West Virginia
WISEWOMAN Program
Annual Report
2011 - 2012

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Overview of the Program

The National WISEWOMAN Program

The Well-Integrated Screening and Evaluation for WOMen Across the Nation (WISEWOMAN) Program provides low-income, underinsured or uninsured women aged 40-64 years who have chronic disease risk factors with screening, lifestyle intervention, and community referrals in an effort to prevent cardiovascular disease. The national WISEWOMAN Program is housed within the Division for Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention (CDC). Currently there are 21 CDC-funded state/tribal WISEWOMAN Programs.

WISEWOMAN Programs screen for heart disease and stroke risk factors by measuring cholesterol levels, blood pressure, and assessing diabetes and body mass index (BMI) status. In addition, WISEWOMAN provides counseling services or classes to educate women about lifestyle changes to prevent heart disease and improve overall health. These services teach women how to eat healthy, be more physically active, and quit smoking.

Since 2000, the WISEWOMAN Program has reached more than 100,000 women nationally and diagnosed thousands of women with high blood pressure and/or high cholesterol, and identified more than 1,100 new cases of diabetes. Furthermore, participation in the WISEWOMAN Program has helped thousands of women reduce their high blood pressure and cholesterol levels and helped women quit smoking. From July 1, 2008, to June 30, 2011, the WISEWOMAN Program provided 125,024 total screening sessions to 100,497 WISEWOMAN participants. During the 2011-2012 Program Year, an additional 47,342 screenings were provided by the WISEWOMAN Program. The number of women who have benefitted from this Program continues to grow each year.

The West Virginia WISEWOMAN Program

From 2003-2008, the West Virginia WISEWOMAN Program was one of six research projects funded by the CDC. The WV WISEWOMAN Program was unique because it investigated the impact of lifestyle health education interventions to reduce the risk of cardiovascular disease among an Appalachian population.

Did you know???

- Cardiovascular disease includes high blood pressure, stroke, congenital heart defects, hardening of the arteries, congestive heart failure, myocardial infarction as well as other diseases of the circulatory system.
- More than 30 million American adults have one or more types of cardiovascular disease.
- One in three adults has high blood pressure, but 21% are not aware they even have it.
of readiness to change behaviors, significantly increased participation in positive lifestyle behaviors and decreased risk factors for cardiovascular diseases.  

In late 2007, CDC began transitioning WISEWOMAN Programs from research interventions to cardiovascular disease screening Programs. This included requiring WISEWOMAN Programs to become fully integrated with the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) in Fiscal Year (FY) 2008. On June 30, 2008, WV WISEWOMAN was integrated with the West Virginia Breast and Cervical Cancer Screening Program (WVBCCSP). The primary focus of WVBCCSP is to provide breast and cervical cancer screening and diagnostic services to low-income, uninsured or underinsured women aged 25-64 years. These services are provided by an expansive statewide network of more than 300 healthcare providers.

Potential WISEWOMAN providers were identified by inviting current WVBCCSP screening providers to participate in a recruitment call. Those providers interested in offering WISEWOMAN services were reviewed and entered into a Memorandum of Understanding (MOU) with the Program. WV WISEWOMAN currently has approximately 20 provider MOUs.
Cardiovascular Disease Among West Virginia Women

According to the American Heart Association, cardiovascular disease is the leading cause of death for women over the age of 25. It kills nearly twice as many women in the United States than all types of cancer, including breast cancer. Only 13% of women think heart disease is a threat to their health. Lifestyle diseases disproportionately affect women, the poor, seniors as well as ethnic and racial minorities. WV is consistently ranked in the top five states for highest rate of diabetes, hypertension, cardiovascular disease, and smoking.  

Cardiovascular Disease

Cardiovascular disease refers to several different disease states affecting the heart and blood vessels that supply the heart, brain and peripheral tissues. The most common disease state is heart disease, with myocardial infarction and stroke being the most common forms of cardiovascular events. Atherosclerosis is the narrowing of blood vessels as a result of plaque buildup. This is the underlying process related to cardiovascular disease.

