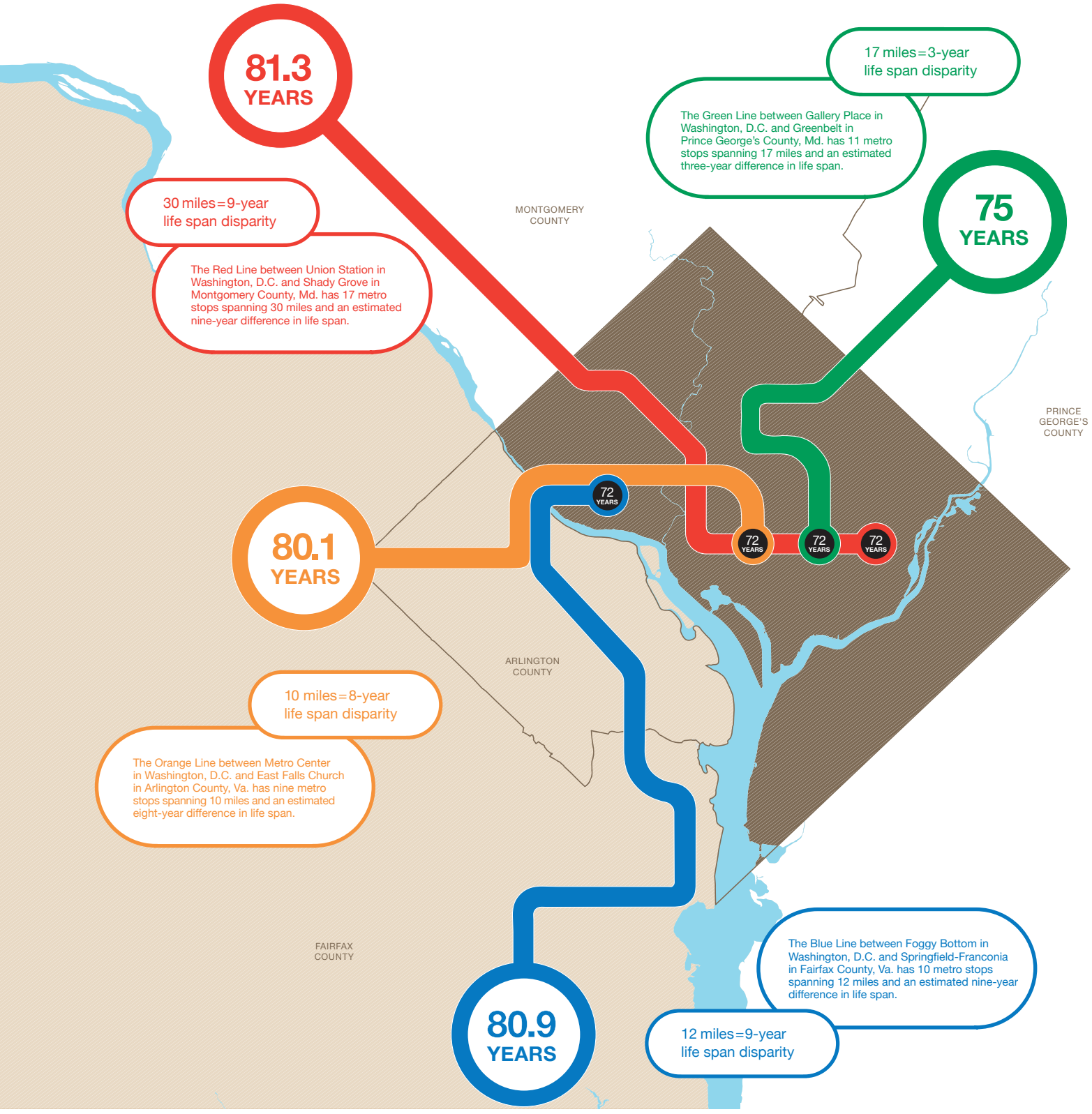
Community Health Status Indicators for Metropolitan Washington 2009

Regional Overview

Metropolitan Washington Council of Governments

WASHINGTON Regional Association of GRANTMAKERS



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Regional Overview 2009

Cover graphic was prepared for the Robert Wood Johnson Foundation Commission to Build a Healthier America by the Center on Social Disparities in Health at the University of California, San Francisco.

Metropolitan Washington Council of Governments
Washington Regional Association of Grantmakers' Health Working Group

Table of Contents

Regional Overview

INTRODUCTION

When thinking about health, we all too often think about health *care*—the services of doctors, hospitals, clinics, and others who provide care to those who are already sick. But, while health care is an essential component of any strategy to protect health, of equal importance are those factors that can *prevent* health problems and *improve* basic health and well being.

> "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."
>
> –World Health Organization[1]

As a result of extensive research, it is now widely accepted as fact that our health—whether excellent, good, fair, or poor—is not simply a matter of genetics, personal behaviors, or lifestyle choices. Nor it is just a matter of insurance coverage and access to healthcare services. While these things are important, our health is actually determined by the conditions and characteristics of our everyday lives: our race and ethnicity, our educational level and income, our family history and early life experiences, our neighborhoods, and even the homes in which we live. These factors, along with the concomitant issues of racism, prejudice and discrimination, are collectively referred to as the "social determinants of health." It is therefore important to view health in the broader demographic and socioeconomic context.

