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VA National Suicide Data Report

2005–2015

Office of Mental Health and Suicide Prevention

June 2018

U.S. Department
of Veterans Affairs

Contents

I. Introduction

Suicide is a national health crisis that affects all Americans. Suicide is the 10th-leading cause of death in the United States, and suicide rates in the U.S. general population have increased in recent years.[1] A report from the Centers for Disease Control and Prevention (CDC) released in April 2016 indicated that, between 1999 and 2014, suicide rates increased among the general population for both men and women and across all age groups[2] and increases were greater between 2006 and 2014 than for earlier time periods. Findings underscore the magnitude of suicide among all Americans and the need for concerted national public health approaches with participation from the federal government, state and local governments, and community partners. To this end, there are a multitude of efforts between the Department of Veterans Affairs (VA) and external partners, including the Substance Abuse and Mental Health Services Administration (SAMHSA), the Department of Defense (DoD), and the National Action Alliance for Suicide Prevention, as well as public-private partnerships and growing partnerships with Veterans Service Organizations.

Suicide prevention is VA's highest clinical priority. Every Veteran suicide is a tragic outcome. Regardless of the numbers or rates, one life lost is too many. VA is focused on preventing Veteran suicides through intensive efforts to enhance a broad public health approach, improve risk identification through enhanced screening and predictive modeling, expand effective treatments and engagement strategies, support innovative research, and establish effective partnerships. VA is committed to doing everything possible to prevent suicide among all Veterans, including those not directly using VA services, and to spread the word that suicide prevention is everyone's business.

VA has worked to develop suicide prevention resources for every Veteran who experiences a crisis. VA is also focused on addressing risk factors early and proactively. Of the approximately 20 million[3] Veterans across the country, which includes almost 2 million Veteran women, just over 9 million[4] are enrolled in VA services, and this number continues to grow. VA continues to enhance suicide prevention, risk reduction, and engagement programs for all Veterans.

Ongoing collection, analysis, and dissemination of suicide-related data are critical for understanding Veteran suicide and informing suicide prevention initiatives. In 2016, VA initiated a groundbreaking effort to conduct the largest analysis of Veteran suicide in our nation's history.[5] That work generated information about Veteran suicide, building upon previous VA suicide data reports (2012, 2014) and VHA analyses. It provided the first systematic assessment of differences in the rates of suicide between Veterans who use and do not use VHA services, calculated suicide rates among populations with established and emerging risk factors for suicide and compared Veterans with other Americans through 2014. Since that report was

released in August 2016, VA has acted swiftly to expand efforts to identify and help Veterans at risk for suicide regardless of whether they are enrolled in the VA health care system.

This report expands upon this prior analysis of Veteran suicide and examines mortality records from 2005 to 2015 from all 50 states and Washington, D.C. Although previous reporting included years 2001–2004, the present report focuses on 2005–2015 due to data limitations. This data is reported only through 2015, as the source data set has a multiyear lag. It is important to note that rates and deaths in this report do not reflect the substantial increase in VA national suicide prevention efforts since the end of 2015.

The report continues to assess characteristics of suicide among Veterans using and not using VHA services and to compare Veteran rates of suicide with those among other Americans (i.e., non-Veteran adults). Several methodologic enhancements were implemented as part of VA's ongoing efforts to improve the identification of Veteran suicides. These were applied for all years to support comparisons over time. These updates may limit direct comparisons of current results with previously reported findings. The present report provides valuable new information on the scope of Veteran suicide and supports ongoing work in Veteran suicide prevention.

II. Executive Summary

This report provides information on suicide mortality for the years 2005–2015. It incorporates the most recent mortality data from the joint VA/DoD Joint Suicide Data Repository and includes information for deaths from suicide among all known Veterans of U.S. military service. Data for the joint VA/DoD Suicide Data Repository were obtained from the National Center for Health Statistics' National Death Index (NDI) through collaboration a with the DoD. Data available from the NDI include reports of mortality submitted from vital statistics systems in all 50 U.S. states, Washington, D.C., and Puerto Rico.[6]

This report builds upon prior analyses of Veteran suicide and provides additional and updated information on all known suicides among Veterans living in the United States from 2005 to 2015. Findings include direct comparisons of Veterans' suicide rates with those of analogous non-Veteran populations, calculations of suicide rates among high-risk subgroups (e.g., Veterans diagnosed with mental health and opioid use disorders), and comparisons of Veterans with and without recent receipt of VHA services. Rates of suicide were calculated by calendar year to facilitate comparison with national statistics and reports from other agencies.

Please note that this report includes data on suicide deaths through 2015 that were not available at the time of the 2016 report. It also incorporates data obtained from the DoD that were unavailable for previous reports. These additional mortality data distinguish Veterans with likely Title 38 status, meaning potential full

eligibility for VA care, from those who were active-duty Service members or who were National Guardsmen or Reservists never federally activated at the time of their death. Of note, all of these populations, as well as former Service members, are included as Veterans in this report. These additional data are included for the years 2005–2015 in this report's calculations of the number of Veterans who died by suicide each day. All other findings in the report refer specifically to Veterans who had been activated for federal service and were not currently serving on active duty at the time of their death.

Findings are based on analyses conducted by the VISN 2 Center of Excellence for Suicide Prevention and the VA Serious Mental Illness Treatment Resource and Evaluation Center in the Office of Mental Health and Suicide Prevention. Results were obtained using all available information to identify Veterans who died by suicide.

Key findings include the following:

- Overall, general trends in Veteran suicide, previously reported through 2014, remained consistent through 2015.
- In 2015, Veterans accounted for 14.3 percent of all deaths by suicide among U.S. adults and constituted 8.3 percent of the U.S. adult population (ages 18 and up). In 2010, Veterans accounted for 16.5 percent of all deaths by suicide and represented 9.6 percent of the U.S. adult population.
- The burden of suicide resulting from firearm injuries remains high among Veterans. In 2015, the percent of suicide deaths that involved firearms remained unchanged from 2014 at 67.0 percent.
- After adjusting for differences in age, the rate of suicide in 2015 was 2.1 times higher among Veterans compared with non-Veteran adults.
- After adjusting for differences in age, the rate of suicide in 2015 was 1.3 times higher among male Veterans compared with non-Veteran adult men.
- After adjusting for differences in age, the rate of suicide in 2015 was 2.0 times higher among female Veterans compared with non-Veteran adult women.
- In 2015, rates of suicide were highest among younger Veterans (ages 18–34) and lowest among older Veterans (ages 55 and older). However, Veterans ages 55 and older accounted for 58.1 percent of all Veteran suicide deaths in 2015.
- In 2015, an average of 20.6 active-duty Service members, non-activated Guard or Reserve members, and other Veterans died by suicide each day. 6.1 of these were Veterans who had recently used VHA services.
- After adjusting for age, suicide rates increased for Veteran and non-Veteran populations from 2005 to 2015. However, rates for Veterans who did not receive care in the VHA increased faster among

VHA using Veterans.

- Considering unadjusted and age-adjusted rates for 2015, Veterans who had recently used VHA services had higher rates of death by suicide when compared with non-VHA-using Veterans, overall Veterans, and non-Veterans. This is similar to information presented in the previous report and is consistent with findings reported elsewhere.[7,8,9] VHA-using Veterans are a population that has active health and mental health care needs and that is actively seeking care because those problems are causing disruption in their lives. Many of these illnesses, such as mental health or substance use disorders, are associated with an increased risk of suicide.

III. Methodology

Data for this report were obtained by linking information from VA and DoD administrative records with cause of death information included in the NDI. Information from multiple program offices and record systems was combined in order to create a comprehensive population database of Veterans and military Service members. From VA, information was obtained from population rosters maintained by the VA Office of Enterprise Integration, from deployment and service rosters maintained by the VA Post-Deployment Health Service, and from VHA clinical and administrative records. Information on Service members was obtained from DoD personnel records provided by the Defense Manpower Data Center.

The results of these suicide data analyses are presented in two sections, parts A and B. The first section, Part A, includes information on rates of suicide among all Veterans, including both those who used VHA services and those who did not. This section compares Veteran suicide rates with suicide rates among the U.S. non-Veteran adult population. The second section, Part B, includes information on rates of suicide among Veteran VHA patients and compares these rates to suicide rates among the general U.S. population.

Throughout this report, Veteran suicide decedents were considered users of VHA services if there was at least one record of inpatient or outpatient care in the calendar year of death or the calendar year prior. In addition, unless otherwise indicated, “Veteran suicides” refers specifically to those individuals who had been activated for federal service and were not currently serving on active duty at the time of their death. These decedents are considered to have likely Title 38 Veteran status; however, the specific data to confirm eligibility is not consistently available. All other decedents are included in the non-Veteran calculations unless otherwise specified.

IV. Results

A. Suicide Among All U.S. Veterans, 2005–2015

This section makes use of information on characteristics of suicide among all Veterans, regardless of VHA use, during the period of observation (2005–2015). Data on suicides among all Veterans were obtained from the joint VA/DoD Suicide Data Repository and include deaths reported in all 50 states and Washington, D.C. Unless otherwise specified, "Veteran" refers to those former Service members who had been activated for federal service and were not currently serving on active duty at the time of their death. All other decedents are included in the non-Veteran calculations. Rates of suicide for the Veteran population were calculated using the Veteran Population Projection Model 2016 (VetPop2016) to estimate the total Veteran population.[10] VetPop2016 is the latest official Veteran population projection from VA. The population of Veterans who were recent VHA patients (shortened to "VHA Veteran" in text and figures) was calculated based on administrative VHA patient data. For reporting, "VHA Veteran" is defined as patients with a record of VHA inpatient or outpatient care in the calendar year of death or the calendar year prior. "Non-VHA Veterans" are Veterans who either had no recorded VHA use history or used VHA outside this time period. Throughout this section, information on the estimated non-Veteran population is included for comparison. These comparison statistics were prepared using publicly available data sources. Total U.S. population counts were obtained from the U.S. Census Bureau American Community Survey one-year estimates.[11] Counts of suicide death among the entire U.S. adult population (ages 18 and older) were obtained from CDC's Wide-ranging ONline Data for Epidemiologic Research (WONDER) application.[12] Counts and rates of suicide for the non-Veteran population were calculated using the total number of suicides reported in the U.S. population and removing counts for known Veteran suicides for each year within each age and sex subgroup of interest. Likewise, the non-Veteran adult population was estimated by subtracting the estimated Veteran population from the total U.S. population.

Crude rates of suicide per 100,000 were calculated for each year — and separated by age group and sex — for Veterans overall, for Veterans using and not using VHA Services, and for non-Veterans. Age adjustment, using the 2000 U.S. standard population, was used to assess differences in rates between groups and over time.[13]

1. Veteran Population

Between 2005 and 2015, the overall Veteran population is estimated to have decreased by 15.2 percent.[10] In 2015, there were declines in population across sexes and most age groups for Veterans who did not use VHA services in 2014–2015, as compared with, in 2005, Veterans who did not use VHA services in 2004–2005, as shown in Figure 1. In contrast, the male and female VHA Veteran population generally increased over this same time period, particularly among younger Veterans. While male Veterans age 55–74 make up the largest portion of the 2015 Veteran population (see Figure 2), they also decreased in numbers from 2005 to 2015.

Figure 1. Veteran Population Percent Change from 2005 to 2015, by Sex and Age Group

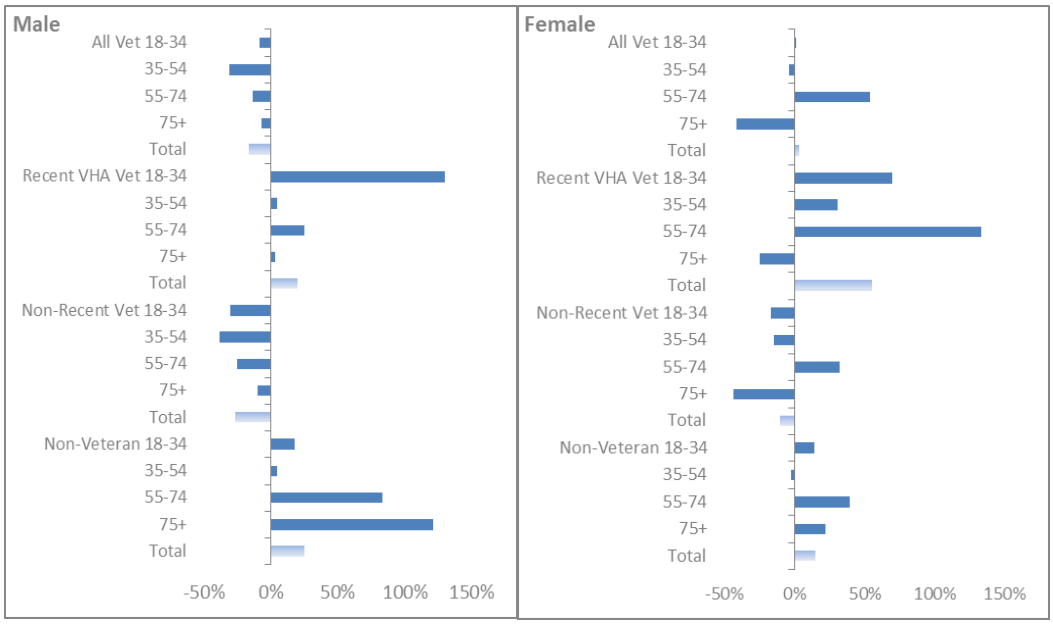
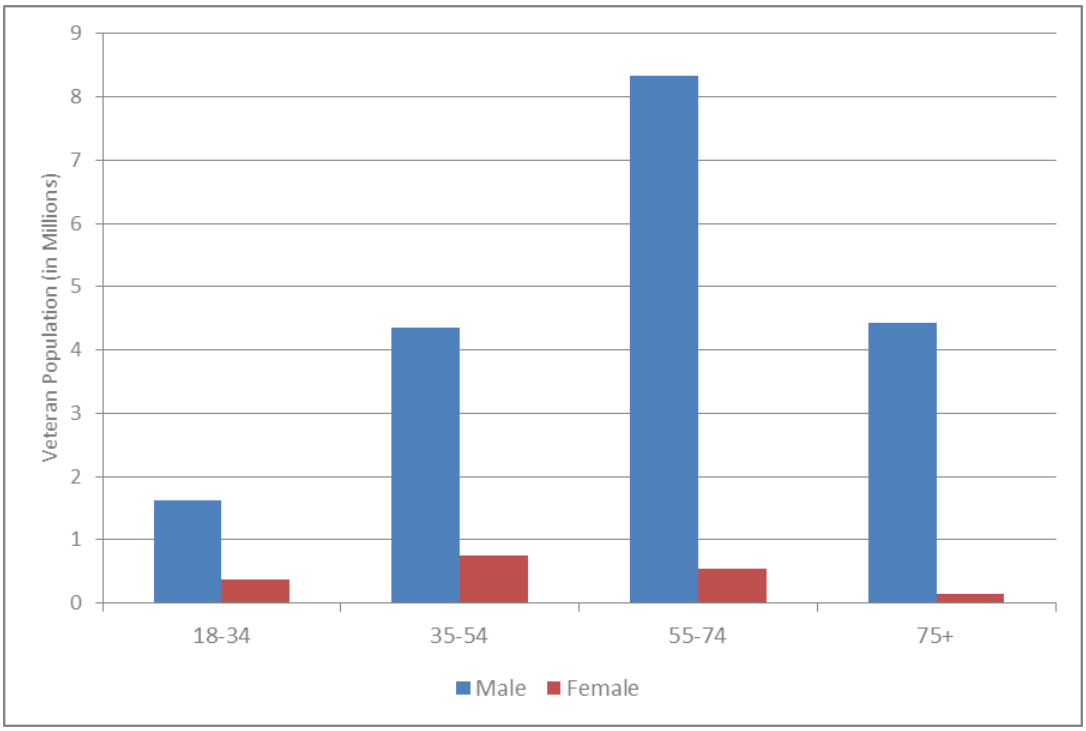


