DoDSER

Department of Defense
Suicide Event Report

Calendar Year 2016 Annual Report

PERSONNEL AND READINESS

JUN 20 2018

Dear Military Leaders and Community Members:

The Department of Defense prioritizes suicide prevention among Service members of the United States Armed Forces. We, therefore, rely on a high-quality surveillance program to assess, implement, and refine suicide prevention efforts in order to better provide for the needs of our Service members.

Our principal suicide surveillance tool, the Department of Defense Suicide Event Report (DoDSER), has two primary purposes. It collects and reports extensive data on the contextual factors present among Service members engaging in suicide-related behavior: event circumstances, medical and behavioral health factors, military-related factors, psychosocial and lifestyle stressors, and demographics. It also provides statistical information from the Army, Navy, Air Force, and Marine Corps about Service members' suicides and suicide attempts, including data from the Active and Reserve Components. We then use this information to implement programs and policies designed to prevent future suicides.

I encourage you to review the DoDSER Calendar Year 2016 Annual Report. The dissemination of the data within this report ensures that leaders have access to the accurate and valuable information guiding current suicide prevention initiatives.

Thank you for your continued support of our efforts to reduce the heartbreaking occurrence of suicide deaths among our Service members.

Sincerely,

Robert L. Wilkie

Acknowledgements

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If you, a family member, friend, peer, subordinate, or others are experiencing thoughts of suicide, please reach out for help immediately.

Dial **1-800-273-8255**.
If you are a Service member or veteran, then press 1 to talk to a qualified VA responder.

- Start a confidential online chat session at www.VeteransCrisisLine.net/chat
- Send a text message to 838255 to connect to a VA responder
- If you are deaf or hard of hearing, you can connect through chat, text, or TTY

Call or text **844-357-PEER (7337)** to contact
DoD BeThere Peer Support Call and Outreach Center.
We've been there. Now, we're here for you.

Executive Summary

This report presents data from the United States (U.S.) Armed Forces on suicide mortality and on the incidence of attempted suicide between January 1, 2016 and December 31, 2016 (CY 2016).

Each year the U.S. Air Force, Army, Marine Corps, and Navy must conduct an extensive data-collection effort—known as the Department of Defense Suicide Event Report (DoDSER)—following all suicide-related deaths and identified suicide attempts. This requirement applies to both the Active and Reserve Components, including the National Guard. For CY 2016, only data from members of the Reserve Component who were in a duty status at the time of the event were required to be submitted via the DoDSER survey.

The DoDSER annual report presents the information collected by the Services, provides official suicide rates, and describes the risk and contextual factors associated with instances of suicide-related behavior for its given calendar year. Each report serves as an independent and quantitative summary and review upon which DoD leadership can base policy, programming strategy, and decisions.

Suicide Mortality Rates

The CY 2016 suicide mortality rate for the Active Component, combined across all Services, was 21.1 deaths per every 100,000 Active Duty Service members. **This rate was consistent with the three-year average suicide mortality rate for CY 2013–2015. Overall, there was no evidence of a change in this combined suicide mortality rate since CY 2011**, the first year with comparable data available for trend analysis.

The CY 2016 suicide mortality rates for the Active Component of each Service were consistent with the expected rates from the three-year average suicide-mortality rates for CY 2013–2015. The data for the suicide mortality rate for the Active Component Army, Marine Corps, and Navy did not show evidence of a change since CY 2011; in contrast, the Active Component Air Force suicide-mortality rate has increased incrementally since CY 2011.

The CY 2016 suicide mortality rate for the Reserve Component, combined across all Services and regardless of duty status, was 22.0 deaths per 100,000 reservists. The CY 2016 suicide mortality rate for the National Guard Component, combined across the Air and Army Guard and regardless of duty status, was 27.3 deaths per 100,000 members of the Guard population. **Both rates (each calculated separately) were consistent with the three-year average suicide mortality rates for CY 2013–2015. There was no evidence of an incremental change in the suicide mortality rate for either group since CY 2011.**

Comparison to the U.S. General Population

The CY 2015 suicide mortality rate for the U.S. general population, aged 17–59, provides a guide for the mortality rate expected in the military population. As of the writing of this report, the U.S. rate was 17.3 per 100,000 members of the general population. After accounting for

differences in the age and sex distributions between the U.S. general population and the military populations, **the adjusted suicide mortality rate for the Active Component, all Services—17.0 deaths per 100,000 population members—was consistent with the rate for the U.S general population**. **The adjusted suicide mortality rate for the Reserve Component, all Services**—17.6 deaths per 100,000 population members—**was also consistent with the rate for the U.S. general population**. However, **the adjusted suicide-mortality rate for the Guard Component**, combined across the Air and Army Guard—21.8 deaths per 100,000 population members—**was higher than the rate for the U.S. general population.**

Contextual Factors

The contextual data collected in the DoDSER system revealed that firearms were the most common method of injury among suicide decedents in CY 2016 and that the majority of suicide decedents had no known behavioral health history. **Overall, the proportion of decedents in CY 2016 with behavioral health risk factors or stressors observed prior to death was consistent with the three-year average for CY 2013–2015.**

This contextual data also revealed that drug and/or alcohol overdose was the most common method of injury among suicide attempt cases and that the majority of cases had a known behavioral health history. **Overall, the proportion of cases with behavioral health risk factors or stressors prior to death was consistent with the three-year average of CY 2013 – 2015.**

Conclusion

The rates and risk factors associated with suicide in CY 2016 were consistent with those identified in previous years: this report reveals no change in the DoD's rate of suicide. The characteristics and risk factors associated with those deaths have remained stable.

Important Note

Staff assigned to the National Center for Telehealth and Technology (T2) initially prepared this document and began coordinating a draft for public release on July 27, 2017. While the document in coordination, the staff and responsibilities associated with the DoDSER program transitioned to the Psychological Health Center for Excellence (PHCoE) under the Research Directorate (J-9) of the Defense Health Agency (DHA). PHCoE now has responsibility for oversight of the DoDSER program as well as the content of this report.

Preface

Preface

The Department of Defense Suicide Event Report (DoDSER) has three primary components:

- A web-based **system** for collecting case-level data about suicide-related behavior among members of the Armed Forces, accessible at https://dodser.t2.health.mil/
- A data-collection **survey** instrument that guides contacts on military installations about which data elements to collect, assess, and enter into the system
- An **annual report** of findings generated from the data-collection effort

To distinguish among these components, "system," "survey," or "annual report" appears after the DoDSER acronym as appropriate throughout this report.

Guiding Questions

Each year, two important questions guide the development of the DoDSER Annual Report:

- What is the rate of suicide among Service members?
- How common are various known or suspected determinants of suicide among those Service members who engaged in suicide-related behavior during the past year?

To answer the first question, the DoDSER team uses all suicide cases determined by the Armed Forces Medical Examiner System (AFMES)—with input from the four Service branches for the Active Component and the Selected Reserve (SELRES) populations—to determine suicide rates for the total military population, regardless of duty status at the time of death. To answer the second question, the DoDSER team uses data on specific risk factors reported directly to the DoDSER system to describe their prevalence in the cases.

CY 2016 required DoDSER submissions on all Active Component Service members who died by suicide and all members of the SELRES who died by suicide while in a duty status. This combination precludes direct comparison between the total number of deaths described in the DoDSER-specific data and the number of Active Component suicides in the rate calculation.

The mission of suicide prevention within the Department of Defense (DoD) falls to the Defense Suicide Prevention Office (DSPO) and the Psychological Health Center of Excellence (PHCoE). The DoDSER Annual Report is a product of PHCoE and the Defense Health Agency.

The National Center for Telehealth and Technology completed and submitted the report draft for external review on July 27, 2017. The final draft of the report was approved for public release on July 2, 2018.

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CHAPTER 1

Mission
and
Methodology

Introduction

Before its disestablishment in 2017, the National Center for Telehealth and Technology, a branch of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury, was responsible for developing, maintaining, and improving the DoDSER system, in addition to compiling and reporting the data contained in this and previous DoDSER annual reports. The responsibility for the DoDSER system and its annual reports transitioned on October 1, 2017, to the Psychological Health Center of Excellence (PHCoE), which operates under the governance of the Defense Health Agency (DHA). DHA—a joint, integrated Combat Support Agency— enables the Army, Navy, and Air Force medical services to provide a medically ready force and ready medical force to Combatant Commands in peacetime and wartime. DHA also supports the delivery of integrated, affordable, and high-quality health services to Military Health System (MHS) beneficiaries and is responsible for driving greater integration of clinical and business processes across the MHS.

The DoDSER system represents a collaborative effort among PHCoE, the Suicide Prevention Program Offices of the Air Force, Army, Marine Corps, and Navy, and the Defense Suicide Prevention Office (DSPO). Its objective is to operate and refine a system for collecting and reporting a set of standardized data for every Service member who dies by, or attempts, suicide, regardless of branch, component, or duty status.

The result is a comprehensive annual report characterizing suicide-related behavior in a standardized manner across the Air Force, Army, Marine Corps, and Navy. This year's report presents data from the United States Armed Forces on the incidence of suicide and suicide attempts that occurred between January 1, 2016 and December 31, 2016. Active and Reserve Components of the Services participate in suicide data surveillance, including the Army National Guard and Air National Guard.

The DoDSER annual report provides decision-making authorities with a tool for the following:

- Monitoring the occurrence of suicide-related behavior among the United States Armed Forces
- Identifying key risk factors and profiles associated with the occurrence of suicide-related behavior
- Compiling objective information that informs the evaluation of the DoD's suicide-prevention priorities, policies, and strategies

Calendar year (CY) 2016 was the DoDSER system's ninth year of operation. All nine annual reports are available online via the National Center for Telehealth & Technology website at http://www.t2health.dcoe.mil/programs/dodser.

Data Collection

Trained behavioral health providers or command officials on military installations and at MHS hospitals collect and input data directly into the DoDSER system's web-based data-collection

survey. Primary data sources in cases of suicide include the following:

- Medical records
- Behavioral health records
- Personnel records
- Legal and/or investigative records
- Interviews with command officials
- Interviews with spouse, extended family, friends, and peers (if authorized)

Primary data sources in cases of attempted suicide include the following:

- Direct interview of the individual who was the subject of the report
- Medical records
- Behavioral health records
- Personnel records
- Legal and/or investigative records
- Interviews with command officials
- Interviews with spouse, extended family, friends, and peers (if authorized)

Data from each case that required a DoDSER submission is then augmented with information from the following:

- Armed Forces Medical Examiner System (AFMES)—for Active Duty suicide decedents
- Defense Manpower Data Center (DMDC)—for suicide and suicide attempt reports

The CY 2016 DoDSER survey form contained more than 500 data elements to provide comprehensive information about the Service members, the psychosocial and emotional context of their lives, military history, legal and/or disciplinary actions, and the specific characteristics of the suicide-related events. DMDC provided additional data related to demographic characteristics and deployment histories to cross-reference and to augment what the DoDSER system collected.

Only CY 2016 cases in which AFMES confirmed suicide as the manner of death on or before January 31, 2017 are guaranteed to have a DoDSER submission included in this report. In order to meet the DoD timeline for calculating suicide rates, the DoDSER team excluded CY 2016 cases in which the cause of death investigation had not been completed by 1 February 2017. Data from previous years have been updated to include any cases that were not part of a previous year's DoDSER Annual Report due to pending investigations.

Cases in which DMDC records classified the Service member as either Absent Without Leave (AWOL) or in a Deserter status when the event occurred continue to be excluded from this report to conform to the definition of end-strength used in the suicide rate calculations.[1]

To protect and maintain the privacy of the individuals whose information was collected by the DoDSER system in CY 2016, all identifiable information in this report was redacted. It presents no singular case-level data presented; rather, it presents aggregated data for DoD as a whole

(Chapter 3) as well as for each individual branch of Service (Chapters 4–7). It presents data for the SELRES separately (Chapter 8), regardless of the individual's duty status at the time of the suicide or suicide attempt.

Changes to the DoDSER in CY 2016

Prior to this year, revisions to the DoDSER system occurred annually. These changes typically included minor system and database improvements, operating software updates, and revisions to the data collection survey's content. Such revisions have been particularly important, as they have a direct effect on the completeness and accuracy of the DoDSER data.

In CY 2014, the DoD Inspector General's office completed an assessment of DoDSER program data quality and determined that the system fell under the provisions of the United States Paperwork Reduction Act (Pub. L. No. 96-511, 94 Stat. 2812, codified at 44 U.S.C. §§ 3501-3521). In order to comply with this act, the DoDSER survey form was submitted to the Office of Management and Budget (OMB) for review and approval. Full findings of this assessment are publically available at https://media.defense.gov/2014/Nov/14/2001713434/-1/-1/1/DODIG-2015-016.pdf.

As a result, the DoDSER survey received an OMB Control Number (0720-0058) and expiration date (03/31/2018) in March 2015. The expiration date provides the next normally scheduled opportunity for revision of the survey instrument. The DoDSER survey was therefore not revised for CY 2016; rather, the CY 2015 form was carried forward.

This new process will change the way the DoDSER survey is revised and assessed. DoDSER Program Managers and Suicide Prevention Program Managers (SPPMs) at each of the Services will now collect suggested revisions during each period between OMB approval and expiration. After reviewing and discussing these suggestions, DoDSER Program Managers, the Services, and DSPO will determine the revisions to be made on the first day of a new data collection cycle—typically the first working day of a new CY following the next cycle of OMB review and approval.

Processes and Procedures

Submission Process and Timeline

The DoDSER system uses a web-based survey tool, available via a secure website (https://dodser.t2.health.mil/), to collect and compile data. A DoD Information Assurance Certification and Accreditation Process-approved facility at Fort Detrick, MD houses the servers on which the DoDSER system operates. Basic data-entry users do not have access to any DoDSER data other than those that they collect and submit themselves.

All Services must complete DoDSER surveys for suicides among Service members in the Active Component, suicides among members of the SELRES in a duty status at the time of the event, and suicide attempts that resulted in hospitalization or evacuation from a theater of operations. The Army also requires DoDSER surveys for other non-fatal events, such as self-harm and suicidal ideation. These surveys are essential to each annual report, as the descriptive DoDSER data are compiled from them.

All Services track suicides via the offices of each Service's SPPM in order to meet reporting timelines, and the AFMES maintains an official list of confirmed suicides. However, the data collection processes can vary slightly between Services. Such variations include the following:

- **Air Force:** The Office of Special Investigations is the primary data-collection agency that receives the AFMES notification and completes the DoDSER survey within 60 days.

- **Army:** The Army Institute of Public Health DoDSER Program Manager receives the AFMES notification, contacts the behavioral health point of contact (POC) at the Service member's assigned Medical Treatment Facility, and requests that a behavioral health clinician complete a DoDSER survey within 60 days.

- **Navy:** Following confirmation from the AFMES, the SPPMs' office contacts the local command and requests an appropriate POC to meet the requirement within 60 days.

- **Marine Corps:** The DoDSER Program Manager, located within the Marine Corps Headquarters' Behavioral Health Data Surveillance section, contacts the local command and requests an appropriate POC to meet the requirement within 15 working days.

In cases involving non-fatal events, such as suicide attempts, the Services must complete a DoDSER suicide attempt survey within 30 days of the hospitalization or evacuation from a theater of operations.

DoD policy states that a CY suicide rate can be calculated no sooner than 90 days after the end of the CY to allow for resolution of case determinations.[1] March 31 typically serves as the final reporting date for cases used in the previous CY's annual rate calculations and for the previous CY's aggregate data from the DoDSER system.

For CY 2016, the final reporting date—the deadline for the Services to submit DoDSER surveys for all CY 2016 deaths AMFES confirmed as suicides on or before January 31, 2017—was March 31, 2017. The Services did not have to submit DoDSER surveys for cases of suicide confirmed after January 31, 2017 by this deadline; they did, however, have to submit such surveys in compliance with their own reporting timelines.

When evaluating DoDSER submission compliance for each of the Services, the CY 2016 report uses the number of confirmed suicides as of January 31, 2017. However, when calculating counts and rates, the CY 2016 report uses the most complete data available as of March 31, 2017.

DoDSER Items

The DoDSER survey requires collection of a broad range of information about the individual who is the subject of the report, including demographic information, military history, medical history, and current life stressors. The content of the DoDSER survey resulted from a collaborative process including the following steps:

- Structured reviews of each Service's historical suicide surveillance systems/procedures
- Workgroup deliberations with representation from all four Services
- A systematic review of suicide literature
- Feedback from nationally recognized civilian and military experts
- Feedback from senior military leaders and key stakeholders

Periodically, a workgroup comprising DoDSER program staff, the SPPM for each Service, and representatives from DSPO meets to revise the DoDSER survey items based on the evolving needs and patterns relevant to each Service. Table 1 displays the DoDSER survey's content areas.

Table 1. DoDSER survey content areas	
Content area	Example items
Personal Information	Age, sex, ethnicity, education, marital status
Military Information	Job code, duty status, permanent duty station
Event Information	Access to firearms, event method, event setting
Medical History	Behavioral health and medical history
Military History	Deployment history, disciplinary action
Personal History	Developmental and family history, current stressors
Narrative Summary	Information on data-collection strategy

Data Sources

Following official notification of a suicide or non-fatal suicide attempt, Service personnel begin the DoDSER data collection process by reviewing records related to the individual's suicide behavior. Necessary data comes from various sources, including medical records, personnel records, investigative records, and, if possible, interviews with the individual's command, investigative agency officer(s), other professionals, and, among some Services, family members who are willing to participate and unlikely to be caused additional stress. In cases where the suicidal behavior did not result in death, Service personnel also attempt to interview the individual. They then use the information collected from these sources to complete the web-based DoDSER survey.

After the DoDSER report is submitted, additional information is obtained from enterprise sources in an effort to improve overall data completeness and accuracy. Data sources include:

- AFMES, which provides data on the official manner and cause of death for suicides among Service members. These data come from military or civilian autopsy reports, death certificates, written reports from military investigative agencies, or a verbal report from a civilian death investigator or coroner.

- DMDC, which provides data from the Defense Enrollment Eligibility Reporting System to deliver demographic information for all events submitted to the DoDSER system. DMDC also provides data from the Contingency Tracking System, the repository of official deployment-related information.

- The DoD Sexual Assault Prevention and Response Office (SAPRO), which provides analytics in which DoDSER cases are matched against unrestricted, sexual assault reporting data. SAPRO analysts examine the relationship between sexual assault and suicide-related behavior and provide an aggregated report to DoDSER staff.

In the case of missing or unavailable data in these three sources, data from the DoDSER surveys are used to generate the final variable set used in the annual report. Discrepancies are resolved with the Service's SPPMs to the extent feasible given the timeline.

<u>Data Quality</u>

It is of the utmost importance that the data entered into the DoDSER system are as accurate and complete as possible. The DoDSER system uses several types of controls to improve the overall quality of its data. Some of these controls have been in use since the DoDSER system's inception; others are recent additions:

- System login and data submission require a DoDSER account associated with Common Access Card (CAC) credentials. Basic users can only access the active reports assigned to them. This assures that the system is private and gives the users confidence that they are entering information for the correct individual.

- The data-submission website design minimizes the possibility of data entry errors.

- Form-field validation requires users to adjudicate responses that are not logically possible (e.g., date of birth must be at least 18 years in the past).

- Reports are flagged as having 'low data quality' when a high degree of missing data is detected on the survey form (i.e., reports that are less than 80 percent complete). Should a report be flagged, the system warns the user that submitting it will count against the Service's overall level of compliance.

- Corroboration of suicide event reports against data from the AFMES ensures that a suicide event is valid and present in both independent systems. A case present in the DoDSER system without a corresponding AFMES report is not included in the analytics of the DoDSER annual report.

- Reviewing all DoDSER surveys ensures that multiple reports are not submitted for the same event. The DoDSER system identifies potential duplicates ahead of the analysis, and the Services' DoDSER Program Managers select the submission that represents the

most accurate and complete data record.

- Reviewing open-ended text fields or the selection of the "Other" response option allows a) the identification of text responses that should have been coded using the existing-item coding structure or b) the generation of new response categories based on multiple responses with similar text.

- Data from AFMES and DMDC improve the accuracy of DoDSER data. The AFMES data inform the manner and cause of death for suicide reports, and the DMDC data provide information on deployment history and demographic characteristics. Priority is given to data provided by these external sources when developing the analytic variables in this report.

- Standardized Help text informs users about the definitions and parameters relevant to each question—including relevant diagnostic codes, identification of data sources relevant to a given item, and improved readability of the text. This Help text is available as a separate 'pop-up' window accessible for each item within the DoDSER system, and the user does not have to navigate away from the survey page to use the Help text.

- Data-quality assessments of 10 percent of the DoDSER surveys submitted each month examine variables where users chose the "Cannot Determine" and "Data Unavailable" response options. These assessments also evaluate the submission timeline and the correlation between the survey's qualitative and quantitative elements.

Suicide Rate Calculations

For each DoDSER annual report, AFMES determines an official case list of suicides among Service members in the Active Component and in the SELRES. Duty status determination (i.e., whether a Service member was in or out of an official duty status at the time of the event) relies on information entered into the Defense Casualty Information Processing System as well as on consultations with the appropriate Service's SPPM. Cadets and midshipmen at the designated military academies—the U. S. Military Academy in West Point, NY; the U.S. Naval Academy in Annapolis, MD; and the U.S. Air Force Academy in Colorado Springs, CO—are determined to be in a duty status. This determination is relevant to validating case submission in the DoDSER system.

AFMES collates data on suicides among members of the SELRES not in a duty status from the Service-specific SPPM reports for the Air Force, Army, Marine Corps, and Navy. The SELRES suicide case numbers presented in the CY 2016 report were verified as of May 31, 2017.

Rate Calculation

Collaboration with stakeholders yielded the DoDSER staff's process for determining the rates of various suicide-related characteristics. All included parties must reach consensus on decisions about those characteristics. Crude and stratified rates are calculated separately for the following:

- The Active Component (in aggregate and individually for each Service)
- The Reserve Component of the SELRES (regardless of duty status; in aggregate and individually for each Service)
- The National Guard Component of the SELRES (regardless of duty status; in aggregate and individually for the Air Force and Army)

Stratified rates are calculated for sex, race, ethnicity, education, marital status, age, and rank/grade within these components. AFMES collaborates with DMDC to identify the number of Service members in each combination of Service, component, and demographic characteristic at the end of each month; this total is the "monthly end-strength." The average of the monthly end-strength totals for the CY is the denominator for the rate calculations.

DoD data standards prohibit reporting rates associated with fewer than 20 instances of suicide, because a high degree of statistical instability occurs in rates calculated from small numerators.[1][2]

Mathematical Formula

The following formula provides a mathematical expression of the rate calculation.

$$Rate = \frac{S_g}{\frac{1}{12}\sum_{m=1}^{12} ES_{mg}} \times 100,000$$

In this formula, S_g represents the number of suicides in a particular population group and ES_{mg} represents the end-strength of a particular month for the same population group. The mutually exclusive populations (g) used in each rate calculation were the following:

1. Active Component
    a. All Services
    b. Air Force
    c. Army
    d. Marine Corps
    e. Navy

2. SELRES
    a. All Services
        i. Air Force Reserve

        ii. Army Reserve
       iii. Marine Corps Reserve
       iv. Navy Reserve

3. National Guard
    a. Air Force and Army combined
        i. Air National Guard
       ii. Army National Guard

Rate Standardization

Rate standardizations for each DoDSER Annual Report are implemented using population data from the Centers for Disease Control and Prevention (CDC) Web-based Injury Statistics Query and Reporting System[3] (WISQARS). The CDC maintains WISQARS and provides aggregate data on fatal and non-fatal injuries.

CY 2015 data were the most current population data available from CDC WISQARS for the CY 2016 DoDSER Annual Report. For CY 2016, rates of suicide were jointly stratified by age group (17–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49, 50–54, 55–59) and sex (male, female) for each calendar year.

Indirect standardization is used to calculate the number of expected cases in each age- and sex-specific stratum of the component and Service subpopulations. Indirect, as opposed to direct, standardization has been selected because of the small case numbers observed for several combinations of age and sex within the DoD population subgroups.

This technique calculates the number of expected suicides given the overall U.S. population age- and sex-specific stratum rates. Division of the observed number of suicides by the total number of expected suicides yields the standardized mortality ratio (SMR). The mathematical formula for the SMR is this:[4]

$$SMR = \frac{\sum_i p_{ia} n_{ia}}{\sum_i p_{is} n_{ia}}$$

- p_{ia} —Represents the stratum-specific rate for the study population (i.e., the specific component or Service under consideration)
- n_{ia} —Represents the number of Service members in that stratum
- p_{is} —Represents the stratum-specific rate from the standard population (in this instance, the U.S. population)

The product of p_{ia} and n_{ia} gives the observed number of suicides within each stratum. The sum of the observed numbers across the strata yields the numerator for the formula. The product of p_{is} and n_{ia} yields the number of expected suicides for that stratum. The sum across the strata is

the total number of expected suicides. Multiplication of the SMR by the crude rate of the standard population produces the adjusted rate for the population of interest.

Practical Example of Indirect Rate Standardization

Table 2 provides a practical example of this indirect method of rate adjustment. The data used in Table 2 are for the Active Component suicide rates from all Services combined for CY 2012. They do not represent the data for the current calendar year, which are provided in Chapter 2.

The sum of the expected deaths column (the denominator of the SMR formula) is 289.782. The numerator of the SMR formula yields the same value as the total number of observed suicides for the time-period: 321. Division of 321 by 289.782 yields the SMR of 1.11. Multiplication of the SMR by the unadjusted rate for the standard population (.000165) gives the adjusted rate of .000183. This value is then multiplied by 100,000 to convert it into the more easily interpretable value of 18.3 suicides per 100,000 members of the population of interest.

Table 2. Demonstration of the Calculation of the Age- and Sex-adjusted Suicide Rate Using the Indirect Method for the Active Component, All Services, CY 2012			
Stratum	CY 2012 Service-aggregated denominator (n_{ia})	CY 2012 U.S. population rate (p_{is})	Expected deaths ($n_{ia}p_{is}$)
Male, 17–19	67726	.000153	10.362
Male, 20–24	375972	.000221	83.090
Male, 25–29	296051	.000240	71.052
Male, 30–34	188920	.000228	43.074
Male, 35–39	137064	.000248	33.992
Male, 40–44	87498	.000266	23.274
Male, 45–49	33105	.000288	9.534
Male, 50–54	8912	.000315	2.807
Male, 55–59	2082	.000309	0.643
Female, 17–19	13382	.000039	0.522
Female, 20–24	67558	.000049	3.310
Female, 25–29	52184	.000056	2.922
Female, 30–34	32318	.000062	2.004
Female, 35–39	20794	.000072	1.497
Female, 40–44	12161	.000082	0.997
Female, 45–49	4869	.000100	0.487
Female, 50–54	1603	.000104	0.167
Female, 55–59	513	.000091	0.047

The adjusted rate allows for comparisons between the military rate and the general U.S. population after accounting for known differences in the distribution of age and sex between the two populations. The 95 percent confidence intervals (CI) associated with the adjusted rates were calculated using the Poisson distribution. These intervals provide the range of plausible values for the adjusted rate: values that are consistent with the data and account for the uncertainty involved in estimation. These CI show, with 95 percent accuracy, the true value of the rate. If the span of the CI does not overlap with the U.S. population rate, then one can

conclude that there is a statistically significant difference between the population of interest and the general U.S. population. In doing so, a 5 percent margin of error is accepted.

The use of indirect standardization limits the comparisons to just those of the populations of interest and against expected rates in the total U.S. population. Within a particular year, it is not possible to directly compare the SMRs or associated adjusted rates between components or Services because the age and sex distributions may still differ between the subpopulations.

A separate set of analyses was conducted using a Poisson regression model[5] to compare the rates of suicide between years or between components and Services within a single year while accounting for different age and sex distributions. This model is appropriate for use with count data, such as the number of deaths in a particular group. Model estimates were used to produce adjusted rates for temporal comparisons and statistical inference.