The Metropolitan Washington, D.C. area is home to more than four million people who live in the city and the surrounding Virginia and Maryland communities. All of us who live here hope that we, our families, friends, and neighbors can be healthy and stay healthy throughout our lives. But how healthy are we?

This is document provides a snapshot of the region's demographic and socioeconomic characteristics and the "health" of adults in the Washington region. The report assembles data from 13 individual jurisdictions (Frederick, Montgomery, and Prince George's counties in Maryland, which include local municipalities; the counties of Arlington, Fairfax, Loudoun, and Prince William and cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park in Virginia; and the District of Columbia). This report presents a picture of the region as a whole, while detailed information for each of the jurisdictions is available in the full report. For those interested in exploring these and other issues more deeply, the full report, Community Health Status Indictors: An In-Depth Look, and accompanying Chart

Book also contain references and links to data used to compile this report and to other sources of health data.

We hope that these documents provide a useful picture of the health status of the region's residents, and will encourage a continuing review of the needs and opportunities for health promotion and disease prevention. We also hope that our work will draw attention to some crucial gaps in health data for individual communities, and encourage efforts to collect those data so that important health concerns can be addressed and monitored more effectively. Finally, we hope that our work will encourage area policymakers to begin focusing on the social determinants of health—those characteristics of peoples' everyday lives that impact their health status—as a means to improve the overall health of the region.

Improving the health status of the region's residents and reducing health disparities requires addressing social and economic determinants of health.

We recognize that while the indicators[2] included represent a broad range of public health concerns, they do not cover—nor were they intended to cover—all of the issues that affect one's health. In some cases, such as environmental health, Metropolitan Washington Council of Government is already producing related reports. In others, such as mental health and substance abuse, comparable data for the region's 13 jurisdictions was not easily accessible. Finally, HIV/AIDS is also of concern in the region but not fully discussed here because more in-depth work is being done by others.

Project Origins and Approach

This report represents a collaboration between the Health Officials Committee (HOC) of the Metropolitan Washington Council of Government (MWCOG) and the Health Working Group (HWG) of Washington Regional Association of Grantmakers.

The HOC and HWG determined that their work would have four major objectives:

- To provide a simple snapshot of the health of the region's residents,
- To identify issues that may be of regional concern,
- To facilitate efforts to improve the population's health status within and across jurisdictions, and
- To facilitate efforts across the public, private, non-profit and philanthropic sectors to make the health of all residents among the best in the nation.

To guide this work, HOC/HWG set up a Health Indicator Working Group. Representatives from four jurisdictions and two HWG members participated: Shirley Brown-Ornish, Senior Planner, Prince George's County Department of Health; Tamara Henry, Policy Analyst, D.C. Department of Health; Patricia N. Mathews, Executive Director, Northern Virginia Health Foundation and Chair of the Health Working Group of Washington Grantmakers; Margaret K. O'Bryon, President and CEO, Consumer Health Foundation; Colleen Ryan-Smith, Epidemiologist, Montgomery County Department of Health; and Kelly Woodward, Medical Director, Alexandria Health Department. The committee was assisted by Phyllis E. Kaye, Lara Atwater, Irit Rasooly, Brynne Bannister, Michael A. Stoto, and Melissa Ann Higdon.

Most of the data in this report come from the Community Health Status (CHS) Reports available through the U.S. Department of Health and Human Services, the U.S. Census American Community Survey Factfinder Reports (from 2005-2007) and Small Area Health Insurance Estimates 2005. Data in the CHS Reports was drawn from the National Vital Statistics Reporting System (generally 2001-2003),[3] and the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance System 2000-2006. While individual jurisdictions may have more current data on a number of these indicators, compiling them to give a regional picture proved difficult. The sources used in this report had standardized methods for data collection and analysis making it relatively easy to build a regional picture. The full report describes the approach, details of the methodology, and data limitations in more detail.

Demographic and Socioeconomic Characteristics of the Region[4]

The Metropolitan Washington, D.C. region is just over 3,000 square miles. It includes the District of Columbia, three counties in Maryland: Frederick, Montgomery and Prince George's; and nine jurisdictions in Virginia: Arlington, Fairfax, Loudoun and Prince William counties, and the cities of Alexandria, Falls Church, Fairfax, Manassas, and Manassas Park. The region's population of about 4.6 million people is racially, ethnically, and economically diverse. It is a major gateway for immigrants.[5] Moreover, the size and population density of each of the 13 jurisdictions vary widely. A recent report by the Brookings Institution notes, "Most of the population lives in the core and inner suburbs (Washington, DC; City of Alexandria; Arlington, Fairfax, Prince George's and Montgomery counties). However, the outer suburbs (such as Prince William and Loudoun counties) have the most rapid rates of growth."[6]

