. Seventeenth century settlers from England, Scotland, Wales, and other western European countries came to Virginia seeking a new life. The more affluent settled in the verdant coastal areas while those with less wealth settled in the rugged mountains of what was then western Virginia. Determination and a well-developed frontier spirit, coupled with the strong desire to own their own land, brought them to what is now West Virginia. These hearty individuals sought religious freedom, solitude, independence, and relief from poverty. They found what they sought in the inhospitable terrain at the expense of economic and societal advancement. But so ingrained was their commitment to the concepts of independence and the worth of the individual over society that the mid-nineteenth century saw West Virginia emerge from the yoke of Virginia and align itself with the Union during the Civil War.

With this era of change came the industrialization of West Virginia and central Appalachia, characterized by the control of the land and resources by large absentee companies. West Virginians who had worked so hard to own land were dazzled by the sums offered for rocky land that could not be farmed, for timber so thick everywhere, for something intangible called "mineral rights." The promise of new jobs and a booming economy materialized as cheaply built "coal towns" and indebtedness, an oppressive class system, intimidation, and physical force that eventually escalated into mine wars. West Virginians lost control of their land and resources and for decades, well into the 1970s, watched the ensuing environmental destruction bring prosperity to others.

The importance of this state's history and its culture lies less in understanding what was done to West Virginians but more in understanding how West Virginians responded to those actions. Some retreated, taking pride in never leaving their "holler," maintaining their dialects and colloquialisms, being hostile to "outsiders," refusing to cooperate in efforts led by "outside authorities," resisting change. Others organized; they began to collaborate to overcome repressive conditions. Because of those efforts, the people of this state successfully organized to improve working and living conditions in the coal, textile, and steel industries, to stop clear-cutting of timber, and to reclaim strip-mined areas. What we know, therefore, is that change is possible and, if it is to be sustainable, it must emanate from within the community and acknowledge and respect Appalachian culture.

The mountains shape people's lives, both literally and figuratively. There is clearly a distinguishable Appalachian culture. "Place" is a prominent feature in that culture.

Our cancer control studies have identified numerous cultural issues that influence cancer incidence, mortality, and cancer care in the region. Actions and beliefs in Appalachia are largely based upon discussion among community members about their experiences with disease and health care. Communication and use of care is influenced by skepticism, some distrust of health

professionals, and fear of being taken advantage of by 'the system.' Residents report that poor communication between health professionals and patients further creates complications in health care delivery and represents a barrier to pursuing cancer screening, diagnosis, and treatment. (Behringer and Friedell, 2006)

Eliminating health disparities will take a coordinated national and local community approach. Over the last few years, the health status of some underserved populations has improved, but not all, and not enough. The Mountains of Hope Cancer Coalition represents an underserved population. Because of that, the Coalition embraces the charge to make certain that all West Virginians have equal access to programs and services that may reduce their chance of getting cancer and limit the impact of the disease.

Working to reduce health disparities in West Virginia requires an understanding of this state's culture and history as well as the dominant access issues of insurance and poverty, rurality and workforce. It also requires building efforts to address these disparities upon the positive characteristics and values of the people. West Virginians are resilient and action-oriented; they are community and family-centered. A common thread is woven into the fabric of West Virginians by a shared value system that includes:

- Close family ties and social networks
- Love of home and place
- Resiliency
- Individualism
- Self-reliance
- Pride
- Church and community ties
- Neighborliness and hospitality
- Family solidarity
- Sense of humor
- Patriotism

Historically, the Mountains of Hope Cancer Coalition has implemented many programs over the last five years that demonstrate an understanding of what it means to work in a state with many pockets of disparities. Through already existing and future collaborations and strong partnerships, Mountains of Hope will continue to build on West Virginia's strengths. Mountains of Hope remains resolute in its commitment to eliminate West Virginia's cancer health disparities by implementing the goals and objectives found in the *West Virginia Cancer Plan*.

Mountains of Hope Successes

Mountains of Hope Successes

In a number of important ways, over the past five years, Mountains of Hope (MOH) members made an impact on several of the Coalition's 2002-2007 priorities: advocacy; cervical cancer; clinical trials; colorectal cancer; health disparities; ovarian cancer; prostate cancer, and tobacco prevention and cessation. During this time, Coalition partners started new initiatives, re-invigorated old ones; successfully advocated for important legislative and policy changes, and educated and trained hundreds of health professionals and the public. Coalition partners also provided more than $260,000 in in-kind donations to defray travel and time away from the office, in order for Coalition members to attend Mountains of Hope meetings and other events.

The following is an abbreviated list of selected past partnership accomplishments:

Advocacy

- Established the Coalition's Advocacy Taskforce. The Taskforce has:
  - Promoted the American Cancer Society's (ACS) Grassroots Network to MOH members.
  - Partnered with the ACS and other organizations to advocate successfully for:
    - **Tobacco Settlement**
      Continued $5.6 million annual allocation to the West Virginia Bureau for Public Health for prevention programs from Master Settlement Agreement.
    - **Tobacco Taxes**
      Increase in the cigarette product tax by 38 cents and levy of the state's first tax (7%) on smokeless tobacco products.
    - **Bidis Ban**
      Ban on sale of bidis (imported flavored cigarettes), becoming only the second state in the nation to ban them.
    - **Clean In-Door Air Preemption**
      Defeat of proposed statewide legislation that would have preempted 46 stronger local Boards of Health clean in-door air regulations.
    - **Tobacco Internet Bill**
      Legislation to prevent mail order or Internet sales of tobacco products to persons under 18 years of age.
    - **Minimum Mastectomy or Reconstruction Surgery Hospital Stay**
      Law to provide minimum hospital stay coverage for patients following radical or modified mastectomy and total surgical treatment of breast cancer.
    - **Clinical Trials**
      Mandate for insurance companies in West Virginia to cover routine care costs for patients enrolled in Phase II, III, and IV Clinical Trials.
    - **Physical Activity and Education**
      Minimum physical education and physical fitness standards for public school students K-6; requires annual report of public school students' body mass index to Governor's office.
    - **Health Insurance Marketplace Modernization Act**
      Defeat of federal bill preempting over 130 state laws guaranteeing health insurance coverage for selected cancer screenings and treatments.

- Partnered with the West Virginia Center for End-of-Life, the West Virginia Center for Health Ethics and Law, the West Virginia Pain Initiative, and other organizations to advocate for:
  - **End-of-Life Care**
    Amendment to the West Virginia Healthcare Decisions Act to add the Physician Orders for Scope of Treatment (POST) form to the state code.
  - **Pain Management**
    Adoption by the West Virginia Boards of Medicine and Osteopathy of the Federation of State Medical Board's "Model Policy for Use of Controlled Substances for the Treatment of Pain."

Cervical Cancer

- West Virginia was one of the first states to take advantage of the federal Breast and Cervical Cancer Prevention and Treatment Act, which gives states the option to offer women in the National Breast and Cervical Cancer Early Detection Program access to treatment through Medicaid.
- The West Virginia Breast and Cervical Cancer Screening Program (WVBCCSP) partnered with researchers from the Mary Babb Randolph Cancer Center (MBRCC) to conduct a Centers for Disease Control and Prevention (CDC) funded study, "Biology-Based Cervical Cancer Screening," and found the high-risk human papillomavirus prevalence rate among study participants was 18%, with women over the age of 50 showing a prevalence rate three to five times higher than would be expected for that age group.
- The WVBCCSP increased the percentage of women screened for cervical cancer from 4.5% to 38.6% in 2006.
- Over 120 nurses attended a WVBCCSP-sponsored Public Health Nurses Physical Assessment Training (PHNPAT), a program that teaches public health nurses how to perform Pap tests and clinical breast exams. PHNPAT is a WVBCCSP partnership with the West Virginia University's (WVU) Health Sciences Center and MBRCC.

Clinical Trials

- Staff from the Appalachia Community Cancer Network (ACCN) and the National Cancer Institute's Mid-Atlantic Cancer Information Service (CIS) developed and presented a web-based clinical trials curriculum, "Clinical Trials Provider Training," for rural primary care physicians with co-sponsorship by MOH.
- CIS, the West Virginia Leukemia and Lymphoma Society, and MBRCC collaborated to facilitate two public education forums entitled "From Trials to Triumphs: Understanding Cancer Clinical Trials" in Parkersburg and Wheeling.
- MBRCC, City Hospital (Martinsburg), and three Eastern Panhandle oncologists became the first links in the West Virginia Clinical Trials Network.

Colorectal Cancer

Established the West Virginia Colorectal Cancer Initiative. The initiative has:

- Worked with the ACCN, ACS, WVU School of Pharmacy, Family Medicine Foundation of West Virginia, and other partners to educate almost 900 state health professionals about life-saving colorectal cancer screening guidelines.
- Convened five annual West Virginia Colorectal Cancer Leadership Summits.
- Partnered with the WVU School of Medicine (Eastern Division), WVU Extension Service, WVBCCSP, and local volunteers and health professionals to conduct an integrated media campaign in eight Eastern Panhandle and Potomac Highlands counties to raise public awareness about colorectal cancer screening.
- Assessed, with the WVU School of Medicine's Department of Community Medicine, primary care clinicians' (physicians, pharmacists, advance practice nurses, and physician assistants) knowledge, attitudes, and behaviors regarding screening guidelines.
- Collaborated with Smoke on the Water, a private fundraising group, Saint Francis Hospital (Charleston), ACS, and MOH to bring the Colossal Colon, a public education tool, to the state's capital.

Health Disparities

- The MOH Patient Care Subcommittee and the West Virginia Comprehensive Cancer Program (WVCCP) partnered to create and disseminate more than 6,000 copies of the *West Virginia Cancer Resource: A Patient's Guide.*
- MBRCC's Cancer Prevention and Control, ACCN, and MOH collaborated to administer 55 community-based mini-grants. Through a competitive process community partners were funded to complete cancer prevention and control projects at the local level. Projects employed the community lay helper model and evidence-informed interventions, and used project-funded, field-tested, easy-to-read educational materials. The mini-grants were made possible through a larger MBRCC Cancer Prevention and Control grant funded by the Claude W. Benedum Foundation.
- MBRCC's Cancer Prevention and Control, ACCN, MOH, and WVCCP partnered to provide unlimited web access to 31 easy-to-read cancer prevention and control brochures and fact sheets.
- MOH Pain Workgroup conducted a statewide survey of West Virginians to assess attitudes and identify gaps in knowledge about pain issues.
- The West Virginia Center for End-of-Life Care grew hospital-based palliative care services from 7 to 24 sites.
- The West Virginia Hospice Council worked to expand hospice coverage to <u>every</u> county in West Virginia.
- Conducted a statewide session on health disparities in collaboration with Intercultural Cancer Council, MOH, and CIS.

Ovarian Cancer

Established the West Virginia Ovarian Cancer Initiative "Reaching Out." The initiative has:

- Partnered with grassroots organizations across the state to educate more than 2,500 women in 30 counties about ovarian cancer.
- Distributed 5,000 educational packets to educate the state's women about the signs and symptoms of ovarian cancer.

- Partnered with WVBCCSP to develop and pilot screening (mammogram, Pap tests, pelvic exams) and educational events for women in three regions of the state.

Prostate Cancer

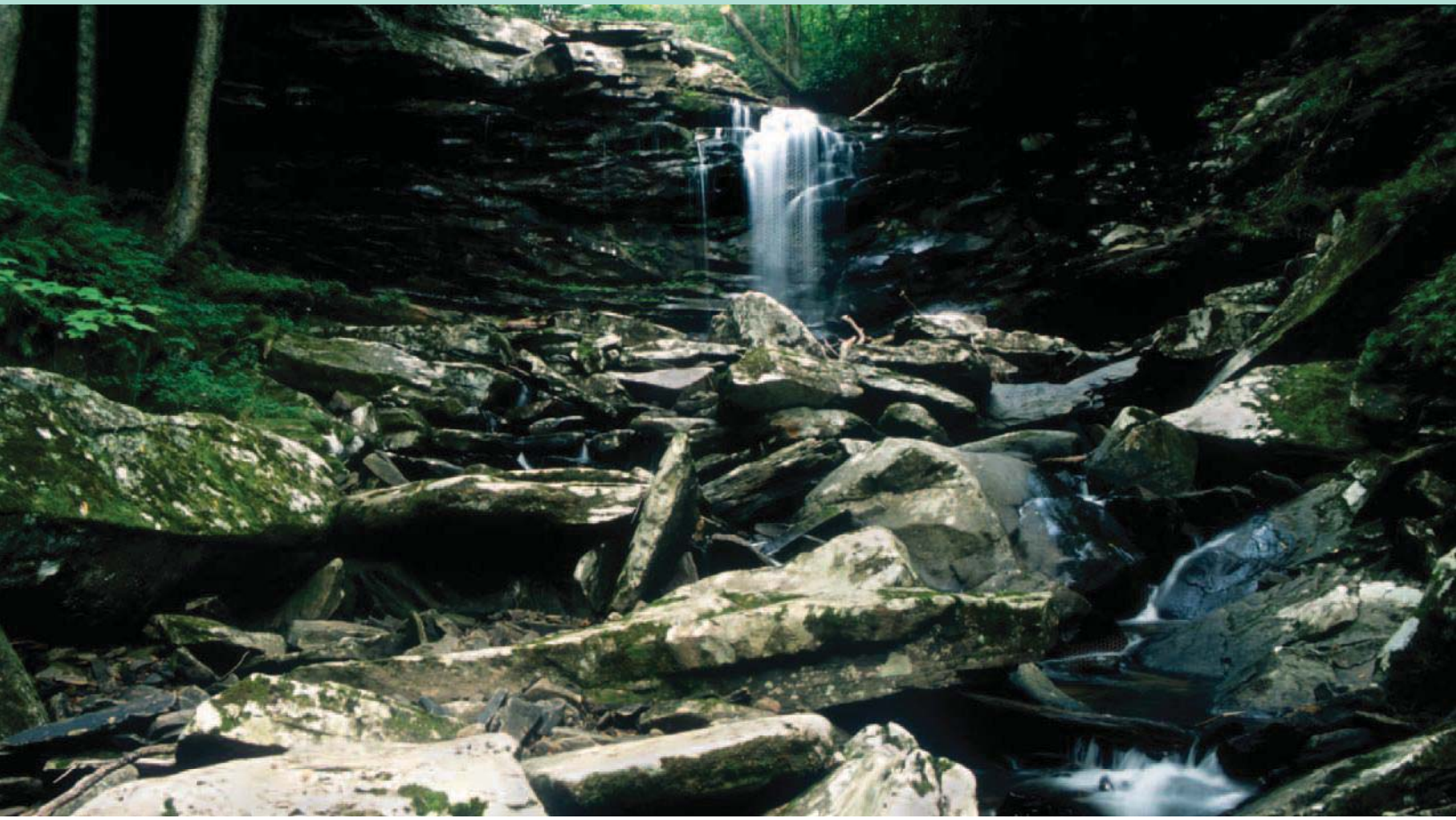
Established the West Virginia Prostate Cancer Initiative. The initiative has:

- Partnered with MOH and state prostate cancer and primary care experts to use Delphi methodology to develop consensus-based public education messages about prostate cancer screening.
- Partnered with the Ebenezer Medical Center (Huntington, WV) to create and implement "My Brothers' Keeper," a male-oriented, lay community health advisor model in Huntington and Charleston.
- Collaborated with Us TOO, a national advocacy organization, and local volunteers to conduct five community-based train-the-trainer sessions.
- Partnered with faculty from the WVU School of Pharmacy and representatives from the Veteran's Administration to conduct eight group interviews at Veteran Outreach Centers throughout West Virginia to learn more about barriers to prostate cancer screening for veterans.

Tobacco

- WV Division of Tobacco Prevention received the 2005 Americans for Non-Smokers Rights Smoke-Free Air Challenge Award for passing more clean indoor air regulations that any other state. Currently there are county health department regulations in 54 of 55 counties; 65% of these regulations require restaurants to be smoke free.
- The Smoke-Free Initiative of West Virginia, funded and operated by the state's Division of Tobacco Prevention, offered technical assistance and support to local health departments and businesses regarding secondhand smoke protections.
- WV Division of Tobacco Prevention funded educational programs to train Freedom from Smoking facilitators. Marshall University School of Medicine and Dr. Lynn Gobel received funding to train health care providers in proven clinical smoking cessation practice guidelines.
- During the 2005-2006 school year the Not-On-Tobacco (N-O-T) smoking cessation program achieved a 30% quit rate and a 44% reduction rate.

While all Mountains of Hope affiliates can take pride in the 2002-2007 accomplishments of the partnership, the cancer burden data and demographic challenges set forth in this plan make it clear much remains to be done before the Coalition can claim to have achieved its noble vision of reducing the human and economic burden of cancer in West Virginia. The goals, objectives, and strategies in the *Plan*, arrived at through an exciting 18-month process, are guides to reach that vision. Each Coalition member can be a part of that success. Remember, together we can collaborate to conquer cancer in the Mountain State.



Prevention

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Tobacco Use:

- West Virginia has traditionally had high adult rates of cigarette smoking. In 2004, the state's rate of adult smoking was 26.9%, significantly higher than the BRFSS national median of 20.8% and the highest rate among all 50 states. In recent years the gap between the national median and West Virginia's rate of current cigarette smoking has widened.
- Smoking rates among high school students in West Virginia have declined from 38.5% in 2000 to 27.8% in 2005, a statistically significant difference. While progress has been made, it is still critical to reduce the incidence further.
- West Virginia men have traditionally reported high usage rates of smokeless tobacco. In 2004, 16.6% of men used smokeless tobacco. According to 2005 YTS data, 22.0% of high school males reported using smokeless tobacco.

Diet/Obesity:

- In 2003, only 18.7% of West Virginian adults and 20.6% of high school students reported that they consumed the recommended five servings of fruits and vegetables daily.
- The prevalence of obesity among adults in the state increased from 15.0% in 1990 to 27.6% in 2004. In 2003, 13.4% of high school students were overweight, with even higher numbers at risk for overweight.

Physical Activity:

- While there has been a marked decline in physical inactivity among West Virginia's adults since 1990, one-fourth (24.5%) still reported being sedentary in 2004. According to data from the 2003 YRBS, 30.1% of high school students reported participating in insufficient physical activity during the week preceding their interview.

UV Exposure:

- In the 2003 BRFSS 38.1% of West Virginia adults reported experiencing a sunburn lasting more than 12 hours during the 12 months prior to the survey. This may account for the increase in the state's incidence rate for melanoma of the skin.

Human Papillomavirus (HPV):

- Results from the 2006 Annenberg National Health Communication Survey, in which a representative sample of 635 US adults took part, only 57% had ever heard of the human papillomavirus, a co-factor in the development of cervical and other cancers.

Prevention

> Nearly two-thirds of all cancer deaths in the United States can be attributed to just three factors: (1) tobacco use, (2) adult diet/obesity, and (3) sedentary lifestyle.

Cancer prevention is defined as actions taken by individuals and communities to promote healthy lifestyles through changes in behavior, policies, and environments. The challenge for public health programs in West Virginia that target cancer prevention continues to be the development of programs and strategies that (1) eliminate the excess cancer morbidity and mortality in our state and (2) reduce risk among all segments of our population. The National Cancer Institute (NCI) estimates that as much as 80% of all cancers are due to lifestyle choices and, therefore, preventable. Family history and other factors that are out of our control account for only about 20% of cancers. A consensus statement on the epidemiological evidence of the primary sources of cancer, published in the Harvard Reports on Cancer Prevention, concluded that nearly two-thirds of all cancer deaths in the United States can be attributed to just three factors: tobacco use (30%), adult diet/obesity (30%), and sedentary lifestyle (5%). Other factors include occupational-related exposures that account for approximately 5% of cancers, alcohol 3%, ultraviolet radiation 2%, and environmental pollution 2%. Additional prevention concerns in West Virginia include the high prevalence of human papillomavirus (HPV) associated cancers and our increasing rates of melanoma. This chapter ends with goals and objectives to address these concerns.

TOBACCO USE

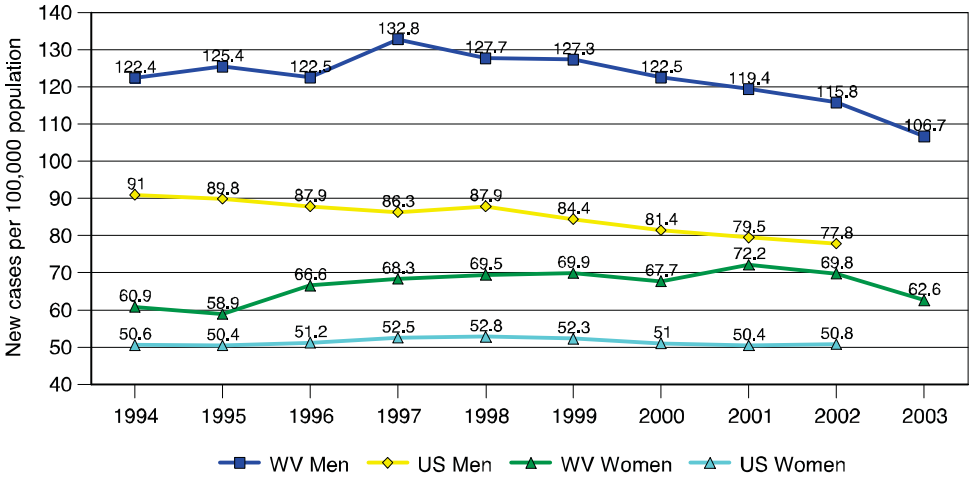
While tobacco use is linked with about 30% of all cancers, approximately 90% of all lung and bronchus cancers are attributable to smoking. Tobacco use also causes cancers of the larynx, oral cavity, throat, and esophagus and contributes to the development of cancers of the bladder, pancreas, stomach, cervix, and kidney, as well as some leukemias. As the first Surgeon General's report on smoking and health, published over 40 years ago, pointed out, smoking was and continues to be the most preventable cause of death in the nation. The incidence of lung cancer is approximately 23 times higher among male smokers and 13 times higher among female smokers than among lifelong nonsmokers.

BURDEN OF LUNG CANCER IN WEST VIRGINIA

> The ACS predicts that West Virginia will have the highest rate of lung cancer deaths in the nation in 2005.

