



Health of Those Who Have Served Report 2018





America's Health Rankings® and America's Health Rankings® Health of Those Who Have Served Report were built upon the World Health Organization definition of health: "Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Our model reflects that determinants of health—Behaviors, Clinical Care, Policy, and Community and Environment—directly influence health outcomes.

America's Health Rankings® Health of Those Who Have Served Report **Executive Summary**

Overview

Men and women who serve in the United States Armed Forces play essential roles in maintaining the safety and security of our country. Nearly 23 million Americans living today have served on active duty in the U.S. Armed Forces — 2.4 million of whom are currently on active duty or in the National Guard and Reserves, and more than 20 million retired. The health and well-being of those who have served continue to be a national priority.

United Health Foundation, in partnership with Military Officers Association of America (MOAA), is pleased to update *America's Health Rankings® Health of Those Who Have Served Report* this year to highlight trends and insights about the similarities and differences in health within groups of those who have served, as well as between those who have served and their civilian counterparts. The data update captures

trends over six years, comparing recently available 2015-2016 data to a baseline of 2011-2012 data.¹ This important work builds on United Health Foundation's ongoing commitment to leverage data to improve the health of men and women who have served.

America's Health Rankings continued its collaboration with an advisory steering group of leading military, veterans and public health organizations to update the report. The update features 31 health measures, including 10 new measures focused on mental health and opioid misuse. These new markers of health provide a more complete picture of the health of those who have served and offer greater data-driven insights into the strengths and challenges associated with the health of these individuals.

¹ Baseline reporting refers to 2011-2012 data, while this year's reporting refers to 2015-2016 data. Some exceptions to these timeframes exist based on data availability and full data sources are available online.

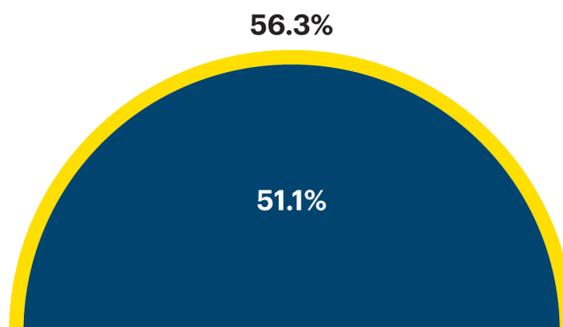
Executive Summary

Those Who Have Served Continue to Report Better Health, But Face Greater Chronic Disease and Behavioral Health Burdens

Those who have served are more likely than civilians to report that their health is very good or excellent — a difference that has generally not changed since 2011-2012.

SELF-REPORTED HEALTH STATUS AS VERY GOOD OR EXCELLENT

■ Served ■ Not Served



Those who have served have higher self-reported rates of very good or excellent health than civilians, **despite facing higher rates of many chronic conditions.**

However, despite generally reporting better health, those who have served still have higher rates of chronic disease and behavioral health concerns, and little to no improvements have been made on many important markers of good health.

Arthritis

24.7% vs. 22.8%

Cancer

10.9% vs. 9.8%

Cardiovascular Disease

9.8% vs. 7.2%

Chronic Obstructive Pulmonary Disease

6.3% vs. 5.8%

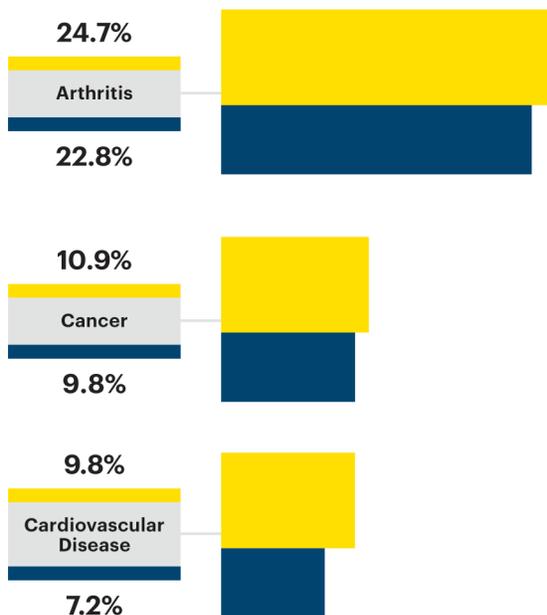
Functional Impairment

25.8% vs. 20.8%

Many chronic disease rates for those who have served have not improved since 2011-2012, especially among 50+ year olds who have served.

COMMON CHRONIC DISEASES

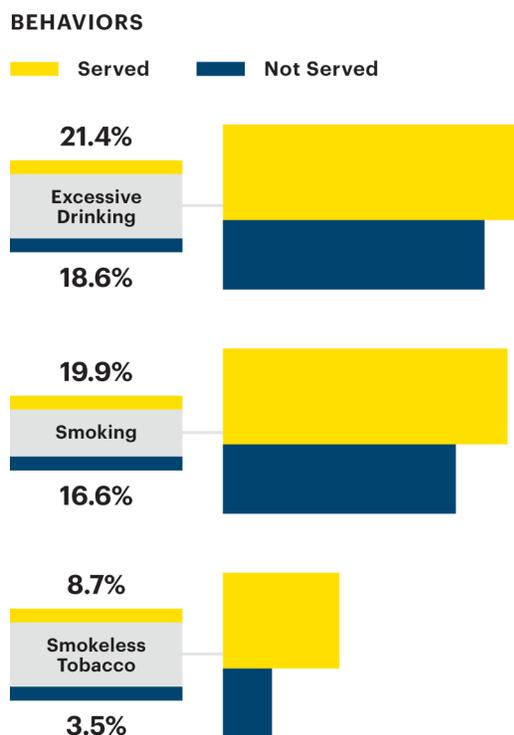
■ Served ■ Not Served



Those who have served **report higher rates of unhealthy behaviors** than civilians.

Similarly, those who have served have greater behavioral health concerns, including smoking, smokeless tobacco use, excessive drinking and insufficient sleep.

Rates of smoking (from 23.5% to 19.9%) and excessive drinking (from 23.4% to 21.4%) have improved among those who have served, but rates of smokeless tobacco use and insufficient sleep have remained consistent.



Executive Summary

Those Who Have Served Still Experience Significant Mental Health Challenges

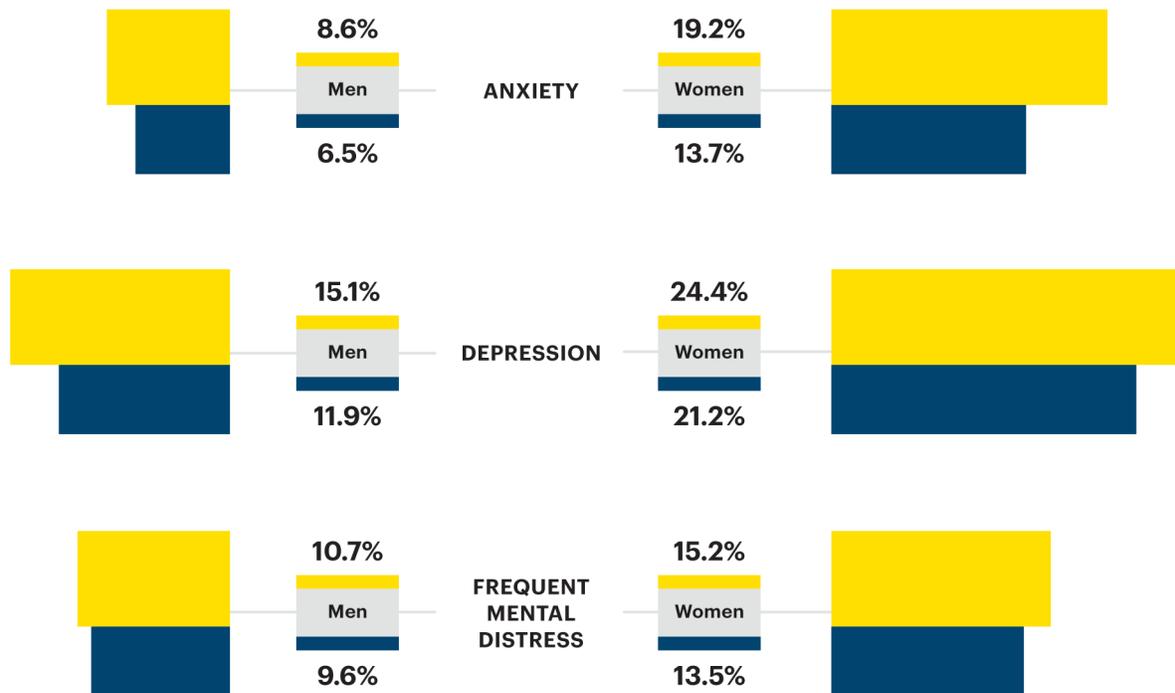
This year's report highlights that men and women who have served have higher rates of depression, anxiety and frequent mental distress² than civilian men and women. Additionally, the rate of depression among those who have served has increased 9% overall since

2011-2012 and as much as 32% among those who have served aged 26-34. During this time, little improvement has been observed in rates of anxiety and frequent mental distress among those who have served.