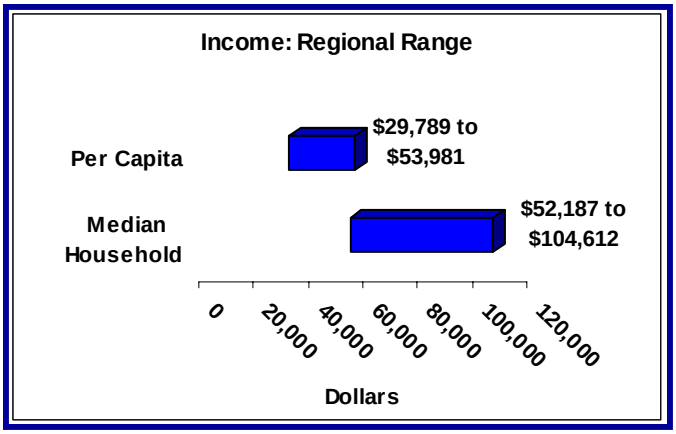
The region, about 1.5 times the size of Delaware, is home to a racially, economically and ethnically diverse population of about 4.6 million.

Population

Just over one half of the region's population is White (54.7%), over one quarter is African American (27.4%), and just under one tenth is Asian (9.2%). The remainder of the population are of some other race, or two or more races. About one eighth of the overall population is of Hispanic or Latino ethnicity (12.5%) regardless of race. There also are growing numbers of immigrants from Africa throughout the region. The region has the seventh highest number of foreign-born residents among all metropolitan areas in the U.S.[7]

The proportion of the population that is aged 65 and older is relatively small—ranging from a jurisdiction low of 5.6% to a high of 14.2%. Conversely, the proportion of the population under age 18 is significant, ranging from a low of 17% to a high of 30.2%.

Most African Americans live in the eastern part of the region; Latinos and Asians are concentrated in the areas to the north and west.[8] However, there is growing diversity within the region's jurisdictions. For example, in the 11 jurisdictions for which data is available, Hispanics are more than 13% of the population in 8 jurisdictions, and Asians are more than 10% of the population in 4 jurisdictions.



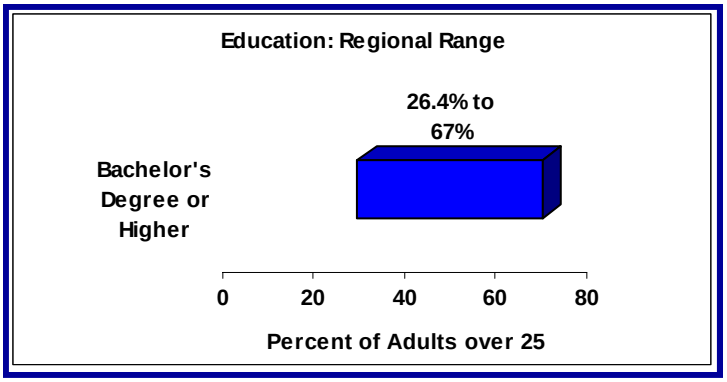
Income

The region as a whole is prosperous, with median household income in each jurisdiction exceeding the national median household income ($50,007), and per capita household income exceeding the national per capita household income ($26,178). Yet there is wide variation in household income across jurisdictions. For example, in 2005-2007, there was an almost two-fold difference between the jurisdiction with the highest median household income. Similarly, per capita income in the jurisdictions ranged from a low of $29,789 to a high of $53,981. In virtually every jurisdiction, the median income of African American and Hispanic households is below each jurisdiction's overall median household income.

Even before the current economic crisis, many residents were experiencing hardships. Poverty levels vary widely across jurisdictions. The percentage of children living below the Federal Poverty Level ranged from 1.7% to 29.3% among the

jurisdictions, while the percentage of adults age 18-64 below the poverty level ranged from 3.1% to 16.3%. The percentage of those over 65 living below poverty was as high as 15.6%.

Education



The percentage of adults over age 25 who have a bachelor's degree or higher exceeds the national percentage of 27% in virtually every jurisdiction. However, as with income, education varies by jurisdiction. The percentage of adults over age 25 with a bachelor's degree or higher ranged from a low of 26.4% to a high of 67%. At the other end of the education spectrum, the percentage of adults over age 25 who had less than a 9th grade education also varied, ranging from 2.6% to 10.9%.

Looking at education by race/ethnicity, 62% of Asians and 58% of Whites in our region have at least bachelor's degree, compared with 29% of African Americans and 23% of Hispanics. On the other hand, 59% of Hispanics and 43% of African Americans have a high school diploma or less, in contrast to 25% of Whites and 21% of Asians.[9]

Languages Spoken

Just over one quarter of the region's population over 5 years old speaks languages other than, or in addition to, English in the home. In five jurisdictions, more than 30% of the population over age 5 speaks a language other than English. Interestingly, in six jurisdictions, 11.5%-15% of the population says that they do not speak English very well.

The Health of the Region's Adult Population: An Overview

When compared to the United States, the region as a whole is reasonably healthy.

