

By Jack Tsai and Robert A. Rosenheck

DOI: 10.1377/hlthaff.2015.1555
 HEALTH AFFAIRS 35,
 NO. 6 (2016): 966–973
 ©2016 Project HOPE—
 The People-to-People Health
 Foundation, Inc.

US Veterans' Use Of VA Mental Health Services And Disability Compensation Increased From 2001 To 2010

Jack Tsai (Jack.Tsai@yale.edu) is a core investigator for the Veterans Affairs (VA) New England Mental Illness, Research, Education, and Clinical Center and an assistant professor of psychiatry at the Yale University School of Medicine, both in West Haven, Connecticut.

Robert A. Rosenheck is a senior investigator for the VA New England Mental Illness, Research, Education, and Clinical Center and a professor of psychiatry at the Yale University School of Medicine.

ABSTRACT There has been concern about the capacity of the Department of Veterans Affairs (VA) health care system to provide care for veterans returning from war zones in the Middle East and Afghanistan. We used two nationally representative surveys of US veterans in 2001 and 2010 to examine changes in the veteran population and veterans' use of health care services after a decade of war. The population was older and more diverse in 2010 than in 2001. In both years, veterans who served in the World War II era or earlier were more likely to have been exposed to combat-related trauma than veterans of more recent service eras. In 2010 veterans who served in the Persian Gulf War era (1990 through the wars in Iraq and Afghanistan) were more likely to have used VA mental health services and to have received VA disability compensation than veterans of previous service eras. Compared to veterans in 2001, those in 2010 were two times more likely to have used any VA health services and were more likely to have received VA disability compensation. These findings highlight changes in the veteran population over time that are important to consider in planning for future VA services.

The Department of Veterans Affairs (VA) operates the largest integrated health care network in the United States. The network was created in 1930 to provide care and benefits for people who had served in the nation's armed forces. It has grown from 54 hospitals in 1930 to more than 150 medical centers and 700 outpatient, community, and outreach clinics in 2015. VA health care facilities provide a broad spectrum of medical, mental health, and rehabilitative care. Recently, there has been public concern about long wait times and access to care in the VA health care system.¹ Substantial efforts have been made to improve the VA health care system over the years, resulting in the VA's becoming a leader in the delivery of health care services—especially mental health services.^{2,3}

In recent years the United States has been fighting wars in Iraq and Afghanistan, which has

taken a toll on the health of the nation's military personnel and affected the VA health care system.⁴ Many veterans are returning with mental health problems,⁵ and there is concern about capacity to provide recent veterans with needed services—especially mental health services.⁶

While the VA health care system is devoted entirely to the care of veterans, many are not enrolled in VA care, and the system was not designed to provide health care to more than twenty million veterans—the number now alive.⁷ In fact, the VA serves only about 15–26 percent of the veteran population each year.⁸ This population is continually changing because of the aging of veterans of previous wars, the entry of veterans of recent service in the Middle East, the expanded roles of female soldiers, and the growing racial and ethnic diversity of the US population.

To better understand the issues facing the VA

health care system and those who depend on it, it is important to examine changes over time in the use of VA services by veterans from all eras. This is because having the capacity to take care of the most recent group of veterans depends on other entitled veterans' use of resources.

Using data from nationally representative surveys of veterans conducted in 2001 and 2010, respectively, we examined differences between the two years in veterans' sociodemographic characteristics, including income, VA disability compensation, and health insurance status; military experiences, including service in a combat zone; general health status; and use of VA and non-VA health and mental health services.

Besides expecting certain changes in demographic characteristics over time (for example, the veteran population in 2010 was older and more diverse than that in 2001), we hypothesized that there were increases in the use of VA mental health services and in having a VA service-connected disability, especially among veterans from the most recent service era. We also hypothesized that being male or in poor health, having a low income, and having been exposed to combat continued to be associated with any VA service use.⁹

The surveys we used are unique in that they collect data from veterans in the general population instead of only those who use VA services. By comparing data from these two surveys, conducted before and during the most recent wars in Iraq and Afghanistan, we identified changing needs and service use within the veteran population. Additionally, relating the changing use of VA and other health services to specific sociodemographic and clinical characteristics may inform efforts by policy makers to address these changes and identify potential challenges to the VA health care system.