DoDSER Data Analysis

The majority of the content within the CY 2016 DoDSER Annual Report describes the prevalence of suspected risk factors associated with the occurrence of suicide-related behavior within DoD. Several statistical comparisons of a defined set of determinants have also been included to examine change over time within DoDSER suicide and suicide-attempt surveys. These comparisons examine the stability of determinant distributions over time. Logistic regression models were used to compare CY 2016 suicide and suicide-attempt DoDSER findings to findings from CY 2013 - CY 2015. Data from the three previous calendar years were used to provide a stable base of comparison in determining whether the data observed for CY 2016 reflected a departure from what would be expected.

Specific to CY 2016, latent class analysis[6] was used to identify subgroups of suicide and suicide-attempt cases based on the patterns of the presence or absence of the risk or protective factors described in the text. This analysis provides context to the reported case counts and allows for an assessment of the following questions:

- What factors are more likely to co-occur?
- Does the risk profile for suicides and suicide attempts qualitatively differ?
- How common are co-occurring risk factors in the population?
- What proportions of cases in the report are defined more by the absence of risk factors as opposed to the presence of those factors?

Factors present in fewer than 10 percent of cases overall were not included in the models. These models were estimated using robust maximum likelihood. Final models were selected based on information criteria values, entropy (classification quality; higher is better), and interpretability of the identified classes. The distribution of the classes for both suicide and suicide attempt cases and the prevalence of each determinant within each class are reported.

Neither these comparisons nor the descriptive reports related to specific risk factors and/or correlates should be interpreted as underlying causes of suicide. Causal relationships between variables cannot be identified by the methodology employed for the DoDSER system.

Identifying such relationships would require an experimental approach involving the systematic and concurrent collection of data on control cases, and such an approach is outside the epidemiological purview of the DoDSER system.

The specific determinants included in the comparative and latent class analyses were these:

- Mechanism of injury (e.g., firearm use, asphyxiation, drug or alcohol overdose—comparative analysis only)
- Mood disorder (as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition–Text Revision[7] (DSM-IV))
- Anxiety disorder (as defined by DSM-IV)
- Adjustment disorder (as defined by DSM-IV)
- Substance-abuse history
- History of prior self-injury
- Use of psychotropic medications in the 90 days prior to the event
- Relationship problems in the 90 days prior to the event
- Legal/administrative problems in the 90 days prior to the event
- Workplace difficulties in the 90 days prior to the event
- Financial difficulties/excessive debt in the 90 days prior to the event
- History of friend or family member suicide
- Severe family member illness in the 90 days prior to the event

These variables were selected for the current report because of their prominence in the suicide research literature as major determinants of suicide and suicide attempts. Each model was adjusted for age, sex, Service, and component. A full-information maximum-likelihood estimate was used to account for missing data on the determinants and demographic variables included in the models[8]. Only the most recent report was retained for analysis from individuals with multiple suicide attempts or with both an attempt and a suicide death to satisfy the assumption of independent observations in the regression model.

Interpretive Considerations

The primary goal of the DoDSER annual report and of the DoDSER system overall is the collection, organization, and presentation of data relevant to the occurrence of suicide and suicide-related behavior in the military community. The DoDSER is not a research study but rather a surveillance system. The data collected by the DoDSER system are used to do the following:

- Monitor the occurrence of suicide-related behavior among the U.S. Armed Forces on an annual cycle
- Offer an independent and objective source of information about data related to suicide and suicide attempts
- Provide leaders with key information on which to base policy and programming decisions

- Monitor important risk factors and profiles associated with suicide
- Support research toward suicide prevention
- Inform local and national suicide prevention program development

While it is natural to speculate about the relative contributions of specific risk and protective factors related to suicide, it is not possible to determine analytically whether any particular variable is a risk or protective factor for suicide solely from the data presented in this report. Data on the distribution of any particular variable among the broader population are required before any statistical inferences or causal statements can be made. The DoDSER system does not systematically collect concurrent data on non-cases (i.e., control participants), as this exceeds the surveillance mandate of this program. Independently planned and executed research is required before inferring any causal roles for specific risk or protective factors.

During CY 2016, many DoDSER items offered the user a "data unavailable" response option to indicate that not enough information could be gathered to provide either an affirmative or negative response. While use of this response option is discouraged, some information for some individuals, inevitably, was unknown or unavailable. For example, information about an individual's family history of mental illness may have been available for Service members who had engaged with the military's behavioral health system, but such behavioral health information may have been difficult to assess or ascertain for Service members who had not. The reader should weigh the impact of missing information on interpretive considerations against what information was not available. Percentages for many DoDSER items were calculated using the total number of reports for a given outcome as the denominator.

The reader should also take into account the content area of any given DoDSER item when interpreting results. While this report reflects the best data available, some DoDSER items are objective (e.g., a Service member's rank/grade), whereas others are highly subjective (e.g., was the patient/decedent involved in community support systems?). Standardized coding guidance was available to all designated DoDSER respondents, along with technical definitions of terms and item-by-item Help text designed to aid in accurate reporting. Nonetheless, idiosyncratic interpretation of subjective items may increase variability in the measurement of these factors.

Figures and Tables

This report includes graphical displays of data to represent the prevalence of specific variables in CY 2013 - CY 2016. The observed prevalence estimates for each year (percent) represent the proportion of "yes" responses to a particular item relative to the total number of events with a completed case for that year. These figures also display an error bar for proportions where practicable. This error bar is the half-width of the 95% confidence interval. It presents the amount of error above or below the top of the bar and can be interpreted in the same way as the error for a survey or opinion poll. For example, a bar that extends to 50 percent with an error bar that extends to 55 percent means that the best estimate of the percent is 50, +/- 5 percentage points. The reader is encouraged to note that separate tables may present separate types of information such as counts, rates, and statistical comparisons, which cannot be directly compared with one another.

References

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CHAPTER 2

Military Suicide Rates

Suicide Rates

Background Information

What are rates?

Death by suicide is a statistically rare event (see Figure 1). In many instances, it is so rare that often only the number of events recorded is reported (e.g., 10 suicides in the last year). This information is necessary to understand the burden, or overall occurrence, of suicide in a population. Unfortunately, this information is not sufficient to describe the scope of the problem. A key piece of information that is missing when only reporting the number of observations is the overall size of the population of interest. If two populations each have 10 suicide deaths in one year, then we could say that the populations had the same number of events. However, is the risk of suicide the same in the two populations? If one population has 5,000 people and the other has 50,000 people, then the proportion of people who died by suicide differs substantially between the two populations (.002 vs. .0002). Since these proportions tend to be extremely small numbers, it is customary to rescale them to make interpretation easier. They are called 'rates' at this point. If we rescale the two aforementioned proportions by multiplying each by 100,000, we produce suicide-mortality rates per 100,000 persons. Clearly,
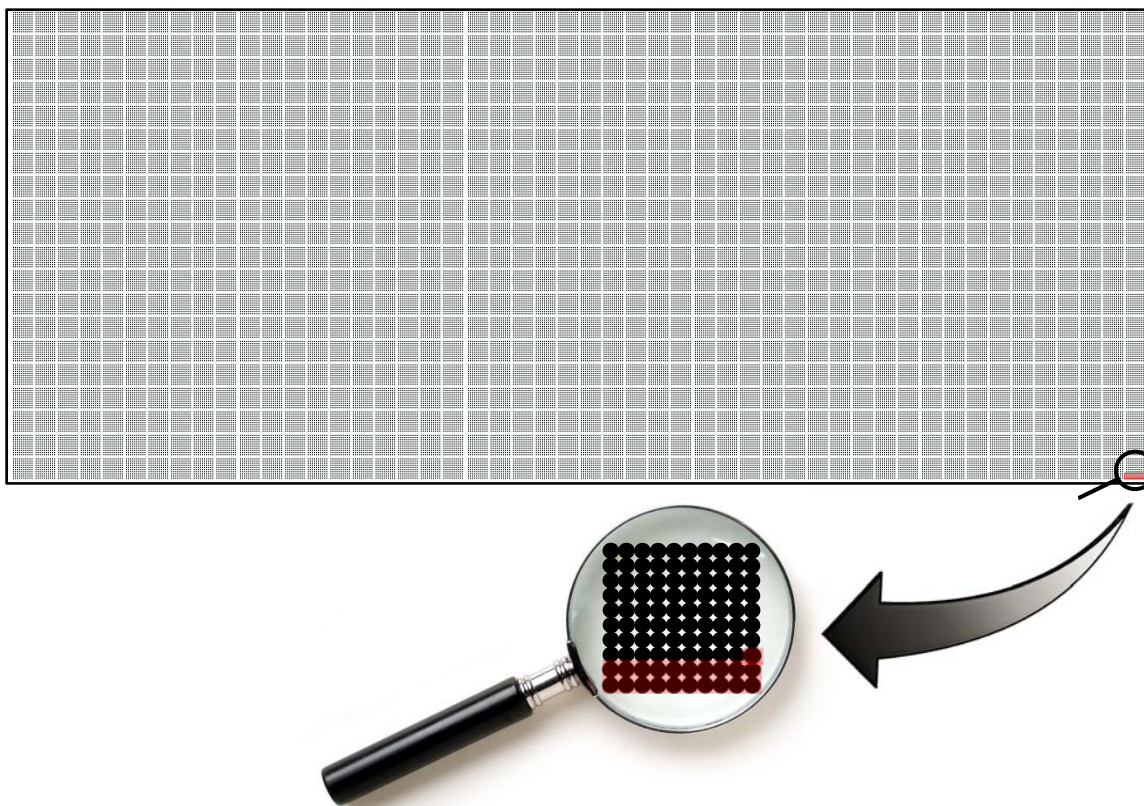
Figure 1. Illustration of the scale of suicide in the military. The figure contains 1,000 gray squares. Each square contains 100 small dots. Thus, there is a total of 100,000 individual dots in the whole figure, each one representing a Service member. The small red box in the bottom corner encapsulates 21 of those dots, which represent 21 cases observed in a population of 100,000 (i.e., a rate of 21 per 100,000). While suicide is an important problem to address, death due to suicide is a rare outcome requiring sophisticated analytics for tracking, measurement, and determination of change.

even though the number of cases between the two populations is identical, the mortality rate is vastly different (200 per 100,000 vs. 20 per 100,000). As such, any presentation of only case numbers is inadequate in understanding the overall occurrence of suicide in a population. Furthermore, any comparisons or qualifying statements using only case numbers are inappropriate and potentially misleading.

What are expected deaths?

Mortality rates provide a description of the occurrence of death in a population. They are also useful in providing a number of *expected* deaths in a similar population or in the same population at a future time point. For example, if it is known that the annual suicide-mortality rate for a population is 15 per 100,000 persons, then it would be expected to observe 30 suicide deaths per year in that population if it was made up of 200,000 people.

What are the statistical considerations?

There are three primary statistical concerns about rates: volatility, uncertainty, and comparability. The first two issues are especially important for events that are statistically rare.

Volatility means that rates from one year to the next may move up and down dramatically, but not meaningfully. Comparisons of an individual year against an average value of several years together help provide a more stable comparison by reducing overall variance observed between years.

Uncertainty means that the true underlying mortality rate with the available data can only be approximated. As a result, attempts are made to quantify uncertainty by providing a range of plausible rate values given the available data. This range is represented by the upper and lower bounds of what is called a *confidence interval*.

Comparability means the extent to which two populations can be compared directly. Specific to suicide mortality in the Services, the population is very young and predominantly male. Figure 2 shows that the general population of the United States, in contrast, has a more even distribution of age (i.e., there is about the same proportion of the U.S. population that are in their 20s as there are in their 50s) and an approximately equal distribution of men and women. Any comparison
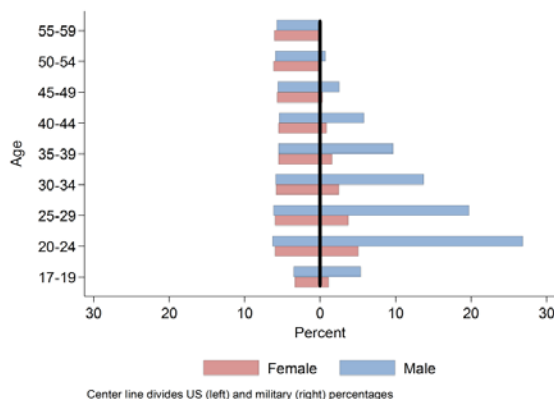
Figure 2. Illustration of population differences (in the age and sex makeup) of the U.S. general population compared to the Service member population of the Armed Forces. These demographic differences are controlled for by the indirect adjustment of the rates.

between the military Services and the general U.S. population requires accounting for these differences in order for it to be valid. Furthermore, any comparison between two or more populations using mortality rates should be adjusted for basic demographic variables (often, age and sex). If they are not (which is not recommended), the comparison is likely to be biased by underlying differences in the composition of the two populations.

When is a difference not a difference?

At this point, rates and some of the statistical issues associated with rate construction and comparison have been reviewed. Before presenting the suicide-mortality-rate data, it is important to restate some key points:

1. Observed rates (which are estimates) can vary from year to year because of volatility, uncertainty, and actual changes in the underlying (true) rate.

2. Our analysis attempts to account for the effects of volatility (using three-year average rates for temporal comparison) and uncertainty (confidence intervals) to determine if an observed change does or does not represent an actual change in the rates.

3. Any arithmetic difference in rates between populations or between years (e.g., 20.2–18.5 = 1.7) that does not account for uncertainty and issues of comparability (primarily age and sex) is not defensible.

4. Any difference in observed rates that does not go beyond expected values (i.e., does not exceed the confidence interval) is not a statistically significant difference. In other words, the evidence is insufficient to argue that the observed difference is real.

5. Unless a rate difference exceeds the expected values, the only defensible inference is that there is *no evidence of a difference.*

Findings

Table 3 details the frequency and rate of suicide mortality for the Active, Reserve, and National Guard Components of the four Services included in this report. The CY 2016 suicide-mortality rates for the three components, all Services, were not statistically different from the three-year average suicide-mortality rates for CY 2013–2015 (Figures 3–5). Similarly, there were no statistically significant differences detected between CY 2016 and the CY 2013–2015 three-year average rates for the Active Components of each of the Services (Figures 6–9).

In addition to the comparison against the three-year average, a linear increase was identified in the suicide-mortality rate, since CY 2011, for the Active Component of the Air Force. No stable increase or decrease in the suicide rate for the Active Components of any other Service or in the overall analysis of the components was observed.

Table 3. Frequency and unadjusted rate[1] of suicide, by Component and Service, for CY 2014 - CY 2016.						
Component and Service	**2014[3]**		**2015[4]**		**2016**	
	Count	**Rate**	**Count**	**Rate**	**Count**	**Rate**
Active, all Services	276	20.4	266	20.2	**275**	**21.1**
Air Force	62	19.1	64	20.5	**61**	**19.4**
Army	126	24.6	120	24.4	**127**	**26.7**
Marine Corps	34	17.9	39	21.2	**37**	**20.1**
Navy	54	16.6	43	13.1	**50**	**15.3**
Reserve,[2] all Services	79	21.6	90	24.7	**80**	**22.0**
Air Force	10	---	10	---	**10**	**---**
Army	42	21.4	55	27.7	**41**	**20.6**
Marine Corps	12	---	11	---	**19**	**---**
Navy	15	---	14	---	**10**	**---**
Guard,[2] Air Force and Army	91	19.8	125	27.5	**123**	**27.3**
Air Guard	14	---	21	19.9	**14**	**---**
Army Guard	77	21.8	104	29.8	**109**	**31.6**

[1]Unadjusted rate per 100,000 Service members. Rates for subgroups with fewer than 20 suicides are not reported because of statistical instability.

[2]Rates for the Reserve and National Guard Components of the SELRES include all Service members irrespective of duty status.

[3]Pruitt, L.D., Smolenski, D., Reger, M., Bush, N., Skopp, N., & Campise, R.L. (2016). Department of defense suicide event report – calendar year 2014 (Publication No. 6-9C3997A). Retrieved from: http://www.t2health.dcoe.mil/programs/dodser

[4]Pruitt, L.D., Smolenski, Bush, N., Skopp, N., Hoyt, T., & Grady, B. (2017). Department of defense suicide event report – calendar year 2015 (Publication No. E-6A4ED71). Retrieved from: http://www.t2health.dcoe.mil/programs/dodser. doi: 10.13140/RG.2.2.12110.05448

Adjusted Annual Rates of Suicide in the Active Component, All Services, CY 2011 - CY 2016
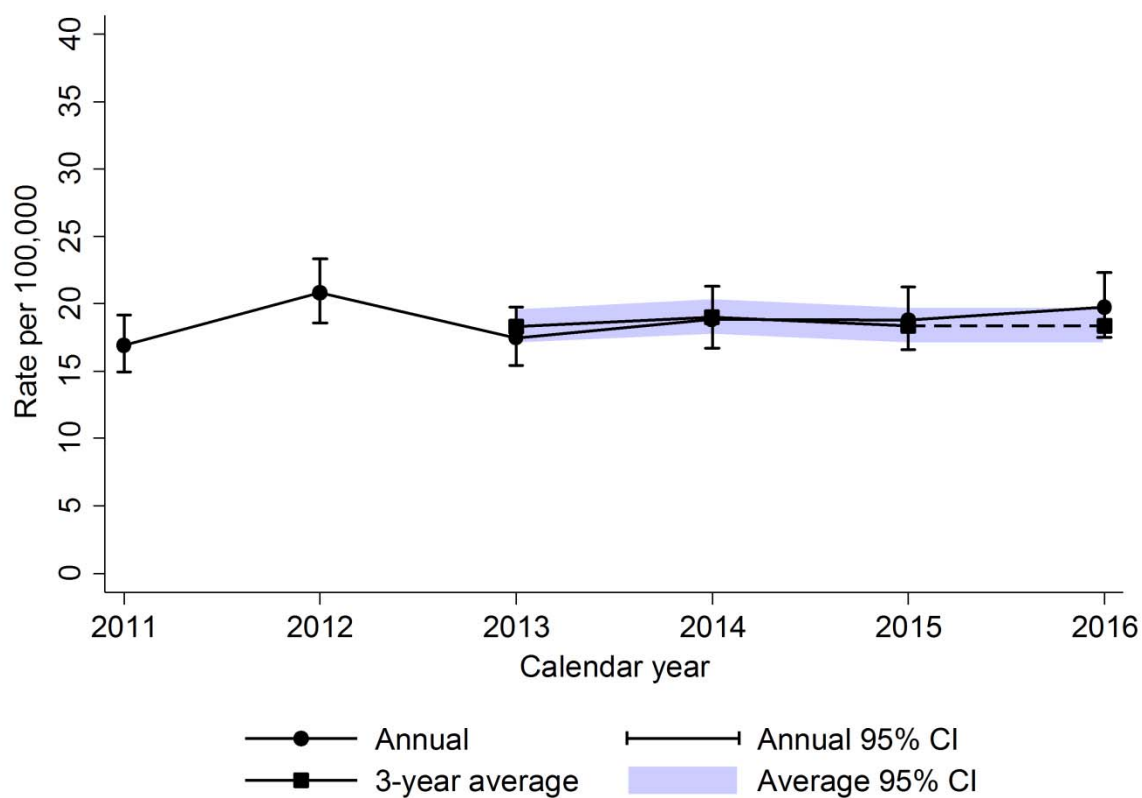
Figure 3. Adjusted annual rates of suicide in the **Active Component**, **all Services**, CY 2011 - CY 2016

Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013–2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Adjusted Annual Rates of Suicide in the Reserve Component, all Services, CY 2011 - CY 2016
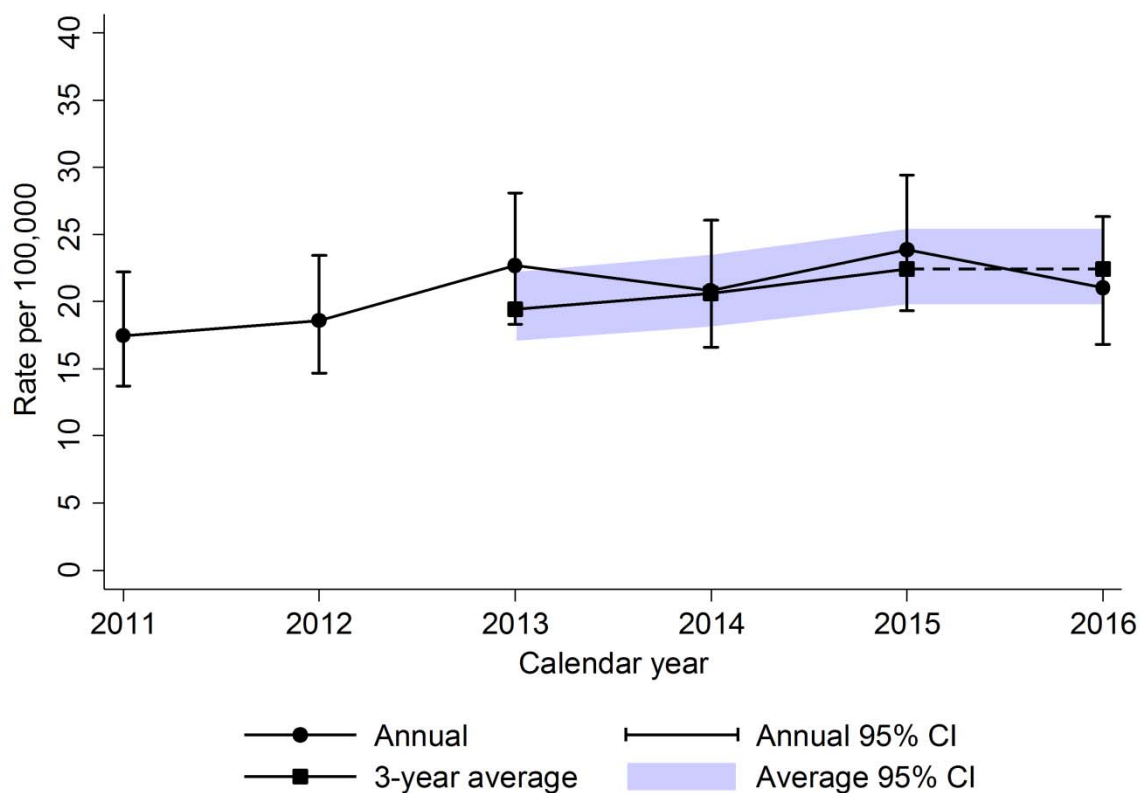
Figure 4. Adjusted annual rates of suicide in the **Reserve Component, all Services,** CY 2011 - CY 2016

Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013–2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Adjusted Annual Rates of Suicide in the National Guard Component, Air Force and Army, CY 2011 - CY 2016

Figure 5. Adjusted annual rates of suicide in the **National Guard Component, Air Force and Army**, CY 2011 - CY 2016

Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013–2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Adjusted Annual Rates of Suicide in the Active Component, Air Force, CY 2011 - CY 2016
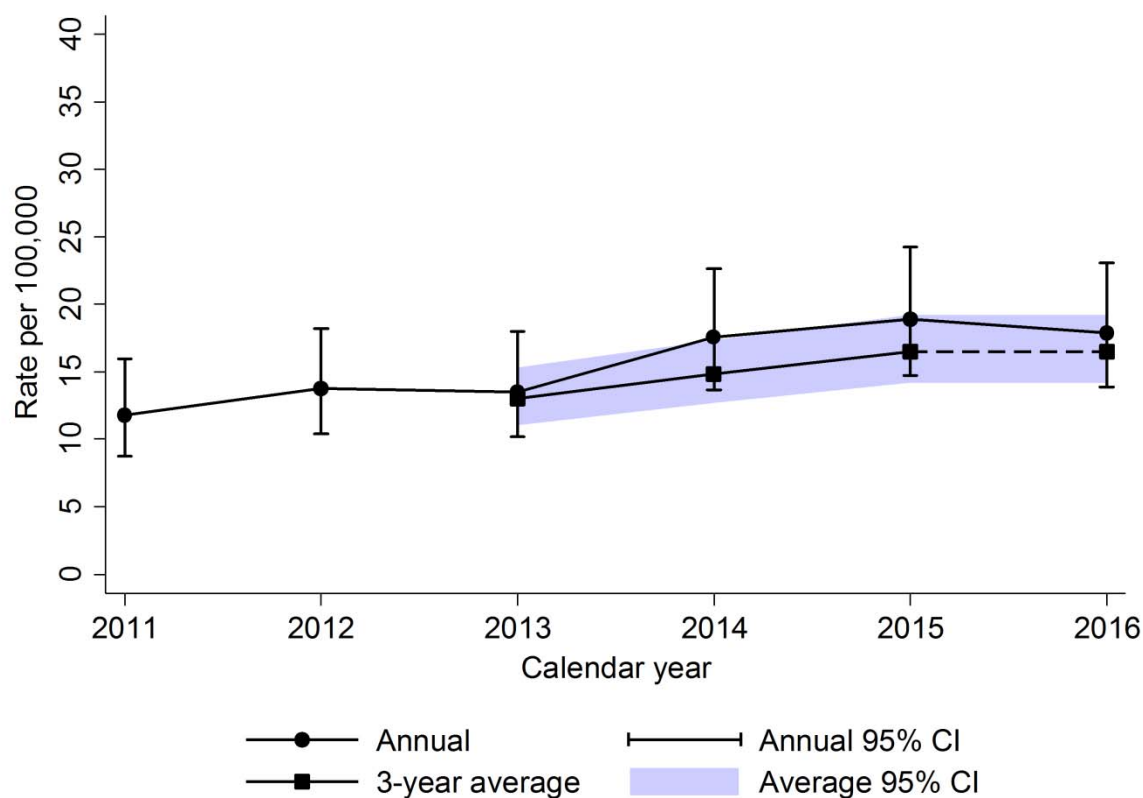
Figure 6. Adjusted annual rates of suicide in the **Active Component, Air Force**, CY 2011 - CY 2016

Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013–2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Adjusted Annual Rates of Suicide in the Active Component, Army, CY 2011 - CY 2016
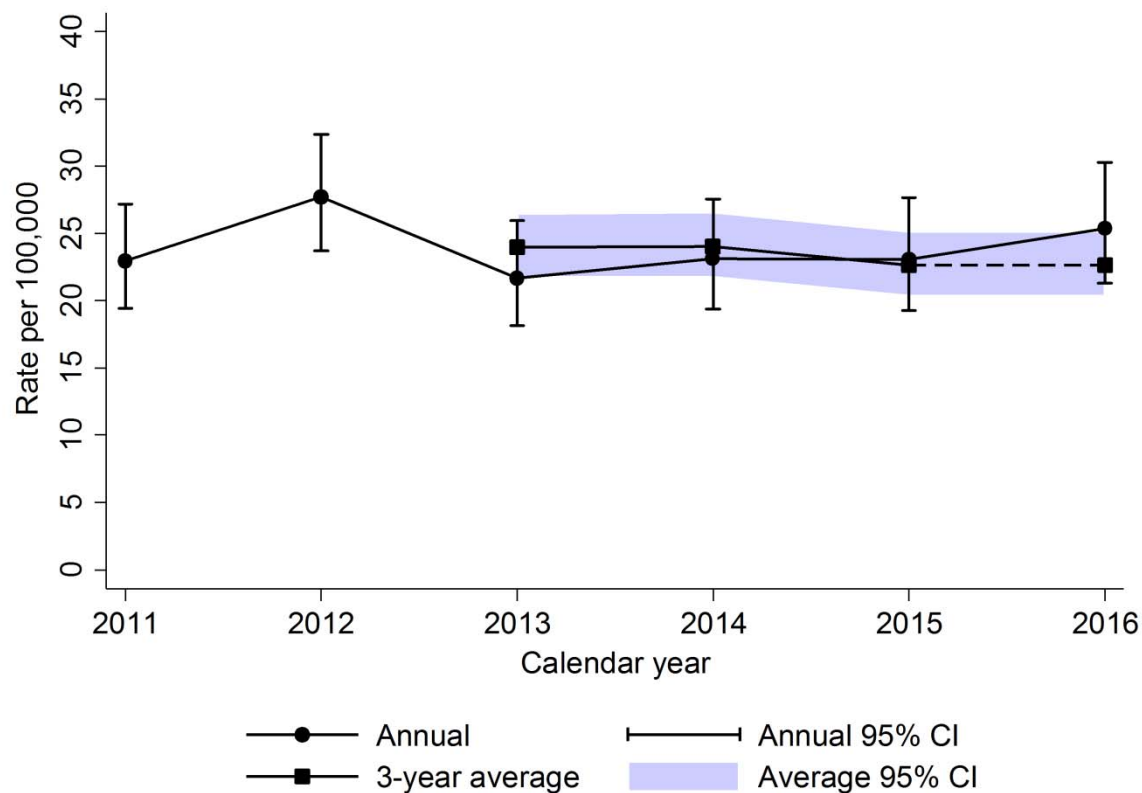
Figure 7. Adjusted annual rates of suicide in the **Active Component, Army,** CY 2011 - CY 2016

Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013–2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Adjusted Annual Rates of Suicide in the Active Component, Marine Corps, CY 2011 - CY 2016
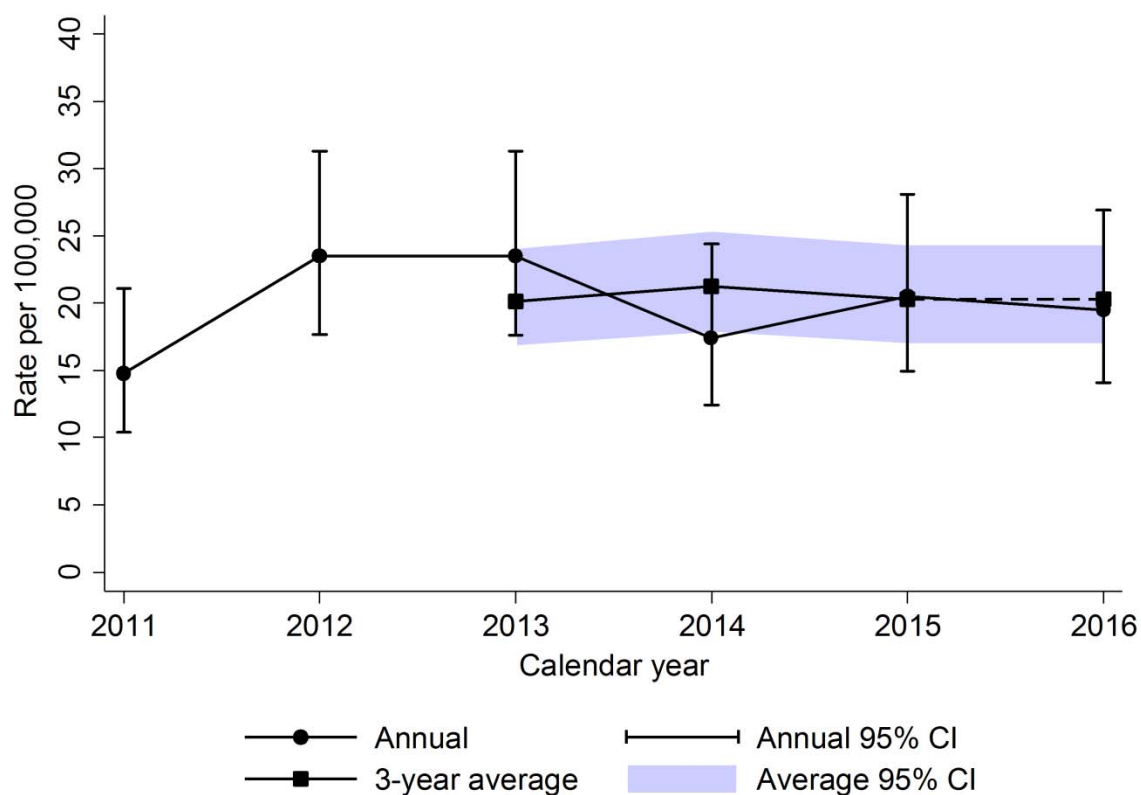
Figure 8. Adjusted annual rates of suicide in the **Active Component, Marine Corps**, CY 2011 - CY 2016

Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013–2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Adjusted Annual Rates of Suicide in the Active Component, Navy, CY 2011 - CY 2016
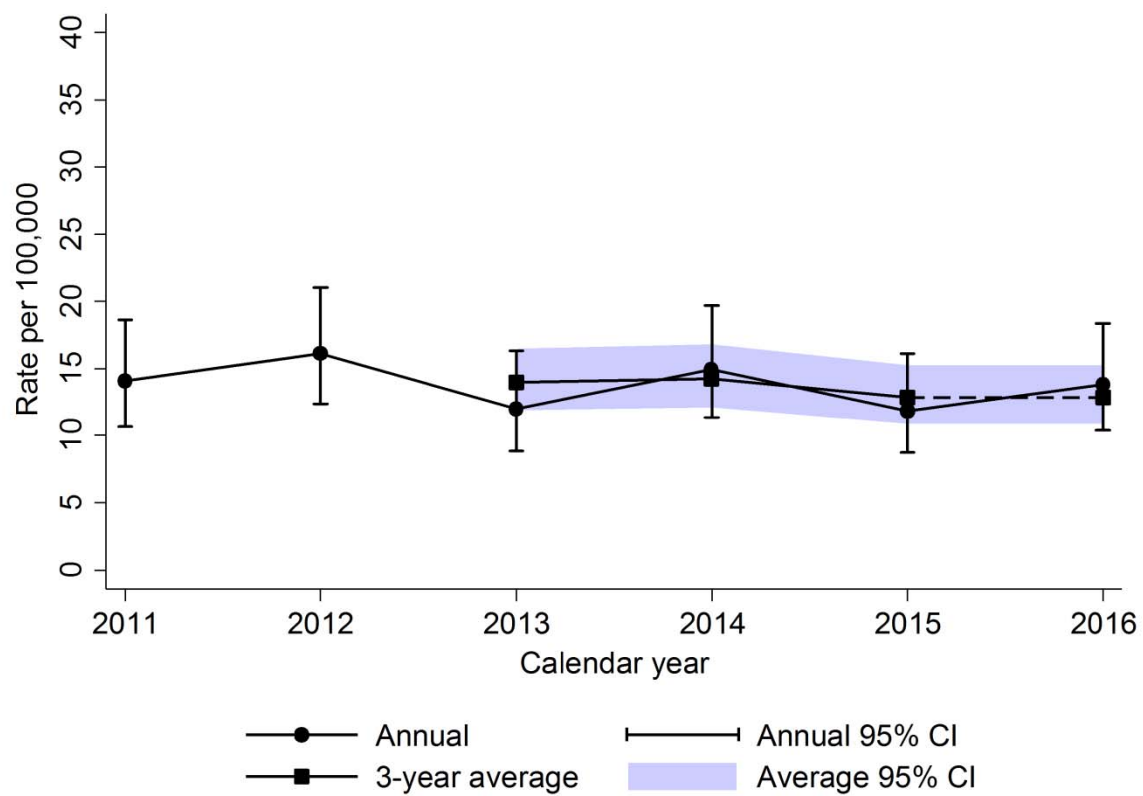
Figure 9. Adjusted annual rates of suicide in the **Active Component, Navy,** CY 2011–CY 2016

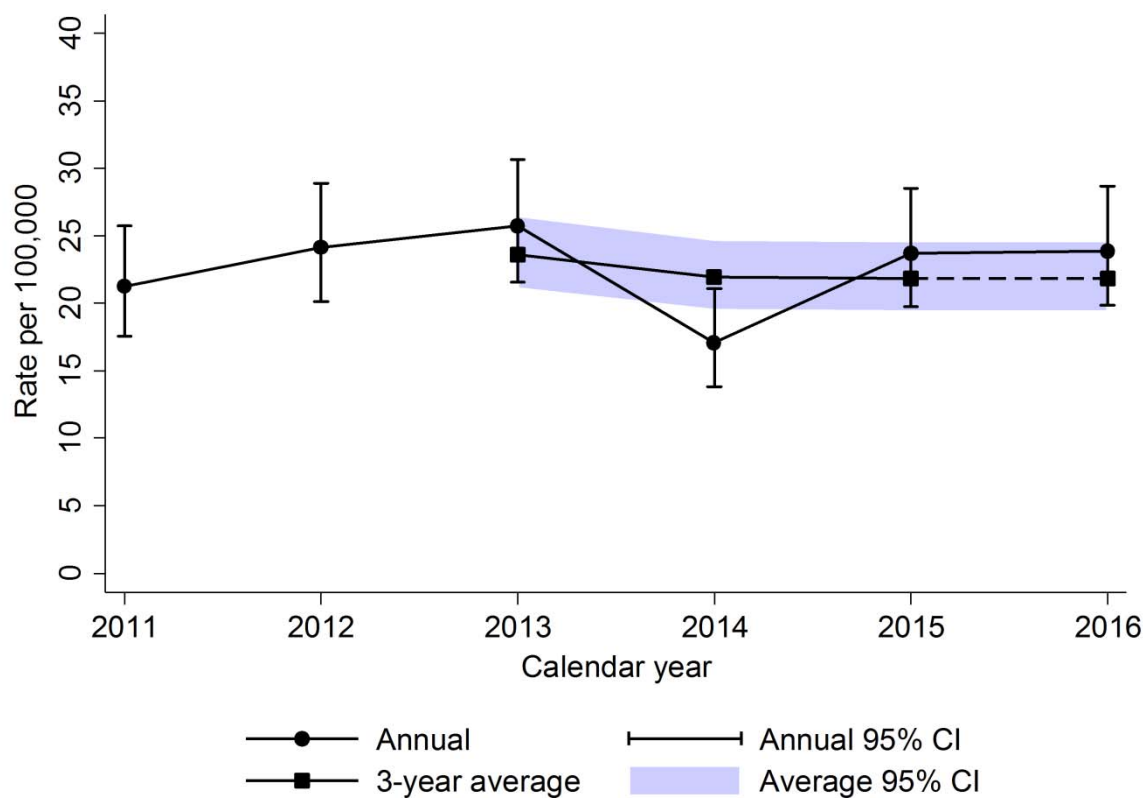Note: All rates are adjusted for age and sex. The three-year moving average for CY 2013 - 2015 is the average rate for that year and the two years previous. The three-year moving average for calendar year CY 2016 is the three-year average for CY 2013–2015 carried forward to show expected values of the rate for CY 2016. Figure does not contain CY 2016 WISQARS data as they were not available at the time of this writing.

Thresholds Required to Identify Rate Changes

Another way to understand the data is to think about the number of cases needed to have a statistically significant change in the suicide-mortality rate. For CY 2016, 275 suicide deaths in the Active Component, all Services, were observed. In order to reach the threshold to conclude that the suicide-mortality rate for CY 2016 was *greater* than the three-year average suicide-mortality rate for CY 2013–2015, there would have to be at least 293 suicide deaths recorded. To conclude that the suicide-mortality rate for CY 2016 was *lower* than the three-year average suicide-mortality rate for CY 2013–2015, there would have to be 222 or fewer deaths recorded. Table 4 shows the observed number of suicide deaths and the number of deaths needed to provide evidence of a change for each Component and for the Active Components of each of the Services.

Table 4. Observed number of suicide deaths and number of suicide deaths required to increase or decrease the CY 2016 suicide-mortality rate relative to the three-year average suicide-mortality rate of CY 2013 – 2015			
Component	Observed in CY 2016	Maximum number of cases allowed to identify a rate decrease	Minimum number of cases needed to identify a rate increase
Active	275	222	293
Reserve	80	65	109
National Guard	123	92	140
Service Active Component only			
Air Force	61	42	76
Army	127	92	139
Marine Corps	37	26	56
Navy	50	33	65

The CY 2015 suicide-mortality rate for the U.S. population, age 17–59, was 17.3 deaths per 100,000. These are the most recent population data available. Note that this rate value is higher than the one often cited in other reports age range (17–59 years) has been restricted to make it comparable to the age range of the U.S. military populations.

Comparison to U.S. General Population

After adjustment for age and sex, the CY 2016 suicide-mortality rate for the Active and Reserve Components was no different from expected given the age-restricted, U.S. total-population rate for CY 2015 (Figures 10 and 11).

The National Guard Component had a higher suicide-mortality rate than expected based on the U.S. population data for CY 2015 (Figure 12).

Among the Services in the Active Component in CY 2016, the Army had a higher suicide mortality rate than expected, while the Navy had a lower suicide mortality rate than expected given the age-restricted, U.S. total-population population data (Figures 14 and 16, respectively). There was no detectable difference in the suicide mortality rate for the Air Force or the Marine Corps from their expected values given the age-restricted, U.S. total-population data (Figures 13 and 15, respectively).

Suicide Rate for the Active Component, All Services, CY 2011–2016
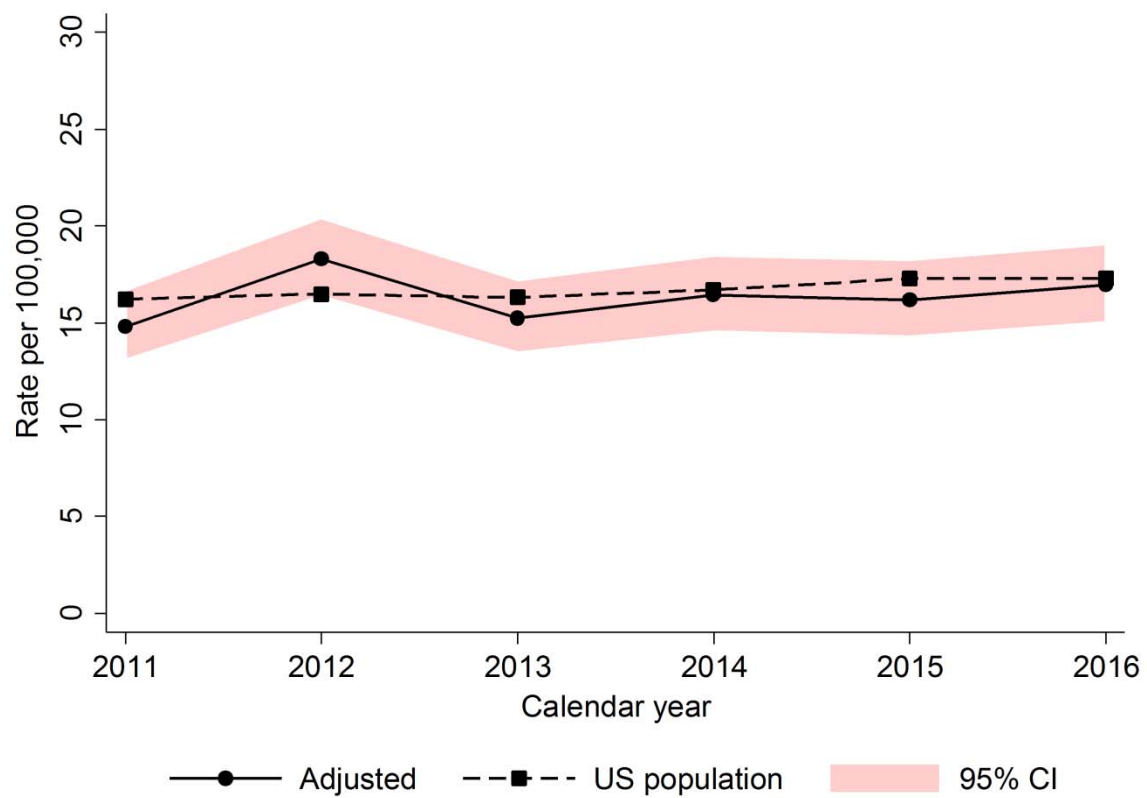
Figure 10. Suicide-mortality rate for the **Active Component, all Services**, CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59.

Suicide Rate for the Reserve Component, All Services, CY 2011–2016
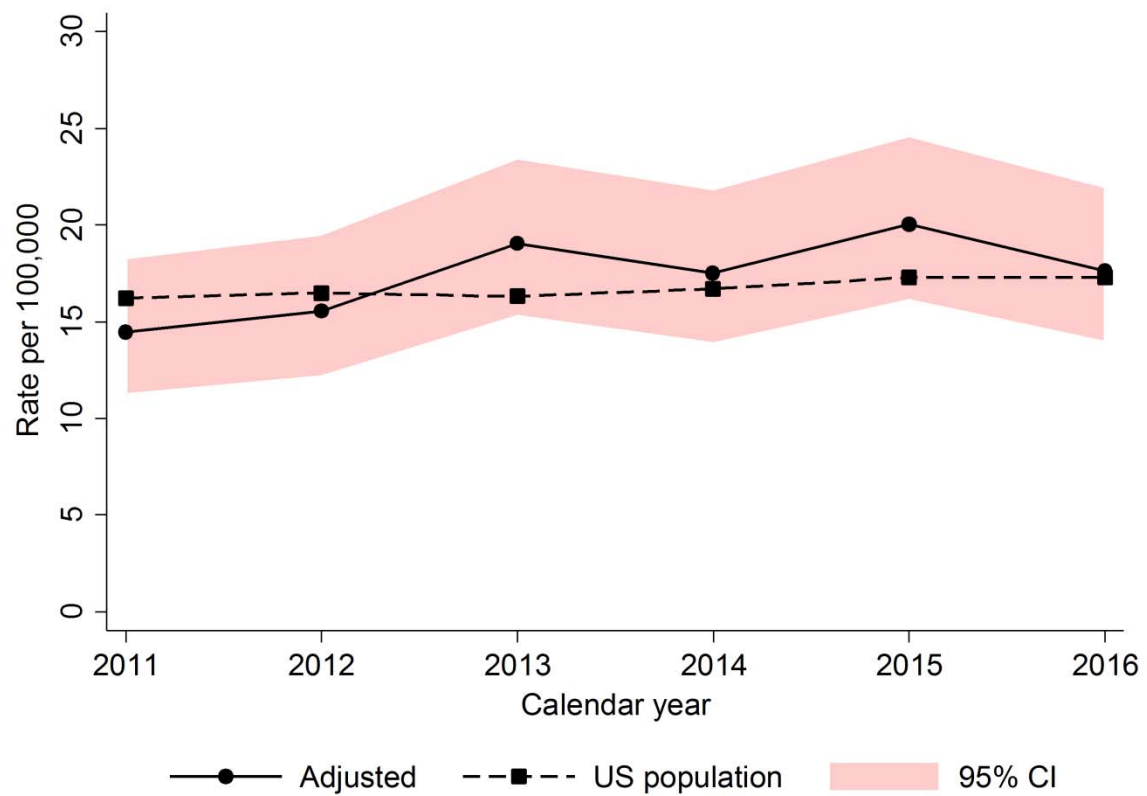
Figure 11. Suicide-mortality rate for the **Reserve Component, all Services**, CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59.

Suicide Rate for the National Guard Component, Air Force and Army, CY 2011–2016
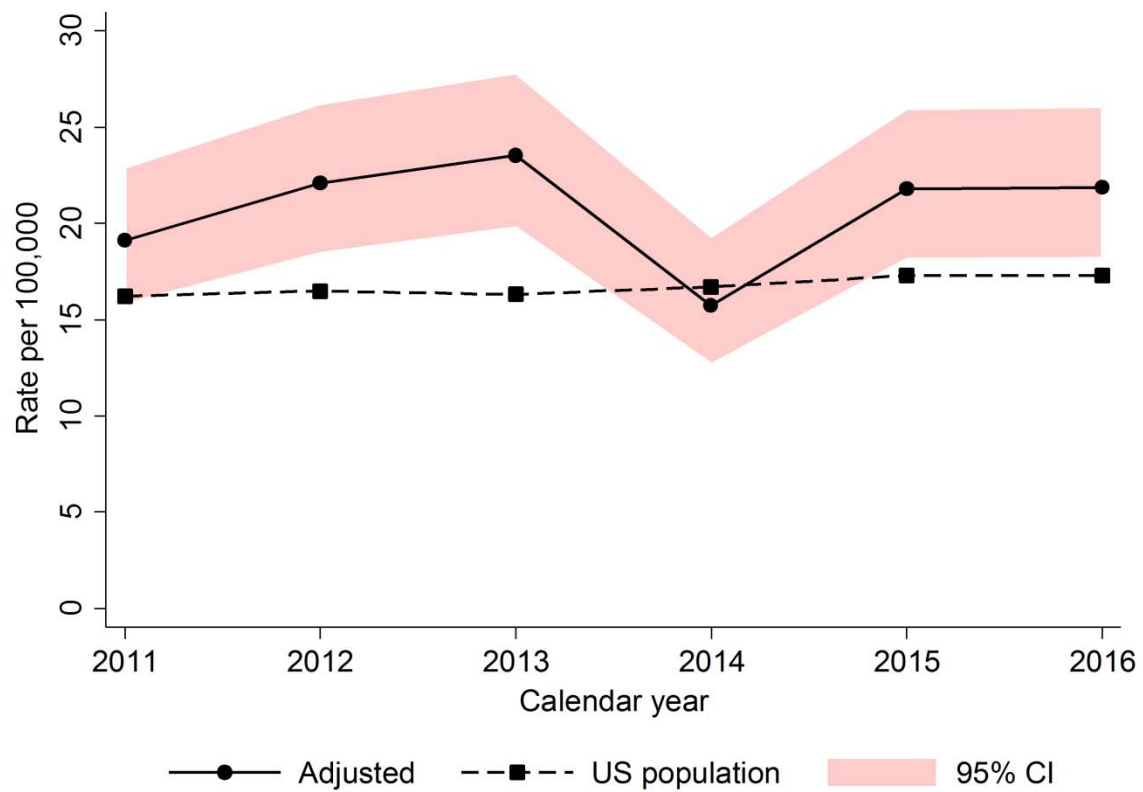
Figure 12. Suicide mortality rate for the **National Guard Component, Air Force and Army,** CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59.

Suicide Rate for the Active Component, Air Force, CY 2011–2016
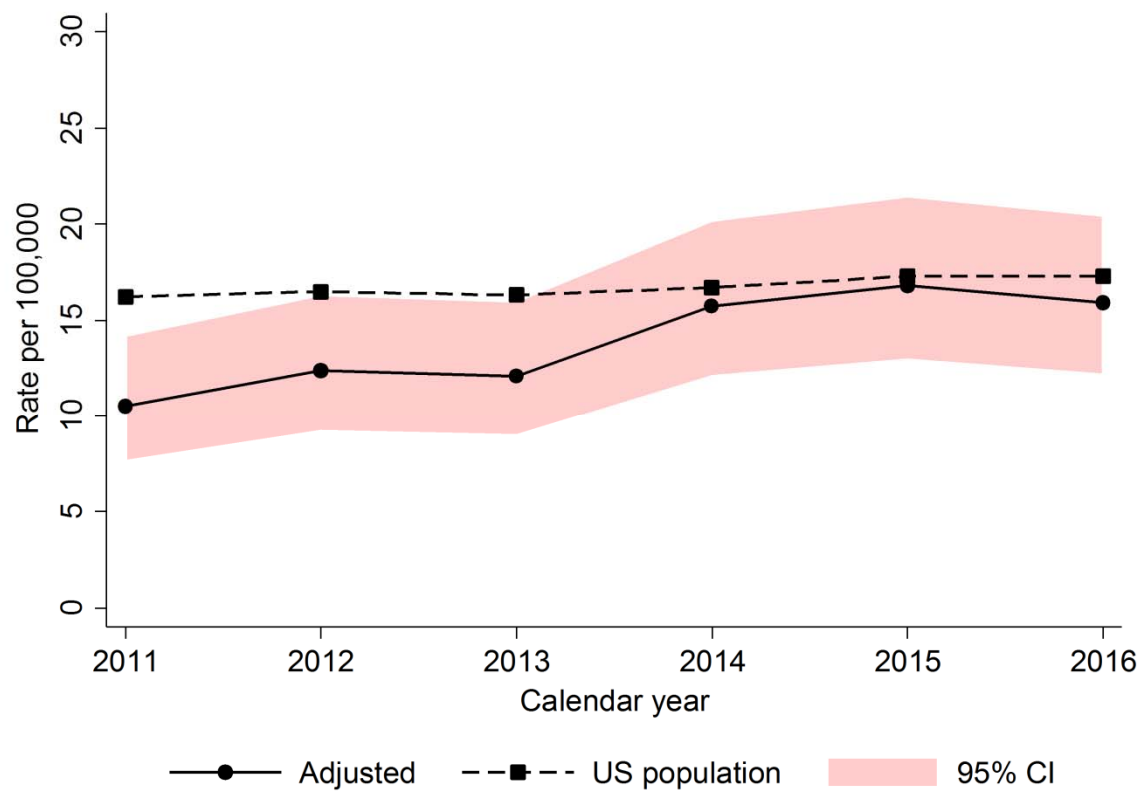
Figure 13. Suicide mortality rate for the **Active Component, Air Force**, CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59

Suicide Rate for the Active Component, Army, CY 2011–2016
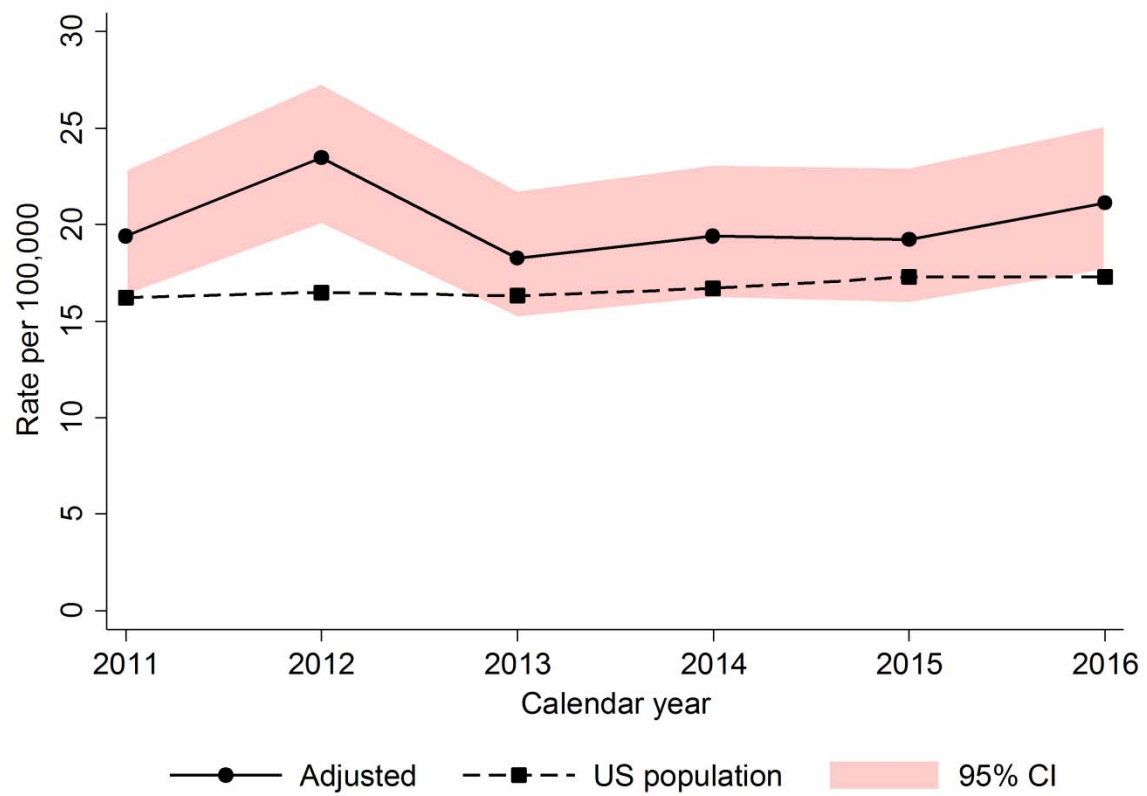
Figure 14. Suicide mortality rate for the **Active Component**, **Army**, CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59