The region as a whole is reasonably healthy when comparing 21 health indicators for 13 metropolitan Washington jurisdictions with the same indicators for United States. Ten of the 13 jurisdictions compared favorably to the United States on at least 60% of the indicators, from the 2008 Community Health Status (CHS) Reports.[10]

Of the 14 indicators for which Healthy People 2010 targets were given in the CHS reports, the region's jurisdictions do not meet most of the targets, nor did the United States as a whole.[11] Healthy People 2010 provides a framework for strengthening health promotion and disease prevention and sets health objectives for the United States to achieve between 2000 and 2010. The overarching goals are to increase quality and years of healthy life and eliminate health disparities.

List of Community Health Status Indicators in Full Report

(unless otherwise noted, data is from CHS reports)

Summary Measures of Health
- Life Expectancy
- Self-reported health status
- Self-rated health status
- Average Number of Unhealthy Days in Past Month

Birth and Death Measures US/P and HP
- Birth Measures
  - Low Birth Weight
  - Premature Births
  - Late or no prenatal care
  - Births to Women Under 18
  - Infant Mortality
- Death Measures
  - Breast Cancer
  - Colon Cancer
  - Lung Cancer
  - Coronary Heart Disease
  - Stroke
  - Unintentional Injuries
  - Motor Vehicle Injuries
  - Homicide
  - Suicide

Adult Preventive Services Use
- Pap Smear
- Mammography
- Sigmoidoscopy
- Pneumonia Vaccination
- Flu Vaccination

Risk Factors for Premature Death
- No exercise
- Few Fruits and Vegetables
- Obesity
- High Blood Pressure
- Smoker
- **Diabetes**

Communicable (Infectious) Diseases*
- HIV/AIDS
- Tuberculosis

Access to Care
- Health Insurance Coverage**

US/P US and Peer County comparison data.
HP Healthy People 2010 Targets.

*From State Statistics.
** From Small Area Health Insurance Estimates, 2005

When looking at the "peer county"[12] data contained in the CHS reports there were seven indicators on which more than half of the jurisdictions compared unfavorably to their peers—

- prenatal care (10 of 13 jurisdictions were unfavorable),
- breast cancer death rates (7 of 12 jurisdictions were unfavorable),
- homicide (8 of 9 jurisdictions were unfavorable),
- very low birth weight (9 of 13 jurisdictions were unfavorable),

When looking at the "peer county" data the picture of the region's health is more varied.

- infant mortality (7 of 13 jurisdictions were unfavorable),
- Hispanic infant mortality (7 of 10 jurisdictions were unfavorable), and
- births to women over 40 (11 of 13 jurisdictions were unfavorable).

In looking at health indicators, it is important to remember the demographic and socioeconomic characteristics of the region. Differences in population health can be traced to unequal economic and social conditions, many of which are avoidable.[13] The challenge is to better understand these factors in our region, and then take steps necessary to improve the health of the region's residents.

DIFFERENCES IN POPULATION HEALTH ACROSS THE REGION: A CLOSER LOOK

It is, however, insufficient to look at the region's health strictly from the standpoint of U.S. rates and targets. It is important to compare the region's health status across its jurisdictions in order to understand the health and health issues confronting the region's residents. The following highlights regional health issues from this perspective.

Longevity

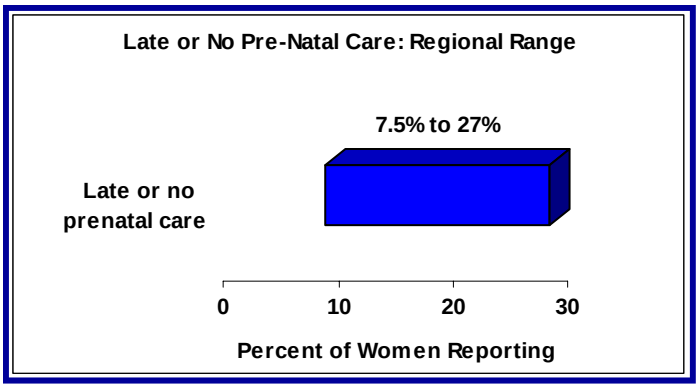
There is an almost 10-year difference in life expectancy depending on where in the Washington D.C. metropolitan region you happen to live. Life expectancy, considered a summary measure of population health, ranges from 72 years (below the national average of 76.5) to just over 81 years.

Life expectancy, infant mortality rates and percentage of low birth weight babies are often used as measures of population health.