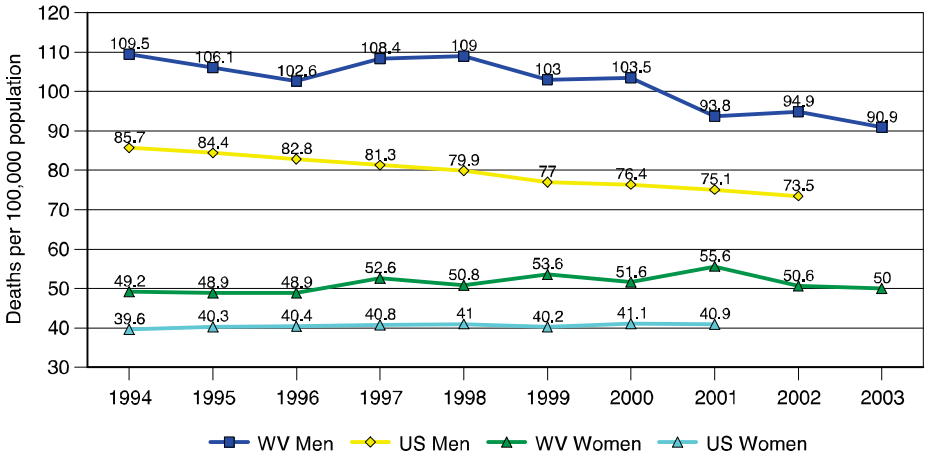
Lung and bronchus cancer is the most frequently diagnosed cancer in the Mountain State, with an average of 1,936 West Virginians diagnosed each year from 1999 through 2003. It is also the deadliest cancer, averaging 4,679 deaths per year from 2000-2004. The American Cancer Society (ACS) estimated a rate of 88.7 deaths due to lung cancer per 100,000 population in West Virginia in 2005, **the highest in the nation** and 59% higher than the estimated national rate of 55.7. Both men and women in West Virginia have higher rates of lung cancer incidence and mortality than their counterparts nationwide, as illustrated by Figures 12 and 13.

Figure 12. Incidence Rates* for Lung and Bronchus Cancer by Gender
West Virginia, 1994-2003 and United States, 1994-2002



*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

Figure 13. Mortality Rates* for Lung and Bronchus Cancer by Gender
West Virginia, 1994-2003 and United States, 1994-2002



*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

DISPARITIES

In addition to the differences in incidence and mortality shown in Figures 12 and 13, lung cancer also differs by county of residence and race. Figure 14 illustrates the difference in average annual incidence rates by county for 1999-2003, using data from the West Virginia Cancer Registry (WVCR). (Appendix E contains a list of individual county rates.)

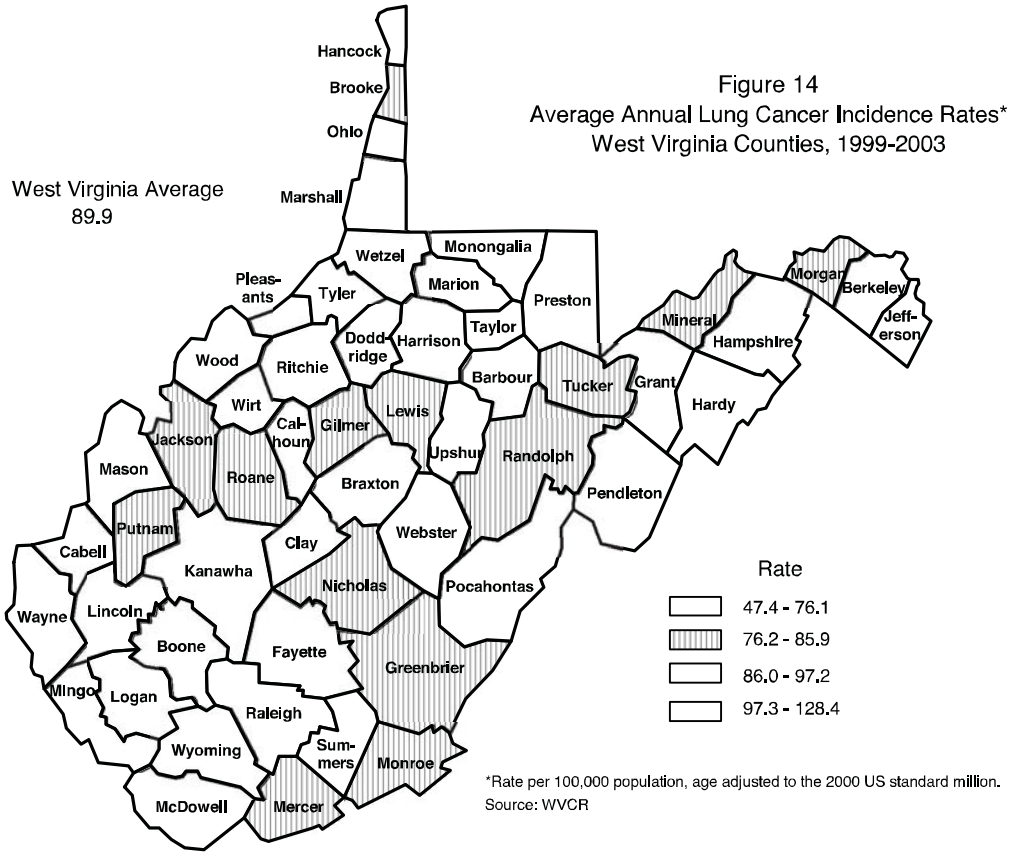
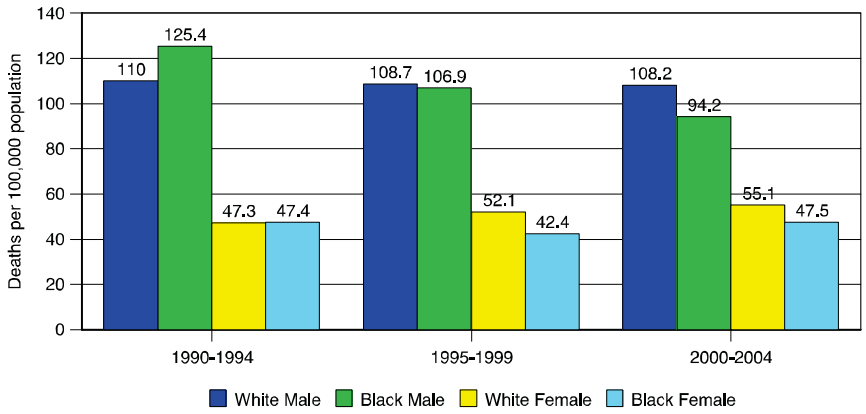


Figure 15 compares average annual lung cancer mortality rates by race and gender for three five-year time periods, 1990-1994, 1995-1999, and 2000-2004. While mortality was higher among African-American men in 1990-1994, it decreased consistently over the years, and was 13% lower than the rate among white men in 2000-2004. The rates among African-American women have remained relatively steady, while those among white women have increased slightly.

Figure 15. Average Annual Mortality Rates* for Lung Cancer
By Race and Gender
West Virginia, 1990-1994, 1995-1999, 2000-2004

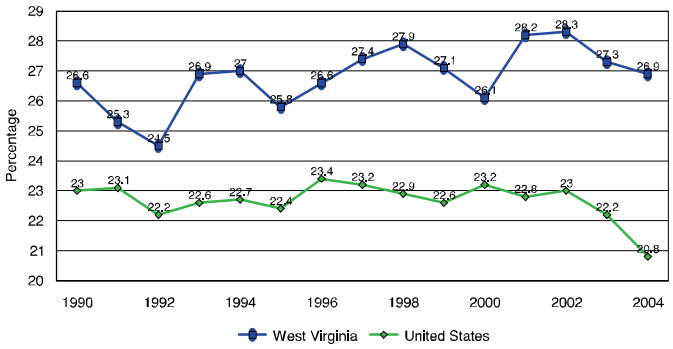


*Rates age adjusted to the US 2000 standard million.
Source: WVHSC

ADULT CIGARETTE SMOKING

West Virginians have traditionally reported high rates of adult cigarette smoking, according to data from the Behavioral Risk Factor Surveillance System (BRFSS)[1]. In 2004, the state's prevalence of adult smoking was 26.9%, significantly higher than the national median of 20.8% and **the highest rate** among all 50 states, the District of Columbia, and the Virgin Islands. Both men and women in West Virginia reported significantly higher smoking rates than their counterparts nationally, 27.5% vs. 23.0% and 26.4% vs. 19.0%, respectively.

Figure 16. Prevalence of Current Cigarette Smoking by Year
BRFSS, West Virginia and United States, 1990-2004



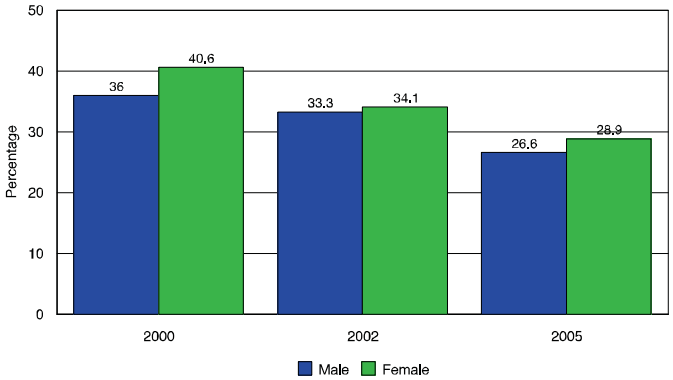
NOTE: US prevalence is the median of participating states and territories.

As Figure 16 shows, the rate of current cigarette smoking in West Virginia has consistently been higher than the national median over the past 15 years, with the gap widening in recent years. The difference between the state rate and the national median is statistically significant in all years.

YOUTH CIGARETTE SMOKING

Although there has not been a significant change in adult smoking rates as shown in Figure 16, smoking rates among West Virginia's high school students have declined since 2000, according to data collected by the West Virginia Youth Tobacco Survey (WVYTS)[2]. In 2000, 38.5% of high school students in the state had smoked a cigarette during the month prior to the survey; in 2002, the percentage had dropped to 33.7%, and by 2005 it was 27.8%, a statistically significant decline between 2000 and 2005. As illustrated in Figure 17, female students reported higher rates of current cigarette smoking than male students in all three survey years; however, these differences were not statistically significant.

Figure 17. Smoking Prevalence among High School Students by Gender
West Virginia Youth Tobacco Survey: 2000, 2002, and 2005



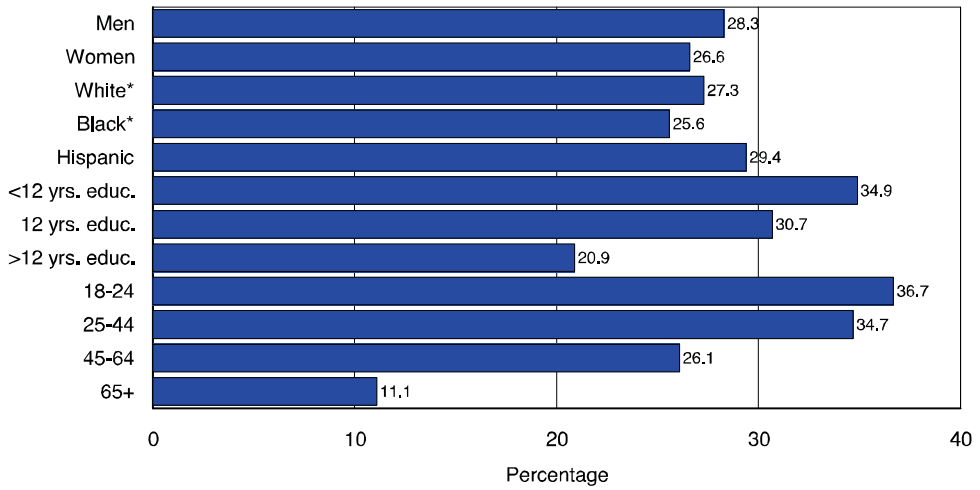
[1] The BRFSS is a random sample telephone survey designed to measure selected behaviors and health problems in the adult population (ages 18 and older). It is conducted in the 50 states, the District of Columbia, and some U.S. territories. Questions may vary from year to year.

[2] The YTS, sponsored by the Centers for Disease Control and Prevention (CDC), collects information from public middle and high school students about tobacco use and tobacco-related issues. The WVYTS self-administered questionnaire was completed by students in randomly selected public middle and high schools in the state in 2000, 2002, 2005, and 2007 (results not yet available).

DISPARITIES

Figure 18 illustrates the disparities in current smoking among West Virginia's adult population groups, using aggregated West Virginia Behavioral Risk Factor Surveillance System (WVBRFSS) data from 2000 through 2004. Young adults are the most likely to report smoking. More than one-third of WV adults aged 18-24 or 25-44 years old were current smokers, compared to 11% of adults 65 years and older. Cigarette smoking was also significantly more prevalent among persons with 12 years of education or less. Hispanic residents were slightly more likely to report smoking than non-Hispanic white or African-American residents, although this difference was not statistically significant.

Figure 18. Prevalence of Current Smoking among Selected Adult Populations
WVBRFSS, 2000-2004

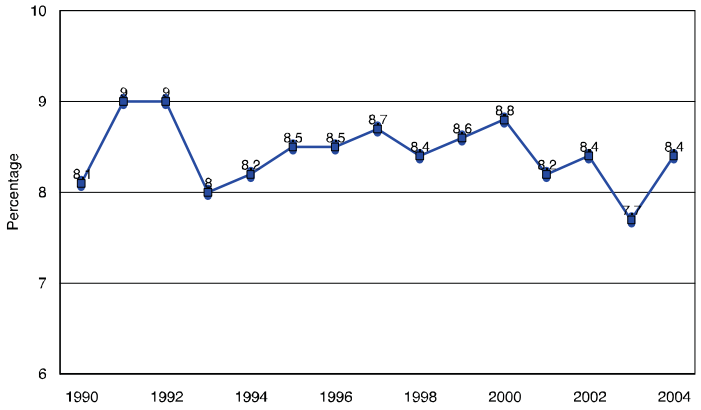


* Non-Hispanic

ADULT SMOKELESS TOBACCO USE

Smokeless tobacco contains 28 carcinogens and can lead to cancer of the oral cavity, i.e., lip, tongue, cheeks, gums, and the floor and roof of the mouth. West Virginia men have a history of high rates of smokeless tobacco use. In 2004, 8.4% of state residents reported using smokeless tobacco, 16.6% of men and 3.5% of women. As noted on Figure 19, the prevalence of current smokeless tobacco use among adults has changed little since 1990.

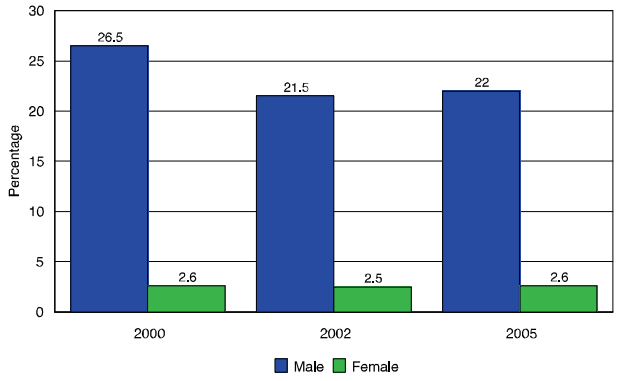
Figure 19. Prevalence of Current Smokeless Tobacco Use by Year
WVBRFSS, 1990-2004



YOUTH SMOKELESSS TOBACCO USE

Over one-fourth (26.5%) of West Virginia's male high school students reported using smokeless tobacco in 2000, according to data collected by the WVYTS. This percentage had dropped to 22.0% by 2005, as shown in Figure 20, although this decline was not statistically significant.

Figure 20. Smokeless Tobacco Use Rates among High School Students by Gen
West Virginia Youth Tobacco Survey: 2000, 2002, and 2005



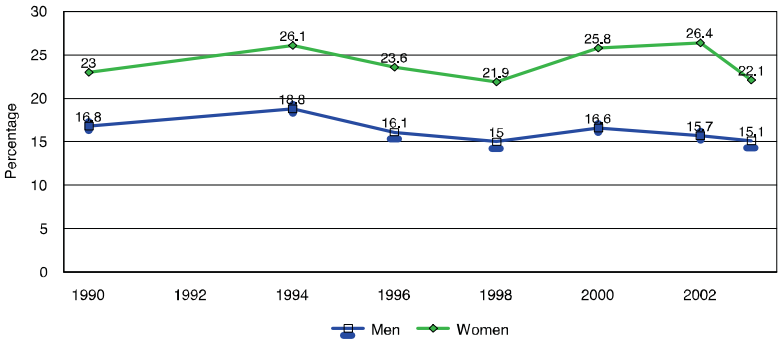
DIET and NUTRITION

The previously cited Harvard study estimated that as many as 30% of all cancers are attributable to adult diet and obesity. Evidence suggests that high-fat diets may contribute to cancers of the prostate, uterus, and colon, while obesity has been linked to cancers of the ovary, uterus, colon, prostate, breast, and pancreas. The Harvard School of Public Health advises that, while not protective against all cancers, fruit and vegetable consumption may protect against cancers of the esophagus, stomach, colon-rectum, lung, and possibly cancers of the mouth, pharynx, larynx, kidney, ovary, and bladder. The ACS recommends eating a minimum of five servings of fruits and vegetables daily.

ADULT FRUIT AND VEGETABLE CONSUMPTION

Every two years from 1990-2002 and in 2003, the WVBRFSS included questions on fruit and vegetable consumption. In 2003, only 18.7% of adult West Virginians reported that they consumed the recommended five servings a day of fruits and vegetables. This prevalence was the 8th lowest among the 54 BRFSS participating states and territories in that year. Women were significantly more likely than men to eat the recommended quantities (22.1% vs. 15.1%). As Figure 21 shows, the prevalence of respondents including the recommended quantities of fruits and vegetables in their diets has changed little since 1990; however, women were significantly more likely to do so in every year the question was asked.

Figure 21. Prevalence of Consumption of 5 or More
Servings of Fruits and Vegetables Daily, by Gender and Year
WVBRFSS, 1990-2003

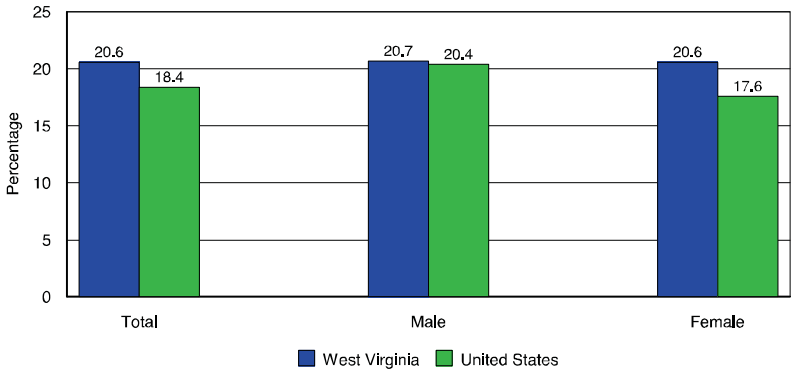


NOTE: Data not available for the years 1991, 1992, 1993, 1995, 1997, 1999, and 2001

YOUTH FRUIT AND VEGETABLE CONSUMPTION

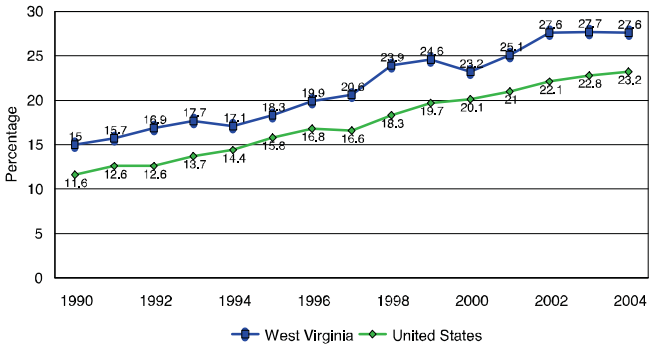
The Youth Risk Behavior Survey (YRBS)[3] conducted in 2003 collected data on fruit and vegetable consumption among high school students (grades 9 through 12). Although the differences were not statistically significant, students in West Virginia were slightly more likely to report having consumed at least five servings of fruits and vegetables in the week preceding the survey than the high school students in other states, as shown in Figure 22. However, only about one in five (20.6%) students in the state reported eating the recommended quantity.

Figure 22. Prevalence of High School Students Who Had Eaten at Least 5 Servings of Fruits and Vegetables Daily in the Week Preceding the Survey YRBS, West Virginia and United States*, 2003



*Median percentage of 32 participating states

Figure 23. Prevalence of Obesity* by Year BRFSS, West Virginia and United States, 1990-2004



*BMI of 30 or greater
NOTE: US prevalence is the median of participating states and territories.

ADULT OBESITY

In 2004, West Virginia was 3rd highest among 52 BRFSS participating entities in the prevalence of its adult population that was obese, i.e., had a body mass index (BMI) of 30 or greater. Nearly 28% (27.6%) of the state's adult population were obese, significantly higher than the national median of 23.2%. By gender, 28.5% of men and 26.7% of women in the state were obese. Although African-Americans were slightly more likely than whites to be obese (30.4% vs. 27.7%), this difference was not statistically significant.

West Virginia adults have consistently been at higher risk from obesity than their counterparts nationwide, as indicated in Figure 23. Obesity rates have been increasing in West Virginia and the United States as a whole; however, the state rate has leveled out during the three most recent survey years, while the national rate has continued to rise, narrowing the gap slightly.

YOUTH OVERWEIGH

According to data from the 2003 YRBS, 13.7% of high school students in West Virginia were overweight[4], 7.4% of female students and 19.5% of male students. An additional 14.7% of females and 15.5% of males were at

> Over one-third of West Virginia's male high school students are at risk for adult obesity.