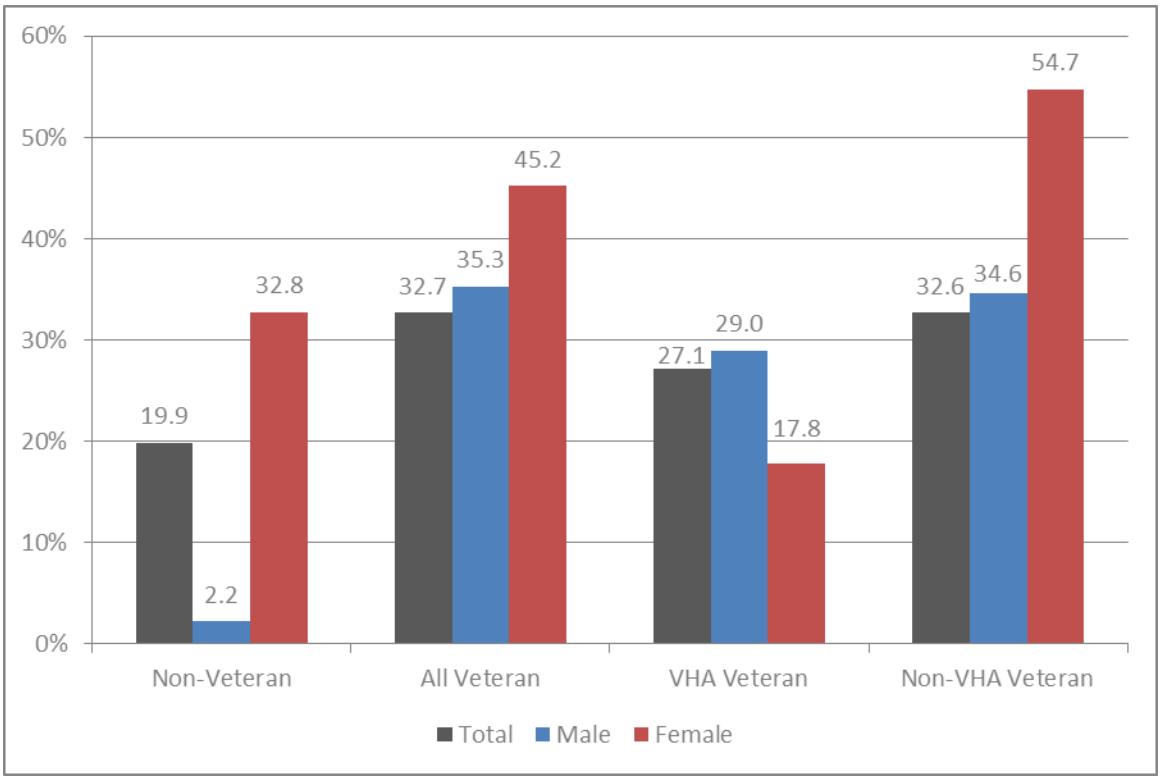
Figure 2. Veteran Population by Sex and Age Group, 2015



2. Magnitude of Veteran Suicide Mortality

In 2005, Veterans accounted for 11.3 percent of the U.S. adult population and 18.3 percent of all suicides among U.S. adults. Between the years 2005 and 2015, the proportion of U.S. adults who were Veterans decreased (8.3 percent, 2015) and the proportion of adult suicide decedents who were Veterans also decreased (14.3 percent, 2015). However, changes in the proportion of U.S. adults who were Veterans and the proportion of adult suicide decedents who were Veterans leaves gaps in our understanding of changes in rates of suicide among Veterans over time. Therefore, steps were taken to account for changes in rates of suicide among Veterans and to control for shifts in the demographic composition of populations over time. Age-adjusted rates of suicide were calculated for 2015 using the 2000 U.S. standard population weights.[13] As shown in Figure 3, differences in age-adjusted rates of suicide between 2005 and 2015 were greater for Veterans than for non-Veterans. Further differences within Veteran subpopulations were observed when changes in the age-adjusted rates of suicide were calculated separately for Veterans with and without use of VHA services. Table 1 and Figure 4 present the unadjusted rates for the overall Veteran population.

Figure 3. Percent Changes in Age-Adjusted Rates of Suicide Among Veterans and Non-Veterans, 2015 Compared With 2005



Main finding: After adjusting for age, suicide rates among the Veteran and non-Veteran populations increased from 2005 to 2015.

Table 1. Unadjusted Veteran Suicide Rates, by Age Group and Sex, 2005–2015

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All	23.8	23.9	25.2	26.9	27.2	27.4	27.6	27.7	28.5	29.7	29.7
18–34	25.0	22.5	24.6	26.7	25.9	27.3	30.1	31.0	35.9	35.5	39.1
35–54	28.9	28.8	30.3	32.3	31.9	32.2	32.6	32.6	31.7	33.6	34.8
55–74	18.7	19.8	20.7	23.1	23.0	23.5	23.4	23.5	24.8	26.0	26.0
75+	26.3	25.9	27.3	27.4	29.6	29.0	28.5	28.6	28.4	29.9	27.1
Male	24.9	25.1	26.4	28.2	28.4	28.7	28.9	29.1	29.9	31.1	31.1
18–34	28.0	25.6	28.4	30.6	28.8	31.3	34.4	35.7	41.1	40.8	45.0
35–54	30.7	30.8	32.5	34.9	34.4	34.6	35.0	35.3	34.6	35.9	37.5
55–74	19.2	20.4	21.2	23.5	23.6	23.9	24.0	24.1	25.5	26.8	26.7
75+	27.5	27.0	28.3	28.4	30.5	30.0	29.4	29.5	29.3	30.7	27.8
Female	10.1	9.1	9.9	11.3	11.8	12.4	12.8	12.3	12.7	15.0	15.3
18–34	10.7	8.2	7.8	9.3	13.3	10.4	11.6	10.6	13.1	12.6	13.5
35–54	14.1	13.3	13.6	13.6	14.5	15.6	16.6	15.9	14.4	20.1	18.7
55–74	5.7	*4.3*	8.0	12.3	8.0	12.5	10.8	11.0	12.7	12.4	14.8
75+	-	-	-	-	-	-	-	-	-	-	-

Rates per 100,000 population. Rates are suppressed and presented as "-"when based on suicide counts of 0–9. Rates calculated based on suicide counts of less than 20 are considered unreliable and are presented in italics.

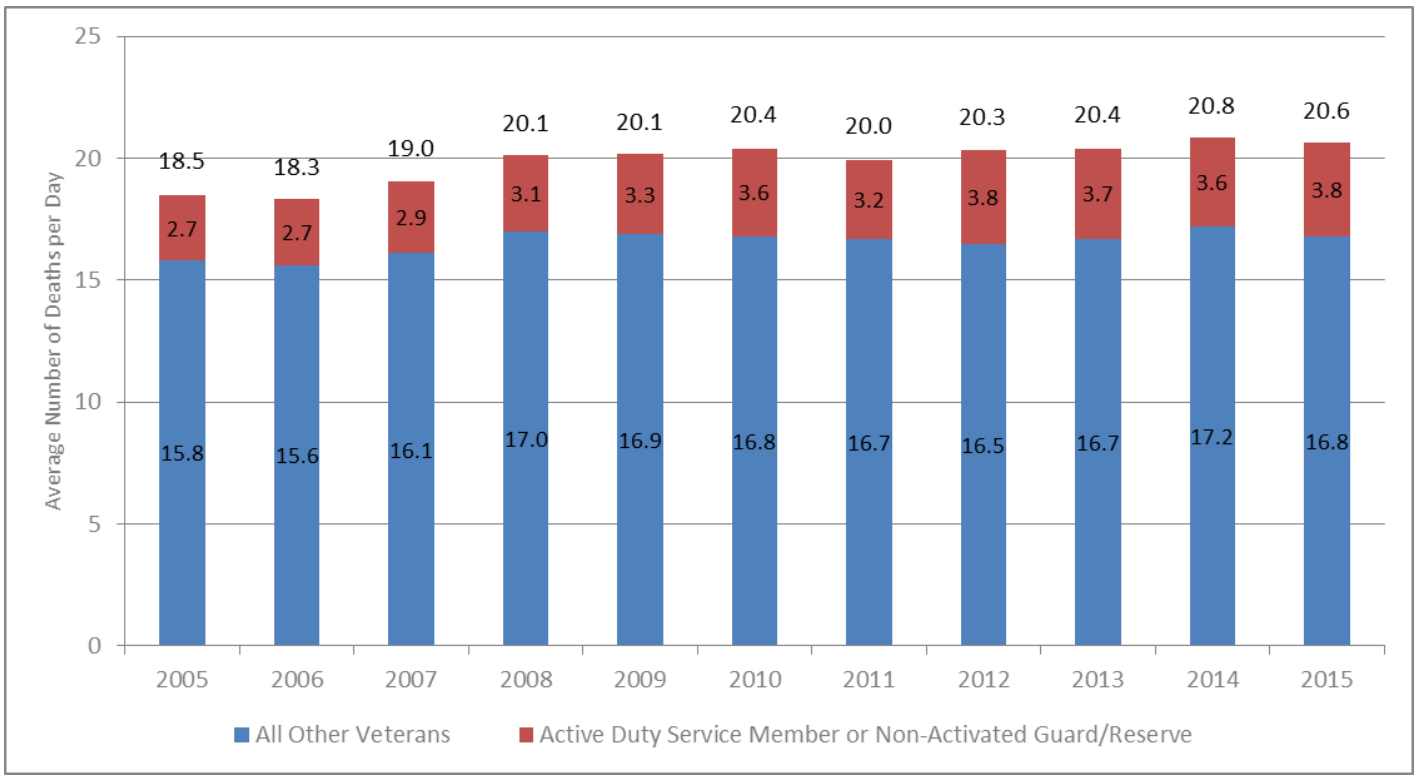
Figure 4. Unadjusted Veteran Suicide Rates by Sex, 2005–2015

Main finding: Unadjusted suicide rates increased for male and female Veterans from 2005 to 2015.

3. Average Number of Veteran and Non-Veteran Suicides per Day

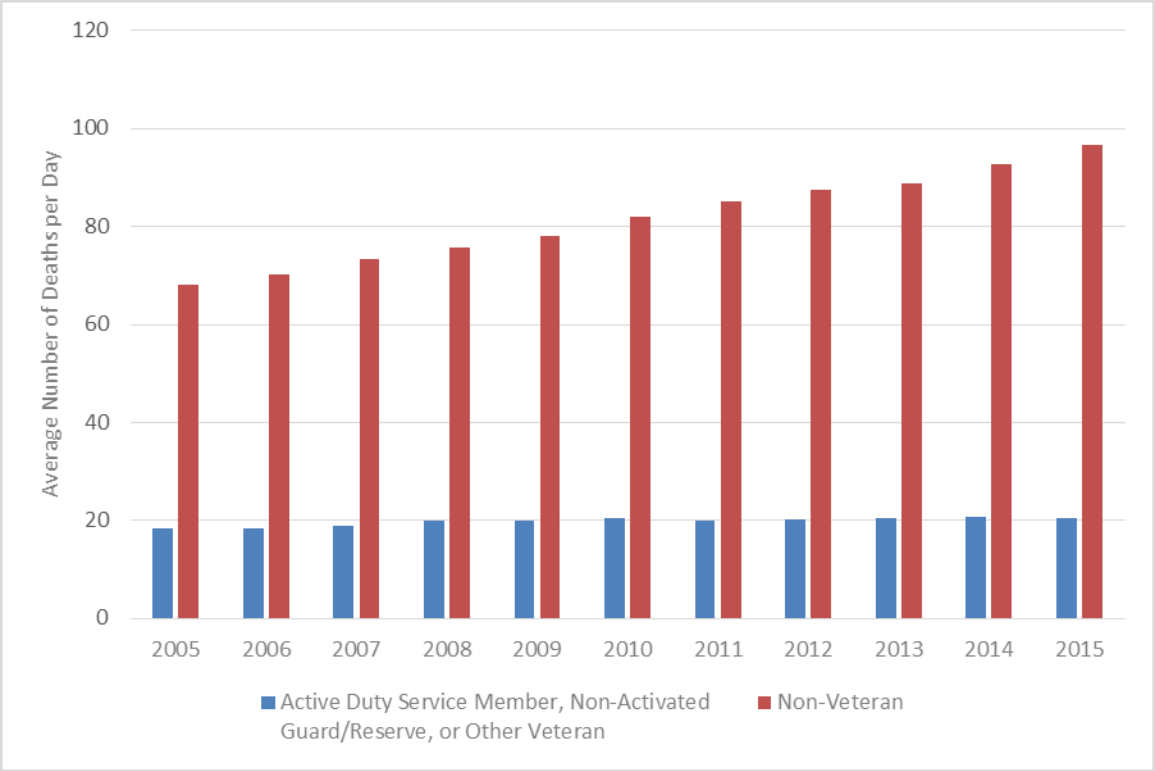
The average numbers of Veteran and non-Veteran suicides per day were calculated by taking the total number of suicides in each group for each year and dividing it by the number of days in that year. In 2015, an average of 20.6 active-duty Service members, non-activated Guardsmen or Reservists, and other Veterans died by suicide each day (Figure 5). 3.8 of these suicide deaths were among active-duty Service members or among National Guardsmen or Reservists never federally activated at the time of death. The other 16.8 ("All Other Veterans") were activated for federal service and were not currently serving on active duty at the time of their death. The average number of non-Veteran adults who died by suicide each day increased steadily from 68 per day in 2005 to 97 per day in 2015 (Figure 6). The average number of VHA Veterans who died by suicide each day increased from 5 in 2005 to 6 in 2015 (Figure 7). It should be noted that decreases in the size of the Veteran population and simultaneous increases in the size of the U.S. population over this time period limit interpretation of these statistics. Rates of suicide, stratified by group, are more appropriate for understanding changes in Veterans and non-Veterans populations and are provided throughout this report.

Figure 5. Average Number of Suicide Deaths per Day Among Active-Duty Service Members, Non-Activated Guardsmen or Reservists, and Other Veterans, 2005–2015



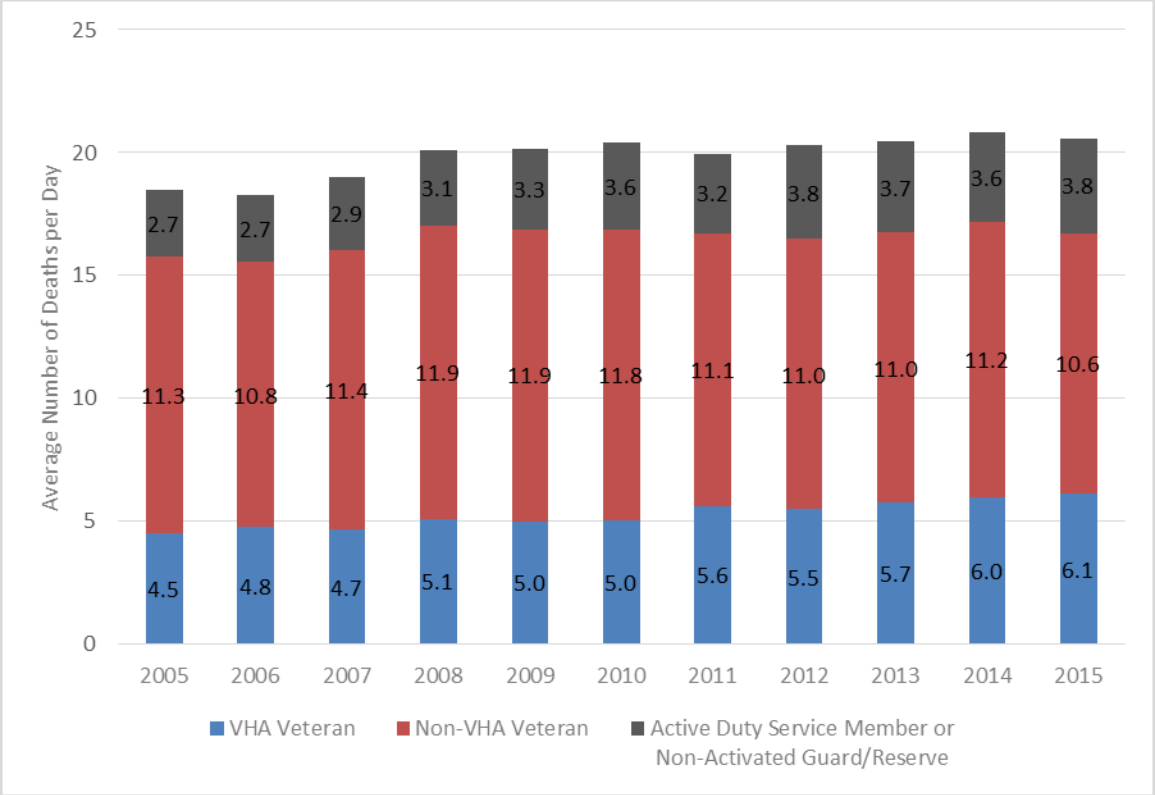
Main Finding: The average number of Veterans dying by Suicide per day has remained unchanged.