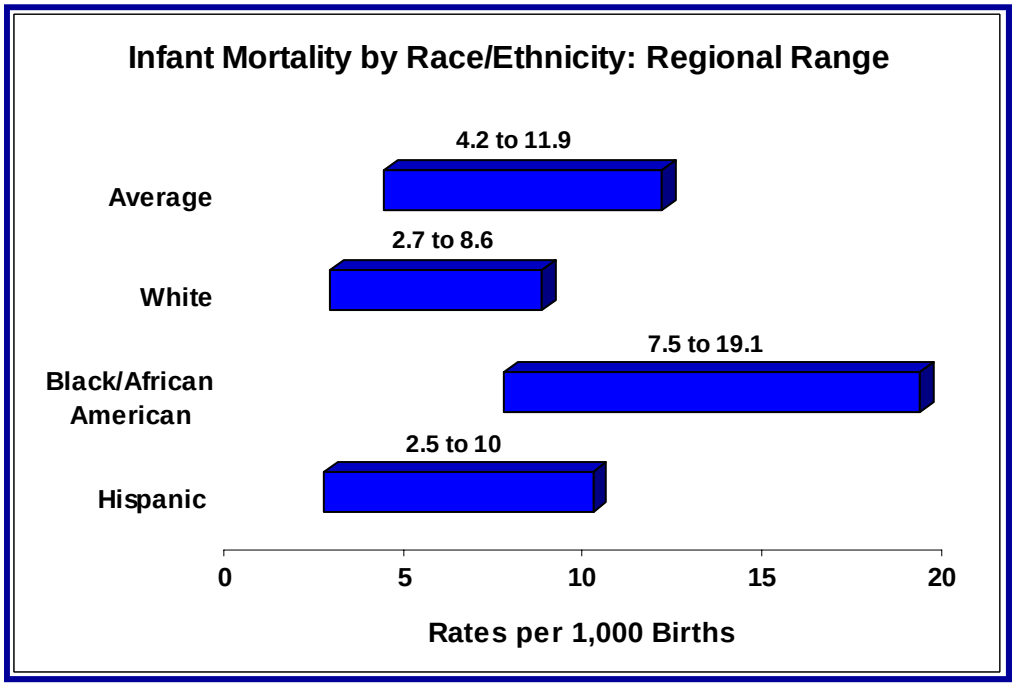
Birth Measures[14]

Timely prenatal care, rates of infant mortality, and percentage low birth weight babies are often used as measures of population health. Prenatal care is a surrogate measure of access to services and is important "… in identifying and mitigating potential risks and helping women to address behavioral factors, such as smoking and alcohol use, that contribute to poor outcomes."[15] Low birth weight contributes to a range of poor health outcomes,[16] and infant mortality is considered reflective of factors such as maternal health, access to medical care, and socioeconomic conditions.[17]

- ***Low Birth Weight—***The percentage of low birth weight babies ranged from a low of 5.4% to a high of 11.5%, with most jurisdictions falling in the 6% range. None of the jurisdictions met the Healthy People 2010 Target of 5%.
- ***Late or no Pre-natal Care—*** The percentage of women receiving late or no prenatal care ranged from 7.5% in the only local jurisdiction to meet the Healthy People 2010 target, to 27% in another jurisdiction. In 4 jurisdictions, more than 20% of women received late or no prenatal care. In 8 of 13 jurisdictions, the percentage of mothers who received late or no prenatal care was higher than that of the U.S.



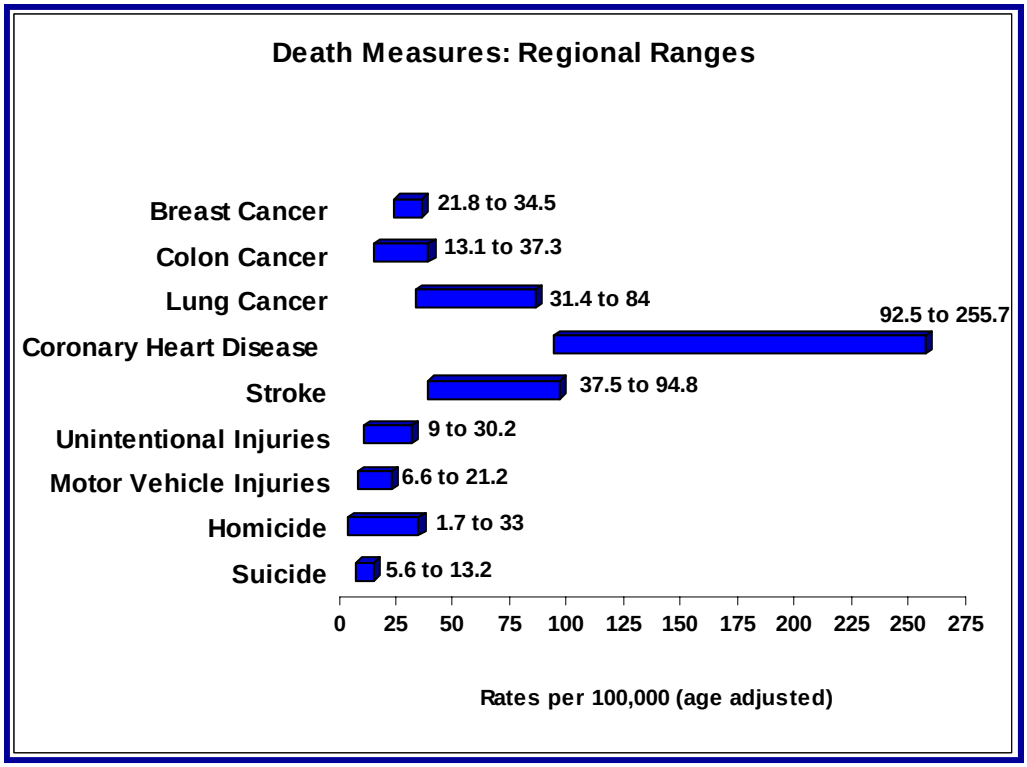
- ***Infant mortality—***Rates in the region range from a low of 4.2 per 1,000 births to a high of 11.9. African American infant mortality in the region exceeded the overall infant mortality rate for all race/ethnicities in the 10 jurisdictions for which data are available, and exceeded the United States rate for births to African American mothers in 4 of 10 jurisdictions for which data was available. However, it should be noted that area jurisdictions generally did better than their peer counties on this measure. Hispanic infant mortality in the region's jurisdictions



was lower than the Hispanic rate for the U.S. in all but 3 of the 10 jurisdictions for which data was available.