[3] The YRBS includes a national school-based survey conducted by the CDC as well as state and local school-based surveys conducted by education and health agencies. The data presented here are from the 32 state surveys.
[4] Students who were at or above the 95th percentile for BMI by age and sex.

risk for overweight[5]. Over one-third (35.0%) of the state's male students are, therefore, either overweight or at risk for overweight, as are 22.1% of the state's female students, putting them at increased risk for obesity as adults.

ALCOHOL USE

Numerous studies have identified an association between alcohol use and certain cancers, with the risk increasing with the amount of alcohol consumed. More than two drinks a day for men and one drink a day for women has been shown to increase the risk of developing cancer. The cancers most strongly associated with alcohol use are mouth, esophageal, pharyngeal, laryngeal, breast, and liver. Alcohol users are about six times more likely than nondrinkers to be diagnosed with oral cancers, with the combination of smoking and alcohol raising the risk even more.

ADULT HEAVY DRINKING

Only 2.9% of West Virginia's adult population reported heavy drinking to the 2004 BRFSS, i.e., more than two drinks a day for men and more than one drink a day for women. The state's prevalence was the 3rd lowest in the nation and significantly lower than the national median of 4.9%.

YOUTH DRINKING

Among the state's high school students, 44.4% reported in the 2003 YRBS that they had used alcohol during the month before the survey, 45.6% of female students and 43.3% of male students. One-third of the students (33.5%) reported episodic heavy drinking (five or more drinks in a row) during the previous month. Research has shown that the earlier an individual begins drinking, the greater the degree of alcohol intoxication routinely experienced as an adult.

PHYSICAL ACTIVITY

Physical activity[6] is critical to the energy balance in the body, crucial to the maintenance of a healthy weight and healthy bones, muscles, and joints. Physical activity also affects an individual's risk of cancer; approximately 5% of all cancers are attributable to the lack of exercise. Researchers have established a connection between physical exercise and a reduced risk of colon and breast cancers. In addition, studies have also linked physical activity with reduced risks of cancers of the lung, prostate, and lining of the uterus (endometrial cancer).

ADULT PHYSICAL INACTIVITY

According to the 2004 BRFSS, 24.5% of adult West Virginians did not participate in any leisure-time physical activities during the month prior to their interview, 21.3% of men and 27.5% of women. This rate was not significantly different than the national median of 22.9% in that year. There has been a marked decline in the prevalence of adult physical inactivity in West Virginia since 1998, as shown in Figure 24. While physical inactivity has also been decreasing across the United States as a whole, the decline is happening at a much faster rate in the state. Although physical inactivity has been decreasing in West Virginia, adults are still not engaging

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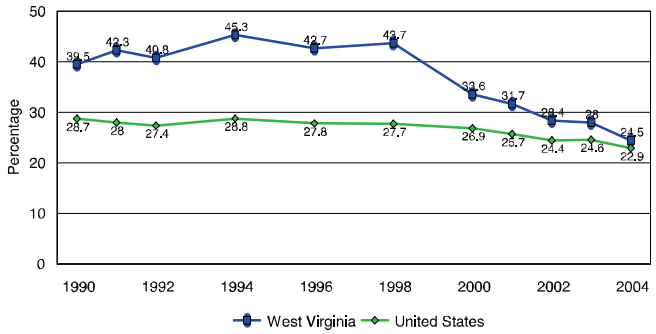
[5] Students who were at or above the 85th percentile but below the 95th percentile for BMI by age and sex.

[6] Any bodily movement produced by skeletal muscles that results in an expenditure of energy.

in recommended amounts of exercise. According to the 2003 BRFSS, 57.3% of adults did not meet these recommendations[7], 56.1% of men and 58.3% of women.

Figure 24. Prevalence of Physical Inactivity* by Year
BRFSS, West Virginia and United States, 1990-2004



*No leisure-time physical activity in the month prior to the survey
NOTE: Data not available for the years 1993,1995, 1997, and 1999
NOTE: US prevalence is the median of participating states and territories.

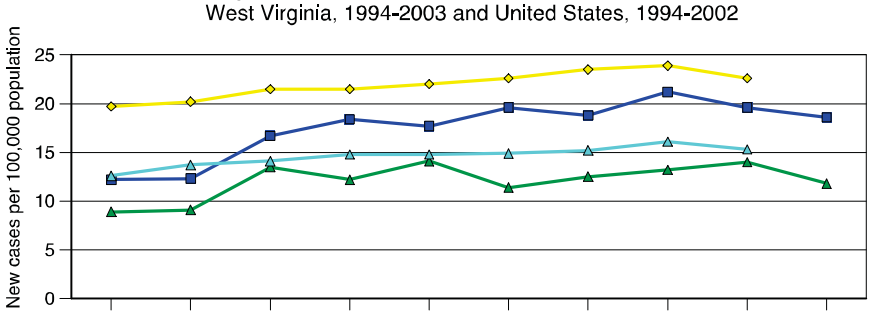
YOUTH PHYSICAL INACTIVITY

Students were asked in the YRBS if they had participated in either vigorous[8] or moderate[9] physical activity during the week prior to the survey. Thirty percent (30.1%) of West Virginia students had participated in an insufficient amount of physical activity, 37.9% of female students and 22.7% of male students. Eight percent (7.5%) of students had not participated in any vigorous or moderate physical activity at all, 9.1% of females and 6.1% of males.

ULTRAVIOLET RADIATION EXPOSURE

Exposure to the sun's ultraviolet rays is the primary risk factor for melanoma and other skin cancers. Sun-protective behaviors include avoiding direct sun exposure when the ultraviolet rays are strongest (10 AM to 4 PM), and wearing protective clothing such as hats, long-sleeved shirts, and long pants, and using sunscreen (15 SPF or higher) when exposed. Nonmodifiable risk factors include a family history of skin cancer, red or blond hair, fair skin, blue, green, or hazel eyes, and an inability to tan. Risk is also increased by occupational exposure to coal tar, pitch, creosote, arsenic compounds, or radium. While studies continue on the dangers of indoor tanning (i.e., the use of tanning beds), in 1994 the American Medical Association (AMA) called for a ban on all non-medical use of indoor tanning.

Figure 25. Incidence Rates* for Melanoma of the Skin
West Virginia, 1994-2003 and United States, 1994-2002



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WV Men	12.2	12.3	16.7	18.4	17.7	19.6	18.8	21.2	19.6	18.6
US Men	19.7	20.2	21.5	21.5	22	22.6	23.5	23.9	22.6	
WV Women	8.9	9.1	13.5	12.2	14.1	11.4	12.5	13.2	14	11.8
US Women	12.6	13.7	14.1	14.8	14.8	14.9	15.2	16.1	15.3	

*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

As seen in Figure 25, incidence rates for melanoma of the skin have been increasing among

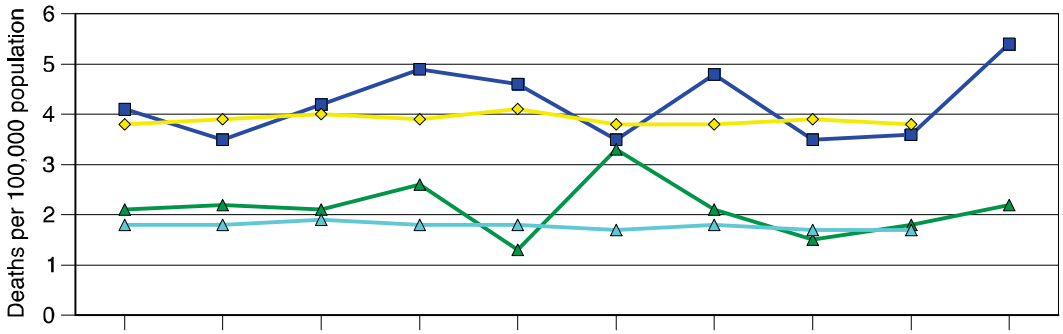
[7] 30 minutes of moderate physical activity at least 5 days per work or 20 minutes of vigorous physical activity for at least 3 days per week.

[8] Physical activity that made the student sweat and breathe hard for 20 or more minutes on three or more of the seven days preceding the survey (e.g., basketball, running, soccer).

[9] Physical activity that did not make the student sweat or breathe hard for 30 or more minutes on five or more of the seven days preceding the survey (e.g., fast walking, skating, mowing grass).

West Virginia's men and women, as they have in the United States as a whole. Mortality rates do not as yet reflect this increase in incidence, as shown in Figure 26. State mortality rates for skin cancer through 2002 are similar to those among their national counterparts but show an increase among both sexes in 2003.

Figure 26. Mortality Rates* for Melanoma of the Skin
West Virginia, 1994-2003 and United States, 1994-2002

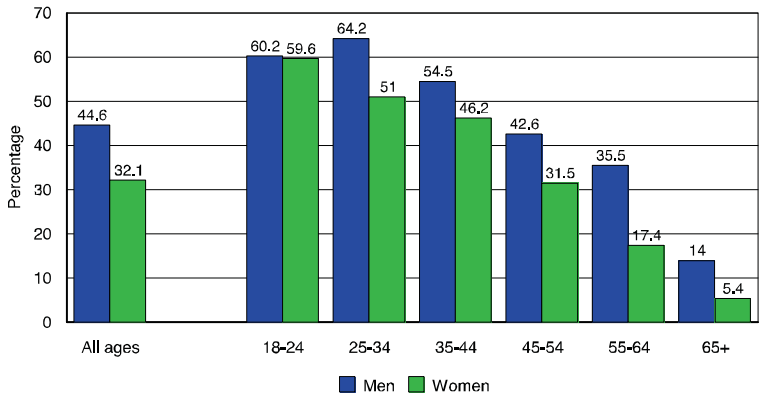


	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WV Men	4.1	3.5	4.2	4.9	4.6	3.5	4.8	3.5	3.6	5.4
US Men	3.8	3.9	4	3.9	4.1	3.8	3.8	3.9	3.8	
WV Women	2.1	2.2	2.1	2.6	1.3	3.3	2.1	1.5	1.8	2.2
US Women	1.8	1.8	1.9	1.8	1.8	1.7	1.8	1.7	1.7	

*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

Despite the well-documented dangers of excessive sun exposure, many West Virginians continue to experience sunburns, especially young adults. In 2003, 38.1% of adults in the state reported to the WVBRFSS that they had experienced sunburn lasting more than 12 hours during the 12 months prior to the survey (Figure 27). Men were more likely to report experiencing a sunburn than women at all ages, but this difference was only statistically significant among persons aged 45 and older.

Figure 27. Prevalence of Sunburn* among West Virginia Adults
WVBRFSS, 2003



*Experienced a sunburn lasting at least 12 hours in the past 12 months.

Prevention Goals, Objectives, and Strategies

The source for baseline data used to quantify objectives is provided when available.

GOAL 1: Prevent initiation and reduce tobacco use among West Virginians.

OBJECTIVE 1.1: Reduce the prevalence of cigarette smoking among adults aged 18 and older to 20% or lower. *(Baseline: 26.9%; Source: BRFSS, 2004)*

Key Strategies

- Promote mass media and local education campaigns.
- Expand statewide tobacco cessation quitline services to include any West Virginian who wants to quit.
- Expand provider education and reminder programs.
- Implement locally enforced smoking bans.
- Work with local and state coalition lobbyists and advocates to influence policymakers to increase funding for prevention efforts.
- Increase unit price for tobacco products (i.e., taxation of ALL tobacco products with dedication of a portion of this revenue for prevention).

OBJECTIVE 1.2: Reduce the proportion of youth in grades 9-12 who report smoking in the previous month to 20% or lower. *(Baseline: 27.8%; Source: YTS, 2005)*

Key Strategies

- Support and promote the Not-On-Tobacco Program.
- Expand provider education on cessation programs such as Not-On-Tobacco and reminder programs.
- Work with local and state coalition lobbyists and advocates to influence policymakers to increase funding for prevention efforts.
- Increase unit price for tobacco products (i.e.. taxation of ALL tobacco products with dedication of a portion of this revenue for prevention).
- Implement locally enforced comprehensive smoking bans covering all 55 counties of West Virginia.

OBJECTIVE 1.3: Reduce smokeless tobacco use among adult men aged 18 and older to 10% or lower. *(Baseline: 16.6%; Source: BRFSS, 2004)*

OBJECTIVE 1.4: Reduce the proportion of young men in grades 9-12 who report smokeless tobacco use to 19% or lower. *(Baseline: 22%; Source: YTS, 2005)*

Key Strategies for Objective 1.3 and 1.4

- Promote mass media and local education campaigns.
- Expand statewide quitline services to include any West Virginian who wants to quit.

- Expand provider education and reminder programs (i.e., cessation brochures and materials in waiting rooms, provider chart sticker system).
- Offer provider education including *Rx for Change* and *Save Face*.
- Increase unit price for tobacco products (i.e., taxation of ALL tobacco products with dedication of a portion of this revenue for prevention).

OBJECTIVE 1.5: Increase the number of WV counties with locally enforced comprehensive smoking bans from 37 (65%) to 55 (100%).

Key Strategies

- Promote mass media and local education campaigns.
- Support local health departments with technical assistance for promulgating and enforcing local, comprehensive clean indoor air regulations.

OBJECTIVE 1.6: Increase collaboration between Mountains of Hope Cancer Coalition members and local tobacco prevention and cessation coalitions.

Key Strategy

- Increase awareness and communication of comprehensive cancer and tobacco prevention efforts among Coalition and/or community stakeholders.

GOAL 2: Improve healthy dietary habits among West Virginians.

OBJECTIVE 2.1: Increase from 19% to 25% the percentage of adults aged 18 and older who consume at least five servings of fruits and vegetables daily. *(Baseline: 19%; Source: BRFSS, 2003)*

OBJECTIVE 2.2: Increase from 21% to 28% the proportion of youth under the age of 18 who consume at least five servings of fruits and vegetables daily. *(Baseline: 21%; Source: YRBS, 2003)*

Key Strategies for Objectives 2.1 and 2.2

- Identify and/or create age-appropriate and easy-to-read educational materials.
- Collaborate with food banks and Women, Infants, and Children Program (WIC) to provide education about healthy eating and to distribute fresh fruits and vegetables to reach the underserved.
- Educate the public that fruits and vegetables can be fresh, frozen, or canned.
- Collaborate with hospitals and other health care facilities to educate patients' families on how to improve nutrition.
- Partner with faith-based and community organizations to implement evidence-based initiatives.
- Partner with recognized early childhood programs to provide education to new mothers about nutritional needs of children based on age.

OBJECTIVE 2.3: Decrease from 44.4% to 25% the number of youths who have consumed alcohol in the past month. *(Baseline: 44.4%; Source: YRBS)*

Key Strategy

- Link with alcohol prevention advocacy groups and 12-Step programs to include educational information on the link between alcohol and cancer.

GOAL 3: Reduce the prevalence of obese and overweight West Virginians.

OBJECTIVE 3.1: Reduce to 20% the proportion of adults who are obese as defined by having a BMI of 30 or greater. *(Baseline: 28%; Source: BRFSS, 2002)*

OBJECTIVE 3.2: Reduce the proportion of children and adolescents who are overweight by 5% from baseline. *(Baseline: 13%; Source: YRBS 2003)*

Key Strategies for Objectives 3.1 and 3.2

- Identify and/or create easy-to-read material and education on portion control.
- Collaborate with food banks and WIC to provide education about healthy eating and distribute fresh fruits and vegetables to reach the underserved.
- Disseminate information about current knowledge of how diet and nutrition impact cancer.
- Promote drinking water instead of soda and other high-sugar beverages.
- Partner with faith-based and community organizations to implement evidence-based initiatives.
- Educate the public that fresh, frozen, or canned fruits and vegetables can be healthy choices.
- Partner with recognized early childhood programs to provide education to new mothers about nutritional needs of children based on age.

GOAL 4: Promote physical activity among West Virginians to decrease sedentary behavior and lifestyles.

OBJECTIVE 4.1: Increase the percentage of West Virginia adults aged 18 and older who participate in moderate physical activity for at least 30 minutes five times per week or vigorous physical activity for at least 20 minutes three times per week from 43% to 50%. *(Baseline: 43%; Source: BRFSS, 2003)*

OBJECTIVE 4.2: Increase the percentage of West Virginia adults aged 18 and older who participate in leisure-time physical activity from 72% to 75%. *(Baseline: 72%; Source: BRFSS, 2003)*

Key Strategies for Objectives 4.1 and 4.2

- Promote and increase community walking campaigns and events.
- Work with the West Virginia State Trails Coordinator to support the development and/or use of walking trails.
- Work with community agencies to promote physical activity among all West Virginians.

OBJECTIVE 4.3: Increase the percentage of West Virginia's youth in grades 9-12 who participate in moderate activity from 27% to 35%. *(Baseline: 27%; Source: YRBS 2003)*

Key Strategies

- Advocate for reinstatement of physical activity classes in West Virginia schools for a minimum of three times per week.
- Promote and increase community walking campaigns and events.

- Collaborate with summer camps to teach children physical activities they can continue to do at home.
- Work with the West Virginia State Trails Coordinator to support the development and/or use of walking trails.
- Expand the *Dance, Dance, Revolution* video physical activity program and other effective physical activity programs for youth.
- Work with community agencies to promote physical activity among all West Virginians.

GOAL 5: Reduce incidence of melanoma among West Virginians.

OBJECTIVE 5.1: Decrease from 38% to 28% the prevalence of individuals experiencing sunburn with redness lasting at least 12 hours in the past 12 months. *(Baseline: 38.1%; Source: BRFSS 2003)*

OBJECTIVE 5.2: Increase awareness among all ages about ultraviolet radiation exposure and risk for melanoma.

Key Strategies for Objectives 5.1 and 5.2

- Collaborate with early childhood education and nutrition programs to educate parents of infants and preschool children about potential cancer risk of ultraviolet radiation exposure.
- Coordinate sun safety awareness with existing community walks and events.
- Develop partnership with state tourism and recreational areas to implement media campaigns and point-of-activity prompts about sun safety in activity areas.
- Provide continuing education programs about sun safety and risk of skin cancer for health care professionals, members of high risk professions, faith-based organizations, and other professions.
- Partner with schools and other community-based organizations and resources to include sun safety awareness in activities and outdoor events.
- Partner with state youth sports organizations, scouting groups, and riding clubs (motorcycle, ATV, and horses) to implement sun safety campaign.
- Review in-door tanning bed regulations from other states and determine appropriateness for West Virginia.

GOAL 6: Increase knowledge and awareness about the relationship between Human Papillomavirus (HPV) and some cancers.

OBJECTIVE 6.1: Educate the public, health professionals, and key decision makers about HPV as a co-factor in the development of some cancers.

Key Strategies

- Identify and/or develop appropriate and age-specific educational materials about HPV.
- Facilitate a research roundtable meeting among HPV researchers and authorities to disseminate latest findings.
- Collaborate with universities and other partners to develop continuing education programs about HPV.
- Provide public education about HPV based on current and ongoing HPV research.

GOAL 7: Increase current funding levels (federal, state, and private) for evidence-based prevention programs and activities in West Virginia.

OBJECTIVE 7.1: Develop a sound fiscal management plan for primary cancer prevention that includes increasing current tobacco funding to CDC Best Practices recommended levels.

Key Strategies

- Influence policymakers to increase public funding for collaborative, research proven, chronic disease interventions (i.e., cancer, cardiovascular, hypertension, diabetes).
- Work with local and state coalition lobbyists and advocates to influence policymakers to increase funding for prevention efforts.

OBJECTIVE 7.2: Identify and pursue new comprehensive cancer funding opportunities.

Key Strategies

- Develop a prioritized implementation budget for the *West Virginia Cancer Plan*.
- Develop funding requests for cancer plan implementation.
- Cultivate relationships by educating appropriate private foundations and corporate funding sources about funding needs.
- Partner with NCI's Cancer Information Service to educate/train community health educators to use evidence-based interventions in the development of funding applications/proposals.
- Submit proposals to government agencies, private foundations, and corporate funding sources.

"West Virginians have an abundance of cancer prevention programs in the state that they can access for care and treatment. We will continue to work to ensure that all citizens of our state are aware of how they can prevent cancer among themselves, their families and their friends."

– Sharon Cope,
Cancer Information Specialist,
WVBCCSP

"I didn't know lung cancer could spread to your brain. I didn't know cigarette smoking could cause brain cancer. It does. If I had never started smoking, I don't think this would have ever happened."

– Janet Wells,
a victim of tobacco use,
passed away November 24, 2004

Early Detection

Early Detection allenges

- The American Cancer Society (ACS) estimates that the five-year relative survival rate for people with cancers for which early detection tests are available is about 86%. The challenge is to increase utilization of cancer screening by West Virginians.

- Comparing state BRFSS data from 2000-2004 with U.S. data from 2002 shows that both African-American and white women in West Virginia are less likely than their national counterparts to have received a mammogram in the past two years.

- Incidence and mortality rates for cervical cancer in the state have been consistently higher than those in the nation, but the gap is narrowing. Still troubling is that, in 2004, 17.5% of women aged 18 and older in West Virginia reported no Pap test in the past three years, compared with 14.1% of women nationwide. Additionally, the percentage of cervical cancers diagnosed at the distant stage has increased, from 6.4% in 1994-1998 to 9.2% in 1999-2003.

- In 2005 West Virginia was second in the nation in the percentage of its population aged 65 and older (15%). The incidence of many cancers, including prostate cancer, increases dramatically with advancing age. For the period 1999-2003 more than 70% of new prostate cancer cases in West Virginia were diagnosed in men age 65 and older.

- Prostate cancer mortality rates are higher among African-American men than among white men in both the state and the nation. In West Virginia, the average annual mortality rate from 2000-2004 among white men was 28.3 deaths per 100,000 men; among African-American men, the average annual rate was 67.2.

- Prostate cancer mortality has decreased significantly since PSA testing was approved by the FDA in 1986, allowing earlier detection and treatment. In 2004, the prevalence of men over the age of 40 in West Virginia who had not had a PSA test in the past two years was 47.4%, similar to the national mean of 48.3%.

- Colorectal cancer is West Virginia's second most deadly cancer among males and third most deadly among women. The rates among African-American men in West Virginia from 1990 through 2004 were markedly higher than those among whites and African-American women.

- According to 2004 BRFSS data, 53.7% of West Virginians aged 50 and older reported that they had never had a sigmoidoscopy or a colonoscopy, a significantly higher prevalence than the national average of 46.7%.