Study Data And Methods

The 2001 National Survey of Veterans was a national telephone survey conducted by 300 trained interviewers.¹⁰ The survey collected data on 20,048 veterans, such as information about their sociodemographic characteristics, military background, health status, and use of health care and VA benefits. Of the 20,048 veterans, 12,956 were selected based on random digit dialing of telephone numbers in the United States and Puerto Rico (there was a 76.4 percent response rate), and 7,092 were randomly selected from computerized files of veterans with service-connected disabilities and those who were enrolled in VA health care during the year 2000 (a 62.8 percent response rate).

The survey data were weighted to represent the

entire noninstitutionalized veteran population in 2001, which consisted of twenty-five million individuals. Relative weights were created for each participant that incorporated the probability of selection, survey nonresponse, and households with more than one telephone number.

The 2010 National Survey of Veterans was conducted using a self-administered questionnaire that was mailed to a large random sample of US veterans' postal addresses.¹¹ The sampling frame was all postal addresses in the United States, and address-based sampling was used. Addresses were stratified by ZIP code and by carrier route and delivery sequence. Of the 13,058 surveys that were mailed, 8,710 were completed (a 66.7 percent response rate).

Survey data were weighted to represent the entire twenty-two million noninstitutionalized veterans at the time. Relative weights were created that incorporated the probability of selection and survey nonresponse and that were post-stratified to known population totals.

In both surveys, participation was voluntary, and data use procedures were approved by the VA Connecticut Institutional Review Board.

MEASURES In both surveys, information about sociodemographic characteristics, military history, health insurance, and VA benefits was reported by veterans. The military history sections included questions about whether respondents had ever served in a combat or war zone and whether they were ever exposed to "dead, dying, or wounded people" during military service. Respondents were also asked whether they had ever applied for and received compensation for a VA service-connected disability and, if so, what their disability rating was.

Health status was assessed by a question that asked respondents to rate their general health on a scale from 1 (poor) to 5 (excellent). They were also asked whether they needed assistance with any of a list of eleven activities of daily living, which were summed for a total score.

Health service use was assessed by questions about respondents' use of different health services at VA and non-VA facilities. These services were emergency department services, outpatient and inpatient medical care, mental health care, home care, and prosthetic services. The 2001 survey asked about health service use in the past twelve months, but the 2010 survey asked about health service use only in the past six months. To make the 2001 and 2010 survey data compatible, the six-month health service use data from the 2010 survey were transformed to a twelve-month reference period. Our examination of national VA administrative data from fiscal year 2010 for all VA service users showed that in the first six months of the year, 86 percent of all VA patients

had had a visit, and 95 percent of all VA mental health patients had had a visit. Thus, six-month health service use from the 2010 survey was divided by 0.86, and six-month mental health service use was divided by 0.95.

DATA ANALYSIS First, respondents to the 2001 and 2010 surveys were compared on background characteristics, health status, and health service use with *t*-tests and chi-square tests. To adjust for multiple comparisons, we used a *p* value of 0.01 to indicate significance for the analyses, and effect sizes were calculated to provide a measure of the magnitude of differences. For continuous variables, we calculated Cohen's *d*—which expresses the effect size in standard deviation units.¹² For categorical variables, we calculated Cramér's *V*—which describes the association between two variables with a range from 0 to 1.¹³

Second, multivariable analyses were conducted with analysis of covariance and logistic regressions on health status and health service use, adjusting for differences in background characteristics. Partial eta squared (η_p^2) values were calculated for continuous variables, and odds ratios (ORs) were calculated for categorical variables. Hierarchical multiple regressions were also conducted separately for 2001 and 2010 to identify predictors of VA mental health services use, with sociodemographic variables entered into a first block, combat exposure entered into a second, and health variables entered into a third. IBM SPSS Statistics for Windows, version 20.0, was used for the statistical analyses.

LIMITATIONS This study had several limitations. First, our data were based on national cross-sectional surveys conducted at two time points, so causality could not be inferred. Because two different samples were used, some apparent population differences may be artifacts of differences in methodology and sample characteristics. For example, the 2001 survey used telephone interviews, while the 2010 survey relied on mailed questionnaires—a change that may have affected response rates and results.

Second, our survey data were reported by veterans and thus may be susceptible to recall and response biases. Limited data were available about veterans' geographic location, mental health, and other health history, so differences in clinical need or access to VA services could not be adjusted for in our analyses.

Nonetheless, these data provide a unique opportunity to observe the “big picture” of the changing veteran population and its health service needs.