Did you Know???

♥ Heart disease kills roughly the same number of people in the United States each year as cancer, lower respiratory diseases (including pneumonia), and accidents combined.
♥ Number of people in the United States who die from heart disease:
  ♥ ~2,200 each day, an average of 1 death every 40 seconds
  ♥ ~800,000 each year (150,000 are under 65)
♥ 1 in 3 deaths in the United States is due to heart disease.
♥ 1 in 3 people (80 Million) in the United States have some form of heart disease, which can include severe chest pain, heart attack, heart failure, and stroke.
♥ Number of heart attacks and strokes that occur in the United States: 2,000,000 per year.
♥ Heart disease and stroke cost the nation $312.6 billion/year in healthcare costs and lost economic productivity.
**Signs of Cardiovascular Disease**

**Myocardial Infarction**
The most common sign of cardiovascular disease is angina (chest pain) and can result in a heart attack. A heart attack occurs when atherosclerosis causes reduced blood flow and muscle cell death to the heart muscle.⁶

In 2009, the leading cause of death in WV was heart disease followed by stroke.

In 2010, the age-adjusted mortality rate of heart disease among women in WV was 170.8 deaths per 100,000 population; the comparable rate in the U.S. in 2010 was 143.3 deaths per 100,000 population.⁸,⁹,¹⁰

In 2010, WV’s overall prevalence of angina was 6.0% and the prevalence of heart attack was 6.3%.⁸

**Stroke**
A stroke occurs when the blood supply to the brain is disrupted by a clot or rupture of a blood vessel.⁶

In 2010, stroke prevalence for women in WV was 3.8%. Overall, the State was ranked 2nd in stroke prevalence.

In 2010, the age-adjusted mortality rate for stroke among women in WV was 49.4 deaths per 100,000 population; the comparable rate in the U.S. in 2010 was 38.3 deaths per 100,000 population.⁸,⁹,¹⁰

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**Prevalence of Adult Women Reporting Having Been Told they Have Had a Heart Attack, Angina, or a Stroke West Virginia and United States, 2010**

<table>
<thead>
<tr>
<th>Condition</th>
<th>WV</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Attack</td>
<td>4.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Angina</td>
<td>2.9</td>
<td>3.2</td>
</tr>
<tr>
<td>Stroke</td>
<td>3.8</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Source: The Office of Women’s Health, U.S. Dept. of Health and Human Services

Data Source: BRFSS
Cardiovascular Disease Risk Factors

Hypertension

Hypertension, or high blood pressure, is a major risk factor for the development of coronary artery disease, stroke and renal failure. Hypertension weakens the blood vessels, leading to an increased risk for stroke, heart attack, and heart failure.\(^5\) WV has one of the highest overall hypertension rates in the nation. In 2011, the prevalence of hypertension was 37.4% for females in WV and was significantly higher than the rate of 29.9% for U.S. females. In 2009, one in three adult female West Virginians was diagnosed with hypertension.\(^8\)

Risk Factors for Developing Hypertension:

- **Modifiable**
  - Lack of physical activity
  - Poor diet, especially one that includes too much salt and decreased intake of fruits and vegetables
  - Overweight and obesity
  - Drinking too much alcohol
  - Smoking and exposure to second hand smoke
  - Stress

- **Non-Modifiable**
  - Family History
  - Advanced age
  - Race

Cholesterol

High cholesterol is also a risk factor associated with stroke and heart disease. High cholesterol can be influenced by genetic disposition as well as personal habits such as eating foods that are high in fat. High low-density lipoprotein (LDL) cholesterol can lead to the development of plaques and narrowing of the arteries, which can become blocked and lead to heart attack when blood flow is reduced to the heart or a stroke when blood flow to the brain is disrupted. High levels of triglycerides are another type of blood fat that increases the risk for heart disease. High-density lipoprotein (HDL) cholesterol is the good cholesterol that removes fatty deposits from inside of the blood vessels. Therefore, low levels of HDL cholesterol increases the risk of developing cardiovascular disease.\(^6\)