Death Measures[18]

The CHS reports focus on nine causes of death addressed in Healthy People 2010: breast cancer, colon cancer, lung cancer, coronary heart disease, stroke, unintentional injuries, motor vehicle injuries, homicide, and suicide.



- ***Breast Cancer*** —Age adjusted death rates from breast cancer range from a low of 21.8 per 100,000 deaths to a high of 34.5 per 100,000 deaths. More than half (7 of 12) jurisdictions for which data was available have rates higher than the United States rate of 25.3 per 100,000. None of the jurisdictions meet the Healthy People 2010 Target of 21.3 per 100,000.
- ***Colon Cancer —***Rates range from a low of 13.1 per 100,000 to a high of 37.3. Six of 13 jurisdictions have rates above that of the United States, 19.1. Two meet the Healthy People 2010 target of 13.7.
- ***Lung Cancer —***Rates range from a low of 31.4 per 100,000 to a high of 84. Five jurisdictions exceed the United States rate of 54.1. Rates in three jurisdictions are lower than the Healthy People 2010 target of 43.3.

- ***Coronary Heart Disease*** **—**Rates range from a low of 92.5 per 100,000 to a high of 255.7. Three jurisdictions have rates that exceed the United States rate of 172. Rates in 9 jurisdictions are below the Healthy People 2010 target of 162.
- ***Stroke*—**Again, there is wide variation across the region, ranging from a low of 37.3 to a high of 94.8 per 100,000. Almost half (6) of the jurisdictions are above the U.S. rate of 53, two are about equal to the U.S. rate, and the remaining five are below the Healthy People 2010 goal of 50.
- ***Unintentional Injuries*** **—** While the age adjusted rates for unintentional injuries are lower than the U.S. rate of 37.3 in the 13 jurisdictions, there is wide variation in the region ranging from a high of 30.2 to a low of 9. Five jurisdictions have rates lower than the Healthy People 2010 goal of 17.1.
- ***Motor Vehicle Injuries*** **—**Rates range from 6.6 per 100,000 to 21.2. Eight of 12 jurisdictions have rates lower than the U.S. of 14.8, and 4 of those have rates lower than the Healthy People 2010 goal of 8.
- ***Homicide*—**Data are available for 9 jurisdictions, and rates range from a low of 1.7 per 100,000 to a high of 33. Three jurisdictions are above the U.S. rate of 6.
- ***Suicide*—**Rates range from 5.6 per 100,000 to 13.2. All jurisdictions exceeded the Healthy People goal of 2010 of 4.8, and 2 had higher rates than the U.S. (10.8).

Adult Prevention Services and Risk Factors for Premature Death[19]

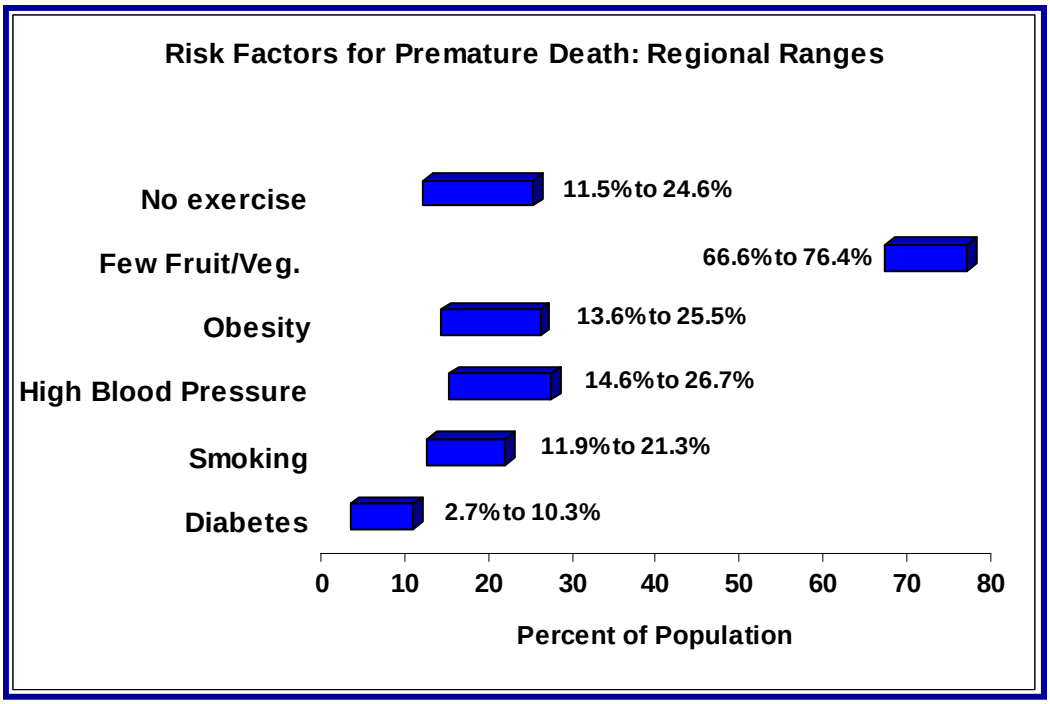
According to the CHS Reports, "the risk of developing certain cancers and suffering fatal consequences from respiratory illnesses can be reduced with the use of various preventive services."[20] Similarly, lack of exercise, poor diet, obesity, smoking, and chronic illnesses increase the risk of premature death.