Figure 6. Average Number of Suicides per Day Among Active-Duty Service Members, Non-Activated Guardsmen or Reservists, and Other Veterans and Non-Veterans by Year, 2005–2015



Main Finding: On average, the number of non-Veterans who died by suicide each day has increased each year since 2005 while the number of Veterans who died by suicide each day has remained unchanged. In contrast, the total Veteran population has been decreasing in size and the Non-Veteran population has been increasing in size over this same period.

Figure 7. Average Number of Suicides per Day Among VHA Veterans, Non-VHA Veterans, and Active-Duty Service Members or Non-Activated Guardsmen or Reservists, 2005–2015*



*Please note that the numbers presented may not align with those in Figure 5 due to rounding.

Main finding: The average number of Veterans who died by suicide each day remained relatively unchanged from 2005 to 2015.

4. Characteristics of Veteran Suicide Decedents

An enhancement to this year's report is the availability of additional information on characteristics of all Veteran suicide decedents from 2005 to 2015. Through work with the VA Office of Enterprise Integration (OEI), data on race, ethnicity, military service branch, and era of military service are included, as available, for Veterans who died by suicide. These additional characteristics were obtained from the U.S. Veterans Eligibility Trends and Statistics (USVETS) database, maintained by OEI. USVETS is an integrated dataset of Veteran demographic and socioeconomic data maintained to support statistical analyses. To provide context for the distribution of these characteristics among suicide decedents, the distribution among the total Veteran population in 2015 is included.[10]

In Figures 8 and 9, race and ethnicity among all Veterans is determined using data from VHA patient records and the USVETS database. This information was obtained from the administrative patient records of Veterans who have used VHA services at any time and for whom race and ethnicity information was available.[14] For VHA patient Veteran decedents with no recorded race or ethnicity and for Veteran decedents with no history of VHA service, data derived from USVETS was used to supplement the available information.

Figure 8. Percent of Veteran Suicide Decedents by Race/Ethnicity, 2005–2015

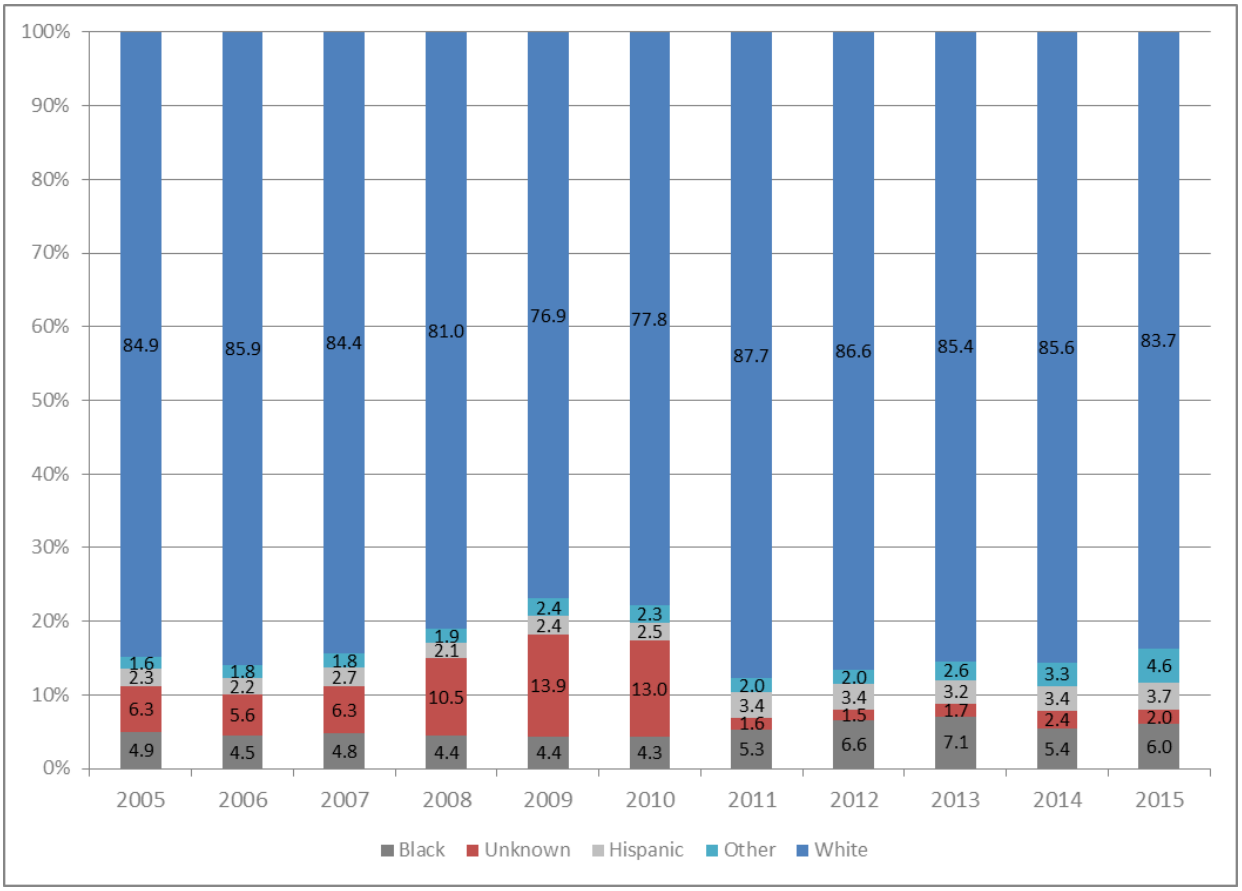
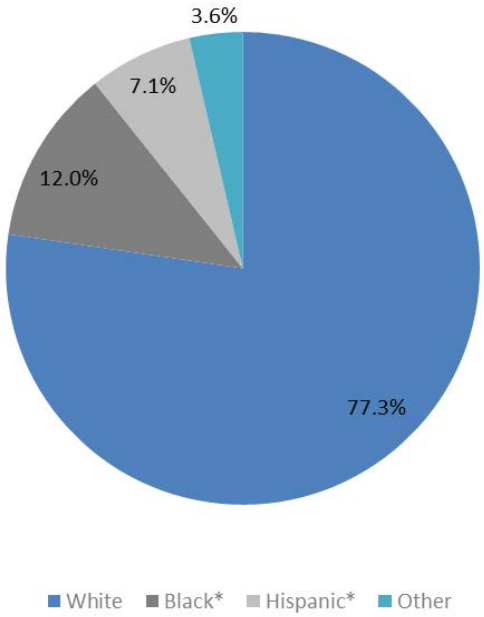


Figure 9. Percent of Veteran Population by Race/Ethnicity, 2015

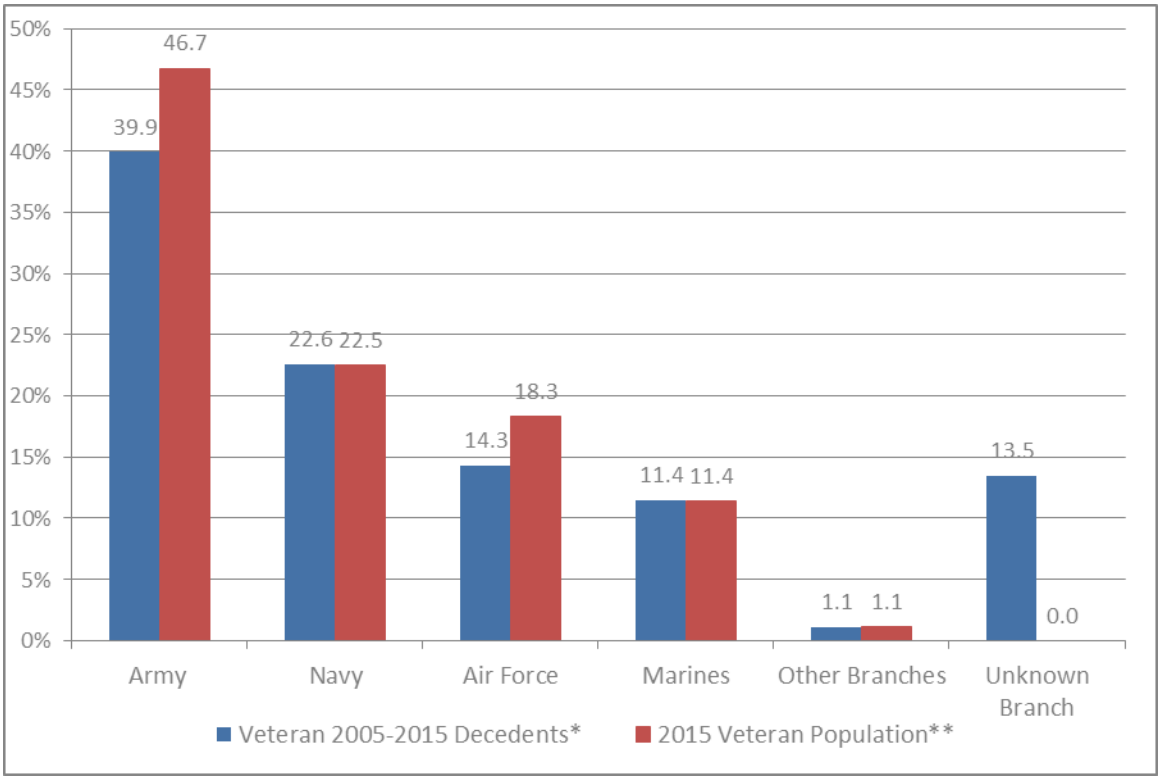


* Black and Hispanic categories are not mutually exclusive.

Main finding: White was the only race/ethnicity category for which the prevalence of suicide in 2015 was disproportionately high.

Military service history for suicide decedents from 2005 to 2015, including their branch(es) and military service era(s), was obtained from the USVETS database. For context, branch of military service and military service era of the 2015 total Veteran population are presented, based on Vetpop2016.[10]

Figure 10. Percent of Veteran Suicide Decedents 2005–2015 and the 2015 Veteran Population by Branch of Service



"Other Branches" category includes Coast Guard, Public Health Service, and National Oceanic and Atmospheric Administration.

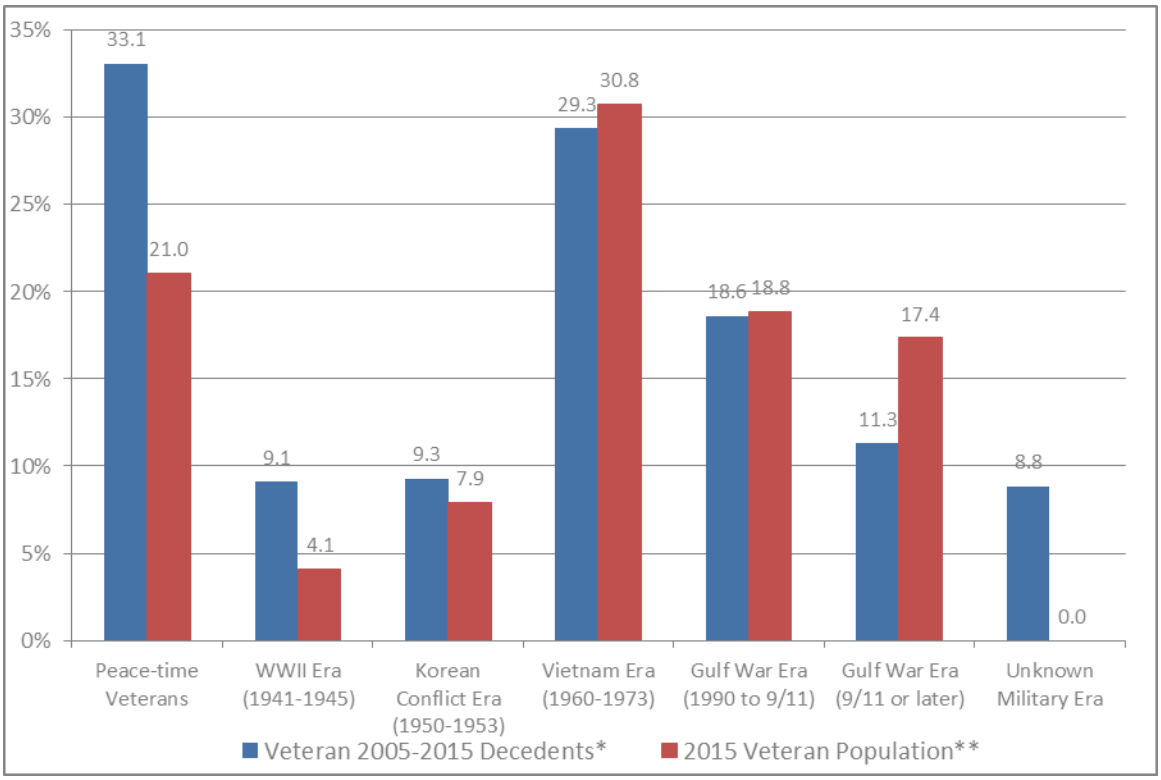
"Unknown Branch" is for decedents for whom branch information was not available.

* Veteran decedents who served in multiple military branches are counted in all branches that they served in, therefore percentages sum to more than 100 percent.

** For 2015 population percentages, Veterans are counted as part of the latest branch in which they served.

Main finding: The distribution of Veteran suicides by military branch from 2005 to 2015 is comparable to the distribution of the Veteran population by military branch.

Figure 11. Percent of Veteran Suicide Decedents 2005–2015 and the 2015 Veteran Population by Military Service Era



* Veteran decedents serving in multiple military eras are counted in all military eras that they served in, so percentages sum to more than 100 percent.

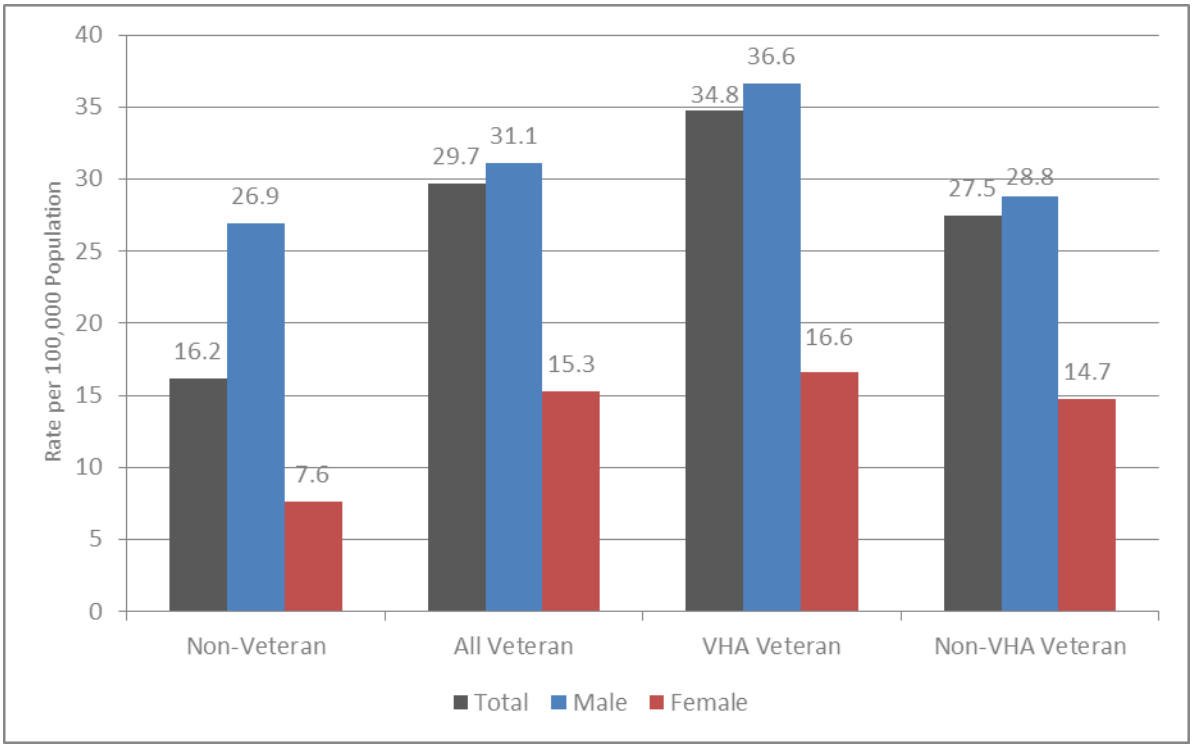
** For population percentages, Veterans are counted as part of the latest era in which they served.

