Use of Clinical Preventive Services and Prevalence of Health Risk Factors among Adults Aged 50–64

National and State-Level Racial/Ethnic, Socioeconomic, and Health Insurance Coverage Status Disparities

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AARP Public Policy Institute
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AARP’s Public Policy Institute informs and stimulates public debate on the issues we face as we age. Through research, analysis and dialogue with the nation’s leading experts, PPI promotes development of sound, creative policies to address our common need for economic security, health care, and quality of life.

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Accompanying this report is an interactive website that allows users to customize the data to rank states and examine disparities as well as compare state performance to national averages and national target rates: http://www.aarp.org/State-Preventive-Care-Rankings/.
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EXECUTIVE SUMMARY

This is the first in a series of publications tracking national and state-level data on the use of recommended preventive services and the prevalence of health risk factors among adults aged 50 to 64. It examines the use of four disease screenings, two immunizations, and two composite measures indicating individuals were up-to-date with select clinical preventive services, as well as the prevalence of five risk factors for poor health. The study also identifies the use of these services by, and the prevalence of risk factors among, midlife adults across racial/ethnic groups, income levels, educational attainment, and health insurance coverage status.

Adults in this age group have much to gain from using these preventive services and engaging in healthier behavior, yet many do not, for a variety of reasons explained in this paper. This study highlights the health challenges that many midlife adults face and the underutilization of potentially lifesaving preventive services, and provides a comprehensive picture of critical disparities. The report also offers some policy recommendations that may improve prevention utilization rates and health equity.

In 2009, the Centers for Disease Control and Prevention, AARP, and the American Medical Association identified a set of 14 indicators for evaluating the use of clinical preventive services and the prevalence of health risk factors among adults aged 50 to 64. Thirteen of the 14 indicators are examined in this paper. “Moderate depressive symptoms within the past 2 weeks” is excluded because data are not available for 2010 and later.

Screening Indicators
- Mammogram within the past 2 years
- Pap test within the past 3 years
- Colorectal cancer screening (had home blood stool test within the past year or a colonoscopy or sigmoidoscopy within the past 10 years)
- Cholesterol screening within the past 5 years

Immunization Indicators
- Influenza vaccination within the past year
- Ever had a pneumococcal vaccination among persons at risk

Up-to-date with Select Clinical Preventive Services Indicators
- Women up-to-date with select clinical preventive services (influenza vaccination, mammogram, Pap test, and colorectal cancer screening)
- Men up-to-date with select clinical preventive services (influenza vaccination and colorectal screening)

Risk Factor Indicators
- No leisure-time physical activity within the past month
- Currently smoke

- Binge drinking within the past 30 days
- Currently obese
- Ever had high blood pressure

Ten of these indicators are also included in the most recent set of 10-year health objectives for the nation, Healthy People 2020.

Study Methodology

The analysis is based on 2 years of Behavioral Risk Factor Surveillance Survey data for each indicator. Because not all topics are addressed every year, this report includes the most recently available data, usually 2010 and 2011 combined, but in some instances 2009 and 2010 combined, or 2009 and 2011 combined. Prevalence estimates were determined as mean values for each variable and across varying racial/ethnic groups, income levels, educational attainment, and health insurance status. Results are presented for the United States (50 states and the District of Columbia) and separately for each state.

Results

Preventive Services

- Fewer than one in three women and about one in three men, aged 50 to 64, were up-to-date with select clinical preventive services.
- Of all the clinical services examined in this report, pneumococcal vaccination was the least utilized by midlife adults at risk for pneumococcal disease (individuals who currently smoke, or have diabetes, asthma, or cardiovascular disease).
- Adults aged 50 to 64 with low-incomes, with low educational attainment, and who were uninsured were less likely than their higher income, more educated, and insured counterparts to have received recommended screenings and immunizations.
- Pneumococcal vaccination among persons at risk had a different relationship with income and education than the other preventive services examined. At-risk midlife adults with low-incomes and some college or technical school were most likely to be vaccinated for pneumonia.
- Whites used more preventive services than any other racial or ethnic group.
- The largest disparity in use was between uninsured women and insured women who were up-to-date with select clinical preventive services (10 percent vs. 32 percent, respectively). Over three times more insured women were up-to-date with select clinical preventive services than uninsured women.

Health Risk Factors

- The most prevalent health risk factor for adults aged 50 to 64 was high blood pressure (43.6 percent), followed by obesity (32.7 percent).
- Midlife adults with low-incomes, with low educational attainment, and who were uninsured were more likely to report physical inactivity, smoking, obesity, and high blood pressure than their higher income, more educated, and insured counterparts.
Binge drinking had a different relationship with income and education than the other risk factors examined. Binge drinking was most prevalent among those with high incomes and among college and technical school graduates.

African Americans were the most likely to report risk factors.

Asians were the least likely to report any risk factors.

The largest disparity found was between obesity rates for African Americans and Asians. About four times more African American adults aged 50 to 64 were obese than Asian adults in the same age group (43 percent vs. 11 percent, respectively).

**State Progress**

Two of the 10 Healthy People 2020 target rates examined in this report were met by all states and the District of Columbia.

- All 50 states and the District of Columbia achieved the target of at least 82.1 percent of midlife adults receiving a cholesterol screening within the past 5 years.
- All 50 states and the District of Columbia achieved the target of no more than 24.3 percent of midlife adults reporting binge drinking within the past 30 days.

The majority of states met the target of no more than 32.6 percent of midlife adults reporting no leisure-time physical activity within the past month.

The remaining seven indicators leave much room for improvement—Pap test, influenza and pneumococcal vaccinations, smoking, colorectal cancer screening, mammogram, and obesity (Appendix A).

In particular, five or fewer states met the target rates for Pap test, influenza and pneumococcal vaccinations, smoking, and colorectal cancer screening.

**State Differences**

Differences in the use of preventive services and the prevalence of risk factors varied across states, at times considerably.

Southern states tended to have the highest prevalence of risk factors.

Northeastern states tended to have the highest preventive service utilization rates.

Massachusetts ranked number one for highest rates of utilization for preventive services more often than any other state, potentially reflecting the success of the Massachusetts health care insurance reform law.

Idaho, Mississippi, and Montana were tied for the lowest rankings more often than any other state, reflecting some of the lowest preventive services utilization rates and highest prevalence of risk factors.

**Recommendations**

**Encourage the Use of Patient and Provider Reminder Systems**

One of the evidence-based interventions most commonly recommended by prevention experts is reminder systems for both patients and health care providers.
Reminder systems improve the use of preventive services among all patients, including minorities.

In addition to reminding physicians to deliver screenings and vaccinations, reminder systems can also be used to remind to screen and to provide counseling for tobacco use, obesity, and binge drinking.

Providing incentives for quality care and enhanced health information technology capabilities may increase the use of reminder systems.

### Raise Public Awareness

- It’s essential to raise public awareness about the importance of preventive care, the behaviors that reduce health risks, and the new benefit covering recommended preventive services without cost-sharing.
- Messages should inform midlife adults about the full array of screenings and vaccinations recommended for them, how often they should be obtaining these free services, the benefits of these services, and where to access them.
- Messages should be evidence-based and culturally and linguistically tailored to at-risk or vulnerable populations.

### Integrate Community Health and Clinical Strategies

- Integrating effective community-based and clinical strategies can expand access to and use of preventive services.
- Health care providers can link patients to appropriate evidence-based services in their communities, such as tobacco use quitlines (evidence-based behavioral counseling provided over the phone to support tobacco users interested in quitting) and chronic disease management programs. Likewise, community organizations can link residents with appropriate health care providers for the delivery of recommended preventive services.

### Improve Access to Preventive Services

- Delivering preventive services in highly accessible community settings (e.g., barber shops, work sites, pharmacies, public events, community centers, polling places, and faith-based organizations) increases the use of recommended preventive services, particularly among at-risk populations.
- Delivering multiple preventive services at once, known as “bundling,” is an efficient method for ensuring midlife adults are up-to-date with the full array of preventive services recommended to them.
- Continued federal guidance over the new ACA benefit eliminating cost-sharing for recommended preventive services is needed to avoid hidden fees and ensure consistent implementation.

### More Funding Is Needed to Break Down Barriers

- Adequate funding is needed to support evidence-based initiatives that diminish the barriers that prevent vulnerable populations from living equally healthy lives as their more affluent counterparts, such as developing safe spaces for active living and encouraging business and community development.
INTRODUCTION

This is the first publication in a series tracking national and state-level disparities in the use of preventive services and the prevalence of risk factors. It examines the use of four disease screenings, two immunizations, and two composite “up-to-date” measures, as well as the prevalence of five risk factors. Together, these metrics provide an indication of the use of effective disease prevention services among adults aged 50 to 64 and the significant challenges to health that many in this age group face. This study also examines these 13 indicators across racial/ethnic groups, income levels, educational attainment, and health insurance coverage status and across all 50 states and the District of Columbia. Ten of these indicators are also included in the most recent set of 10-year health objectives for the nation, Healthy People 2020. This paper demonstrates state progress on meeting these Healthy People 2020 targets. Further, it explores the impact of the Affordable Care Act (ACA) on preventive service utilization among adults aged 50 to 64. Evidence-based strategies to increase uptake of preventive services and reduce disparities are recommended. A promising new model for integrating prevention efforts of health care providers and community organizations is discussed.

This paper and its companion interactive website (http://www.AARP.org/State-Preventive-Care-Rankings/) are intended to serve as resources for policy makers, public health professionals, clinicians, and other stakeholders as they work to make effective screenings, immunizations, and health counseling more accessible to midlife adults, particularly to those most at risk for underutilization of preventive services and risk factors.
BACKGROUND

In 2011, there were more than 60 million adults between the ages of 50 and 64 in the United States, about 20 percent of the population. For this age group, maintaining a healthy lifestyle along with regularly obtaining recommended screenings and immunizations are crucial to healthy aging. Exercising regularly, consuming a healthy diet, not using tobacco, and drinking alcohol in moderation are fundamental to preventing or delaying the onset of chronic conditions such as heart disease, cancers, stroke, and diabetes—the leading causes of death and disability in the United States. The prevalence of chronic conditions in the United States is rising rapidly with the aging of the population. Chronic conditions are expensive to manage and total health costs increase with the increased number of chronic conditions. More than 81 million Americans are projected to have more than one chronic condition by 2030. Total costs associated with the treatment of chronic conditions are expected to rise from $1.3 trillion in 2003 to $4.2 trillion by 2023. Chronic conditions currently account for 83 percent of total U.S. health spending, while prevention accounts for only 2 to 3 percent of total U.S. health spending.

Clinical Preventive Services are Crucial in Three Stages of Disease Development

1. Primary prevention is aimed at preventing the onset of disease (for example, vaccinations and regular physical activity).

2. Secondary prevention is aimed at treating disease after its onset, but before the disease is clinically evident or causing serious complications (for example, colorectal cancer screening).

3. Tertiary prevention is aimed at treating a disease once it is established but before it has made its maximal impact (for example, vision screening for eye disease in diabetics).

Screening Guidelines and Recommendations

- The USPSTF is an independent panel of primary care providers who review the latest scientific evidence for clinical preventive services and develop recommendations for primary care clinicians and health systems in “The Guide to Clinical Preventive Services.”

- ACIP is an expert panel selected by the Secretary of the U.S. Department of Health and Human Services to issue recommendations on reducing vaccine preventable diseases and standards for routine administration of vaccines to children and adults.

- The Task Force for Community Preventive Services is an independent body composed of public health and prevention experts appointed by the Director of the Centers for Disease Control and Prevention (CDC). The task force conducts systematic reviews and issues recommendations based on its findings to help inform decision making about policy, practice, and research.
Clinical preventive services enable illnesses to be detected and treated early, which typically leads to better health outcomes. National bodies—such as U.S. Preventive Services Task Force (USPSTF), the Advisory Committee on Immunization Practices (ACIP), and the Task Force for Community Preventive Services—have agreed on and recommended preventive services for midlife adults. It has been estimated that 25,000 to 40,000 deaths per year among Americans under the age of 65 could be prevented through optimal use of nine recommended clinical preventive services. Yet analysis for this report reveals that fewer than one in three women and about one in three men, aged 50 to 64, are up-to-date with a select set of immunizations and disease screenings recommended for their age and gender. Underutilization of preventive services among midlife adults is an even greater problem for those of low socioeconomic status. This group is not only less likely to use recommended clinical preventive services, but also less likely to engage in healthy behaviors than their more educated and higher income counterparts. Racial and ethnic minorities, the uninsured, and people who live in rural areas are also less likely to access preventative services and are more likely to experience risk factors for poor health.