Early Detection

Early detection is defined as discovering cancer or a premalignancy before an individual shows disease signs or symptoms. When cancer is discovered early the chances for survival are greatly enhanced. The American Cancer Society (ACS) estimates that the five-year relative survival rate for people with cancers for which early detection tests are available is about 86%. Therefore, it is the goal of early detection to find cancer early.

Evidence-based cancer screenings such as mammograms, Pap tests, and colorectal cancer screening, the most common forms of early detection today, often improve health outcomes and in some cases reduce mortality; they could also substantially reduce the billions of dollars spent annually on cancer treatments. While not all cancers have current evidence-based early detection tests, ongoing research offers hope on how to detect prostate, ovarian, lung, and head and neck cancers earlier. Unfortunately many West Virginians still are not in compliance with evidence-based guidelines for reasons including: lack of a physician recommendation to be screened, health insurance challenges, or the inconvenient location of screening facilities.

Effective education is needed for the public and health professionals about currently available, evidence-based cancer screenings and to keep them informed about promising screening tools on the horizon. Legislators and other key decision makers also need to be educated about why it is important to invest in cost-effective early detection programs, especially for under- or uninsured West Virginians. The goals and objectives in this chapter address these challenges.

BREAST CANCER

In the United States, a woman is diagnosed with breast cancer every two minutes; one woman in seven who lives to the age of 85 will develop the disease. When detected early, the five-year survival rate for breast cancer is 96%. Seventy percent (70%) of breast cancers are found through self-examination; however, breast cancers that can be felt are often larger and more likely to have spread beyond the breast. Those cancers that are detected through mammography are smaller and more likely to be confined to the breast.

The ACS has issued the following guidelines[10] for the early detection of breast cancer:

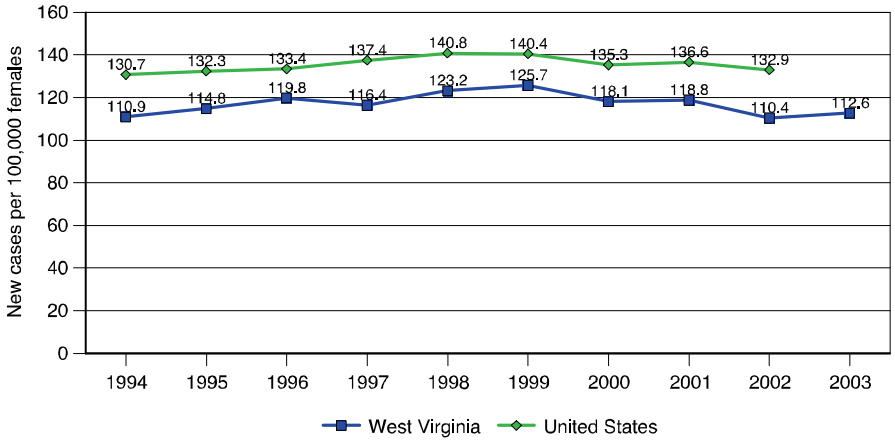
- Women age 40 and older should have a screening mammogram every year and should continue to do so as long as they are in good health.
- Women in their 20s and 30s should have a clinical breast examination (CBE) as part of a periodic (regular) health exam by a health professional preferably every three years. After age 40, women should have a CBE by a health professional every year.
- Breast self-examination (BSE) is an option for women starting in their 20s.
- Women should be told about the benefits and limitations of BSE and report any changes in their breasts to their health professional right away.

[10] United States Preventive Services Task Force (USPSTF) and National Cancer Institute (NCI) also offer screening guidelines and recommendations.

BREAST CANCER INCIDENCE

Breast cancer is the most frequently diagnosed cancer among women in West Virginia. Between 1999 and 2003, approximately 6,640 women received a diagnosis of breast cancer, an average of 1,328 per year. The incidence rates among state women have remained relatively unchanged over the decade, ranging from a low of 110.4 in 2002 to a high of 125.7 in 1999, and have consistently been somewhat lower than the U.S. rates, as shown in Figure 28.

Figure 28. Incidence Rates* for Female Breast Cancer
West Virginia, 1994-2003 and United States, 1994-2002

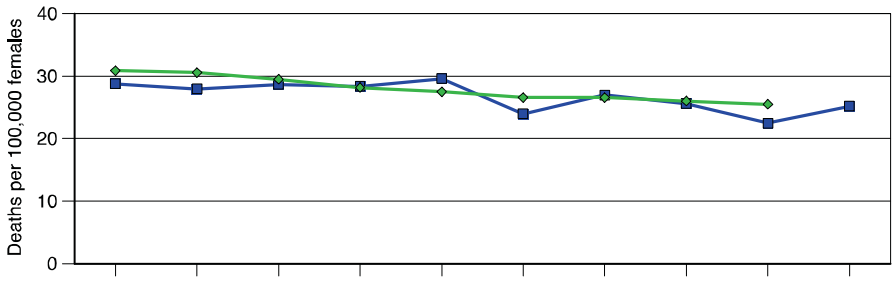


*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

BREAST CANCER MORTALITY

Mortality rates for breast cancer have declined since 1994 in both West Virginia and the United States, as shown in Figure 29. The highest state rate during the decade was 29.6 deaths per 100,000 females in 1998, the lowest was 22.5 in 2002. The U.S. rate ranged from 30.9 in 1994 to 25.5 in 2002. In 2003 the mortality rates in more than a quarter of the state's counties (27.3%, or 15 out of 55 counties) were above that of the U.S. average of 26. The rates in these counties ranged from 26.2 to 45.7.

Figure 29. Mortality Rates* for Female Breast Cancer
West Virginia, 1994-2003 and United States, 1994-2002



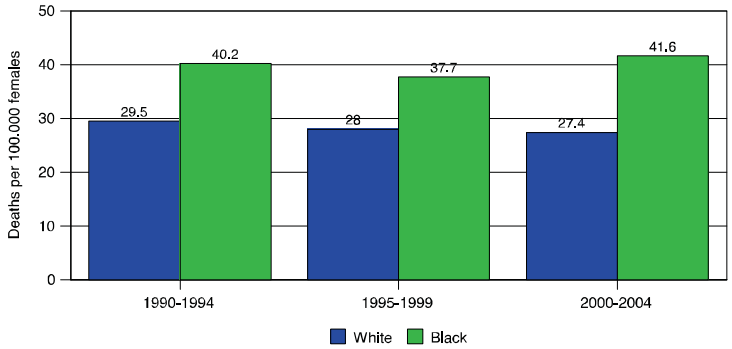
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WV	28.8	28	28.7	28.4	29.6	24	27	25.6	22.5	25.2
US	30.9	30.6	29.5	28.2	27.5	26.6	26.6	26	25.5	

*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

DISPARITIES

Three five-year aggregates of data were examined to determine any disparities in breast cancer mortality by race. African-American women in West Virginia had higher rates of death from breast cancer than white women in all three time periods, as shown in Figure 30. The greatest difference occurred in the years 2000 through 2004, when the rate of mortality among African-American women (41.6 deaths per 100,000 women) was 51.8% higher than that among white women in the state (27.4).

Figure 30. Average Annual Mortality Rates* for Female Breast Cancer by Race
West Virginia, 1990-1994, 1995-1999, and 2000-2004

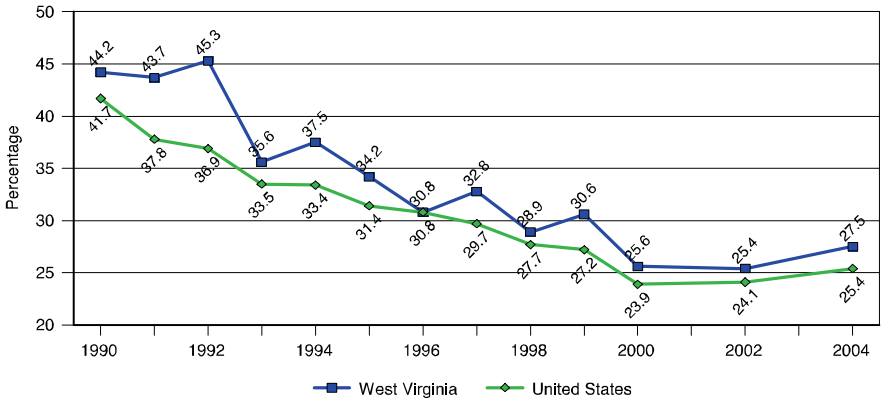


*Rates age adjusted to the US 2000 standard million.
Source: WVHSC

BREAST CANCER SCREENING

The ACS recommends that all women aged 40 and older should receive a yearly mammogram. Figure 31 shows the percentage of women aged 40 and older in West Virginia and the United States who reported to the Behavioral Risk Factor Surveillance System (BRFSS) that they had received a screening mammogram within the two years prior to their interview. The percentage of women not receiving a mammogram in that time period has declined in both the state and the nation since 1990, with the gap between the two cohorts narrowing over time. By 2004, 27.5% of women in West Virginia had not had a mammogram, compared with the U.S. median of 25.4%, not a statistically significant difference. The ACS also recommends that women aged 40 and older should receive a CBE every year. According to the 2004 West Virginia Behavioral Risk Factor Surveillance System (WVBRFSS), 75.2% of women aged 40 and older had a CBE in the past 2 years.

Figure 31. Prevalence of Women Aged 40+ Reporting No Mammogram in Past Two Years
BRFSS, West Virginia and United States, 1990-2004

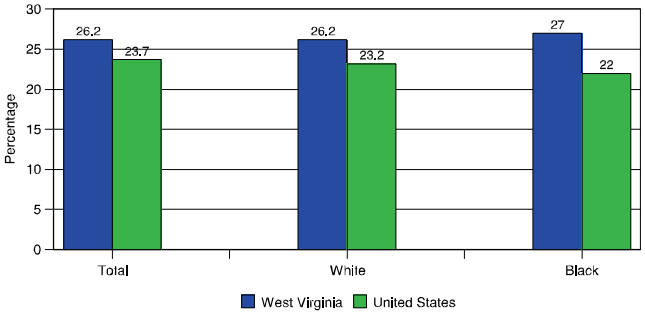


NOTE: US prevalence is the median of participating states and territories.

DISPARITIES

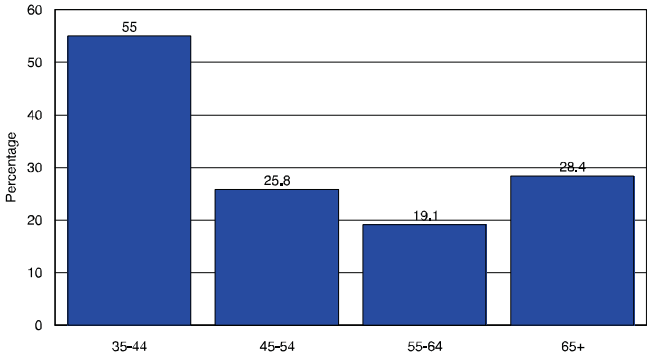
When aggregated 2000-2004 WVBRFSS data were compared with 2002 U.S. BRFSS data, it was found that both white women and African-American women in the state were less likely than their national counterparts to have received a mammogram in the previous two years; however, only the difference among white women was found to be statistically significant (Figure 32).

Figure 32. Prevalence of Women Aged 40+ Reporting No Mammogram in the Past Two Years, by Race BRFSS, West Virginia, 2000-2004 and United States, 2002



NOTE: US prevalence is the mean of the 52 participating states and territories.

Figure 33. Prevalence of Women Reporting No Mammogram in the Past Two Years, by Age Group WVBRFSS, 2004



The most recent data from the WVBRFSS (2004) revealed that women aged 45-64 were more likely to report having had a mammogram in the previous two years than were women aged 65 and older, although the difference was not statistically significant (Figure 33). However, since the incidence of breast cancer increases with age, this might indicate a potential problem with inadequate screening among older women.

STAGE AT DIAGNOSIS

The improvement in mammogram screening levels among West Virginia women from 1990 to 2004 illustrated in Figure 31 has been reflected in the increase in the percentage of breast cancers diagnosed at the in situ stage. In 1994-95, only 10.7% of breast cancers were diagnosed at the in situ stage; by 2002-2003, the percentage had increased to 18.2%, according to data from the West Virginia Cancer Registry (WVCR). Unfortunately, the percentage of cancers diagnosed in the distant stage did not show a comparable decline: 5.0% in 1994-95 and 4.3% in 2002-2003.

DISPARITIES

Data from 1994-98 and 1999-2003 were used by the WVCR to examine the differences in incidence rates at primary stage of diagnosis of breast cancer by race. In both time periods, African-American women were less likely to have their cancers diagnosed at the in situ stage, although the rate increased among women of both races. The greatest difference over the 10 years occurred among African-American women diagnosed at the distant stage; their rate decreased from 10.0 cases per 100,000 population to 3.6.

Table 2: Stage of Diagnosis of Female Breast Cancer by Race 1994-1998 and 1999-2003

Primary stage	White		African-American	
	1994-98	1999-2003	1994-98	1999-2003
In situ/local	66.1	68.1	54.2	55.7
Distant	4.6	3.9	10.0	3.6

CERVICAL CANCER

Cervical cancer was at one time the leading cause of death for women in the United States. It remains the third most common gynecological cancer among American women, with the ACS estimating that about 9,710 new cases of invasive cervical cancer will be diagnosed in 2006 and that approximately 3,700 women will die from the disease. However, cervical cancer incidence and mortality have decreased significantly over the past four decades due to the use of Pap tests. Between 1955 and 1992, the ACS reports that the number of cervical cancer deaths among women in the United States decreased by 74%, and deaths continue to decline at the rate of nearly 4% per year.

Most cervical cancers are preceded by the formation of precancerous cells, or dysplasia, which can be detected by routine screening. Human papillomavirus (HPV) has also been identified as a co-factor in the development of cervical cancer. If found in its early stages, cervical cancer can be cured; the five-year survival rate for invasive cervical cancer diagnosed in its earliest stage is 92%. The overall survival rate is approximately 73%. Most invasive cancers are found in women who have not had regular Pap tests.

About half of women diagnosed with cervical cancer are between the ages of 35 and 55, with about one-fifth diagnosed over the age of 65. Hispanic women are most at risk; their rate is over two times that among non-Hispanic white women. African-American women are diagnosed at a rate of about 50% more often than non-Hispanic white women.

The ACS has issued the following recommendations[11] for cervical cancer screening:

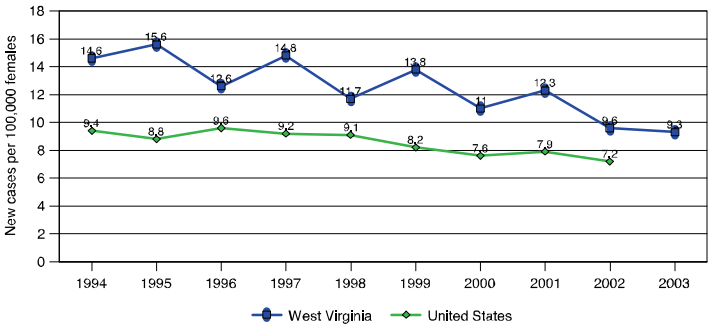
- All women should begin screening about three years after they begin having sexual intercourse, but no later than age 21. Screening should be done every year with the regular Pap test or every two years using the newer liquid-based Pap test.
- Beginning at age 30, women should have a Pap test at least once every three years. Women who have certain risk factors such as diethylstilbestrol (DES) exposure before birth, HIV infection, or a weakened immune system due to organ transplant, chemotherapy, or chronic steroid use should continue to be screened annually.
- Women 70 years of age or older who have had three or more normal Pap tests in a row and no abnormal Pap tests in the last 10 years may decide, upon consultation with their healthcare provider, to stop cervical cancer screening.
- Women who have had a total hysterectomy (removal of the uterus and cervix) do not need to undergo screening, unless the surgery was done as a treatment for cervical precancer or cancer. Women who have had a hysterectomy without removal of the cervix should continue to follow the guidelines recommended above.

[11] USPSTF and NCI also offer screening guidelines and recommendations.

CERVICAL CANCER INCIDENCE

Incidence rates for cervical cancer among women in West Virginia have been higher than those for women in the United States as a whole. As illustrated in Figure 34, state rates from 1994 through 2003 have ranged from a high of 15.6 new cases per 100,000 women in 1995 to a low of 9.3 in 2003. National rates ranged from 9.6 in 1996 to 7.2 in 2002.

Figure 34. Incidence Rates* for Cervical Cancer
West Virginia, 1994-2003 and United States, 1994-2002

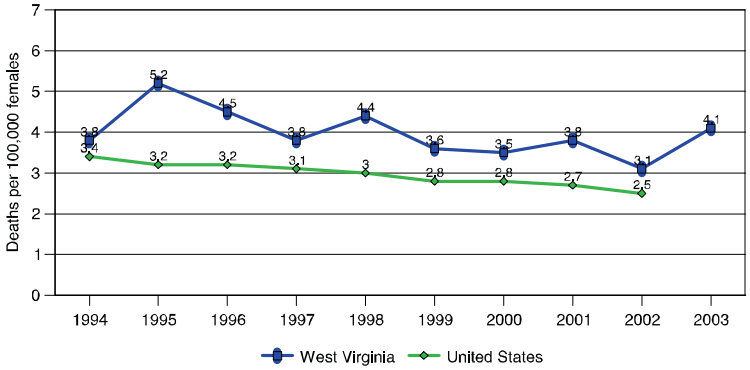


*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

CERVICAL CANCER MORTALITY

West Virginia's mortality rates for cervical cancer have also been consistently higher than U.S. rates, as shown in Figure 35. State rates from 1994 through 2003 ranged from a high of 5.2 deaths per 100,000 women in 1995 to a low of 3.1 in 2002. U.S. rates showed a slight but steady downward trend, from a high of 3.4 in 1994 to 2.5 in 2002.

Figure 35. Mortality Rates* for Cervical Cancer
West Virginia, 1994-2003 and United States, 1994-2002

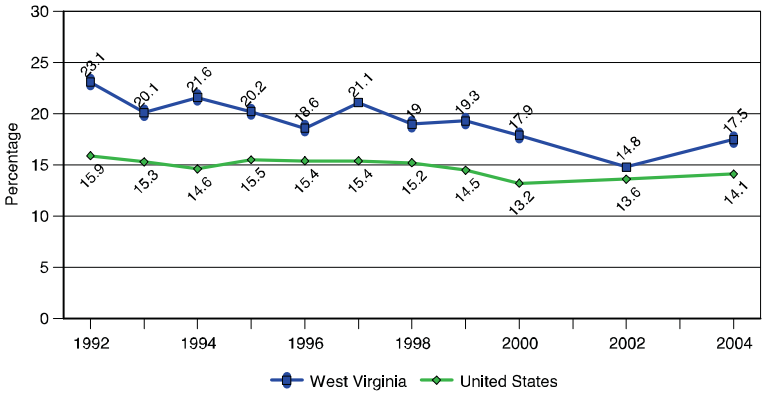


*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

CERVICAL CANCER SCREENING

The U.S. prevalence of women aged 18 and older who have not had a Pap test within the past three years changed very little over the period from 1992 through 2004, as seen in Figure 36. The rate in West Virginia, on the other hand, showed a decrease over the period, narrowing the gap between the state and the nation.

Figure 36. Prevalence of Women Aged 18+ Reporting No Pap Test in Past Three Years
BRFSS, West Virginia and United States, 1992-2004

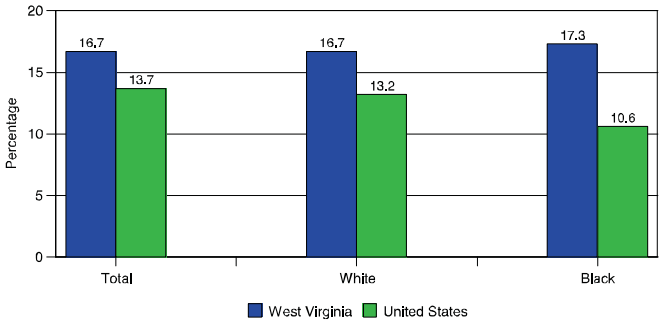


NOTE: US prevalence is the median of participating states and territories.

DISPARITIES

Little difference was found between the prevalence of white and African-American women in West Virginia who reported no Pap test within the past three years (Figure 37). White women in the state, however, were significantly more likely than their counterparts nationwide to have not had a Pap test. While African-American women in West Virginia were more likely than African-American women nationally to have not had the test within three years, the difference was not statistically significant.

Figure 37. Prevalence of Women Aged 18+ Reporting No Pap Test in the Past Three Years, by Race
BRFSS, West Virginia, 2000-2004 and United States, 2002



NOTE: US prevalence is the mean of the 52 participating states and territories.

STAGE AT DIAGNOSIS

While the state's incidence and mortality rates for cervical cancer have been declining, the percentage of cases diagnosed at the distant stage increased over the past decade. In 1994-1998, the percentage of invasive cervical cancers diagnosed at the distant stage was 6.4%; in 1999-2003, this had risen to 9.2%. These findings suggest that there may be a subgroup of West Virginia women who still do not access screening services.

PROSTATE CANCER

All men are at risk for prostate cancer. Excluding skin cancer, prostate cancer is the most frequently diagnosed cancer among American men. It is the second leading cause of cancer death among men, following lung cancer. According to the NCI, a man has a risk of one in six of developing prostate cancer in his lifetime.

The risk for prostate cancer increases with age; over 70% of cases are diagnosed in men over the age of 65. A family history of the disease also increases the risk. African-American men are at much greater risk of developing prostate cancer than men of other racial and ethnic groups. The incidence rate among African-American men is approximately 60% higher than among white men; the mortality rate is nearly twice as high.

Prostate Specific Antigen (PSA) testing was approved by the Food and Drug Administration in 1986, allowing earlier detection and treatment of the disease. Prior to PSA screening, about three-fourths of all cases of prostate cancer were diagnosed in the late stages; since screening began, about three-fourths of all cases are now discovered in the early stages, with markedly improved survival rates.