Main finding: Vietnam-era Veterans represent the largest population of Veterans by era and the second-largest number of deaths by suicides.

5. Comparison of Veteran and Adult Non-Veteran Suicide Rates, 2005–2015

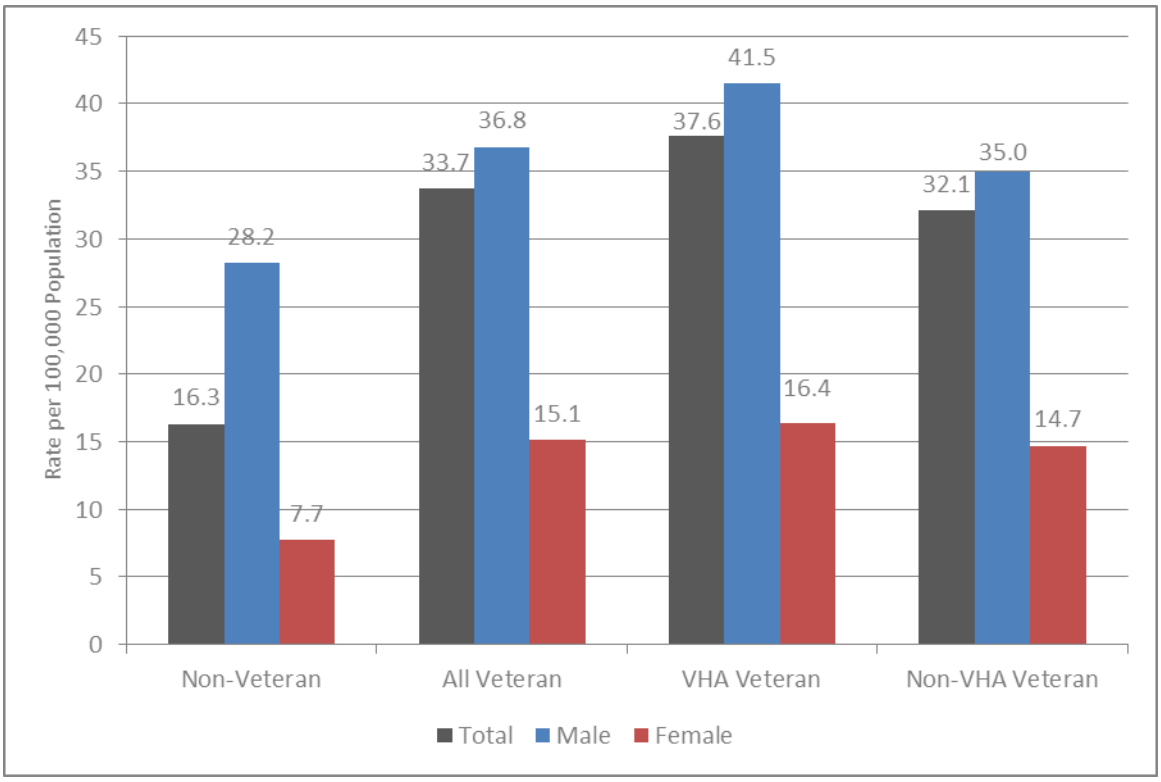
VHA-using Veterans are a population that has health and mental health care needs and that is actively seeking care because those problems are causing disruption in their lives. They are more likely to have mental and medical illnesses, chronic pain, and disabilities than the non-VHA-using Veteran population and the general non-Veteran population. Many of these illnesses, such as mental health or substance use disorders, are associated with an increased risk of suicide.[8,9,10] Although the absolute rate of suicide is higher in the VHA-using Veteran population (Figure 12), the rate of suicide in this population is increasing at a slower pace than among non-VHA-using Veterans and among the general Veteran population. Please also note that Figure 12 reports the suicide rate unadjusted for age and gender. The non-Veteran population is significantly younger and has a greater percentage of women than the overall Veteran population. This potentially limits comparability between the Veteran and non-Veteran populations. However, when adjusted for age (Figure 13), the suicide rates for the Veteran and adult non-Veteran populations show a similar relationship as presented in Figure 12.

Figure 12. Unadjusted Veteran and Non-Veteran Suicide Rates, 2015



* Please note: Part B reports VHA Veteran suicide rates per 100,000 person-years.

Figure 13. Age-Adjusted Veteran and Non-Veteran Suicide Rates, 2015



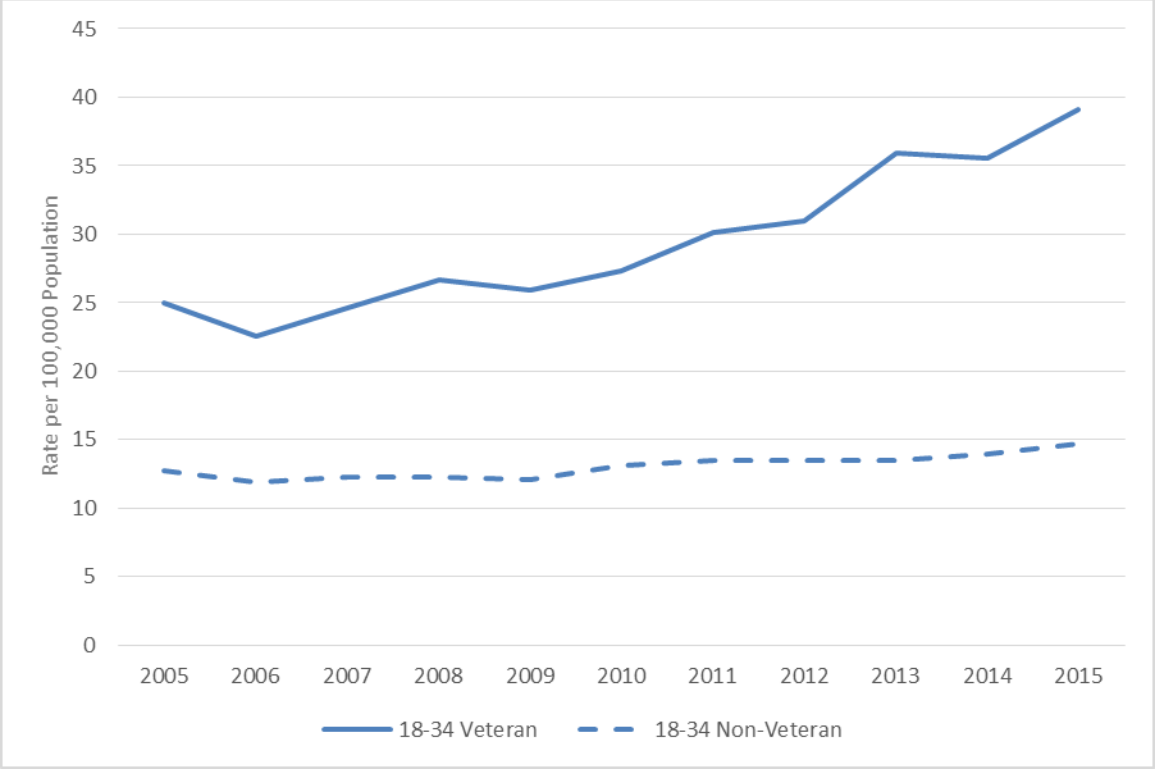
* Please note: Part B reports VHA Veteran suicide rates per 100,000 person-years.

Main finding: Suicide rates among Veterans were higher than among non-Veterans. Veterans who use VHA services had a higher rate of suicide death than non-VHA Veterans, overall Veterans, and non-Veterans.

Age Differences in the Comparison of Veteran and Non-Veteran Suicide Rates

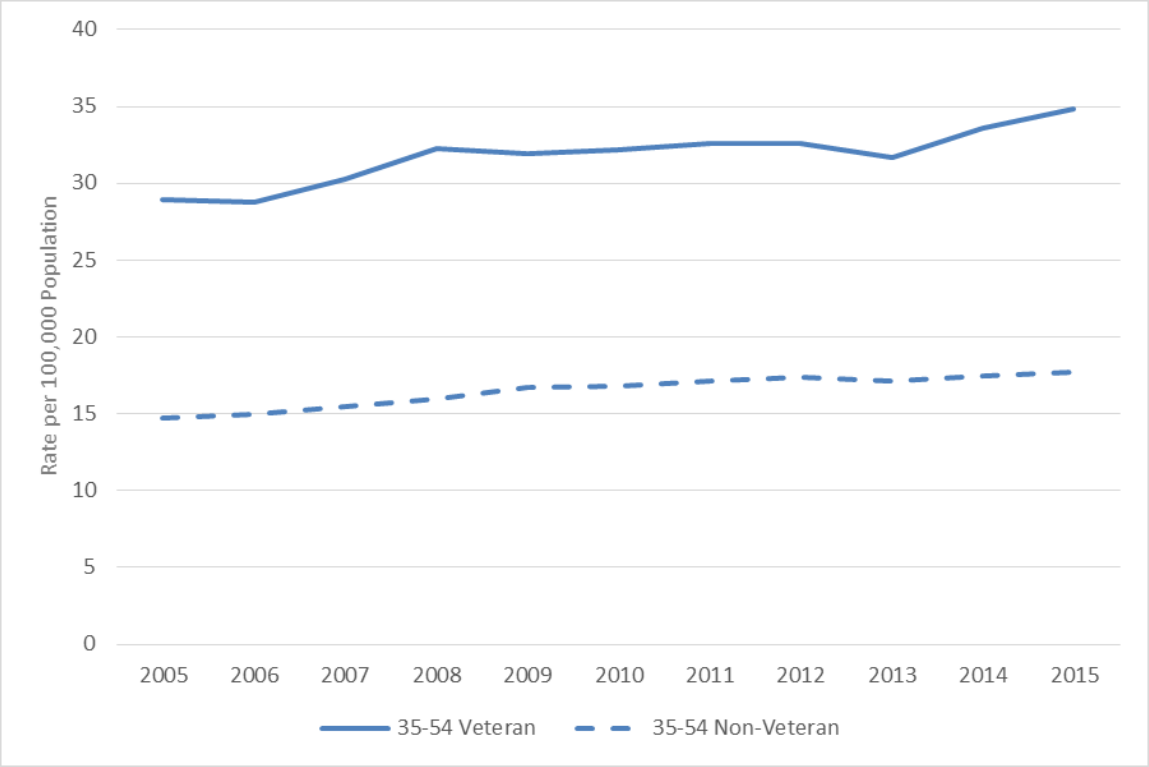
Figures 14–17 provide age-specific suicide rates for all Veterans and non-Veterans, by year. Figures 18 and 19 present this information for men, and Figure 20 presents this information for women. Overall, rates of suicide increased more among Veterans than among their non-Veteran peers. However, there are important differences across age groups and sex. For example, trends seen in a Veteran age group are not always mirrored in the non-Veteran age group; moreover, trends over time are different for some age groups within the Veteran population.

Figure 14. Rates of Suicide Among Veterans and Non-Veterans Ages 18–34, 2005–2015



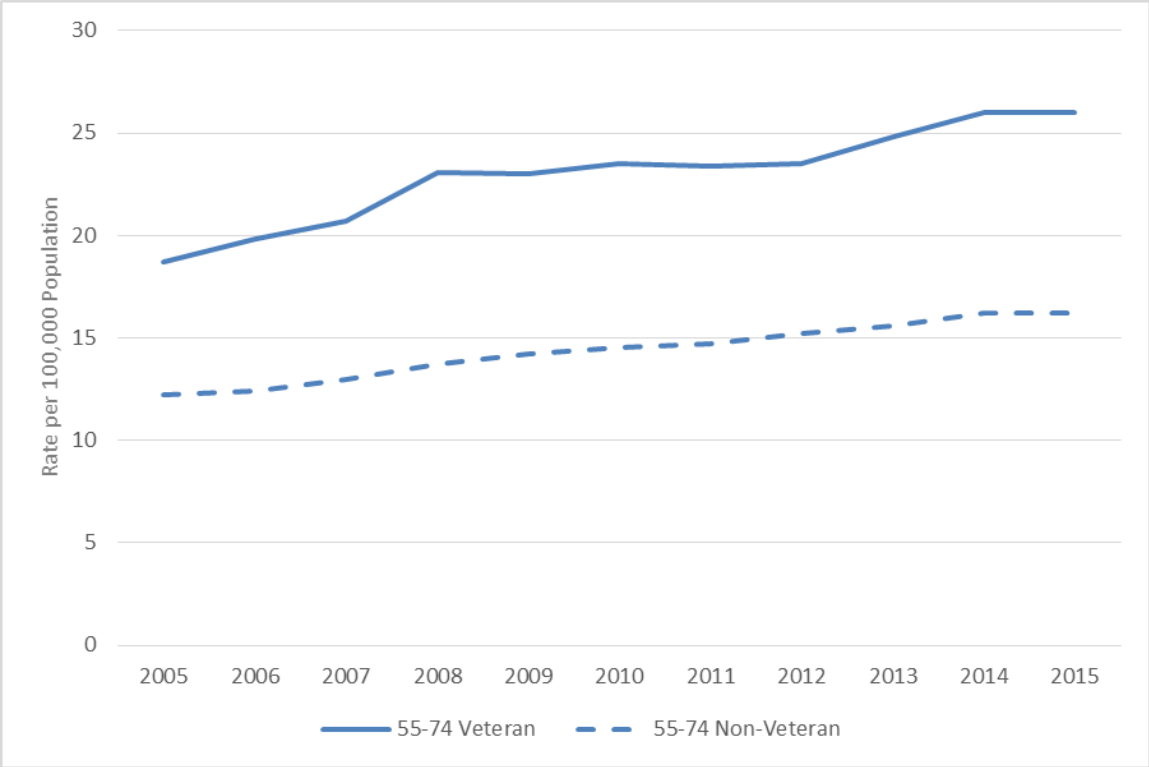
Main finding: Rates of suicide increased substantially among younger Veterans while remaining relatively stable among non-Veterans ages 18–34.

Figure 15. Rates of Suicide Among Veterans and Non-Veterans Ages 35–54, 2005–2015



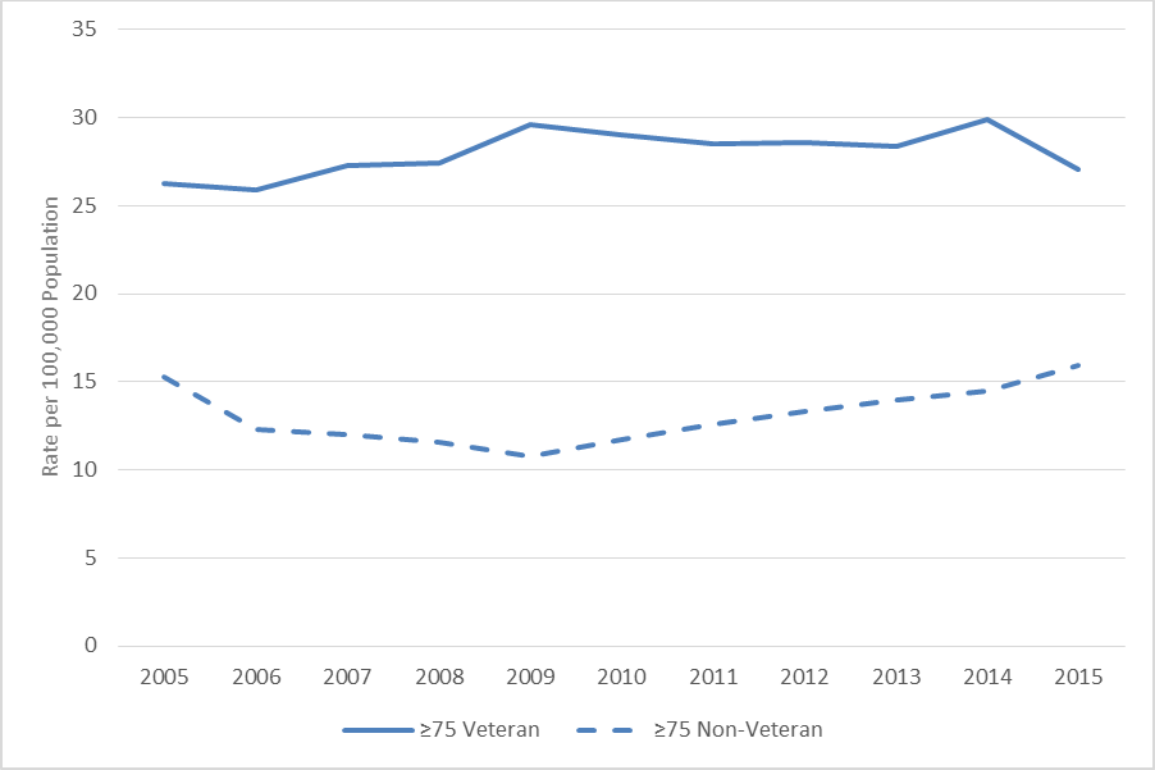
Main finding: Rates of suicide increased among Veterans and non-Veterans ages 35–54.