**Why Focus on Promoting Prevention for 50- to 64-year-olds?**

- Midlife adults who receive recommended preventive services and engage in healthy behaviors are more likely to remain healthy and function independently in old age. Yet the majority of midlife adults are not up-to-date with select preventive services recommended for their age and gender. In addition, about one-third of adults aged 50 to 64 are obese, and more than one-quarter report no leisure-time physical activity at all in the preceding month.

- Costly chronic conditions and poor health start to become more prevalent among this age group. More than 70 percent of adults aged 50 to 64 have at least one chronic health condition compared with 35 percent of adults aged 18 to 45. The USPSTF recommends that regular screenings for breast and colorectal cancer begin at age 50.

- Policy makers have worked successfully to ensure that children are up-to-date with lifesaving clinical preventive services by requiring children to receive recommended childhood immunizations before they enter school. Medicaid programs are required to cover preventive services for children, but generally are not required to cover such services for adults. Medicare has long covered immunizations at no cost to seniors. In contrast, prior to the ACA, there were no similar policies in place to ensure that adults under the age of 65 also received highly recommended immunizations and screenings. As such, adults aged 50 to 64 are typically less likely to receive recommended preventive services than children or seniors. For example, during the 2011–2012 influenza season, fewer adults aged 50 to 64 were vaccinated for influenza (42.7 percent) than compared with children aged 5 to 12 (54.2 percent) and adults aged 65 and older (64.9 percent).

**Indicators**

Based on USPSTF, ACIP, and the Task Force for Community Preventive Services recommendations, the CDC, AARP, and American Medical Association (AMA) identified 14 indicators for monitoring clinical preventive services utilization and prevalence of risk factors among adults aged 50 to 64. Thirteen of the 14 indicators are examined in this paper. “Moderate depressive symptoms within the past two weeks” is excluded because data is not available for 2010 and later.

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<td>▪ Pap test within past 3 years</td>
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<td></td>
<td>▪ Colorectal cancer screening (had home blood stool test within past year or colonoscopy or sigmoidoscopy within past 10 years)</td>
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<td>▪ Cholesterol screening within past 5 years</td>
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<td><strong>Immunizations</strong></td>
<td>▪ Influenza vaccination within past year</td>
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<td>▪ Ever had a pneumococcal vaccination among persons at risk</td>
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<td>▪ Men up-to-date with select clinical preventive services (influenza vaccination and colorectal screening)</td>
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<td><strong>Risk Factors</strong></td>
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<td>▪ Currently smoke</td>
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<td>▪ Binge drinking within past 30 days</td>
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<td></td>
<td>▪ Currently obese</td>
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<td>▪ Ever had high blood pressure</td>
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Benefits and Costs Associated with Preventive Services

Effective clinical preventive services can help people live longer, improve health, increase productivity, and reduce illness and disability. Cost-effectiveness measures the cost of producing a unit of health, such as a quality-adjusted life year (QALY), which is a measurement of life that accounts for both years of life lost and quality of life lost due to disease and injury. The lower the cost spent per QALY, the more valuable or cost-effective the service. A service is cost saving when it saves more money than it costs. Most preventive services are cost-effective rather than cost saving. However, the National Commission on Prevention Priorities (NCP) found 6 of the 25 recommended preventive services that they examined to be cost saving, including counseling to help tobacco users to quit and screening adults for and counseling adults about alcohol abuse. Services are generally considered to be reasonably cost-effective if they cost less than $50,000 per QALY. All of the recommended preventive services in this report that were examined by the NCPP are in this reasonably cost-effective range. Mammograms, Pap tests, and cholesterol screenings were found to cost less than $50,000 per QALY. Colorectal cancer screening and influenza vaccination are even more cost-effective and were found to cost less than $15,000 per QALY.

The impact of delivering recommended preventive services on overall population medical costs and savings is not well understood, although a few studies have made inroads in estimating their relationship. Maciosek and colleagues estimate that increasing the use of 20 recommended preventive services and immunizations from rates observed
in 2006 to a 90 percent utilization rate would result in more than 2.5 million QALYs gained annually and save a total of $3.7 billion. A number of studies focus on economic loss of productivity due to illness and disability among midlife adult workers and estimate substantial losses; it is estimated that 48 million hours of productivity are lost per week, totaling about $49 billion per year. A Commonwealth Fund survey of older Americans revealed that among Medicare beneficiaries with chronic conditions, those who were previously uninsured reported significantly more hospitalizations and total medical costs than did those who were previously insured. Lack of access to care, including preventive care, appear to lead to more expensive care and a higher cost burden on Medicare in later years.

Beyond measuring costs in terms of dollars and cents, the harms associated with a preventive service must be carefully considered. Recommendations issued by the USPSTF and ACIP are considered to be the “gold standard” of harm-benefit analyses. A preventive service is not recommended by the USPSTF or ACIP if the risk of consequences outweighs the benefits. For example, there are several potential harms from mammograms including the risk of radiation exposure and the potential for a false positive—reporting the disease is present when it is not, which may lead to unnecessary, costly, and harmful care. There is also the risk of overdiagnosis—treatment of cancer that would not become clinically apparent during a woman’s lifetime—as well as unnecessary earlier treatment that would have become clinically apparent but would not have shortened a woman’s life. The USPSTF weighs the potential for harms versus the benefits of lives saved from early detection and issues its recommendation for biennial screening in women aged 50 to 74.

Racial/Ethnic, Socioeconomic, and Health Insurance Coverage Status Disparities in the Use of Preventive Services and Risk Factors

Achieving health equity is a major national concern and is one of the overarching goals for Healthy People 2020. The causes of health inequalities are complex and closely linked with social determinants of health. The landmark 2002 Institute of Medicine (IOM) report, “Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care,” concluded that racial and ethnic disparities are pervasive across a wide range of health care services and illnesses, and are partially explained by socioeconomic factors.

In 2007, the Robert Wood Johnson Foundation released a report that draws the following conclusions about gaps in the use of preventive services:

- African American and Hispanic older adults are less likely than white older adults to report receiving pneumococcal and influenza vaccinations. The African American–white gap in receipt of influenza vaccination remains, even after controlling for differences in health insurance coverage status and socioeconomic status. By contrast, differences in health insurance coverage status and socioeconomic status appear to explain the gap in influenza rates between Hispanics and whites.
- Racial and ethnic differences in breast and cervical cancer screenings are small or nonexistent.
- Spanish-speaking Hispanics have lower rates of influenza vaccination, breast cancer screening, and colorectal cancer screening than English-speaking Hispanics.
The CDC, AARP, and AMA identified the following racial/ethnic and health insurance coverage status–based gaps in use of preventive services for adults aged 50 to 64:\(^3\)

- Insured midlife women are much more likely to be screened routinely for cervical cancer than uninsured midlife women.
- Hispanic midlife adults are less likely to receive a colorectal cancer screening than white and African American midlife adults.

Risk factors, such as tobacco use, sedentary lifestyle, poor nutrition, obesity, and high blood pressure are more prevalent among racial and ethnic minorities, those of low socioeconomic status, and the uninsured.\(^3\)

- African American midlife women are more likely to report no leisure-time physical activity within the past month than white, Asian, and Hispanic midlife men and women.
- American Indian/Alaska Native adults are more likely to smoke than any other racial/ethnic groups.\(^4\)
- African American adults are more likely to be obese than Hispanic and white adults.\(^5\)
- Racial and ethnic disparities in hypertension (high blood pressure) are not fully explained by socioeconomic status and other predictors of hypertension. Hypertension is more prevalent among African American midlife adults than Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native midlife adults.

Binge drinking has a different relationship with income and education than other risk factors. Unlike physical inactivity, smoking, obesity, and hypertension, binge drinking is least prevalent among those with low-income and low education. However, low-income adults and those who did not graduate from high school consume more drinks when they do binge drink than high-income and well-educated adults. Whites and Hispanics are significantly more likely to binge drink than any other racial/ethnic group.\(^6\)

**Barriers to Receipt of Clinical Preventive Services**

Barriers to receipt of clinical preventive services are multifaceted and span structural, community, organizational, and personal levels. As such, everyone has a responsibility in ensuring midlife adults receive recommended preventive services—the government, health care providers, community organizations, insurers, and patients.

**Barriers to Maintaining a Healthful Lifestyle**

Behavior change, such as quitting smoking and improving diet and exercise habits, can be very difficult. These behavior changes are even more challenging for individuals living in low-income neighborhoods. There is growing evidence that social, economic, and environmental conditions where people live, work, learn, play, and age have an even greater impact on health and life span than what happens within our health care system. It has been suggested that health care accounts for only 10 percent of premature deaths, whereas social circumstances, environmental exposure, and behaviors account for about 60 percent. Genetic predisposition accounts for the remaining 30 percent.\(^7\) People who live in low-income neighborhoods tend to be surrounded by more fast food restaurants, liquor stores, polluting industries, and waste.\(^8\) They are less likely to have supermarkets
## Fundamental Barriers to Receipt of Clinical Preventive Services

<table>
<thead>
<tr>
<th>Type</th>
<th>Barrier</th>
</tr>
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<tbody>
<tr>
<td>Structural</td>
<td>The U.S. health care system tends to focus on treating disease and less so on preventing disease, as evidenced by the limited investment in prevention as well as the underutilization of preventive services. The top reasons cited by midlife and older adults for not receiving clinical screenings or vaccinations in a recent nationally representative survey had to do with the costs of these services. The ACA seeks to address this barrier by eliminating out-of-pocket costs in non-grandfathered health plans for recommended preventive services. Uninsured people are less likely to receive preventive care, are more likely to be hospitalized for preventable conditions, and are more likely to die in the hospital than those with insurance. More than 9 million adults aged 50 to 64 were uninsured in 2011. Minorities and those of low socioeconomic status are much more likely to be uninsured. In 2011, approximately 1 in 3 Hispanics aged 50 to 64 and 1 in 5 African Americans aged 50 to 64 were uninsured compared with 1 in 10 whites in the same age group. Individuals who earn less than 100 percent of the federal poverty level (FPL)—more than a third of uninsured midlife African Americans and about a quarter of uninsured midlife Hispanics—are at risk of not having access to health coverage if they live in a state that does not elect to expand Medicaid. Generally, provider reimbursement is not designed to reward quality or patient outcomes.</td>
</tr>
<tr>
<td>Community</td>
<td>No single entity at the community level is responsible for ensuring wide-scale delivery of all recommended preventive services. Many health care providers do not use systems to remind patients when they are due for a service or remind themselves to administer the service when it is due, or make appropriate referrals and follow up. Health care providers are often not appropriately trained to effectively counsel patients to change behavior and improve compliance with appropriate medication. Health care providers might not be up-to-date on recommended guidelines for clinical preventive services.</td>
</tr>
<tr>
<td>Organizational</td>
<td>A common reason for not receiving recommended preventive services is inconvenience. Typically, patients have to visit multiple health care providers (e.g., primary care physician, gynecologist, gastroenterologist, pulmonologist, geriatrician, and cardiologist) to secure the full array of recommended preventive services. Scheduling and attending all of these appointments is time-consuming and often requires taking time away from work or family. Midlife adults are often unaware of preventive services recommended for their age, gender, and risk factors. In addition, they may not think of themselves as at risk. Access to preventive services may be more difficult to obtain for those who are unable to take time off work, those who live in a rural area due to lack of public transportation, and those with limited English proficiency due to linguistic or cultural barriers, or both. Sociocultural factors play a role, including prohibitive health beliefs (e.g., misperception that vaccines will cause severe illness and belief that the service is unnecessary), distrust of health care providers, health-seeking behaviors, and low health literacy. Some preventive service procedures are time-consuming, require advance preparation, or may be unpleasant. For example, patients are often required to refrain from eating solid food the night before a colonoscopy.</td>
</tr>
<tr>
<td>Personal</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

stocked with healthier varieties of food and beverages, and safe green spaces with walking and bike paths.45 A study found that, on average, the fruits and vegetables available in poor neighborhoods are of significantly lower quality than the produce available in affluent neighborhoods. It is also typically more expensive to eat healthfully.46 In addition, a CDC study found that those who perceived their neighborhood to be unsafe were less likely to be physically active.47 Finally, minority neighborhoods tend to have a higher concentration of tobacco and alcohol advertisements.48 These kinds of community conditions make it challenging for people to maintain healthy behaviors. Given the overwhelming evidence that disadvantaged populations face greater barriers to maintaining a healthful lifestyle, it is not surprising that life expectancy for poor adults is 6 years shorter than for upper-middle class adults.49

**The Impact of the ACA on Preventive Care for Adults Aged 50–64**

U.S. health care spending is higher than any other nation—nearly twice that of the Organization for Economic Cooperation and Development average in 2010.50 Because the U.S. health care system remains the most expensive in the world, the prevalence of preventable conditions is rising, and preventive services remain underutilized, more attention needs to shift toward promoting prevention and wellness which could potentially lower national health expenditures. The ACA took a number of steps designed to improve prevention and health promotion. Among them are the creation of a grant...
program to enhance quality of care at community health centers, a national prevention and health promotion strategy, and a fund for evidence-based prevention, wellness, and public health activities. Arguably the most significant ACA provision designed to increase use of preventive services is the requirement that all non-grandfathered plans (plans effective after the ACA was signed on March 23, 2010, or plans that existed before the ACA, but lost their grandfathered status at renewal) provide coverage without cost-sharing for USPSTF recommended screenings, ACIP recommended immunizations, and preventive care services for women and children recommended by Health Resources and Services Administration. This provision effectively removes all cost-sharing—such as coinsurance, copayments, and deductibles—for recommended preventive services. In addition, Medicaid programs that cover optional diagnostic services for adults are required to provide coverage for recommended preventive services. The federal government pays an additional 1 percent of the cost of those recommended preventive services if they are provided without cost-sharing.

