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## Veteran Suicide Surveillance: **Methods Summary**

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Suicide Prevention, Data and Surveillance  
Office of Mental Health and Suicide Prevention  
Department of Veterans Affairs

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**VA**



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## 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 represents a supplement to information included in VA's annual suicide reports.

This work is conducted by the OMHSP Suicide Prevention Program's 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's 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 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—is combined. 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. CDC conducts checks and validation of these records. Beginning in 2017, deaths from Guam, American Samoa, and the Northern Marianas were also included. Additionally, NDI includes some records of out-of-country deaths of U.S. military personnel, but no information is available on out-of-country deaths of civilian U.S. citizens.<sup>1</sup>

## Identifying Death Records

NDI returns all submitted records, with indication as to whether they were a match or non-match to a death certificate(s) in the NDI. 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.<sup>2</sup> 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

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<sup>1</sup> Centers for Disease Control and Prevention, National Centers for Health Statistics. NCHS Fact Sheet August 2020. National Death Index. [https://www.cdc.gov/nchs/data/factsheets/factsheet\\_ndi.pdf](https://www.cdc.gov/nchs/data/factsheets/factsheet_ndi.pdf).

<sup>2</sup> For more information on the NDI matching process, please see the NDI User's Guide: [https://www.cdc.gov/nchs/data/ndi/NDI\\_Users\\_Guide.pdf](https://www.cdc.gov/nchs/data/ndi/NDI_Users_Guide.pdf).

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, but rather indicators as to whether select identifiers (e.g., SSN, name, birth date, and sex) provided matched to those on a probable death certificate.

Suicide deaths are identified based on the underlying cause of death recorded on the death certificate, and as returned from NDI. 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<sup>3</sup> 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—namely, persons who served on federal active duty 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. 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 are used to determine if individuals were Veterans or other non-Veteran recipients of VA services (e.g., dependents, employees, humanitarian care recipients).

## Notes

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 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.<sup>4</sup> 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

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<sup>3</sup> 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.

<sup>4</sup> Hoffmire CA, Piegari RI, Bossarte RM. Misclassification of Veteran status on Washington state death certificates for suicides from 1999 to 2008. *Annals of Epidemiology*, 2013, Volume 23, Issue 5, Pages 298-300.

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.

Results of VA/DoD searches of the NDI are maintained in the VA/DoD Mortality Data Repository.

Questions: [VASPDATAREQUEST@va.gov](mailto:VASPDATAREQUEST@va.gov).

## 2021 Updates

For the 2021 report, there were two methodologic updates:

1. Annual Veteran population estimates, used for 2001-2019 rate calculations, are now based on the estimated July 1st population of the year, rather than the September 30th population. Using the population estimated at the midpoint of the calendar year aligns with mortality rate reporting by CDC. Per consultation with the VA Office of Enterprise Integration, this was completed using linearly interpolated estimates of the Veteran Population Projection Model 2018 (VetPop2018), which provides estimates as of September 30<sup>th</sup> of each year. This resulted in an average increase in the Veteran population estimate of approximately one quarter of a percent.
2. As seen in most reporting years, additional deaths were identified across the reporting period and are included in this report. This year's updates for most recent years were larger than what is typically observed, resulting from (1) updated VA data sources used to validate potential matches returned from searches of CDC NDI, and more so, (2) ongoing updates to the data sources used in preparing the search list sent to NDI for matching. Analysts submitted a subset of records identified from the USVETS database to NDI for expanded search. On review of the deaths identified from this expanded search, these records were primarily related to data from the National Cemetery Administration, one of the components of the USVETS database. Adjusting for this finding, in the future, any records added to this database will continue to be submitted for a multi-year search ensuring results are always as complete as possible.

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