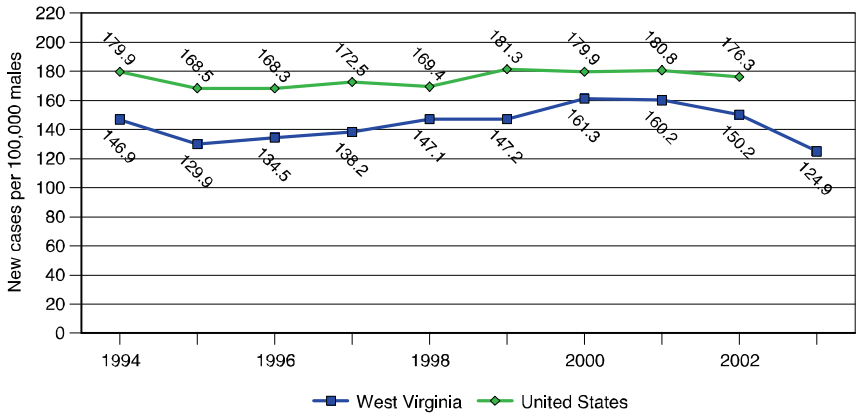
The ACS recommends the following guidelines[12] for testing for early prostate cancer detection:

- Both the PSA and digital rectal examination (DRE) should be offered annually beginning at age 50 to men who have a life expectancy of at least 10 years.
- African-American men and men with a strong family history of one or more first-degree relatives (fathers or brothers) diagnosed before age 65 should begin testing at age 45. Men with first-degree relatives diagnosed at an early age should begin testing at age 40.
- Information about the benefits, limitations, and harms of early detection and treatment of prostate cancer should be provided to all men in order that they may make an informed decision.

PROSTATE CANCER INCIDENCE

Over the past 10 years, the incidence rates of prostate cancer among West Virginia men have been consistently lower than the corresponding U.S. rates. Rates in both the state and the nation have remained relatively steady throughout the decade, as shown in Figure 38.

Figure 38. Incidence Rates* for Prostate Cancer
West Virginia, 1994-2003 and United States, 1994-2002

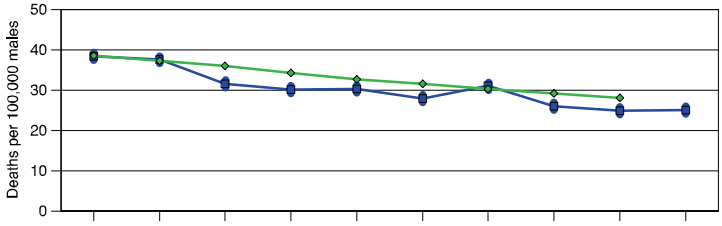


*Rates age adjusted to the 2000 US standard million.
Source: WVCR; US rates from NCI, SEER

PROSTATE CANCER MORTALITY

Little difference can be noted in the mortality rates for prostate cancer state and nationwide from 1994 through 2003 (Figure 39). The rates have declined slightly among men in both West Virginia and the United States over the past 10 years, from highs of 38.4 and 38.5 in the state and the nation, respectively, in 1994 to a low of 25.1 in 2003 in West Virginia and 28.1 in 2002 in the United States.

Figure 39. Mortality Rates* for Prostate Cancer
West Virginia, 1994-2003 and United States, 1994-2002



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WV	38.4	37.5	31.6	30.1	30.3	27.9	31	26	24.9	25.1
US	38.5	37.3	36	34.2	32.6	31.6	30.3	29.1	28.1	

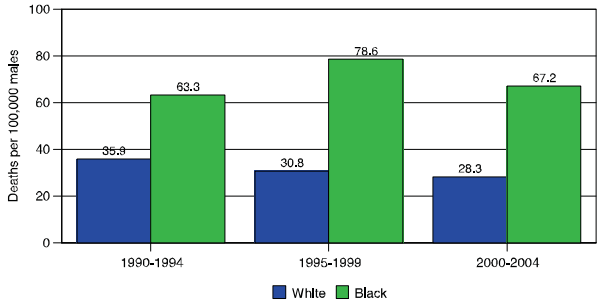
*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

[12] USPSTF and NCI also offer screening guidelines and recommendations.

DISPARITIES

Prostate cancer mortality rates among African-American men in West Virginia are dramatically higher than those among white men in the state, as shown in Figure 40. Rates among white men have declined steadily in the three five-year groupings examined; however, no such pattern is evident in the rates for African-American men.

Figure 40. Average Annual Mortality Rates* for Prostate Cancer by Race
West Virginia, 1990-1994, 1995-1999, and 2000-2004



*Rates age adjusted to the US 2000 standard million.
Source: WVHSC

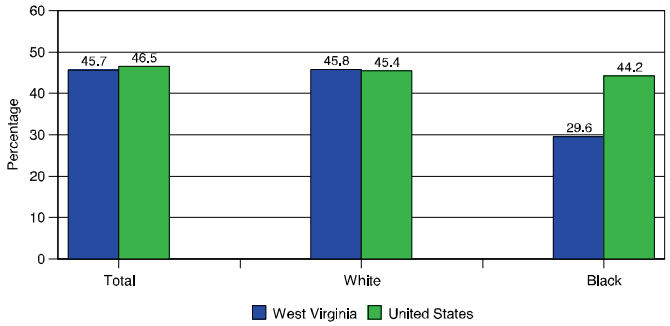
PROSTATE CANCER SCREENING

The WVBRFSS included a question on PSA testing in 2001, 2002, and 2004. Men aged 40 and older were asked how long it had been since their last PSA test. In 2004, the prevalence of men who had not had a PSA test within the previous two years was 47.4%, similar to the national mean of 48.3%. The 2004 WVBRFSS also indicates that 50.9% of men 50 and older had a DRE in the past year.

DISPARITIES

On the national level, virtually no difference was noted in 2002 between the percentage of Caucasian and African-American men aged 40 and older who had not had a PSA test in the previous two years, 45.4% and 44.2%, respectively (Figure 41). In West Virginia, on the other hand, a striking and statistically significant difference was noted between the two groups when examining aggregated WVBRFSS data from 2000-2004. While 45.8% of white men reported no PSA test within two years, only 29.6% of African-American men had not had the test.

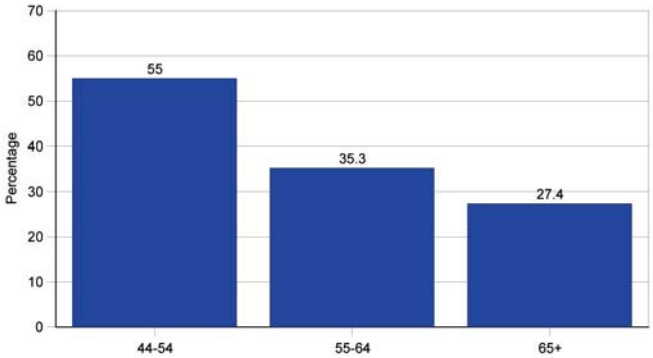
Figure 41. Prevalence of Men Reporting No PSA Test
in the Past Two Years, by Race
BRFSS, West Virginia, 2000-2004 and United States, 2002



NOTE: US prevalence is the mean of the 52 participating states and territories.

Screening by age among West Virginia men is displayed in Figure 42. According to 2004 WVBRFSS data, the percentage of state men not receiving PSA testing within the previous two years decreased with age, from 55.0% of men aged 45 through 54 to only 27.4% of men aged 65 and older.

Figure 42. Prevalence of Men Reporting
No PSA test in the Past Two Years, by Age Group
WVBRFSS, 2004



NOTE: US prevalence is the mean of the 52 participating states and territories.

STAGE AT DIAGNOSIS

The increase in prostate cancer screening has resulted in a corresponding increase in the early detection of the illness. According to the WVCR, the percentage of prostate cancers in the state diagnosed in the in situ or local stage increased from 62.5% in 1994-1995 to 73.8% in 2002-2003. The percentage of prostate cancer diagnosed at the distant stage decreased from 8.7% to 3.7% during the same period.

COLORECTAL CANCER

Nationally colorectal cancer is the second leading cause of cancer deaths for men and women combined. Over 50,000 people die each year in the United States from colorectal cancer; an average of 481 people die each year in West Virginia. Up to age 50, men and women have similar rates of colorectal cancer incidence and mortality; after age 50, men have higher rates than women.

Risk factors for colorectal cancer include being over age 50, a family history of colorectal cancer, a personal history of colorectal polyps or inflammatory bowel disease, obesity, physical inactivity, smoking, heavy alcohol use, a diet high in animal fats, and a genetic mutation leading to the disease found among Jews of Eastern European descent (Ashkenazi Jews). African-Americans and Native Americans are more likely to be diagnosed at a later stage of the illness and have a higher mortality rate. In addition, according to the ACS, people with diabetes have a greater likelihood of developing and dying from colorectal cancer. However, approximately 75% of people who are diagnosed with the disease are over age 50 with no other identifiable risk factors.

When diagnosed in the early stages, 90% of colorectal cancers are completely curable. It is estimated that if all Americans received guidelines-based screening, about 25,000 lives would be saved each year.

The ACS has issued the following guidelines[13] for colorectal cancer screening:

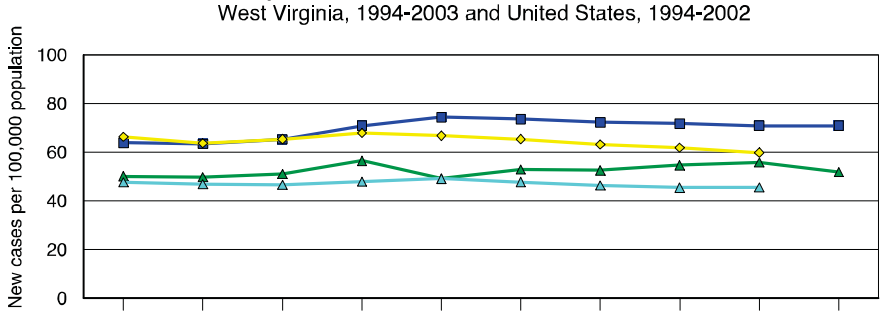
> Beginning at age 50, men and women at average risk for colorectal cancer should follow ONE of the following five screening options:
> - yearly fecal occult blood test (FOBT) or fecal immunochemical test (FIT)
> - flexible sigmoidoscopy every five years
> - yearly FOBT or FIT plus flexible sigmoidoscopy every five years
> - double-contrast barium enema every five years
> - colonoscopy every 10 years
>
> A person should begin colorectal cancer screening earlier or be screened more frequently if they have one or more of the following conditions:
> - a personal history of colorectal cancer or adenomatous polyps
> - a strong family history of colorectal cancer or polyps
> - a personal history of chronic inflammatory bowel disease
> - a family history of an hereditary colorectal cancer syndrome (familial adenomatous polyposis or hereditary nonpolyposis colon cancer)

[13] USPSTF and NCI also offer screening guidelines and recommendations.

COLORECTAL CANCER INCIDENCE

Colorectal cancer incidence rates from 1994-2003 were higher among men than women in both West Virginia and the United States, as seen in Figure 43. While national rates of colorectal cancer incidence decreased slightly among both sexes over the decade, corresponding state rates increased among both men and women, with the gap between men and women becoming smaller.

Figure 43. Incidence Rates* for Colorectal Cancer
West Virginia, 1994-2003 and United States, 1994-2002



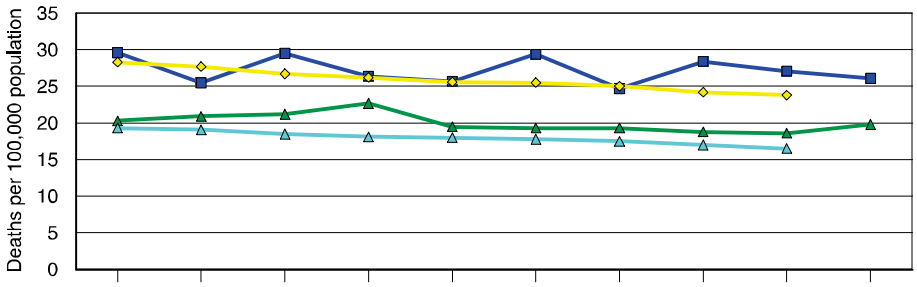
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WV Men	63.9	63.5	65.3	70.9	74.4	73.6	72.3	71.8	70.9	70.9
US Men	66.3	63.7	65.4	68	66.8	65.4	63.2	61.9	59.9	
WV Women	50.2	49.8	51.1	56.5	49.2	53	52.6	54.7	55.8	51.9
US Women	47.7	46.9	46.6	47.9	49.2	47.8	46.4	45.5	45.6	

*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

COLORECTAL CANCER MORTALITY

Colorectal cancer mortality rates were also higher among men than among women over the past 10 years, both in the state and nationwide (Figure 44). The rates among West Virginia and U.S. women were similar during the time period, with both decreasing slightly. The rates among men in the state showed more variation and greater difference when compared with those among their national counterparts.

Figure 44. Mortality Rates* for Colorectal Cancer
West Virginia, 1994-2003 and United States, 1994-2002



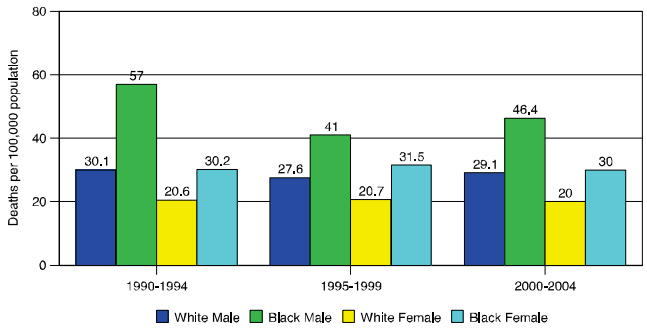
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
WV Men	29.6	25.5	29.5	26.4	25.7	29.4	24.7	28.4	27.1	26.1
US Men	28.3	27.7	26.7	26.2	25.6	25.5	25	24.2	23.8	
WV Women	20.3	20.9	21.2	22.7	19.5	19.3	19.3	18.8	18.6	19.8
US Women	19.3	19.1	18.5	18.1	18	17.8	17.5	17	16.5	

*Rates age adjusted to the US 2000 standard million.
Source: WVCR; US rates from NCI, SEER

DISPARITIES

Figure 45 illustrates the differences in mortality rates by race for the three different five-year time periods between 1990 and 2004. The rates among African-American men were markedly higher than the rates among whites and African-American women for all three periods, especially from 1990-1994. White women had the lowest rate of mortality from colorectal cancer of the four groups in all years, with similar rates found for white men and African-American women.

Figure 45. Average Annual Mortality Rates* for Colorectal Cancer by Race
West Virginia, 1990-1994, 1995-1999, and 2000-2004



*Rates age adjusted to the US 2000 standard million.
Source: WVHSC

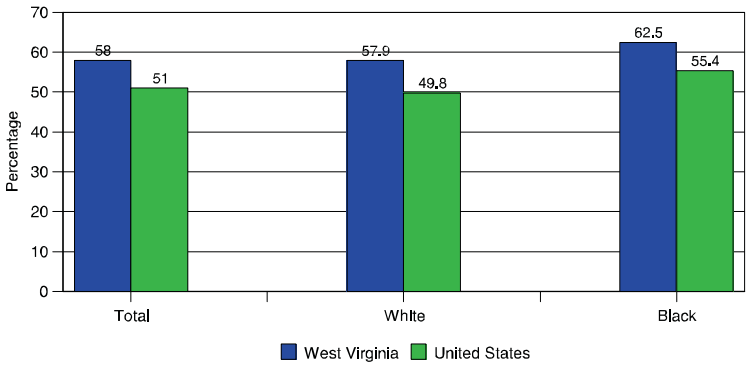
COLORECTAL CANCER SCREENING

According to 2004 BRFSS data, 53.7% of West Virginians aged 50 and older reported that they had never had either a sigmoidoscopy or a colonoscopy, a significantly higher percentage than the national average of 46.7%. Little difference was noted by gender, with 53.3% of men and 54.1% of women in the state reporting no colorectal screening. Approximately 42.1% reported having a sigmoidoscopy or colonoscopy in the past 10 years. The ACS also recommends that older adults should have a FOBT every year. According to the 2004 WVBRFSS, only 19.8% of adults 50 and older had received a FOBT in the past year.

DISPARITIES

A comparison of aggregated WVBRFSS data from 2000-2004 with U.S. BRFSS data from 2002 showed that African-American respondents were more likely than white respondents to have never been screened for colorectal cancer, both in the state and nationwide (Figure 46). There was a statistically significant difference in screening rates among whites in the state and the nation; the difference in rates between African-Americans in West Virginia and the U.S. was not statistically significant.

Figure 46. Prevalence of Adults Aged 50+ Who Have
Never had a Sigmoidoscopy or Colonoscopy, by Race
BRFSS, West Virginia, 2000-2004 and United States, 2002



NOTE: US prevalence is the mean of the 52 participating states and territories.

STAGE AT DIAGNOSIS

According to data from the WVCR, there has been an improvement in the early detection of colorectal cancer in the state. In 1994-1995, the percentage of colorectal cancers diagnosed in the in situ or local stage was 32.9%. By 2002-2003, this percentage had increased to 39.8%. Unfortunately, there was little change in the percentage of colorectal cancers diagnosed at the distant stage: 16.4% in 1994-1995 compared with 16.2% in 2002-2003.

Early Detection Goals, Objectives, and Strategies

The source for baseline data used to quantify objectives is provided when available.

GOAL 8: Improve access to and utilization of evidence-based and guideline-specific cancer screening and diagnostic follow-up services for all West Virginians, including those who are under- or uninsured.

OBJECTIVE 8.1: Increase the percentage of women aged 40 and older who have had a mammogram within the previous 2 years to at least 75%. *(Baseline: 72.5%; Source: WVBRFSS, 2004)*

OBJECTIVE 8.2: Increase the percentage of women aged 40 and older who have had a clinical breast exam (CBE) within the previous 2 years to at least 78%. *(Baseline: 75.3%; Source: WVBRFSS, 2004)*

OBJECTIVE 8.3: Increase the percentage of women aged 18 and older who have had a Pap test within the previous 3 years to at least 85%. *(Baseline: 82.6%; Source: WVBRFSS, 2004)*

OBJECTIVE 8.4: Increase the percentage of men and women aged 50 and older who have had a FOBT within the previous year to at least 22%. *(Baseline: 19.8%; Source: WVBRFSS, 2004)*

OBJECTIVE 8.5: Increase the percentage of men and women aged 50 and older who have had endoscopy (sigmoidoscopy or colonoscopy) within the previous 10 years to at least 50%. *(Baseline: 42.1%; Source: WVBRFSS, 2004)*

OBJECTIVE 8.6: Increase percentage of men aged 50 and older who have had a PSA in the past year to at least 59%. *(Baseline: 54.8%; Source: WVBRFSS, 2004)*

OBJECTIVE 8.7: Increase percentage of men aged 50 and older who have had a DRE (as part of a prostate examination) in the past year to at least 55%. *(Baseline: 50.9%; Source: WVBRFSS, 2004)*

Key Strategies for Objectives 8.1 – 8.7

- Identify providers and facilities in WV that provide: colorectal cancer endoscopic screening services, traditional and digital mammography, magnetic resonance imaging (MRI), and other advanced breast cancer screening services and effectively disseminate and promote that information to the public and relevant health professionals.
- Identify providers and facilities that offer free or low-cost colorectal, prostate, and ovarian cancer screening services and effectively disseminate that information to the public and relevant health professionals.
- Disseminate accurate information about cancer screening services to WVBCCSP and Medicare- and Medicaid-eligible individuals and their providers.

GOAL 9: Address major barriers to early detection of cancers in order to increase screening rates and to reduce health disparities.

OBJECTIVE 9.1: Develop a *West Virginia Screening Barriers Action Plan* to address the top three to five concerns related to the following cancers: breast, colorectal, cervical, and prostate.

Key Strategies

- Use existing data, identifying major screening barriers gathered by WV researchers and other partners.
- Update literature reviews on barriers to cancer screening in WV.
- Charge a taskforce to write action plan, utilizing evidence-based interventions whenever possible.

OBJECTIVE 9.2: Implement at least 50% of the activities in the *WV Screening Barriers Action Plan*.

Key Strategies

- Create a prioritized implementation plan.
- Explore availability of funding resources to implement plan priorities.
- Develop processes to regularly monitor, assess, and report on plan implementation progress; annually review relevant literature and resources to update plan.

GOAL 10: Educate the public, health professionals, and decision makers about the risk factors, symptoms, key clinical advances, and policy changes for cancers including ovarian, prostate, head and neck, and lung.

OBJECTIVE 10.1: Through semiannual updates, the Coalition and its partners will have access to the most recent information about clinical advances and policy changes related to early detection, screening, and follow-up services for these cancers.

Key Strategies

- Identify and charge clinical and policy partners to assist in providing semiannual updates.
- Review the medical/scientific literature related to clinical practices and advances related to early detection, screening, and follow-up services.
- Submit regular clinical and policy updates (for the general public, patients, and health professionals) to existing media outlets, including the *WV State Medical Journal*, daily newspapers, the Coalition newsletter.

GOAL 11: Educate the public, health professionals, and decision makers about evidence-based comprehensive cancer screening guidelines.

OBJECTIVE 11.1: Health professionals and students will have accurate and relevant early detection, screening, and other cancer control information, including knowledge about the important role that provider recommendations play in a patient's decision to undergo screening.

Key Strategies

- Work with health professions schools, members of the health care workforce, continuing education experts, and representatives from major professional associations.
- Identify ways to build a "progressive" partnership with professional organizations to share information and foster regular ongoing involvement with Mountains of Hope (MOH):
  - MOH exhibits at professional meetings.
  - MOH suggests/supplies speaker for annual conference.
  - MOH collaborates on a "cancer update" conference with professional organizations.
  - MOH regularly contributes to professional organization newsletters, Web sites, journals, etc. Professional organizations distribute MOH materials to membership.
- Find "value added" ways to partner with professional medical organizations, such as providing free patient education materials, demonstrating value of electronic health record systems for patient reminders and population management, etc.

OBJECTIVE 11.2: Educate and raise awareness of the public about the importance of undergoing evidence-based cancer screenings.