The ACA also increases access to care including preventive services through changes to insurance market rules, creation of state-based health care exchanges, health insurance subsidies for the poor, and enhanced federal funding for states that elect to expand their Medicaid programs to poor, childless adults. Prior to the ACA, adults with preexisting conditions and childless adults who were not covered through their employer and could not afford health insurance in the individual market often lacked coverage. Starting in 2014, insurers are prohibited from turning away applicants with preexisting medical conditions or charging higher premiums to sicker people. With these changes, the ACA is projected to reduce racial and ethnic disparities in health coverage.51

Some components of the ACA were modeled after the Massachusetts health care insurance reform law including state-based health insurance exchanges, health insurance subsidies for low-income families and individuals, and assistance with paying for preventive services. Research examining the trend in use of preventive services among Massachusetts residents, including those aged 50 to 64, found that use of preventive services increased significantly following the implementation of the health care insurance reform law.52,53 As such, the ACA is expected to not only increase coverage for millions of Americans and reduce racial and ethnic disparities in health coverage, but also increase use of preventive services, particularly in the states adopting the ACA’s Medicaid expansion.
SUMMARY OF RESULTS

Use of Preventive Services and Prevalence of Risk Factors across Social Determinants of Health

This report reviewed the use of preventive services and the prevalence of risk factors in all 50 states and the District of Columbia. Despite overwhelming evidence that preventive care can avert or delay the onset of debilitating disease, our report finds that fewer than one in three women and about one in three men, aged 50 to 64, were up-to-date with select clinical preventive services recommended for their age and gender. Adults aged 50 to 64 with low-incomes, with low educational attainment, and who were uninsured were less likely than their higher income, more-educated, and insured counterparts to have received recommended screenings and immunizations. Conversely, at-risk midlife adults (smoke currently or have diabetes, asthma, or cardiovascular disease) with low-incomes and some college or technical school were most likely to be vaccinated for pneumonia.

Consistent with previous research, the data also show that whites used more preventive services than any other racial or ethnic group. Specifically, whites were more likely than any other racial or ethnic group to receive influenza vaccinations and colorectal cancer screenings, and to be up-to-date with select clinical preventive services.

Of all the clinical services examined in this report, pneumococcal vaccinations were the least utilized by at-risk midlife adults (38.1 percent). The most prevalent risk factors for adults aged 50 to 64 were high blood pressure (43.6 percent) and obesity (32.7 percent). Both risk factors increase the risk of coronary heart disease, heart attack, and stroke. Obesity also increases the risk of type 2 diabetes, certain kinds of cancers, high blood pressure, high cholesterol, liver and gallbladder disease, osteoarthritis, respiratory problems, infertility, and mental health conditions.

Similar to the findings for preventive services, there were also large socioeconomic and health insurance coverage status–based gaps in prevalence of risk factors. Specifically, adults aged 50 to 64 with low-incomes, with low educational attainment, and who were uninsured were more likely to report physical inactivity, smoking, obesity, and high blood pressure than their higher income, more educated, and insured counterparts. Conversely, binge drinking was most prevalent among those with high incomes and college or technical school graduates.

The data also showed large racial/ethnic-based gaps in prevalence of risk factors. For all five risk factors—no leisure-time physical activity within the past month, smoking, binge drinking within the past 30 days, obesity, and high blood pressure ever—Asians were the least likely to report any risk factors. African Americans were the most likely to report risk factors.

Largest Disparities

Of all the indicators analyzed in this report, the largest disparity found was between obesity rates for African Americans and Asians. The share of African American adults aged 50 to 64 who were obese was nearly 300 percent greater than the share of Asian adults in the same age group who were obese (43 percent vs. 11 percent). Disparities in the prevalence of the remaining risk factors—no leisure-time physical activity, smoking,

binge drinking, and high blood pressure ever—were to some extent smaller but still substantial, particularly across racial/ethnic groups, educational attainment, and income levels.

Of all the preventive services analyzed in this report, the largest disparity in use was between uninsured women and insured women who were up-to-date with select clinical preventive services. The share of insured women aged 50 to 64 who were up-to-date with select clinical preventive services was more than three times greater than the share of uninsured women in the same age group who were up-to-date with select clinical preventive services (32.8 percent vs. 10 percent; Appendix C). Racial/ethnic, socioeconomic, and health insurance coverage status–based gaps in use of the remaining preventive services—mammogram, Pap test, colorectal cancer and cholesterol screenings, and influenza and pneumococcal vaccinations, and men up-to-date with select preventive services—were a bit smaller, but still considerable. The largest disparities in the use of preventive services were between the uninsured and insured, but there were still sizable disparities across racial/ethnic groups, educational attainment, and income levels.

State Progress on Achieving Healthy People 2020 Target Rates for the 50–64 Population

The data indicate that 2 of the 10 Healthy People 2020 target rates examined in this report were met by all states and the District of Columbia for the 50- to 64-year-old population. All 50 states and the District of Columbia achieved the target rates of at least 82.1 percent of midlife adults receiving cholesterol screening within the past 5 years and no more than 24.3 percent of midlife adults reporting binge drinking within the past 30 days. Forty-four states met the target of no more than 32.6 percent of midlife adults reporting no leisure-time physical activity within the past month. However, the remaining seven indicators—Pap test, influenza and pneumococcal vaccinations, smoking, colorectal cancer screening, mammogram, and obesity—leave room for much improvement (Appendix A). In particular, five or fewer states met the target rates for Pap test, influenza and pneumococcal vaccinations, smoking, and colorectal cancer screening.

Use of Preventive Services and Prevalence of Risk Factors across States

Differences in the use of preventive services and the prevalence of risk factors varied across states, at times considerably. For example, the largest disparity of all the indicators across states was between the binge drinking rates in Tennessee and Wisconsin. About 237 percent more adults aged 50 to 64 living in Wisconsin reported binge drinking within the past 30 days than their counterparts living in Tennessee (18.3 percent vs. 5.4 percent). The gaps between the highest- and lowest-ranking states across the remaining risk factors ranged from a 65 percent difference to a 264 percent difference. The gaps between the highest- and lowest-ranking states across all preventive services ranged from a 10 percent difference to a 40 percent difference. Southern states tended to have the highest prevalence of risk factors. Northeastern states tended to have the highest preventive service utilization rates. Idaho, Mississippi, and Montana were tied for the lowest-ranking state more often than any other state, reflecting some of the lowest preventive service utilization rates and highest prevalence of risk factors in the nation. Massachusetts ranked number one for four of the eight preventive services analyzed in this report, which is more often than any other state.
Massachusetts residents aged 50 to 64 utilized the most preventive services in the
nation. Specifically, midlife Massachusetts residents have the highest preventive services
utilization rates in the nation for mammograms, colorectal cancer screenings, and
cholesterol screenings; and the most women up-to-date with select clinical preventive
services. As for the remaining preventive services indicators, Massachusetts residents had
the second-highest utilization rates for Pap tests and influenza and pneumococcal
vaccinations. The state also had the third-highest rate of men up-to-date with select
clinical preventive services. This is not surprising given that Massachusetts passed health
care reform in 2006 designed to provide near-universal health insurance coverage for
state residents. Following Massachusetts’ health reform, the uninsured rate in the state
decreased from 10.9 percent among non-elderly in 2006 to only 6.3 percent of non-
elderly in 2010.56 By contrast, the national uninsured rate since 2006 has continued to
rise. The insured rate among Massachusetts adults aged 50 to 64 is also the highest in the
nation; 95.4 percent were covered in 2011—which is 10 percentage points higher than the
national average for this age group.
RECOMMENDATIONS

The goals of the triple aim—higher quality care for individuals, improved health for populations, and care that is affordable—are becoming widely accepted as worthy goals for transforming our health care system. Achieving the goal of better population health requires all levels of government to identify disparities in the use of recommended preventive services among midlife adults in both public- and private-sector health insurance programs, and implement evidence-based strategies to eliminate them. A number of interventions proven to increase the use of preventive services have been identified by the Task Force for Community Preventive Services, an independent body composed of public health and prevention experts who conduct systematic reviews of evidence and issue recommendations based on their findings in “The Guide to Community Preventive Services” (see Appendix B for a comprehensive list of relevant interventions).

Encourage the Use of Patient and Provider Reminder Systems

One of the interventions most commonly recommended by the task force for increasing preventive services is reminder systems for both patients and providers. Alerting patients through letters, postcards, or phone calls when they are due for screenings and vaccinations increases mammograms, Pap tests, colorectal cancer screenings, and recommended immunizations. Systems that alert providers or their staff when patients are due or overdue for recommended preventive services also increase recommended screenings and vaccinations. Provider reminders can be provided through a variety of methods, such as notations in patients’ charts, emails, standardized checklists, computer databases, or registries. For example, immunization information systems are confidential computerized databases that record all immunization doses administered and remind patients and providers when a vaccination is due—this system has been found to increase vaccinations. In addition, reminder systems can be used to remind health care providers to screen and provide counseling for tobacco use, obesity, and binge drinking. Provider reminder systems paired with efforts to educate providers to identify and intervene with tobacco-using patients increase screening, counseling, and cessation. Another benefit of reminder systems is that they can improve the use of preventive services among minority patients. Reminder systems can be used in various health care delivery systems, such as private practices, managed care organizations, hospitals, or community health clinics.

Despite the proven effectiveness of reminder systems in increasing the uptake of essential preventive services and tobacco cessation, they are not widely utilized. Many providers lack funding and external quality systems to encourage them to make financial investments in the resources required to implement reminder systems. Schmittdiel and colleagues found that provider organizations that use provider reminder systems are more likely to engage in outside reporting of quality data, receive higher reimbursement and public recognition for quality, and have enhanced health information technology (HIT) capabilities. Therefore, offering incentives for quality and enhanced HIT capabilities may help to increase the use of provider reminder systems. In addition, increasing HIT capabilities has the potential to improve the quality, efficiency, coordination, and patient-centeredness of care. The ACA requires the Centers for Medicare and Medicaid Services to reform its reimbursement methods to reward quality outcomes and value. Medicare could lead the private sector in developing quality-based payment systems. Such payment reforms are essential to achieving the goal of affordable quality care. As we move toward
quality-based payment systems, providers will need to take steps, such as implementing reminder systems, to meet quality standards, which could improve prevention.

**Raise Public Awareness**

Another equally important step toward achieving improved population health is to raise public awareness about the importance of preventive care, the behaviors that reduce health risks, and the new ACA benefit covering recommended preventive services without cost-sharing. Such educational campaigns should be evidence-based and culturally and linguistically tailored to populations at risk for underutilization of preventive services and increased risk factors. An innovative approach would be for community organizations and clinicians to partner to inform midlife adults about the full array of screenings and vaccinations recommended for them, how often they should be obtaining these free services, the benefits of these services, and where to accesses them. Typically, preventive services are promoted through fragmented efforts focused on one specific service at a time, rather than sending aligned messages about which screenings and vaccinations are recommended by age and gender.