Rates of anxiety, depression, and frequent mental distress² are **higher among both men and women who have served** than their civilian counterparts.

MENTAL HEALTH

■ Served ■ Not Served



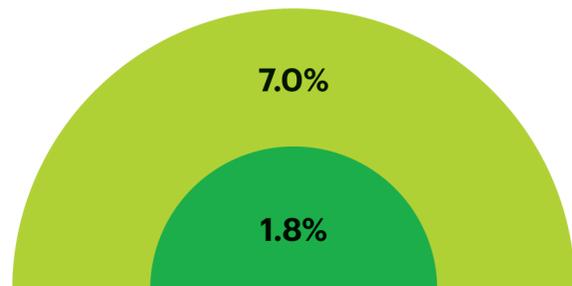
²Percentage of respondents who reported their mental health was not good for 14 or more of the past 30 days.

As highlighted in the *Health of Women Who Have Served Report*, women who have served face distinct mental health challenges. Among women who have served, the rate of suicidal thoughts increased nearly threefold and anxiety rate more than doubled since 2011-2012.

The rate of suicidal thoughts among women who have served has **increased threefold in recent years.**

SUICIDAL THOUGHTS

2011-2012 2015-2016

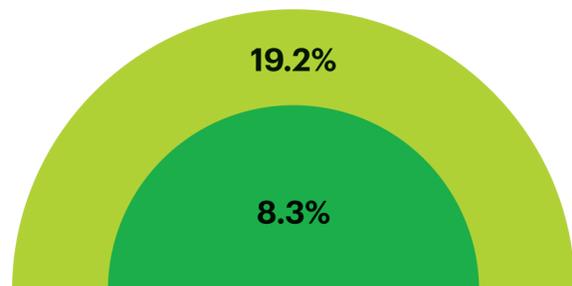


Improvements in mental health treatment are highlighted in this year's report. The percentage of those who have served who have any mental illness and have received mental health treatment in the past 12 months increased 23% since 2011-2012. Nonetheless, despite these improvements, half of those who have served who have a mental illness have not received mental health treatment during that time.

The rate of anxiety among women who have served has **increased 131% in recent years.**

ANXIETY

2011-2012 2013-2014



Executive Summary

Encouraging Markers of Preventive and Primary Care Among Those Who Have Served

The report also documents access to and use of health care services by those who have served. Across several measures, these men and women fare better than their civilian counterparts, including:

Colorectal Cancer Screening

72.4% vs. 66.0%

Dental Visit

69.6% vs. 65.2%

Flu Vaccine

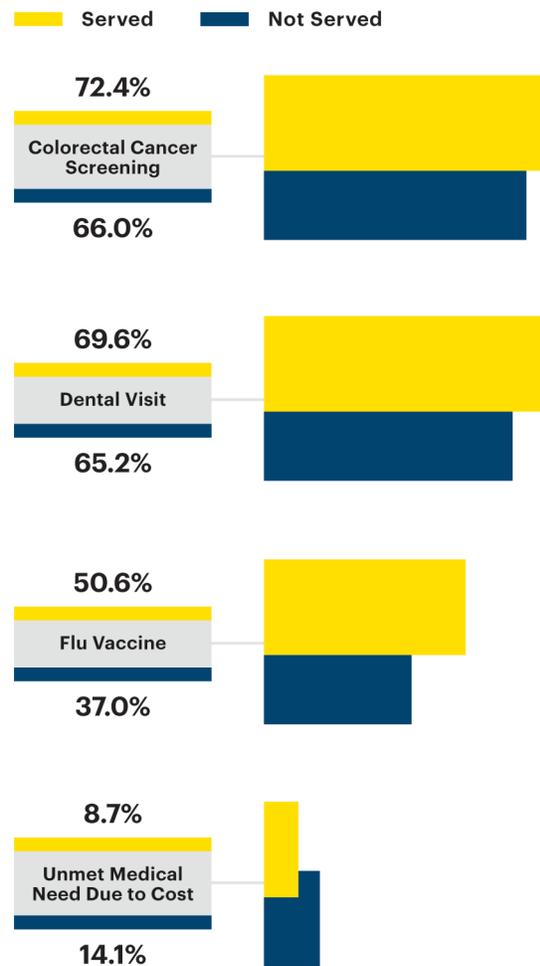
50.6% vs. 37.0%

Unmet Medical Need Due to Cost

8.7% vs. 14.1%

Those who have served also have higher rates of health insurance coverage than civilians (92.7% vs. 86.9%), a trend that has improved since 2011-2012. However, those who have served are still less likely to have a dedicated health care provider than civilians (75.2% vs. 77.1%) and have not experienced improvement on this marker.

HEALTH CARE SERVICES



Despite higher rates of usage of many health care services, half of those who have served who have any mental illness **have not received mental health services.**

Notable Trends Among Key Subpopulations of Those Who Have Served

Several notable trends and differences in health among subpopulations of those who have served — both improvements and challenges — are highlighted in the report. These findings add to the strengths and challenges of different groups across populations illustrated by the *America's Health Rankings* database.

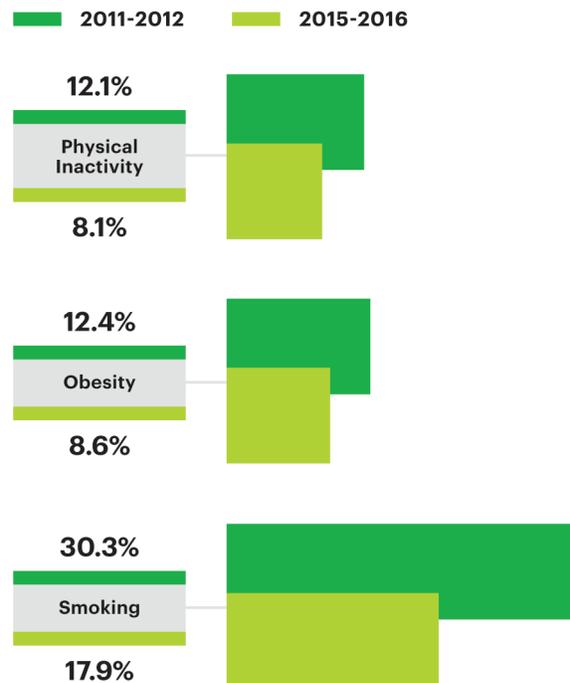
IMPROVEMENTS

Higher rates of very good or excellent health cut across groups among those who have served, with minorities, younger individuals (18-25 year olds) and those with lower levels of education and income more likely to report high health status than their civilian counterparts. This trend has continued since 2011-2012.

Physical inactivity, obesity and smoking rates declined among 18-25 year olds who have served since 2011-2012.

Physical inactivity, obesity and smoking rates **have declined among** 18-25 year olds who have served.

BEHAVIORS



Executive Summary

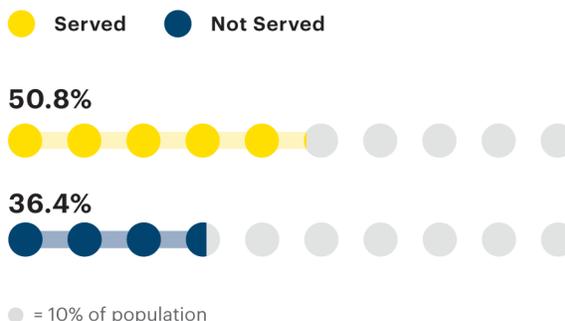
CHALLENGES

The rate of smokeless tobacco use among 18-25 year olds who have served is nearly four times the rate of civilians aged 18-25 and has not improved among this cohort since 2011-2012.

More than half of those who have served aged 26-34 report insufficient sleep compared to slightly more than one-third of civilians aged 26-34, a rate that has not improved since 2014.

26-34 year olds who have served report a **higher rate of insufficient sleep** than their civilian counterparts.

INSUFFICIENT SLEEP



Stimulating Dialogue and Action to Improve the Health of Those Who Have Served

The *Health of Those Who Have Served Report* remains a leading national resource to monitor trends over time and identify key areas of concern and opportunities for improvement. United Health Foundation and MOAA encourage policy-makers, health officials and community leaders to engage in meaningful dialogue about the findings of this report, especially

exploring solutions to health challenges where little improvement has been observed since the initial report in 2016. The insights from this year's report can spark cross-stakeholder collaboration and drive action in improving the lives of service members and veterans and the health of the communities where they live.

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Introduction

Those who have served in the United States (U.S.) Armed Forces comprise nearly 10 percent of the U.S. adult population or almost 23 million, including 1.3 million on active duty, 1.1 million in National Guard and the Reserves, and over 20 million veterans.^{1,2} The health and health care needs of people with military service differ in several important ways from civilians, differences which are grounded in the unique experiences and exposures of serving on duty and in combat, as well as in transitioning to civilian life.

Our nation looks to men and women in uniform to serve and protect our country, and it is incumbent on us to respond to their health and health care needs. Central to our obligation is a better understanding of their health circumstances. The objective of this report is to document and offer insight into the distinct and changing health profile of those who have served so that we may work to assure their well-being now and in the future.