Figure 16. Rates of Suicide Among Veterans and Non-Veterans Ages 55–74, 2005–2015



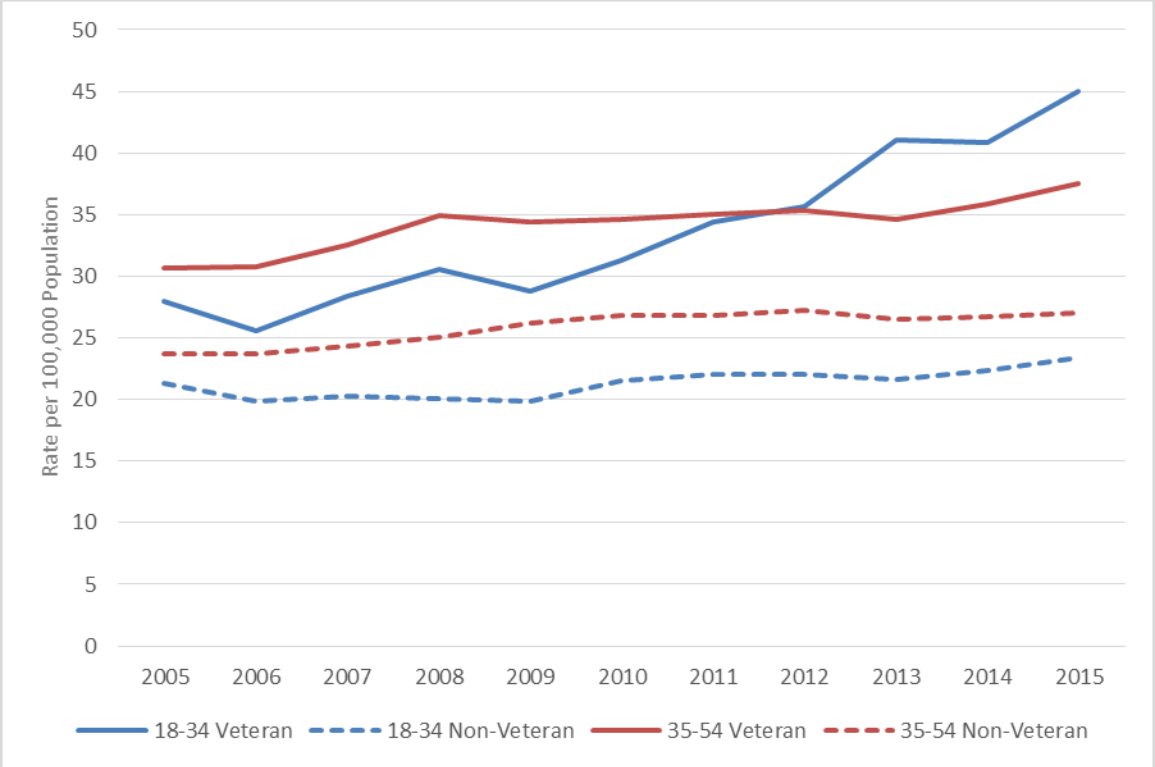
Main finding: Suicide rates among both Veterans and non-Veterans ages 55–74 increased between 2005 and 2015.

Figure 17. Rates of Suicide Among Veterans and Non-Veterans Ages 75 and Older, 2005–2015



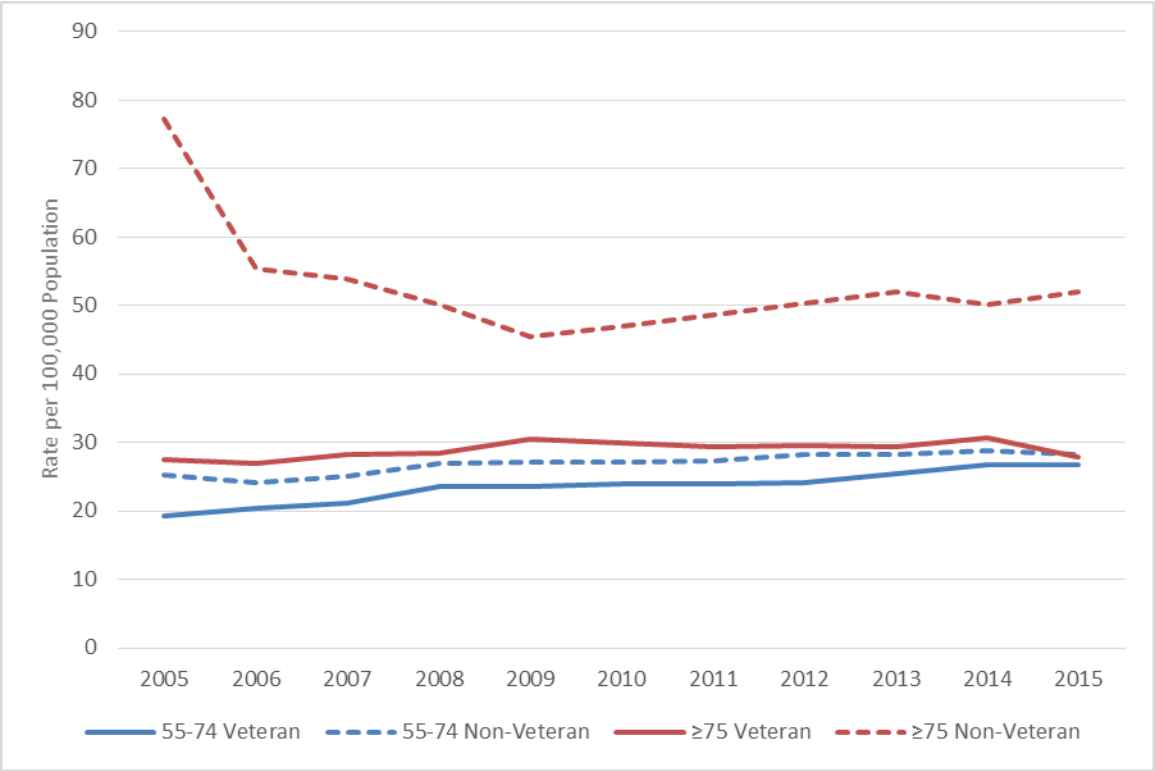
Main finding: Rates of suicides in 2015 among Veterans and non-Veterans ages 75 and older are consistent with their respective rates in 2005, though there were fluctuations in the intervening years.

Figure 18. Rates of Suicide Among Male Veterans and Non-Veterans Ages 18–54, 2005–2015



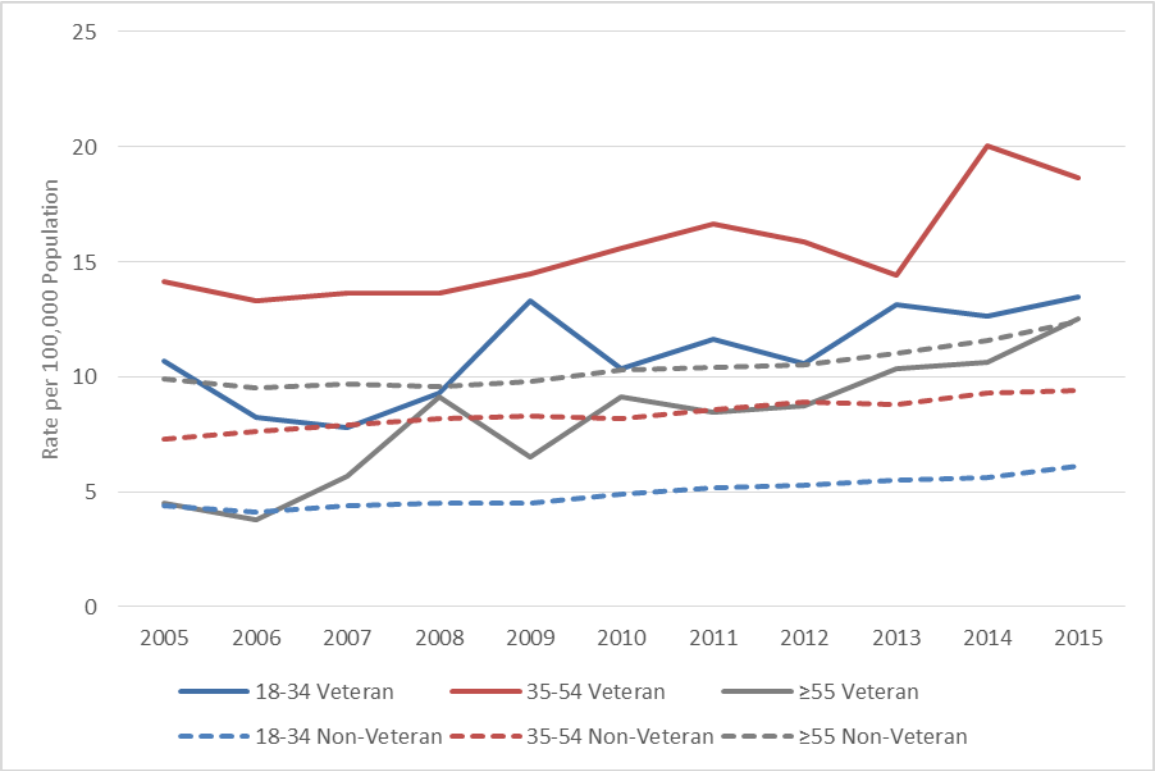
Main finding: When compared with rates among non-Veteran men, suicide rates among younger and middle-aged male Veterans were higher and increased to a greater degree from 2005 to 2015.

Figure 19. Rates of Suicide Among Male Veterans and Non-Veteran Ages 55 and Older, 2005–2015



Main finding: The rates of suicides for older Veterans were lower than the respective rates for older non-Veterans, particularly with respect to those ages 75 and up.

Figure 20. Rates of Suicide Among Female Veterans and Non-Veterans by Age Group, 2005–2015

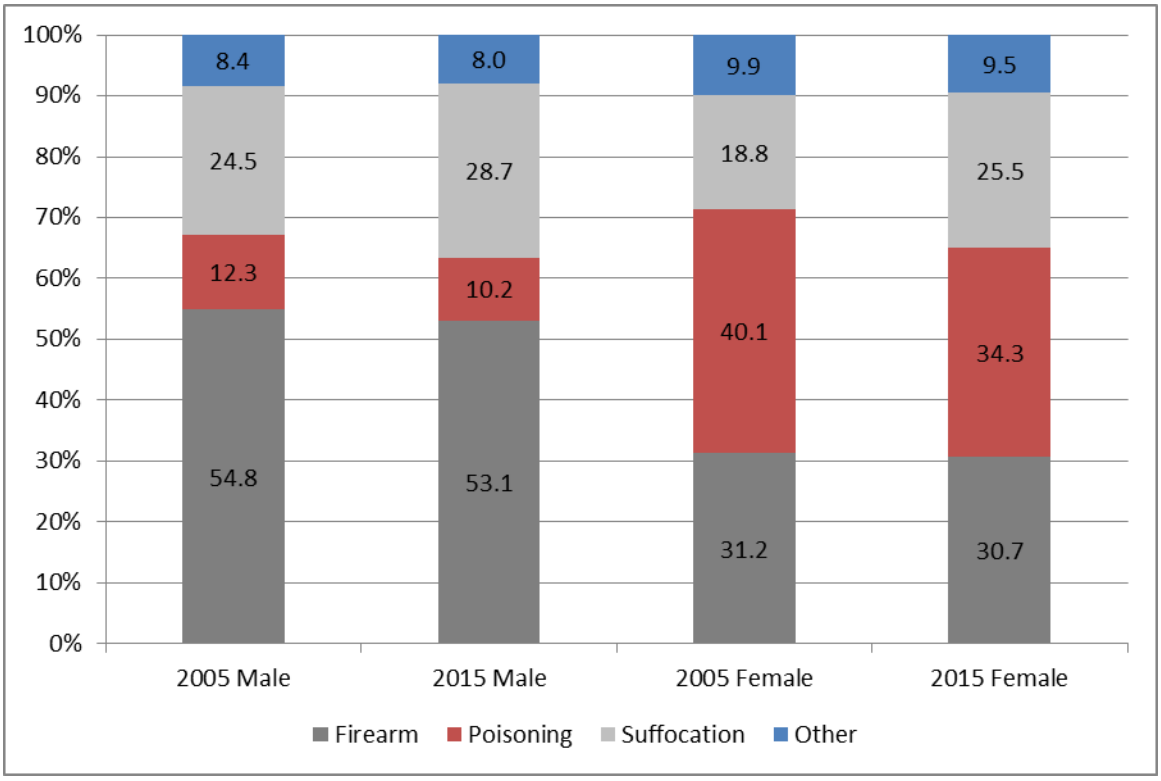


Main finding: Except in the case of older women, the rates of suicides for Veteran women were higher than those of non-Veteran women.

6. Method of Veteran and Non-Veteran Suicide, 2005–2015

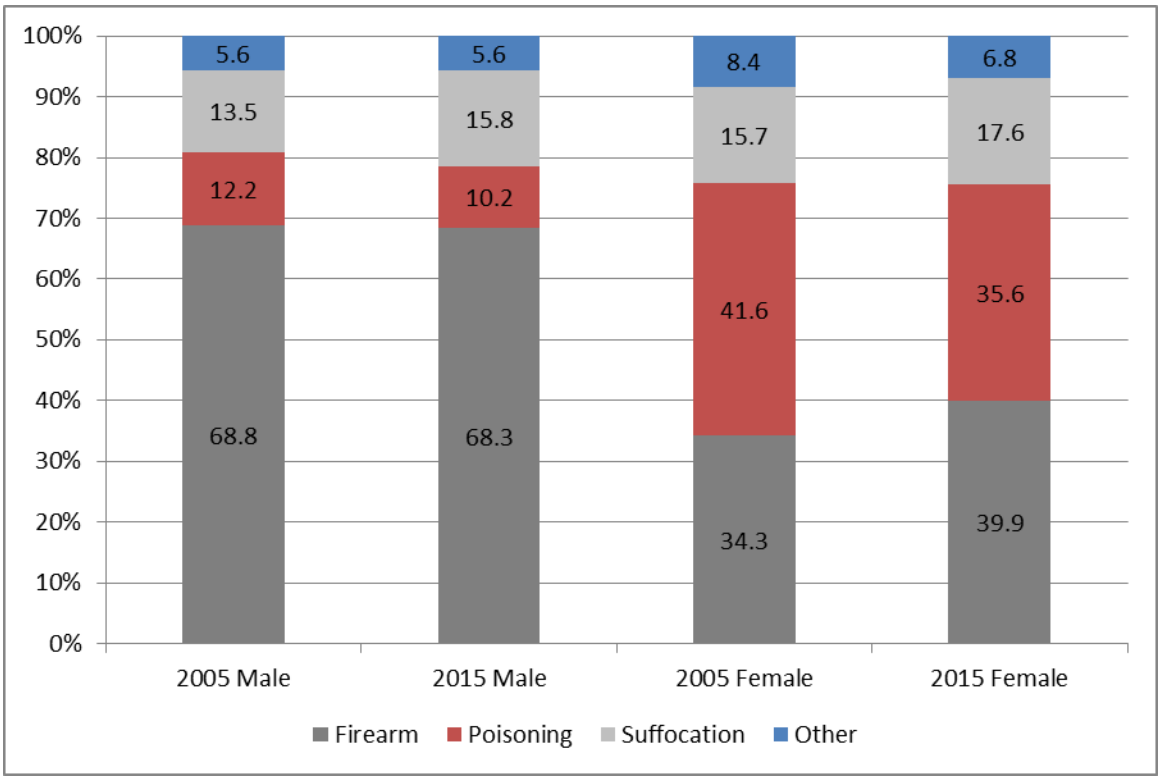
Compared with other suicide methods prevalent in the U.S., use of firearms is associated with the highest rate of suicide mortality. Figures 21 and 22 demonstrate that the proportion of suicide decedents using firearms is higher among both male and female Veterans than among the adult non-Veteran population. The proportion of decedents who used firearms remained relatively stable between 2005 and 2015 for all populations except for female Veterans, among whom usage increased.