**Integrate Community Health and Clinical Strategies**

Integrating effective community-based and clinical strategies can expand access to and use of recommended preventive services. Collaborative care between community health and clinical organizations is particularly important for increasing the use of recommended preventive services among underserved populations. The majority of health management takes place outside of the health care system and is up to the patient. However, the patient may lack the knowledge, health literacy level, skills, and social support necessary to effectively manage their condition(s). Some diseases, such as diabetes, require continual diligence and behavior change. Patients who are inadequately managing their disease(s) may benefit from being linked to appropriate and evidence-based community education and support programs. In addition to appropriately counseling and treating their patients, health care providers can refer patients to relevant community-based services, such as community quitlines (evidence-based behavioral counseling and support to help tobacco users interested in quitting over the phone) and chronic disease management programs. Likewise, community organizations can link community members to appropriate health care providers for recommended preventive services.

**Improve Access to Preventive Services**

Another evidence-based recommendation for communities is to deliver preventive services in highly accessible community settings, such as barbershops, work sites, pharmacies, public events, community centers, polling places, and faith-based organizations. Delivery of preventive services in nontraditional and creative settings can help to reach the most vulnerable populations who otherwise may not have received preventive services. For example, Vote & Vax developed a network of immunizers who deliver influenza vaccinations at polling places on and around Election Day. During presidential election years, more than 120 million Americans turn out to the polls. About two-thirds of voters are aged 50 and older. In 2008, Vote & Vax provided influenza coverage to 21,000 people in a single day. About half of those immunized were not regular influenza vaccination recipients. More than half of African Americans and
Hispanics immunized were not regular recipients; 60 percent of African Americans and 65 percent of Hispanics reported not being regular recipients of an influenza vaccination.66

Collaborative care in convenient community settings can also focus on “ bundling” multiple preventive services. This is an efficient approach to ensuring that midlife adults are up-to-date with the full array of recommended preventive services. During the past decade, several promising models have emerged with the aim of integrating community programs and clinicians to increase the use of multiple recommended preventive services.67 One exemplary model was developed by Sickness Prevention Achieved through Regional Collaboration. Its success in increasing the use of preventive services has been documented.68 This model seeks to deliver bundled recommended preventive services and follow-up care at convenient community sites. The delivery is coordinated by a “convening agency” that is responsible for fostering strong partnerships between health care providers and community organizations.69

It is essential to ensure that the ACA provision removing all cost-sharing for recommended preventive services in non-grandfathered health plans is properly implemented by insurers and that patients are, in fact, receiving recommended preventive services free of charge as the law intended (e.g., when the primary purpose of an office visit is the delivery of the recommended preventive service). There are already reports that many asymptomatic adults who received cancer screenings were billed for their screening when they should not have been. For example, some patients undergoing colonoscopies have reported unexpected costs for polyp removal (a routine procedure during screening) and administration of anesthesia, which can be a rather high cost, particularly if the anesthesiologist is out-of-network.70,71 Further federal guidance on the implementation of the new preventive care benefit, including clarification of the definition of covered services, who should receive them, and when, was recently provided by the Departments of Health and Human Services, Labor, and Treasury through interim final rules. Answers to frequently asked questions may be found on the Center for Consumer Information and Insurance Oversight’s website. One of the answers to the frequently asked questions clarifies that patients should not be subject to cost-sharing for the removal of polyps during a colonoscopy. However, the issue of cost-sharing for anesthesiologists still needs to be addressed. Ongoing federal efforts providing clarity over the implementation of this new benefit, as intended, is critical.

More Funding to Break Down Barriers

Another recommendation to achieve the goals of better population health and health equity is to adequately fund evidence-based initiatives that help remove barriers preventing vulnerable populations from living equally healthy lives as their more affluent counterparts, for example, redesigning distressed neighborhoods, amending zoning regulations, providing tax incentives to increase access to healthy foods and quality health care, developing safe spaces for active living, and encouraging business and community development.72
CONCLUSION

These findings demonstrate that the underutilization of preventive services and the high prevalence of risk factors remain significant public health concerns for midlife adults, particularly in certain states. Racial and ethnic minorities, the uninsured, and those of low socioeconomic status are receiving even fewer recommended preventive services and experiencing more risk factors. The degree to which the ACA will be able to increase the utilization of recommended preventive services as well as enhance the priority placed on preventive care and health equity remains to be seen. Based on analysis of the Massachusetts health care reform experience for adults aged 50 to 64, it is expected that the use of preventive services will increase, particularly in the states that expand their Medicaid program eligibility to include poor, childless adults. However, more could be done, such as encouraging providers to use reminder systems; increasing awareness of preventive services recommended for midlife adults and the new benefit eliminating cost-sharing for these recommended services; fostering collaborative care between community health and clinical organizations; delivering multiple preventive services in highly accessible community settings; ensuring correct and consistent implementation of the removal of cost-sharing for recommended preventive services; and increasing funding for evidence-based initiatives that help remove barriers that preclude vulnerable populations from living healthy lives. Increases in rates of utilization for recommended preventive services and uptake of healthy behaviors will reduce the risk of premature deaths and avoidable illnesses. It is also hoped that increases in insurance coverage and the use of recommended preventive services among midlife adults will help to reduce health disparities and Medicare spending growth rates.
NATIONAL PREVENTIVE SERVICES UTILIZATION RATES

Breast Cancer Screening

Indicator: Percent of women who have received a mammogram within the past 2 years

Importance: Breast cancer is the third-leading cause of cancer deaths among women. More than 250,000, or one in eight, women will be diagnosed with breast cancer in 2013. For women aged 50 to 74, having a mammogram every 2 years is the most effective method to detect breast cancer early, when it is most treatable.

Share of Women Aged 50–64 Who Have Received a Mammogram within the Past 2 Years by State, 2009–2010

Source: Behavioral Risk Factor Surveillance System

Data Highlights:

- Thirteen states and the District of Columbia achieved the Healthy People 2020 target of ≥ 81.1 percent of women receiving a breast cancer screening within the past 2 years (Appendix A).
- The share of women aged 50 to 64 who received a mammogram declined from 80 percent in 2008 to 78.4 percent in 2009–2010.
- The breast cancer screening rate was lowest in Idaho and highest in Massachusetts. The share of women aged 50 to 64 who received a mammogram was about 24 percent lower among women living in Idaho than among women living in Massachusetts (68.1 percent vs. 89.2 percent; Appendix C, Table 9).
The share of women aged 50 to 64 who received a mammogram was 41 percent lower among uninsured women than among insured women (Appendix C, Table 1).

The share of women aged 50 to 64 who received a mammogram was 24 percent lower among low-income women than among high-income women (Appendix C, Table 3).

### National Screening Rate by Education Level

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Share of Women Receiving Mammogram within Past 2 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduated College or Technical School</td>
<td>83.8%</td>
</tr>
<tr>
<td>Some College or Technical School</td>
<td>77.4%</td>
</tr>
<tr>
<td>Graduated High School</td>
<td>74.0%</td>
</tr>
<tr>
<td>Did Not Graduate High School</td>
<td>71.0%</td>
</tr>
</tbody>
</table>

*Source: Behavioral Risk Factor Surveillance System*

The share of women aged 50 to 64 who received a mammogram was 15 percent lower among women who did not graduate from high school than among women who graduated from college (Appendix C, Table 5).

### National Screening Rate by Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Share of Women Receiving Mammogram within Past 2 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic only</td>
<td>79.3%</td>
</tr>
<tr>
<td>Other</td>
<td>68.7%</td>
</tr>
<tr>
<td>Asian only</td>
<td>78.4%</td>
</tr>
<tr>
<td>African American only</td>
<td>81.1%</td>
</tr>
<tr>
<td>White only</td>
<td>78.3%</td>
</tr>
</tbody>
</table>

*Source: Behavioral Risk Factor Surveillance System*

The breast cancer screening rate was lowest among “other” women and highest among African American women. The share of women aged 50–64 who received a mammogram was 15 percent lower among “other” women than among African American women (Appendix C, Table 7).
Cervical Cancer Screening

**Indicator:** Percent of women who have not had a hysterectomy and have had a Pap test within the past 3 years

**Importance:** The Pap test screens for cervical cancer and is one of the most reliable and effective cancer screening tests available. Detecting cervical cancer early greatly increases the chances of survival.\(^7\)

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**Share of Women Aged 50–64 Who Had a Pap Test within the Past 3 Years by State, 2009–2010**

![Map showing the share of women aged 50–64 who had a Pap test within the past 3 years by state, 2009–2010.](image)

**Source:** Behavioral Risk Factor Surveillance System

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**Data Highlights:**

- No state achieved the Healthy People 2020 target of $\geq 93.3$ percent of women receiving a cervical cancer screening within the past 3 years (Appendix A).
- The share of women aged 50 to 64 who received a Pap test within the past 3 years declined from 85 percent in 2008 to 78 percent in 2009–2010.
- The cervical cancer screening rate among women aged 50 to 64 was lowest in Idaho and highest in the District of Columbia (65 percent vs. 90 percent). The share of women aged 50 to 64 who received a Pap test within the past 3 years was about 28 percent lower among women living in Idaho than among women living in the District of Columbia (Appendix C, Table 9).
The share of women aged 50 to 64 who received a Pap test within the past 3 years was 31 percent lower among uninsured women than among insured women (Appendix C, Table 1).

The share of women aged 50 to 64 who received a Pap test within the past 3 years was 27 percent lower among low-income women than among high-income women (Appendix C, Table 3).
The share of women aged 50 to 64 who received a Pap test within the past 3 years was 17 percent lower among women who did not graduate high school than among women who graduated from college (Appendix C, Table 5).

The cervical cancer screening rate for women aged 50 to 64 was lowest among “other” women and highest among Hispanic women. The share of women aged 50 to 64 who received a Pap test within the past 3 years was 16 percent lower among “other” women than among Hispanic women (Appendix C, Table 7).
Colorectal Cancer Screening

**Indicator:** Percent of adults who had either a home blood stool test within the past year or a colonoscopy or sigmoidoscopy within the past 10 years

**Importance:** Of cancers affecting both men and women, colorectal cancer is the second-leading cause of cancer death in the United States. Screening can detect and remove precancerous cells before they can develop into colorectal cancer as well as detect cancer early, which greatly increases the chances of survival.

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**Data Highlights:**

- Five states achieved the Healthy People 2020 target of ≥ 70.5 percent of adults receiving a blood stool test within the past year or a colonoscopy/sigmoidoscopy within the past 10 years (Appendix A).

- The colorectal cancer screening rate among adults aged 50 to 64 was lowest in North Dakota and highest in Massachusetts (50.7 percent vs. 73.3 percent). The share of adults aged 50 to 64 who received a colorectal cancer screening was 31 percent lower among adults living in North Dakota than among adults living in Massachusetts (Appendix C, Table 9).
Insured adults aged 50 to 64 were nearly two times more likely than uninsured adults aged 50 to 64 to have received a colorectal cancer screening (Appendix C, Table 1).

The share of adults aged 50 to 64 with low-incomes who received a colorectal cancer screening was 37 percent lower among low-income adults compared with high-income adults (Appendix C, Table 3).
The share of adults aged 50 to 64 who received a colorectal cancer screening was 40 percent lower among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 5).

The colorectal cancer screening rate for adults aged 50 to 64 was lowest among Hispanics and highest among whites (46.4 percent vs. 62.1 percent). The share of adults aged 50 to 64 who received a colorectal cancer screening was 25 percent lower among Hispanic adults than among white adults (Appendix C, Table 7).
Cholesterol Screening

Indicator: Percent of adults who had a blood cholesterol screening within the past 5 years

Importance: Heart disease is the leading cause of death in the United States. Stroke is the leading cause of long-term disability in the United States. High low-density lipoprotein (LDL) cholesterol is a major risk factor for heart disease and stroke. Cholesterol screening for early detection and treatment can prevent premature death from coronary heart disease and disability.

Data Highlights:

- All 50 states and the District of Columbia achieved the Healthy People 2020 target of ≥82.1 percent of adults receiving a cholesterol screening within the past 5 years (Appendix A).
- The cholesterol screening rate among adults aged 50 to 64 was lowest in Montana and highest in Massachusetts (85 percent vs. 94.5 percent). The share of adults aged 50 to 64 who received cholesterol screening within past 5 years was 10 percent lower among adults living in Montana than among adults living in Massachusetts (Appendix C, Table 9).
The share of adults aged 50 to 64 who received a cholesterol screening within the past 5 years was about 24 percent lower among uninsured adults than among insured adults (Appendix C, Table 1).

The share of adults aged 50 to 64 who received a cholesterol screening within the past 5 years was about 15 percent lower among low-income adults than among high-income adults (Appendix C, Table 3).

The share of adults aged 50 to 64 who received a cholesterol screening within the past 5 years was about 15 percent lower among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 5).