Shifting Demographics

Over the last 50 years, the number of active duty personnel has declined significantly from 3.5 million during the military draft era to 1.3 million as part of today's all-volunteer force.³ The U.S. Department of Veterans Affairs (VA) projects the veteran population will further decrease by nearly 40% over the next three decades to 13.6 million.² During this time, the share of male veterans is expected to decline significantly,

The changing face of military and veteran populations creates unique health challenges and new demands on the health care system.

while the female veteran population will nearly double in size. Racial and ethnic diversity among veterans will also increase, and people of color will account for one-third (32.8%) of the total veteran population by 2037.² The composition of veterans by wartime eras is also changing, with Gulf War-era veterans (spanning from 1990 through present) now comprising the largest share of all U.S. veterans, surpassing those from the Vietnam era.²

Evolving Health Needs

The changing face of military and veteran populations creates unique health challenges and new demands on the health care system. Although most service members return from active duty and combat without physical injuries, and receive education, employment, and other financial benefits associated with service, many face serious and lasting health effects.

As those who have served age, the burden of chronic disease will continue to grow, especially among aging baby boomers who served in the Vietnam and Korean Wars. Women who have served — and who increasingly make up a larger proportion of this population — also face unique challenges. Despite being more highly educated and having higher incomes, for example, women with military service have a greater prevalence of many physical and mental health concerns than civilian women.⁴

In addition, those returning from the most recent Gulf Wars, including Operation Enduring Freedom in Afghanistan (OEF) from 2001-2014, Operation Iraqi Freedom (OIF) from 2003-2010, and the ongoing Operation New Dawn in Iraq (OND) from 2010-present face unusual combat-related circumstances. As a volunteer force and the largest, longest lasting mobilization of National Guard and Military Reserves, these service members face more frequent and longer deployments as well as exposure to and survival

from extreme stresses of combat. These changes and circumstances have contributed to unprecedented rates of behavioral and mental health concerns, such as Post Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI).⁵ Finally, while in previous wars, physical training and fitness standards for those who served appeared to protect against mortality risks, referred to as the Healthy Soldier Effect (HSE), research shows the effect may be waning among veterans of recent wars in Iraq and Afghanistan.^{6,7}

These changing dynamics point to the continued need to monitor the health of those who have served from a broader population perspective, including measures of behaviors, social conditions, and policies that influence health.

Report Objectives

The *America's Health Rankings® 2018 Health of Those Who Have Served Report* builds on the 2016 Edition to provide an updated, comprehensive national portrait and trends of the health and well-being of those who have ever served on active duty in the U.S. Armed Forces. It remains the only national resource to provide comprehensive population-based data over time on the health of men and women who have served, filling an important and ongoing

gap in the field. It is intended for a broad range of audiences including advocates, policymakers, government officials, and constituents at the national, state, and local levels to:

- **Describe the health of those who have served** across 31 measures of behaviors, clinical care, policy, community and environment, and health outcomes. Comparisons between those who have and have not served are examined overall and by age, gender, race/ethnicity, education, and income.
- **Provide trends on health and well-being improvements and challenges over time** for those who have served overall and in comparison to those who have not served by age, gender, race/ethnicity, education, and income.
- **Build awareness of the breadth and magnitude of health concerns** facing those who have served overall and for specific population groups.
- **Stimulate dialogue and action** to inform health priorities and improve the health of those who have served, recognizing they are an evolving segment of the U.S. population facing distinct needs.

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Design

Overview

The *2018 Health of Those Who Have Served Report* was developed with guidance from a National Advisory Group representing military, veteran, and public health organizations who informed the selection of health measures and other methodological features of the report. For more information on the group, see page 37.

As with the 2016 Edition, the primary source of data for this report is the Centers for Disease Control and Prevention's (CDC) *Behavioral Risk Factor Surveillance System* (BRFSS), the world's largest, annual population-based telephone survey system tracking health conditions and risk behaviors in America since 1984. With an annual sample of over 400,000 respondents, BRFSS also has one of the most robust samples of those who have served, totaling nearly 60,000 each year.

This report also draws on data from the Substance Abuse and Mental Health Services Administration's *National Survey on Drug Use and Health* (NSDUH) and the CDC's *National Health Interview Survey* (NHIS). NSDUH provides national and state data on the use of tobacco, alcohol, illicit drugs, and mental health in the U.S. and includes an annual sample of about 2,500 individuals who have served. NHIS is the nation's largest in-person household health survey conducted since 1957 and includes an annual sample of nearly 7,000 individuals who have served.

Those who have served are defined in this report as "those who have ever served in the U.S. Armed Forces."

Definition of Those Who Have Served

Those who have served are defined in this report as "those who have ever served in the U.S. Armed Forces." While all three data sources use this common definition, some differences exist in who is included among those with service. For more information on specific definitions used by BRFSS, NSDUH, and NHIS, see page 36.

Measures

The *2018 Health of Those Who Have Served Report* is based on an expanded set of 31 measures. New to this edition are two socioeconomic measures — employment and food security — as well as a measure of self-reported pain. Also new to this edition are six additional mental health measures which span the behaviors, clinical care, and health outcomes domains. Informed by the latest literature and guidance from the National Advisory Group, the selection of these measures was driven by three criteria:

- Measures must represent overall health conditions, behaviors, and care issues most pertinent to those who have served in the U.S. Armed Forces, including those addressing mental illness and chronic disease.
- Individual measures must have sufficient sample sizes to assure reliable estimates for those who have served and not served overall, and where possible, by age, gender, race/ethnicity, education, and income.
- Each selected measure must be amenable to change. In other words, each measure can be modified by policy or intervention to achieve measurable improvement.

Data and Analysis

This report utilizes six years of data, 2011-2016, drawn from BRFSS, NSDUH, and NHIS. Data were weighted and age-adjusted into three two-year periods as follows:

- Baseline, 2011-2012: provides a baseline by which to compare trends across editions, and over time.
- Midpoint, 2013-2014: these rates were presented as the “current” rate in the 2016 Edition, and now represent an interim period in the trends analysis.
- Current, 2015-2016: provides the most current years’ rates and an opportunity to measure change since the midpoint and baseline years.

Unless otherwise noted, this report mainly features data for the most current period, 2015-2016, and tracks progress since the baseline period, 2011-2012.

Age Adjustment

Those who have served on active duty have a different age distribution from the general U.S. population. To prevent age from skewing results, data included in this report were age-adjusted to the 2000 U.S. Standard Population. This adjustment produces fairer, more realistic comparisons between those who have and have not served. Age-adjusted prevalence estimates should be understood as relative estimates, not as actual measures of burden.

Findings

Overview

The *2018 Health of Those Who Have Served Report* documents the current health-related strengths and challenges facing those who have served, identifying where encouraging improvements have occurred, where challenges persist, and where new concerns have emerged. Overall, the report finds:

- Those who have served are significantly more likely to self-report being in excellent or very good health, despite having persistently higher rates of unhealthy behaviors, mental health challenges, and chronic diseases than those who have not served.
 - Both men and women with military service report significantly higher rates of anxiety, depression, and frequent mental distress than men and women who have not served.
 - Rates of chronic disease such as arthritis, cancer, chronic obstructive pulmonary disease (COPD), functional impairment, and pain are also significantly higher for men and women who have served than men and women who have not.
 - Despite significantly higher rates of coverage and access to care to many preventive services, those who have served are less likely to have a dedicated health care provider than those who have not served.
 - Those who have served report significantly higher rates of mental health treatment — which includes inpatient care, outpatient care, and prescription medication — than those who have not served.
- Since 2011-2012, there have been encouraging improvements in smoking, excessive drinking, health insurance coverage, unmet medical need due to cost, and mental health treatment among those who have served.
 - Those aged 18-25 years who have served experienced substantial improvements in health behaviors.
 - Since 2011-2012, women who have served have seen a significant increase in mental health challenges, with the rate of suicidal thoughts increasing three-fold and the rate of anxiety more than doubling.

In addition to overall population differences between those who have and have not served, the report documents significant differences between specific subpopulation groups. For example, minorities who have served generally experience positive socioeconomic and clinical care benefits compared to minorities who have not served. At the same time, some minorities face higher rates of unhealthy behaviors such as smoking and excessive drinking than their peers who have not served. While rates of chronic disease generally increase with age, those aged 50 years and older who have served have significantly higher rates of cancer, cardiovascular disease, and other conditions than those who have not served.



STRENGTHS

Those who have served report better overall health experiences on nine behavior, policy, community and environment, clinical care, and health outcome measures than those who have not served.

Strengths Among Those Who Have Served, 2015-2016

Behaviors	Served	Not Served
Physical Inactivity	20.1%	25.0%
Policy		
Health Insurance	92.7%	86.9%
Community & Environment		
Employment	92.9%	90.6%
Clinical Care		
Colorectal Cancer Screenings	72.4%	66.0%
Dental Visit	69.6%	65.2%
Flu Vaccine	50.6%	37.0%
Mental Health Treatment	50.8%	42.2%
Unmet Medical Need	8.7%	14.1%
Health Outcomes		
High Health Status	56.3%	51.1%



CHALLENGES

Those who have served face greater challenges across thirteen behavior, clinical care, and health outcome measures than those who have not served.