In 2011, the prevalence of high cholesterol among females in WV was 40.3% compared to the U.S. average of 36.7%. In 2011, 82.1% of females in WV reported having their cholesterol checked within the past five years, which exceeds the U.S. female median of 77.9%.\(^8\)
Diabetes

Diabetes is a metabolic disorder characterized by defects in the body’s ability to produce and/or use the hormone insulin to absorb glucose from the blood. Diabetes itself is a major risk factor for developing cardiovascular disease. Excess blood glucose can lead to increased deposits of fatty materials on the insides of the blood vessel walls. These deposits may affect blood flow, increasing the chance of clogging and hardening of blood vessels. Uncontrolled diabetes can lead to irreversible damage to nerves and blood vessels that have detrimental consequences on the function of the heart, kidneys and eyes. There are three major types of diabetes: Type 1, Type 2, and gestational diabetes.\(^\text{11}\)

### Risk Factors for Developing Type 2 Diabetes:

- Being non-white - prevalence of diabetes is 2-4 times higher among African American, Hispanic/Latino, American Indian, and Asian/Pacific Islander women than among white women
- Family history of diabetes
- Overweight/obese
- Physical inactivity
- Low HDL cholesterol and high triglyceride levels
- Smoking
- Lower education and socioeconomic status

### Type Characteristics

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>- Characterized by a lack of insulin being produced by the pancreas.</td>
</tr>
<tr>
<td></td>
<td>- Daily insulin injections usually help manage the condition.</td>
</tr>
<tr>
<td></td>
<td>- Previously known as juvenile diabetes because Type 1 diabetes is usually diagnosed in children and young adults under 30 years of age.</td>
</tr>
<tr>
<td>Type 2</td>
<td>- Characterized by the body either not producing enough insulin or not responding to insulin (insulin resistance).</td>
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<tr>
<td></td>
<td>- The most common form of diabetes.</td>
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<tr>
<td></td>
<td>- Previously known as adult onset diabetes, however the prevalence of Type 2 diabetes among children has increased with the rise in childhood obesity.</td>
</tr>
<tr>
<td>Gestational</td>
<td>- Occurs in pregnant women around the 28th week of pregnancy.</td>
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<tr>
<td></td>
<td>- An estimated 18% of pregnant women develop gestational diabetes.</td>
</tr>
<tr>
<td></td>
<td>- It can occur in women without a previous diagnosis of diabetes and is typically resolved following child birth, however the woman is at a higher risk of developing Type 2 diabetes later in life.</td>
</tr>
</tbody>
</table>

**Diabetes Mortality Rates* Among Women**

**West Virginia and United States, 2003-2010**

*Rates are adjusted to the 2000 US Standard Million
US Data Source: CDC, National Center for Health Statistics, National Vital Statistics System

In 2010, the age-adjusted mortality rate for diabetes among women in WV was 29.9 deaths per 100,000 population, significantly higher than the U.S. population rate of 17.6 deaths per 100,000 population.\(^\text{8,9,10}\)
**Obesity**

Women with a diagnosis of being overweight or obese are determined using the body mass index (BMI). Body mass is calculated as a ratio of height to weight. An adult is considered overweight if BMI is 25.1-29.9 and obese if BMI is 30.0 or greater. Excess body fat, particularly abdominal fat, is a risk factor for developing heart disease. Although the proportion of overweight WV women has remained roughly the same for the past six years, the number of obese women has significantly increased from 25.0% in 2003 to 34.2% in 2011. In 2011, 65.7% of women in WV were either overweight or obese, compared to 56.6% of women in the U.S.\(^8\)

**Physical Activity/Inactivity**

Physical inactivity is a major risk factor for developing cardiovascular disease because it contributes to other risk factors such as obesity, hypertension, abnormal cholesterol levels, and diabetes. Physical activity has continued to decrease in WV. In 2003, 30.9% of WV women reported not participating in any type of physical activity, which increased to 36.8% in 2009. Furthermore, in 2011, only 39.5% of WV women reported participating in 150 minutes or more of aerobic physical activity per week and 10.3% reported participating in enough aerobic and muscle strengthening exercises to meet guidelines.