Figure 21. Non-Veteran Suicide Deaths by Method and Sex in 2005 and 2015



Main finding: From 2005 to 2015, the percentages of suicides resulting from a firearm injury and intentional poisoning decreased among U.S. adult non-Veterans, for both men and women.

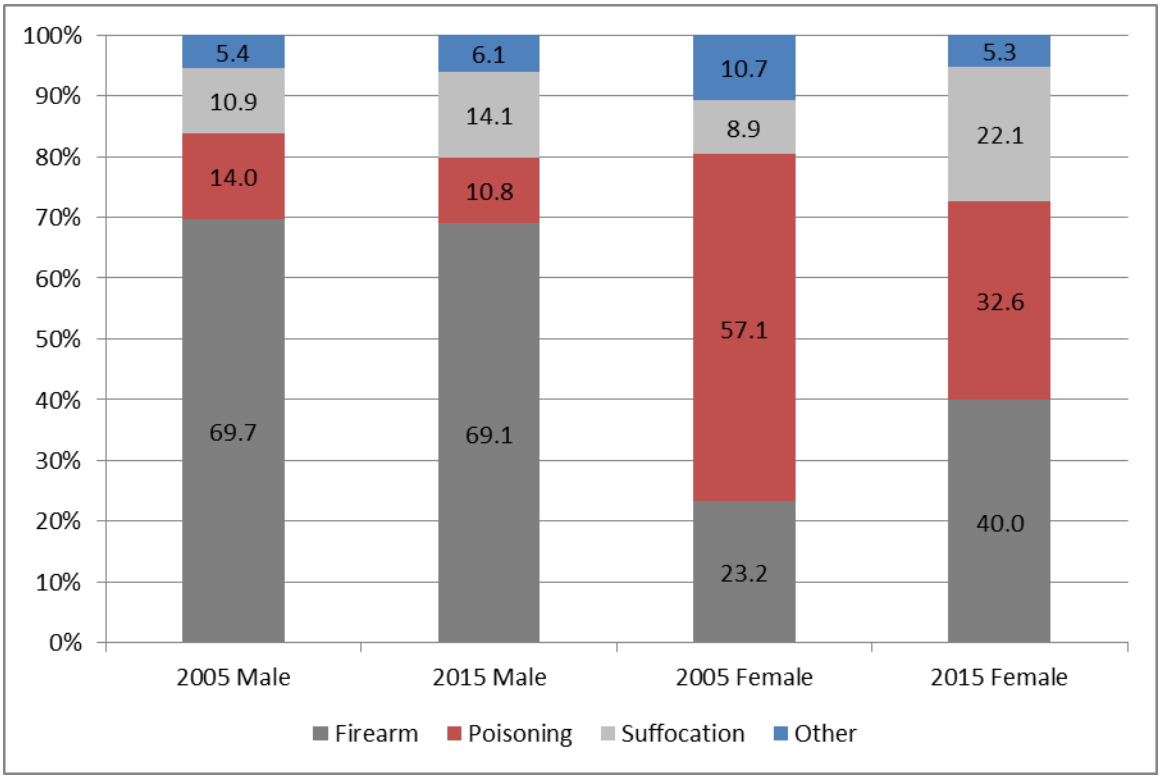
Figure 22. All Veteran Suicide Deaths by Method and Sex in 2005 and 2015



Main finding: The percentage of all suicides resulting from a firearm injury remained high among Veterans from 2005 to 2015.

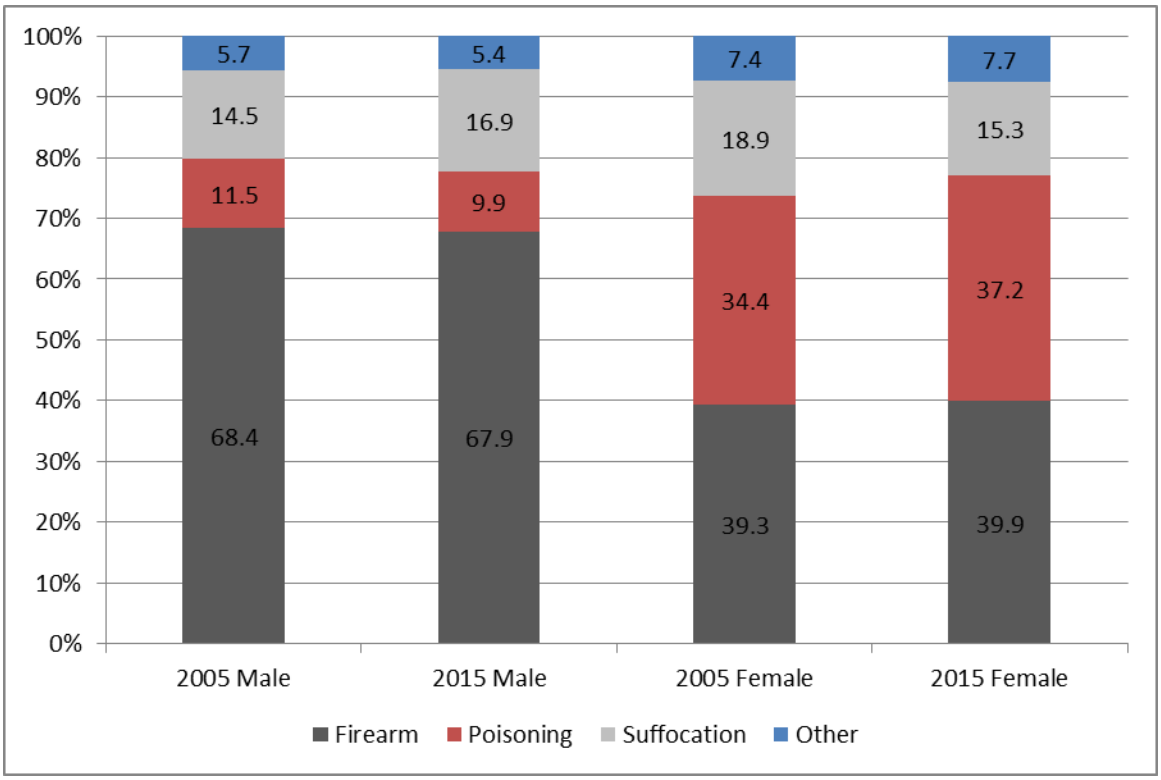
Figures 23 and 24 show the proportion of all deaths by method among Veterans with and without use of VHA services in 2005 and 2015. Among female VHA Veterans, there were decreases in the proportion of suicides resulting from poisoning and increases in the proportion of suicides resulting from suffocation and firearms. In contrast, female Veterans without VHA service use showed a decrease in the proportion of suicides resulting from suffocation and an increase in those resulting from poisoning, while the proportion of firearm suicides stayed relatively stable (Figures 23 and 24).

Figure 23. VHA Veteran Suicide Deaths by Method and Sex in 2005 and 2015



Main finding: The percentage of all suicides resulting from suffocation and firearms increased among female Veterans who used VHA services.

Figure 24. Non-VHA Veteran Suicide Deaths by Method and Sex in 2005 and 2015



Main finding: The percentage of suicides resulting from a firearm injury remained high among Veterans who did not use VHA services from 2005 to 2015.

7. Understanding the Burden of Veteran Suicide: Magnitude vs. Risk

When directing suicide prevention efforts, it's important to consider the distribution of suicides as well as differences in rates among key population subgroups. Figures 25 and 26 demonstrate important differences in the distribution of the number and rate of Veteran suicides across age groups and sexes when compared with the characteristics of suicides among non-Veterans in 2015. As demonstrated in Figure 26, rates of suicide are highest among male Veterans ages 18–34 and lowest among male Veterans ages 55–74 years. However, the greatest number of suicides among male Veterans was observed for those ages 55–74 years. In contrast, the greatest number of suicides among non-Veteran men was observed for those ages 35–54 and the highest rate among those 75 and older (Figure 25). For both Veteran and non-Veteran women, the highest rate and greatest number of suicides were observed among those ages 35–54 years.

Figure 25. Comparison of Suicide Counts and Rates by Age Group for Non-Veteran Men, 2015

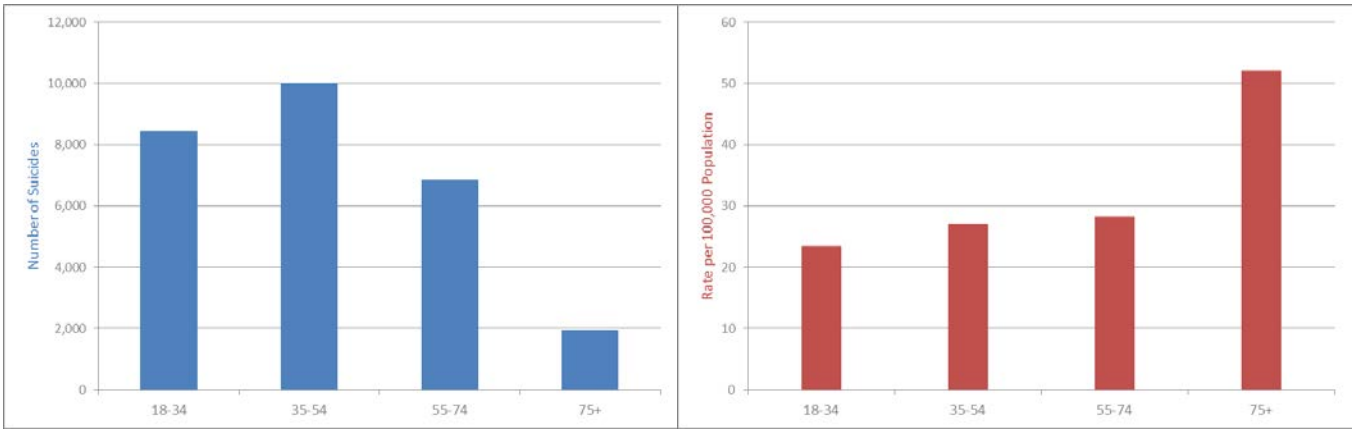
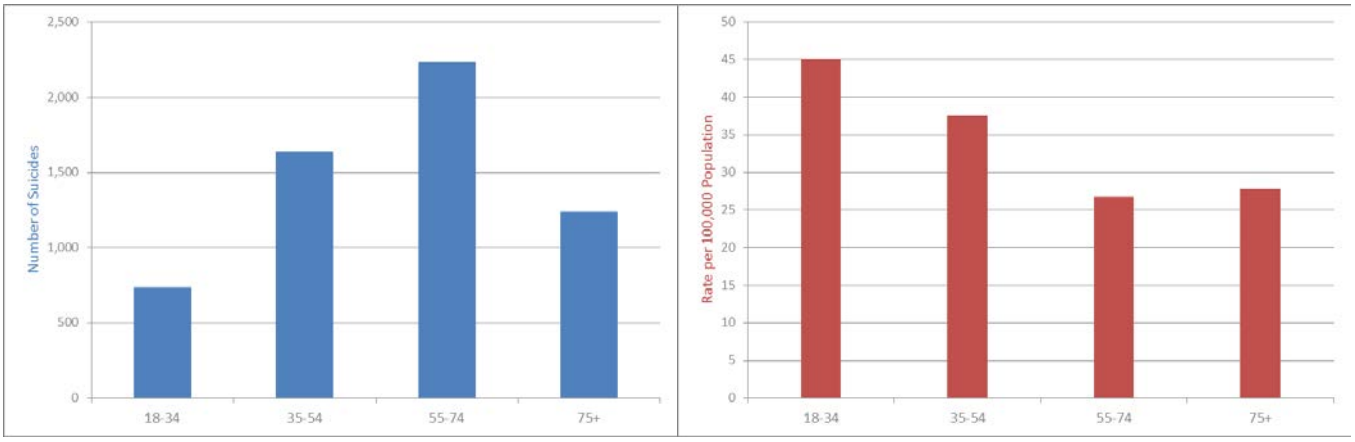


Figure 26. Comparison of Suicide Counts and Rates by Age Group for Veteran Men, 2015



Main finding: Among non-Veteran men, the largest number of lives lost to suicide occurs among younger and middle-aged adults (ages 18–54) with the highest rates of suicide among older adults (ages 75 and older). Among male Veterans, the largest number of lives lost to suicide are among the middle-aged (ages 55–74), with the highest rates of suicide among the youngest men (ages 18–34).

Figure 27. Comparison of Suicide Counts and Rates by Age Group for Non-Veteran Women, 2015

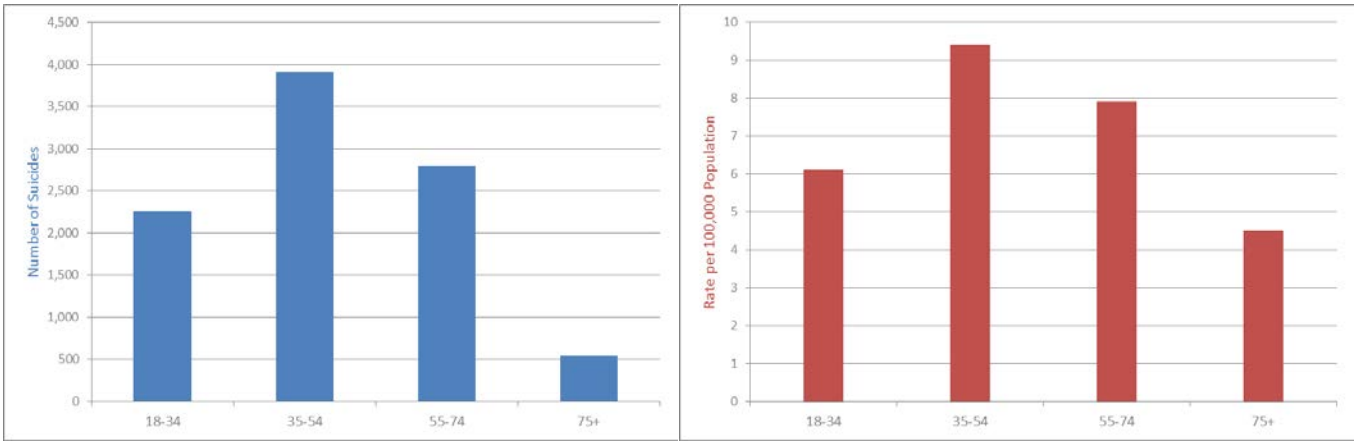
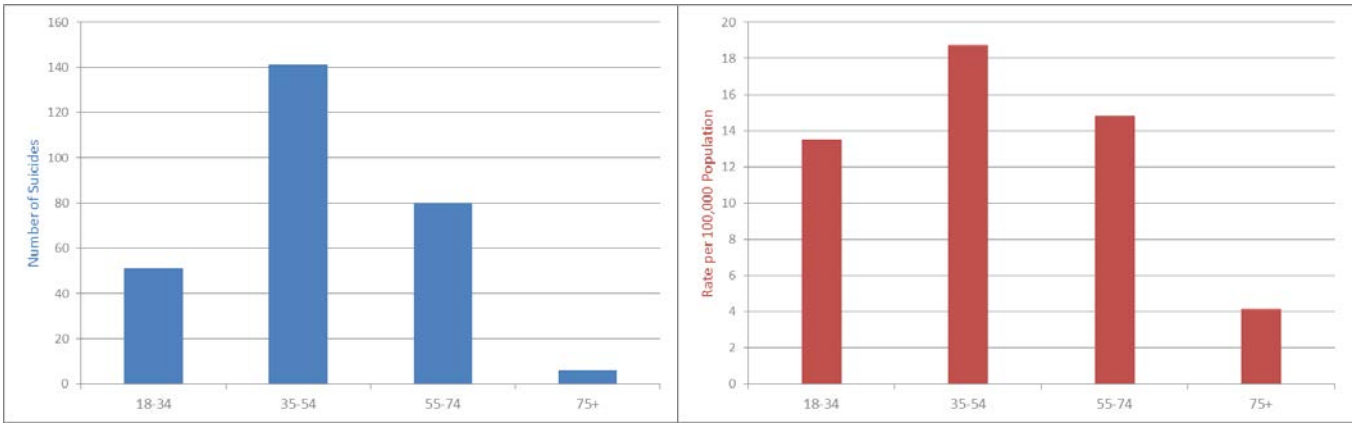


Figure 28. Comparison of Suicide Counts and Rates by Age Group for Veteran Women, 2015



Main finding: Among both Veteran and non-Veteran women, age-specific suicide rates and the number of lives lost to suicide are similar, with both peaking between the ages of 35 and 54. Across age groups, Veteran women had higher rates of suicide but a substantial lower number of suicides than non-Veteran women.