Study Results

Veterans in 2010 were older and better educated, had higher incomes, and were more likely to be female and nonwhite than veterans in 2001 (Exhibit 1). Veterans in 2010 were also less likely to be married and employed and more likely to be looking for employment. As we expected, veterans in 2010 were more likely to have served in the recent wars in Iraq and Afghanistan (the survey's service-era category “Persian Gulf War and later” encompasses the period from August 1990 to the present). Compared to veterans in 2001, those in 2010 were less likely to have served in a combat zone and to have been exposed to combat-related trauma, presumably because greater proportions of military personnel in earlier eras served in war zones or in combat.

Veterans in 2010 rated their general health as worse but also reported having fewer difficulties with ADLs, compared to veterans in 2001 (Exhibit 2). When we adjusted for sociodemographic differences, we found that veterans in 2010 still rated their general health as worse ($p < 0.001$) and reported fewer difficulties with ADLs, compared to veterans in 2001 ($p < 0.01$) (online Appendix Exhibit 2).¹⁴

Veterans in 2010 were two times more likely than veterans in 2001 to have ever used any VA health services, even after adjustment for sociodemographic and health differences ($p < 0.001$; OR: 2.26). However, there was little difference between the two groups of veterans in their reported use of any VA health services in the previous year. It is notable, however, that there was a lower percentage of past-year use among veterans in 2010 for nearly every type of VA and non-VA health service compared to veterans in 2001, except for VA mental health services. Veterans in 2010 were 1.4 times more likely than veterans in 2001 to use any VA mental health services.

This observed increase in the use of VA mental health services was also consistent with our examination of VA administrative records, which revealed that 17.5 percent of all VA service users in 2001 used VA mental health services, which increased to 22.9 percent in 2010. In other words, there was an increase from 712,045 users of VA mental health services nationally in 2001 to 1,266,686 users in 2010.

To examine predictors of the use of VA mental health services, we used a hierarchical multiple regression of 2001 National Survey of Veterans data. This revealed that sociodemographic characteristics explained 3.2 percent of the variance in use of VA mental health services, combat exposure explained an additional 0.7 percent, and general health variables explained a further 2.7 percent. With 2010 survey data, sociodemographic characteristics explained 5.1 percent of

the variance, combat exposure explained an additional 1.0 percent, and general health variables explained another 1.6 percent (for both years, all $p < 0.001$; results not shown).

There was little difference in terms of health coverage between veterans in 2001 and those in 2010: The majority of veterans (63 percent) were enrolled in private health insurance, and 39 percent were enrolled in Medicare (Exhibit 2). Although there was an increase in the proportion of veterans with multiple forms of coverage (Exhibit 2), the most common form of dual coverage (Medicaid and Medicare) decreased from 78.1 percent of those with Medicaid in 2001 to 48.4 percent in 2010 (data not shown).

When we adjusted for differences in sociodemographic characteristics and general health, we found that veterans in 2010 were more likely to have applied for VA disability compensation and received higher VA disability ratings, compared to veterans in 2001 (data not shown).

In addition to comparing the veteran populations in 2001 and 2010, we compared VA and non-VA service users in the two years. Compared to non-VA service users in the same years, VA service users in both 2001 and 2010 were less likely to be white or employed, had lower incomes and poorer general health, and were more likely to have served in a combat zone and been exposed to combat-related trauma (Exhibit 3). Compared to VA service users in 2001, users in 2010 were older; were less likely to be white, male, married, or employed and to have an advanced degree; and had lower incomes and poorer health.

In both 2001 and 2010, veterans who served during World War II or earlier were most likely to have served in a combat zone (data not shown) and been exposed to combat-related trauma (Exhibit 4), compared to those who served in other eras. In both years, veterans who served during the Persian Gulf War era were most likely to have received VA disability compensation, compared to veterans of other eras.

Compared to veterans from other eras, in 2001, Vietnam War-era veterans were most likely to use VA mental health services, but in 2010, veterans who served during the Persian Gulf War era were most likely to do so. And in 2001, veterans who served during the Vietnam War and post-Vietnam War eras were most likely to have ever used any VA health services, but in 2010, the earliest and most recent cohorts were most likely to have done so.