**Overweight and Obesity Among Women**

**West Virginia and United States, 2003-2011**

![Graph showing overweight and obesity rates in WV and U.S.](image)

**Physical Activity**

**West Virginia and United States, 2011**

![Graph showing physical activity rates in WV and U.S.](image)
Tobacco Use

The risk of developing heart disease doubles for smokers compared to nonsmokers. Exposure to second hand smoke increases the risk of heart disease even among nonsmokers. Smoking contributes to the narrowing of blood vessels and the development of atherosclerosis.¹²

For the years 2003-2011 WV’s prevalence of adult cigarette smoking has consistently ranked in the top three states nationwide. WV also has a high prevalence of adult smokers with a rate of 28.6% compared to 21.2% for the U.S. The same is true when comparing the prevalence of female smokers in WV to all female smokers in the U.S. In 2011, female smokers in WV had a prevalence of 25.9% as compared to 18.8% for all females in the U.S.⁸

Did you know???

Studies show women with low incomes are at greater risk for heart disease and stroke because:

♥ They have less access to healthcare and are often unable to pay for needed prevention, screening and treatment services.

♥ They are more likely than women with higher incomes to be underinsured or uninsured.

♥ They are more likely to smoke and to be overweight.

Data Source: BRFSS

Prevalence of Adult Female Smokers
West Virginia and United States, 2003-2011

Data Source: WV Health Statistics Center, BRFSS

Heart Disease and Diabetes Among Adult Females by Income Level
West Virginia, 2009

Data Source: WV Health Statistics Center, BRFSS
West Virginia WISEWOMAN 2011-2012 Screening Year

During FY 2011-2012, 2,578 women were screened for cardiovascular disease risk factors at 22 WISEWOMAN provider sites. The following data is a summary of the proportion of women who were identified as having cardiovascular disease risk factors:

- 66.6% had abnormal or alert blood pressure readings
- 54.3% reported they had high blood pressure
- 70.4% had abnormal or alert cholesterol levels
- 52.0% reported they had high cholesterol
- 26.1% had an abnormal glucose value
- 23.1% reported they were diabetic
- 41.5% reported smoking some days or everyday
- 78.8% were either overweight (BMI 25.0-29.9) or obese (BMI ≥30.0)
- 87.9% ate less than 5 or more fruits and vegetables per day
- 55.3% exercised less than 150 minutes per week
- 27.6% reported their mother or sister had a heart attack before age 65
- 25.8% reported their father or brother had a heart attack before age 65
- 53.8% reported a family history of diabetes

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West Virginia WISEWOMAN BMI for Women Screened During FY* 2011-2012

*FY runs from June 30th through June 29th
Direct Services

Screening

WISEWOMAN screens for heart disease and stroke risk factors, including high cholesterol, high blood pressure, and diabetes. The WISEWOMAN Program requires that certain baseline medical screenings are completed on all women who participate in the Program. This assessment includes:

- Two blood pressure readings
- Cholesterol testing
- Glucose (blood sugar) testing for pre-diabetes and diabetes
- BMI calculation
- Smoking status
- Exposure to secondhand smoke
- Personal history of high cholesterol, high blood pressure, diabetes, and current medications for those conditions
- Personal history of heart attack, angina, coronary heart disease, or stroke
- Family history of stroke, heart attack, and diabetes

All baseline screening measures must be completed in a timely manner and must be completed before a woman can participate in the lifestyle intervention. The screening results are used to determine which lifestyle intervention and/or community-based resources she will be referred. WISEWOMAN also provides community-based services to help women improve their blood pressure, cholesterol, and blood sugar levels by referring them to services such as:

- Nutrition education
- Physical activity information
- Physician referrals
- Smoking cessation Programs