Suicide Rate for the Active Component, Marine Corps, CY 2011–2016
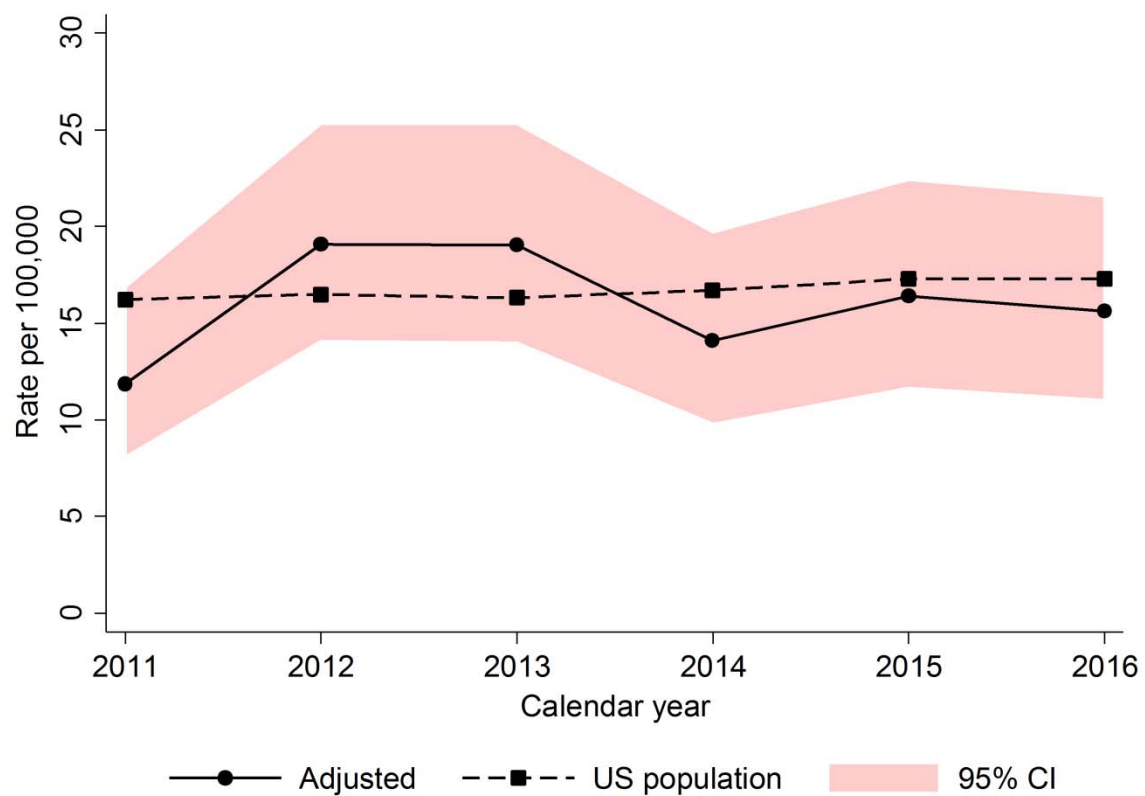
Figure 15. Suicide mortality rate for the **Active Component, Marine Corps**, CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59

Rate for the Active Component, Navy, CY 2011–2016
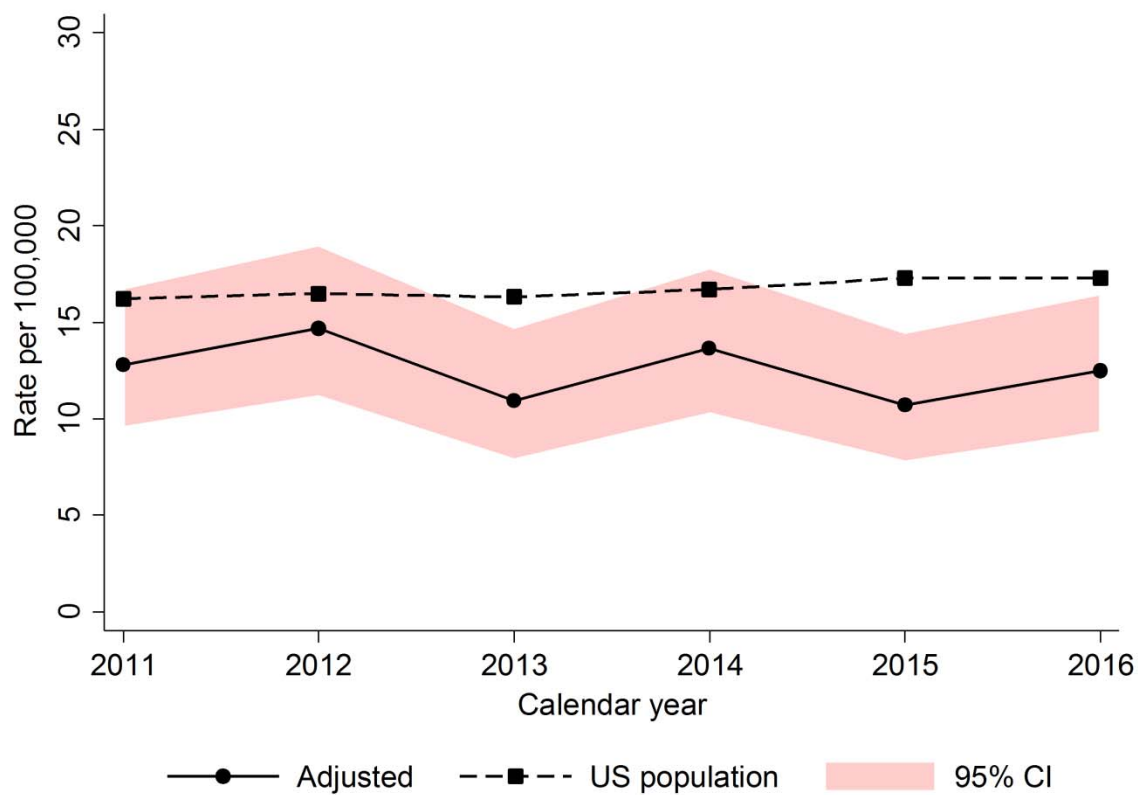
Figure 16. Suicide mortality rate for the **Active Component, Navy**, CY 2011–2016, after indirect adjustment for age and sex to the U.S. total population, age 17–59

Tables 5 – 11 provide a demographic breakdown of the suicide deaths identified in each component and each Service. Where possible, an unadjusted rate is provided. Formal comparisons of suicide rates between demographic groups were not made. As such, no formal comparisons or conclusions are provided.

Table 5. Rates of suicide among Service members in the Active Component, all Services, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	276	20.4	266	20.2	275	21.1
Sex						
Male	256	22.3	252	22.7	255	23.3
Female	20	9.8	14	---	20	9.7
Race						
American Indian/Alaska Native	3	---	4	---	6	---
Asian/Pacific Islander	8	---	12	---	9	---
Black/African American	42	18.2	44	19.4	32	14.2
White/Caucasian	199	21.5	186	20.7	212	23.9
Other/Unknown	24	22.3	20	19.1	16	---
Ethnicity						
Hispanic	34	21.4	29	18.2	27	14.6
Non-Hispanic	240	20.8	231	20.7	242	22.8
Unknown	2	---	6	---	6	---
Age						
17–19	7	---	13	---	14	---
20–24	95	22.2	94	22.4	113	27.1
25–29	72	22.4	62	20.0	65	21.5
30–34	53	24.2	45	21.1	35	16.6
35–39	30	19.8	32	21.7	26	17.6
40–44	15	---	15	---	12	---
45–49	1	---	4	---	8	---
50–54	3	---	1	---	1	---
55–59	0	---	0	---	1	---
Unknown	0	---	0	---	0	---
Rank/Grade						
Cadet/midshipman	0	---	2	---	0	---
E1–**E4**	122	21.2	127	22.5	135	24.0
E5–E9	120	22.8	114	22.5	105	21.1
Officer	31	14.3	18	---	32	15.3
Warrant officer	3	---	5	---	3	---
Education						
Some high school	1	---	1	---	0	---
Alternative high school certification	20	49.3	18	---	20	55.9
High school graduate	177	21.4	179	22.4	186	23.7
Some college, no degree	20	32.6	19	---	17	---
Associate's degree or technical certification	19	---	21	19.9	8	---
Four-year college degree	28	16.8	17	---	24	14.0
Master's degree or greater	7	---	6	---	19	---
Unknown	4	---	5	---	1	---
Marital Status						
Never married	105	19.0	116	21.1	118	21.2
Married	145	19.5	132	18.6	133	19.2
Legally separated	0	---	0	---	2	---
Divorced	25	44.8	17	---	21	42.1
Widowed	1	---	1	---	1	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

Table 6. Rates of suicide among Service members in the Reserve Component of the Selected Reserve irrespective of duty status, all Services, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	79	21.6	90	24.7	80	22.0
Sex						
Male	72	25.1	78	27.3	76	26.7
Female	7	---	12	---	4	---
Race						
American Indian/Alaska Native	2	---	0	---	1	---
Asian/Pacific Islander	4	---	6	---	5	---
Black/African American	9	---	10	---	7	---
White/Caucasian	59	23.6	72	29.0	63	25.7
Other/Unknown	5	---	2	---	4	---
Ethnicity						
Hispanic	9	---	14	---	7	---
Non-Hispanic	67	21.7	75	24.5	73	24.0
Unknown	3	---	1	---	0	---
Age						
17–19	3	---	2	---	5	---
20–24	30	38.0	25	33.0	25	34.0
25–29	13	---	25	33.7	26	34.5
30–34	9	---	21	34.7	9	---
35–39	10	---	4	---	5	---
40–44	3	---	7	---	4	---
45–49	8	---	3	---	2	---
50–54	1	---	3	---	1	---
55–59	2	---	0	---	3	---
Rank/Grade						
Cadet/midshipman	0	---	0	---	0	---
E1–E4	46	29.7	47	31.2	46	31.6
E5–E9	24	16.8	33	22.9	29	19.5
Officer	9	---	8	---	5	---
Warrant officer	0	---	2	---	0	---
Education						
Some high school	1	---	4	---	1	---
Alternative high school certification	6	---	5	---	6	---
High school graduate	54	26.0	60	29.4	60	30.0
Some college, no degree	2	---	3	---	2	---
Associate's degree or technical certification	4	---	5	---	4	---
Four-year college degree	8	---	7	---	5	---
Master's degree or greater	4	---	5	---	2	---
Unknown	0	---	1	---	0	---
Marital Status						
Never married	45	27.3	49	29.6	48	28.8
Married	28	16.3	32	18.8	28	16.5
Legally separated	0	---	0	---	0	---
Divorced	6	---	8	---	4	---
Widowed	0	---	1	---	0	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

Table 7. Rates of suicide among Service members in the Guard Component of the SELRES, Air Force and Army, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	91	19.8	125	27.5	123	27.3
Sex						
Male	87	22.7	118	31.3	117	31.4
Female	4	---	7	---	6	---
Race						
American Indian/Alaska Native	2	---	1	---	4	---
Asian/Pacific Islander	5	---	4	---	6	---
Black/African American	11	---	10	---	9	---
White/Caucasian	73	20.0	105	29.3	99	27.8
Other/Unknown	0	---	5	---	5	---
Ethnicity						
Hispanic	5	---	9	---	4	---
Non-Hispanic	86	20.4	116	27.9	119	29.0
Unknown	0	---	0	---	0	---
Age						
17–19	8	---	9	---	11	---
20–24	35	31.3	44	39.6	43	39.0
25–29	19	---	24	26.0	36	38.6
30–34	13	---	23	32.6	12	---
35–39	8	---	12	---	6	---
40–44	3	---	4	---	8	---
45–49	2	---	6	---	4	---
50–54	2	---	2	---	3	---
55–59	1	---	1	---	0	---
Rank/grade						
Cadet/midshipman	0	---	0	---	0	---
E1–E4	51	25.1	70	35.0	74	37.4
E5–E9	34	17.3	46	23.7	40	20.8
Officer	6	---	9	---	8	---
Warrant officer	0	---	0	---	1	---
Education						
Some high school	4	---	2	---	5	---
Alternative high school certification	5	---	12	---	13	---
High school graduate	48	25.9	67	36.4	66	35.9
Some college, no degree	15	---	25	22.6	19	---
Associate's degree or technical certification	3	---	5	---	2	---
Four-year college degree	7	---	12	---	15	---
Master's degree or greater	2	---	2	---	1	---
Unknown	7	---	0	---	2	---
Marital status						
Never married	58	25.5	68	29.5	81	35.1
Married	26	12.9	51	26.2	37	19.4
Legally separated	0	---	0	---	0	---
Divorced	7	---	6	---	5	---
Widowed	0	---	0	---	0	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

Table 8. Rates of suicide among Service members in the Active Component, Air Force, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	62	19.1	64	20.5	61	19.4
Sex						
Male	53	20.2	62	24.6	56	22.0
Female	9	---	2	---	5	---
Race						
American Indian/Alaska Native	0	---	0	---	0	---
Asian/Pacific Islander	1	---	5	---	0	---
Black/African American	9	---	7	---	6	---
White/Caucasian	45	19.3	48	21.5	52	23.2
Other/Unknown	7	---	4	---	3	---
Ethnicity						
Hispanic	4	---	2	---	5	---
Non-Hispanic	58	19.2	60	20.7	55	20.7
Unknown	0	---	2	---	1	---
Age						
17–19	3	---	1	---	4	---
20–24	27	30.1	25	29.1	14	---
25–29	11	---	16	---	17	---
30–34	11	---	10	---	10	---
35–39	8	---	5	---	9	---
40–44	2	---	5	---	4	---
45–49	0	---	2	---	3	---
50–54	0	---	0	---	0	---
55–59	0	---	0	---	0	---
Rank/grade						
Cadet/midshipman	0	---	1	---	0	---
E1–E4	29	24.7	30	25.9	22	18.4
E5–E9	28	20.1	29	22.2	27	20.6
Officer	5	---	4	---	12	---
Warrant officer	0	---	0	---	0	---
Education						
Some high school	0	---	0	---	0	---
Alternative high school certification	0	---	0	---	0	---
High school graduate	50	28.7	43	26.6	40	24.9
Some college, no degree	0	---	0	---	0	---
Associate's degree or technical certification	6	---	16	---	6	---
Four-year college degree	5	---	2	---	5	---
Master's degree or greater	1	---	1	---	9	---
Unknown	0	---	2	---	1	---
Marital status						
Never married	26	22.4	37	32.6	27	22.7
Married	29	15.5	22	12.4	25	14.2
Legally separated	0	---	0	---	0	---
Divorced	6	---	5	---	8	---
Widowed	1	---	0	---	1	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

Table 9. Rates of suicide among Service members in the Active Component, Army, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	126	24.6	120	24.4	127	26.7
Sex						
Male	118	26.7	113	26.8	117	28.8
Female	8	---	7	---	10	---
Race						
American Indian/Alaska Native	1	---	3	---	3	---
Asian/Pacific Islander	4	---	4	---	5	---
Black/African American	27	24.6	26	24.3	17	---
White/Caucasian	88	25.3	78	23.6	97	30.6
Other/Unknown	6	---	9	---	5	---
Ethnicity						
Hispanic	18	---	14	---	15	---
Non-Hispanic	108	24.4	105	24.9	112	27.7
Unknown	0	---	1	---	0	---
Age						
17–19	2	---	4	---	3	---
20–24	37	24.8	31	21.6	50	35.5
25–29	36	30.2	30	27.0	32	30.2
30–34	24	27.5	30	36.3	19	---
35–39	13	---	19	---	11	---
40–44	11	---	4	---	7	---
45–49	1	---	2	---	4	---
50–54	2	---	0	---	0	---
55–59	0	---	0	---	1	---
Rank/grade						
Cadet/midshipman	0	---	1	---	0	---
E1–E4	56	25.6	45	21.4	60	28.8
E5–E9	56	29.2	59	32.5	46	27.0
Officer	12	---	10	---	18	---
Warrant officer	2	---	5	---	3	---
Education						
Some high school	1	---	1	---	0	---
Alternative high school certification	14	---	15	---	13	---
High school graduate	68	24.1	68	25.4	75	29.3
Some college, no degree	18	---	17	---	15	---
Associate's degree or technical certification	8	---	4	---	1	---
Four-year college degree	12	---	9	---	13	---
Master's degree or greater	4	---	4	---	10	---
Unknown	1	---	2	---	0	---
Marital status						
Never married	35	19.2	39	21.8	47	26.3
Married	73	24.2	71	24.9	65	24.0
Legally separated	0	---	0	---	2	---
Divorced	18	---	9	---	13	---
Widowed	0	---	1	---	0	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

Table 10. Rates of suicide among Service members in the Active Component, Marine Corps, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	34	17.9	39	21.2	37	20.1
Sex						
Male	32	18.3	37	21.8	36	21.3
Female	2	---	2	---	1	---
Race						
American Indian/Alaska Native	0	---	1	---	3	---
Asian/Pacific Islander	0	---	1	---	2	---
Black/African American	1	---	3	---	4	---
White/Caucasian	28	18.6	34	23.3	26	17.8
Other/Unknown	5	---	0	---	2	---
Ethnicity						
Hispanic	2	---	5	---	1	---
Non-Hispanic	32	20.3	34	22.6	36	24.3
Unknown	0	---	0	---	0	---
Age						
17–19	2	---	5	---	4	---
20–24	13	---	22	25.5	24	27.5
25–29	11	---	5	---	4	---
30–34	8	---	2	---	1	---
35–39	0	---	4	---	2	---
40–44	0	---	1	---	1	---
45–49	0	---	0	---	1	---
50–54	0	---	0	---	0	---
55–59	0	---	0	---	0	---
Rank/grade						
Cadet/midshipman	0	---	0	---	0	---
E1–E4	17	---	28	25.8	23	21.2
E5–E9	13	---	9	---	13	---
Officer	4	---	2	---	1	---
Warrant officer	0	---	0	---	0	---
Education						
Some high school	0	---	0	---	0	---
Alternative high school certification	1	---	0	---	3	---
High school graduate	25	16.1	36	23.8	32	21.2
Some college, no degree	2	---	0	---	1	---
Associate's degree or technical certification	2	---	1	---	0	---
Four-year college degree	4	---	2	---	1	---
Master's degree or greater	0	---	0	---	0	---
Unknown	0	---	0	---	0	---
Marital status						
Never married	14	---	19	---	19	---
Married	19	---	17	---	18	---
Legally separated	0	---	0	---	0	---
Divorced	1	---	3	---	0	---
Widowed	0	---	0	---	0	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

Table 11. Rates of suicide among Service members in the Active Component, Navy, CY 2014 - CY 2016, overall and by demographic characteristics						
	2014		**2015**		**2016**	
Group	Count	Rate[1]	Count	Rate[1]	Count	Rate[1]
Total	54	16.6	43	13.1	50	15.3
Sex						
Male	53	19.8	40	14.9	46	17.3
Female	1	---	3	---	4	---
Race						
American Indian/Alaska Native	2	---	0	---	0	---
Asian/Pacific Islander	3	---	2	---	2	---
Black/African American	5	---	8	---	5	---
White/Caucasian	38	19.4	26	13.1	37	18.6
Other/Unknown	6	---	7	---	6	---
Ethnicity						
Hispanic	10	---	8	---	6	---
Non-Hispanic	42	16.5	32	12.7	39	16.0
Unknown	2	---	3	---	5	---
Age						
17–19	0	---	3	---	3	---
20–24	18	---	16	---	25	24.4
25–29	14	---	11	---	12	---
30–34	10	---	3	---	5	---
35–39	9	---	4	---	4	---
40–44	2	---	5	---	0	---
45–49	0	---	0	---	0	---
50–54	1	---	1	---	1	---
55–59	0	---	0	---	0	---
Rank/grade						
Cadet/midshipman	0	---	0	---	0	---
E1–E4	20	15.6	24	18.6	30	23.7
E5–E9	23	16.6	17	---	19	---
Officer	10	---	2	---	1	---
Warrant officer	1	---	0	---	0	---
Education						
Some high school	0	---	0	---	0	---
Alternative high school certification	5	---	3	---	4	---
High school graduate	34	15.7	32	14.7	39	18.1
Some college, no degree	0	---	2	---	1	---
Associate's degree or technical certification	3	---	0	---	1	---
Four-year college degree	7	---	4	---	5	---
Master's degree or greater	2	---	1	---	0	---
Unknown	3	---	1	---	0	---
Marital status						
Never married	30	19.0	21	13.1	25	15.6
Married	24	14.5	22	13.2	25	15.0
Legally separated	0	---	0	---	0	---
Divorced	0	---	0	---	0	---
Widowed	0	---	0	---	0	---

[1]Rate per 100,000 Service members. Rates for strata with fewer than 20 suicides were not reported because of statistical instability.

CHAPTER 3

Joint Results Summary

Joint Results Summary: All Services

This chapter presents a joint, aggregated overview of the combined Air Force, Army, Marine Corps, and Navy data. An examination of each of these Services, individually, follows in Chapters 4–7. The DoDSER system collects data on demographic, contextual, behavioral health, historical, and risk-related factors for all incidences of suicide and all suicide attempts that result in hospitalization or evacuation from a military theater of operations. Cases involving both Active Component Service members and SELRES Service members who were in a duty status at the time of the event are subject to this reporting requirement. Particular variables of interest are presented in the following text; however, the reader is encouraged to review the DoDSER data tables that follow each chapter's text for the full data, presented separately by event type.

Suicide Mortality

As of March 31, 2017, the AFMES had identified 300 confirmed or pending cases of suicide that occurred during CY 2016. A total of 275 of these deaths occurred among members of the Active Component. The remaining 25 deaths occurred among SELRES Service members who were in a duty status at the time of their death. A DoDSER survey was submitted for 299 deaths. These 299 DoDSER surveys were used to populate the tables included in this chapter.

A total of 10 deaths were associated with one or more reported suicide attempts that occurred between CY 2010 (CY 2008 for Army) and CY 2016. The median number of days between the most recent suicide attempt and the date of death was 159.

Incidence of Attempted Suicide

Over the course of CY 2016, 1,263 non-fatal suicide attempts were identified. The associated DoDSER reports provided data on suicide attempts for 1,218 unique individuals. A total 1,182 had a single suicide-attempt reported; 36 had two or more suicide attempts reported, dating back to 2010. The median number of days between the most recent suicide attempt and the penultimate attempt was 82 days.

Event Information

It is important to examine whether the Service members who died by suicide had made an effort to communicate their suicidal thoughts or feelings to their family, social, and peer networks prior to engaging in suicidal behavior. Data from CY 2016 suggest that 23.4 percent of those who died by suicide had communicated their desire to die prior to engaging in the behavior that would ultimately cause their death. Most frequently, these communications involved verbal communications about their thoughts and feelings (14.4%) or sending electronic (10.4%) messages. Most commonly, spouses (8.7%) and friends (9.0%) were the recipients of these messages. Communication of suicidal thoughts and feelings were either not made or recognized in 64.9 percent of suicide cases. Separately, suicide notes were left in 26.1 percent of deaths.

Firearms were the method of injury most often identified in suicide cases (62.2%). The majority (94.6%) of the firearms used were personal possessions, with only 3.8 percent of firearm deaths resulting from self-directed use of a military-issued weapon. Regardless of the method of injury, firearms were present in the immediate environment of 58.5 percent of those who died by suicide. Figure 17 identifies the two most common methods of injury and the proportion of deaths that are due to those methods. These findings, related to the methods of injury, are consistent with the data from CY 2013 - CY 2015.
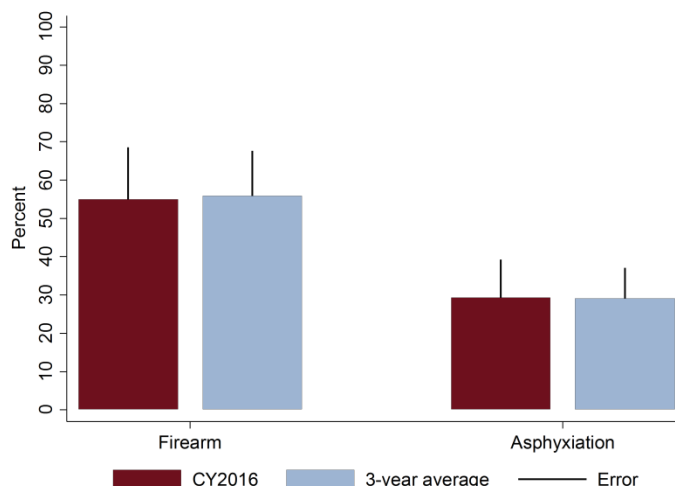
Figure 17. Proportion of CY 2016 DoDSER suicide cases' method of injury compared to the three-year average of CY 2013 - CY 2015

With regard to suicide attempts, drug and/or alcohol overdose was the most frequently reported (56.8%) mechanism of injury among DoDSER suicide-attempt cases. As seen in Figure 18, the other common methods of attempting suicide involved the self-directed use of a sharp or blunt object (19%) and hanging/asphyxiation (14.2%). The prevalence of these mechanisms of injury for CY 2016 were consistent with the data from CY 2013 - CY 2015.
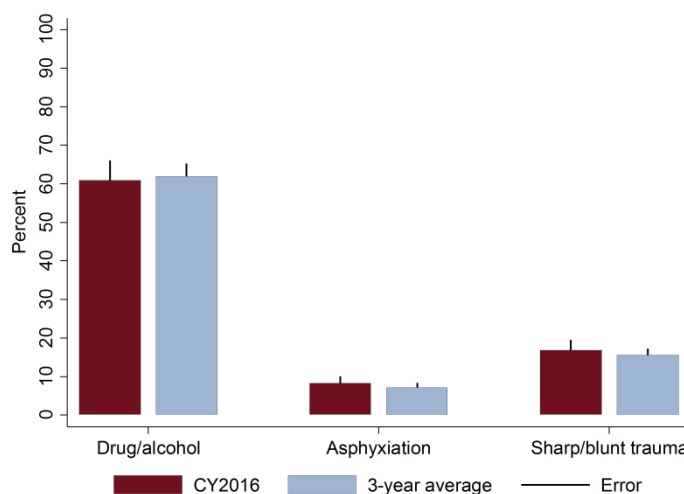
Figure 18. Proportion of CY 2016 DoDSER suicide-attempt cases' method of injury compared to the three-year average of CY 2013 - CY 2015

The Service member's primary residence, including military barracks, was the most common setting in which suicidal behavior occurred (67.5%), with a few cases occurring in other settings, for example, their work environment (4%), a vehicle (8.4%), or a hotel room (4.3%). Table 14 provides a descriptive overview of the settings and circumstances involved in these cases of suicide and attempted suicide.

Demographic Characteristics

The most common characteristics associated with suicide among Service members closely resembled the makeup of the Services overall. The most common demographic profile was non-

Hispanic, white males, age 20–24, rank/grade of E1-E4, and a high school education. This represented 18.7% of all suicide DoDSER cases.

The occurrence of suicide among female Service members rarely accounts for more than 20 cases a year; however, for CY 2016, 21 cases were observed, which allowed a rate of suicide to be calculated for this specific demographic group. Similar to previous years, the proportion of male and female Service members identified in each event type produced a demographic distinction between cases of suicide and cases of suicide attempt. Females accounted for 7.0 percent of DoDSER suicide cases and 30.8 percent of DoDSER suicide-attempt cases.

Demographic and military service characteristics for all DoDSER suicide and suicide-attempt cases are detailed in Tables 12 and 13.

Behavioral Health History

Of those individuals who died by suicide in CY 2016, 44.1 percent had met criteria for at least one current or past behavioral health diagnosis. Substance use (20.7%), adjustment (21.4%), and anxiety (18.7%) disorders were common. However, the most frequent diagnosis was related to a mood disorder (21.7%). Conversely, 52.8 percent of individuals who died by suicide had no known history of a behavioral health diagnosis.

Among those who attempted to die by suicide, 61.8 percent had at least one current or past behavioral health diagnosis present in their medical record. Again, substance use (22.5%), adjustment (27.7%), and anxiety (23.0%) disorders were common. However, the most frequent diagnosis in this group pertained to a mood disorder (31.0%). Among those who attempted suicide, 38.0 percent of individuals had no known behavioral health history.