B. Suicide Among Veteran VHA Patients, 2005–2015

This section provides information regarding suicide mortality among Veteran VHA patients. Suicide rates were calculated for each year 2005–2015, overall and separated by sex and age group, among Veterans who were alive at the start of the year and had received VHA health care services either that year or in the previous year. Please note that previous reporting included data on overall VHA users, which can include active-duty personnel, Veteran dependents, and emergent non-Veteran care in addition to VHA Veterans.

1. Veteran VHA Patient Population

The VHA provides health care to a large and diverse patient population and, as is true with many health systems, provides care for patients with complex health problems, some of which are associated with increased risk for suicide. It is also important to note that Veterans may differ in their eligibility to receive VHA services. This section focuses on Veterans who received VHA inpatient or outpatient health services. The vast majority of VHA patients are Veterans (95 percent in 2005 and 96 percent in 2015). For the 2005 and 2015 cohorts of Veteran VHA patients (those who were alive at the start of the year and with VHA inpatient or outpatient encounters that year or in the previous year), the average age was 61.6 in 2005 (standard deviation [SD] 15.5) and 60.6 in 2015 (SD 17.0). As shown in Figure 29, for the 2005 cohort, 7.0 percent were women and 93.0 percent men. In the 2015 cohort, 8.9 percent were women and 91.1 percent were men.

Figure 29. Veteran VHA Patients, Sex Distribution, 2005 and 2015

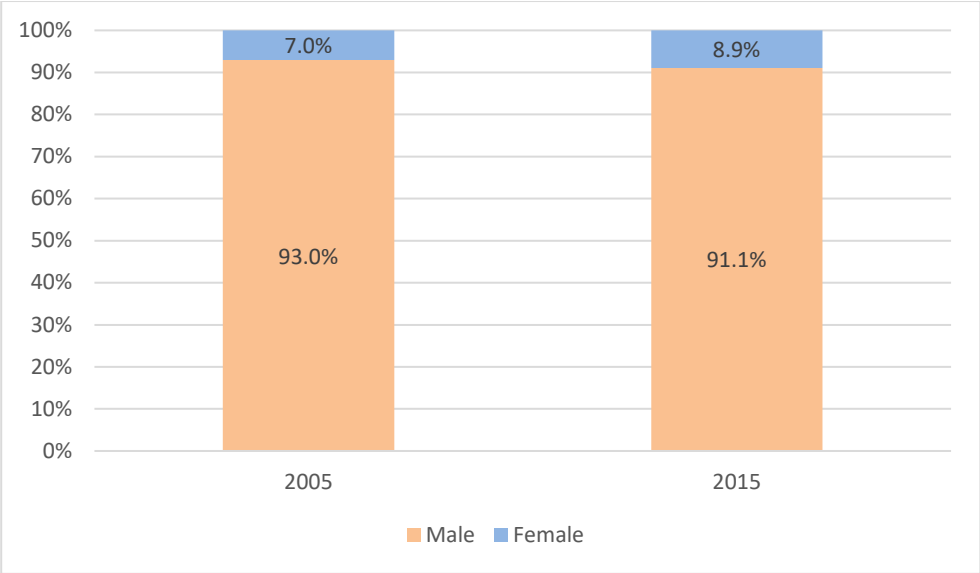
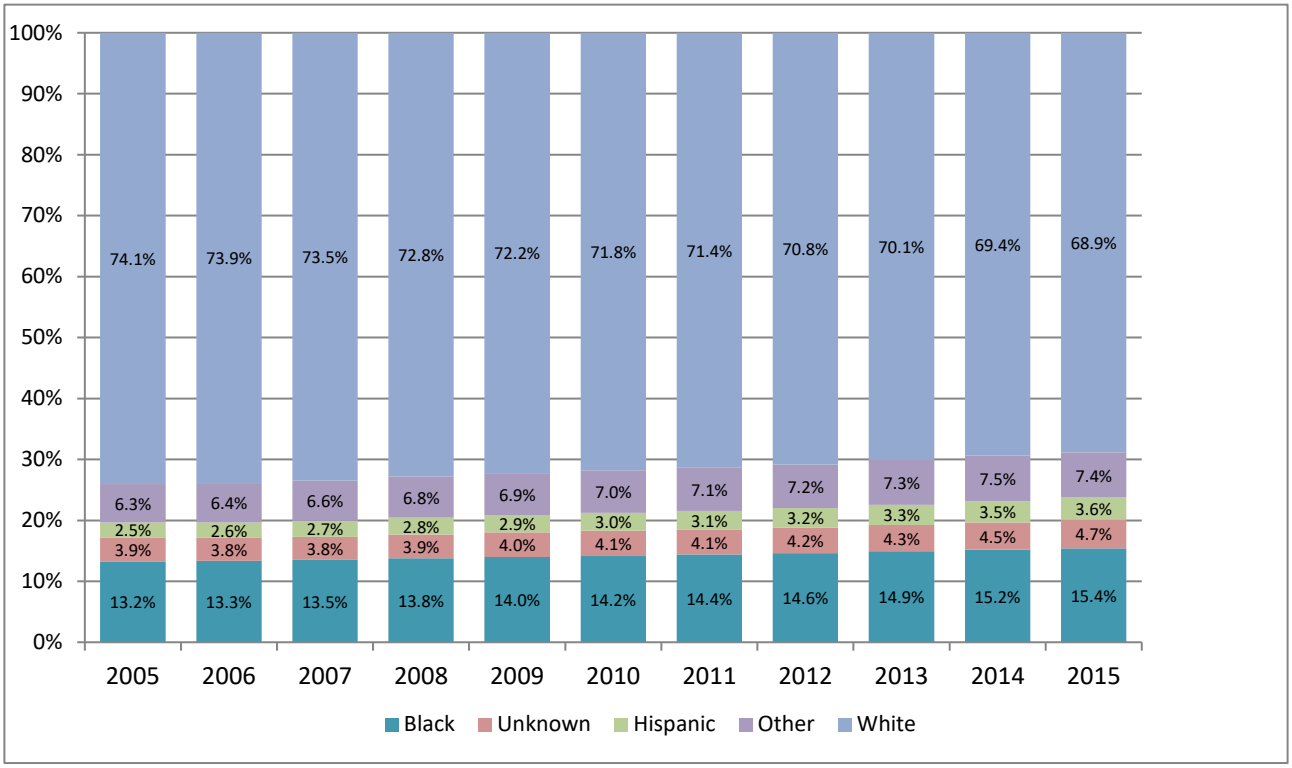


Figure 30 presents information regarding the distribution of race/ethnicity for annual cohorts of Veteran VHA patients from 2005 to 2015.

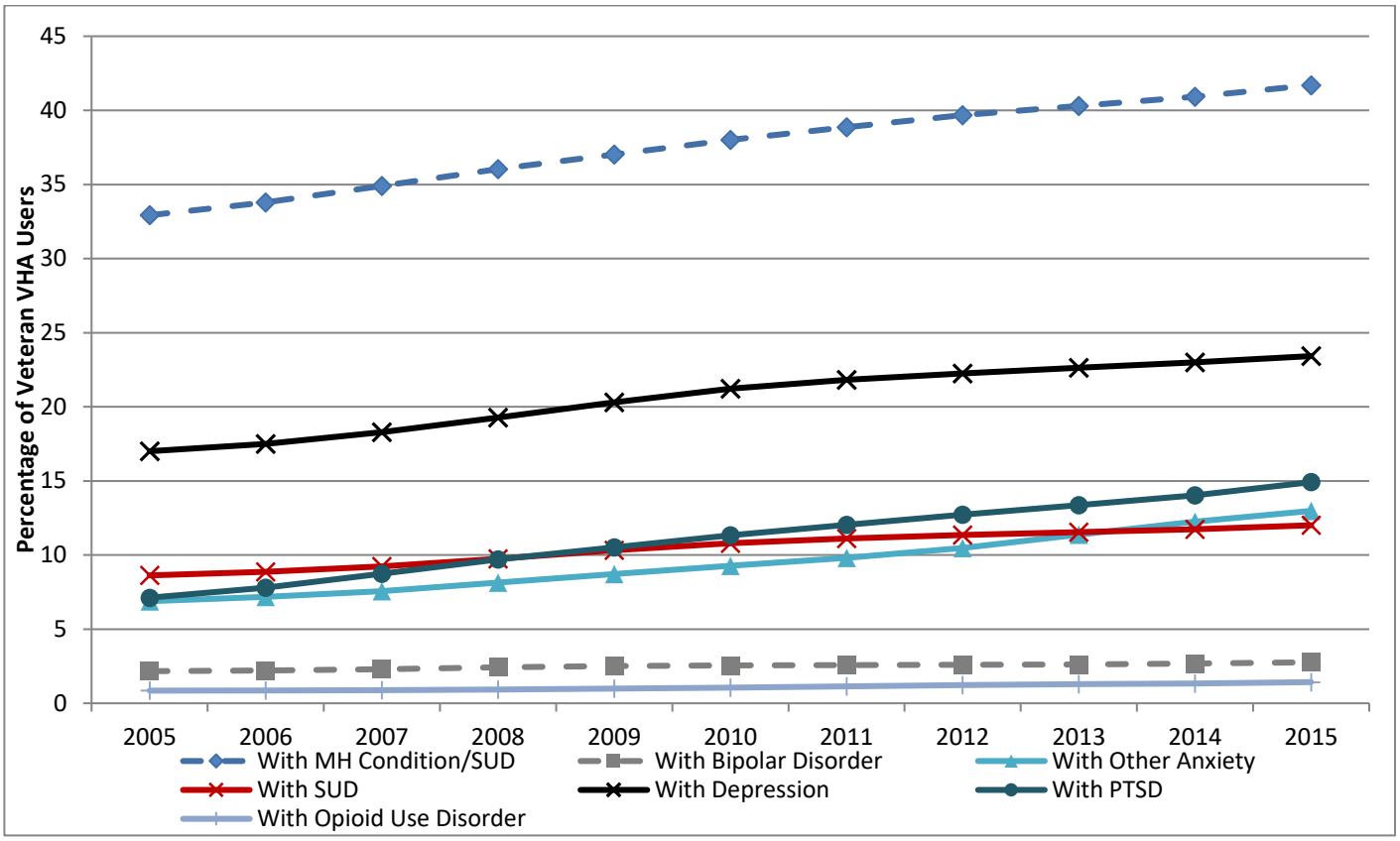
Figure 30. Veteran VHA Patients, Race/Ethnicity Distribution, 2005–2015



2. Mental Health and Substance Use Disorders Among Veteran VHA Patients

Mental health disorders, including major depression and other mood disorders, have been associated with increased risk for suicide.[15] Among Veteran VHA users, the prevalence of mental health or substance use disorder (SUD) diagnoses increased from approximately 33 percent in 2005 to more than 41 percent in 2015. This is similar to information presented in previous reports and other VA publications and reflects the high percentage of Veterans in VHA care with risk factors for suicide.[8,9,10]

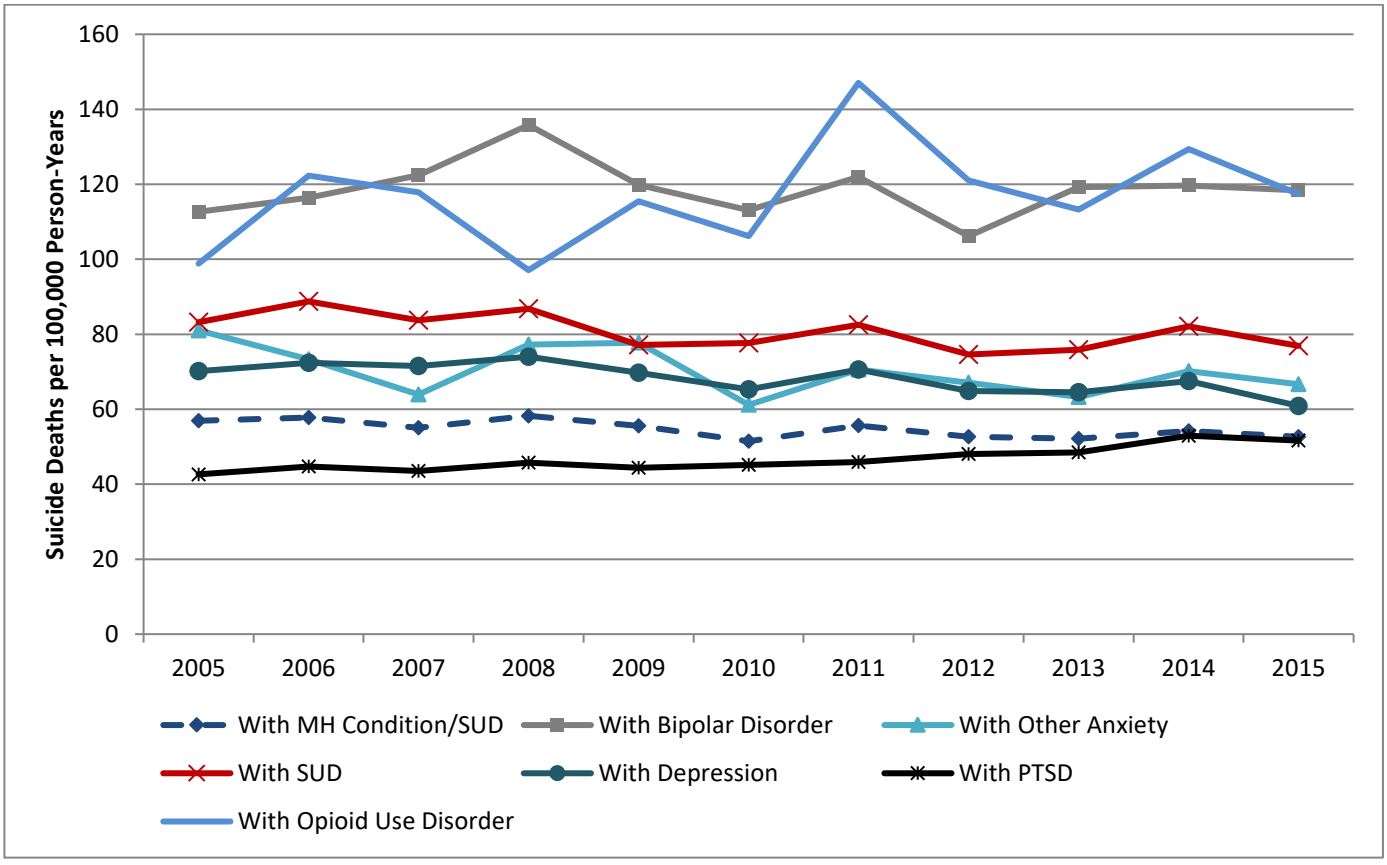
Figure 31. Percentage of Veteran VHA Users With Diagnoses of Mental Health (MH) Conditions or Substance Use Disorders (SUD), by Year



Main finding: The percentage of Veteran VHA users diagnosed with a mental health or substance use disorder increased substantially from 2005 to 2015.

Between 2005 and 2015, rates of suicide remained stable across cohorts of Veteran VHA patients diagnosed with a mental health condition or substance use disorder (Figure 32). Rates were highest among those diagnosed with bipolar disorder and those diagnosed with opioid use disorder. In contrast, rates among those with any mental health or substance use disorder diagnosis decreased from 56.9 to 52.7 per 100,000 person-years between 2005 and 2015. For those diagnosed with depression, the rate decreased from 70.2 to 60.9 per 100,000 person-years between 2005 and 2015.