Lifestyle Intervention

Lifestyle intervention is a combination of strategies designed to assist people in making positive lifestyle behavior changes to promote health. The WISEWOMAN lifestyle intervention is intended to modify behaviors that are associated with increased risks for cardiovascular disease, as well as other chronic diseases such as diabetes. It is predicated on the theory that poor diet, physical inactivity, tobacco use and obesity can be modified in order to reduce elevated cholesterol levels, hypertension, and improve or maintain glucose levels. The lifestyle interventions vary throughout the CDC-funded Programs, allowing each state or tribe to develop culturally appropriate, evidence-based strategies to reduce the cardiovascular risk among their target population. All approved lifestyle interventions are based on the Transtheoretical Model of Change which assesses how prepared an individual is to commit to making behavior changes. National guideline-based recommendations for physical activity, heart-healthy eating, and tobacco cessation are also used in the development of lifestyle interventions.
The lifestyle intervention strategy used in the WV WISEWOMAN Program includes risk reduction counseling, behavior counseling, a series of six printed health messages that are tailored to the participant’s stage of readiness to change physical activity and dietary habits, and access to supplemental health information via a web-based Program, “Cookin’ Up Health”. In addition, the intervention addresses living tobacco free.

Following cardiovascular risk factor screening, the clinician engages in a face-to-face conversation with the WISEWOMAN participant to explain risk factors and to discuss lifestyle changes that can be made to improve her health. This discussion is intended to motivate the participant to set goals to change diet, physical activity levels, and tobacco use. To increase provider effectiveness, the WISEWOMAN lifestyle intervention staff created a curriculum for motivational interviewing skills for clinic staff. Participants also receive information about free or low-cost community resources to assist in making positive lifestyle changes. The WISEWOMAN Program empowers women to take control of the modifiable risk factors that have placed them among the nation’s most unhealthy citizens. Through multi-pronged approaches, WISEWOMAN strives to positively impact the health and well-being of the women who participate in the Program.

**Partnerships and Collaborations**

Throughout the existence of the Program, WISEWOMAN has made efforts to establish and strengthen partnerships with various health organizations having similar goals. This includes partnering with state-level Programs such as Cardiovascular Health, Diabetes Prevention, Tobacco Prevention, and the WV Cancer Coalition-Mountains of Hope. In addition, WISEWOMAN staff have expanded contacts with several initiatives that address health-related racial and socio-economic disparities in WV. The organizations promoting these initiatives include: WV Minority Health Coalition, WV Nutrition Network, and Bonnie’s Bus Task Force to increase the numbers of minority and older women accessing services available through the mobile mammography unit. Through participation with these partners, WISEWOMAN strives to decrease heart disease and stroke risk factors for the WISEWOMAN population, maximize the number and variety of settings that deliver WISEWOMAN services and eliminate health disparities.
Evaluation

Surveillance

Public health surveillance is defined as the continuous, systematic collection, analysis, and interpretation of data pertaining to the occurrence of specific diseases. Surveillance is essential to the planning, implementation, and evaluation of a public health Program, and is the cornerstone and management tool for public health practice. Good surveillance can be used to assess the health of a population, give a quantitative base for defining objectives and priorities, and help to design, plan, and evaluate public health Programs and interventions. The WISEWOMAN Program uses surveillance to determine activities that will increase enrollment, design studies to determine the utilization of the Program and plan marketing strategies to promote the Program. 13,14

The WVBCCSP/WISEWOMAN Evaluation Team meets quarterly to review work plans submitted to the CDC and assess successes and barriers to meeting goals and objectives. The goal of the Evaluation Team is to ensure that the activities and objectives outlined in the work plans are completed in the specified timeframes submitted to CDC. During FY 2011-2012, WISEWOMAN worked on increasing the number of women screened and improving participant health outcomes by increasing technical assistance and training for provider sites.