Table 15 provides data on behavioral health variables related to both common diagnoses and treatment utilization. Figure 19 displays the prevalence of various diagnoses, prior self-harm, and the use of psychotropic medication in the 90 days prior to a suicide-related death. Risk indicators for CY 2016 were consistent with the data from the previous three calendar years.
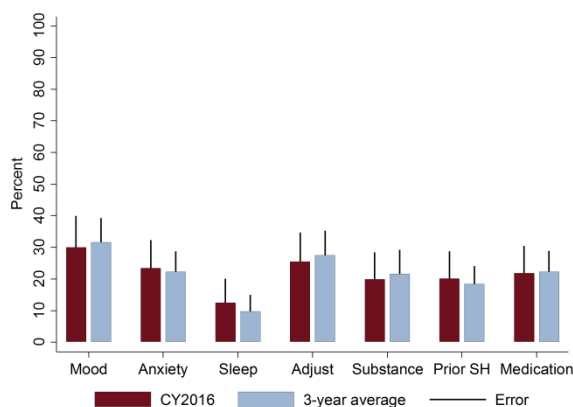
Figure 19. Proportions of behavioral health risk factors in CY 2016 DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
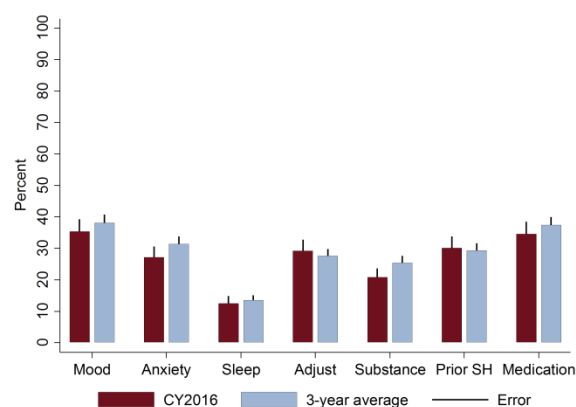
Figure 20. Proportions of behavioral health risk factors in CY 2016 DoDSER suicide attempt cases compared to the three-year average of CY 2013 - CY 2015

Figure 20 displays the prevalence of the same factors among DoDSER suicide-attempt cases. Amongst reports of attempted suicide, there was a significant decrease in the prevalence of anxiety and substance-abuse disorders in CY 2016 compared to the three-year average for CY 2013-CY 2015.

Substance Use

Alcohol use, during the time period immediately preceding death, was identified in 23.4 percent of suicide cases, though the "unknown" response for this item was endorsed for a substantial proportion of cases (47.5%; Table 14). Drug use (including illicit, prescription, and over-the-counter substances) was identified in 7.0 percent of suicides. Proportionally, few deaths resulted from drug/alcohol overdose (3.3%).

Alcohol use immediately prior to the suicidal behavior was present in 29.3 percent of suicide-attempt cases, and 48.6 percent of cases were positive for drug use immediately prior to the suicidal behavior. Prescription drugs had the highest overall frequency of overdose (25.7%).

Health Care Utilization

Regardless of whether or not an individual voluntarily disclosed—or was assessed for—suicidal thoughts, feelings, and behavior, 58.5 percent of the Service members who died by suicide in CY 2016 had been in contact with the MHS in the 90 days prior to their death (Table 15). In total, 29.1% of cases had received either inpatient (6.4%) or outpatient (28.1%) behavioral health services. Substance abuse services and family assistance programs were utilized less at 10.4 and 3.7 percent, respectively. The proportion of Service members who had made contact with the MHS in the 90 days preceding their death was consistent with the three previous years.

A similar pattern was observed for suicide-attempt case reports. In total, 69.3 percent of the reports indicated contact with the MHS in the 90 days prior to the behavior. This included both physical- health visits (58.1%) and behavioral health visits (50.4%). Of the latter, 14.0% of visits were for inpatient behavioral health and 49.3 percent were for outpatient behavioral health services. Additionally, 9.7 percent of reports indicated participation with substance-abuse services and 4.4 percent identified participation with family assistance programs. These proportions were consistent with data from previous years.

Psychosocial Stressors

Overall, the presence of psychosocial stressors in CY 2016 is consistent with the proportionality of stressors in the previous three years. Relationship difficulties, especially strife within—or termination of—an intimate partner relationship, were present in 39.5 percent of suicide cases and 36.3 percent of suicide attempts.

Individuals who died by suicide were frequently involved with legal and administrative stressors (25.1%), as were those who attempted to die by suicide (31.8%). Being 'under investigation' was a shared risk factor among both suicide cases (10.4%) and suicide-attempt (9.6%) reports.
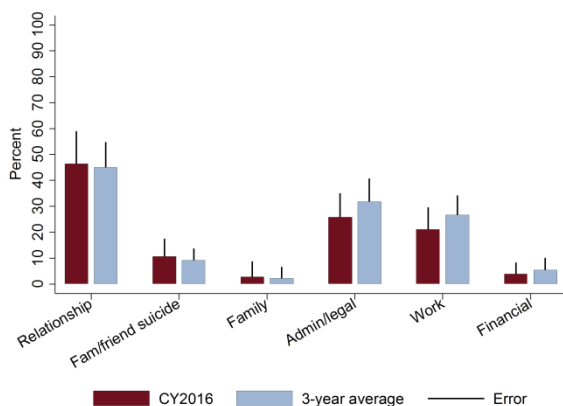
Figure 21. Proportions of stress-related risk factors in CY 2016 DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
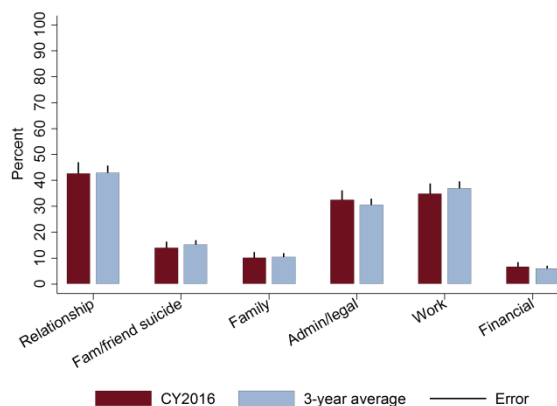
Figure 22. Proportions of stress-related risk factors in CY2016 DoDSER suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

Figures 21 and 22 display the prevalence of six stressors queried in the DoDSER system from CY 2016 compared to the three-year average from CY 2013 - CY 2015. Table 16 also provides data for stressors pertaining to relationships, family issues, legal or administrative problems, work and financial difficulties, and abuse victimization or perpetration. The prevalence of these factors was consistent over time for both suicide and suicide attempt reports. The one identified significant difference was a decrease in the prevalence of administrative/legal problems for suicide cases in CY 2016 relative to the average of CY 2013 - CY 2015.

Sexual Assault

To better assess and understand any potential association between sexual assault and the occurrence of suicide-related behavior, data collected from the DoDSER system were matched against records related to the filing of an unrestricted report of sexual assault. According to the analysis of these data, 1 DoDSER suicide case and 53 DoDSER suicide-attempt cases were associated with incidences of sexual assault that were reported via the unrestricted reporting option and which occurred at any point in time prior to the suicide event. When the date that a sexual assault occurred was restricted to the 12 months preceding the suicide behavior, no DoDSER suicide cases, and 24 DoDSER suicide-attempt cases, were associated with an unrestricted report of a sexual assault. Table 16 provides the number of sexual assaults recorded directly by the DoDSER system. Discrepancies between those cases identified by SAPRO and those identified on the DoDSER surveys could be due to several factors, including utilization of the restricted reporting option.

Latent Class Analysis

An important consideration in surveillance is that risk and protective factors often co-occur. Descriptive analyses that look at individual risk or protective factors may miss this. A latent class analysis was used to describe unique risk factor patterns that occurred in the data. The analysis also provides estimates of how common the various patterns are in the data. A three-class model was identified as the best solution for the suicide case data. The three classes are

depicted in Figure 23. The first class was smallest with approximately 6% of cases assigned to it. They were defined by a strong endorsement of mood and anxiety disorders, substance abuse, active psychotropic medication use prior to death, relationship problems, and administrative/legal problems proximal to the date of death.

The second class included approximately 25% of the suicide cases. This group was defined by a low prevalence of administrative/legal and work problems. Of the behavioral health conditions, mood disorders were the most commonly identified. The third class was the largest with the remaining 69% of suicide decedents assigned to it. This class was defined by a pronounced absence of endorsement of any of the included risk factors in the model. The most common risk factor was relationship difficulty prior to the event; however, this was common for all three classes so it did not contribute substantially in differentiating the class structures.

The latent class analysis of the suicide-attempt cases (Figure 24) also identified a three-class solution as optimal. The first class had approximately 13% of suicide-attempt cases assigned to it. The most common risk factor was an endorsement of adjustment disorder. There was also a lack of comorbid sleep, anxiety, or mood disorders. The second class was slightly larger with approximately 36% of attempt cases assigned to it. The most salient risk factors for this group were mood disorders and active psychotropic medication use prior to the event. The third class was the largest with the remaining 51% of attempt cases assigned to it. This class had low endorsement for almost all risk factors included in the model. Similar to the third class for the suicide decedent model, this model had a moderate endorsement of relationship difficulties. Again, this may simply reflect the ubiquity of this risk factor in the population.

Summary

The occurrence and characteristics of risk factors that were present for cases of suicide and suicide attempt for CY 2016 are consistent, overall, with DoDSER findings from CY 2013 - CY 2015.
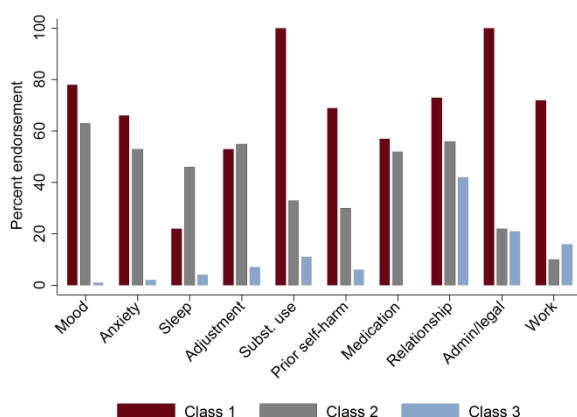
Figure 23. Risk-factor prevalence within each of the latent classes identified among suicide decedents
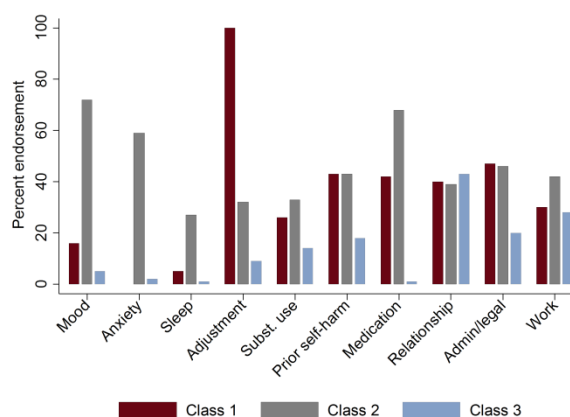
Figure 24. Risk-factor prevalence within each of the latent classes identified among suicide-attempt cases

Table 12. Demographic characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Sex				
Male	278	93.0	874	69.2
Female	21	7.0	389	30.8
Age				
17–19	14	4.7	198	15.7
20–24	115	38.5	628	49.7
25–29	72	24.1	219	17.3
30–34	39	13.0	115	9.1
35–39	28	9.4	61	4.8
40–44	17	5.7	27	2.1
45–64	14	4.7	15	1.2
Race				
American Indian/Alaska Native	5	1.7	18	1.4
Asian/Pacific Islander	13	4.3	84	6.7
Black/African American	37	12.4	269	21.3
White/Caucasian	241	80.6	874	69.2
Other/Unknown	3	1.0	18	1.4
Ethnicity				
Hispanic	31	10.4	192	15.2
Not Hispanic	268	89.6	1,070	84.7
Unknown	0	0.0	1	0.1
Education				
Less than high school	0	0.0	11	0.9
Alternative high school	20	6.7	76	6.0
High school graduate	195	65.2	957	75.8
Associate's or technical degree	31	10.4	138	10.9
Four-year degree	32	10.7	57	4.5
Postgraduate	20	6.7	23	1.8
Unknown	1	0.3	1	0.1
Marital status				
Never married	126	42.1	688	54.5
Married	147	49.2	515	40.8
Separated	2	0.7	2	0.2
Divorced	23	7.7	58	4.6
Widowed	1	0.3	0	0.0

[1]Data on demographic characteristics primarily provided by DMDC.

Table 13. Military characteristics[1] of suicide and suicide-attempt DoDSER reports, CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Component				
Active	**274**	**91.6**	**1,195**	**94.6**
Reserve	**10**	**3.3**	**33**	**2.6**
Guard	**15**	**5.0**	**35**	**2.8**
Rank/grade				
Cadet/midshipman	**0**	**0.0**	**0**	**0.0**
Enlisted, unknown grade	**0**	**0.0**	**32**	**2.5**
E1–E4	**137**	**45.8**	**917**	**72.6**
E5–E9	**121**	**40.5**	**273**	**21.6**
Warrant	**4**	**1.3**	**2**	**0.2**
Officer	**37**	**12.4**	**39**	**3.1**
Unknown	**0**	**0.0**	**0**	**0.0**
Enlisted occupational group				
Infantry, gun crews, and seamanship specialists	**55**	**18.4**	**202**	**16.0**
Electronic equipment repairers	**24**	**8.0**	**90**	**7.1**
Communications and intelligence specialists	**35**	**11.7**	**105**	**8.3**
Health care specialists	**18**	**6.0**	**119**	**9.4**
Other technical and allied specialists	**9**	**3.0**	**22**	**1.7**
Functional support and administration	**37**	**12.4**	**180**	**14.3**
Electrical/mechanical equipment repairers	**50**	**16.7**	**186**	**14.7**
Craftsworkers	**7**	**2.3**	**38**	**3.0**
Service and supply handlers	**18**	**6.0**	**169**	**13.4**
Non-occupational	**3**	**1.0**	**86**	**6.8**
Unknown	**2**	**0.7**	**25**	**2.0**
Officer occupational group				
General officers and executives	**1**	**0.3**	**0**	**0.0**
Tactical operations officers	**12**	**4.0**	**14**	**1.1**
Intelligence officers	**5**	**1.7**	**2**	**0.2**
Engineering and maintenance officers	**10**	**3.3**	**7**	**0.6**
Scientists and professionals	**1**	**0.3**	**2**	**0.2**
Health care officers	**7**	**2.3**	**7**	**0.6**
Administrators	**2**	**0.7**	**1**	**0.1**
Supply, procurement, and allied officers	**1**	**0.3**	**6**	**0.5**
Non-occupational	**2**	**0.7**	**2**	**0.2**
Unknown	**0**	**0.0**	**0**	**0.0**
History of deployment				
Yes	**168**	**56.2**	**448**	**35.5**
Number of deployments				
1	66	22.1	251	19.9
2	50	16.7	102	8.1
3 or more	52	17.4	95	7.5
Specific deployment locations[2]				
Afghanistan	72	24.1	195	15.4
Iraq	55	18.4	132	10.5
Kuwait	74	24.7	189	15.0
No	**130**	**43.5**	**815**	**64.5**
Unknown	**1**	**0.3**	**0**	**0.0**

[1]Data on military characteristics primarily provided by DMDC.
[2]Subcategories are not mutually exclusive.

Table 14. Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Event location country				
United States	270	90.3	1,071	84.8
Iraq	1	0.3	2	0.2
Afghanistan	0	0.0	10	0.8
Kuwait	0	0.0	23	1.8
Korea	4	1.3	46	3.6
Other Europe	3	1.0	8	0.6
North America	0	0.0	3	0.2
Central or South America	0	0.0	1	0.1
Japan	8	2.7	44	3.5
Belgium	0	0.0	2	0.2
Germany	3	1.0	18	1.4
United Kingdom	0	0.0	7	0.6
Other	9	3.0	22	1.7
Unknown	1	0.3	6	0.5
Event setting				
Own residence	143	47.8	472	37.4
Barracks	57	19.1	555	43.9
Residence of friend or family	23	7.7	45	3.6
Work/jobsite	12	4.0	34	2.7
Automobile	25	8.4	63	5.0
Inpatient medical facility	1	0.3	12	1.0
Hotel	13	4.3	10	0.8
Other	23	7.7	68	5.4
Unknown	2	0.7	4	0.3
Event method[1]				
Drugs/alcohol	10	3.3	717	56.8
Hanging/asphyxiation	84	28.1	179	14.2
Poisoning	5	1.7	48	3.8
Firearm	186	62.2	57	4.5
Military firearm	7	2.3	13	1.0
Non-military firearm	176	58.9	44	3.5
Firearm of unknown origin	3	1.0	0	0
Trauma, sharp or blunt force	14	4.7	240	19.0
Other	0	0.0	18	1.4
Pending/unknown	0	0.0	4	0.3
Used alcohol during event				
Yes	70	23.4	370	29.3
No	87	29.1	854	67.6
Unknown	142	47.5	39	3.1

Table 14 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Used drugs during event				
Yes[2]	**21**	**7.0**	**614**	**48.6**
Illegal drugs				
Used, overdose	0	0.0	41	3.2
Used, no overdose	4	1.3	25	2.0
Prescription drugs				
Used, overdose	6	2.0	325	25.7
Used, no overdose	6	2.0	65	5.1
Non-prescription drugs				
Used, overdose	5	1.7	250	19.8
Used, no overdose	1	0.3	42	3.3
No	**135**	**45.2**	**618**	**48.9**
Unknown	**143**	**47.8**	**31**	**2.5**
Death-risk gambling				
Yes	**3**	**1.0**	**23**	**1.8**
No	**269**	**90.0**	**1,205**	**95.4**
Unknown	**27**	**9.0**	**35**	**2.8**
Planned/premeditated				
Yes	**121**	**40.5**	**273**	**21.6**
No	**106**	**35.5**	**870**	**68.9**
Unknown	**72**	**24.1**	**120**	**9.5**
Observable				
Yes	**61**	**20.4**	**510**	**40.4**
No	**220**	**73.6**	**689**	**54.6**
Unknown	**18**	**6.0**	**64**	**5.1**
Suicide note left				
Yes	**78**	**26.1**	**131**	**10.4**
No	**172**	**57.5**	**1,096**	**86.8**
Unknown	**49**	**16.4**	**36**	**2.9**
Communicated potential for self-harm (other than suicide note)				
Yes	**70**	**23.4**	**286**	**22.6**
How communicated[2]				
Written	3	1.0	9	0.7
Verbal	43	14.4	175	13.9
Text	31	10.4	115	9.1
Other	3	1.0	11	0.9
To whom communicated[2]				
Supervisor	8	2.7	44	3.5
Chaplain	3	1.0	4	0.3
Mental health staff	14	4.7	68	5.4
Friend	27	9.0	101	8.0
Spouse	26	8.7	100	7.9
Family	2	0.7	23	1.8
Other	4	1.3	9	0.7
No	**194**	**64.9**	**916**	**72.5**
Unknown	**35**	**11.7**	**61**	**4.8**

Table 14 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Residence at time of event				
Barracks	**75**	**25.1**	**617**	**48.9**
Bachelor Enlisted/Officer Quarters	**12**	**4.0**	**24**	**1.9**
On-base family housing	**33**	**11.0**	**102**	**8.1**
Off-base	**157**	**52.5**	**451**	**35.7**
Ship	**3**	**1.0**	**19**	**1.5**
Other	**17**	**5.7**	**37**	**2.9**
Unknown	**2**	**0.7**	**13**	**1.0**
Reside alone at time of event				
Yes	**119**	**39.8**	**411**	**32.5**
No	**169**	**56.5**	**824**	**65.2**
Unknown	**11**	**3.7**	**28**	**2.2**
Gun in home/immediate environment				
Yes	**175**	**58.5**	**142**	**11.2**
No	**86**	**28.8**	**1,035**	**81.9**
Unknown	**38**	**12.7**	**86**	**6.8**
Duty environment[2]				
Garrison/permanent duty station	**233**	**77.9**	**952**	**75.4**
Leave	**18**	**6.0**	**35**	**2.8**
Temporary duty	**7**	**2.3**	**9**	**0.7**
Training	**16**	**5.4**	**120**	**9.5**
Other/unknown	**40**	**13.4**	**107**	**8.5**
Deployed at time of event				
Yes	**4**	**1.3**	**45**	**3.6**
Location				
Afghanistan	0	0.0	11	0.9
Kuwait	0	0.0	15	1.2
Other	4	1.3	19	1.5
No	**295**	**98.6**	**1,218**	**96.4**

[1]Data on the cause of the death were provided by AFMES.
[2]Subcategories are not mutually exclusive.

Table 15. Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Any mental health diagnosis				
Yes[1]	**132**	**44.1**	**780**	**61.8**
Mood disorder	65	21.7	392	31.0
Anxiety disorder[2]	56	18.7	291	23.0
Personality disorder	13	4.3	85	6.7
Psychotic disorder	2	0.7	11	0.9
Adjustment disorder	64	21.4	350	27.7
Substance abuse disorder	62	20.7	284	22.5
No	**158**	**52.8**	**480**	**38.0**
Unknown	**9**	**3.0**	**3**	**0.2**
Sleep disorder				
Yes	**46**	**15.4**	**141**	**11.2**
No	**237**	**79.3**	**1,097**	**86.9**
Unknown	**16**	**5.4**	**25**	**2.0**
History of traumatic brain injury				
Yes	**11**	**3.7**	**49**	**3.9**
No	**274**	**91.6**	**1,187**	**94.0**
Unknown	**14**	**4.7**	**27**	**2.1**
Family history of mental illness				
Yes	**42**	**14.0**	**423**	**33.5**
No	**148**	**49.5**	**752**	**59.5**
Unknown	**109**	**36.5**	**88**	**7.0**
Prior self-injury				
Yes	**40**	**13.4**	**385**	**30.5**
Number of prior self-injuries				
One	18	6.0	191	15.1
More than one	22	7.4	191	15.1
Unknown	0	0.0	3.0	0.2
Current event similar to prior	11	3.7	199	15.8
No	**214**	**71.6**	**839**	**66.4**
Unknown	**45**	**15.1**	**39**	**3.1**
Psychotropic medications, last 90 days				
Yes[1]	**49**	**16.4**	**396**	**31.4**
Antidepressant	40	13.4	343	27.2
Antianxiety	16	5.4	182	14.4
Antimanic	2	0.7	12	1.0
Anticonvulsant	6	2.0	18	1.4
Antipsychotic	7	2.3	36	2.9
Sleep medication	23	7.7	196	15.5
No	**250**	**83.6**	**866**	**68.6**
Unknown	**0**	**0.0**	**1**	**0.1**

Table 15 (cont). Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Pain medication at time of event				
Yes	**34**	**11.4**	**209**	**16.5**
Opioid medication	10	3.3	67	5.3
No	**216**	**72.2**	**1,004**	**79.5**
Unknown	**49**	**16.4**	**50**	**4.0**
Health/social services, last 90 days				
Yes[1]	**175**	**58.5**	**875**	**69.3**
Medical treatment facility	162	54.2	734	58.1
Substance Abuse Services	31	10.4	123	9.7
Family Assistance Program	11	3.7	56	4.4
Outpatient mental health	84	28.1	623	49.3
Inpatient mental health	19	6.4	177	14.0
No	**119**	**39.8**	**381**	**30.2**
Unknown	**5**	**1.7**	**7**	**0.6**

[1]Subcategories are not mutually exclusive.

[2]Survey form used for this CY used DSM-IV taxonomy for behavioral health diagnoses; thus posttraumatic stress disorder is subsumed under the "Anxiety disorder" category.

Table 16. Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Failed or failing relationship, last 90 days				
Yes[1]	**132**	**44.1**	**522**	**41.3**
Intimate relationship	118	39.5	459	36.3
Other relationship	37	12.4	140	11.1
No	**143**	**47.8**	**727**	**57.6**
Unknown	**24**	**8.0**	**14**	**1.1**
Friend and family stressors, last 90 days				
Yes[1]	**17**	**5.7**	**122**	**9.7**
Death of spouse or other family member (not suicide)	7	2.3	45	3.6
Death of friend (not suicide)	2	0.7	29	2.3
Serious illness of friend or family member	9	3.0	59	4.7
No	**255**	**85.3**	**1,124**	**89**
Unknown	**27**	**9.0**	**17**	**1.3**
History of friend or family death by suicide				
Yes[1]	**25**	**8.4**	**175**	**13.9**
Spouse	0	0.0	0	0.0
Family other than spouse	13	4.3	72	5.7
Friend	13	4.3	122	9.7
No	**263**	**88.0**	**1,073**	**85.0**
Unknown	**11**	**3.7**	**15**	**1.2**
Administrative/legal problems, last 90 days				
Yes[1]	**75**	**25.1**	**402**	**31.8**
Courts martial proceedings	6	2.0	9	0.7
Article 15/Non-judicial punishment	14	4.7	85	6.7
Administrative separation proceedings	11	3.7	123	9.7
Away without leave/deserter status	7	2.3	25	2.0
Medical evaluation board proceedings	9	3.0	117	9.3
Civil legal proceedings	17	5.7	69	5.5
Non-selection for promotion	7	2.3	38	3.0
Under investigation	31	10.4	121	9.6
No	**219**	**73.2**	**854**	**67.6**
Unknown	**5**	**1.7**	**7**	**0.6**
Excessive debt/bankruptcy, last 90 days				
Yes	**13**	**4.3**	**83**	**6.6**
No	**241**	**80.6**	**1,134**	**89.8**
Unknown	**45**	**15.1**	**46**	**3.6**
Workplace, last 90 days				
Yes[1]	**50**	**16.7**	**422**	**33.4**
Job problems	40	13.4	316	25.0
Supervisor/coworker issues	17	5.7	241	19.1
Poor performance review	16	5.4	131	10.4
Unit/workplace hazing	0	0.0	35	2.8
No	**234**	**78.3**	**825**	**65.3**
Unknown	**15**	**5.0**	**16**	**1.3**

Table 16 (cont). Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, all Services				
	Suicide (n = 299)		Suicide attempt (n = 1,263)	
	No.	%	No.	%
Abuse, assault, or harassment victimization, last year				
Yes[1]	**8**	**2.7**	**155**	**12.3**
Physical abuse or assault	1	0.3	50	4.0
Sexual abuse or assault	3	1.0	60	4.8
Emotional abuse	5	1.7	84	6.7
Sexual harassment	2	0.7	26	2.1
No	**255**	**85.3**	**1,089**	**86.2**
Unknown	**36**	**12**	**19**	**1.5**
Abuse, assault, or harassment perpetration, last year				
Yes[1]	**25**	**8.4**	**73**	**5.8**
Physical abuse or assault	12	4.0	44	3.5
Sexual abuse or assault	13	4.3	18	1.4
Emotional abuse	8	2.7	24	1.9
Sexual harassment	2	0.7	3	0.2
No	**244**	**81.6**	**1,163**	**92.1**
Unknown	**30**	**10**	**27**	**2.1**

[1]Subcategories are not mutually exclusive.

CHAPTER 4

U.S. Air Force

DoDSER Results Summary: Air Force

This chapter presents data collected on cases of suicide and suicide attempt involving members of the Air Force. The DoDSER system collects data on demographic, contextual, behavioral health, historical, and risk-related factors for all incidences of suicide and all suicide attempts that result in hospitalization or evacuation from a military theater of operations. Cases involving both Active Component Service members and SELRES Service members who were in a duty status at the time of the event are subject to this reporting requirement. Particular variables of interest are presented in the following text, however, the reader is encouraged to examine the DoDSER data tables that follow this chapter's text for the full Air Force data, presented separately by event type.

<u>Suicide Mortality</u>

As of March 31, 2017, the AFMES had identified 66 confirmed or pending cases of suicide that occurred during CY 2016 and involved a member of the Air Force. A total of 61 of these deaths occurred among members of the Air Force's Active Component. The remaining 5 deaths occurred among SELRES Service members who were in a duty status at the time of their death. A DoDSER survey was submitted for all 66 deaths. These 66 DoDSER surveys were used to populate the data tables included in this chapter.