Morbidity and death rates can be reduced through use of prevention services, healthy eating, consistent physical activity and not smoking.

- ***Use of Adult Prevention Services***
  - Pap: Women who reported having had a pap test in the past three years range from a low of 86.8% to a high of 90.3%, in the 8 jurisdictions for which data are available.
  - Mammography: Women who reported having had a mammogram in the past two years ranges from a low of 79.8% to 88.1%, in the 8 jurisdictions for which data are available.
  - Sigmoidoscopy/Colonoscopy: The percentage of people who reported having some type of protoscopic exam was much lower, ranging from 49.9% to 60.1%, in the 8 jurisdictions for which data are available.

- Vaccines: For adults over 65, 58% to 75.1% of those surveyed reported receiving a flu shot in the past year of the 5 jurisdictions which data are available. 50.3% to 72.8% of adults over 65, in the 4 jurisdictions which data are available, reported receiving a pneumonia vaccine.

- ***Risk Factors for Premature Death***



- Exercise and Diet: In 4 of 10 jurisdictions for which data are available, more than 20% of the adult population surveyed reported no exercise. In 9 jurisdictions for which data are available, at least 66% of adults eat fewer than the recommended number of fruits and vegetables on a daily basis.
- Obesity: In the 10 jurisdictions for which data are available, at least 13.6% of the population reported being obese. In 4 jurisdictions, more than 21% reported being obese
- High Blood Pressure: More than 14% of the population in the 10 jurisdictions for which data are available reported being told by a clinician that they have high blood pressure; in half the jurisdictions, this figure is more than 20%.
- Smoking: The percentage of adults reporting that they were current smokers ranged from 11.9%to 21.3%.
- Diabetes: In the 10 jurisdictions for which data are available, all reported adults being told that they had diabetes, ranging from 2.7% to 10.3%.

Access to Services[21]

The percentage of adults aged 18-64 who lack health insurance range from 11.8% to 25.2%. In 4 of the 13 jurisdictions, more than 20%, or one fifth of the population, lacks health insurance coverage.

Implications for the Region

Improving health requires improving more than health care.

Assuring that all residents of the region have good health requires a commitment to equitable, accessible and quality health care and to creating the conditions that promote health equality and result in community health.

In creating community health, we have come to acknowledge the many and dominant influences in our lives beyond health care that affect our health. Research has shown how race, ethnicity, income, education, and where we live dictate how long and how healthy our lives will be. Thus, truly improving health—actually moving the needle on multiple indicators in a positive direction and sustaining that change—requires addressing the social determinants of health equity, those social and economic policies and conditions that create opportunity for good health.

The social determinants of health have, in recent years, been the subject of intense study by governments, global health organizations, academics, and private foundations. For example, the World Health Organization (WHO) created a special Commission on the Social Determinants of Health which, after years of study, concluded in 2008 that: "The social determinants of health are mostly responsible for health inequities—the unfair and avoidable differences in health status seen within and between countries."[22]

A 2008 Robert Wood Johnson Foundation report, *Overcoming Obstacles to Health*,[23] found that:

- More affluent Americans and their children live healthier lives than middle-class and lower-income American families. Poor, less educated and minority Americans die, on average, up to six years sooner than their wealthier, better educated counterparts;
- Compared with adults in the highest income group, poor adults are three times as likely to have a chronic illness such as asthma or diabetes;
- Compared with college graduates, adults who have not finished high school are four times as likely to be in fair or poor health.

The Robert Wood Johnson Foundation's Commission to Build a Healthier America[24] spent more than a year examining the social determinants of health and, in 2009, issued findings and recommendations to improve health and health equity in the United States. Their recommendations focus on actions that go beyond improving medical care, such as nutrition, physical activity, smoking, early childhood development, healthy places and accountability. They include improving access to healthy foods and increasing opportunities for physical activity, particularly in low-income communities where fresh, nutritious foods and recreational options are limited. The bi-partisan Commission also called for the creation of "healthy communities," in which the development of local policies, programs, and infrastructure planning takes health impact into consideration, and wellness and safety are integrated into every aspect of community life. The data presented in this report illuminate not only the general health status of the jurisdictions of the Washington, D.C. metropolitan region, but also the health inequities that exist here. We know from the data that while the region as a whole is relatively prosperous, there are large pockets of inequality among and within jurisdictions, which research shows also indicate the presence of health inequities.