Figure 32. Suicide Rate per 100,000 Person-Years, Among Veteran VHA Users With Mental Health (MH) Conditions or Substance Use Disorders (SUD), by Condition and Year



Main finding: From 2005 through 2015, suicide rates among Veteran VHA patients diagnosed with a mental health or substance use disorder were relatively stable. Rates were highest among those with bipolar disorder and those with opioid use disorder.

Overall, suicide rates were highest among Veteran patients with a mental health or substance use disorder diagnosis who were receiving VHA mental health treatment and lower among those who had received a diagnosis who were not receiving VHA mental health treatment (Table 2).

Table 2. Suicide Rates by Receipt of Mental Health (MH) or Substance Use Disorder (SUD) Diagnosis and Treatment, by Year

Characteristics	Year										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	34.0	35.3	34.1	37.0	35.3	34.3	37.1	35.3	36.4	37.2	37.5
With MH treatment	61.3	65.1	60.4	66.1	60.3	56.3	61.7	56.9	56.3	60.5	58.0
Without MH treatment	26.0	26.1	25.6	26.7	25.7	25.3	26.4	25.5	27.1	25.8	27.0
With MH/SUD diagnosis	56.9	57.8	55.0	58.2	55.5	51.5	55.6	52.5	52.1	54.2	52.7
Without MH/SUD diagnosis	22.3	23.3	22.5	24.6	22.8	23.3	24.7	23.4	25.3	24.9	26.1
With MH/SUD diagnosis and MH treatment	66.7	69.9	65.0	70.9	64.2	59.5	65.1	60.2	59.9	63.7	61.9
With MH/SUD diagnosis, without MH treatment	42.3	39.5	39.4	36.7	39.5	35.9	36.7	37.1	36.1	33.9	32.5
Without MH/SUD diagnosis, with MH treatment	17.4	26.9	22.6	28.4	28.9	30.8	36.0	33.4	31.5	38.7	31.6
Without MH/SUD diagnosis, without MH treatment	22.5	23.1	22.5	24.4	22.5	22.9	24.0	22.7	24.8	23.8	25.6

Main finding: Veteran VHA patients with a MH/SUD diagnosis who accessed mental health treatment services had higher rates of suicide than other Veteran VHA patients.

3. Overall and Sex-Specific Veteran VHA Suicide Rates

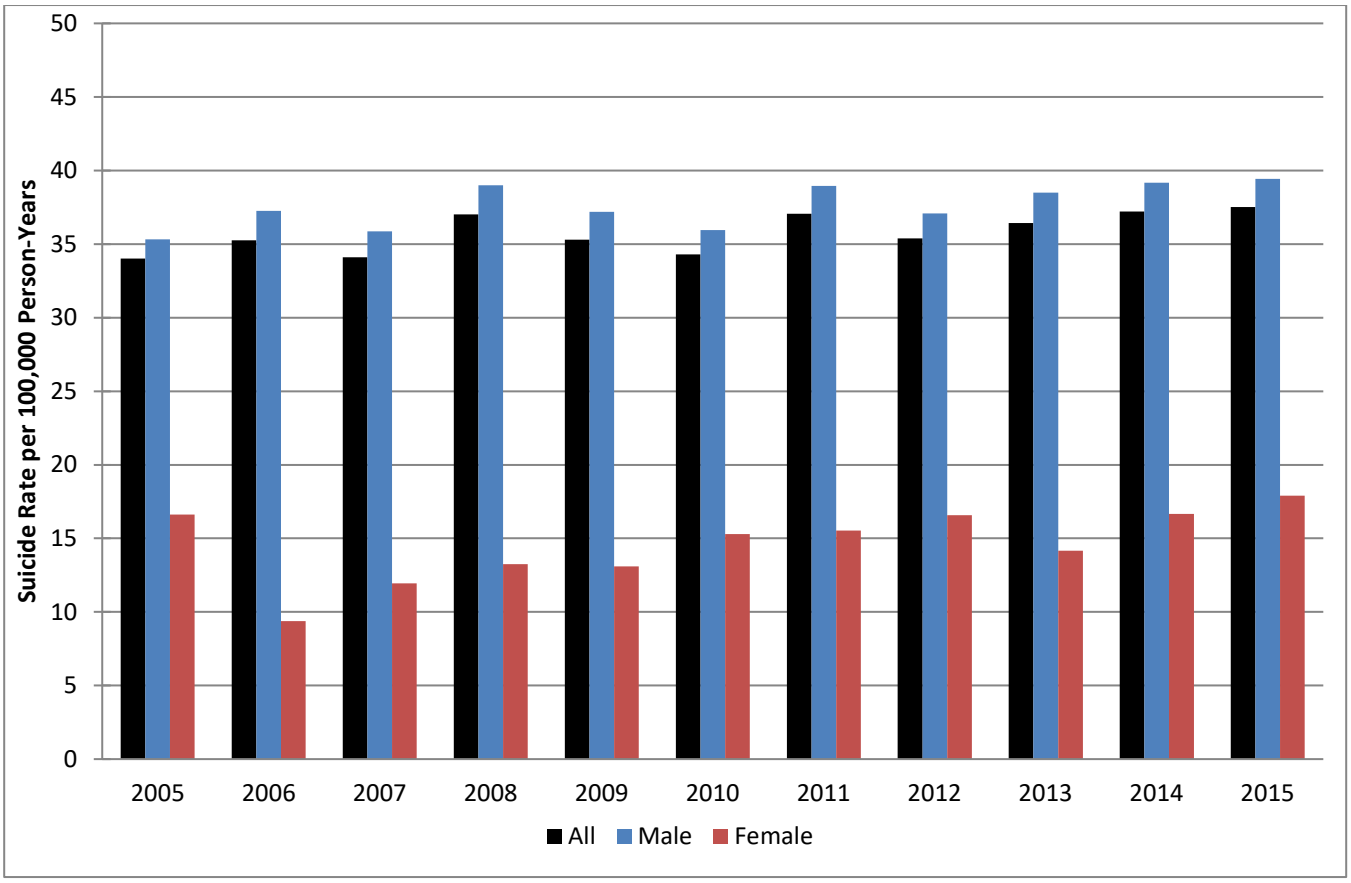
For the years 2005–2015, the rates of suicide among all Veteran VHA patients with recent VHA service use (that year or the previous year) were evaluated. Rates are listed in Table 3 and shown in Figure 33, below. Comparing 2005 and 2015, overall rates of suicide among Veteran VHA patients increased from 34.0 to 37.5 per 100,000 person-years. Rates among men increased from 35.3 to 39.4, and among women rates increased from 16.6 to 17.9 per 100,000 person-years.

Table 3. Suicide Rates Among Veterans With VHA Use, by Sex and Year

Year	Suicide Rate (per 100,000 Person-Years)		
	All	Male	Female
2005	34.0	35.3	16.6
2006	35.3	37.3	9.4
2007	34.1	35.9	11.9
2008	37.0	39.0	13.3
2009	35.3	37.2	13.1
2010	34.3	35.9	15.3
2011	37.1	39.0	15.5
2012	35.4	37.1	16.6
2013	36.4	38.5	14.2
2014	37.2	39.2	16.7
2015	37.5	39.4	17.9

Main finding: Rates of suicide among Veteran VHA users remained relatively stable in recent years.

Figure 33. Suicide Rates Among Veteran VHA Users by Sex and Year



Main finding: Rates of suicide among male and female users of VHA services remained relatively stable in recent years.

4. Veteran VHA Patient Suicide Rates by Age and Sex

Table 4 provides information on rates of suicide by age group and sex for Veteran VHA patients. These rates are unadjusted for age and reflect the true rate of suicide in the VHA population.

Table 4. Suicide Rates Among Veteran VHA Patients by Year, Overall and by Age and Sex

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All	34.0	35.3	34.1	37.0	35.3	34.3	37.1	35.4	36.4	37.2	37.5
18–34	24.9	24.5	23.9	29.3	28.3	33.0	41.5	37.4	45.0	46.7	47.6
35–54	39.4	39.3	39.5	42.0	38.4	38.2	43.3	39.6	36.0	38.6	41.1
55–74	31.2	32.6	30.5	34.9	32.6	32.2	32.0	30.2	31.5	31.8	31.0
75–115	36.4	39.2	38.8	38.9	39.8	35.5	40.2	41.9	44.2	44.2	44.7
Male	35.3	37.3	35.9	39.0	37.2	35.9	39.0	37.1	38.5	39.2	39.4
18–34	30.2	30.9	28.4	36.2	31.2	39.2	48.5	45.0	52.0	55.2	55.6
35–54	42.5	44.7	44.6	47.6	43.7	42.7	48.8	42.9	40.3	42.6	45.1
55–74	31.8	33.3	31.3	35.6	33.6	32.7	32.7	31.1	32.6	32.6	32.0
75–115	36.9	39.9	39.5	39.6	40.5	36.2	40.9	42.4	44.9	44.9	45.3
Female	16.6	9.4	11.9	13.3	13.1	15.3	15.5	16.6	14.2	16.7	17.9
18–34	-	-	-	-	*18.2*	-	*14.1*	-	*16.4*	*11.3*	*14.4*
35–54	22.2	*10.8*	14.4	15.1	13.1	16.9	17.0	24.0	15.7	20.1	23.1
55–74	-	-	-	*17.6*	*10.0*	20.8	*16.5*	*12.8*	*11.8*	17.5	13.9
75–115	-	-	-	-	-	-	-	-	-	-	-

Rates are suppressed and presented as "-" when based on suicide counts of 0–9. Rates based on suicide counts of less than 20 are considered unreliable and are presented in italics.

Main finding: Rates of suicide are substantially greater among male Veteran VHA patients than among female Veteran VHA patients. Rates among younger men, ages 18–34, have been rising in recent years.

5. Comparison of Suicide Rates Between Veteran VHA Patients and the General U.S. Population

Comparisons in suicide rates separated by sex and over time are complicated by differences in age distributions. Age-adjusted rates, presented below in Table 5A, compare suicide rates among male and female Veteran VHA patients to those for the general U.S. population from 2005 to 2015. Rates by year for male and female Veteran VHA patients and for men and women in the U.S. general adult population were standardized using the age distribution of the overall U.S. population in 2000.

As shown in Table 5B and Figure 34, when compared with the age-adjusted rates of suicide for men and women in the general U.S. population, rates were greater for male and female Veteran VHA patients.

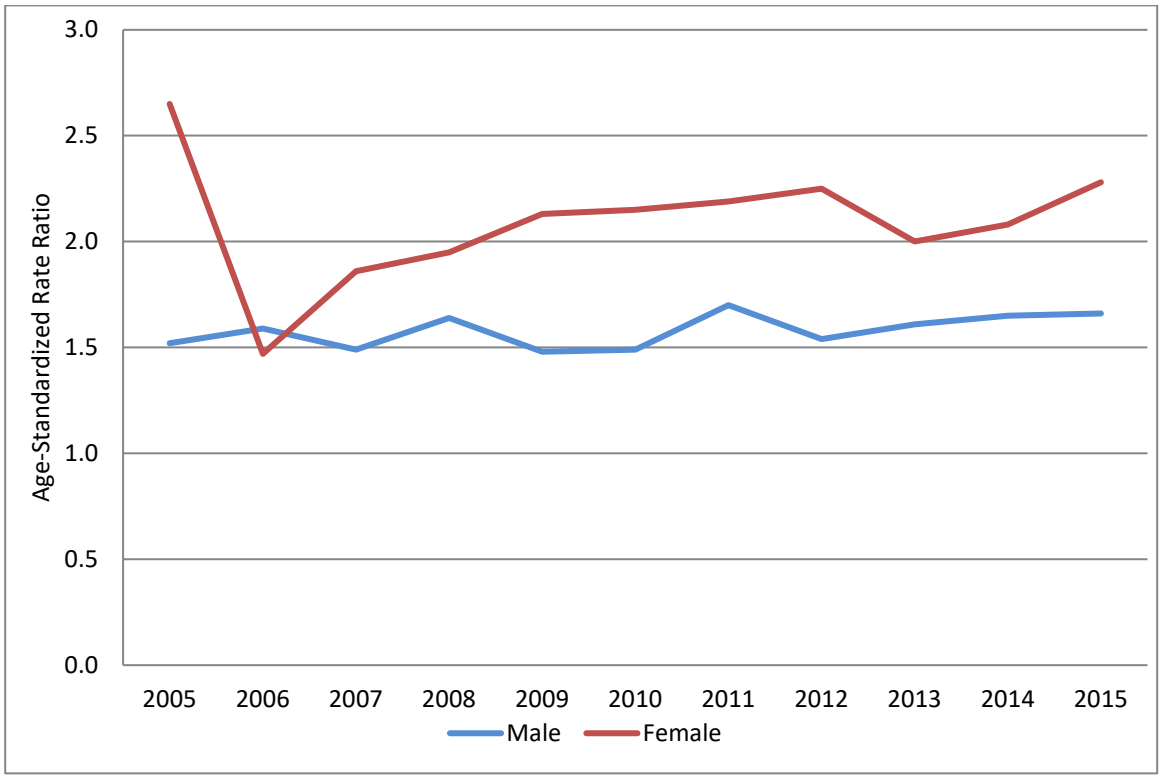
Table 5A. Age-Adjusted Suicide Rates Among Male and Female Veteran VHA Patients, by Sex and Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	36.0	37.7	36.4	40.9	37.5	39.0	44.8	41.1	42.7	44.7	45.6
Female	15.2	8.7	11.5	12.2	13.6	14.1	15.0	15.8	14.2	15.6	17.8

Table 5B. Age-Adjusted Suicide Rate Ratios, Comparing Rates Among Male and Female Veteran VHA Health Care Users With Rates for the General U.S. Population, by Sex and Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	1.52	1.59	1.49	1.64	1.48	1.49	1.70	1.54	1.61	1.65	1.66
Female	2.65	1.47	1.86	1.95	2.13	2.15	2.19	2.25	2.00	2.08	2.28

Figure 34. Age-Adjusted Rate Ratios for Suicide Among Veteran VHA Users Compared With Rates for the General U.S. Population, by Sex and Year



Main finding: Age-adjusted suicide rates among Veteran VHA patients were greater than those for the general U.S. population for both men and women and — in most years — particularly among women Veteran VHA patients.

6. Veteran VHA Patient Suicide Rates by Race/Ethnicity

Suicide rates among Veterans with recent VHA use are presented in Table 6 for 2005–2015 for race/ethnicity categories overall and separated by sex. In 2015, overall rates were highest among individuals whose race/ethnicity was categorized as "other," followed by those who were white.

Table 6. Suicide Rates Among Veteran VHA Patients by Race/Ethnicity, Overall and by Sex, by Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All	34.0	35.3	34.1	37.0	35.3	34.3	37.1	35.4	36.4	37.2	37.5
Black	11.8	12.1	12.0	11.5	11.7	9.1	9.8	14.3	14.0	10.5	11.9
White	37.5	39.8	39.1	42.9	41.4	40.2	44.0	42.1	43.2	44.2	42.6
Hispanic	20.3	19.3	22.3	16.0	21.9	23.5	23.8	22.9	22.2	23.3	27.0
Other	12.3	12.8	10.7	15.5	16.0	12.6	14.5	12.5	21.3	31.6	49.1
Unknown	90.4	81.1	67.5	72.1	52.2	65.6	63.6	45.5	41.2	39.8	37.0
Male	35.3	37.3	35.9	39.0	37.2	35.9	39.0	37.1	38.5	39.2	39.4
Black	12.3	13.4	12.8	12.5	12.5	9.9	10.7	15.1	15.2	11.7	13.1
White	38.4	41.2	40.4	44.4	43.0	41.4	45.3	43.4	44.8	45.7	43.9
Hispanic	20.0	20.0	23.3	16.6	22.4	24.3	24.7	24.6	22.8	24.2	28.0
Other	12.6	12.8	11.4	16.6	16.2	13.4	14.5	12.4	22.2	32.4	51.4
Unknown	122.4	116.5	93.9	99.3	70.5	87.2	87.2	59.0	53.8	48.5	45.5
Female	16.6	9.4	11.9	13.3	13.1	15.3	15.5	16.6	14.2	16.7	17.9
White	21.0	14.0	16.0	18.0	15.5	21.5	23.3	22.0	18.8	22.1	24.1

Among women, rates are not reported for black, Hispanic, other, and unknown categories due to fewer than 10 deaths in each category.

Main finding: Rates of suicide varied across race/ethnicity categories among Veteran VHA patients, with elevated rates among patients categorized as "white," as well as among those whose race/ethnicity was categorized as "other" or "unknown."

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