VA | U.S. Department of Veterans Affairs

2023 National Veteran Suicide Prevention Annual Report

Methods Summary

VA Suicide Prevention, Data and Surveillance
Office of Mental Health and Suicide Prevention
October 2023

Overview

This document provides background regarding the methods used by the Department of Veterans Affairs (VA) Office of Mental Health and Suicide Prevention (OMHSP) to assess suicide mortality among Veterans.

This work is conducted by the OMHSP Suicide Prevention Program Data and Surveillance Team, which includes VA staff from the Center of Excellence for Suicide Prevention (COESP) and the Serious Mental Illness Treatment Resource and Evaluation Center (SMITREC). Suicide surveillance processes include close coordination with federal colleagues in the Department of Defense (DoD) and the Centers for Disease Control and Prevention (CDC).

This document summarizes VA suicide surveillance processes, including conduct of VA/DoD searches of death certificate data from the CDC National Death Index (NDI), data processing, and determination of decedent Veteran status.

Annual VA/DoD NDI Search: Building Search List

VA OMHSP analysts coordinate with staff at the DoD Defense Manpower Data Center (DMDC) to compile a list of identifiers for all known Veterans, current and former service members, and other VA-engaged persons. To develop this list, data is combined from multiple sources, including Veterans Health Administration (VHA) clinical, administrative, and enrollment records compiled by SMITREC; the United States Veterans Eligibility Trends and Statistics (USVETS) database maintained by the VA Office of Enterprise Integration; and service-era rosters and registry files maintained by the VA Health Outcomes Military Exposure (HOME) Program. To this data, DMDC staff adds records of all current and former service members from DoD personnel files.

National Death Index

The combined list of identifiers is sent to CDC NDI staff to be used to identify possible matching death certificates. Data available from the NDI includes reports of mortality from vital statistics systems in all 50 U.S. states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. Deaths from Guam, American Samoa, and the Northern Marianas are included as available. CDC conducts checks and validation of these records. Additionally, NDI includes some records of out-of-country deaths of U.S. military personnel; no information is available on the out-of-country deaths of civilian U.S. citizens.[1]

Identifying Death Records

NDI returns all submitted records to VA/DoD. Match records are returned with a score indicating the probability that a given set of provided identifiers matched to a death certificate present in the NDI. Following receipt and initial review of the results returned by NDI, analysts at SMITREC use an algorithm to identify what is considered true match death certificate data. This algorithm selects the best matching death certificate, based on the probability score and other criteria from all possible matches returned for a given set of identifiers. Of note, matching results returned from the NDI, although derived from state death certificate data, do not include any added demographic information. Rather, they indicate whether select identifiers (e.g., SSN, name, birth date, and sex) that were submitted to NDI as part of the search corresponded with those of a potentially matching NDI death certificate record. Results of VA/DoD searches of the NDI are maintained in the VA/DoD Mortality Data Repository.

[1] Centers for Disease Control and Prevention, National Center for Health Statistics. NCHS Fact Sheet August 2020. National Death Index. https://www.cdc.gov/nchs/data/factsheets/factsheet_ndi.pdf

Suicide deaths are identified based on the underlying cause of death recorded on the death certificate, per the NDI data. Suicides include all deaths with International Classification of Diseases, Tenth Revision (ICD–10) underlying cause-of-death codes X60-X84, U03, and Y87.0. Method of injury for suicide deaths are identified based on ICD–10 codes: firearm (X72-X74), suffocation (X70), poisoning (X60-X69), and all other (U03, X71, X75-X84, Y87.0).

Veteran Status

VA analysts use a data-defined approach to best identify a decedent's Veteran status[2] at their time of death, relying on the most current data available from DMDC, as well as other VA administrative data sources. OMHSP's reporting definition is intended to most closely match the federal definition of Veteran status. Specifically, for this report and based on the available data, Veterans are identified as persons who served on federal active duty, other than for training, and were not currently serving at the time of their death. For all military service members with service after 1974, when the DoD electronic personnel data begins, DMDC provides VA with data indicating: if a given decedent has a personnel record and was federally activated and whether an individual died while still in service. DMDC information is used to distinguish Veterans from those who were currently serving at their time of death or who had never been federally activated other than for training. For decedents not identified in DMDC electronic personnel data sources (e.g., military service prior to 1974), VA data, including the USVETS database, administrative patient records, and service-era rosters, is used to determine if individuals were Veterans or other non-Veteran recipients of VA services (e.g., dependents, employees, humanitarian care recipients).