Challenges Among Those Who Have Served, 2015-2016

Behaviors	Served	Not Served
Excessive Drinking	21.4%	18.6%
Insufficient Sleep	42.5%	34.6%
Smoking	19.9%	16.6%
Smokeless Tobacco Use	8.7%	3.5%
Clinical Care		
Dedicated Health Care Provider	75.2%	77.1%
Health Outcomes		
Arthritis	24.7%	22.8%
COPD	6.3%	5.8%
Cancer	10.9%	9.8%
Cardiovascular Disease	9.8%	7.2%
Diabetes	9.8%	9.3%
Functional Impairment	25.8%	20.8%
Pain	25.1%	19.0%
Suicidal Thoughts in Past Year	5.1%	4.1%



SIMILARITIES

Those who have served report overall rates that are not significantly different from civilians on nine behavior, community and environment, and health outcome measures.

Similarities Between Those Who Have and Have Not Served, 2015-2016

Behaviors	Served	Not Served
Obesity	29.1%	29.0%
Opioid Misuse	4.8%	4.8%
Community & Environment		
Food Insecurity	15.2%	16.6%
Health Outcomes		
Any Mental Illness in Past Year	18.1%	18.6%
Anxiety [§]	10.0%	10.5%
Depression	16.4%	17.1%
Frequent Mental Distress	11.4%	11.7%
Suicide Attempt	12.3%	12.9%
Teeth Extractions	13.8%	13.5%

§ Data on anxiety were not available for 2015-2016. Rates reported for the current period correspond to 2013-2014.

Findings

Encouraging Improvements

Since 2011-2012, those who have served experienced significant improvements in overall rates for six of the 31 measures: smoking, excessive drinking, mental health treatment, unmet medical need due to cost, health insurance, and employment. With the exception of mental health treatment, improvements among those with service coincided with improvements in rates among the general population.

Two key behavior measures improved since the baseline period among those who have served. Smoking rates decreased by 15% overall, dropping from 23.5% to 19.9%. During this same period, excessive drinking declined by 9%, from 23.4% to 21.4%.

Coinciding with the overall expansion of health insurance coverage since the implementation of the Affordable Care Act (ACA) of 2010, those who have served experienced a 5% increase in coverage rates from 88.2% to 92.7%. Almost all subpopulation groups saw significant improvements in health insurance rates, with those who have served who earn less than \$25,000 witnessing a 17% gain.

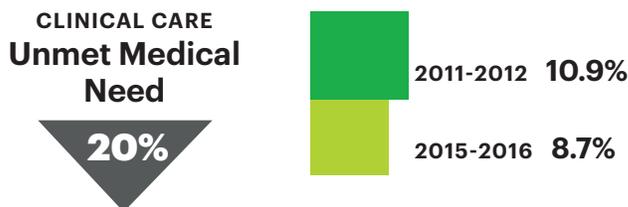
Accompanying these coverage gains were improvements in access to care. Nearly 20% fewer people who have served reported unmet medical need due to cost in 2015-2016 as compared to the baseline period. The most notable declines in rates occurred among blacks and whites (28% and 20% respectively).

Mental health treatment rates also improved by 23%, increasing from 41.2% to 50.8% among those who have served. Whites and men who have served experienced significant improvements in mental health treatment compared with whites and men who did not serve (23% among both population groups).

Finally, employment improved significantly among both groups, with those who have served experiencing a 4% increase since 2011-2012, from 89.6% to 92.9%. Employment gains can be linked to the overall recovery that occurred in the economy during the last few years following one of the worst recessions documented in U.S. history in 2007-2009.

Two key behavior measures improved since the baseline period among those who have served. Smoking rates decreased by 15% overall, and excessive drinking declined by 9%.

Improvements in Overall Rates Among Those Who Have Served, 2011-2012 to 2015-2016



Findings

Continuing and Emerging Challenges

Despite some significant improvements in overall behavior rates and access to care measures, those who have served continue to face many health-related challenges. For example, those with military service continue to report significantly lower rates of having a dedicated health care provider — or one or more persons they think of as their personal doctor or healthcare provider. This finding has held steady since 2011-2012. In addition, men and women who have served continue to face a higher burden of many chronic diseases and mental health challenges, rates that have generally also remained steady.

In terms of unhealthy behaviors, while smoking and excessive drinking rates improved, they still remain significantly higher in the current time period for those who have served than those who have not. Insufficient sleep remains an ongoing concern among those who have served, who continuously report a significantly higher rate than those who have not served.

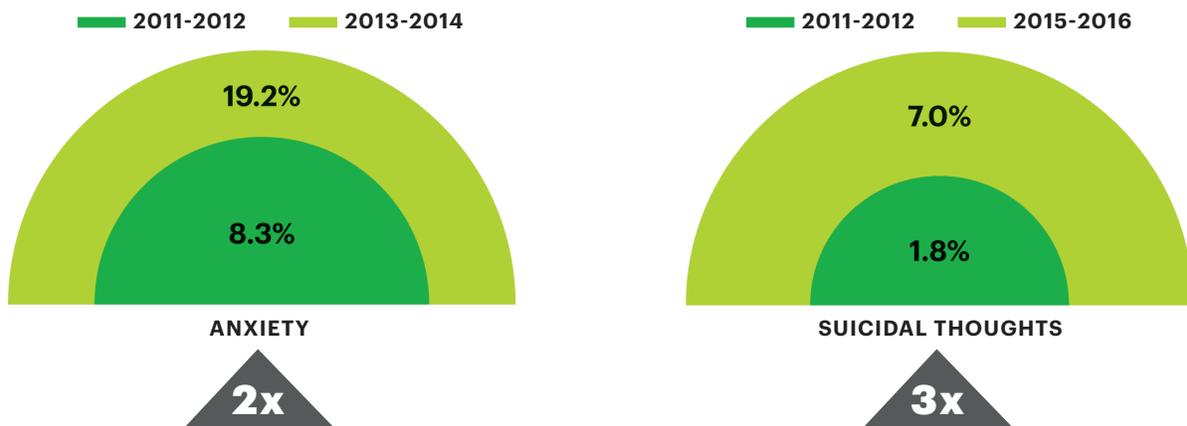
Those who have served have experienced some significant increases in mental health challenges since 2011-2012. First, the overall rate of depression increased by 9%, from 15.0%

Despite some significant improvements in overall behavior rates and access to care measures, those who have served continue to face many health-related challenges.

to 16.4%, and among 26-34 year olds who have served, depression rates increased by 32%, from 14.8% to 19.5%. Second, women who have served face a growing burden of mental health challenges. Since the baseline period, anxiety rates more than doubled from 8.3% to 19.2%, and the rate of suicidal thoughts increased three-fold from 1.8% to 7.0%.

The sections that follow provide a summary of key overall and population-specific findings across behavior, policy, community and environment, clinical care, and health outcome measures. Complete data on all 31 measures can be accessed at the America's Health Rankings' website at www.AmericasHealthRankings.org.

Since 2011-2012, rates of suicidal thoughts tripled and anxiety doubled among women who have served.



Behaviors

Health risk behaviors such as smoking, excessive drinking, and substance misuse, can elevate risk for chronic disease, disability, and premature mortality over time. Certain unhealthy behaviors, such as insufficient sleep, are also associated with mental illness. Other behaviors, such as excessive drinking or tobacco use, may be coping responses to psychological distress.

This year's study includes seven measures of behaviors, with opioid misuse and smokeless tobacco use added as new measures. Findings reveal that those who have served continue to report significantly higher overall rates of excessive drinking, insufficient sleep, smoking, and smokeless tobacco use. And while the rate of physical inactivity remains significantly lower among those who have served, the overall rate of obesity is not significantly different between those who have and have not served. Overall rates of opioid misuse also do not differ between those who have and have not served.

However, the report documents important differences by age, race/ethnicity, and other demographic factors between those who have and have not served:

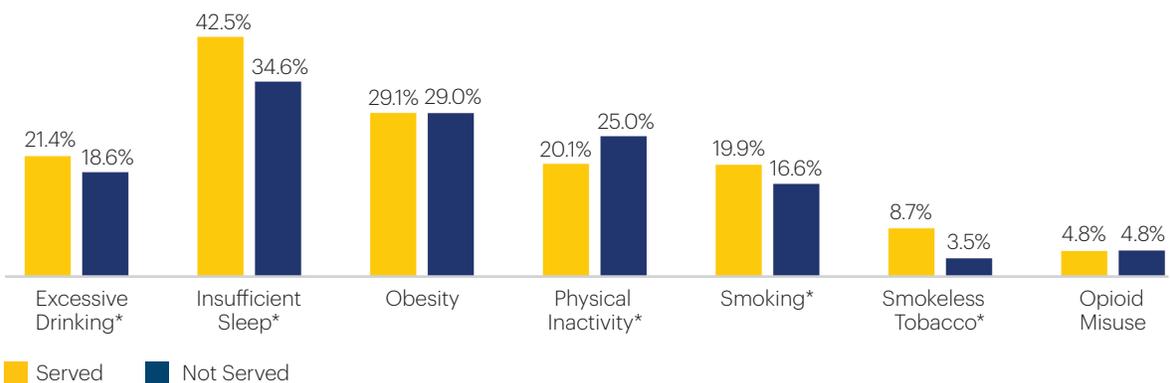
- Whites who have served have significantly higher rates of excessive drinking (22.8% vs. 21.2%), insufficient sleep (40.0% vs. 33.0%), obesity (28.9% vs. 27.6%), smoking (20.8% vs. 18.4%), and smokeless tobacco use (10.7% vs. 4.3%) than whites who have not served.