Discussion

We compared the characteristics and service-use patterns of US veterans nationally in 2001 and in

EXHIBIT 1

Sociodemographic characteristics and military backgrounds of US veterans in 2001 and 2010

Characteristic	2001 (n = 20,048)	2010 (n = 8,710)
Mean age (years) ^a	58.2	61.1****
Male	94.1%	91.9%****
RACE		
White	84.8%	81.6%****
Black	8.8	10.8
American Indian or Alaskan Native	2.1	2.4
Asian or Pacific Islander	0.4	1.5
Other or missing	3.9	3.7
EDUCATION		
Less than high school	11.2%	5.4%****
High school or GED	30.0	26.0
Some college or technical college	26.7	30.0
Associate's or bachelor's degree	23.1	26.9
An advanced degree	9.1	11.6
MARITAL STATUS		
Married or in civil union	75.1%	70.5%****
Widowed, divorced, or separated	17.7	21.4
Never married	7.2	8.1
EMPLOYMENT STATUS		
Working	55.1%	45.0%****
Not working, but looking	3.6	9.7
Not working, not looking	41.3	45.3
HOUSEHOLD INCOME		
Less than \$10,000	4.0%	5.1%****
\$10,000–\$29,999	24.3	23.0
\$30,000–\$49,999	26.3	23.4
\$50,000–\$74,999	24.0	21.2
\$75,000–\$99,999	10.6	11.3
\$100,000 or more	10.7	16.0
SERVICE ERA		
WWII or earlier (before December 1947)	20.5%	8.7%****
Post-WWII (January 1947–June 1950)	6.7	1.6****
Korean conflict (July 1950–January 1955)	16.8	10.8****
Post-Korean conflict (February 1955–July 1964)	25.5	17.2****
Vietnam War (August 1964–April 1975)	35.9	33.0****
Post-Vietnam War (May 1975–July 1990)	27.8	26.8****
Persian Gulf War and later (August 1990–)	13.8	24.1****
COMBAT STATUS		
Served in combat zone	39.3%	33.9%
Exposed to combat-related trauma	36.7	33.9

SOURCE Authors' analysis of data from the 2001 and 2010 National Survey of Veterans. **NOTES** For a full version of Exhibit 1 that includes effect-size values, see the Appendix (to access the Appendix, see Note 14 in text). Significance refers to difference between 2001 and 2010. ^aStandard deviation is 15.5 for 2001 and for 15.8 for 2010. **** $p < 0.001$

2010, before and during the wars in Iraq and Afghanistan. Our analyses revealed several important findings.

SOCIODEMOGRAPHIC CHANGES First, the sociodemographic characteristics of the overall veteran population and the VA user population have changed over time. Not only is the veteran population aging, but there is an increasing number of female veterans, and veterans as a group are

EXHIBIT 2

Health, service use, coverage, and disability benefits of US veterans in 2001 and 2010

	2001	2010
HEALTH STATUS		
Mean general rating of health ^a	3.3	3.1****
Mean number of difficulties with ADLs ^b	1.1	0.9****
USE OF:		
Any VA health service use ever	14.0%	28.4%****
Any VA health service in past year	20.6	18.1
Emergency services	4.2	2.5****
Medical care	16.4	12.6****
Mental health services	2.7	3.8****
Any non-VA health services in past year	76.2	58.4****
Emergency services	20.8	13.4****
Medical care	69.3	53.6****
Mental health services	4.4	4.1
CURRENT HEALTH COVERAGE		
Medicare	39.3%	39.2%
Medicaid	3.5	3.5
CHAMPUS or TRICARE ^c	7.1	9.3****
Private insurance	63.0	63.0
Other	3.5	3.0
More than one form of coverage	24.2	29.7****
DISABILITY BENEFITS		
Ever applied for VA disability compensation	15.9%	21.0%****
Have a VA service-connected disability	14.0	16.0****
DISABILITY RATING (PERCENT)^d		
0	5.7%	5.8%****
10–20	49.6	33.2
30–40	20.3	21.4
50–60	9.7	14.9
70–100	14.8	24.8

SOURCE Authors' analysis of data from the 2001 and 2010 National Survey of Veterans. **NOTES** For a full version of Exhibit 2 that includes original values from six-month health service use data in 2010, see the Appendix (to access the Appendix, see Note 14 in text). Sample sizes are in Exhibit 1. VA is Department of Veterans Affairs. Significance refers to difference between 2001 and 2010. ^aOn a five-point scale, with higher scores indicating greater health. Standard deviation is 1.2 for 2001 and 1.1 for 2010. ^bADL is activity of daily living. Standard deviation is 2.3 for 2001 and 2.9 for 2010. ^cCHAMPUS is the former name of TRICARE, the Department of Defense's health care program. ^dVA disability ratings are shown only for veterans who received any VA disability compensation. Ratings exist only in 10% increments. *****p* < 0.001

becoming more racially diverse. The VA is adapting its services to meet the needs of the changing veteran population with its creation of female veterans health clinics,¹⁵ the adoption of service models for geriatric care,¹⁶ and increased attention to racial/ethnic disparities in care.¹⁷

Importantly, more VA service users in 2010 had low incomes and slightly poorer health than in 2001, so it appears that the VA continues to be a health care safety net for many veterans. Since the 1980s there have been concerns that aging veterans will overwhelm the VA health care system,¹⁸ and historically the federal government has provided funding for the VA to address these concerns. For instance, the VA health care budget increased from \$8 billion in 1983¹⁸ to more

than \$59 billion in 2014,¹⁹ unadjusted for inflation. The VA health care system will need to continue to plan how to best and most efficiently serve a growing veteran population that is also growing older.