Key Strategies

- Use evidence-based resources such as the *Community Guide to Preventive Services* to identify effective education interventions.
- Identify and adapt other best practices in successful outreach.
- Use paid and earned media.
- Partner with other health and cancer-related groups.

GOAL 12: West Virginia will have comprehensive and responsive cancer data and information systems for planning, implementing, and evaluating programs, policies, and cancer research.

OBJECTIVE 12.1: Enhance existing cancer data systems to fully support the needs of West Virginia health care professionals, policymakers, planners, researchers, and the general public.

Key Strategies

- Enhance awareness of the value of cancer data.
- Identify and address gaps in West Virginia cancer data.
- Promote policies that enhance the acquisition of timely, quality data.
- Promote support for adequate funding of West Virginia's cancer data systems.

OBJECTIVE 12.2: Utilize quality data to support outcome-driven cancer control planning and evaluation.

Key Strategies

- Educate cancer control stakeholders on the appropriate use of cancer data.
- Promote use of cancer data for program planning.
- Assure the *West Virginia Cancer Plan* is responsive to the changing health care needs of the citizens of the state.

GOAL 13: Increase current funding levels (federal, state, and private) for evidence-based early detection, screening, and follow-up programs and activities in West Virginia.

OBJECTIVE 13.1: Develop a sound fiscal management plan that includes increased current funding levels for breast and cervical cancer screening and provides funding for colorectal cancer screening for West Virginia's under- or uninsured citizens.

Key Strategies

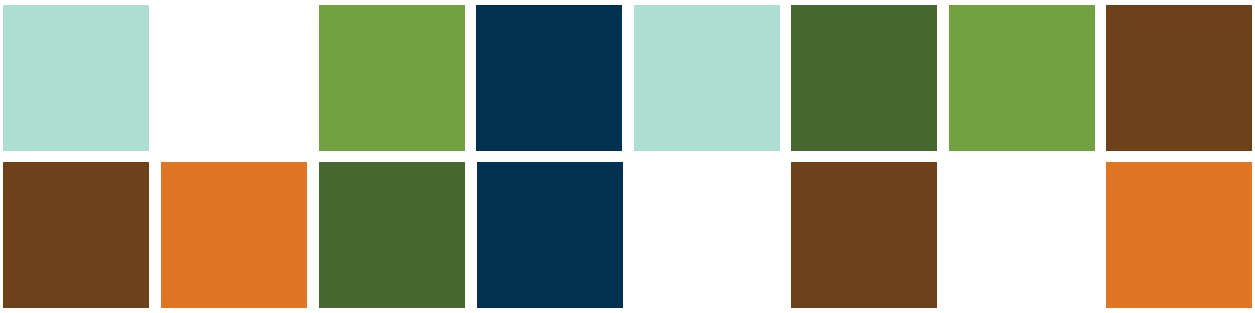
- Work with national and state partners to develop a budget for the *West Virginia Cancer Plan*.
- Influence policymakers to increase funding for collaborative, research-proven, chronic disease interventions (i.e., cancer, cardiovascular, hypertension, diabetes).
- Work with local and state coalition lobbyists and advocates who can influence policymakers to increase funding for prevention efforts.
- Identify and pursue private foundation and corporate funding opportunities.

"I tell my patients there is solid evidence that regular screening can find some cancers early, even before symptoms begin. In fact, some screening tests, like those for cervical cancer or colorectal cancer, are able to find pre-cancerous conditions that can be treated before they become cancer, essentially stopping the disease from occurring."

– Rosemarie Cannarella, MD, MPH,
Harpers Ferry Family Medicine/Jefferson County Health Officer

"Unbelievable," was my first reaction to finding out the mammogram showed breast cancer. I was told they found it early enough to treat only because I had this mammogram done. I want all women to know it was the mammogram that saved my life. Mammograms do save lives, it could save yours. Take time to make an appointment for life."

– Garnett Duvall, WVBCCSP Client



Quality of Life

Quality of Life allenges

- In 2004, 18.5% of the state's adults had no health care coverage. The state was 16th in the percentage of residents enrolled in Medicaid.
- In 2005, West Virginia was second in the nation in the percentage of its population aged 65 and older (15%). West Virginia also ranks 1st among the 50 states and the District of Columbia in the percentage of residents enrolled in Medicare.
- As of March 2006, 48 of the state's 55 counties were classified as federally designated medically underserved areas (MUAs) or included sub-county MUAs. Approximately 80% of West Virginia's counties (45 out of 55) were designated as primary care health professional shortage areas (HPSAs).
- Fourteen percent (13.9%) of the state's population is designated as underserved by primary care practitioners, compared with a national average of 11.5%.
- Residents in 14 out of 55 West Virginia counties must drive more than 55 miles to the closest Commission on Cancer-approved programs for treatment.
- Rural residents generally have fewer visits with physicians, lower levels of preventive care, later stage diagnoses, lack of access to follow-up care and standard treatment options, and very limited participation in clinical trials.
- Ninety percent of cancer patients with advanced disease experience severe pain, and 30% of all cancer patients, regardless of the disease stage, suffer pain.
- Currently 39% of West Virginians have completed an advance directive.
- Presently 37% of patients referred to hospital-based palliative care programs have a cancer diagnosis.
- There is a lack of definitive data documenting the issues faced by West Virginia cancer survivors.

Quality of Life For Cancer Patients and Survivors

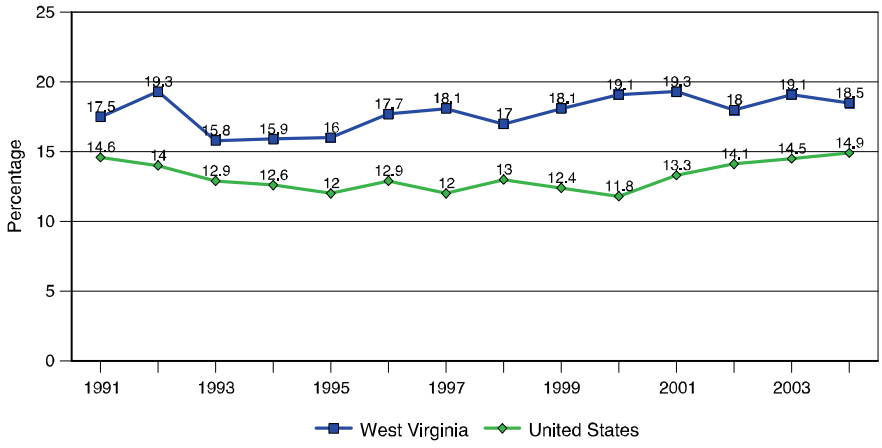
The *West Virginia Cancer Plan* uses the term *cancer survivor* as defined by the *National Action Plan for Cancer Survivorship* (Lance Armstrong Foundation, in partnership with CDC, 2004). *Cancer survivors* are those who have a personal cancer diagnosis and the people in their lives, including family members, friends, and caregivers. *Cancer survivorship* involves the entire continuum of care, from the day of diagnosis through treatment and rehabilitation to the end of life. The term *cancer patient* refers to survivors in active cancer treatment. The *West Virginia Cancer Plan* defines *quality of life* as a person's perception of his or her physical and mental well-being. Quality of life issues for cancer survivors, including pain management and palliative care, are growing in importance. They are becoming critical components of the excellent care that individuals with a cancer diagnosis should expect. The significant advances made over the last two decades in medical technology have led to earlier diagnoses and better treatment for many cancers, making some cancers a chronic rather than an acute disease.

While all cancer survivors may face physical, psychological, social, spiritual, and financial issues from the time of diagnosis, during treatment, and throughout their lives, the entire picture of what special challenges West Virginia cancer survivors may face remains unclear. Even so, we do know that these challenges may include: difficult access to cancer specialists and promising new treatments; denial of health and life insurance coverage; financial hardships long after the initial diagnosis and treatment; employment problems; psychological struggles; strains on personal relationships, and the fear of recurrence. Even with these challenges, many West Virginia cancer survivors live active, productive lives. The *West Virginia Cancer Plan* recognizes the importance of identifying and addressing an array of pertinent quality of life issues to improve the lives of West Virginians who are living with, through, and beyond cancer.

HEALTH CARE COVERAGE

According to 2004 Behavioral Risk Factor Surveillance System (BRFSS) data, 18.5% of West Virginia adults reported having no health care coverage, compared with 14.9% nationwide. The state was ranked 12th highest in that year among the 50 states and the District of Columbia in percentage of uninsured adults. As Figure 47 illustrates, West Virginia has reported higher rates of uninsured adults in every year from 1991 through 2004.

Figure 47. Prevalence of No Health Care Coverage among Adults Aged 18+ by Year
BRFSS, West Virginia and United States, 1991-2004



NOTE: US prevalence is the median of participating states and territories.

MEDICARE COVERAGE

As of 2004, West Virginia ranked 1st among the 50 states and the District of Columbia in the percentage of residents enrolled in Medicare. Nearly one in five (19.4%) of the state's population was enrolled in Medicare in that year, compared with a national rate of 13.9%. West Virginia's high rate of Medicare enrollees reflects both the state's aging population and its high rate of people with a disability.

MEDICAID COVERAGE

In that same year, the state ranked 16th in the percentage of residents enrolled in Medicaid. Seventeen percent (16.5%) of the population in the state were Medicaid recipients; nationwide, 14.9% of the population received Medicaid assistance.

MUAs AND HPSAs

The rurality of the state (the 2nd most rural state in the nation, following Vermont) also leads to problems with access to health care. As of March 2006, 48 of the state's 55 counties were federally designated as medically underserved areas[14] (MUAs) or included sub-county MUAs. Approximately 80% of West Virginia's counties (45 out of 55) are also federally designated wholly or in part as primary care health professional shortage areas[15] (HPSAs). MUAs and HPSAs are shown in Figure 48.

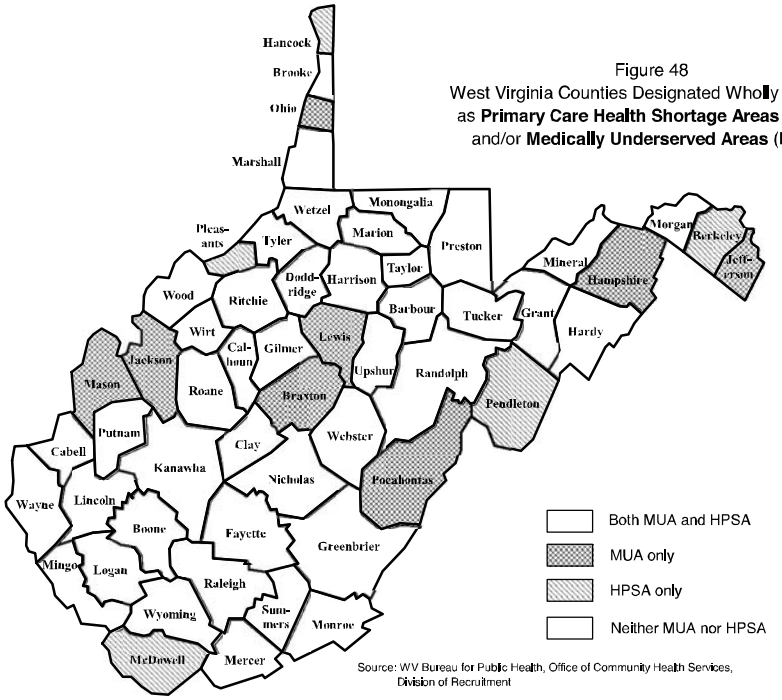


Figure 48
West Virginia Counties Designated Wholly or in Part as **Primary Care Health Shortage Areas** (HPSAs) and/or **Medically Underserved Areas** (MUAs)

Source: WV Bureau for Public Health, Office of Community Health Services, Division of Recruitment

[14] Four criteria are used to calculate scores used to designate MUAs: (1) Primary care physicians per 1,000 population; (2) Infant mortality rate (IMR); (3) Percentage of population aged 65+; and (4) Percentage of population below poverty level.

[15] Primary care HPSAs scores are determined by four factors: (1) Population-to-primary care physician ratio (3,500:1 or worse or 3,000:1 with a high need indicator); (2) IMR/Low birth weight rate; (3) Percentage of population below poverty level; and (4) Travel time/Distance to nearest available source of care.

RATE OF PHYSICIANS PER 100,000 POPULATION

According to data from the American Medical Association (AMA), West Virginia had a rate of 204 physicians in patient care per 100,000 population in 2004, compared with a national rate of 235. Thirty-five percent (34.9%) of these physicians had primary care specialties (family practice, general practice, internal medicine, obstetrics/gynecology, or pediatrics), comparable to the national average of 33.4%. Fourteen percent (13.9%) of the state's population is designated as underserved by primary care practitioners. Nationally, 11.5% of the population is considered underserved by primary medical care.

TRAVEL DISTANCE TO CANCER CARE

Access to cancer care is challenging for many state residents, particularly those in many of the eastern counties in the state. Figure 49 illustrates the driving distance by county (as measured from the county seat) to the closest treatment program approved by the American College of Surgeons' Commission on Cancer (CoC). Residents in 14 counties must drive more than 55 miles one way to reach such a program. The actual driving miles from the county seat to the nearest CoC-approved treatment program for each county are listed in Appendix F.

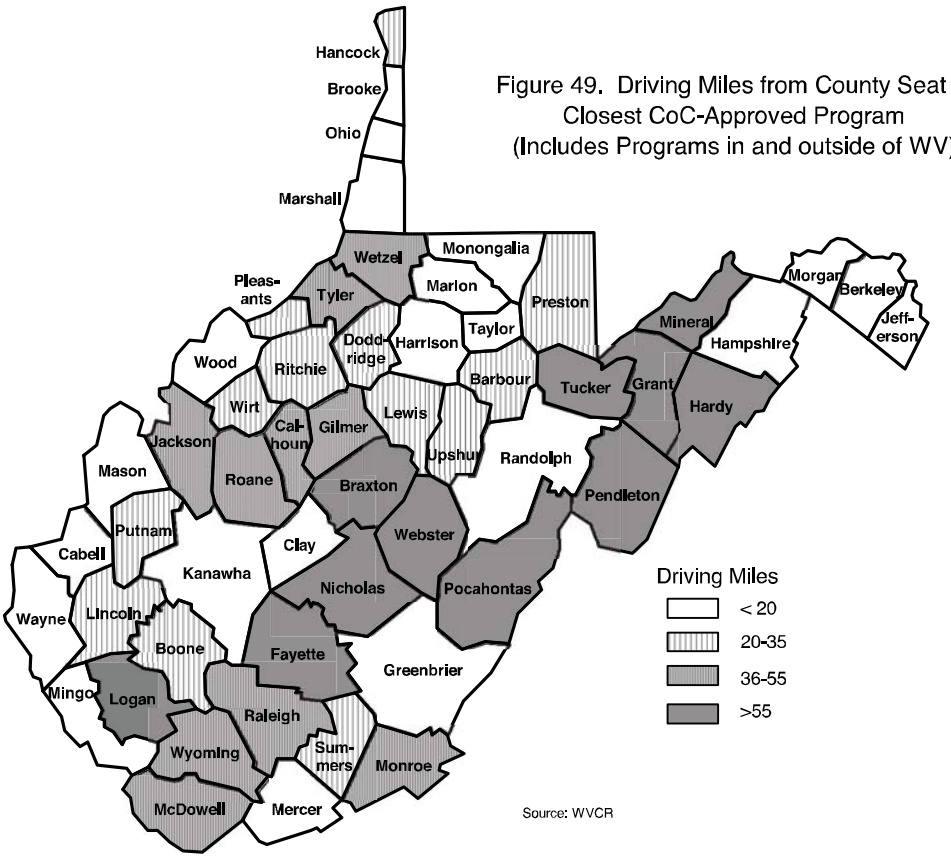


Figure 49. Driving Miles from County Seat to Closest CoC-Approved Program (Includes Programs in and outside of WV)

PAIN

The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage." Pain has traditionally been considered a physical symptom, but it can also affect an individual's sense of general well-being and decrease his or her overall quality of life. Increased pain is often a factor as cancer progresses, with as many as 50% of patients receiving inadequate pain treatment. While studies show that 90% of cancer patients with advanced disease experience severe pain, 30% of all cancer patients, regardless of disease stage, suffer pain. Effective management of some cancer pain is complex, posing challenges for physicians and patients.

END-OF-LIFE CARE

Effective end-of-life care affirms life and regards dying as a normal process, neither hastening nor postponing death while providing relief from distress and integrating psychological and spiritual aspects of patient care. Ensuring access to both hospice and palliative care services is a critical part of the continuum of care for many cancer patients. Hospital-based palliative care programs have increased in the state and 39% of all palliative care referrals now have a cancer diagnosis. Access to hospice services has proven difficult for some cancer patients for several reasons. Many cancer patients in nursing homes do not have ready access to hospice services. Also, access is limited for cancer patients due to Medicare regulations that restrict payment for medical complexities. As a response, some hospices are moving to an "Open Access Philosophy" that allows for the provision of hospice services to cancer patients who are involved with medical interventions such as chemotherapy, radiation treatment, palliative blood transfusions, etc. However, open access is expensive and not affordable to all hospice programs in the state. A quality of life issue for cancer patients is the ability to have their wishes met during the last phase of life. This can be facilitated by advance care planning including the completion of living wills and medical power of attorney forms as well as the Physician Order for Scope of Treatment form. At this time 39% of West Virginians have completed a living will and/or medical power of attorney.

Quality of Life Goals, Objectives, and Strategies

The source for baseline data used to quantify objectives is provided when available.

GOAL 14: Coordinate a statewide effort to address major needs of WV's cancer patients and survivors, especially those who are under- or uninsured, addressing concerns such as increased access to quality care, improved economic assistance, and transportation options.

OBJECTIVE 14.1: Identify and recruit at least 50% of the unaffiliated key Quality of Life stakeholders into Mountains of Hope (MOH). *(MOH database)*

Key Strategies

- Identify missing stakeholders.
- Initiate contact with each stakeholder organization and identify at least one primary contact person.
- Educate primary contacts about MOH and enroll organizations as MOH members.

OBJECTIVE 14.2: Develop and disseminate a *West Virginia Cancer Survivorship Action Plan* to address the top five concerns of West Virginia cancer survivors.

Key Strategies

- Conduct an extensive literature search related to cancer survivorship.
- Summarize gaps in existing data pertaining to cancer survivorship in West Virginia.
- Revise existing resources or create validated surveys or other tools to address identified gaps.
- Charge a taskforce to write the action plan.
- Disseminate the *West Virginia Cancer Survivorship Action Plan* to WV clinicians, other health professionals, legislators, and policymakers.
- Conduct a series of media efforts to educate West Virginians about cancer survivorship and the *West Virginia Cancer Survivorship Action Plan*.
- Collaborate with partners to access the status of the health care workforce to determine future needs.

OBJECTIVE 14.3: Pursue funding for a West Virginia Cancer Transportation Fund.

Key Strategies

- Provide input to the WV Medicaid redesign process.
- Gather data on transportation issues affecting WV cancer survivors.
- Analyze data and develop a report on transportation needs of cancer survivors.

OBJECTIVE 14.4: Increase clinical trials enrollment.

Key Strategies

- Gather all relevant clinical data related to clinical trials in WV.
- Identify all state and national resources related to clinical trials in WV.
- Identify the most salient barriers to participation in clinical trials.

GOAL 15: Educate health care professionals and students about cancer survivorship.

OBJECTIVE 15.1: Health professionals and students will have accurate and relevant information about cancer survivors and their quality of life issues.

Key Strategies

- Compile a list of relevant existing education and training programs for WV health professionals and students.
- Work with state health professional schools, practicing health professionals, continuing education experts, and representatives of major professional associations to ensure that the cancer survivorship and quality of life education needs of the state's current and future health care workforce are met.
- Evaluate effectiveness of education strategies.

GOAL 16: Promote access to high quality evidence-based information, resources, and support programs for cancer patients, cancer survivors, and the public.

OBJECTIVE 16.1: Cancer patients, survivors, and the public will be knowledgeable about existing information, resources, and support programs.

Key Strategies

- Identify all stakeholders providing information, resources, and support programs to cancer survivors.
- Educate the public about survivorship.
- Teach cancer patients and survivors how to access and evaluate existing cancer information.
- Empower cancer patients and survivors with advocacy skills.
- Increase utilization of the American Cancer Society (ACS) and National Cancer Institute (NCI) resources by West Virginia's cancer patients and survivors by 15%.

OBJECTIVE 16.2: Develop, test, and promote at least one formal patient navigation system by January 1, 2009.

Key Strategies

- Identify successful patient navigator models that have been field-tested.
- Identify a subcommittee to work on navigator project.

GOAL 17: Assess and enhance access to end-of-life services.

OBJECTIVE 17.1: Identify gaps in hospice and palliative care for WV cancer survivors.

Key Strategies

- Review data regarding the number of palliative care teams available in WV.
- Review current palliative care data collection tools to assess data related to cancer patients.
- Develop new and/or revise existing data collection tools as necessary to reflect services to cancer patients.
- Map all hospice and palliative care services in the state to identify existing gaps in service.
- Collaborate with Hospice Council of West Virginia and West Virginia Center for End-of-Life Care and develop plans to fill any identified gaps in service.
- Work directly with the West Virginia Health Care Authority to advocate for appropriate formulary regarding Certificate of Need for hospice services in WV.

OBJECTIVE 17.2: Increase the number of cancer survivors who receive inpatient palliative care and hospice services at their end of life.

Key Strategies

- Identify utilization rates for hospice and palliative care for cancer patients.
- Conduct ongoing education related to palliative care and hospice services to physicians with particular emphasis on medical oncologists.
- Empower cancer patients and their families with information about hospice and palliative care services in West Virginia.
- Encourage hospice programs with financial means to offer an open access philosophy for cancer patients.
- Collaborate with the Hospice Council of West Virginia to increase the number of nursing homes contracting with hospice agencies.

OBJECTIVE 17.3: Increase completion of advance directives and Physician Orders for Scope of Treatment (POST) forms by cancer survivors.

Key Strategies

- Determine baseline advance directive completion rate for cancer survivors.
- Identify and collaborate with key stakeholders related to advance care planning in WV.
- Conduct public education about advance directives and POST.