Cholesterol screening rates among adults aged 50 to 64 was lowest among Hispanics and highest among Asians. The share of adults aged 50 to 64 who received a cholesterol screening within the past 5 years was 8 percent lower among Hispanics than among Asians (Appendix C, Table 7).
Influenza Vaccination

Indicator:  Percent of adults who had an influenza vaccination within the past year

Importance:  Together, influenza and pneumonia represent the eighth-leading cause of death in the United States.\textsuperscript{82} Both life-threatening infectious respiratory diseases are vaccine-preventable.\textsuperscript{83}

### Share of Adults Aged 50–64 Who Received an Influenza Vaccination within the Past Year by State, 2010–2011

![Map showing the share of adults aged 50–64 who received an influenza vaccination within the past year by state, 2010–2011.](source)

Source: Behavioral Risk Factor Surveillance System

Data Highlights:

- No state achieved the Healthy People 2020 target of \( \geq 80.0\) percent of adults receiving an influenza vaccination within the past year (Appendix A).

- The influenza screening rate among adults aged 50 to 64 was lowest in Nevada and highest in South Dakota (32.6 percent vs. 53.5 percent). The share of adults aged 50 to 64 who received an influenza vaccination within the past year was 39 percent lower among adults living in Nevada than among adults living in South Dakota (Appendix C, Table 9).
The share of adults aged 50 to 64 who received an influenza vaccination within the past year was 47 percent lower among uninsured adults than among insured adults (Appendix A, Table 1).

The share of adults aged 50 to 64 who received an influenza vaccination within the past year was 28 percent lower among low-income adults than among high-income adults (Appendix C, Table 3).
The share of adults aged 50 to 64 who received an influenza vaccination within the past year was 28 percent lower among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 5).

The influenza vaccination rate among adults aged 50 to 64 was lowest among Hispanics and highest among whites. The share of adults aged 50 to 64 who received an influenza vaccination within the past year was 18 percent lower among Hispanics than among whites (Appendix C, Table 7).
Pneumococcal Vaccination

Indicator: Percent of adults who reported current smoking, diabetes, asthma, or cardiovascular disease who have ever received a pneumococcal vaccination

Importance: Together, influenza and pneumonia represent the eighth-leading cause of death in the United States. Both life-threatening infectious respiratory diseases are vaccine-preventable.

Percent of Adults Aged 50–64 Who Reported Current Smoking, Diabetes, Asthma, or Cardiovascular Disease Who Have Ever Received a Pneumococcal Vaccination, 2010–2011

<table>
<thead>
<tr>
<th>State</th>
<th>Pneumococcal Vaccination Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maine</td>
<td>45.1%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>31.7%</td>
</tr>
</tbody>
</table>

No state achieved the Healthy People 2020 target of ≥ 80.0 percent of at-risk adults ever receiving a pneumococcal vaccination (Appendix A).

The pneumococcal vaccination rate among at-risk adults aged 50 to 64 was lowest in New Jersey and highest in Maine (31.7 percent vs. 45.1 percent). The share of at-risk midlife adults who ever received a pneumococcal vaccination was 30 percent lower among New Jersey residents than among Maine residents (Appendix C, Table 9).
The share of at-risk adults aged 50 to 64 who ever received a pneumococcal vaccination was 33 percent lower among uninsured adults than among insured adults (Appendix C, Table 1).

The share of at-risk adults aged 50 to 64 who ever received a pneumococcal vaccination was 17 percent lower among high-income adults than among low-income adults (Appendix C, Table 3).
The share of at-risk adults aged 50 to 64 who ever received a pneumococcal vaccination was 13 percent lower among adults who did not graduate high school and high school graduates than among adults who had some college or technical school (Appendix C, Table 5).

Pneumococcal vaccination rates among at-risk adults aged 50 to 64 was lowest among Asians and highest among “other” adults. The share of at-risk adults aged 50 to 64 who ever received a pneumococcal vaccination was 39 percent lower among Asians than among “other” adults (Appendix C, Table 7).
Women Up-to-date with Select Clinical Services

**Indicator:** Percent of women who have had an influenza vaccination within the past year, a mammogram within the past 2 years, a Pap test within the past 3 years (unless the woman had a hysterectomy), and a home blood stool test within the past year or a colonoscopy/sigmoidoscopy within the past 10 years. Women who have had a hysterectomy were counted as up-to-date if they had all of the aforementioned tests except for a Pap test.

**Importance:** The up-to-date indicators are a composite measure that reflects overall current use of select recommended clinical preventive services.

**Data Highlights:**

- The share of women aged 50 to 64 who were up-to-date with select clinical services increased from 25.9 percent in 2008 to 30 percent in 2009–2010.

- The share of women aged 50 to 64 who were up-to-date with select clinical services was lowest in Alaska and highest in Massachusetts (23.3 percent vs. 42.8 percent). The share of women aged 50 to 64 who were up-to-date with select clinical preventive services was 45 percent lower among women living in Alaska than among women living in Massachusetts (Appendix C, Table 9).
The share of women aged 50 to 64 who were up-to-date with select clinical preventive services was more than three times larger among insured women than among uninsured women (Appendix C, Table 1).

The share of women aged 50 to 64 who were up-to-date with select clinical preventive services was 54 percent lower among low-income women than among high-income women (Appendix C, Table 3).
The share of women aged 50 to 64 who were up-to-date with select clinical preventive services was 53 percent lower among women who did not graduate high school than among women who graduated from college (Appendix C, Table 5).

The share of women aged 50 to 64 who were up-to-date with select clinical services was lowest among Hispanic women and highest among white women. The share of women who were up-to-date with select clinical preventive services was 33 percent lower among Hispanic women than among white women (Appendix C, Table 7).
Men Up-to-date with Select Clinical Services

Indicator: Percent of men who have had an influenza vaccination within the past year and a home blood stool test within the past year or a colonoscopy/sigmoidoscopy within the past 10 years

Importance: The up-to-date indicators are a composite measure that reflects overall current use of select recommended clinical preventive services.

Share of Men Aged 50–64 Who Were Up-to-date with Select Clinical Preventive Services by State, 2010–2011

Data Highlights:
- The share of men aged 50 to 64 who were up-to-date with select clinical services was lowest in Montana and highest in Rhode Island (27.3 percent vs. 45.5 percent). The share of men aged 50 to 64 who were up-to-date with select clinical preventive services was 40 percent lower among men living in Montana than among men living in Rhode Island (Appendix C, Table 9).
The share of men aged 50 to 64 who were up-to-date with select clinical preventive services was nearly three times larger among insured men than among uninsured men (Appendix C, Table 1).

The share of men aged 50 to 64 who were up-to-date with select clinical preventive services was 46 percent lower among low-income men than among high-income men (Appendix C, Table 3).
The share of men aged 50 to 64 who were up-to-date with select clinical preventive services was 48 percent lower among men who did not graduate high school than among men who graduated from college (Appendix C, Table 5).

The share of men aged 50 to 64 who were up-to-date with select clinical preventive services was 34 percent lower among Hispanic men than among white men (Appendix C, Table 7).
NATIONAL PREVALENCE OF HEALTH RISK FACTORS

Physical Inactivity

Indicator: Percent of adults who did not engage in a leisure-time physical activity within the past month

Importance: Regular physical activity decreases the risk of developing depression; obesity and its dangerous comorbidities such as coronary heart disease, stroke, type 2 diabetes; and certain kinds of cancers.

Data Highlights:

- Forty-four states and the District of Columbia achieved the Healthy People 2020 target of ≤ 32.6 percent of adults reporting no leisure-time physical activity within the past month (Appendix A).

- The physical inactivity rate was highest in Mississippi and lowest in Colorado (37.3 percent vs. 18.4 percent). The share of adults aged 50 to 64 who reported no leisure-time physical activity within the past month was 102 percent greater among adults living in Mississippi than among adults living in Colorado (Appendix C, Table 10).
The share of adults aged 50 to 64 who reported no leisure-time physical activity within the past month was 39 percent greater among uninsured adults than among insured adults (25 percent vs. 34.8 percent; Appendix C).

The share of adults aged 50 to 64 who reported no leisure-time physical activity within the past month was 172 percent greater among low-income adults than among high-income adults (Appendix C, Table 4).
The share of adults aged 50 to 64 who reported no leisure-time physical activity within the past month was about 187 percent greater among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 6).

The physical inactivity rate was highest among African Americans and lowest among Asians. The share of adults aged 50 to 64 who reported no leisure-time physical activity within the past month was 55 percent greater among African Americans than among Asians (Appendix C, Table 8).
Smoking

**Indicator:** Percent of adults who have smoked at least 100 cigarettes in their entire life and still smoke every day or some days.

**Importance:** Smoking is the leading cause of preventable death and disease, responsible for about 443,000, or nearly one of every five, deaths annually in the United States. 87

**Data Highlights:**

- One state (Utah) achieved the Healthy People 2020 target of ≤ 12.0 percent of adults who currently smoke (Appendix A).
- The smoking rate was highest in Kentucky and lowest in Utah (26.4 percent vs. 18.3 percent). The share of adults aged 50 to 64 who smoke was 151 percent greater among adults living in Kentucky than among adults living in Utah (Appendix C, Table 10).
The share of adults aged 50 to 64 who smoke was 77 percent greater among uninsured adults than among insured adults (Appendix C, Table 2).

The share of adults aged 50 to 64 who smoke was 263 percent greater among low-income adults than among high-income adults (Appendix C, Table 4).
The share of adults aged 50 to 64 who smoke was 264 percent greater among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 6).

The smoking rate was highest among “other” adults and lowest among Asians. The share of adults aged 50 to 64 who smoke was 242 percent greater among “other” adults than among Asian adults (Appendix C, Table 8).
Binge Drinking

**Indicator:** Percent of adults who reported binge drinking on at least one occasion within the past 30 days

**Importance:** Binge drinking is linked with adverse health effects, including neurological damage, cardiovascular diseases, high blood pressure, stroke, liver disease, and injuries.\(^\text{88}\)

**Share of Adults Aged 50–64 Who Reported Binge Drinking on at Least One Occasion within the Past 30 Days by State, 2010–2011**

Data Highlights:

- All 50 states and the District of Columbia achieved the Healthy People 2020 target of ≤ 24.3 percent adults reporting binge drinking within past 30 days (Appendix A).
- The binge drinking rate was highest in Wisconsin and lowest in Tennessee (18.3 percent vs. 5.4 percent). The share of adults aged 50 to 64 who reported binge drinking was about 237 percent greater among adults living in Wisconsin than among adults living in Tennessee (Appendix C, Table 10).
The share of adults aged 50 to 64 who binge drink was 9 percent greater among uninsured adults than among insured adults (Appendix C, Table 2).

The share of adults aged 50 to 64 who binge drink was 45 percent greater among high-income adults than among low-income adults (Appendix C, Table 4).

The share of adults aged 50 to 64 who binge drink was 25 percent greater among adults who graduated high school than among adults who graduated from college (Appendix C, Table 6).

The binge drinking rate was highest among whites and lowest among Asians. The share of adults aged 50 to 64 who reported binge drinking was about 166 percent greater among whites than among Asians (Appendix C, Table 8).
Obesity

**Indicator:** Percent of adults with a body mass index (BMI) of 30.0 or higher

**Importance:** With adult obesity rates having doubled between 1980 and 2004, more than one-third of adults are now categorized as obese. The adult obesity rate is continuing to rise and is projected to reach 44 percent by 2030. Obesity increases the risk of coronary heart disease, stroke, type 2 diabetes, certain kinds of cancers, high blood pressure, high cholesterol, liver and gallbladder disease, osteoarthritis, respiratory problems, infertility, and mental health conditions.

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**Share of Adults Aged 50–64 Who Are Obese by State, 2010–2011**

Source: Behavioral Risk Factor Surveillance System

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**Data Highlights:**

- Fifteen states and the District of Columbia achieved the Healthy People 2020 target of ≤ 30.6 percent of adults who are currently obese (Appendix A).
- The obesity rate was highest in Louisiana and lowest in Colorado (40.1 percent vs. 24.3 percent). The share of obese adults aged 50 to 64 was 65 percent greater among adults living in Louisiana than among adults living in Colorado (Appendix C, Table 10).

The share of obese adults aged 50 to 64 was about 4 percent greater among uninsured adults than among insured adults (Appendix C, Table 2).

![Bar chart showing national prevalence of risk factor by health insurance coverage status.](chart_uninsured_insured)

Source: Behavioral Risk Factor Surveillance System

The share of obese adults aged 50 to 64 was 47 percent greater among low-income adults than among high-income adults (Appendix C, Table 4).

![Bar chart showing national prevalence of risk factor by income level.](chart_income_level)

Source: Behavioral Risk Factor Surveillance System
The share of obese adults aged 50 to 64 was 57 percent greater among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 6).