How Have Behaviors Changed Since 2011-2012 for Those Who Have Served?

⊕ Encouraging Improvements:

- Smoking declined by 15% from 23.5% to 19.9% among those who have served. Among 18-25 year olds with service, smoking dropped by 41% from 30.3% to 17.9%.
- Excessive drinking decreased by 9% from 23.4% to 21.4% among those who have served.
- Physical inactivity and obesity rates declined among 18-25 year olds who have served by 28% and 17%, respectively.

Behavior Rates for Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

Findings

- Many minority groups are also more likely to report unhealthy behaviors than their peers who have not served. Hispanics who have served, for example, report significantly higher rates of excessive drinking (21.9% vs. 16.5%), insufficient sleep (46.7% vs. 32.8%), smoking (16.5% vs. 11.9%), and smokeless tobacco use (5.8% vs. 1.9%) than Hispanics who have not served.
- Asians who have served report roughly twice the rate of smoking (15.0% vs. 6.4%) and obesity (16.0% vs. 9.8%) than Asians who have not served.
- Rates of physical inactivity (8.1% vs. 16.9%) and obesity (8.6% vs. 18.2%) are significantly lower among 18-25 year olds who have served than those who have not. However, this cohort is more likely to have higher rates of other unhealthy behaviors such as excessive drinking (32.0% vs. 26.4%), insufficient sleep (45.1% vs. 32.7%), and smoking (17.9% vs. 14.8%). Smokeless tobacco use is also four times higher among 18-25 year olds who have served than those who have not (16.9% vs. 4.6%).
- With age, those who have served are significantly more likely to be obese than those who have not served. For example, rates are significantly higher among those 35-49 years (35.7% vs. 33.0%) and 50+ years (33.3% vs. 30.5%).
- Unhealthy behaviors such as excessive drinking, insufficient sleep, smoking, and smokeless tobacco use are generally higher among those who have served than those who have not served, at all levels of income and education.

Policy

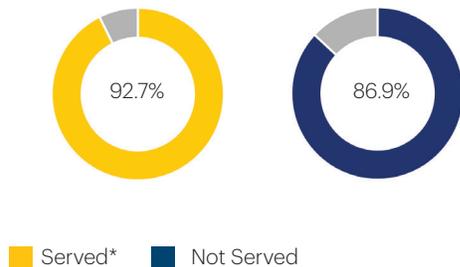
This report includes one measure of policy — health insurance, which is measured as the percentage who have health insurance privately, through their employer, or through the government. People who have health insurance are more likely to receive timely and appropriate medical care, have better self-reported health status, and are protected from the threat of catastrophic health care expenses.

The U.S. Department of Defense (DoD) and Department of Veterans Affairs (VA) provide health insurance benefits for members of the military, veterans, and their families. However, access to VA benefits depends on several factors, including character of discharge. National data show DoD and VA benefits are not the leading or primary source of health insurance for those who have served. About half of all veterans are covered through Medicare, and employer-sponsored plans are the leading source of coverage for working-age veterans.

How Have Health Insurance Rates Changed Since 2011-2012 for Those Who Have Served?

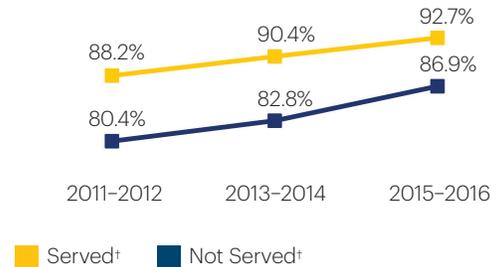
- ➕ **Encouraging Improvements:**
 - Health insurance rates increased by 5% from 88.2% to 92.7% among those who have served.
 - Rates increased significantly across virtually all subgroups who have served, by gender, age, and race/ethnicity.
 - Those earning less than \$25,000 experienced the largest insurance gains, with rates increasing by 16% from 70.6% to 82.2%.

Overall Rates of Health Insurance for Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

Trends in Overall Rates of Health Insurance, 2011-2012 to 2015-2016



†Statistically significant difference between 2011-2012 and 2015-2016.

Findings from this study reveal that those who have served have significantly higher rates of health insurance than those who have not served, overall (92.7% vs. 86.9%) and among most subpopulation groups. Of note:

- Many minority groups who have served have significantly higher rates of health insurance than those who have not served. For example, Hispanics (90.1% vs. 71.8%), Hawaiian/Pacific Islanders (93.7% vs. 83.9%), and blacks (91.3% vs. 85.4%) have significantly higher rates of insurance than their peers who have not served.
- Those with lower levels of education and income who have served are significantly more likely than their non-served peers to have coverage.

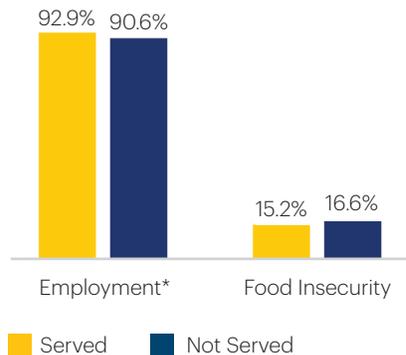
Community & Environment

Social and environmental factors play a key role in promoting conditions to enable people to achieve and maintain good health. Two new measures were added to the *2018 Health of Those Who Have Served Report*: employment and food insecurity. Having a job provides an important source of stability and benefits for most families, and directly influences whether a person can afford safe housing, quality childcare, and educational opportunities. Food insecurity is a marker of whether someone has access to sufficient, nutritious food, and influences diet, weight, and overall health.

Those who have served report significantly higher rates of employment than those who have not served (92.9% vs. 90.6%). The difference in overall rate of food insecurity, which is measured as the percentage who faced the threat of hunger in the past 30 days, was not statistically significant between those

Findings

Rates of Employment and Food Insecurity Among Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

How Have Employment & Food Insecurity Rates Changed Since 2011-2012 for Those Who Have Served?

+ Encouraging Improvements:

- Employment rate increased by 4% from 89.6% to 92.9% among those who have served.
- Employment rate increased by 17% from 62.7% to 73.6% for those who have served who earn less than \$25,000 annually.
- Food insecurity declined by 16% from 12.7% to 10.7% among those who have served who are 50 years or older.

who have and have not served (15.2% vs. 16.6%). However, important findings emerged at the subpopulation level:

- Some minorities who have served have higher rates of employment and lower rates of food insecurity than their peers who have not served. For example, blacks who have served have significantly higher rates of employment (89.0% vs. 84.4%) and lower rates of food insecurity (22.8% vs. 29.1%) than blacks who have not served.
- At lower levels of education and income, those who have served have significantly higher rates of employment and lower rates of food insecurity than those have not served.

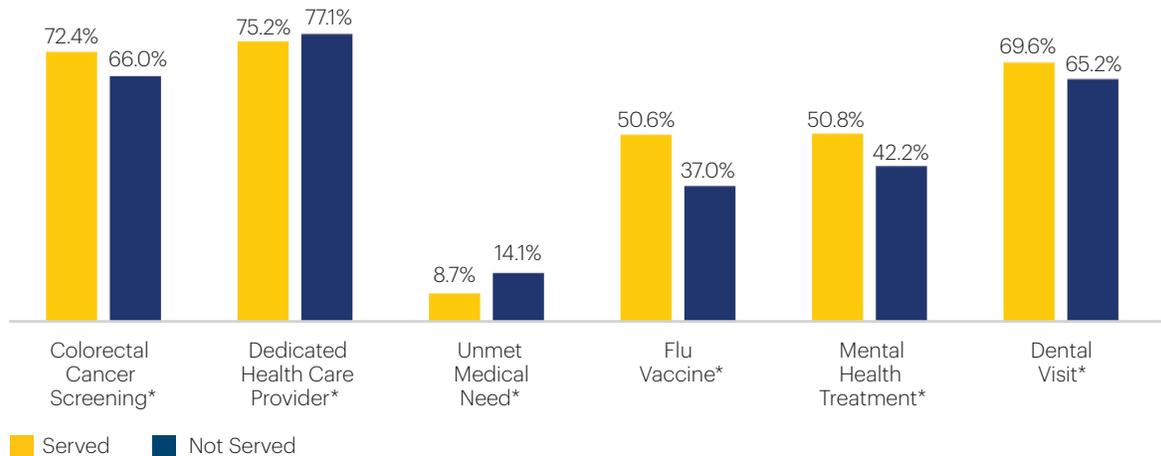
Clinical Care

Access to clinical care is necessary to maintain good health, identify and treat health problems at early stages, and manage chronic disease appropriately. Timely access to a dedicated health care provider is linked to better health outcomes, and obtaining recommended preventive screenings can reduce mortality from chronic diseases like cancer.