Although the veteran population is becoming more highly educated, we found that fewer than half of veterans in 2010 were working, and about one in ten veterans were unemployed and looking for work. This 10 percent unemployment rate is on a par with the 9.4 percent unemployment rate in the general US population during the same time period.²⁰ Nonetheless, our findings underscore the vocational needs of veterans after they leave the military. These needs may have already attracted the public's attention, as various large companies (including Amazon and Walmart) have created programs dedicated to hiring veterans. These programs, along with national initiatives such as Joining Forces,²¹ may help reduce unemployment among veterans.

CHANGES IN EXPOSURE TO COMBAT AND RELATED TRAUMA Second, despite the wars in Iraq and Afghanistan, recent veterans were slightly less likely to have served in a combat zone and to have been exposed to combat-related trauma than previous veterans who served during war-time. For example, in 2010, veterans who had served during the Persian Gulf War era were 3.6 percentage points less likely to have been exposed to combat-related trauma than those who served during World War II.

The media and public perception may convey the notion that post-traumatic stress is a problem among recent veterans especially, but our results do not appear to support this. However, we did find that there was an uptick in past-year use of VA mental health services from 2001 to 2010, with no difference in use of non-VA mental health services (Exhibit 2), and that in 2010 the most recent cohort of veterans was the most likely to use VA mental health services (Exhibit 4). This increase may be due to collective efforts by the VA, the Department of Defense, and community-based providers to engage veterans in VA health care and improve their access to mental health services.^{22,23}

INCREASED USE OF VETERANS AFFAIRS HEALTH SERVICES Our third major finding was that the veteran population as a whole was two times more likely to have ever used any VA health services in 2010 than in 2001 (Exhibit 2). The historical context of these findings is important to consider, because the Great Recession of 2007–09 resulted in generally high unemployment and loss of employer-provided health insurance—which may have driven greater use of VA services. There also was rapid growth in technology in this time period, which the VA has leveraged to create

EXHIBIT 3
Comparison of characteristics between veterans who used the Department of Veterans Affairs (VA) and those who did not, 2001 and 2010

	2001		2010	
	VA users (n = 3,216)	Non-VA users (n = 16,695)	VA users (n = 2,288)	Non-VA users (n = 5,763)
Mean age (years) ^a	57.3	58.3****	60.5	61.3
Male	94.2%	93.9%	91.0%	92.5%
Married or in civil union	75.3	73.8	62.8	74.0****
Working	54.2	60.8****	34.9	48.7****
RACE				
White	81.4%	85.3%****	76.3%	84.4%****
Black	11.3	8.4	15.3	8.9
Other	7.3	6.3	8.5	6.7
EDUCATION				
Less than high school	9.7%	11.4%****	6.9%	4.5%****
High school or GED	25.7	30.7	25.8	26.4
Some college or technical college	28.5	26.4	34.2	28.2
Associate's or bachelor's degree	26.6	22.4	25.4	27.7
An advanced degree	9.5	9.0	7.7	13.1
HOUSEHOLD INCOME				
Less than \$10,000	4.7%	3.8%***	9.0%	3.5%****
\$10,000–29,999	21.6	24.8	35.2	17.8
\$30,000–49,999	26.4	26.3	24.3	23.1
\$50,000–74,999	26.0	23.7	17.2	23.0
\$75,000–\$99,999	10.8	10.6	7.0	13.0
\$100,000 or more	10.6	10.8	7.3	19.6
SERVICE ERA^b				
WWII or earlier	19.5%	20.6%	9.2%	7.8%
Post-WWII	6.3	6.7	1.5	1.7
Korean conflict	14.6	17.2****	10.8	10.8
Post-Korean conflict	19.7	26.5****	13.7	19.0****
Vietnam War	45.6	34.4****	36.8	32.1****
Post-Vietnam War	32.3	27.1****	26.4	26.7
Persian Gulf and later	13.2	13.9	27.4	22.4****
COMBAT STATUS				
Served in combat zone	46.2%	38.2%****	45.5%	28.9%****
Exposed to combat-related trauma	43.6	35.5****	46.5	28.6****
CURRENT HEALTH COVERAGE				
Medicare	35.3%	39.9%****	38.4%	39.6%
Medicaid	3.5	3.5	4.8	3.0****
CHAMPUS or TRICARE ^c	9.2	6.8****	12.9	7.5****
Private insurance	68.8	62.0****	40.3	72.6****
Other	4.4	3.4****	3.1	2.8
HEALTH STATUS				
Mean general rating of health ^d	3.2%	3.3%***	2.7%	3.3%****
Mean number of difficulties with ADLs ^e	1.2	1.1	1.4	0.7****