One of these suicide-related deaths was associated with one or more previous suicide attempts that occurred between CY 2010 and CY 2016. The number of days between the most recent suicide attempt and the date of death was 111.

<u>Incidence of Attempted Suicide</u>

Over the course of CY 2016, 297 non-fatal suicide attempts were identified among members of the Air Force. These reports provided data on suicide attempts for 278 unique individuals. A total of 264 Airmen had a single suicide-attempt recorded; two or more suicide-attempt were recorded for 14 (4.7%) individuals. The median number of days between the most recent suicide attempt and the penultimate attempt was 66 days.
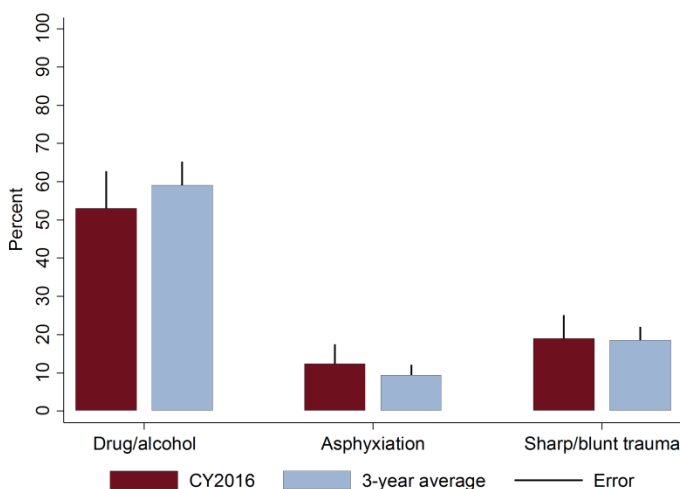
<u>Event Information</u>

It is important to examine whether the Airmen who died by suicide had made an effort to communicate their suicidal thoughts or feelings to their family, social, and peer networks prior to engaging in suicidal behavior. Data from CY 2016 suggest that 19.7 percent of those who died by suicide had communicated their desire to die prior to engaging in the behavior that would ultimately cause their death. Most frequently, these communications involved verbal communications about their thoughts and feelings (13.6%) or sending electronic (10.6%) messages. Spouses (7.6%) and friends (10.6%) were the most common recipients of these messages. Communication of suicidal thoughts and feelings were either not made or recognized in 74.2 percent of suicide cases. Separately, suicide notes were left in 36.4 percent of Air Force suicide deaths.

Firearms were the method of injury most often identified in Air Force suicide cases (56.1%). All (100.0%) of the firearms used were personal possessions; no firearm deaths resulted from self-directed use of a military-issued weapon. Regardless of the method of injury, firearms were present in the immediate environment of 54.5 percent of Airmen who died by suicide. Figure 25 identifies the two most common methods of injury and the proportion of deaths that are due to those methods.
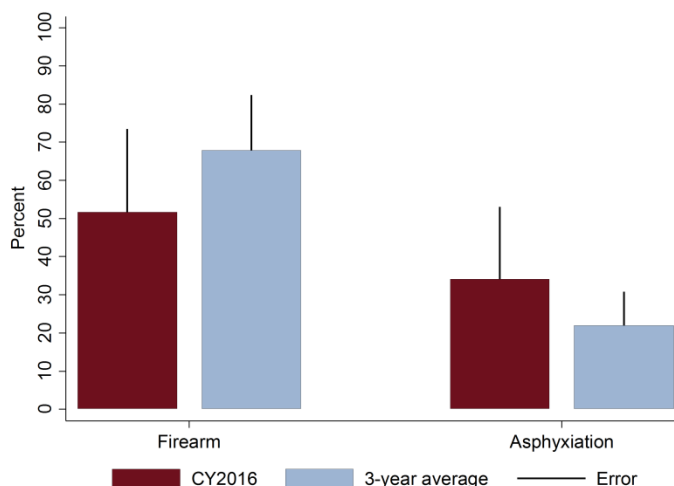
Figure 25. Proportion of CY 2016 Air Force DoDSER suicide cases' method of injury compared to the three-year average of CY 2013 - CY 2015

With regard to suicide attempts, drug and/or alcohol overdose was the most frequently reported (52.5%) mechanism of injury among the Air Force's DoDSER suicide-attempt cases. As seen in Figure 26, the other common methods of attempting suicide involved the self-directed use of a sharp or blunt object (19.2%) and asphyxiation (15.5%).

An Airman's primary residence, including military barracks, was the most common setting in which suicidal behavior occurred (74.2%), with a few cases occurring in other settings, for example, their work environment (3.0%), a vehicle (10.6%), or a hotel room (3.0%). Table 19 provides a descriptive overview of the settings and circumstances involved in these cases of suicide and attempted suicide.

Figure 26. Proportion of CY 2016 Air Force DoDSER suicide-attempt cases' method of injury compared to the three-year average of CY 2013 - CY 2015

Demographic Characteristics

The most common demographic characteristics associated with suicide among members of the Air Force closely resembles the makeup of the Air Force population overall. The most common demographic profile was non-Hispanic, white males, age 20–24, rank/grade of E1–E4, and a high school education. This represented 15.2% of all suicide DoDSER cases.

The occurrence of suicide among female Airmen continues to comprise fewer than 20 cases a year, precluding a rate calculation. Similar to previous years, the proportion of male and female Airmen identified in each event type produced a demographic distinction between cases of suicide and cases of suicide attempt. Female Airmen accounted for 7.6 percent of DoDSER suicide cases and 38.7 percent of DoDSER suicide-attempt cases.

Demographic and military service characteristics for all Air Force DoDSER suicide and suicide-attempt cases are detailed in Tables 17 and 18.
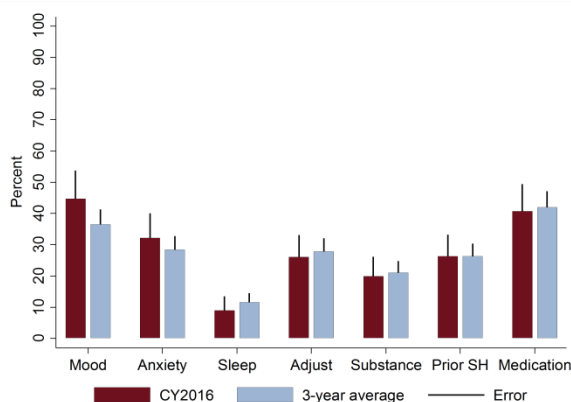
<u>Behavioral health History</u>

Of those individuals who died by suicide in CY 2016, 40.9 percent had met criteria for at least one current or past behavioral health diagnosis. Substance abuse (12.1%) and anxiety (16.7%) disorders were common. The most frequent diagnoses were mood (19.7%) and adjustment (19.7%) disorders. Conversely, 59.1 percent of Airmen who died by suicide had no known behavioral health history.

Among reports of those who attempted to die by suicide, 66.7 percent identified at least one current or past behavioral health diagnosis present in their medical record. Again, adjustment (24.6%), anxiety (31.6%), and substance use (18.9%) disorders were common. However, the most frequent diagnosis pertained to a mood disorder (42.8%). Thirty-three percent of reports did not identify any known behavioral health history.

Table 20 provides data on behavioral health variables related to both common diagnoses and treatment utilization. Figure 27 displays the prevalence of various diagnoses, prior self-harm and the use of psychotropic medication in the 90 days prior to a suicide-related death. Figure 28 displays the prevalence of the same factors among DoDSER suicide-attempt cases.
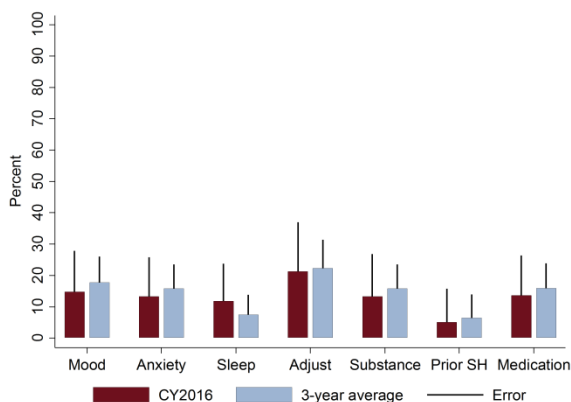
Figure 27. Proportions of behavioral health risk factors in CY 2016 Air Force DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015

Figure 28. Proportions of behavioral health risk factors in CY 2016 Air Force DoDSER suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

Substance Use

Alcohol use, during the time period immediately preceding death, was identified in 27.3 percent of Air Force suicide cases, though the "unknown" response for this item was endorsed for a substantial proportion of cases (45.5%; Table 19). Drug use (including illicit, prescription, and over-the-counter substances) was identified in 7.6 percent of Air Force suicides. Proportionally, few deaths resulted from drug/alcohol overdose (4.5%).

Alcohol use immediately prior to the suicidal behavior was present in 33.3 percent of Air Force suicide-attempt case reports, and 46.8 percent of Air Force case reports indicated drug use immediately prior to the suicidal behavior. Prescription drugs had the highest overall frequency of overdose (27.9%).

Health Care Utilization

Regardless of whether or not an individual voluntarily disclosed—or was assessed for—suicidal thoughts, feelings, and behavior, 65.2 percent of the Airmen who died by suicide in CY 2016 had been in contact with the MHS in the 90 days prior to their death (Table 20). Overall, 30.3 percent had received either inpatient (4.5%) or outpatient (33.3%) behavioral health services. Of the total, 12.1 percent of Airmen who died by suicide had participated in either substance abuse or family assistance programs.

A similar pattern was observed for suicide-attempt cases: 75.4 percent of the Airmen who attempted suicide in CY 2016 had been in contact with the MHS in the 90 days prior to the behavior. Overall, 54.2 percent had received either inpatient (16.8%) or outpatient (51.9%) behavioral health services. Of the total, 12.1 percent had participated in substance-abuse services and 7.1 percent had participated in family assistance programs.

Psychosocial Stressors

Overall, the presence of psychosocial stressors among Airmen in CY 2016 is consistent with the proportionality of stressors in the previous four years. Relationship difficulties, especially strife within—or termination of—an intimate-partner relationship, were present in 43.9 percent of Air Force suicide cases and 38.7 percent of Air Force suicide-attempt cases.

Reports of deaths by suicide and suicide attempts identified legal/administrative risk factors as common for both groups at 25.8 percent and 32.0 percent, respectively. Figure 29 (cases of suicide) and Figure 30 (cases of suicide attempt) display the prevalence of six stressors queried in the DoDSER system from CY 2016 compared to the three-year average from CY 2013 - CY 2015. Table 21 also provides data for stressors pertaining to relationships, family issues, legal or administrative problems, work and financial difficulties, and abuse victimization or perpetration.
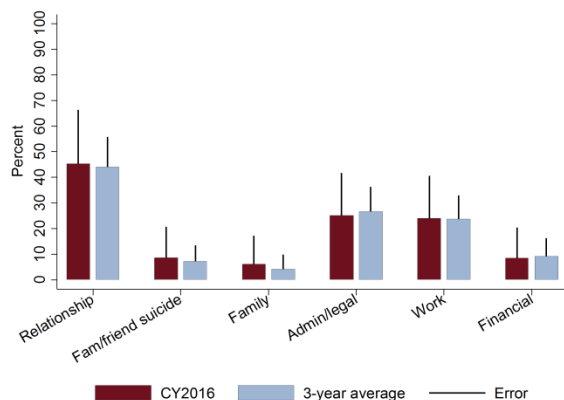
Figure 29. Proportions of stress-related risk factors in CY 2016 Air Force DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
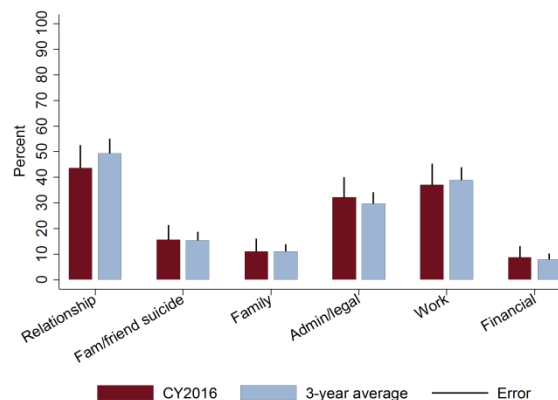
Figure 30. Proportions of behavioral health risk factors in CY 2016 Air Force DoDSER suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

Sexual Assault

To better assess and understand any potential association between sexual assault and the occurrence of suicide-related behavior, Air Force data collected from the DoDSER system were matched against records related to the filing of an unrestricted report of sexual assault. According to the analysis of these data, no Air Force DoDSER suicide cases and 3 Air Force DoDSER suicide-attempt cases were associated with an unrestricted report of a sexual assault that occurred during the 12 months preceding the suicide-related event. When the limit of the 12 months preceding the suicide-related behavior was removed, no cases of suicide and 15 cases of attempted suicide were associated with unrestricted reports of sexual assault. Table 21 provides the number of sexual assaults recorded directly by the DoDSER system. Discrepancies between those cases identified by SAPRO and those identified on the DoDSER surveys could be due to several factors, including utilization of the restricted reporting option.

Table 17. Demographic characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Sex				
Male	**61**	**92.4**	**182**	**61.3**
Female	**5**	**7.6**	**115**	**38.7**
Age				
17–19	**4**	**6.1**	**20**	**6.7**
20–24	**14**	**21.2**	**143**	**48.1**
25–29	**19**	**28.8**	**72**	**24.2**
30–34	**11**	**16.7**	**30**	**10.1**
35–39	**9**	**13.6**	**22**	**7.4**
40–44	**5**	**7.6**	**8**	**2.7**
45–64	**4**	**6.1**	**2**	**0.7**
Race				
American Indian/Alaska Native	**0**	**0.0**	**4**	**1.3**
Asian/Pacific Islander	**2**	**3.0**	**18**	**6.1**
Black/African American	**7**	**10.6**	**44**	**14.8**
White/Caucasian	**56**	**84.8**	**224**	**75.4**
Other/Unknown	**1**	**1.5**	**7**	**2.4**
Ethnicity				
Hispanic	**7**	**10.6**	**36**	**12.1**
Not Hispanic	**59**	**89.4**	**261**	**87.9**
Unknown	**0**	**0.0**	**0**	**0.0**
Education				
Less than high school	**0**	**0.0**	**0**	**0.0**
Alternative high school	**0**	**0.0**	**1**	**0.3**
High school graduate	**41**	**62.1**	**216**	**72.7**
Associate's or technical degree	**8**	**12.1**	**53**	**17.8**
Four-year degree	**6**	**9.1**	**20**	**6.7**
Postgraduate	**10**	**15.2**	**6**	**2.0**
Unknown	**1**	**1.5**	**1**	**0.3**
Marital status				
Never married	**30**	**45.5**	**141**	**47.5**
Married	**27**	**40.9**	**129**	**43.4**
Separated	**0**	**0.0**	**1**	**0.3**
Divorced	**8**	**12.1**	**26**	**8.8**
Widowed	**1**	**1.5**	**0**	**0.0**

[1]Data on demographic characteristics primarily provided by DMDC.

Table 18. Military characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Component				
Active	**61**	**92.4**	**285**	**96**
Reserve	**3**	**4.5**	**5**	**1.7**
Guard	**2**	**3.0**	**7**	**2.4**
Rank/grade				
Cadet/midshipman	**0**	**0.0**	**0**	**0.0**
Enlisted, unknown grade	**0**	**0.0**	**3**	**1.0**
E1–E4	**22**	**33.3**	**193**	**65**
E5–E9	**31**	**47**	**91**	**30.6**
Officer	**13**	**19.7**	**10**	**3.4**
Unknown	**0**	**0.0**	**0**	**0.0**
Enlisted occupational group				
Infantry, gun crews and seamanship specialists	**1**	**1.5**	**4**	**1.3**
Electronic equipment repairers	**6**	**9.1**	**21**	**7.1**
Communications and intelligence specialists	**5**	**7.6**	**19**	**6.4**
Health care specialists	**2**	**3.0**	**34**	**11.4**
Other technical and allied specialists	**3**	**4.5**	**6**	**2.0**
Functional support and administration	**12**	**18.2**	**64**	**21.5**
Electrical/mechanical equipment repairers	**15**	**22.7**	**52**	**17.5**
Craftsworkers	**2**	**3.0**	**8**	**2.7**
Service and supply handlers	**5**	**7.6**	**53**	**17.8**
Non-occupational	**1**	**1.5**	**18**	**6.1**
Unknown	**1**	**1.5**	**8**	**2.7**
Officer occupational group				
General officers and executives	**0**	**0.0**	**0**	**0.0**
Tactical operations officers	**3**	**4.5**	**3**	**1.0**
Intelligence officers	**3**	**4.5**	**2**	**0.7**
Engineering and maintenance officers	**2**	**3.0**	**2**	**0.7**
Scientists and professionals	**1**	**1.5**	**0**	**0.0**
Health care officers	**2**	**3.0**	**2**	**0.7**
Administrators	**1**	**1.5**	**0**	**0.0**
Supply, procurement and allied officers	**1**	**1.5**	**1**	**0.3**
Non-occupational	**0**	**0.0**	**0**	**0.0**
Unknown	**0**	**0.0**	**0**	**0.0**
History of deployment				
Yes	**44**	**66.7**	**113**	**38.0**
Number of deployments				
1	14	21.2	57	19.2
2	14	21.2	25	8.4
3 or more	16	24.2	31	10.4
Specific deployment locations[2]				
Afghanistan	17	25.8	36	12.1
Iraq	8	12.1	28	9.4
Kuwait	14	21.2	21	7.1
No	**22**	**33.3**	**184**	**62.0**
Unknown	**0**	**0.0**	**0**	**0.0**

[1]Data on military characteristics primarily provided by DMDC.
[2]Subcategories are not mutually exclusive.

Table 19. Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Event location country				
United States	**56**	**84.8**	**241**	**81.1**
Iraq	**0**	**0.0**	**0**	**0.0**
Afghanistan	**0**	**0.0**	**2**	**0.7**
Kuwait	**0**	**0.0**	**1**	**0.3**
Korea	**0**	**0.0**	**9**	**3.0**
Other Europe	**1**	**1.5**	**0**	**0.0**
North America	**0**	**0.0**	**1**	**0.3**
Central or South America	**0**	**0.0**	**0**	**0.0**
Japan	**5**	**7.6**	**15**	**5.1**
Belgium	**0**	**0.0**	**0**	**0.0**
Germany	**0**	**0.0**	**12**	**4.0**
United Kingdom	**0**	**0.0**	**7**	**2.4**
Other	**4**	**6.1**	**8**	**2.7**
Unknown	**0**	**0.0**	**1**	**0.3**
Event setting				
Own residence	**40**	**60.6**	**144**	**48.5**
Barracks	**9**	**13.6**	**85**	**28.6**
Residence of friend or family	**5**	**7.6**	**15**	**5.1**
Work/jobsite	**2**	**3.0**	**6**	**2.0**
Automobile	**7**	**10.6**	**21**	**7.1**
Inpatient medical facility	**0**	**0.0**	**4**	**1.3**
Hotel	**2**	**3.0**	**5**	**1.7**
Other	**1**	**1.5**	**17**	**5.7**
Unknown	**0**	**0.0**	**0**	**0.0**
Event method[1]				
Drugs/alcohol	**3**	**4.5**	**156**	**52.5**
Hanging/asphyxiation	**22**	**33.3**	**46**	**15.5**
Poisoning	**2**	**3.0**	**12**	**4.0**
Firearm	**37**	**56.1**	**17**	**5.7**
Military firearm	0	0.0	4	1.3
Non-military firearm	37	56.1	13	4.4
Firearm of unknown origin	0	0.0	0	0.0
Trauma, sharp or blunt force	**2**	**3.0**	**57**	**19.2**
Other	**0**	**0.0**	**8**	**2.7**
Pending/unknown	**0**	**0.0**	**1**	**0.3**
Used alcohol during event				
Yes	**18**	**27.3**	**99**	**33.3**
No	**18**	**27.3**	**192**	**64.6**
Unknown	**30**	**45.5**	**6**	**2.0**

Table 19 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Used drugs during event				
Yes	**5**	**7.6**	**139**	**46.8**
Illegal drugs				
Used, overdose	0	0.0	5	1.7
Used, no overdose	1	1.5	3	1.0
Prescription drugs				
Used, overdose	2	3.0	83	27.9
Used, no overdose	0	0.0	21	7.1
Non-prescription drugs				
Used, overdose	2	3.0	43	14.5
Used, no overdose	1	1.5	14	4.7
No	**32**	**48.5**	**152**	**51.2**
Unknown	**29**	**43.9**	**6**	**2**
Death-risk gambling				
Yes	**0**	**0.0**	**7**	**2.4**
No	**59**	**89.4**	**283**	**95.3**
Unknown	**7**	**10.6**	**7**	**2.4**
Planned/premeditated				
Yes	**21**	**31.8**	**71**	**23.9**
No	**24**	**36.4**	**193**	**65.0**
Unknown	**21**	**31.8**	**33**	**11.1**
Observable				
Yes	**16**	**24.2**	**115**	**38.7**
No	**48**	**72.7**	**174**	**58.6**
Unknown	**2**	**3.0**	**8**	**2.7**
Suicide note left				
Yes	**24**	**36.4**	**43**	**14.5**
No	**37**	**56.1**	**245**	**82.5**
Unknown	**5**	**7.6**	**9**	**3.0**
Communicated potential for self-harm (other than suicide note)				
Yes	**13**	**19.7**	**74**	**24.9**
How communicated[2]				
Written	2	3.0	4	1.3
Verbal	9	13.6	48	16.2
Text	7	10.6	21	7.1
Other	0	0.0	5	1.7
To whom communicated[2]				
Supervisor	2	3.0	10	3.4
Chaplain	1	1.5	0	0.0
Mental health staff	4	6.1	24	8.1
Friend	7	10.6	23	7.7
Spouse	5	7.6	27	9.1
Family	0	0.0	5	1.7
Other	1	1.5	0	0.0
No	**49**	**74.2**	**214**	**72.1**
Unknown	**4**	**6.1**	**9**	**3.0**

Table 19 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Residence at time of event				
Barracks	7	10.6	94	31.6
Bachelor Enlisted/Officer Quarters	4	6.1	8	2.7
On-base family housing	7	10.6	33	11.1
Off-base	43	65.2	145	48.8
Ship	0	0.0	0	0.0
Other	5	7.6	14	4.7
Unknown	0	0.0	3	1.0
Reside alone at time of event				
Yes	41	62.1	134	45.1
No	25	37.9	158	53.2
Unknown	0	0.0	5	1.7
Gun in home/immediate environment				
Yes	36	54.5	42	14.1
No	20	30.3	245	82.5
Unknown	10	15.2	10	3.4
Duty environment[2]				
Garrison/permanent duty station	55	83.3	223	75.1
Leave	5	7.6	13	4.4
Temporary duty	0	0.0	4	1.3
Training	2	3.0	10	3.4
Other	4	6.1	43	14.5
Deployed at time of event				
Yes	2	3.0	2	0.7
Location				
Afghanistan	0	0.0	0	0.0
Kuwait	0	0.0	0	0.0
Other/Unknown	2	3.0	2	0.6
No	64	97.0	295	99.3

[1]Data on the cause of the death were provided by AFMES.
[2]Subcategories are not mutually exclusive.

Table 20. Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Any mental health diagnosis				
Yes[1]	**27**	**40.9**	**198**	**66.7**
Mood disorder	13	19.7	127	42.8
Anxiety disorder[2]	11	16.7	94	31.6
Personality disorder	3	4.5	36	12.1
Psychotic disorder	0	0.0	5	1.7
Adjustment disorder	13	19.7	73	24.6
Substance abuse disorder	8	12.1	56	18.9
No	**39**	**59.1**	**99**	**33.3**
Unknown	**0**	**0.0**	**0**	**0.0**
Sleep disorder				
Yes	**12**	**18.2**	**26**	**8.8**
No	**53**	**80.3**	**270**	**90.9**
Unknown	**1**	**1.5**	**1**	**0.3**
History of traumatic brain injury				
Yes	**1**	**1.5**	**8**	**2.7**
No	**64**	**97.0**	**289**	**97.3**
Unknown	**1**	**1.5**	**0**	**0.0**
Family history of mental illness				
Yes	**9**	**13.6**	**136**	**45.8**
No	**26**	**39.4**	**141**	**47.5**
Unknown	**31**	**47.0**	**20**	**6.7**
Prior self-injury				
Yes	**4**	**6.1**	**81**	**27.3**
Number of prior self-injuries				
One	2	3.0	40	13.5
More than one	2	3.0	41	13.8
Unknown	0	0.0	0	0.0
Current event similar to prior	1	1.5	46	15.5
No	**52**	**78.8**	**210**	**70.7**
Unknown	**10**	**15.2**	**6**	**2.0**
Psychotropic medications, last 90 days				
Yes[1]	**12**	**18.2**	**118**	**39.7**
Antidepressant	10	15.2	102	34.3
Antianxiety	4	6.1	55	18.5
Antimanic	0	0.0	5	1.7
Anticonvulsant	1	1.5	8	2.7
Antipsychotic	1	1.5	17	5.7
Sleep medication	6	9.1	46	15.5
No	**54**	**81.8**	**179**	**60.3**
Unknown	**0**	**0.0**	**0**	**0.0**

Table 20 (cont). Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Pain medication at time of event				
Yes	**7**	**10.6**	**59**	**19.9**
Opioid medication	1	**1.5**	20	**6.7**
No	**53**	**80.3**	**233**	**78.5**
Health/social services, last 90 days				
Yes[1]	**43**	**65.2**	**224**	**75.4**
Medical treatment facility	40	60.6	207	69.7
Substance Abuse Services	4	6.1	36	12.1
Family Assistance Program	4	6.1	21	7.1
Outpatient mental health	19	28.8	154	51.9
Inpatient mental health	3	4.5	50	16.8
No	**23**	**34.8**	**73**	**24.6**
Unknown	**0**	**0.0**	**0**	**0.0**

[1]Subcategories are not mutually exclusive.
[2]Survey form used for this CY used DSM-IV taxonomy for behavioral health diagnoses, thus posttraumatic stress disorder is subsumed under the "Anxiety disorder" category.

Table 21. Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Failed or failing relationship, last 90 days				
Yes[1]	**30**	**45.5**	**130**	**43.8**
Intimate relationship	29	43.9	115	38.7
Other relationship	10	15.2	38	12.8
No	**32**	**48.5**	**167**	**56.2**
Unknown	**4**	**6.1**	**0**	**0.0**
Friend and family stressors, last 90 days				
Yes[1]	**4**	**6.1**	**29**	**9.8**
Death of spouse or other family member (not suicide)	2	3.0	14	4.7
Death of friend (not suicide)	0	0.0	3	1.0
Serious illness of friend or family member	2	3.0	16	5.4
No	**59**	**89.4**	**268**	**90.2**
Unknown	**3**	**4.5**	**0**	**0.0**
History of friend or family death by suicide				
Yes[1]	**5**	**7.6**	**44**	**14.8**
Spouse	0	0.0	0	0.0
Family other than spouse	2	3.0	18	6.1
Friend	3	4.5	28	9.4
No	**61**	**92.4**	**252**	**84.8**
Unknown	**0**	**0.0**	**1**	**0.3**
Administrative/legal problems, last 90 days				
Yes[1]	**17**	**25.8**	**95**	**32.0**
Courts martial proceedings	2	3.0	2	0.7
Article 15/Non-judicial punishment	3	4.5	14	4.7
Administrative separation proceedings	3	4.5	16	5.4
Away without leave/deserter status	0	0.0	1	0.3
Medical evaluation board proceedings	1	1.5	37	12.5
Civil legal proceedings	7	10.6	19	6.4
Non-selection for promotion	0	0.0	8	2.7
Under investigation	7	10.6	29	9.8
No	**49**	**74.2**	**202**	**68**
Unknown	**0**	**0.0**	**0**	**0.0**
Excessive debt/bankruptcy, last 90 days				
Yes	**6**	**9.1**	**24**	**8.1**
No	**57**	**86.4**	**269**	**90.6**
Unknown	**3**	**4.5**	**4**	**1.3**
Workplace, last 90 days				
Yes[1]	**16**	**24.2**	**111**	**37.4**
Job problems	11	16.7	89	30.0
Supervisor/coworker issues	6	9.1	57	19.2
Poor performance review	7	10.6	30	10.1
Unit/workplace hazing	0	0.0	5	1.7
No	**50**	**75.8**	**186**	**62.6**
Unknown	**0**	**0.0**	**0**	**0.0**

Table 21 (cont). Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Air Force				
	Suicide (n = 66)		Suicide attempt (n = 297)	
	No.	%	No.	%
Abuse, assault, or harassment victimization, last year				
Yes[1]	**1**	**1.5**	**39**	**13.1**
Physical abuse or assault	1	1.5	9	3.0
Sexual abuse or assault	1	1.5	20	6.7
Emotional abuse	1	1.5	18	6.1
Sexual harassment	0	0.0	6	2.0
No	**57**	**86.4**	**256**	**86.2**
Unknown	**8**	**12.1**	**2**	**0.7**
Abuse, assault, or harassment perpetration, last year				
Yes[1]	**6**	**9.1**	**21**	**7.1**
Physical abuse or assault	3	4.5	13	4.4
Sexual abuse or assault	5	7.6	3	1.0
Emotional abuse	2	3.0	11	3.7
Sexual harassment	1	1.5	0	0.0
No	**59**	**89.4**	**271**	**91.2**
Unknown	**1**	**1.5**	**5**	**1.7**

[1]Subcategories are not mutually exclusive.