This report includes six measures of clinical care which intend to broadly capture access to and utilization of care across primary and preventive services as well as oral and mental health services. New to the 2018 Edition, is a measure on mental health treatment, measured as the percentage of persons with any mental illness who received mental health treatment in the past 12 months, such as inpatient care, outpatient care, or prescription medications prescribed to treat a mental or emotional condition.

Across five of the six measures, those who have served consistently report better access

Clinical Care Rates for Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

to and utilization of clinical care services than those who have not served. Rates of colorectal cancer screening (72.4% vs. 66.0%), dental visit (69.6% vs. 65.2%), flu vaccine (50.6% vs. 37.0%), and mental health treatment (50.8% vs. 42.4%) are significantly higher among those who have served than those who have not. Unmet medical need — measured as the percentage who delay or forgo needed care anytime during the past year due to cost — was significantly lower among those with service than those without (8.7% vs. 14.1%).

Despite having greater access to and uptake of many preventive and clinical care services, those who have served have a significantly lower overall rate of having a dedicated health care provider than those who have not served (75.2% vs. 77.1%).

Rates of having a dedicated health care provider vary significantly between those who have and have not served at the subpopulation level. Of note:

- Whites (75.0% vs. 80.7%) and Asians (75.0% vs. 80.5%) who have served have significantly

lower rates of having a dedicated health care provider than whites and Asians who have not served.

- Hispanics who have served have a significantly higher rate of having a dedicated health care provider than Hispanics who have not served (73.8% vs. 65.0%).
- At higher levels of education and income, those who have served have significantly lower rates of having a health care provider than those who have not served. For example, whereas 78.8% of those who have served who earn \$75,000 or more have a dedicated health care provider, 85.0% of those who have not served who earn \$75,000 or more have a dedicated health care provider.

Mental health treatment also varies significantly between those who have and have not served at the subpopulation level:

- Men who have served who have any mental illness have a significantly higher rate of

Findings

receiving mental health treatment than their peers who have not served (49.0% vs. 32.6%).

- Blacks (54.0% vs. 28.7%), Hispanics (61.3% vs. 29.4%), and Asians (38.1% vs. 22.8%) who have served have nearly twice the rate of receiving mental health treatment for any mental illness they faced in the past year than their counterparts who have not served.

How Have Clinical Care Rates Changed Since 2011-2012 for Those Who Have Served?

⊕ Encouraging Improvements:

- Those who have served experienced a 20% decline in unmet medical need due to cost since 2011-2012. In particular, 18-25 year olds, blacks, and whites with service experienced a 43%, 28%, and 20% decline, respectively, in unmet medical need.
- Rate of mental health treatment among those with any mental illness who have served increased significantly by 23% from 41.2% to 50.8%. Whites and men with service also experienced significant improvements in mental health treatment.

⊖ Remaining Challenges:

- Despite improvements, half of those who have served who had any mental illness in the past year still do not receive needed mental health treatment. And among subpopulation groups, such as Asians who have served, nearly two-thirds still do not receive the mental health treatment they need to address their mental illness.

Health Outcomes

The *2018 Health of Those Who Have Served Report* features an expanded set of 15 health outcome measures. New to this year's edition are a range of mental health measures, including anxiety, any mental illness in the past year, suicidal thoughts, and suicide attempts. Also new is a measure of pain, defined as the percentage who reported having neck pain or lower back pain in the past three months.

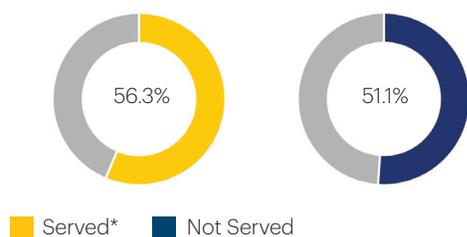
Overall, men and women who have served are more likely to say they are in excellent or very good health than men and women who have not served. Despite this positive outlook, those who have served have a significantly higher burden of many physical health, mental health, and chronic disease challenges. Findings on health outcomes in this section are organized by overall health status, mental health, and chronic conditions.

OVERALL HEALTH STATUS

Those who have served report significantly higher rates of high health status than those who have not served (56.3% vs. 51.1%). Detailed findings show that:

- Both men (56.6% vs. 51.0%) and women (55.7% vs. 51.0%) who have served have significantly higher self-reported rates of high health status than men and women who have not served.
- Many minorities who have served report significantly higher rates of high health status than minorities who have not served.

Overall Rates of High Health Status for Those Who Have and Have Not Served, 2015-2016



■ Served* ■ Not Served

*Statistically significant difference between those who have and have not served.

- Self-reported health status varies between those who have and have not served by age. Those who have served who are 18-25 years (74.1% vs. 61.3%), 26-34 years (62.8% vs. 57.4%), and 35-49 years (58.7% vs. 51.6%) have significantly higher rates of self-reported high health status than those who have not served. This difference disappears at higher age levels. No difference, for instance, occurred in perception of high health status between those 50 years and older who have served and those who have not.

How Have Self-Reported Health Status Rates Changed Since 2011-2012 for Those Who Have Served?

⊕ Encouraging Improvements:

- Health status rates have generally held steady for those who have served, overall and for most subpopulation groups.
- Among college graduates who have served, health status rates improved by 6% from 64.1% to 68.1%.

MENTAL HEALTH

The *2018 Health of Those Who Have Served Report* features six mental health measures, including percentage with any mental illness, anxiety, depression, frequent mental distress, suicidal thoughts, and suicide attempts.

Rates of suicidal thoughts are significantly higher among those who have served than those who have not (5.1% vs. 4.1%). On other mental health measures, overall rates are similar for those who have and have not served. However, significant differences were found by gender, age, race/ethnicity, and other factors.

First, both men and women who have served report significantly higher rates of anxiety, depression, and frequent mental distress than men and women who have not served. Second, women who have served continue to have significantly higher rates of most mental health concerns than both women who have not served and men who have served. Of note:

- About one in three (30.6%) women who have served have had a diagnosed mental illness in the past year, compared to 22.1% of women who have not served and 16.2% of men who have served.

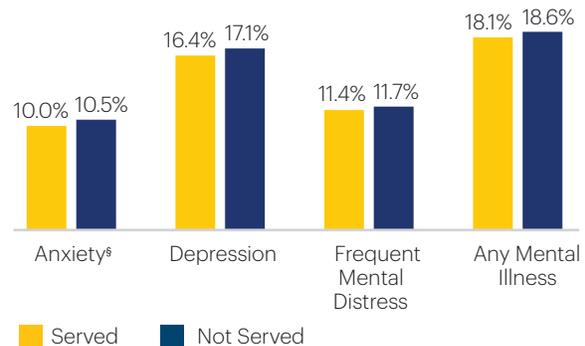
Findings

- About one in four (24.4%) women who have served have depression, compared to 21.2% of women who have not served and 15.1% of men who have served.
- About one in six (15.2%) women who have served report frequent mental distress, compared to 13.5% of women who have not served and 10.7% of men who have served.
- Women who have served have almost twice the rate of suicidal thoughts (7.0%) as compared to women who have not served (4.3%) and men who have served (4.7%).

In addition, findings reveal that the mental health burden among those who have served varies by race/ethnicity:

- Whites who have served have significantly lower rates of anxiety (10.4% vs. 13.5%), any mental illness (18.8% vs. 21.2%), depression (16.5% vs. 20.0%), and frequent mental distress (10.7% vs. 12.2%) than whites who have not served.
- Minorities who have served — including blacks (16.0% vs. 13.9%), Hispanics (16.5% vs. 13.6%), and Asians (10.2% vs. 6.5%) — report significantly higher rates of depression than their counterparts who have not served.

Overall Rates of Mental Health Concerns for Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between women who have and have not served.

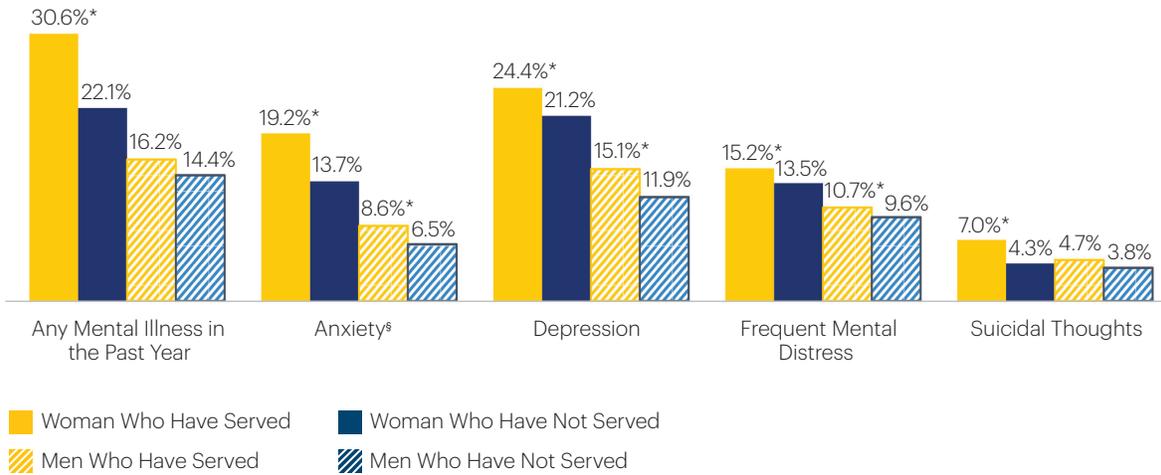
§ Data for Anxiety are reported for 2013-2014.