SOURCE Authors' analysis of data from the 2001 and 2010 National Survey of Veterans. **NOTES** Veterans who did not respond to questions about VA use were excluded. Significance refers to difference between users and nonusers in a given year. Differences between users in 2001 and those in 2010 were all significant ($p < 0.001$) except for served in combat zone ($p = 0.63$), exposed to combat-related trauma ($p = 0.04$), and mean number of difficulties with ADLs (activities of daily living; $p = 0.02$). Differences between non-users in 2001 and those in 2010 were all significant ($p < 0.01$) except for race ($p = 0.24$), marital status ($p = 0.04$), served in the post-Vietnam War era ($p = 0.55$), Medicare coverage ($p = 0.69$), Medicaid coverage ($p = 0.05$), CHAMPUS coverage ($p = 0.04$), and other health coverage ($p = 0.05$). ^aStandard deviation is 14.7 for VA user 2001, 15.6 for non-VA user in 2001, 16.0 for VA user in 2010, and 15.5 for non-VA user in 2010. ^bDates for service eras are given in Exhibit 1. ^cCHAMPUS is the former name of TRICARE, the Department of Defense's health care program. ^dOn a five-point scale, with higher scores indicating greater health. Standard deviation is 3.2 for VA user in 2001, 3.3 ($p < 0.01$) for non-VA user in 2001, 2.7 for VA user in 2010, and 3.3 ($p < 0.001$) for non-VA user in 2010. ^eStandard deviation is 2.3 for VA user 2001, 2.2 for non-VA user in 2001, 3.2 for VA user in 2010, and 2.7 for non-VA user in 2010. *** $p < 0.01$ **** $p < 0.001$

EXHIBIT 4

Combat exposure and Department of Veterans Affairs (VA) disability compensation and health service use by veterans in 2001 and 2010, by service era

	WWII or earlier	Post-WWII	Korean conflict	Post-Korean conflict	Vietnam War	Post-Vietnam War	Persian Gulf and later
2001							
Exposed to combat-related trauma	51.2%	26.6%	35.5%	18.9%	46.7%	29.9%	31.9%
Ever applied for VA disability compensation	15.9	9.9	13.2	8.2	16.8	16.6	24.0
Have received VA disability compensation	13.5	8.0	9.9	5.9	13.7	15.8	24.5
Any VA mental health service use in past year	1.2	0.5	1.6	1.2	4.5	3.4	3.0
Any VA health service use ever	13.1	13.9	11.8	8.6	16.7	16.8	13.3
2010							
Exposed to combat-related trauma	46.4%	11.8%	25.2%	10.6%	43.8%	23.0%	42.8%
Ever applied for VA disability compensation	17.7	8.7	11.9	5.5	21.1	16.4	37.4
Have received VA disability compensation	13.2	5.8	8.1	3.9	15.2	12.9	30.0
Any VA mental health service use in past 6 months	1.2	0.0	1.6	0.4	4.9	4.4	5.7
Any VA health service use ever	31.1	26.2	28.0	19.5	30.2	25.6	32.8

SOURCE Authors' analysis of data from the 2001 and 2010 National Survey of Veterans. **NOTE** Dates for service eras are in Exhibit 1.

marketing videos and websites, social media campaigns, phone apps, telehealth programs, and other ways to reach out to veterans.^{24,25}

Following passage of the Affordable Care Act (ACA) in 2010, the number of veterans using VA services has likely increased²⁶ because enrollment in VA health care satisfies the individual mandate for health insurance coverage. There was no significant difference in Medicaid coverage among veterans between 2001 and 2010. However, new Medicaid coverage in states that have decided to expand eligibility may lead to growth in Medicaid coverage among veterans and increase the number of veterans with multiple sources of health coverage.²⁷