CHAPTER 5

U.S. Army

DoDSER Results Summary: Army

This chapter presents data collected on cases of suicide and suicide attempt involving members of the Army. The DoDSER system collects data on demographic, contextual, behavioral health, historical, and risk-related factors for all incidences of suicide and all suicide attempts that result in hospitalization or evacuation from a military theater of operations. Cases involving both Active Component Service members and SELRES Service members who were in a duty status at the time of the event are subject to this reporting requirement. Particular variables of interest are presented in the following text, however, the reader is encouraged to examine the DoDSER data tables that follow this chapter's text for the full Army data, presented separately by event type.

Suicide Mortality

As of March 31, 2017, the AFMES had identified 141 confirmed or pending cases of suicide that occurred during CY 2016 and involved a member of the Army. A total of 127 of these deaths occurred among members of the Army's Active Component. The remaining 14 deaths occurred among SELRES Service members who were in a duty status at the time of their death. A DoDSER survey was submitted for 140 of the 141 deaths. These 140 DoDSER surveys were used to populate the data tables included in this chapter. A total of 5 suicide-related deaths were associated with one or more reported suicide attempts that occurred between CY 2008 and CY 2016. The median number of days between the most recent suicide attempt and the date of death was 179.

Incidence of Attempted Suicide

Over the course of CY 2016, 586 non-fatal suicide attempts were identified within the Army. These reports provided data on suicide attempts for 572 unique individuals. A total of 561 Soldiers had a single suicide attempt recorded; two or more suicide attempts were recorded for 11 (1.9%) individuals. The median number of days between the most recent suicide attempt and the penultimate attempt was 91 days.

Event Information

It is important to examine whether the Soldiers who died by suicide had made an effort to communicate their suicidal thoughts or feelings to their family, social, and peer networks prior to engaging in suicidal behavior. Data from CY 2016 suggest that 19.3 percent of those who died by suicide had communicated their desire to die by suicide prior to engaging in the behavior that would ultimately cause their death. Most frequently, these communications involved verbal communications about their thoughts and feelings (12.1%) or sending electronic (9.3%) messages. Most commonly, spouses (8.6%) and friends (5.0%) were the recipients of these messages. Communication of suicidal thoughts and feelings were either not made or recognized in 63.6 percent of suicide cases. Separately, suicide notes were left in 19.3 percent of Army suicide deaths.

Firearms were the method of injury most often identified in Army suicide cases (67.9%). Among the firearm deaths, the majority of the firearms used (92.6%) were personal possessions, with only 4.2 percent of firearm deaths resulting from self-directed use of a military-issued weapon. Regardless of the method of injury, firearms were present in the immediate environment of 61.4 percent of those Soldiers who died by suicide. Figure 31 identifies the two most common methods of injury and the proportion of deaths that are due to those methods.
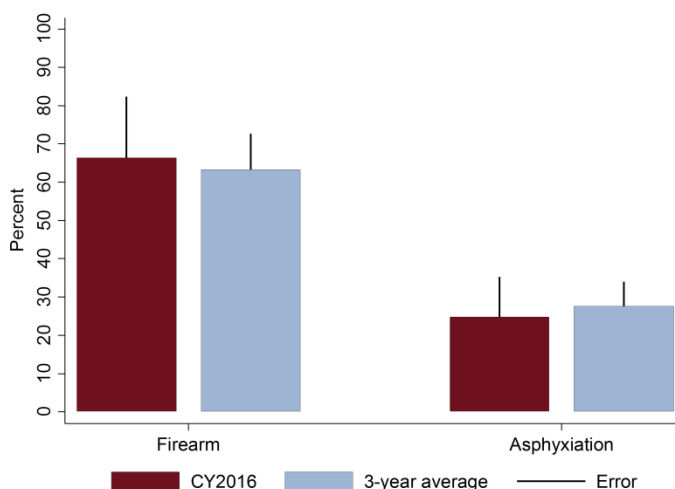
Figure 31. Proportion of CY 2016 Army DoDSER suicide cases' method of injury compared to the three-year average of CY 2013 - CY 2015

With regard to suicide attempt records, drug and/or alcohol overdose was the most frequently reported (59.9%) mechanism of injury. As seen in Figure 32, the other common methods of attempting suicide involved the self-directed use of a sharp or blunt object (16.9%) and hanging/asphyxiation (14.2%).

A Soldier's primary residence, including military barracks, was the most common setting in which deaths by suicide occurred (67.9%), with a few cases occurring in other settings, for example, their work environment (3.6%), a vehicle (7.9%), or a hotel room (3.6%). Table 24 provides a descriptive overview of the settings and circumstances involved in cases of suicide and suicide attempt.
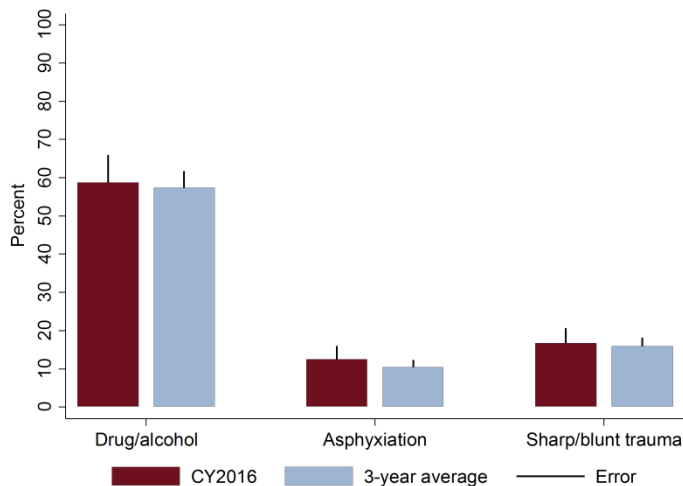
Figure 32. Proportion of CY 2016 Army DoDSER suicide cases' method of injury compared to the three-year average of CY 2013 - CY 2015

Demographic Characteristics

The demographic characteristics of the Army suicide cases closely resembles the makeup of the Army overall. The most common demographic profile was non-Hispanic, white males, age 20–24, rank/grade of E1–E4, and a high school education. This represented 15.0% of all suicide DoDSER cases.

The occurrence of suicide among female Soldiers continues to account for fewer than 20 cases a year, precluding a rate calculation. Similar to previous years, the proportion of male and female Soldiers identified in each event type produced a demographic distinction between cases of suicide and cases of suicide attempt. Female Soldiers accounted for 7.9 percent of DoDSER suicide cases and 28.2 percent of DoDSER suicide-attempt cases.

Demographic and military service characteristics for all Army DoDSER suicide and suicide-attempt cases are detailed in Tables 22 and 23.

Behavioral Health History

Of those individuals who died by suicide in CY 2016, 50.7 percent had met criteria for at least one current or past behavioral health diagnosis. Substance use (24.3%) and anxiety (22.1%) disorders were common. However, the most frequently reported diagnoses were mood (26.4%) and adjustment (26.4%) disorders. Conversely, 46.4 percent of Soldiers who died by suicide had no known behavioral health history.

Among suicide-attempt cases, 62.5 percent identified at least one current or past behavioral health diagnosis present in the medical record. Mood (28.2%), anxiety (22.4%), and substance-use (21.8%) disorders were common. However, the most frequent diagnosis in this group was adjustment disorder (31.2%). Overall, 37.5 percent of reports did not identify a known behavioral health history.

Table 25 provides data on behavioral health variables related to both common diagnoses and treatment utilization. Figure 33 displays the prevalence of various diagnoses, prior self-harm, and the use of psychotropic medication in the 90 days prior to a suicide-related death. Figure 34 displays the prevalence of the same factors among DoDSER suicide-attempt cases.

Substance Use

Alcohol use, during the time period immediately preceding death, was identified in 18.6 percent of Army suicide cases; though the "unknown" response for this item was endorsed for a
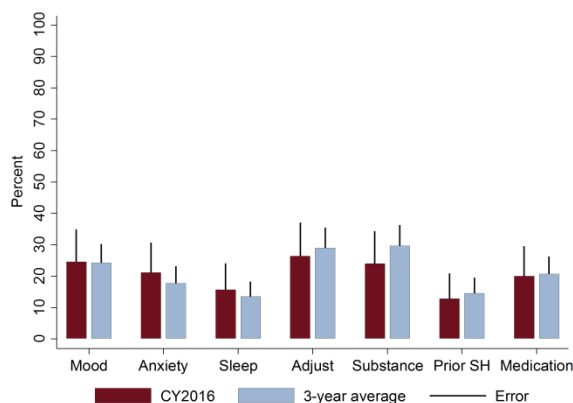
Figure 33. Proportion of behavioral health risk factors in CY 2016 Army suicide cases compared to the three-year average of CY 2013 - CY 2015
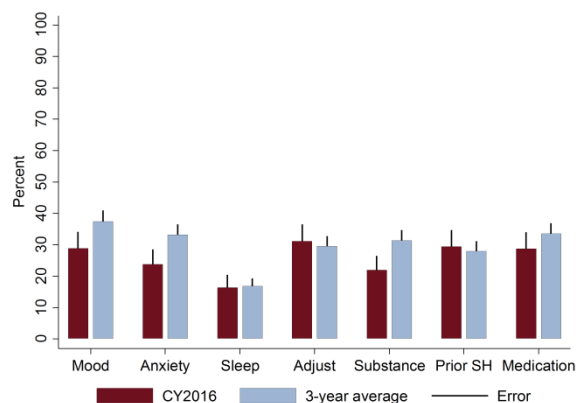
Figure 34. Proportion of behavioral health risk factors in CY 2016 Army suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

substantial proportion of cases (50.7%; Table 24). Drug use (including illicit, prescription, and over-the-counter substances) was identified in 7.9 percent of Army suicides. Overall, very few deaths resulted from drug/alcohol overdose (1.4%).

Alcohol use immediately prior to the suicidal behavior was reported in 27.1 percent of suicide-attempt case reports; 50.3 percent of reports identified drug use immediately prior to the event. Prescription drugs had the highest overall frequency of overdose (26.1%).

Health Care Utilization

Regardless of whether or not an individual voluntarily disclosed—or was assessed for—suicidal thoughts, feelings, and behavior, 62.1 percent of the Soldiers who died by suicide in CY 2016 had been in contact with the MHS in the 90 days prior to their death (Table 25). Overall, 32.9 percent had received either inpatient (6.4%) or outpatient (32.9%) behavioral health services. Respectively, 13.6 percent and 3.6 percent had participated in substance-abuse services or family assistance programs.

A similar pattern was observed for suicide-attempt cases. Seventy-one percent of the Soldiers who attempted suicide in CY 2016 had been in contact with the MHS in the 90 days prior to the behavior. Overall, 52.0 percent had received either inpatient (13.5%) or outpatient (51.9%) behavioral health services. Additionally, 9.4 percent had participated in substance-abuse services and 4.4 percent had participated in family assistance programs.

Psychosocial Stressors

Relationship difficulties, especially strife within—or termination of—an intimate-partner relationship, were present in 36.4 percent of Army suicide cases and 35.7 percent of suicide attempts. Individuals who died by suicide were frequently involved with legal and administrative stressors (27.1%), as were those who attempted to die by suicide (34.5%). Those who died by suicide were most frequently 'under investigation' (10.7%) or facing non-judicial punishments (7.9%). These stressors held for those who attempted suicide as well, with 9.2
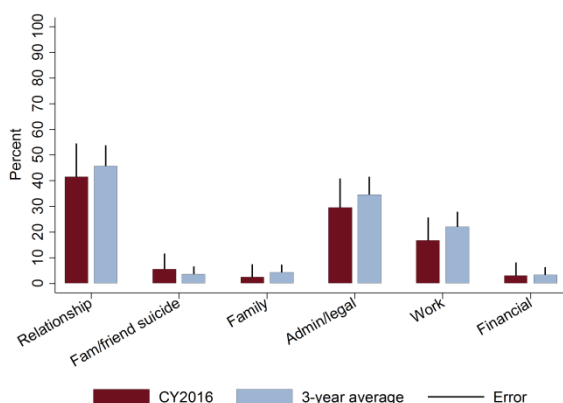
Figure 35. Proportion of stress-related risk factors in CY 2016 Army suicide cases compared to the three-year average of CY 2013 - CY 2015
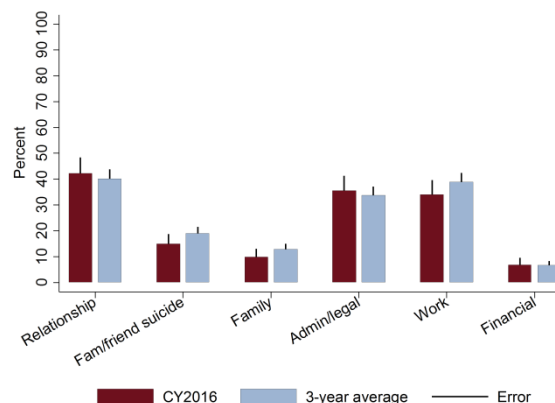
Figure 36. Proportion of stress-related risk factors in CY 2016 Army suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

percent endorsing being 'under investigation' and 12.1 percent endorsing non-judicial punishment. Figures 35 (cases of suicide) and 36 (cases of suicide attempt) display the prevalence of six stressors queried in the DoDSER system from CY 2016 compared to the three-year average from CY 2013 - CY 2015. Table 26 also provides data for stressors pertaining to relationships, family issues, legal or administrative problems, work and financial difficulties, and abuse victimization or perpetration.

Sexual Assault

To better assess and understand any potential association between sexual assault and the occurrence of suicide-related behavior, Army data collected from the DoDSER system were matched against records related to the filing of an unrestricted report of sexual assault. According to the analysis of these data, no Army DoDSER suicide cases and 6 Army DoDSER suicide-attempt cases were associated with an unrestricted report of a sexual assault that occurred during the 12 months preceding the suicide-related event. When the limit of the 12 months preceding the suicide-related behavior was removed, one case of suicide and 18 cases of attempted suicide were associated with unrestricted reports of sexual assault. Table 26 provides the number of sexual assaults recorded directly by the DoDSER system. Discrepancies between those cases identified by SAPRO and those identified on the DoDSER surveys could be due to several factors, including utilization of the restricted reporting option.

Table 22. Demographic characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Sex				
Male	**129**	**92.1**	**421**	**71.8**
Female	**11**	**7.9**	**165**	**28.2**
Age				
17–19	**3**	**2.1**	**114**	**19.5**
20–24	**51**	**36.4**	**264**	**45.1**
25–29	**34**	**24.3**	**96**	**16.4**
30–34	**22**	**15.7**	**65**	**11.1**
35–39	**12**	**8.6**	**31**	**5.3**
40–44	**10**	**7.1**	**8**	**1.4**
45–64	**8**	**5.7**	**8**	**1.4**
Race				
American Indian/Alaska Native	**2**	**1.4**	**7**	**1.2**
Asian/Pacific Islander	**6**	**4.3**	**36**	**6.1**
Black/African American	**17**	**12.1**	**154**	**26.3**
White/Caucasian	**113**	**80.7**	**385**	**65.7**
Other/Unknown	**2**	**1.4**	**4**	**0.7**
Ethnicity				
Hispanic	**16**	**11.4**	**90**	**15.4**
Not Hispanic	**124**	**88.6**	**495**	**84.5**
Unknown	**0**	**0.0**	**1**	**0.2**
Education				
Less than high school	**0**	**0.0**	**10**	**1.7**
Alternative high school	**13**	**9.3**	**63**	**10.8**
High school graduate	**78**	**55.7**	**412**	**70.3**
Associate's or technical degree	**19**	**13.6**	**68**	**11.6**
Four-year degree	**20**	**14.3**	**23**	**3.9**
Postgraduate	**10**	**7.1**	**10**	**1.7**
Unknown	**0**	**0.0**	**0**	**0.0**
Marital status				
Never married	**49**	**35.0**	**315**	**53.8**
Married	**74**	**52.9**	**242**	**41.3**
Separated	**2**	**1.4**	**0**	**0.0**
Divorced	**15**	**10.7**	**29**	**4.9**
Widowed	**0**	**0.0**	**0**	**0.0**

[1]Data on demographic characteristics primarily provided by DMDC.

Table 23. Military characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Component				
Active	**126**	**90.0**	**543**	**92.7**
Reserve	**1**	**0.7**	**15**	**2.6**
Guard	**13**	**9.3**	**28**	**4.8**
Rank/grade				
Cadet/midshipman	**0**	**0.0**	**0**	**0.0**
Enlisted, unknown grade	**0**	**0.0**	**24**	**4.1**
E1–E4	**59**	**42.1**	**432**	**73.7**
E5–E9	**55**	**39.3**	**110**	**18.8**
Warrant	**4**	**2.9**	**2**	**0.3**
Officer	**22**	**15.7**	**18**	**3.1**
Unknown	**0**	**0.0**	**0**	**0.0**
Enlisted occupational group				
Infantry, gun crews, and seamanship specialists	**42**	**30.0**	**140**	**23.9**
Electronic equipment repairers	**10**	**7.1**	**28**	**4.8**
Communications and intelligence specialists	**16**	**11.4**	**47**	**8.0**
Health care specialists	**10**	**7.1**	**62**	**10.6**
Other technical and allied specialists	**6**	**4.3**	**13**	**2.2**
Functional support and administration	**14**	**10.0**	**75**	**12.8**
Electrical/mechanical equipment repairers	**9**	**6.4**	**67**	**11.4**
Craftsworkers	**0**	**0.0**	**16**	**2.7**
Service and supply handlers	**7**	**5.0**	**85**	**14.5**
Non-occupational	**0**	**0.0**	**22**	**3.8**
Unknown	**0**	**0.0**	**11**	**1.9**
Officer occupational group				
General officers and executives	**1**	**0.7**	**0**	**0.0**
Tactical operations officers	**8**	**5.7**	**5**	**0.9**
Intelligence officers	**2**	**1.4**	**0**	**0.0**
Engineering and maintenance officers	**8**	**5.7**	**4**	**0.7**
Scientists and professionals	**0**	**0.0**	**2**	**0.3**
Health care officers	**5**	**3.6**	**3**	**0.5**
Administrators	**1**	**0.7**	**1**	**0.2**
Supply, procurement, and allied officers	**0**	**0.0**	**4**	**0.7**
Non-occupational	**1**	**0.7**	**1**	**0.2**
Unknown	**0**	**0.0**	**0**	**0.0**
History of deployment				
Yes	**76**	**54.3**	**224**	**38.2**
Number of deployments				
1	28	20.0	128	21.8
2	21	15.0	56	9.6
3 or more	27	19.3	40	6.8
Specific deployment locations[2]				
Afghanistan	44	31.4	134	22.9
Iraq	41	29.3	90	15.4
Kuwait	56	40.0	155	26.5
No	**63**	**45.0**	**362**	**61.8**
Unknown	**1**	**0.7**	**0**	**0.0**

[1]Data on military characteristics primarily provided by DMDC.
[2]Subcategories are not mutually exclusive.

Table 24. Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Event location country				
United States	**128**	**91.4**	**495**	**84.5**
Iraq	**1**	**0.7**	**1**	**0.2**
Afghanistan	**0**	**0.0**	**8**	**1.4**
Kuwait	**0**	**0.0**	**21**	**3.6**
Korea	**4**	**2.9**	**36**	**6.1**
Other Europe	**1**	**0.7**	**3**	**0.5**
North America	**0**	**0.0**	**0**	**0.0**
Central or South America	**0**	**0.0**	**0**	**0.0**
Japan	**0**	**0.0**	**3**	**0.5**
Belgium	**0**	**0.0**	**2**	**0.3**
Germany	**3**	**2.1**	**6**	**1.0**
United Kingdom	**0**	**0.0**	**0**	**0.0**
Other	**2**	**1.4**	**7**	**1.2**
Event setting				
Own residence	**68**	**48.6**	**207**	**35.3**
Barracks	**27**	**19.3**	**289**	**49.3**
Residence of friend or family	**10**	**7.1**	**17**	**2.9**
Work/jobsite	**5**	**3.6**	**16**	**2.7**
Automobile	**11**	**7.9**	**29**	**4.9**
Inpatient medical facility	**1**	**0.7**	**3**	**0.5**
Hotel	**5**	**3.6**	**0**	**0.0**
Other	**11**	**7.9**	**22**	**3.8**
Unknown	**2**	**1.4**	**3**	**0.5**
Event method[1]				
Drugs/alcohol	**2**	**1.4**	**351**	**59.9**
Hanging/asphyxiation	**34**	**24.3**	**83**	**14.2**
Poisoning	**2**	**1.4**	**24**	**4.1**
Firearm	**95**	**67.9**	**23**	**3.9**
Military firearm	4	2.8	5	0.8
Non-military firearm	88	62.9	18	3.1
Firearm of unknown origin	3	2.1	0	0.0
Trauma, sharp or blunt force	**7**	**5.0**	**99**	**16.9**
Other	**0**	**0.0**	**4**	**0.7**
Pending/unknown	**0**	**0.0**	**2**	**0.3**
Used alcohol during event				
Yes	**26**	**18.6**	**159**	**27.1**
No	**43**	**30.7**	**413**	**70.5**
Unknown	**71**	**50.7**	**14**	**2.4**

Table 24 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Used drugs during event				
Yes	**11**	**7.9**	**295**	**50.3**
Illegal drugs				
Used, overdose	0	0.0	26	4.4
Used, no overdose	2	1.4	11	1.9
Prescription drugs				
Used, overdose	3	2.1	153	26.1
Used, no overdose	5	3.6	35	6.0
Non-prescription drugs				
Used, overdose	1	0.7	117	20
Used, no overdose	0	0.0	19	3.2
No	**62**	**44.3**	**277**	**47.3**
Unknown	**67**	**47.9**	**14**	**2.4**
Death-risk gambling				
Yes	**2**	**1.4**	**10**	**1.7**
No	**120**	**85.7**	**557**	**95.1**
Unknown	**18**	**12.9**	**19**	**3.2**
Planned/premeditated				
Yes	**56**	**40.0**	**113**	**19.3**
No	**51**	**36.4**	**428**	**73.0**
Unknown	**33**	**23.6**	**45**	**7.7**
Observable				
Yes	**26**	**18.6**	**208**	**35.5**
No	**101**	**72.1**	**340**	**58**
Unknown	**13**	**9.3**	**38**	**6.5**
Suicide note left				
Yes	**27**	**19.3**	**60**	**10.2**
No	**79**	**56.4**	**511**	**87.2**
Unknown	**34**	**24.3**	**15**	**2.6**
Communicated potential for self-harm (other than suicide note)				
Yes	**27**	**19.3**	**148**	**25.3**
How communicated[2]				
Written	0	0.0	3	0.5
Verbal	17	12.1	86	14.7
Text	13	9.3	69	11.8
Other	0	0.0	4	0.7
To whom communicated[2]				
Supervisor	2	1.4	25	4.3
Chaplain	2	1.4	2	0.3
Mental health staff	3	2.1	31	5.3
Friend	7	5.0	56	9.6
Spouse	12	8.6	57	9.7
Family	0	0.0	10	1.7
Other	1	0.7	5	0.9
No	**89**	**63.6**	**417**	**71.2**
Unknown	**24**	**17.1**	**21**	**3.6**

Table 24 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Residence at time of event				
Barracks	**42**	**30.0**	**329**	**56.1**
Bachelor Enlisted/Officer Quarters	**1**	**0.7**	**6**	**1.0**
On-base family housing	**16**	**11.4**	**52**	**8.9**
Off-base	**71**	**50.7**	**180**	**30.7**
Ship	**0**	**0.0**	**0**	**0.0**
Other	**8**	**5.7**	**11**	**1.9**
Unknown	**2**	**1.4**	**8**	**1.4**
Reside alone at time of event				
Yes	**41**	**29.3**	**188**	**32.1**
No	**88**	**62.9**	**382**	**65.2**
Unknown	**11**	**7.9**	**16**	**2.7**
Gun in home/immediate environment				
Yes	**86**	**61.4**	**69**	**11.8**
No	**35**	**25.0**	**467**	**79.7**
Unknown	**19**	**13.6**	**50**	**8.5**
Duty environment[2]				
Garrison/permanent duty station	**108**	**77.1**	**453**	**77.3**
Leave	**6**	**4.3**	**12**	**2.0**
Temporary duty	**1**	**0.7**	**2**	**0.3**
Training	**1**	**0.7**	**66**	**11.3**
Other	**21**	**15.0**	**21**	**3.6**
Deployed at time of event				
Yes	**0**	**0.0**	**37**	**6.3**
Location				
Afghanistan	0	0.0	10	1.7
Kuwait	0	0.0	14	2.4
Other/Unknown	0	0.0	13	2.2
No	**140**	**100.0**	**549**	**93.7**

[1]Data on the cause of the death were provided by AFMES.
[2]Subcategories are not mutually exclusive.

Table 25. Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Any mental health diagnosis				
Yes[1]	**71**	**50.7**	**366**	**62.5**
Mood disorder[1]	37	26.4	165	28.2
Anxiety disorder[1]	31	22.1	131	22.4
Personality disorder	6	4.3	27	4.6
Psychotic disorder	2	1.4	5	0.9
Adjustment disorder	37	26.4	183	31.2
Substance abuse disorder	34	24.3	128	21.8
No	**65**	**46.4**	**220**	**37.5**
Unknown	**4**	**2.9**	**0**	**0.0**
Sleep disorder				
Yes	**24**	**17.1**	**87**	**14.8**
No	**107**	**76.4**	**486**	**82.9**
Unknown	**9**	**6.4**	**13**	**2.2**
History of traumatic brain injury				
Yes	**9**	**6.4**	**32**	**5.5**
No	**124**	**88.6**	**542**	**92.5**
Unknown	**7**	**5.0**	**12**	**2.0**
Family history of mental illness				
Yes	**23**	**16.4**	**170**	**29.0**
No	**77**	**55.0**	**378**	**64.5**
Unknown	**40**	**28.6**	**38**	**6.5**
Prior self-injury				
Yes	**20**	**14.3**	**187**	**31.9**
Number of prior self-injuries				
One	6	4.3	88	15.0
More than one	14	10.0	96	16.4
Unknown	0	0.0	3	0.5
Current event similar to prior	8	5.7	89	15.2
No	**96**	**68.6**	**385**	**65.7**
Unknown	**24**	**17.1**	**14**	**2.4**
Psychotropic medication, last 90 days				
Yes[1]	**27**	**19.3**	**165**	**28.2**
Antidepressant	21	15.0	140	23.9
Antianxiety	9	6.4	85	14.5
Antimanic	2	1.4	4	0.7
Anticonvulsant	5	3.6	8	1.4
Antipsychotic	5	3.6	13	2.2
Sleep medication	10	7.1	84	14.3
No	**113**	**80.7**	**420**	**71.7**
Unknown	**0**	**0.0**	**1**	**0.2**

[1]Subcategories are not mutually exclusive

Table 25 (cont). Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Pain medication at time of event				
Yes	**17**	**12.1**	**110**	**18.8**
Opioid medication	9	6.4	34	5.8
No	**102**	**72.9**	**451**	**77.0**
Unknown	**21**	**15.0**	**25**	**4.3**
Health/social services, last 90 days				
Yes[1]	**87**	**62.1**	**416**	**71.0**
Medical treatment facility	78	55.7	327	55.8
Substance Abuse Services	19	13.6	55	9.4
Family Assistance Program	5	3.6	26	4.4
Outpatient mental health	46	32.9	304	51.9
Inpatient mental health	9	6.4	79	13.5
No	**52**	**37.1**	**166**	**28.3**
Unknown	**1**	**0.7**	**4**	**0.7**

[1]Subcategories are not mutually exclusive.