The obesity rate was highest among African Americans and lowest among Asians. The share of obese adults aged 50 to 64 was 297 percent greater among African Americans than among Asians (Appendix C, Table 8).
High Blood Pressure Ever

**Indicator:** Percent of adults who have ever been told by a health professional that they have high blood pressure

**Importance:** More than two in five adults aged 50 to 64 have high blood pressure.\(^91\) High blood pressure increases the risk of coronary heart disease, heart attack, and stroke.\(^92\)

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**Share of Adults Aged 50–64 Who Reported Ever Having High Blood Pressure, 2009 and 2011 Combined**

Data Highlights:

- The share of adults aged 50 to 64 who ever had high blood pressure was highest in Mississippi and lowest in Minnesota (55.1 percent vs. 33.2 percent). The share of adults aged 50 to 64 who reported ever having high blood pressure was 66 percent greater among adults living in Mississippi than among adults living in Minnesota (Appendix C, Table 10).
The share of adults aged 50 to 64 who reported ever having high blood pressure was 1.4 percent greater among uninsured adults than among insured adults (Appendix C, Table 2).

The share of adults aged 50 to 64 who reported ever having high blood pressure was 62 percent greater among low-income adults than among high-income adults (Appendix C, Table 4).
The share of adults aged 50 to 64 who reported ever having high blood pressure was 47 percent greater among adults who did not graduate high school than among adults who graduated from college (Appendix C, Table 6).

The share of adults aged 50 to 64 who reported ever having high blood pressure was highest among African Americans and lowest among Asians. The share of adults aged 50 to 64 who reported ever having high blood pressure was 55 percent greater among African Americans than among Asians (Appendix C, Table 8).
APPENDIX A. STATE PROGRESS ON ACHIEVING HEALTHY PEOPLE 2020 TARGETS, ADULTS 50–64

State Progress on Achieving Healthy People (HP) 2020 Targets, Adults Aged 50–64

<table>
<thead>
<tr>
<th>Indicator</th>
<th>HP 2020 Target</th>
<th>State Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammograms within past 2 years</td>
<td>≥81.1</td>
<td>13 states and DC met the target</td>
</tr>
<tr>
<td>Pap test within past 3 years</td>
<td>≥93.0</td>
<td>0 states met the target</td>
</tr>
<tr>
<td>Colorectal cancer screening</td>
<td>≥70.5</td>
<td>5 states met the target</td>
</tr>
<tr>
<td>Cholesterol screening within past 5 years</td>
<td>≥82.1</td>
<td>50 states and DC met the target</td>
</tr>
<tr>
<td>Influenza vaccination within past year</td>
<td>≥80.0</td>
<td>0 states met the target</td>
</tr>
<tr>
<td>Pneumococcal vaccination ever among persons at risk</td>
<td>≥60.0</td>
<td>0 states met the target</td>
</tr>
<tr>
<td>No leisure-time physical activity within past month</td>
<td>≤32.6</td>
<td>44 states and DC met the target</td>
</tr>
<tr>
<td>Smoking—current</td>
<td>≤12.0</td>
<td>1 state met the target</td>
</tr>
<tr>
<td>Binge drinking within past 30 days</td>
<td>≤24.3</td>
<td>50 states and DC met the target</td>
</tr>
<tr>
<td>Obesity—current</td>
<td>≤30.6</td>
<td>15 states and DC met the target</td>
</tr>
</tbody>
</table>

Source: Behavioral Risk Factor Surveillance System
APPENDIX B. EVIDENCE-BASED INTERVENTIONS THAT INCREASE USE OF PREVENTIVE SERVICES AND UPTAKE OF HEALTHY BEHAVIORS BASED ON “THE GUIDE TO COMMUNITY PREVENTIVE SERVICES” BY THE TASK FORCE FOR COMMUNITY PREVENTIVE SERVICES

The following interventions increase use of certain cancer screenings:93

- **Provider reminder systems**—there is strong evidence that alerting providers when a patient is due or overdue for a breast, cervical, or colorectal cancer screening increases mammograms, Pap tests, fecal occult blood tests, and flexible sigmoidoscopies.94

- **Provider assessment and feedback**—there is sufficient evidence that evaluating provider performance in offering and/or delivering screening to patients and presenting feedback to providers about their performance increases mammograms, Pap tests, and fecal occult blood tests.95

- **Patient reminders**—there is strong evidence that alerting patients via mail or phone when they are due for screening increases mammograms, Pap tests, and fecal occult blood tests.

- **Small media**—there is strong evidence that videos and printed materials educating people about the benefits of receiving cancer screenings increase mammograms, Pap tests, and fecal occult blood tests.

- **Group education**—there is sufficient evidence that educating women on indications for, benefits of, and strategies to overcome barriers to breast screening in a group setting increases mammograms.

- **One-on-one education**—there is sufficient-to-strong evidence that providing adults with one-on-one education about the indications for, benefits of, and strategies to overcome barriers to cancer screenings increase mammograms, Pap tests, and fecal occult blood tests.

- **Reducing structural barriers**—there is strong evidence that interventions designed to reduce barriers that make it difficult for adults to access cancer screenings (e.g., offering service delivery in the communities of target populations, offering services in nonclinical settings, extending hours to meet patients’ needs, providing transportation, or providing dependent care) increase mammograms, and fecal occult blood tests.

- **Reducing patients’ out-of-pocket costs**—there is sufficient evidence that reducing patient out-of-pocket costs for breast cancer screening (e.g., vouchers, reimbursements, and lowered co-pays) increases mammograms.

The following interventions increase vaccination coverage for universally recommended vaccinations:96

- **Home visits**—assessment of patient vaccination status, discussion of vaccination benefits, and delivery of vaccination or referral to immunization services

- **Reducing patients’ out-of-pocket costs**

- **Patient rewards**—small rewards, such as a gift card or a lottery prize, are used to motivate patients to obtain recommended immunizations.

- **Patient reminders**
Community-wide education—the purpose is to circulate information about vaccination benefits and when and where to receive the vaccination.

Immunization information systems—computerized databases that record all immunization doses administered by participating providers.

Provider assessment and feedback.

Provider reminders.

Standing orders—authorize licensed health care personnel, such as nurses and pharmacists, to administer vaccinations without the direct involvement of the attending clinician at the time of the interaction.

The following interventions increase vaccination coverage for influenza, pneumococcal disease, and hepatitis B among adults at high risk for infection or complications of infection because of occupational, behavioral, or health factors, such as diabetes, asthma, or cardiovascular disease.97

Provider reminder systems.

The following multiple interventions implemented in combination:

- Expand access in health care provider settings (e.g., extend facility hours, add locations, and remove administration barriers), and/or
- Reduce patients’ out-of-pocket costs

Plus one or more of the following:

- Provider reminder systems
- Standing orders
- Provider assessment and feedback

And/or

- Patient reminders
- Patient education

The following interventions increase physical activity.98,99,100

Community-wide campaigns.

Individually adapted health behavior change programs—personalized lessons teaching behavioral skills (e.g., goal setting and self-monitoring of progress) designed to help participants incorporate physical activity into their daily life based on their readiness for change and unique interests.

Social support interventions in community settings.

Community-scale urban design land use policies—improving the physical environment of communities to support physical activity, such as adding sidewalks, bike paths, trails, parks, and stores in residential areas.

Street-scale urban design land use policies—enhancing small geographic areas to support physical activity, such as improving building codes, roadway design standards, and street lighting.
Point-of-decision prompts to encourage use of stairs—signs placed near elevators and escalators prompting people to take the stairs.

The following interventions increase smoking cessation:\textsuperscript{101}

- Mass media education campaigns combined with other effective interventions, such as increasing excise tax—mass media education campaigns may be tailored to specific populations.
- Provider reminders—prompt providers to discuss evidence-based tobacco cessation treatment and the health benefits of quitting with patients who smoke.
- Mobile phone–based interventions—use of text messages to deliver evidence-based information, strategies, and behavioral support directly to tobacco users who want to quit. Messages may be tailored to specific populations.
- Quitline interventions—provide evidence-based behavioral counseling and support to help tobacco users interested in quitting over the phone.
- Reducing out-of-pocket costs for evidence-based tobacco cessation treatments.

The following interventions increase obesity control and promote obesity prevention:\textsuperscript{102,103}

- Worksite nutrition and physical activity programs—one or multiple initiatives in the workplace to support behavioral change including informational and educational (e.g., lectures and written materials), behavioral and social (e.g., behavioral counseling and skill-building activities) and policy and environmental strategies (e.g., discounts for gym memberships and providing more healthy food options in the cafeteria).
- Multicomponent coaching or counseling interventions intended to reduce weight or maintain weight loss, or both—interventions may or may not include technology supported components, such as computers, personal digital assistants, or pedometers with computer interaction. Non technological components include counseling, manual tracking, printed lessons, and written feedback.
- Behavioral interventions to reduce screen time—screen time is the amount of time spent watching TV, surfing the Internet, and playing video games. Effective interventions include skill-building, goal-setting, and reinforcement techniques; environmental strategies to reduce television and computer access; and challenges in which participants refrain from watching TV for a specified period of time.
### APPENDIX C. DISPARITIES DATA

#### Table 1
Disparities in Use of Preventive Services by Health Insurance Coverage Status, Adults Aged 50–64

<table>
<thead>
<tr>
<th></th>
<th>Mammogram within Past 2 Years</th>
<th>Pap Test within Past 3 Years</th>
<th>Colorectal Cancer Screening</th>
<th>Cholesterol Screening within Past 5 Years</th>
<th>Influenza Vaccination within Past Year</th>
<th>Pneumococcal Vaccination Ever among Persons at Risk</th>
<th>Women Up-to-date with Select Preventive Services</th>
<th>Men Up-to-date with Select Preventive Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insured</td>
<td>82.6%</td>
<td>81.1%</td>
<td>63.9%</td>
<td>93.0%</td>
<td>45.3%</td>
<td>40.3%</td>
<td>32.8%</td>
<td>36.1%</td>
</tr>
<tr>
<td>Uninsured</td>
<td>48.6%</td>
<td>56.3%</td>
<td>32.3%</td>
<td>70.8%</td>
<td>23.9%</td>
<td>27.1%</td>
<td>10.0%</td>
<td>12.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>78.4%</strong></td>
<td><strong>78.0%</strong></td>
<td><strong>60.0%</strong></td>
<td><strong>90.1%</strong></td>
<td><strong>42.5%</strong></td>
<td><strong>38.1%</strong></td>
<td><strong>30.0%</strong></td>
<td><strong>33.2%</strong></td>
</tr>
<tr>
<td><strong>Percent Difference</strong></td>
<td>-41.18%</td>
<td>-30.59%</td>
<td>-49.49%</td>
<td>-23.91%</td>
<td>-47.39%</td>
<td>-32.73%</td>
<td>-69.49%</td>
<td>-65.71%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.

Source: Behavioral Risk Factor Surveillance System (BRFSS)

Colorectal cancer screening, influenza vaccination, pneumococcal vaccination, and men up-to-date with select clinical preventive services averages are based on the 2010 and 2011 BRFSS combined. Mammogram, Pap test, and women up-to-date with select clinical preventive services averages are based on the 2009 and 2010 BRFSS combined. Cholesterol screening averages are based on the 2009 and 2011 BRFSS combined.

#### Table 2
Disparities in Prevalence of Risk Factors by Health Insurance Coverage Status, Adults Aged 50–64

<table>
<thead>
<tr>
<th></th>
<th>No Leisure-time Physical Activity within Past Month</th>
<th>Smoking</th>
<th>Binge Drinking within Past 30 Days</th>
<th>Obesity</th>
<th>High Blood Pressure Ever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insured</td>
<td>25.0%</td>
<td>17.4%</td>
<td>12.2%</td>
<td>32.5%</td>
<td>43.5%</td>
</tr>
<tr>
<td>Uninsured</td>
<td>34.8%</td>
<td>30.8%</td>
<td>13.2%</td>
<td>33.8%</td>
<td>44.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26.3%</strong></td>
<td><strong>19.2%</strong></td>
<td><strong>12.3%</strong></td>
<td><strong>32.7%</strong></td>
<td><strong>43.6%</strong></td>
</tr>
<tr>
<td><strong>Simple Difference</strong></td>
<td>9.84</td>
<td>13.38</td>
<td>1.07</td>
<td>1.29</td>
<td>0.60</td>
</tr>
<tr>
<td><strong>Percent Difference</strong></td>
<td>39.33%</td>
<td>76.88%</td>
<td>8.76%</td>
<td>3.96%</td>
<td>1.37%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.