OBJECTIVE 17.4: Determine pediatric cancer patient and survivor needs.

Key Strategies

- Identify key partners that have a focus on pediatric palliative care.
- Map palliative care services targeted to pediatric patients in WV and identify gaps.
- Develop appropriate activities to enhance services to pediatric cancer patients.

GOAL 18: Promote effective pain management for cancer patients.

OBJECTIVE 18.1: As an MOH affiliate, the West Virginia Pain Initiative will grow by 60%.

Key Strategies

- Assess existing baseline quantitative and qualitative data describing the status of pain management and the WV cancer survivor.
- Develop existing baseline quantitative and qualitative data describing the status of pain management and the WV cancer survivor.
- Procure funding support for West Virginia Pain Initiative activities.

OBJECTIVE 18.2: Educate health care providers about cancer pain as a survivorship issue through a West Virginia Pain Summit at least biennially.

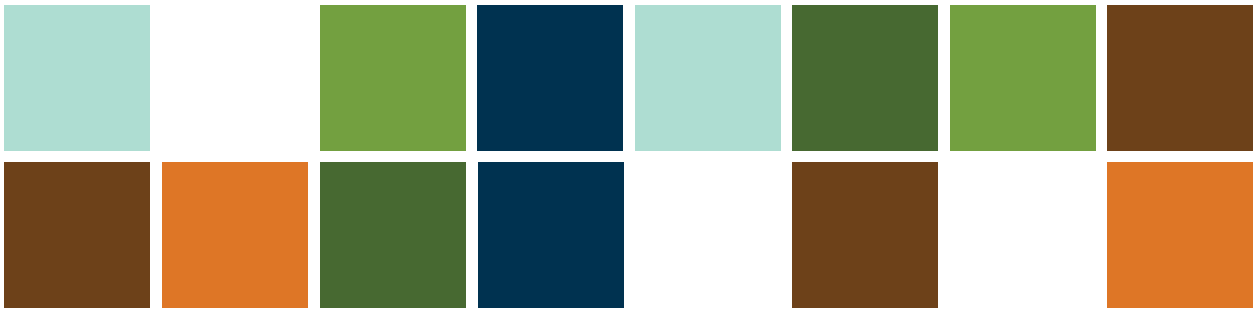
Key Strategies

- Develop a Pain Summit Advisory Group as a subcommittee of the WV Pain Initiative.
- Collaborate with stakeholders to secure funding through organizational and/or foundation support for the Summit.
- Develop partnerships with other chronic disease groups to cosponsor event.
- Obtain declaration in the month in which the summit is conducted as "Pain Awareness Month in WV."
- Conduct an evaluation of the Summit.

OBJECTIVE 18.3: Develop a Pain Resources Section for the *West Virginia Cancer Resource: A Patient's Guide.*

Key Strategies

- Develop an extensive list of pain resources for cancer patients in WV.
- Add a Pain Section to an updated version of the *West Virginia Cancer Resource: A Patient's Guide.*
- Distribute to MOH members and other targeted groups.

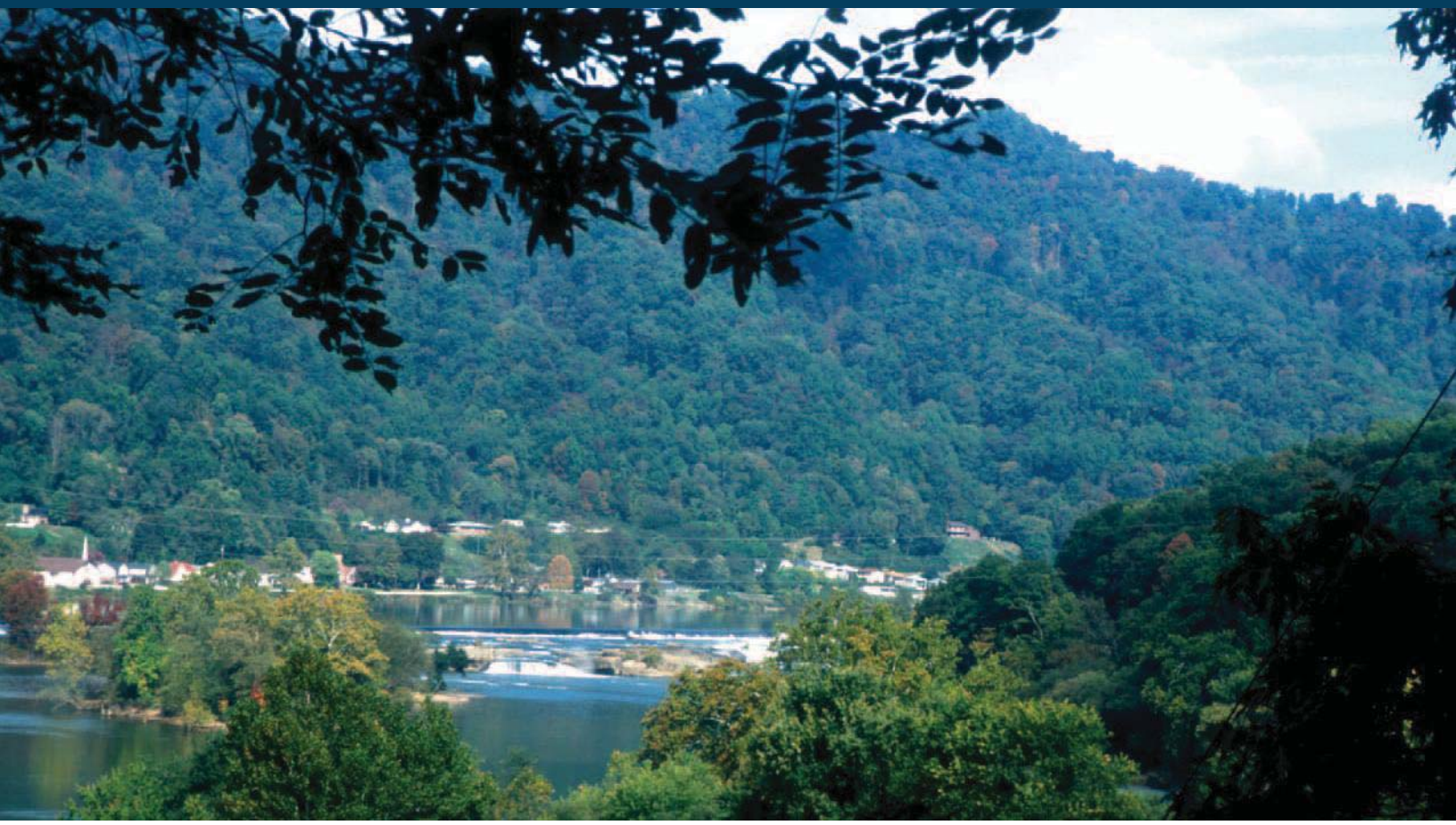


"Cancer survivors in West Virginia are growing in numbers. We want to ensure quality of life for all of them throughout the continuum of care from the day of diagnosis through the end of life."

– Alvin H. Moss, M.D.,
West Virginia Center for End-of-Life Care

"As a survivor, I celebrate life each day. We are all involved in this journey called life. Being an advocate for cancer survivors, I have learned how important it is to educate and provide meaningful information for my community."

– Patti Davis, Cancer Survivor



Appendices

Appendix A: Selected List of Acronyms

ACCN	Appalachia Community Cancer Network
ACS	American Cancer Society
BRFSS	Behavioral Risk Factor Surveillance System
CBE	Clinical Breast Exam
CDC	Centers for Disease Control and Prevention
CIS	National Cancer Institute's Mid-Atlantic Cancer Information Service
CoC	American College of Surgeons' Commission on Cancer
FOBT	Fecal Occult Blood Test
HPSAs	Health Professional Shortage Areas
HPV	Human Papillomavirus
MBRCC	Mary Babb Randolph Cancer Center
MOH	Mountains of Hope Cancer Coalition
MUAs	Medically Underserved Areas
NCI	National Cancer Institute
POST	Physician Orders for Scope of Treatment
PSA	Prostate Specific Antigen
SEER	National Cancer Institute's Surveillance, Epidemiology and End Results Program
USPSTF	United States Preventive Services Task Force
WVBCCSP	West Virginia Breast and Cervical Cancer Screening Program
WVBRFSS	West Virginia Behavioral Risk Factor Surveillance System
WVCCP	West Virginia Comprehensive Cancer Program
WVCR	West Virginia Cancer Registry
WVHSC	West Virginia Health Statistics Center
WVU	West Virginia University
WVYTS	West Virginia Youth Tobacco Survey
YRBS	Youth Risk Behavior Survey
YTS	Youth Tobacco Survey

Appendix B: Percentage of Population Living in Poverty
West Virginia Counties, 2003

County	Percentage	Rank	County	Percentage	Rank
Barbour	19.4	14	Monongalia	15.3	36
Berkeley	11.6	51	Monroe	14.8	41
Boone	18.4	18	Morgan	11.3	52
Braxton	19.9	11	Nicholas	19.2	15
Brooke	11.7	50	Ohio	14.6	42
Cabell	17.6	21	Pendleton	12.5	48
Calhoun	21.5	7	Pleasants	12.2	49
Clay	22.5	4	Pocahontas	15.7	34
Doddridge	18.1	19	Preston	16.1	31
Fayette	20.2	10	Putnam	9.7	54
Gilmer	19.6	13	Raleigh	18.0	20
Grant	14.4	43	Randolph	17.4	22
Greenbrier	16.1	33	Ritchie	16.1	32
Hampshire	14.1	44	Roane	19.9	12
Hancock	10.8	53	Summers	22.4	5
Hardy	12.9	47	Taylor	17.2	24
Harrison	16.7	27	Tucker	14.8	40
Jackson	14.9	38	Tyler	15.5	35
Jefferson	9.3	55	Upshur	18.8	27
Kanawha	15.2	37	Wayne	17.3	23
Lewis	16.9	26	Webster	24.1	3
Lincoln	21.4	8	Wetzel	16.4	29
Logan	21.0	9	Wirt	16.7	28
McDowell	32.4	1	Wood	14.0	45
Marion	16.2	30	Wyoming	21.6	6
Marshall	14.9	39	Total WV	16.3	
Mason	17.2	25			
Mercer	18.8	16			
Mineral	13.9	46			
Mingo	24.7	2			

Ranked highest (1) to lowest (55)
Source: US Census Bureau

Appendix C: Average Annual Cancer Incidence Rates*

West Virginia and United States, 1998-2002

Primary Site	West Virginia (95% Confidence Interval)	United States
All sites	**495.5 (491.2-499.8)**	**480.4**
Prostate	153.4 (149.8-157.0)	177.6
Female Breast	119.1 (116.2-122.0)	137.1
Lung	91.9 (90.0-93.7)	64.2
Colon and Rectum	61.1 (59.6-62.6)	45.0
Uterus	27.5 (26.1-28.9)	25.0
Bladder**	24.4 (23.5-25.4)	21.3
Non-Hodgkin Lymphoma	18.7 (17.8-19.5)	19.4
Cutaneous Melanoma	15.6 (14.9-16.4)	18.4
Ovary	14.7 (13.7-15.7)	14.1
Leukemia	12.5 (11.8-13.2)	12.4
Kidney	13.0 (12.3-13.7)	12.1
Pancreas	9.3 (8.7-9.9)	11.2
Head and Neck	10.4 (9.8-11.1)	10.8
Stomach	5.7 (5.3-6.2)	8.1
Cervix	11.7 (10.7-12.7)	8.0
Thyroid	7.5 (6.9-8.1)	7.8
Brain and Other Nervous System	6.8 (6.3-7.3)	6.6
Multiple Myeloma	5.1 (3.6-5.5)	5.6
Testis	4.7 (4.0-5.3)	5.6
Liver	3.8 (3.5-4.2)	5.5
Esophagus	5.1 (4.6-5.5)	4.7
Larynx	5.9 (5.4-6.3)	3.8
Hodgkin Lymphoma	2.8 (2.4-3.1)	2.8

* Rates are new cases per 100,000 population, age adjusted to the US 2000 standard million.
** Invasive cancers only, except for bladder, which includes in situ and invasive cancers.
Source: WVCR

Appendix D: Average Annual Cancer Incidence Rates* by Race
West Virginia, 1999-2003

Primary Site	White (95% Confidence Interval)	Black (95% Confidence Interval)
All sites	**493.9 (489.6-498.3)**	**483.1 (456.8-509.5)**
Prostate	147.8 (144.2-151.3)	231.9 (202.4-261.4)
Female Breast	118.0 (115.0-120.9)	108.9 (92.0-125.8)
Lung	90.6 (88.8-92.4)	76.9 (66.4-87.5)
Colon and Rectum	61.3 (59.8-62.9)	67.1 (57.4-76.7)
Uterus	28.0 (26.6-29.4)	13.4 (7.5-19.4)
Bladder**	24.1 (23.2-25.1)	14.0 (9.6-18.4)
Non-Hodgkin Lymphoma	18.8 (18.0-19.7)	9.7 (5.9-13.4)
Cutaneous Melanoma	16.1 (15.3-16.9)	***
Ovary	14.6 (13.6-15.6)	14.1 (8.1-20.0)
Leukemia	12.5 (11.8-13.2)	9.2 (5.6-12.8)
Kidney	13.2 (12.5-13.9)	15.2 (10.4-19.9)
Pancreas	9.1 (8.5-9.7)	15.2 (10.4-19.9)
Head and Neck	10.5 (9.9-11.1)	13.7 (9.2-18.2)
Stomach	5.9 (5.4-6.4)	6.3 (3.4-9.3)
Cervix	11.3 (10.3-12.3)	13.3 (7.1-19.5)
Thyroid	7.6 (7.1-8.2)	7.1 (3.9-10.4)
Brain and Other Nervous System	7.3 (6.7-7.8)	3.2 (1.1-5.4)
Multiple Myeloma	4.7 (4.3-5.2)	15.0 (10.3-19.7)
Testis	5.1 (4.4-5.8)	***
Liver	3.7 (3.3-4.1)	4.0 (1.7-6.3)
Esophagus	5.3 (4.8-5.7)	6.3 (3.3-9.3)
Larynx	5.8 (5.4-6.3)	6.2 (3.1-8.3)
Hodgkin Lymphoma	2.7 (2.4-3.1)	2.4 (0.6-4.2)

* Rates are new cases per 100,000 population, age adjusted to the US 2000 standard million.
** Invasive cancers only, except for bladder, which includes in situ and invasive cancers.
*** Fewer than 4 cases during entire period.

Source: WVCR

Appendix E:

Average Annual Lung Cancer Incidence Rates* by County

West Virginia and United States, 1999-2003

County	Rate*	Rank	County	Rate*	Rank
Barbour	89.3	22	Monongalia	69.8	49
Berkeley	102.4	11	Monroe	77.6	39
Boone	126.8	2	Morgan	79.5	37
Braxton	87.1	25	Nicholas	78.3	38
Brooke	81.8	35	Ohio	95.6	18
Cabell	93.8	19	Pendleton	47.4	55
Calhoun	110.3	7	Pleasants	91.8	21
Clay	115.2	5	Pocahontas	76.1	42
Doddridge	68.7	51	Preston	73.7	45
Fayette	107.0	10	Putnam	83.5	33
Gilmer	83.1	34	Raleigh	73.8	44
Grant	54.7	54	Randolph	79.8	36
Greenbrier	84.9	30	Ritchie	97.2	14
Hampshire	87.0	26	Roane	84.0	32
Hancock	97.1	15	Summers	65.5	52
Hardy	64.9	53	Taylor	70.6	48
Harrison	102.4	11	Tucker	77.2	40
Jackson	85.5	29	Tyler	73.4	46
Jefferson	69.2	50	Upshur	71.4	47
Kanawha	96.4	16	Wayne	86.1	27
Lewis	84.8	31	Webster	88.8	23
Lincoln	100.3	13	Wetzel	110.6	6
Logan	108.8	9	Wirt	128.4	1
McDowell	119.0	4	Wood	88.2	24
Marion	95.9	17	Wyoming	110.3	7
Marshall	75.8	43	Total WV	89.9	
Mason	92.7	20			
Mercer	85.9	28			
Mineral	77.0	41			
Mingo	120.1	3			

Ranked highest (1) to lowest (55)
Source: WVCR

Appendix F: Driving Miles from County Seat to Closest Commission on Cancer Approved Program*

West Virginia Counties

County	Miles	Rank	County	Miles	Rank
Barbour	24.9	38	Monongalia	0	
Berkeley	0		Monroe	44.6	23
Boone	31.4	32	Morgan	25	37
Braxton	60.1	11	Nicholas	84	7
Brooke	16.1	43	Ohio	0	
Cabell	0		Pendleton	110.9	1
Calhoun	52.5	18	Pleasants	32.4	31
Clay	48.4	21	Pocahontas	110.3	2
Doddridge	26.8	35	Preston	24	39
Fayette	58.5	12	Putnam	26.7	36
Gilmer	54.8	15	Raleigh	39.5	26
Grant	99.4	3	Randolph	49.3	19
Greenbrier	54.7	16	Ritchie	35.6	30
Hampshire	63.9	9	Roane	45.9	22
Hancock	53.5	17	Summers	58.2	13
Hardy	90.4	5	Taylor	15.9	44
Harrison	0		Tucker	60.2	10
Jackson	38.8	27	Tyler	48.7	20
Jefferson	15.2	45	Upshur	20.3	41
Kanawha	0	55	Wayne	17.4	42
Lewis	27.1	34	Webster	91.1	4
Lincoln	27.7	33	Wetzel	36.2	29
Logan	56.6	14	Wirt	21.8	40
McDowell	37.9	28	Wood	0	
Marion	0		Wyoming	41.9	25
Marshall	10.9	46			
Mason	42.1	24			
Mercer	9	47			
Mineral	89.9	6			
Mingo	78.9	8			

*Includes programs both in and outside West Virginia.
Ranked longest distance (1) to shortest distance (47). Eight counties had 0 driving miles.
Source: WVCR

Appendix G: Mountains of Hope Affiliates

Allegheny Energy – Fort Martin Power Station
American Association of Retired People
American Cancer Society
American Lung Association of West Virginia
Appalachia Community Cancer Network
Around and Round U
BEAT – Boone County Cancer Coalition
Berkeley County Health Department
Better Balance, LL
Braxton Community Health Center
C3: Colorectal Cancer Coalition
Cabell County Extension
Cabell Huntington Hospital
    Breast Health Center
    Regional Pain Management Center
Community Education Outreach Service
    Big Isaac
    Halleck
    Pleasant Hills
    Summers County
Charleston Area Medical Center
    David Lee Cancer Center
    Health Education and Research Institute
Colony Drug and Wellness Center
Community Health Initiatives
Concerned Citizens of Quinwood and Vicinity, Inc.
Concord College
Davis Memorial Hospital
Dignity Hospice of Southern WV
Doddridge County Health Department
Encore*plus* – YWCA of Charleston
Energy Corporation of America
Fairmont General Hospital
Fairmont State College
Fayette County Cancer Support Group
Genentech BioOncology
Gilmer Primary Care
Gilmer/Braxton Hospice
Grafton City Hospital
Grant Memorial Hospital
Greenbrier Oncology Clinic
Greenbrier Valley Breast Cancer Support Group
Gynecologic Associates, Inc. of Parkersburg
Hampshire County Cancer Coalition
HBA Cytology
Health Plan of Upper Ohio Valley
Healthsouth Mountainview Regional Rehabilitation Hospital
Hospice Care Corp
Hubbard Hospice House
Intercultural Cancer Council
James Tiger Morton Catastrophic Illness Commission
JS Blanchard and Associates
Kanawha County Schools
Kanawha Hospice Care, Inc.
Leukemia and Lymphoma Society
Lincoln Primary School
Louis A. Johnson VA Medical Center
Marion County Board of Education
Marion Health Care
Marshall University School of Medicine
McDowell Mission, Inc.
McDowell Rural Health Advisory Council
Mineral County Cancer Coalition
Mountain Valley Regional Tobacco Prevention Coalition
National Association of State Prostate Cancer Coalitions
National Ovarian Cancer Coalition
National Cancer Institute's Mid-Atlantic Cancer Information Service
Northern WV Rural Health Education Center
Ohio Valley Medical Center
Oncology Nursing Society
Pfizer Pharmaceutical Company
Pocahontas County Senior Center
Princeton Community Hospital
Princeton Surgical Group, Inc.
Randolph-Elkins Health Department
River Valley Health and Wellness Center
Roane County Cancer Coalition
Smoke on the Water
South Central Educational Development, Inc.
St. Francis Hospital

St. Mary's Medical Center
St. Peter's Episcopal Church Cancer Ministry
The Insurance Store
Thomas Memorial Hospital
Tri-State Ovarian Cancer Alliance
United Bank
United Hospital Center
United Mine Workers of America Health and Retirement Funds
University of Pennsylvania – School of Medicine
Us Too International
Valley Health Systems
Wayne County Watch Group
Webster County Cancer Education Project
Webster County Family Resource Network
Webster County Memorial Hospital
Wellness Council of West Virginia
West Virginia Association for Family and Community Education
West Virginia Bureau for Public Health
- Office of Epidemiology and Health Promotion
  - Division of Health Promotion and Chronic Disease
    - Comprehensive Cancer Program
  - Division of Tobacco Prevention
  - Health Statistics Center
  - Surveillance and Disease Control
  - Cancer Registry
- Office of Maternal, Child and Family Health
  - WV Breast and Cervical Cancer Screening Program

West Virginia Bureau for Senior Services
West Virginia Department of Environmental Protection
West Virginia Gynecologic Oncology Associates
West Virginia Health Right
West Virginia Lymphedema Network
West Virginia Medical Institute
West Virginia Office of Environmental Health Services
West Virginia on the Move
West Virginia Rural Health Education Partnerships
West Virginia School of Osteopathic Medicine
West Virginia University
- Extension Service
- School of Dentistry
- School of Medicine
  - Community Medicine Department
    - Evaluation Oversight and Coordinating Unit
    - Mary Babb Randolph Cancer Center
      - Cancer Prevention and Control
      - Clinical Trials Unit
    - Medicine Department
      - Center on Aging
    - Surgery Department
- School of Nursing
- School of Pharmacy