Quality Assurance

Quality assurance is defined as the use of established standards, systems, policies and procedures to monitor, assess, and identify practice methods for improvement. The purpose of this component is to ensure the quality of services delivered to women through WVBCCSP/WISEWOMAN and to ensure provider compliance with Program guidelines. The WVBCCSP/WISEWOMAN Programs have an active Medical Advisory Committee (MAC) comprised of medical experts in the field of women’s health. The MAC ensures that clinical practice guidelines set forth by the Programs are performed in accordance with best practices.

Quality assurance monitoring is conducted at WVBCCSP/WISEWOMAN provider sites each year. Monitoring may include, but is not limited to, meetings with consumers, review of medical records, review of service policies and procedures, and meetings with any staff directly or indirectly involved in the provision of services at the clinic. During these on-site monitoring reviews, the Office of Maternal, Child and Family Health (OMCFH) Quality Assurance Monitoring Team is given access to all necessary information and is allowed to observe WVBCCSP/WISEWOMAN examinations to ensure patient care standards are met and services are provided in accordance with Program policies and guidelines. All quality assurance monitoring reports are submitted to OMCFH and are carefully reviewed. Areas of provider deficiency are noted and a corrective course of action is put into place. The Clinical Services Coordinator calls or visits the provider to discuss the deficiency and works with them to ensure the deficiency is successfully corrected.

During FY 2011-2012, WV WISEWOMAN staff continued quarterly conference calls, inviting all clinics participating in the Program to join in. The calls began as a mechanism to ensure that the applicable clinics received uniform updates and Program information. Subsequently, these quarterly calls have served as an opportunity for clinics to share strategies, success stories, questions, and technical assistance.
Future Directions

In FY 2012-2013, the WV WISEWOMAN Program will continue to work with other public health and community partners in an effort to increase awareness of heart health issues and the striking impact of cardiovascular disease in women. WISEWOMAN’s community education efforts are year-round with an expanded outreach focus during National Heart Health Month in February. The WISEWOMAN staff worked with state and county officials to provide outreach and education to employees and constituents during 2013 Heart Health Month observances.

Fiscal Year 2012-2013, is the final year of the five-year grant cycle through which WV WISEWOMAN has operated. The WV WISEWOMAN staff anticipate delivering data that illustrates improvement in the health status of women who have participated in the Program over the last several years. The Minimum Data Elements (MDE) reports will be submitted to CDC in October 2013.

As WV WISEWOMAN moves into the new four-year funding cycle, Program staff will be intensifying partnerships within the Bureau for Public Health as well as the community in order to provide WISEWOMAN participants with as many opportunities as possible to engage in evidence-based community resources and/or lifestyle Programs. The basis for the lifestyle Program will continue to be motivational interviewing techniques based on the stage of readiness to change. However, there will be a variety of lifestyle pathways for participants based on intensified Risk Reduction Counseling, team centered care and self-monitoring. In the first year of the new grant cycle, the WISEWOMAN Program will concentrate efforts on those participants with alert blood pressure values or newly diagnosed hypertension.

The U.S. Department of Health and Human Services’ (HHS) Million Hearts™ initiative to prevent one million heart attacks and strokes over five years was immediately embraced by WISEWOMAN and will continue to be a Program focus in the coming year.

Million Hearts™ was implemented in September 2011, and aims to prevent heart disease and stroke by:

♥ Improving access to effective care.

♥ Improving the quality of care for the ABCS.

• A — Appropriate Aspirin Therapy
• B — Blood Pressure Control
• C — Cholesterol Management
• S — Smoking Cessation

♥ Focusing clinical attention on the prevention of heart attack and stroke.

♥ Activating the public to lead a heart-healthy lifestyle.

♥ Improving the prescription and adherence to appropriate medications for the ABCS.
**References**

10. West Virginia Health Statistics Center, Vital Registration.

“Heart disease takes the lives of far too many people in this country, depriving their families and communities of someone they love and care for—a father, a mother, a wife, a friend, a neighbor, a spouse. With more than 2 million heart attacks and strokes a year, and 800,000 deaths, just about all of us have been touched by someone who has had heart disease, heart attack, or a stroke.”

(Kathleen Sebelius, Secretary, US Department of Health and Human Services.)