How Have Mental Health Rates Changed Since 2011-2012 for Those Who Have Served?

⊖ Remaining Challenges:

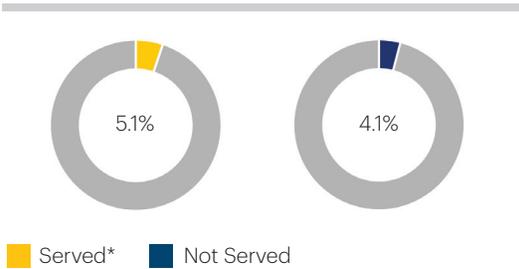
- Since 2011-2012, depression rates significantly increased by 9% among those who have served.
- Since 2011-2012, anxiety rates doubled, and suicidal thoughts tripled, among women who have served.

Differences in Mental Health for Those Who Have and Have Not Served by Gender, 2015-2016



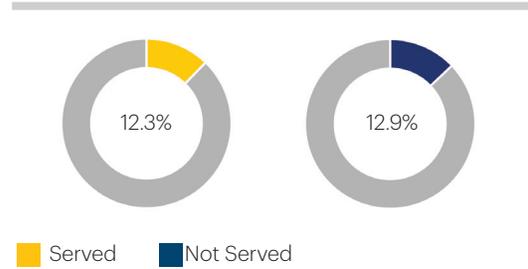
*Statistically significant difference between those who have and have not served.
 § Data for Anxiety reported for 2013-2014

Overall Rates of Suicidal Thoughts for Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

Overall Rates of Suicide Attempts Among Those with Suicidal Thoughts for Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

Findings

CHRONIC CONDITIONS

Eight self-reported measures of chronic disease are included in this report: arthritis, cancer, cardiovascular disease, COPD, diabetes, functional impairment, pain, and teeth extractions. Those who have served, overwhelmingly, report significantly higher rates of chronic disease than those who have not served. This is the case for seven of the eight measures, with the only exception being teeth extractions for which both those who have and have not served have similar rates. Several important differences in the burden of chronic disease exist among subpopulations.

First, both men and women who have served consistently report significantly higher rates of chronic disease, such as arthritis, cancer, COPD, functional impairment, and pain than men and women who have not served.

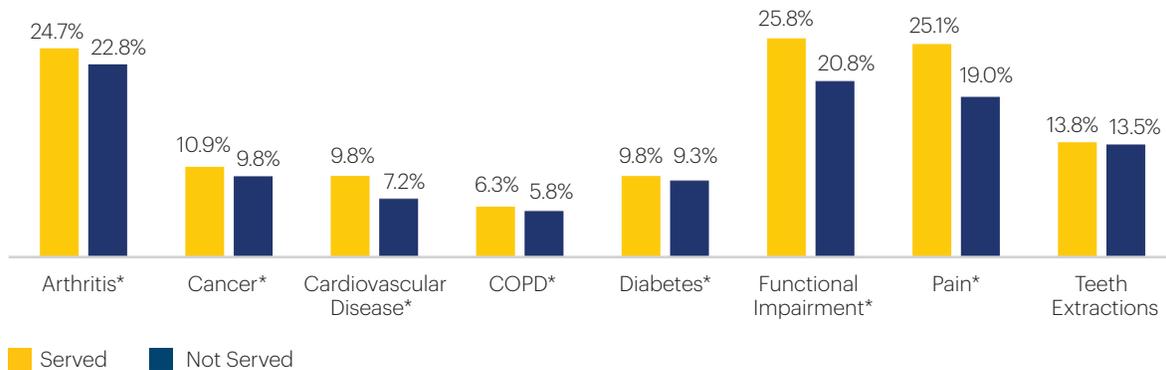
Second, despite the higher burden of disease generally among those with service, women

How Have Chronic Disease Rates Changed Since 2011-2012 for Those Who Have Served?

⊖ Remaining Challenges:

- Rates of chronic disease have generally held steady over time, with those who have served persistently facing a significantly higher burden than those who have not served.

Overall Rates of Chronic Disease For Those Who Have and Have Not Served, 2015-2016



*Statistically significant difference between those who have and have not served.

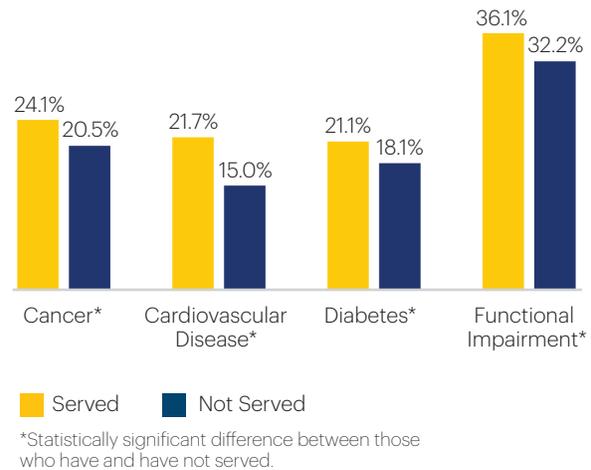
who have served have significantly higher rates than even men who have served and women who have not. For example:

- Women who have served have an arthritis rate of 30.4% as compared to 25.3% among women who have not served and 23.9% among men who have served.
- Whereas 7.8% of women who have served have COPD, 6.4% of women who have not served, and 6.0% of men who have served have the condition.
- Functional impairment is also significantly more common among women who have served (29.0%) than both women who have not served and men who have (21.6% and 25.3%, respectively).
- Women who have served are also significantly more likely to report pain (28.4%) than women who have not served and men who have (24.2% and 20.6%, respectively).

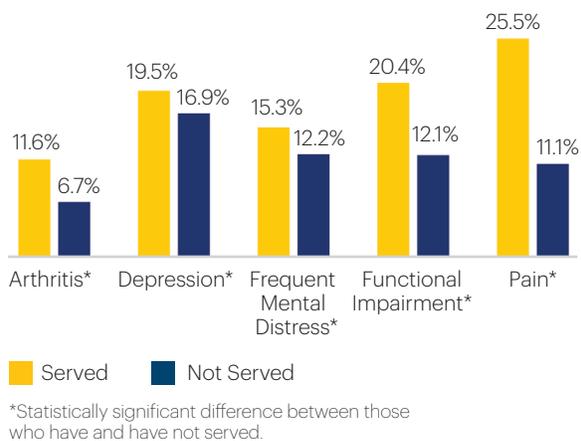
Third, chronic disease rates vary between those who have and have not served by age. Of note, two age cohorts who have served, in particular, experience higher rates of chronic disease than their counterparts who have not served—26-34 year olds and 50 years and older.

- For those 50 years and older, rates of cancer (24.1% vs. 20.5%), cardiovascular disease (21.7% vs. 15.0%), diabetes (21.1% vs. 18.1%), and functional impairment (36.1% vs. 32.2%) are significantly higher among those who have served than those who have not.

Rates of Chronic Disease Among Those 50 Years and Older Who Have and Have Not Served, 2015-2016



Rates of Chronic Disease Among 26-34 Year Olds Who Have and Have Not Served, 2015-2016



Findings

- Those 26-34 years old who have served have significantly higher rates of many chronic conditions than those who have not served, including: arthritis (11.6% vs. 6.7%), depression (19.5% vs. 16.9%), frequent mental distress (15.3% vs. 12.2%), functional impairment (20.4% vs. 12.1%), and pain (25.5% vs. 11.1%).

In addition, some minorities who have served have significantly higher rates of chronic disease than minorities who have not served. For example:

- Asians who have served report twice the rate of pain (18.1% vs. 8.3%) and functional impairment (19.7% vs. 10.5%) than Asians who have not served.

- American Indians/Alaska Natives who have served have significantly higher rates of arthritis (35.2% vs. 29.9%), cancer (12.6% vs. 9.0%), cardiovascular disease (17.6% vs. 11.3%), and pain (54.9% vs. 28.0%) than those who have not served.
- Hispanics who have served also have significantly higher rates of arthritis (21.8% vs. 18.2%), COPD (5.2% vs. 3.7%), cancer (6.7% vs. 4.5%), and cardiovascular disease (9.6% vs. 6.9%) than Hispanics who have not served.