West Virginia University Hospital, Inc.
West Virginia WiseWoman
Wetzel County Cancer Coalition
Wheeling Health Right
Wheeling Hospital
Wheeling Jesuit School of Nursing
Wheeling-Ohio County Health Department
Wirt County Health Services
Women's Health Center of West Virginia

Appendix H: Steering Committee

2005 – 2007

***Workgroup Chair or Co-Chair**

Chair of Coalition: 2005-2007
Joe Barker, MPA
DHHR/BPH/Office of Epidemiology
Charleston, WV

Vice Chair of Coalition: 2005-2007
*Stephenie Kennedy, MA, LP
ACCN Project Director and Assistant Director of Outreach and Community-Based Research
MBRCC Cancer Prevention and Control
Morgantown, WV

Founding Member - American Cancer Society: 2005-2007
Kevin Tephabock, BS
Regional Executive Director
Charleston, WV

Founding Member - WV Breast and Cervical Cancer Screening Program: 2005-2006
Nikki Lyttle, MS
Epidemiologist - DHHR
Charleston, WV

Founding Member - WV Breast and Cervical Cancer Screening Program: 2006-2007
Christina Mullins, MA
Director
WVBCCSP
Charleston, WV

Founding Member - Mary Babb Randolph Cancer Center: 2005-2007
*James Keresztury, ACSW, MBA
Assistant Director of Cancer Prevention and Control
Morgantown, WV

Founding Member - WV Comprehensive Cancer Program: 2005-2006
Jennifer Weiss, MS
Program Manager
WV Comprehensive Cancer Program
Charleston, WV

SUBCOMMITTEES

Prevention: 2005-2006
Chair: *Mary Ellen Conn, MS
Program Manager
Appalachia Community Cancer Network
Morgantown, WV
Vice Chair: *Jaunita Conaway, BA
Program Coordinator
ENCORE*plus* Breast Cancer Education and Support Program
YWCA of Charleston
Charleston, WV

Prevention: 2006-2007
Chair: *Pat Smith, MA
Assistant Director
National Cancer Institute's Mid-Atlantic Cancer Information Service
Morgantown, WV
Vice Chair: Juanita Bishop, MSW
Community Social Worker
UMWA Health and Retirement Fund
Beckley, WV

Early Detection: 2005-2006
Chair: *Deborah Rake, MS
Mission Delivery Director, WV
American Cancer Society
Charleston, WV
Vice Chair: *Julie Lejeune, MS
Health Educator
WV Medical Institute
Charleston, WV

Early Detection: 2006-2007
Chair: *Deborah Rake, MS
Mission Delivery Director, WV
American Cancer Society
Charleston, WV
Vice Chair: *Lesley-Ann Miller, PhD
Assistant Professor
WVU School of Pharmacy
Morgantown, WV

Quality of Life: 2005-2007
Chair: *David Bougher, BSN, CHPN
Hospice Care Corp
Arthurdale, WV
Vice Chair: *Brenda Thomas, MA
WVBCCSP
Huntington, WV

Quality of Life: 2006-2007
Chair: *David Bougher, BSN, CHPN
Hospice Care Corp
Arthurdale, WV
Vice Chair: *Deloris Wilder, BA
Sr. Service Specialist
WV Bureau of Senior Services
Charleston, WV

Ad Hoc Chairs (nonvoting)
Advocacy: 2005-2007
Hersha Arnold Brown
American Cancer Society
Charleston, WV

Appendix I: Comprehensive Cancer Control Staff

WV Comprehensive Cancer Program:
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MBRC
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WV Ovarian Cancer Initiative:
Caroline Schlatt, MA
Program Coordinator
WV Ovarian Cancer Initiative
Huntington, WV

WV Prostate Cancer Initiative:
James Keresztury, ACSW, MBA
Project Director
WV Prostate Cancer Initiative
Morgantown, WV

Appendix J: Mountains of Hope's Mission, Vision and Value Statements

Mission Statement
To facilitate and coordinate collaborations, statewide and at the community level, to address Mountains of Hope's designated priority areas.

Vision Statement
To reduce the human and economic impact of cancer in West Virginia.

Value Statements

- All members' opinions are valued equally, and we recognize that what each member has to contribute is valued equally.
- We value making decisions together.
- We operate with human courtesy and respect in mind. We value integrity.
- We serve the people/communities of West Virginia, not ourselves or our agencies.
- We value speaking with one voice as a Coalition and at the same time recognize that we have opposing viewpoints/diversity.
- It is ok to make mistakes--we learn from them.
- We value ethical organizational practices.
- We value and uphold our commitments and will hold one another accountable for them.
- We value each others' time.
- We resolve conflicts and work towards solutions.
- We value our mission and goals.
- We value and seek diversity within our Coalition.
- We seek first to understand, then to be understood.
- We value the idea that we can make a difference and measure our accomplishments.
- We value compassion, and our actions reflect our commitment to reducing human suffering due to cancer.

Appendix K: Goals and Objectives

PREVENTION:

GOAL 1: Prevent initiation and reduce tobacco use among West Virginians.

Objective 1.1: Reduce the prevalence of cigarette smoking among adults aged 18 and older to 20% or lower.

Objective 1.2: Reduce the proportion of youth in grades 9-12 who report smoking in the previous month to 20% or lower.

Objective 1.3: Reduce smokeless tobacco use among adult men aged 18 and older to 10% or lower.

Objective 1.4: Reduce the proportion of young men in grades 9-12 who report smokeless tobacco use to 19% or lower.

Objective 1.5: Increase the number of WV counties with locally enforced comprehensive smoking bans from 37 (65%) to 55 (100%).

Objective 1.6: Increase collaboration between Mountains of Hope Cancer Coalition members and local tobacco prevention and cessation coalitions.

GOAL 2: Improve healthy dietary habits among West Virginians.

Objective 2.1: Increase from 19% to 25% the percentage of adults aged 18 and older who consume at least five servings of fruits and vegetables daily.

Objective 2.2: Increase from 21% to 28% the proportion of youth under the age of 18 who consume at least five servings of fruits and vegetables daily.

Objective 2.3: Decrease from 44% to 25% the number of youths who have consumed alcohol in the past month.

GOAL 3: Reduce the prevalence of obese and overweight West Virginians.

Objective 3.1: Reduce to 20% the proportion of adults who are obese as defined by having a body mass index (BMI) of 30 or greater.

Objective 3.2: Reduce the proportion of children and adolescents who are overweight by 5% from baseline.

GOAL 4: Promote physical activity among West Virginians to decrease sedentary behavior and lifestyles.

Objective 4.1: Increase the percentage of West Virginia adults aged 18 and older who participate in moderate physical activity for at least 30 minutes five times per week or vigorous physical activity for at least 20 minutes three times per week from 43% to 50%.

Objective 4.2: Increase the percentage of West Virginia adults aged 18 and older who participate in leisure-time physical activity from 72% to 75%.

Objective 4.3: Increase the percentage of West Virginia's youth in grades 9-12 who participate in moderate activity from 27% to 35%.

GOAL 5: Reduce incidence of melanoma among West Virginians.

Objective 5.1: Decrease from 38% to 28% the prevalence of individuals experiencing sunburn with redness lasting at least 12 hours in the past 12 months.

Objective 5.2: Increase awareness among all ages about ultraviolet radiation exposure and the risk for melanoma.

GOAL 6: Increase knowledge and awareness about the relationship between Human Papillomavirus (HPV) and some cancers.

Objective 6.1: Educate the public, health professionals, and key decision makers about HPV as a co-factor in the development of some cancers.

GOAL 7: Increase current funding levels (federal, state, and private) for evidence-based prevention programs and activities in West Virginia.

Objective 7.1: Develop a sound fiscal management plan for primary cancer prevention that includes increasing current tobacco funding to CDC Best Practices recommended levels.

Objective 7.2: Identify and pursue new comprehensive cancer funding opportunities.

EARLY DETECTION:

GOAL 8: Improve access to evidence-based and guidelines-specific cancer screening and follow-up services for all West Virginians, including those who are under- or uninsured.

Objective 8.1: Increase the percentage of women aged 40 and older who have had a mammogram within the previous 2 years to at least 75%.

Objective 8.2: Increase the percentage of women aged 40 and older who have had a clinical breast exam (CBE) within the previous 2 years to at least 78%.

Objective 8.3: Increase the percentage of women aged 18 and older who have had a Pap test within the previous 3 years to at least 85%.

Objective 8.4: Increase the percentage of men and women aged 50 and older who have had a FOBT within the previous year to at least 22%.

Objective 8.5: Increase the percentage of men and women aged 50 and older who have had endoscopy (sigmoidoscopy or colonoscopy) within the previous 10 years to at least 50%.

Objective 8.6: Increase the percentage of men aged 50 and older who have had a PSA in the past year to at least 59%.

Objective 8.7: Increase the percentage of men aged 50 and older who have had a DRE (as part of a prostate examination) in the past year to at least 55%.

GOAL 9: Address major barriers to early detection of cancer in order to increase screening rates and to reduce health disparities.

Objective 9.1: Develop a *West Virginia Screening Barriers Action Plan* to address the top three to five concerns related to the following cancers: breast, colorectal, cervical, and prostate.

Objective 9.2: Implement at least 50% of the activities in the *WV Screening Barriers Action Plan*.

GOAL 10: Educate the public, health professionals, and decision makers about the risk factors, symptoms, key clinical advances, and policy changes for cancers including ovarian, prostate, head and neck, and lung.

Objective 10.1: Through semiannual updates, the Coalition and its partners will have access to the most recent information about clinical advances and policy changes related to early detection, screening, and follow-up services for these cancers.

GOAL 11: Educate the public, health professionals, and decision makers about evidence-based comprehensive cancer screening guidelines.

Objective 11.1: Health professionals and students will have accurate and relevant early detection, screening, and other cancer control information, including knowledge about the important role that provider recommendations play in a patient's decision to undergo screening.

Objective 11.2: Educate and raise awareness of the public about the importance of undergoing evidence-based cancer screenings.

GOAL 12: West Virginia will have comprehensive and responsive cancer data and information systems for planning, implementing, and evaluating programs, policies, and cancer research.

Objective 12.1: Enhance existing cancer data systems to fully support the needs of West Virginia health care professionals, policymakers, planners, researchers, and the general public.

Objective 12.2: Utilize quality data to support outcome-driven cancer control planning and evaluation.

GOAL 13: Increase current funding levels (federal, state, and private) for evidence-based early detection, screening, and follow-up programs and activities in West Virginia.

Objective 13.1: Develop a sound fiscal management plan that includes increased current funding levels for breast and cervical cancer screening and provides funding for colorectal cancer screening for West Virginia's under- or uninsured citizens.

QUALITY OF LIFE:

GOAL 14: Coordinate a statewide effort to address major needs of WV's cancer patients and survivors, especially those who are under- or uninsured, addressing concerns such as increased access to quality care, improved economic assistance, and transportation options.

Objective 14.1: Identify and recruit at least 50% of the unaffiliated key Quality of Life stakeholders into MOH.

Objective 14.2: Develop and disseminate a *West Virginia Cancer Survivorship Action Plan* to address the top five concerns of West Virginia cancer survivors.

Objective 14.3: Pursue funding for a WV Cancer Transportation Fund.

Objective 14.4: Increase clinical trials enrollment.

GOAL 15: Educate health care professionals and students about cancer survivorship.

Objective 15.1: Health professionals and students will have accurate, relevant information about cancer survivors and their quality of life issues.

GOAL 16: Promote access to high-quality evidence-based information, resources, and support programs for cancer patients, cancer survivors, and the public.

Objective 16.1: Cancer patients, survivors, and the public will be knowledgeable about existing information, resources, and support programs.

Objective 16.2: Develop, test, and promote at least one formal patient navigation system by January 1, 2009.

GOAL 17: Assess and enhance access to end-of-life services.

Objective 17.1: Identify gaps in hospice and palliative care for WV cancer survivors.

Objective 17.2: Increase the number of cancer survivors who receive inpatient palliative care and hospice services at their end of life.

Objective 17.3: Increase completion of advance directives and Physician Orders for Scope of Treatment (POST) forms by cancer survivors.

Objective 17.4: Determine pediatric cancer patient and survivor needs.

GOAL 18: Promote effective pain management for cancer patients.

Objective 18.1: As an MOH affiliate, the West Virginia Pain Initiative will grow by 60%.

Objective 18.2: Educate health care providers about cancer pain as a survivorship issue through a West Virginia Pain Summit at least biennially.

Objective 18.3: Develop a Pain Resources Section for the *West Virginia Cancer Resource: A Patient's Guide.*

Appendix L: Selected Bibliography

Alcohol and Cancer. American Cancer Society. In http://www.cancer.org/docroot/PRO/content/PRO_1_1x_Alcohol.pdf.asp?sitearea=PRO . (accessed 02/28/2006.)

American Community Survey Data Profile Highlights: West Virginia 2005. U.S. Census Bureau. In http://factfinder.census.gov/. (accessed 02/27/2006).

Barry, J., and N. Breen. "The Importance of Place of Residence in Predicting Late-Stage Diagnosis of Breast or Cervical Cancer." *Health Place* 11, no. 1 (2005): 15-29.

Behavioral Risk Factor Surveillance System (BRFSS). Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. In http://www.cdc.gov/brfss/. (accessed 01/18/2007).

Behringer, B., and G. H. Friedell. "Appalachia: Where Place Matters in Health." *Prev Chronic Dis* 3, no. 4 (2006): A113.

Cancer Facts and Figures. American Cancer Society. Atlanta, GA: American Cancer Society, 2007.

Cancer Prevention and Early Detection. American Cancer Society. In http://www.cancer.org/docroot/PED/ped_0.asp. (accessed 02/27/2007).

Care without Coverage: Too Little, Too Late. p.1-194. Washington, DC: Institute of Medicine, Board on Health Care Services. National Academy Press, 2002.

Chien, C, L M Morimoto, J Tom, and C I Li. "Differences in Colorectal Carcinoma Stage and Survival by Race and Ethnicity." *Cancer* 104, no. 3 (2005): 629-39.

Colditz, G A, H W DeJong, D J Hunter, D Trichopoulos, and W C Willett, eds. *Harvard School of Public Health. The Harvard Report on Cancer Prevention. Volume I: Causes of Human Cancer*: Springer Science + Business Media BV, 1997.

Colsher, P. "Cancer in West Virginia: Incidence and Mortality 1993-2003." Charleston, WV: Division of Surveillance and Disease Control, West Virginia Cancer Registry, West Virginia Department of Health and Human Resources, 2006.

Couto, R A. "Appalachia." In *Sowing Seeds in the Mountains. Community-Based Coalitions for Cancer Prevention and Control (Nih Pub. No. 94-3779)*, edited by R A Couto, N K Simpson and G Harris, 14-28. Bethesda, MD: National Institutes of Health. National Cancer Institute, Divison of Cancer Prevention and Control, 1994.

Coyne, C. A., C. Demian-Popescu, and D. Friend. "Social and Cultural Factors Influencing Health in Southern West Virginia: A Qualitative Study." *Prev Chronic Dis* 3, no. 4 (2006): A124.

DeNavas-Walt, C, B D Proctor, and R J Mills. "Income, Poverty, and Health Insurance Coverage in the United States: 2003." edited by US Government Printing Offices. Washington, DC: US Census Bureau, Current Population Reports, P60-226 US Department of Commerce, 2004.

Early Detection. National Breast Cancer Foundation, Inc. In http://www.nationalbreastcancer.org/early_detection/index.html. (accessed 02/27/2007).

Effects of Public Information in Cancer (Epic). University of Pennsylvania Annenberg School for Communication. Centers of Excellence in Cancer Communication Research. In http://ceccr.asc.upenn.edu/index.asp. (accessed 02/28/2007).

Extraordinary Opportunities for Early Cancer Detection and Risk Assessment Research. National Cancer Institute. Division of Cancer Prevention. In http://www.cancer.gov/prevention///cbrg/exopp/exopp.html. (accessed 02/27/2007).

Faden, V B, and M P Fay. "Trends in Drinking among Americans Age 18 and Younger: 1975-2002." *Alcoholism, Clinical and Experimental Research* 28, no. 9 (2004): 1388-95.

Freeman, H P. "Voices of a Broken System: Real People, Real Problems." edited by Suzanne H. Reuben, 1-72. Bethesda, MD: National Institutes of Health. National Cancer Institute, 2001.

Freeman, H P, and B K Wingrove, eds. Excess Cervical Cancer Mortality: A Marker for Low Access to Health Care in Poor Communities (NIH Pub No. 05-5282). Bethesda, MD: National Institute of Health. National Cancer Institute, Center to Reduce Cancer Health Disparities, 2005.

Fronstin, P. 2005. Sources of Health Insurance and Characteristics of the Uninsured: Analysis of the March 2005 Current Population Survey, EBRI Issue Brief, No. 287, November 2005 Available at SSRN: Http://Ssrn.Com/Abstract=850465

Guidelines for Medically Underserved Areas and Population Designation. U.S. Department of Health and Human Services. Health Resources and Services Administration. Bureau of Health Professions. In http://bhpr.hrsa.gov/shortage/muaguide.htm. (accessed 02/27/2007).

Guidry, J. J., P. Matthews-Juarez, and V. A. Copeland. "Barriers to Breast Cancer Control for African-American Women: The Interdependence of Culture and Psychosocial Issues." Cancer 97, no. 1 Suppl (2003): 318-23.

Health Professional Shortage Areas. Shortage Designation. U.S. Department of Health and Human Services. Health Resources and Services Administration. Bureau of Health Professions. In http://bhpr.hrsa.gov/shortage/. (accessed 02/27/2007).

Lavizzo-Mourey, R. "A Tree in the Storm: Philantropy and the Health of the Public." In Robert Wood Johnson Foundation Annual Report, 2005.

Lengerich, E. J., J. R. Bohland, P. K. Brown, M. B. Dignan, E. D. Paskett, N. E. Schoenberg, and S. W. Wyatt. "Images of Appalachia." *Prev Chronic Dis* 3, no. 4 (2006): A112.

Morgan, K L, and S Morgan, eds. *Health Care State Rankings 2006*. Lawrence, KS: Morgan Quitno Press, 2006.

The Nutrition Source: Knowledge for Healthy Living. Harvard School of Public Health. Department of Nutrition. In http://www.hsph.harvard.edu/nutritionsource/index.html. (accessed 02/27/2007).

Overview: Colon and Rectum Cancer. American Cancer Society. In http://www.cancer.org/docroot/CRI/CRI_2_1x.asp?dt=10. (accessed 02/27/2007).

Physical Activity and Cancer: Fact Sheet. National Cancer Institute. In http://www.cancer.gov/cancertopics/factsheet/physical-activity-qa. (accessed 02/27/2007)

Providing Statistical Information for Informed Decisions. West Virginia Department of Health and Human Resources. Bureau for Public Health. Health Statistics Center In http://www.wvdhhr.org/bph/oehp/hsc/default.htm. (accessed 02/27/2007).

Selected Historical Decennial Census Urban and Rural Definitions and Data. U.S. Census Bureau. In http://www.census.gov/population/www/censusdata/ur-def.html. (accessed 01/18/2007).

Smith, R. A., V. Cokkinides, and H. J. Eyre. "American Cancer Society Guidelines for the Early Detection of Cancer, 2006." CA: *A Cancer Journal for Clinicians* 56, no. 1 (2006): 11-25; quiz 49-50.

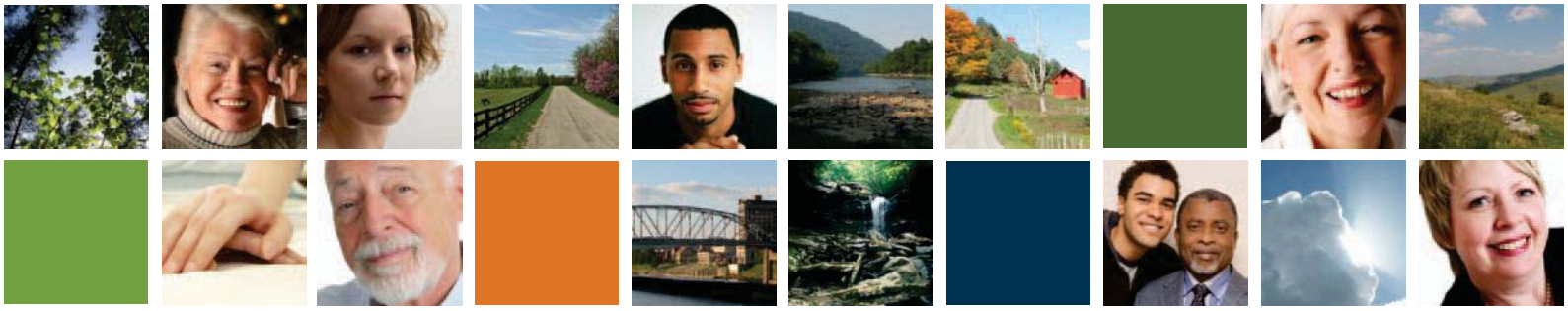
West Virginia Department of Health and Human Resources. Bureau for Public Health. Division of Primary Care. In http://www.wvochs.org/dpc/default.aspx. (accessed 02/27/2007).

West Virginia Health Professional Shortage Areas (HPSAs). West Virginia Department of Health and Human Resources. Bureau for Public Health. In http://www.wvochs.org/dr/shortageareas.aspx. (accessed 01/18/2007).

West Virginia Youth Tobacco Survey 2002. West Virginia Department of Health and Human Resources. Division of Tobacco Prevention. Health Statistics Center. West Virginia Department of Education. Office of Student Services and Health Promotion In http://www.wvdhhr.org/bph/oehp/tobacco/yts/default.htm. (accessed 02/27/2007).

York, J L, J Welte, J Hirsch, J H Hoffman, and G Barnes. "Association of Age at First Drink with Current Alcohol Drinking Variables in a National General Population Sample." *Alcoholism, Clinical and Experimental Research* 28, no. 9 (2004): 1379-87.

Youth Risk Behavior Surveillance System. Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. In http://www.cdc.gov/HealthyYouth/yrbs/overview.htm (accessed 02/27/2007).



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