INCREASED LIKELIHOOD OF DISABILITY COMPENSATION Fourth, perhaps our most interesting finding was that veterans who served during the Persian Gulf War era were more likely to apply for and to receive VA disability compensation, compared to veterans of previous service eras. This difference was found in both 2001 and 2010, and it appears to have increased over time. In fact, other reports indicate that veterans who served in Iraq and Afghanistan are seeking service-connected disability compensation at unprecedented rates, despite lower rates of fatalities, injuries, and post-traumatic stress disorder compared to the rates among veterans of other service eras.²⁸

VA disability compensation pays veterans a monthly benefit for service-connected conditions and injuries, and it also provides access to VA health and dental care. However, VA disability compensation is a controversial benefit: Some scholars suggest that it may encourage

exaggerated claims²⁹ and create disincentives for recovery,³⁰ while others point to its beneficial effects³¹ and the economic rationales for its existence.³² In any case, more veterans are applying for and receiving VA disability compensation than ever before, and public concern about the backlog of disability claims seems to have increased since the wars in Iraq and Afghanistan.³³

Conclusion

The size of the veteran population decreased from 2001 to 2010, and veterans who served in the Vietnam War and post-Vietnam War eras are likely to seek an increasing array of VA health services in the near future to address the chronic and complex medical and psychiatric conditions that are associated with aging. The relatively small but important cohort of veterans who have served in the Persian Gulf War era is more diverse than previous cohorts in terms of sex and race.

VA services will need to adapt to changing veteran sociodemographic characteristics, particularly because this younger cohort of veterans is more likely to use VA services—including mental health services—and to apply for and receive VA disability compensation, compared to older cohorts. The veteran population as a whole has become more reliant on VA services since 2001, and the VA continues to be a health care safety net for many veterans—a role that may become even more necessary as provisions of the ACA continue to be implemented. The VA faces new opportunities and challenges in developing and allocating resources for a changing population of veterans in the next decade. ■