Conclusion

As the only ongoing, national data resource providing a holistic, population-based portrait of our military and veteran community, the *2018 Health of Those Who Have Served Report* continues to shed important light on the leading health concerns facing men and women who have served. Findings not only reaffirm the distinct health and broader social determinant needs of those who have served, but also highlight encouraging improvements, persistent challenges, and new and emerging concerns overall and for specific subpopulations who have served. In so doing, this report offers important insight and direction to inform future areas of research, dialogue, advocacy, and policy to improve the health and well-being — including the systems that provide care and the communities within which they live — of all those who have selflessly sacrificed and served this country.

Description of Measures

Data on 23 measures were obtained from the Centers for Disease Control and Prevention's (CDC) *Behavioral Risk Factor Surveillance System* (BRFSS), CDC's *National Health Interview Survey* (NHIS) and the Substance Abuse and Mental Health Services

Administration's *National Survey on Drug Use and Health* (NSDUH) were the source of two and six measures, respectively. Unless otherwise indicated, data were obtained from 2011-2016.

	Measure	Description	Source
Behaviors	Excessive Drinking	Percentage of respondents who reported either binge drinking (having five or more [men] or four or more [women] drinks on one occasion) or heavy drinking (having more than two drinks [men] or more than one drink [women] per day)	BRFSS
	Insufficient Sleep	Percentage who reported sleeping less than seven hours in a 24-hour period, on average	BRFSS (2014, 2016)
	Obesity	Percentage with a body mass index of 30.0 or higher based on reported weight and height	BRFSS
	Physical Inactivity	Percentage who reported doing no physical activity or exercise other than their regular job in the past 30 days	BRFSS
	Smoking	Percentage who are smokers (reported smoking at least 100 cigarettes in their lifetime and currently smoke every or some days)	BRFSS
	Smokeless Tobacco Use	Percentage who use smokeless tobacco (currently use chewing tobacco, snuff, or snus every day or some days)	BRFSS
	Opioid Misuse	Percentage who used heroin or misused prescription pain relievers in the past year. Misuse of prescription pain relievers is defined as use in any way not directed by a doctor, including use without a prescription of one's own medication, use in greater amounts, more often, or longer than told to take a drug, or use in any other way not directed by a doctor	NSDUH (2015-2016)
Policy	Health Insurance	Percentage who have health insurance privately, through their employer, or through the government	BRFSS
Community & Environment	Employment	Percentage who are in the workforce and are either employed for wages or self-employed	BRFSS
	Food Insecurity	Percentage who faced the threat of hunger in the past 30 days	NHIS

	Measure	Description	Source
Clinical Care	Colorectal Cancer Screenings	Percentage of respondents aged 50 to 75 years who reported receiving recommended colorectal cancer screening using high-sensitivity fecal occult blood testing, sigmoidoscopy, or colonoscopy	BRFSS (2012,2014, 2016)
	Dedicated Health Care Provider	Percentage who reported having one or more people they think of as their personal doctor or healthcare provider	BRFSS
	Unmet Medical Need	Percentage who reported there was a time in the past 12 months when they needed to see a doctor but could not because of cost	BRFSS
	Dental Visit	Percentage who reported visiting the dentist or dental clinic within the past year for any reason	BRFSS (2012,2014, 2016)
	Flu Vaccine	Percentage who reported receiving a flu vaccine in the last year	BRFSS
	Mental Health Treatment	Percentage with any mental illness who received any mental health treatment in the past 12 months, including inpatient care (such as hospital or residential treatment), outpatient care (such as therapy from a clinician [e.g., doctor, psychologist, counselor, social worker], outpatient clinic, partial-day hospital stay, or day treatment program) or taking any prescription medications prescribed to treat a mental or emotional condition. Treatment for alcohol or drug use is not included.	NSDUH
Health Outcomes	Anxiety	Percentage who reported ever being told by a health professional that they have an anxiety disorder	NSDUH (2011-2014)
	Any Mental Illness in the Past Year	Percentage having serious, moderate, or mild mental illness in the past year	NSDUH
	Arthritis	Percentage who reported being told by a health professional that they have some form of arthritis	BRFSS
	Cancer	Percentage who reported being told by a health professional that they have skin cancer or some other form of cancer	BRFSS

Appendix

Health Outcomes

Measure	Description	Source
Cardiovascular Disease	Percentage who reported being told by a health professional that they had angina or coronary heart disease, heart attack, or stroke	BRFSS
COPD	Percentage who reported being told by a health professional that they have Chronic Obstructive Pulmonary Disease, or COPD	BRFSS
Depression	Percentage who reported ever being told by a health professional that they have a depressive disorder including depression, major depression, minor depression, or dysthymia	BRFSS
Diabetes	Percentage who reported being told by a health professional that they have diabetes (excludes pre-diabetes and gestational diabetes)	BRFSS
Frequent Mental Distress	Percentage who self-reported 14 or more days in the past 30 days when their mental health was not good	BRFSS
Functional Impairment	Percentage who reported being limited in any way in any activities because of physical, mental, or emotional problems or have any health problem that requires them to use special equipment such as a cane, wheelchair, a special bed, or a special telephone	BRFSS
High Health Status	Percentage who reported that their health is very good or excellent	BRFSS
Pain	Percentage who reported having neck pain or lower back pain in the past three months	NHIS (2016)
Suicidal Thoughts	Percentage who reported seriously thinking about trying to kill themselves in the past 12 months	NSDUH
Suicide Attempts	Percentage with suicidal thoughts who tried to kill themselves in the past 12 months	NSDUH
Teeth Extractions	Percentage who have had six or more permanent teeth extracted due to tooth decay or gum disease	BRFSS (2012, 2014, 2016)

Methodology and Limitations

Methodology

Data in this report are obtained from the Centers for Disease Control and Prevention’s *Behavioral Risk Factor Surveillance System (BRFSS)* and *National Health Interview Survey (NHIS)*, and the Substance Abuse and Mental Health Services Administration’s *National Survey on Drug Use and Health (NSDUH)*.

Six years of data are included: 2011, 2012, 2013, 2014, 2015, and 2016. To ensure adequate sample size for the number of people who have served, two years of data were combined into three time periods: 2011-2012, 2013-2014, and 2015-2016.

Data were weighted according to each survey’s weighting methodology to correct for selection bias and ensure representative samples by demographic variables. To reflect the differing age distribution of those who have and have not served, data were age-adjusted to the 2000 U.S. Standard Population. Weighted and age-adjusted point estimates were calculated and are included in this report for those who have and have not served, overall and by gender, age, race/ethnicity, income and education.

Subpopulation categories were reported consistently across all data sources where possible, though in some instances, categories were not comparable across surveys. Age categories for all indicators were reported in accordance with NSDUH age ranges, as NSDUH reports respondent ages only by category and not as a discrete value. NHIS does not report a Hawaiian/Pacific Islander race/ethnic group. Cutoff points for the lowest household income category also differed across surveys. For purposes of general alignment, the following categories were selected for the lowest income cutoff in each survey:

- * BRFSS: \$25,000 per year;
- * NSDUH: \$30,000 per year; and
- * NHIS: \$35,000 per year.

BRFSS Sample Size for Those Who Have and Have Not Served by Time Period

	2011-2012	2013-2014	2015-2016
Served	123,186	122,288	120,492
Not Served	841,009	816,027	789,738
Total	964,195	938,315	910,230

NSDUH Sample Size for Those Who Have and Have Not Served by Time Period

	2011-2012	2013-2014	2015-2016
Served	4,533	4,799	5,270
Not Served	72,469	74,296	80,916
Total	77,002	79,095	86,186

NHIS Sample Size for Those Who Have and Have Not Served by Time Period

	2011-2012	2013-2014	2015-2016
Served	14,236	14,577	14,281
Not Served	140,389	146,603	137,652
Total	154,625	161,180	151,933

Appendix

Limitations

Given the large annual sample sizes present in the analyzed datasets and the pooling of multiple years of data to produce estimates, the numbers presented on those who have served are backed by adequate statistical power. Further, the sampling designs of these surveys ensure representation by multiple demographic variables.

However, there are limitations to interpreting data on those who have served. For example, each of the three sources of data analyzed for this report asks different questions about military service. Since 2011, the BRFSS has asked only whether the respondent has served on active duty in the U.S. Armed Forces. By comparison, NSDUH asks whether respondents have ever been in the U.S. Armed Forces and excludes any who are currently on active duty. NHIS asks if the respondent has ever served in the U.S. Armed Forces, Reserves, or National Guard and excludes those on active duty. As such, BRFSS data in this report do not distinguish between those currently serving and those who have been discharged,

while NSDUH and NHIS data exclude those on active duty but include those who currently or in the past have served in the Reserves or National Guard without being activated. For the time period analyzed, none of the surveys allow analysis by the nature of discharges, involvement in active combat, or the era in which one served.

Additionally, the samples of those who have served and not served may be different from one another in demographic composition, for example citizenship status. Such differences may contribute to observed differences in results between the groups. Caution should also be taken when interpreting data on specific health measures. Of note, many health outcome measures indicate whether a respondent has been told by a health care professional that they have a disease, excluding those who may not have received a diagnosis or not have sought or obtained treatment.

2018 Health of Those Who Have Served Advisory Group

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