Source: Behavioral Risk Factor Surveillance System

No leisure-time physical activity within past month, smoking, binge drinking, and obesity averages are based on the 2010 and 2011 BRFSS combined. High blood pressure averages are based on the 2009 and 2011 BRFSS combined.
Table 3
Disparities in Use of Preventive Services by Income, Adults Aged 50–64

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Mammogram within Past 2 Years</th>
<th>Pap Test within Past 3 Years</th>
<th>Colorectal Cancer Screening</th>
<th>Cholesterol Screening within Past 5 Years</th>
<th>Influenza Vaccination within Past Year</th>
<th>Pneumococcal Vaccination Ever among Persons at Risk</th>
<th>Women Up-to-date with Select Preventive Services</th>
<th>Men Up-to-date with Select Preventive Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>65.6%</td>
<td>62.8%</td>
<td>43.3%</td>
<td>80.9%</td>
<td>34.8%</td>
<td>41.3%</td>
<td>17.4%</td>
<td>21.9%</td>
</tr>
<tr>
<td>$15,000 to $74,999</td>
<td>75.8%</td>
<td>75.7%</td>
<td>56.8%</td>
<td>88.6%</td>
<td>40.3%</td>
<td>38.7%</td>
<td>27.4%</td>
<td>30.8%</td>
</tr>
<tr>
<td>More than $75,000</td>
<td>86.4%</td>
<td>86.2%</td>
<td>68.7%</td>
<td>95.1%</td>
<td>48.1%</td>
<td>34.1%</td>
<td>37.7%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Total</td>
<td>78.4%</td>
<td>78.0%</td>
<td>60.0%</td>
<td>90.1%</td>
<td>42.5%</td>
<td>38.1%</td>
<td>30.0%</td>
<td>33.2%</td>
</tr>
<tr>
<td>*Percent Difference</td>
<td>-24.06%</td>
<td>-27.16%</td>
<td>-37.00%</td>
<td>-14.85%</td>
<td>-27.67%</td>
<td>-17.45%</td>
<td>-53.86%</td>
<td>-45.58%</td>
</tr>
</tbody>
</table>

*The simple difference and relative difference measure the differences between best and worst group rates. The best group rates were used as the reference points.
Source: Behavioral Risk Factor Surveillance System
Colorectal cancer screening, influenza vaccination, pneumococcal vaccination, and men up-to-date with select clinical preventive services averages are based on the 2010 and 2011 BRFSS combined. Mammogram, Pap test, and women up-to-date with select clinical preventive services averages are based on the 2009 and 2010 BRFSS combined. Cholesterol screening averages are based on the 2009 and 2011 BRFSS combined.

Table 4
Disparities in Prevalence of Risk Factors by Income, Adults Aged 50–64

<table>
<thead>
<tr>
<th>Income Level</th>
<th>No Leisure-time Physical Activity within Past Month</th>
<th>Smoking</th>
<th>Binge Drinking within Past 30 Days</th>
<th>Obesity</th>
<th>High Blood Pressure Ever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $15,000</td>
<td>42.2%</td>
<td>35.7%</td>
<td>9.6%</td>
<td>39.5%</td>
<td>57.4%</td>
</tr>
<tr>
<td>$15,000 to $74,999</td>
<td>30.4%</td>
<td>22.1%</td>
<td>11.7%</td>
<td>35.2%</td>
<td>46.2%</td>
</tr>
<tr>
<td>More than $75,000</td>
<td>15.5%</td>
<td>9.8%</td>
<td>14.0%</td>
<td>26.9%</td>
<td>35.4%</td>
</tr>
<tr>
<td>Total</td>
<td>26.3%</td>
<td>19.2%</td>
<td>12.3%</td>
<td>32.7%</td>
<td>43.6%</td>
</tr>
<tr>
<td>*Simple Difference</td>
<td>26.64</td>
<td>25.88</td>
<td>4.34</td>
<td>12.56</td>
<td>21.95</td>
</tr>
<tr>
<td>*Percent Difference</td>
<td>171.61%</td>
<td>263.46%</td>
<td>45.10%</td>
<td>46.67%</td>
<td>61.93%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.
Source: Behavioral Risk Factor Surveillance System
No leisure-time physical activity within past month, smoking, binge drinking, and obesity averages are based on the 2010 and 2011 BRFSS combined. High blood pressure averages are based on the 2009 and 2011 BRFSS combined.
### Table 5
Disparities in Use of Preventive Services by Education, Adults Aged 50–64

<table>
<thead>
<tr>
<th>Education</th>
<th>Mammogram within Past 2 Years</th>
<th>Pap Test within Past 3 Years</th>
<th>Colorectal Cancer Screening</th>
<th>Cholesterol Screening within Past 5 Years</th>
<th>Influenza Vaccination within Past Year</th>
<th>Pneumococcal Vaccination Ever among Persons at Risk</th>
<th>Women Up-to-date with Select Preventive Services</th>
<th>Men Up-to-date with Select Preventive Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Graduate High School</td>
<td>71.0%</td>
<td>69.8%</td>
<td>40.4%</td>
<td>80.2%</td>
<td>35.0%</td>
<td>35.8%</td>
<td>17.3%</td>
<td>20.4%</td>
</tr>
<tr>
<td>Graduated High School</td>
<td>74.0%</td>
<td>73.2%</td>
<td>53.6%</td>
<td>87.8%</td>
<td>37.7%</td>
<td>35.8%</td>
<td>24.1%</td>
<td>27.5%</td>
</tr>
<tr>
<td>Some College or Technical School</td>
<td>77.4%</td>
<td>76.9%</td>
<td>60.9%</td>
<td>91.1%</td>
<td>42.2%</td>
<td>41.3%</td>
<td>30.0%</td>
<td>33.5%</td>
</tr>
<tr>
<td>Graduated College or Technical School</td>
<td>83.8%</td>
<td>83.9%</td>
<td>67.4%</td>
<td>94.1%</td>
<td>48.8%</td>
<td>38.5%</td>
<td>36.5%</td>
<td>39.5%</td>
</tr>
<tr>
<td>Total</td>
<td>78.4%</td>
<td>78.0%</td>
<td>60.0%</td>
<td>90.1%</td>
<td>42.5%</td>
<td>38.1%</td>
<td>30.0%</td>
<td>33.2%</td>
</tr>
<tr>
<td>*Percent Difference</td>
<td>-15.21%</td>
<td>-16.80%</td>
<td>-40.02%</td>
<td>-14.80%</td>
<td>-28.28%</td>
<td>-13.36%</td>
<td>-52.62%</td>
<td>-48.39%</td>
</tr>
</tbody>
</table>

*The simple difference and relative difference measure the differences between best and worst group rates. The best group rates were used as the reference points.

Source: Behavioral Risk Factor Surveillance System

Colorectal cancer screening, influenza vaccination, pneumococcal vaccination, and men up-to-date with select clinical preventive services averages are based on the 2010 and 2011 BRFSS combined. Mammogram, Pap test, and women up-to-date with select clinical preventive services averages are based on the 2009 and 2010 BRFSS combined. Cholesterol screening averages are based on the 2009 and 2011 BRFSS combined.

### Table 6
Disparities in Prevalence of Risk Factors by Education, Adults Aged 50–64

<table>
<thead>
<tr>
<th>Education</th>
<th>No Leisure-time Physical Activity within Past Month</th>
<th>Smoking</th>
<th>Binge Drinking within Past 30 Days</th>
<th>Obesity</th>
<th>High Blood Pressure Ever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Graduate High School</td>
<td>43.5%</td>
<td>31.9%</td>
<td>11.9%</td>
<td>40.3%</td>
<td>53.9%</td>
</tr>
<tr>
<td>Graduated High School</td>
<td>34.6%</td>
<td>26.0%</td>
<td>13.6%</td>
<td>36.3%</td>
<td>47.4%</td>
</tr>
<tr>
<td>Some College or Technical School</td>
<td>25.7%</td>
<td>20.6%</td>
<td>12.9%</td>
<td>34.8%</td>
<td>44.4%</td>
</tr>
<tr>
<td>Graduated College or Technical School</td>
<td>15.2%</td>
<td>8.8%</td>
<td>10.9%</td>
<td>25.7%</td>
<td>36.5%</td>
</tr>
<tr>
<td>Total</td>
<td>26.3%</td>
<td>19.2%</td>
<td>12.3%</td>
<td>32.7%</td>
<td>43.6%</td>
</tr>
<tr>
<td>*Simple Difference</td>
<td>28.33</td>
<td>23.15</td>
<td>2.73</td>
<td>14.59</td>
<td>17.37</td>
</tr>
<tr>
<td>*Percent Difference</td>
<td>186.63%</td>
<td>264.43%</td>
<td>25.01%</td>
<td>56.67%</td>
<td>47.55%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.

Source: Behavioral Risk Factor Surveillance System

No leisure-time physical activity within past month, smoking, binge drinking, and obesity averages are based on the 2010 and 2011 BRFSS combined. High blood pressure averages are based on the 2009 and 2011 BRFSS combined.
### Table 7
Disparities in Use of Preventive Services by Race and Ethnicity, Adults Aged 50–64

<table>
<thead>
<tr>
<th></th>
<th>Mammogram within Past 2 Years (%)</th>
<th>Pap Test within Past 3 Years (%)</th>
<th>Colorectal Cancer Screening (%)</th>
<th>Cholesterol Screening within Past 5 Years (%)</th>
<th>Influenza Vaccination within Past Year (%)</th>
<th>Pneumococcal Vaccination Ever among Persons at Risk (%)</th>
<th>Women Up-to-date with Select Preventive Services (%)</th>
<th>Men Up-to-date with Select Preventive Services (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>78.3%</td>
<td>78.0%</td>
<td>62.1%</td>
<td>91.0%</td>
<td>44.2%</td>
<td>38.9%</td>
<td>31.9%</td>
<td>35.4%</td>
</tr>
<tr>
<td>African American</td>
<td>81.1%</td>
<td>79.4%</td>
<td>61.0%</td>
<td>90.6%</td>
<td>36.2%</td>
<td>38.0%</td>
<td>25.5%</td>
<td>27.7%</td>
</tr>
<tr>
<td>Asian</td>
<td>78.4%</td>
<td>72.5%</td>
<td>49.9%</td>
<td>91.2%</td>
<td>43.5%</td>
<td>25.8%</td>
<td>30.3%</td>
<td>33.6%</td>
</tr>
<tr>
<td>“Other”</td>
<td>68.7%</td>
<td>68.4%</td>
<td>55.8%</td>
<td>86.7%</td>
<td>41.5%</td>
<td>42.6%</td>
<td>23.4%</td>
<td>27.1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>79.3%</td>
<td>81.1%</td>
<td>46.4%</td>
<td>83.8%</td>
<td>36.1%</td>
<td>32.9%</td>
<td>21.3%</td>
<td>23.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>78.4%</td>
<td>78.0%</td>
<td>60.0%</td>
<td>90.1%</td>
<td>42.5%</td>
<td>38.1%</td>
<td>30.0%</td>
<td>33.2%</td>
</tr>
<tr>
<td><em>Percent Difference</em></td>
<td>-15.25%</td>
<td>-15.73%</td>
<td>-25.29%</td>
<td>-8.08%</td>
<td>-18.37%</td>
<td>-39.43%</td>
<td>-33.21%</td>
<td>-34.35%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.*

Source: Behavioral Risk Factor Surveillance System

Colorectal cancer screening, influenza vaccination, pneumococcal vaccination, and men up-to-date with select clinical preventive services averages are based on the 2010 and 2011 BRFSS combined. Mammogram, Pap test, and women up-to-date with select clinical preventive services averages are based on the 2009 and 2010 BRFSS combined. Cholesterol screening averages are based on the 2009 and 2011 BRFSS combined.