Additional Notes on Death Certificate Data

On state death certificates, the "ever served in the U.S. armed forces" field has a broader definition as compared to OMHSP Veteran status and includes decedents who were never federally activated other than for training or who were current service members at their time of death. In addition to identifying a different population, it has been noted that this information recorded on state death certificates can be unreliable.[3] Regardless, NDI does not make this information available to requesters and, therefore, VA does not have access to this data.

At present, there is no comprehensive roster of all Veterans, particularly those who served prior to the implementation of DoD's electronic personnel data in the 1970s. The largest single data source, the USVETS database, acknowledges that identification of Veterans over age 67 (in 2018) is incomplete, however, older Veterans comprise a large proportion of the overall Veteran population. OMHSP relies on a broad combination of data sources, including all available DoD personnel data, the USVETS database, and HOME service-era rosters, to identify the entire Veteran population. Even with inclusion of all currently available data sources, data is updated and enhanced over time—this enriches and improves surveillance and resulting estimates as new data becomes available.

Finally, the NDI is limited to deaths occurring in the 50 U.S. states, the District of Columbia, and Puerto Rico from 1979 onward. Deaths in other U.S. territories, including American Samoa, Guam, U.S. Virgin Islands, and the Northern Marianas, are included as available, but are not considered complete for all years. U.S. citizen civilian deaths outside the United States and territories, or any deaths prior to 1979, are not included in the NDI.

For questions regarding the methods used in this report, contact: VASPDATAREQUEST@va.gov.

[2] For OMHSP mortality reporting, Veteran status is intended to align with the federal definition of Veteran. A decedent is identified as a Veteran if they had data indicating federal active-duty service and were not currently serving at their time of death.

[3] Hoffmire CA, Piegari RI, Bossarte RM. 2013. Misclassification of Veteran Status on Washington State Death Certificates for Suicides from 1999 to 2008. Annals of Epidemiology. 23(5);298-300.

Mortality Rate Calculations

Unadjusted suicide rates are calculated as the number of suicide deaths in the year, divided by the "population at risk." For the Veteran population, risk time was assessed using the July 1st population estimate, derived from the Veteran Population Projection Model 2020 (VetPop2020).[4] The National Center for Health Statistics (NCHS) population estimates[5] were used for the general U.S. adult population, and the non-Veteran adult population was estimated by subtracting Veterans from the general U.S. adult population. For rates presented as "per 100,000 person-years," risk time was assessed per individual risk time.

Calculating adjusted rates (e.g., age-adjusted, or age- and sex-adjusted rates) enables rate comparisons while adjusting for population demographic differences. Per standard practice, age- and age- and sex-adjusted rates reported are directly adjusted, using the 2000 U.S. projected population as the standard.[6]

2023 Updates

The 2023 report incorporates several areas of new or enhanced content, including:

1. Annual Veteran population estimates, used for 2001-2021 rate calculations, are based on the estimated July 1st population of the year, now derived from the most recently updated Veteran Population Projection Model 2020 (VetPop2020). Compared to the estimates from VetPop2018, the overall population estimates increased by 0.06% on average (range: -0.7, +0.3).

2. Information regarding suicide decedents and suicide rates among Veteran subpopulations as defined by engagement with the VHA and the Veterans Benefits Administration (VBA). VHA delivers health services for Veterans and VBA supports Veterans in five areas of benefits and entitlements: Compensation and Pension; Education; Home Loan Guaranty; Insurance; and Veteran Readiness and Employment.

3. Expanded reporting on Veteran all-cause mortality to include years of potential life lost (YPLL) and stratified findings by recent VHA use status to further contextualize Veteran suicide mortality among the leading causes of death for Veterans.

4. Added new information regarding Recent Veteran VHA Users with indications of homelessness or contact with Veterans Justice Programs. Also, for Recent Veteran VHA Users whose suicide deaths were reported to VHA Suicide Prevention teams, the report includes information on potential suicide risk factors, per chart reviews conducted as part of VA's Behavioral Health Autopsy Program.

The present report represents the most complete, current assessment of Veteran suicide mortality, and findings from this report supersede information reported previously.

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[4] Veteran Population Model 2020 (VetPop2020), Predictive Analytics and Actuary, Office of Enterprise Integration, Department of Veterans Affairs.
[5] CDC, NCHS, Single-Race Population Estimates, United States, 2021. July 1st resident population by state, age, sex, single-race, and Hispanic origin, on CDC WONDER Online Database. Vintage 2021 estimates released by U.S. Census Bureau on June 30, 2022. Accessed at http://wonder.cdc.gov/single-race-single-year-v2021.html.
[6] Klein RJ, and Schoenborn CA. Age Adjustment Using the 2000 Projected U.S. Population. Healthy People Statistical Notes, No. 20. Hyattsville, Maryland: National Center for Health Statistics. January 2001.