NOTES

- 1 Devi S. Obama vows to address veteran health-care scandal. *Lancet*. 2014;384(9946):841.
- 2 Karlin BE, Cross G. From the laboratory to the therapy room: national dissemination and implementation of evidence-based psychotherapies in the US Department of Veterans Affairs Health Care System. *Am Psychol*. 2014;69(1):19–33.
- 3 Perlin JB, Kolodner RM, Roswell RH. The Veterans Health Administration: quality, value, accountability, and information as transforming strategies for patient-centered care. *Am J Manag Care*. 2004;10(Pt 2): 828–36.
- 4 Wells TS, Miller SC, Adler AB, Engel CC, Smith TC, Fairbank JA. Mental health impact of the Iraq and Afghanistan conflicts: a review of US research, service provision, and programmatic responses. *Int Rev Psychiatry*. 2011;23(2):144–52.
- 5 Hoge CW, Auchterlonie JL, Milliken CS. Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *JAMA*. 2006;295(9): 1023–32.
- 6 Seal KH, Bertenthal D, Miner CR, Sen S, Marmar C. Bringing the war back home: mental health disorders among 103,788 US veterans returning from Iraq and Afghanistan seen at Department of Veterans Affairs facilities. *Arch Intern Med*. 2007; 167(5):476–82.
- 7 Department of Veterans Affairs, National Center for Veterans Analysis and Statistics. Unique veteran users report FY 2014 [Internet]. Washington (DC): VA; 2016 Mar [cited 2016 May 2]. Available from: https://www.va.gov/vetdata/docs/SpecialReports/Profile_of_Unique_Veteran_Users_2014.pdf
- 8 Bagalman E. The number of veterans that use VA health care services: a fact sheet [Internet]. Washington (DC): Congressional Research Service; 2014 Jun 3 [cited 2016 Apr 18]. Available from: <https://www.fas.org/sgp/crs/misc/R43579.pdf>
- 9 Wilson NJ, Kizer KW. The VA health care system: an unrecognized national safety net. *Health Aff (Millwood)*. 1997;16(4):200–4.
- 10 Choudhry GH, Park I, Kudela MS, Helmick JC. 2001 National Survey of Veterans design and methodology: final report [Internet]. Rockville (MD): Westat; 2002 Aug 12 [cited 2016 May 2]. Available from: http://www.va.gov/VETDATA/docs/SurveysAndStudies/NSV_Methodology_Report.pdf
- 11 Westat. 2001 National Survey of Veterans. Appendix B: National Survey of Veterans: detailed description of weighting procedures [Internet]. Rockville (MD): Westat; 2010 [cited 2016 Apr 18]. Available from: <http://www.va.gov/vetdata/docs/SurveysAndStudies/AppendixBWeightingProcedures.pdf>
- 12 Cohen J. A power primer. *Psychol Bull*. 1992;112(1):155–9.
- 13 Cramér H. Mathematical methods of statistics. Princeton (NJ): Princeton University Press; 1946.
- 14 To access the Appendix, click on the Appendix link in the box to the right of the article online.
- 15 Yano EM, Hayes P, Wright SM, Schnurr PP, Lipson LR, Bean-Mayberry B, et al. Integration of women veterans into VA quality improvement research efforts: what researchers need to know. *J Gen Intern Med*. 2010;25(Suppl 1): 56–61.
- 16 Shay K, Hyduke B, Burris JF. Strategic plan for geriatrics and extended care in the Veterans Health Administration: background, plan, and progress to date. *J Am Geriatr Soc*. 2013;61(4):632–8.
- 17 Hausmann LRM, Gao S, Mor MK, Schaefer JH Jr, Fine MJ. Understanding racial and ethnic differences in patient experiences with outpatient health care in Veterans Affairs medical centers. *Med Care*. 2013;51(6):532–9.
- 18 Horgan C, Taylor A, Wilensky G. Aging veterans: will they overwhelm the VA medical care system? *Health Aff (Millwood)*. 1983;2(3):77–86.
- 19 Department of Veterans Affairs. FY 2014 summary of expenditures by state, expenditures in \$000s [Internet]. Washington (DC): VA; [cited 2016 May 16]. Available for download from: http://www.va.gov/vetdata/docs/GDX/GDX_FY14.xlsx
- 20 Department of Commerce, Bureau of Labor Statistics. Unemployment rates by race and ethnicity, 2010 [Internet]. Washington (DC): BLS; 2011 Oct 5 [cited 2016 May 2]. Available from: http://www.bls.gov/opub/ted/2011/ted_20111005.htm
- 21 White House. Joining Forces [Internet]. Washington (DC): White House; [cited 2016 Apr 19]. Available from: <https://www.whitehouse.gov/joiningforces>
- 22 Burnam MA, Meredith LS, Tanielian T, Jaycox LH. Mental health care for Iraq and Afghanistan war veterans. *Health Aff (Millwood)*. 2009;28(3): 771–82.
- 23 Zinzow HM, Britt TW, McFadden AC, Burnette CM, Gillispie S. Connecting active duty and returning veterans to mental health treatment: interventions and treatment adaptations that may reduce barriers to care. *Clin Psychol Rev*. 2012;32(8): 741–53.
- 24 Tsai J, Rosenheck RA. Use of the Internet and an online personal health record system by US veterans: comparison of Veterans Affairs mental health service users and other veterans nationally. *J Am Med Inform Assoc*. 2012;19(6):1089–94.
- 25 Department of Defense, Department of Veterans Affairs. Integrated strategy for mental health: summary paper. Washington (DC): The Departments; 2010.
- 26 Tsai J, Rosenheck RA. Uninsured veterans who will need to obtain insurance coverage under the Affordable Care Act. *Am J Public Health*. 2014;104(3):e57–62.
- 27 Tsai J, Rosenheck RA. Homeless and non-homeless Veterans Affairs service users who will likely be eligible for the Medicaid expansion component of the Affordable Care Act. *J Rehabil Res Dev*. 2014;51(5):675–84.
- 28 McNally RJ, Frueh BC. Why are Iraq and Afghanistan War veterans seeking PTSD disability compensation at unprecedented rates? *J Anxiety Disord*. 2013;27(5):520–6.
- 29 Gold PB, Frueh BC. Compensation-seeking and extreme exaggeration of psychopathology among combat veterans evaluated for posttraumatic stress disorder. *J Nerv Ment Dis*. 1999;187(11):680–4.
- 30 Tsai J, Rosenheck RA. Examination of Veterans Affairs disability compensation as a disincentive for employment in a population-based sample of veterans under age 65. *J Occup Rehabil*. 2013;23(4):504–12.
- 31 Edens EL, Kaspro W, Tsai J, Rosenheck RA. Association of substance use and VA service-connected disability benefits with risk of homelessness among veterans. *Am J Addict*. 2011;20(5):412–9.
- 32 Buddin R, Kapur K. An analysis of military disability compensation [Internet]. Santa Monica (CA): RAND Corporation; 2005 [cited 2016 Apr 19]. Available for download from: <http://www.rand.org/pubs/monographs/MG369.html>
- 33 Mitka M. Capitol Health Call: VA disability claims backlog reduced. *JAMA*. 2014;311(6):564.