### Table 8
Disparities in Prevalence of Risk Factors by Race and Ethnicity, Adults Aged 50–64

<table>
<thead>
<tr>
<th></th>
<th>No Leisure-time Physical Activity within Past Month (%)</th>
<th>Smoking (%)</th>
<th>Binge Drinking within Past 30 Days (%)</th>
<th>Obesity (%)</th>
<th>High Blood Pressure Ever (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>24.5%</td>
<td>19.0%</td>
<td>13.1%</td>
<td>31.6%</td>
<td>24.5%</td>
</tr>
<tr>
<td>African American</td>
<td>33.7%</td>
<td>25.5%</td>
<td>9.0%</td>
<td>43.4%</td>
<td>33.7%</td>
</tr>
<tr>
<td>Asian</td>
<td>21.8%</td>
<td>8.3%</td>
<td>4.9%</td>
<td>10.9%</td>
<td>21.8%</td>
</tr>
<tr>
<td>Other</td>
<td>27.4%</td>
<td>28.4%</td>
<td>11.0%</td>
<td>35.5%</td>
<td>27.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>33.5%</td>
<td>14.3%</td>
<td>12.6%</td>
<td>35.1%</td>
<td>33.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>26.3%</td>
<td>19.2%</td>
<td>12.3%</td>
<td>32.7%</td>
<td>43.6%</td>
</tr>
<tr>
<td><em>Simple Difference</em></td>
<td>11.93%</td>
<td>20.10%</td>
<td>8.15%</td>
<td>32.44%</td>
<td>11.93</td>
</tr>
<tr>
<td><em>Percent Difference</em></td>
<td>54.77%</td>
<td>242.44%</td>
<td>165.72%</td>
<td>297.25%</td>
<td>54.77%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.*

Source: Behavioral Risk Factor Surveillance System

No leisure-time physical activity within past month, smoking, binge drinking, and obesity averages are based on the 2010 and 2011 BRFSS combined. High blood pressure averages are based on the 2009 and 2011 BRFSS combined.
Table 9  
Disparities in Prevalence of Use of Preventive Services by State,  
Adults Aged 50–64  

<table>
<thead>
<tr>
<th></th>
<th>Mammogram within Past 2 Years</th>
<th>Pap Test within Past 3 Years</th>
<th>Colorectal Cancer Screening</th>
<th>Cholesterol Screening within Past 5 Years</th>
<th>Influenza Vaccination within Past Year</th>
<th>Pneumococcal Vaccination Ever among Persons at Risk</th>
<th>Women Up-to-date with Select Preventive Services</th>
<th>Men Up-to-date with Select Preventive Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest Ranked State and Percent</td>
<td>MA 89.2%</td>
<td>DC 90.0%</td>
<td>MA 73.3%</td>
<td>MA 94.5%</td>
<td>SD 53.5%</td>
<td>ME 45.1%</td>
<td>MA 42.8%</td>
<td>RI 45.5%</td>
</tr>
<tr>
<td>Lowest Ranked State and Percent</td>
<td>ID 68.1%</td>
<td>ID 65.0%</td>
<td>ND 50.7%</td>
<td>MT 85.0%</td>
<td>NV 32.6%</td>
<td>NJ 31.7%</td>
<td>AK 23.3%</td>
<td>MT 27.3%</td>
</tr>
<tr>
<td>*Percent Difference</td>
<td>-23.60%</td>
<td>-27.80%</td>
<td>-30.79%</td>
<td>-10.11%</td>
<td>-39.10%</td>
<td>-29.59%</td>
<td>-45.47%</td>
<td>-39.92%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.

Source: Behavioral Risk Factor Surveillance System

Colorectal cancer screening, influenza vaccination, pneumococcal vaccination, and men up-to-date with select clinical preventive services averages are based on the 2010 and 2011 BRFSS combined. Mammogram, Pap test, and women up-to-date with select clinical preventive services averages are based on the 2009 and 2010 BRFSS combined. Cholesterol screening averages are based on the 2009 and 2011 BRFSS combined.

Table 10  
Disparities in Prevalence of Risk Factors by State,  
Adults Aged 50–64  

<table>
<thead>
<tr>
<th></th>
<th>No Leisure-time Physical Activity within Past Month</th>
<th>Smoking</th>
<th>Binge Drinking within Past 30 Days</th>
<th>Obesity</th>
<th>High Blood Pressure Ever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest Ranked State and Percent</td>
<td>CO 18.4%</td>
<td>UT 10.5%</td>
<td>TN 5.4%</td>
<td>CO 24.3%</td>
<td>MN 3.2%</td>
</tr>
<tr>
<td>Lowest Ranked State and Percent</td>
<td>MS 37.3%</td>
<td>KY 26.4%</td>
<td>WI 18.3%</td>
<td>LA 40.1%</td>
<td>MS 55.1%</td>
</tr>
<tr>
<td>*Simple Difference</td>
<td>18.88</td>
<td>15.87</td>
<td>12.88</td>
<td>15.76</td>
<td>21.91</td>
</tr>
<tr>
<td>*Percent Difference</td>
<td>102.34%</td>
<td>150.74%</td>
<td>236.99%</td>
<td>64.82%</td>
<td>66.01%</td>
</tr>
</tbody>
</table>

*The simple difference and percent difference measure the differences between best and worst group rates. The best group rates were used as the reference points.

Source: Behavioral Risk Factor Surveillance System

No leisure-time physical activity within past month, smoking, binge drinking, and obesity averages are based on the 2010 and 2011 BRFSS combined. High blood pressure averages are based on the 2009 and 2011 BRFSS combined.

For state-level data on the use of preventive services and the prevalence of risk factors across varying racial/ethnic groups, educational attainment, income levels, and health insurance coverage status, visit:  
http://www.aarp.org/State-Preventive-Care-Rankings/
APPENDIX D. METHODOLOGY

Indicators

In 2009, the CDC, AARP, and the AMA identified a set of key indicators for evaluating the use of clinical preventive services among adults aged 50 to 64.104 Thirteen of the 14 key indicators are analyzed in this paper—four disease screenings, two immunizations, two composite “up-to-date” measures, and five risk factors. The excluded indicator is “moderate depressive symptoms within the past 2 weeks.” This indicator is excluded because data is not available for 2010 and later.

Screenings

- **Breast cancer screening**: Percentage of women who had a mammogram within the past 2 years. This was determined from answers to two separate questions about ever having a mammogram, and how long it had been since the last one.

- **Cervical cancer screening**: Percentage of women who had a Pap test within the past 3 years. The measure excludes women who reported they had a hysterectomy.

- **Colorectal cancer screening**: Percentage of adults who had either a home blood stool test within the past year or a colonoscopy or sigmoidoscopy within the past 10 years. Respondents were counted if they had a missing value for one of the questions as long as they reported having the other test.

- **Cholesterol screening**: Percentage of adults who had a blood cholesterol screening within the past 5 years.

Immunizations

- **Influenza vaccination**: Percentage of adults having been vaccinated against influenza vaccination within the past year.

- **Pneumococcal vaccination among persons at risk**: Percentage of adults who reported current smoking, diabetes, asthma, or cardiovascular disease who have ever had a pneumococcal vaccination.

Composite measures

- **Women up-to-date with select preventive services**: Percentage of women who have had an influenza vaccination within the past year, a mammogram within the past 2 years, a Pap test within the past 3 years (excluding women who had a hysterectomy), and a colorectal cancer screening as described above. Women who have had a hysterectomy were counted as up-to-date if they had all of the aforementioned tests except for a Pap test.

- **Men up-to-date with select preventive services**: Percentage of men who have had an influenza vaccination within the past year and a colorectal cancer screening as described as above.
Risk Factors

- **Physical inactivity**: Percentage of adults who did not engage in any leisure-time physical activity within the past month.
- **Smoking**: Percentage of adults who have smoked at least 100 cigarettes in their entire life and still smoke every day or some days (currently smoking).
- **Binge drinking**: Percentage of women who reported having four or more drinks and men who reported having five or more drinks on at least one occasion within the past 30 days.
- **Obesity**: Percentage of adults with a Body Mass Index (BMI) of 30.0 or above, as calculated from self-reported current height and weight.
- **High blood pressure**: Percentage of adults who have ever been told by a health professional that they have high blood pressure.

Data Source

The BRFSS has been a major source of information on health risk behaviors, preventive health practices, and health care access since it was established by the CDC in 1984. The BRFSS is the largest telephone survey in the world, with more than 350,000 adults interviewed each year. Information from the survey is used to identify public health concerns; monitor progress toward health objectives, such as Healthy People 2020; and evaluate the effectiveness of public health policies and programs. The BRFSS collects data monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. In this report, data are limited to adults aged 50 to 64 with valid responses (invalid responses include “don’t know,” “refused,” or missing) to health insurance coverage status, education, income, and race and ethnicity questions in the 50 states and the District of Columbia. Focusing on subgroups, such as Asian adults aged 50 to 64, decreases sample sizes. In order to increase the precision of the estimates for subgroups, the analyses were based on 2 years of survey data combined. Because not all topics are addressed every year, this report includes most recently available data, usually 2010 and 2011 combined, but in some instances 2009 and 2010 combined, and 2009 and 2011 combined.

Data Analysis

Prevalence estimates were determined as mean values. For each variable, results are presented for all adults aged 50 to 64 in the U.S. (50 states and the District of Columbia), for each state, and each sub-level of select social determinants of health—education, income, race and ethnicity, and health insurance coverage status. “N/A” indicates that data were suppressed because there were fewer than 50 observations in the denominator.

Disparities can be measured as a simple difference, which is the difference between a group rate and a specified reference point.

\[
\text{Simple difference} = \text{rate of interest} - \text{reference point}
\]

Disparities can also be measured in terms of percent difference, which expresses the simple difference from the reference point as a percentage of the reference point.
Percent difference = \((\text{rate of interest} - \text{reference point}) ÷ \text{(reference point)} \times 100\)

Reporting both simple difference and percent difference provides a more comprehensive picture of a disparity than either method alone.\(^{105}\) Simple difference and percent difference measures of disparities were calculated between the best and worst group rates. Percent difference measures were based on using best group—the groups with the highest rate of use for a preventive service or lowest prevalence of a risk factor—rates as the reference point. The equations above were used to measure racial and ethnic and socioeconomic disparities in use of clinical preventive services and prevalence of risk factors.

Sample

Data on colorectal cancer screening, influenza vaccination, pneumococcal vaccination, men up-to-date with select clinical preventive services, physical inactivity, smoking, binge drinking, and obesity are based on 273,267 adults aged 50 to 64 in the 50 states and the District of Columbia who were surveyed in 2010 and 2011 and provided valid responses to select health insurance, education, income, and race/ethnicity questions. Cholesterol screening and high blood pressure averages are based on 267,956 adults aged 50 to 64 in the 50 states and the District of Columbia who were surveyed in 2009 and 2011 and provided valid responses to select health insurance, education, income, and race/ethnicity questions. Mammogram, Pap test, and women up-to-date with select clinical preventive services averages are based on 153,627 women aged 50 to 64 in the 50 states and the District of Columbia who were surveyed in 2009 and 2010 and provided valid responses to select health insurance, education, income, and race/ethnicity questions.

Data Limitations

Excluded in all years of BRFSS data are adults in institutions such as nursing homes, and those that have physical or mental impairments that prevent them from participating in the survey. Prior to 2011, BRFSS also excluded households without telephones or using only cell phones. In 2011, BRFSS added survey respondents from households only using cell phones and revised the weighting methodology. Due to the changes in the methodology of the survey, the 2010 and 2011 combined data, and the 2009 and 2011 combined data in this report cannot be compared with BRFSS data released prior to 2011. For the same reasons, the 2009 and 2010 combined data in the report cannot be compared with BRFSS data released during or after 2011. Survey results are based on self-reported information on receipt of screenings and vaccinations, which has not been verified. Self-reported data is subject to recall bias. Studies examining the validity of self-reported data have found survey respondents tend to overestimate rates of screening tests and vaccines. Survey respondents also have a tendency to underreport their undesirable behaviors (e.g., smoking or drinking) and their weight as well as to exaggerate their height.\(^{106,107,108,109,110}\) Despite these limitations, a comprehensive reliability and validity study of the BRFSS concluded that most questions were moderately to highly reliable and valid.\(^{111}\)
REFERENCES


5 S. Y. Wu and A. Green, Projection of Chronic Illness Prevalence and Cost Inflation (Santa Monica, CA: RAND, 2000).


10 W. F. Benson and N. Aldrich, CDC Focuses on Need for Older Adults to Receive Clinical Preventive Services, Critical Issue Brief (Atlanta, GA: Centers for Disease Control and Prevention, 2012).


14 W. F. Benson and N. Aldrich, CDC Focuses on Need for Older Adults to Receive Clinical Preventive Services, Critical Issue Brief (Atlanta, GA: Centers for Disease Control and Prevention, 2012).

15 Ibid.


26 Ibid.

27 Ibid.


32 The World Health Organization (WHO) defines social determinants of health as the conditions in which people are born, grow, live, work, and age, including the health system.


54 National Center for Health Statistics, Health, United States, 2011: With Special Feature on Socioeconomic Status and Health (Hyattsville, MD: National Center for Health Statistics, 2012).


75 “Other” refers to a race or ethnicity other than African American, Asian, Hispanic, or white.