These and other findings are generally consistent with the community health indicator data for the Washington metropolitan region, which show that Washington area residents in communities where income and education levels are higher and percentages of minorities are lower generally seem to enjoy better health than residents of low-income, less-educated, largely minority communities.

Next Steps

Historically, health policies and public health practices have, all too often, sought to place Band-Aids® on the symptoms of poor health—addressing poor health status through efforts to screen for and prevent specific health problems while also increasing access to medical care. While these efforts are vital to improving and maintaining health, they do nothing to address the root causes of poor health and little to change the status quo.

To fully understand and address these inequities both across the region and within individual jurisdictions will require a number of actions, including;

- Collecting and mapping health data at the neighborhood level, by race/ethnicity, income and other socio-economic factors relevant to health status;
- Understanding those factors in our region that most influence health inequities;
- Understanding current work in our region to address critical health issues and identifying the gaps in service and policy;
- Understanding the health status of the region's children and adolescents;
- Educating our community to advance a broad-based and deep understanding of how fundamental causes of inequality shape community environments and how these environments, in turn, shape health;
- Researching community health models that promote health equity and give greater attention to a prevention oriented approach;
- Working across public, private, non-profit and philanthropic sectors to understand how each can contribute to achieving health equity;
- Having a community conversation to determine what strategies might be applied to improving the overall health of our region; and
- Developing a regional plan of action.

Improving the health of our region is about more than hospitals, doctors and insurance. Achieving a truly healthy region requires a holistic approach that addresses the social determinants of health and creates health equity.

END NOTES:

1. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. http://www.who.int/about/definition/en/print.html
2. A health indicator is "a measure that reflects or indicates, the state of health of a defined population, e.g. the infant mortality rate" - Manual of Epidemiology for District Health Management (WHO - OMS, 1989, p. 202) http://nzdl.sadl.uleth.ca/cgi-bin/library?e=d-00000-00---off-0who--00-0--0-10-0---0---0prompt-10---4-------0-1l--11-en-50---20-about---00-0-1-00-0-0-11-1-0utfZz-8-00&cl=CL1.70&d=HASH2ee3b9cf701d7852364719.17&x=1
3. Data comes from the NCHS Vital Statistics Reporting System, 2001-2003. For some smaller jurisdictions data is based on 1994-2003 or 1999-2003.
4. U.S. Census, American Communities Survey (2005-2007 averages) http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ACS&_submenuId=&_lang=en&_ts=
5. Demographic and Economic Trends in the National Capital Region and their Effects on Children, Youth and Families, Research conducted by Greater Washington Research at Brookings for Venture Philanthropy Partners, January 2009. http://www.vppartners.org/learning/reports/demographics/VPP-Brookings-Trends-Report.pdf
6. *Ibid.*
7. *Ibid.*
8. *Ibid.*
9. *Ibid.*
10. The CHS reports were developed as part of the Community Health Status Indicator Project, a public-private partnership that includes: Centers for Disease Control and Prevention (including NCHS and ATSDR), the National Institutes of Health/National Library of Medicine, the Health Resources Services Administration, the Public Health Foundation, the Association of State and Territorial Health Officials, National Association of County and City Health Officials, National Association of Local Boards of Health, and Johns Hopkins University School of Public Health.
11. "Healthy People 2010." U.S. Department of Health and Human Services. http://www.healthypeople.gov
12. Peer counties are defined by the CHSI Project as "…those counties similar in population composition and selected demographics. Comparison of a county to its peers is thought to take into account some of the factors that make a difference in a community's health…. Strata, or peer groups, were developed with input from an advisory committee composed of Federal, State, and local public health professionals and members of academia for CHSI 2000. The project goal was to develop strata of 20-50 counties each, providing several peers for each county. The relatively large number in each stratum allows counties to choose a few peers that they believe to be most like them." http://www.communityhealth.hhs.gov/Companion_Document/CHSI-Data_Sources_Definitions_And_Notes.pdf
13. Unnatural Causes: Is Inequality Making Us Sick?, California Newsreel. 2008. http://www.unnaturalcauses.org

14. Data from the CHS Reports comes from the NCHS Vital Statistics Reporting System, 2001-2003. For some smaller jurisdictions data is based on 1994-2003 or 1999-2003.
15. Centers for Disease Control and Prevention and Health Resources and Services Administration. “Chapter 16. Maternal, Infant, and Child Health.” *Healthy People 2010.* http://www.healthypeople.gov/document/HTML/Volume2/16MICH.htm#_Toc494699663
16. The World Health Organization and the United Nations Children Fund. “Low birthweight: Country, Regional and Global Estimates.”2004. http://www.who.int/reproductive-health/publications/low_birthweight/low_birthweight_estimates.pdf
17. The Boston Indicators Project. “7.4.1 Infant mortality and birth weight by race/ethnicity Boston.” *The Boston Foundation.* 2009. http://www.bostonindicators.org/indicatorsproject/health/indicator.aspx?id=1848
18. Data are generally based on the national Center for Health Statistics Vital Statistics Reporting System 2001-2003. All rates are per 100,000 persons. Rates are age-adjusted to the year 2000 standard; per 100,000 population. For some smaller jurisdictions data is based on 1994-2003 or 1999-2003.
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