Table 26. Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Failed or failing relationship, last 90 days				
Yes[1]	**57**	**40.7**	**240**	**41.0**
Intimate relationship	51	36.4	209	35.7
Other relationship	13	9.3	62	10.6
No	**69**	**49.3**	**342**	**58.4**
Unknown	**14**	**10.0**	**4**	**0.7**
Friend and family stressors, last 90 days				
Yes[1]	**5**	**3.6**	**56**	**9.6**
Death of spouse or other family member (not suicide)	2	1.4	19	3.2
Death of friend (not suicide)	1	0.7	14	2.4
Serious illness of friend or family member	2	1.4	29	4.9
No	**119**	**85.0**	**523**	**89.2**
Unknown	**16**	**11.4**	**7**	**1.2**
History of friend or family death by suicide				
Yes[1]	**8**	**5.7**	**85**	**14.5**
Spouse	0	0.0	0	0.0
Family other than spouse	6	4.3	36	6.1
Friend	2	1.4	61	10.4
No	**125**	**89.3**	**494**	**84.3**
Unknown	**7**	**5.0**	**7**	**1.2**
Administrative/legal problems, last 90 days				
Yes[1]	**38**	**27.1**	**202**	**34.5**
Courts martial proceedings	2	1.4	5	0.9
Article 15/Non-judicial punishment	11	7.9	71	12.1
Administrative separation proceedings	5	3.6	76	13.0
Away without leave/deserter status	3	2.1	11	1.9
Medical evaluation board proceedings	6	4.3	50	8.5
Civil legal proceedings	7	5.0	35	6.0
Non-selection for promotion	5	3.6	21	3.6
Under investigation	15	10.7	54	9.2
No	**97**	**69.3**	**382**	**65.2**
Unknown	**5**	**3.6**	**2**	**0.3**
Excessive debt/bankruptcy, last 90 days				
Yes	**4**	**2.9**	**39**	**6.7**
No	**111**	**79.3**	**523**	**89.2**
Unknown	**25**	**17.9**	**24**	**4.1**
Workplace, last 90 days				
Yes[1]	**23**	**16.4**	**196**	**33.4**
Job problems	20	14.3	149	25.4
Supervisor/coworker issues	7	5.0	123	21.0
Poor performance review	6	4.3	64	10.9
Unit/workplace hazing	0	0.0	19	3.2
No	**106**	**75.7**	**384**	**65.5**
Unknown	**11**	**7.9**	**6**	**1.0**

Table 26 (cont). Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Army				
	Suicide (n = 140)		Suicide attempt (n = 586)	
	No.	%	No.	%
Abuse, assault, or harassment victimization, last year				
Yes[1]	**4**	**2.9**	**71**	**12.1**
Physical abuse or assault	0	0.0	24	4.1
Sexual abuse or assault	2	1.4	23	3.9
Emotional abuse	1	0.7	42	7.2
Sexual harassment	2	1.4	12	2.0
No	**119**	**85**	**509**	**86.9**
Unknown	**17**	**12.1**	**6**	**1.0**
Abuse, assault, or harassment perpetration, last year				
Yes[1]	**13**	**9.3**	**38**	**6.5**
Physical abuse or assault	8	5.7	22	3.8
Sexual abuse or assault	5	3.6	10	1.7
Emotional abuse	3	2.1	10	1.7
Sexual harassment	0	0.0	2	0.3
No	**109**	**77.9**	**537**	**91.6**
Unknown	**18**	**12.9**	**11**	**1.9**

[1]Subcategories are not mutually exclusive.

CHAPTER 6

U.S. Marine Corps

DoDSER Results Summary: Marine Corps

This chapter presents data collected on cases of suicide and suicide attempt involving members of the United States Marine Corps. The DoDSER system collects data on demographic, contextual, behavioral health, historical, and risk-related factors for all incidences of suicide and all suicide attempts that result in hospitalization or evacuation from a military theater of operations. Cases involving both Active Component Service members and SELRES Service members who were in a duty status at the time of the event are subject to this reporting requirement. Particular variables of interest are presented in the following text, however, the reader is encouraged to examine the DoDSER data tables that follow this chapter's text for the full Marine Corps data, presented separately by event type.

Suicide Mortality

As of March 31, 2017, the AFMES had identified 38 confirmed or pending cases of suicide that occurred during CY 2016 and involved a member of the Marine Corps. All but one of the deaths occurred among Active-Component Marines; the remaining case was a Reserve-Component Marine in a duty status at the time of death. DoDSER surveys were submitted for all 38 deaths, which were used to populate the data tables included in this chapter.

One Marine Corps suicide-related death was associated with one or more reported suicide attempts that occurred between CY 2010 and CY 2016. The number of days between the most recent suicide attempt and the date of death was 324.

Incidence of Attempted Suicide

Over the course of CY 2016, 204 non-fatal, suicide attempts were identified. Of these, 198 suicide attempts occurred among Active-Component Marines and 6 cases were Reserve-Component Marines who were in a duty status at the time of the suicide attempt. These reports provided data on suicide attempts for 198 unique individuals. A total of 193 Marines had a single suicide attempt recorded; 5 (2.5%) had two or more suicide attempts recorded, dating back to 2010. The median number of days between the most recent suicide attempt and the penultimate attempt was 86 days.

Event Information

It is important to examine whether the Marines who died by suicide had made an effort to communicate their suicidal thoughts or feelings to their family, social, and peer networks prior to engaging in suicidal behavior. Data from CY 2016 indicate that 31.6 percent of those Marines who died by suicide had communicated their desire to die prior to engaging in the behavior that would ultimately cause their death. Most frequently, these communications involved verbal communications about their thoughts and feelings (23.7%) or sending electronic (7.9%) messages. Spouses (5.3%) and friends (10.5%) were the most common recipients of these messages. Communication of suicidal thoughts and feelings were either not made or recognized in 55.3 percent of suicide cases. Separately, suicide notes were left in 18.4 percent of deaths.

Firearms were the method of injury most often identified in Marine Corps suicide cases (55.3%). The majority (90.5%) of the firearms used were personal possessions, with 9.5 percent of firearm deaths resulting from use of a military-issued weapon. Regardless of the method of injury, firearms were present in the immediate environment of 52.6 percent of those Marines who died by suicide. Figure 37 identifies the two most common methods of injury and the proportion of deaths that are due to those methods.

With regard to suicide attempts, drug and/or alcohol overdose was the most frequently reported (55.9%) method of injury among the Marine Corps' DoDSER suicide-attempt cases. As seen in Figure 38, the other common methods of attempting suicide involved the self-directed use of a sharp or blunt object (22.1%) and asphyxiation (11.3%).

A Marine's primary residence, including military barracks, was the most common setting in which suicidal behavior occurred (68.4%), with a few cases occurring in other settings, for example, their work environment (7.9%), the home of a family member or friend (10.5%), or a hotel room (5.3%). Table 29 provides a descriptive overview of the settings and circumstances involved in these cases of suicide and attempted suicide.

Figure 37. Proportion of CY 2016 Marine Corps DoDSER suicide cases' methods of injury compared to the three-year average of CY 2013 - CY 2015

Figure 38. Proportion of CY 2016 Marine Corps DoDSER suicide-attempt cases' methods of injury compared to the three-year average of CY 2013 - CY 2015

Demographic Characteristics

The demographic characteristics of suicide cases closely resemble the makeup of the Marine Corps overall. The most common profile of enlisted, non-Hispanic, White men below age 25 with a high school education constituted 26.3% of the case group.

The occurrence of suicide among female Marines continues to account for fewer than 20 cases a year, precluding a rate calculation. Similar to previous years, the proportion of male and female Marines identified in each event type produced a demographic distinction between cases of suicide and cases of suicide attempt. Female Marines constituted 2.6 percent of DoDSER suicide cases and 24.0 percent of DoDSER suicide-attempt cases. Demographic and military service characteristics for all Marine Corps DoDSER suicide and suicide-attempt cases are detailed in Tables 27 and 28.

Behavioral health History

Of those individuals who died by suicide in CY 2016, 31.6 percent had met criteria for at least one current or past behavioral health diagnosis. Mood (13.2%) disorders were common. However, the most frequent diagnosis was related to substance use (23.7%). Conversely, 65.8 percent of Marines who died by suicide had no known behavioral health history.

Among those who attempted to die by suicide, 53.4 percent had at least one current or past behavioral health diagnosis present in their medical record. Mood (23.5%) and substance-use (22.5%) disorders were common. However, the most frequently identified diagnosis was adjustment disorder (25.0%). Among those Marines who attempted suicide, 45.6 percent had no known behavioral health history.

Table 29 provides data on behavioral health variables related to both common diagnoses and treatment utilization. Figure 39 displays the prevalence of various diagnoses, prior self-harm, and the use of psychotropic medication in the 90 days prior to a suicide-related death. Figure 40 displays the prevalence of the same factors among DoDSER suicide-attempt cases.

Substance Use

Alcohol use, during the period immediately preceding death, was identified in 18.4 percent of Marine Corps suicide cases; though the "unknown" response for this item was endorsed for a substantial proportion (65.8%) of cases (Table 29). Drug use (including illicit, prescription, and
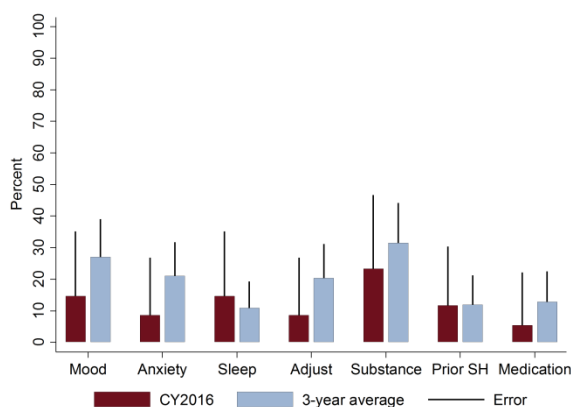
Figure 39. Proportion of behavioral health risk factors in CY 2016 Marine Corps DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
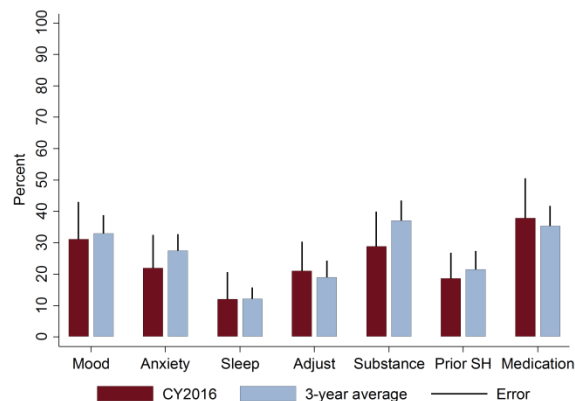
Figure 40. Proportion of behavioral health risk factors in CY 2016 Marine Corps DoDSER suicide attempt cases compared to the three-year average of CY 2013 - CY 2015

over-the-counter substances) was identified in 2.6 percent of Marine Corps suicides. No Marine Corps deaths resulted from overdose (0.0%).

Alcohol use immediately prior to the suicidal behavior was present in 27.9 percent of suicide-attempt cases, and 51.5 percent of cases were positive for drug use immediately prior to the suicidal behavior. Over-the-counter drugs and prescription drugs were the most common substances reported as overdosed, with 26.5 percent and 25.0 percent of cases reported as engaging in an overdose for each drug class, respectively.

Health Care Utilization

Regardless of whether or not an individual voluntarily disclosed—or was assessed for—suicidal thoughts, feelings, and behavior, 55.3 percent of the Marines who died by suicide in CY 2016 had been in contact with the MHS in the 90 days prior to their death (Table 30). Overall, 21.1 percent had received either inpatient (7.9%) or outpatient (18.4%) behavioral health services. Respectively, 10.5 percent and 5.3 percent had participated in substance abuse or family assistance programs.

A similar pattern was observed for suicide-attempt cases. Of the Marines who attempted suicide in CY 2016, 64.2 percent had been in contact with the MHS in the 90 days prior to the behavior. Overall, 45.1 percent had received either inpatient (13.7%) or outpatient (44.1%) behavioral health services. Additionally, 6.9 percent had participated in substance-abuse services and 2.9 percent had participated in family assistance programs.

Psychosocial Stressors

Overall, the presence of psychosocial stressors among Marines in CY 2016 was consistent with the proportionality of stressors in the previous four years. Relationship difficulties, especially strife within—or termination of—an intimate-partner relationship, were present in 36.8 percent of Marine Corps suicide cases and 35.3 percent of suicide attempts.
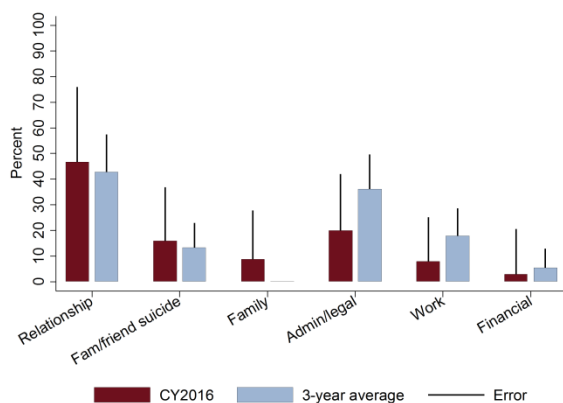
Figure 41. Proportion of stress-related risk factors in CY 2016 Marine Corps DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
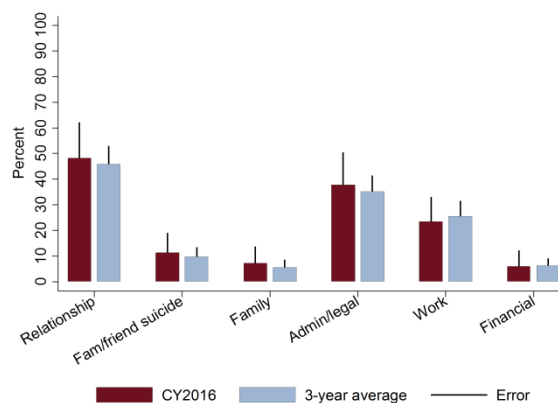
Figure 42. Proportion of stress-related risk factors in CY 2016 Marine Corps DoDSER suicide attempt cases compared to the three-year average of CY 2013 - CY 2015

Individuals who died by suicide were frequently involved with legal and administrative stressors (18.4%), as were those who attempted to die by suicide (26.5%). The most common legal or administrative stressors among suicide cases were being 'under investigation' (5.3%) or facing

court-martial proceedings (5.3%). Being 'under investigation' (9.3%) and medical separation from service (7.4%) were the most frequent administrative issues facing those who attempted suicide in CY 2016. Figures 41 (cases of suicide) and 42 (cases of suicide attempt) display the prevalence of six stressors queried in the DoDSER system from CY 2013 - CY 2016.

Table 31 provides data for stressors pertaining to relationships, family issues, legal or administrative problems, work and financial difficulties, and abuse victimization or perpetration.

Sexual Assault

To better assess and understand any potential association between sexual assault and the occurrence of suicide-related behavior, Marine Corps data collected from the DoDSER system were matched against records related to the filing of an unrestricted report of sexual assault. According to the analysis of these data, no Marine Corps DoDSER suicide cases and 13 Marine Corps DoDSER suicide-attempt cases were associated with an unrestricted report of a sexual assault that occurred during the 12 months preceding the suicide-related event. When the limit of the 12 months preceding the suicide-related behavior was removed, no cases of suicide and 16 cases of attempted suicide were associated with unrestricted reports of sexual assault. Table 31 provides the number of sexual assaults recorded directly by the DoDSER system. Discrepancies between those cases identified by SAPRO and those identified on the DoDSER surveys could be due to several factors, including utilization of the restricted reporting option.

Table 27. Demographic characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Sex				
Male	37	97.4	155	76.0
Female	1	2.6	49	24.0
Age				
17–19	4	10.5	48	23.5
20–24	24	63.2	128	62.7
25–29	5	13.2	21	10.3
30–34	1	2.6	3	1.5
35–39	2	5.3	2	1.0
40–44	1	2.6	2	1.0
45–64	1	2.6	0	0.0
Race				
American Indian/Alaska Native	3	7.9	3	1.5
Asian/Pacific Islander	3	7.9	14	6.9
Black/African American	5	13.2	25	12.3
White/Caucasian	27	71.1	159	77.9
Other/Unknown	0	0.0	3	1.5
Ethnicity				
Hispanic	1	2.6	41	20.1
Not Hispanic	37	97.4	163	79.9
Unknown	0	0.0	0	0.0
Education				
Less than high school	0	0.0	1	0.5
Alternative high school	3	7.9	7	3.4
High school graduate	33	86.8	192	94.1
Associate's or technical degree	1	2.6	1	0.5
Four-year degree	1	2.6	3	1.5
Postgraduate	0	0.0	0	0.0
Unknown	0	0.0	0	0.0
Marital status				
Never married	19	50.0	136	66.7
Married	19	50.0	64	31.4
Separated	0	0.0	1	0.5
Divorced	0	0.0	3	1.5
Widowed	0	0.0	0	0.0

[1]Data on demographic characteristics primarily provided by DMDC.

Table 28. Military characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Component				
Active	**37**	**97.4**	**198**	**97.1**
Reserve	**1**	**2.6**	**6**	**2.9**
Guard	**0**	**0.0**	**0**	**0.0**
Rank/grade				
Cadet/midshipman	**0**	**0.0**	**0**	**0.0**
Enlisted, unknown grade	**0**	**0.0**	**2**	**1.0**
E1–E4	**23**	**60.5**	**181**	**88.7**
E5–E9	**14**	**34.2**	**18**	**8.8**
Warrant	**0**	**0.0**	**0**	**0.0**
Officer	**1**	**2.6**	**3**	**1.5**
Unknown	**0**	**0.0**	**0**	**0.0**
Enlisted occupational group				
Infantry, gun crews and seamanship specialists	**7**	**18.4**	**45**	**22.1**
Electronic equipment repairers	**1**	**2.6**	**13**	**6.4**
Communications and intelligence specialists	**7**	**18.4**	**21**	**10.3**
Health care specialists	**0**	**0.0**	**0**	**0.0**
Other technical and allied specialists	**0**	**0.0**	**3**	**1.5**
Functional support and administration	**8**	**21.1**	**27**	**13.2**
Electrical/mechanical equipment repairers	**8**	**21.1**	**24**	**11.8**
Craftsworkers	**3**	**7.9**	**6**	**2.9**
Service and supply handlers	**1**	**2.6**	**22**	**10.8**
Non-occupational	**1**	**2.6**	**36**	**17.6**
Unknown	**1**	**2.6**	**4**	**2.0**
Officer occupational group				
General officers and executives	**0**	**0.0**	**0**	**0.0**
Tactical operations officers	**0**	**0.0**	**2**	**1.0**
Intelligence officers	**0**	**0.0**	**0**	**0.0**
Engineering and maintenance officers	**0**	**0.0**	**0**	**0.0**
Scientists and professionals	**0**	**0.0**	**0**	**0.0**
Health care officers	**0**	**0.0**	**0**	**0.0**
Administrators	**0**	**0.0**	**0**	**0.0**
Supply, procurement and allied officers	**0**	**0.0**	**1**	**0.5**
Non-occupational	**1**	**2.6**	**0**	**0.0**
Unknown	**0**	**0.0**	**0**	**0.0**
History of deployment				
Yes	**15**	**39.5**	**31**	**15.2**
Number of deployments				
1	8	21.1	19	9.3
2	3	7.9	8	3.9
3 or more	4	10.5	4	2.0
Specific deployment locations[2]				
Afghanistan	8	21.1	20	9.8
Iraq	5	13.2	12	5.9
Kuwait	2	5.3	10	4.9
No	**23**	**60.5**	**173**	**84.8**
Unknown	**0**	**0.0**	**0**	**0.0**

[1]Data on military characteristics primarily provided by DMDC.
[2]Subcategories are not mutually exclusive.

Table 29. Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Event location country				
United States	**36**	**94.7**	**174**	**85.3**
Iraq	**0**	**0.0**	**1**	**0.5**
Afghanistan	**0**	**0.0**	**0**	**0.0**
Kuwait	**0**	**0.0**	**1**	**0.5**
Korea	**0**	**0.0**	**1**	**0.5**
Other Europe	**0**	**0.0**	**0**	**0.0**
North America	**0**	**0.0**	**1**	**0.5**
Central or South America	**0**	**0.0**	**0**	**0.0**
Japan	**2**	**5.3**	**24**	**11.8**
Belgium	**0**	**0.0**	**0**	**0.0**
Germany	**0**	**0.0**	**0**	**0.0**
United Kingdom	**0**	**0.0**	**0**	**0.0**
Other	**0**	**0.0**	**2**	**1.0**
Event setting				
Own residence	**13**	**34.2**	**43**	**21.1**
Barracks	**13**	**34.2**	**133**	**65.2**
Residence of friend or family	**4**	**10.5**	**7**	**3.4**
Work/jobsite	**3**	**7.9**	**4**	**2.0**
Automobile	**0**	**0.0**	**4**	**2.0**
Inpatient medical facility	**0**	**0.0**	**3**	**1.5**
Hotel	**2**	**5.3**	**1**	**0.5**
Other	**3**	**7.9**	**9**	**4.4**
Unknown	**0**	**0.0**	**0**	**0.0**
Event method[1]				
Drugs/alcohol	**0**	**0.0**	**114**	**55.9**
Hanging/asphyxiation	**15**	**39.5**	**23**	**11.3**
Poisoning	**1**	**2.6**	**6**	**2.9**
Firearm	**21**	**55.3**	**12**	**5.9**
Military firearm	2	5.3	2	1.0
Non-military firearm	19	50.0	10	4.9
Firearm of unknown origin	0	0.0	0	0.0
Trauma, sharp or blunt force	**1**	**2.6**	**45**	**22.1**
Other	**0**	**0.0**	**4**	**2.0**
Pending/unknown	**0**	**0.0**	**0**	**0.0**
Used alcohol during event				
Yes	**7**	**18.4**	**57**	**27.9**
No	**6**	**15.8**	**136**	**66.7**
Unknown	**25**	**65.8**	**11**	**5.4**

Table 29 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Used drugs during event				
Yes	**1**	**2.6**	**105**	**51.5**
Illegal drugs				
Used, overdose	0	0.0	6	2.9
Used, no overdose	0	0.0	3	1.5
Prescription drugs				
Used, overdose	0	0.0	51	25.0
Used, no overdose	1	2.6	3	1.5
Non-prescription drugs				
Used, overdose	0	0.0	54	26.5
Used, no overdose	0	0.0	3	1.5
No	**8**	**21.1**	**97**	**47.5**
Unknown	**29**	**76.3**	**2**	**1.0**
Death-risk gambling				
Yes	**1**	**2.6**	**2**	**1.0**
No	**36**	**94.7**	**197**	**96.6**
Unknown	**1**	**2.6**	**5**	**2.5**
Planned/premeditated				
Yes	**13**	**34.2**	**58**	**28.4**
No	**9**	**23.7**	**125**	**61.3**
Unknown	**16**	**42.1**	**21**	**10.3**
Observable				
Yes	**5**	**13.2**	**109**	**53.4**
No	**30**	**78.9**	**84**	**41.2**
Unknown	**3**	**7.9**	**11**	**5.4**
Suicide note left				
Yes	**7**	**18.4**	**14**	**6.9**
No	**22**	**57.9**	**184**	**90.2**
Unknown	**9**	**23.7**	**6**	**2.9**
Communicated potential for self-harm (other than suicide note)				
Yes	**12**	**31.6**	**31**	**15.2**
How communicated[2]				
Written	0	0.0	2	1.0
Verbal	9	23.7	20	9.8
Text	3	7.9	14	6.9
Other	0	0.0	0	0.0
To whom communicated[2]				
Supervisor	1	2.6	6	2.9
Chaplain	0	0.0	1	0.5
Mental health staff	1	2.6	6	2.9
Friend	4	10.5	13	6.4
Spouse	2	5.3	5	2.5
Family	1	2.6	4	2.0
Other	0	0.0	0	0.0
No	**21**	**55.3**	**157**	**77**
Unknown	**5**	**13.2**	**16**	**7.8**

Table 29 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Residence at time of event				
Barracks	**15**	**39.5**	**140**	**68.6**
Bachelor Enlisted/Officer Quarters	**2**	**5.3**	**6**	**2.9**
On-base family housing	**5**	**13.2**	**8**	**3.9**
Off-base	**14**	**36.8**	**43**	**21.1**
Ship	**0**	**0.0**	**0**	**0.0**
Other	**2**	**5.3**	**6**	**2.9**
Unknown	**0**	**0.0**	**1**	**0.5**
Reside alone at time of event				
Yes	**15**	**39.5**	**40**	**19.6**
No	**23**	**60.5**	**159**	**77.9**
Unknown	**0**	**0.0**	**5**	**2.5**
Gun in home/immediate environment				
Yes	**20**	**52.6**	**16**	**7.8**
No	**12**	**31.6**	**172**	**84.3**
Unknown	**6**	**15.8**	**16**	**7.8**
Duty environment[2]				
Garrison/permanent duty station	**29**	**76.3**	**151**	**74.0**
Leave	**6**	**15.8**	**4**	**2.0**
Temporary duty	**5**	**13.2**	**2**	**1.0**
Training	**3**	**7.9**	**25**	**12.3**
Other	**8**	**21.1**	**20**	**9.8**
Deployed at time of event				
Yes	**0**	**0.0**	**3**	**1.5**
Location				
Afghanistan	0	0.0	1	0.5
Kuwait	0	0.0	1	0.5
Other/Unknown	0	0.0	1	0.5
No	**38**	**100**	**201**	**98.5**

[1]Data on the cause of the death were provided by AFMES.
[2]Subcategories are not mutually exclusive.

Table 30. Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Any mental health diagnosis				
Yes[1]	**12**	**31.6**	**109**	**53.4**
Mood disorder[1]	5	13.2	48	23.5
Anxiety disorder[1]	3	7.9	27	13.2
Personality disorder	3	7.9	11	5.4
Psychotic disorder	0	0.0	1	0.5
Adjustment disorder	3	7.9	51	25.0
Substance abuse disorder	9	23.7	46	22.5
No	**25**	**65.8**	**93**	**45.6**
Unknown	**1**	**2.6**	**2**	**1.0**
Sleep disorder				
Yes	**5**	**13.2**	**15**	**7.4**
No	**31**	**81.6**	**181**	**88.7**
Unknown	**2**	**5.3**	**8**	**3.9**
History of traumatic brain injury				
Yes	**0**	**0.0**	**6**	**2.9**
No	**36**	**94.7**	**188**	**92.2**
Unknown	**2**	**5.3**	**10**	**4.9**
Family history of mental illness				
Yes	**3**	**7.9**	**59**	**28.9**
No	**16**	**42.1**	**125**	**61.3**
Unknown	**19**	**50.0**	**20**	**9.8**
Prior self-injury				
Yes	**5**	**13.2**	**56**	**27.5**
Number of prior self-injuries				
One	2	5.3	28	13.7
More than one	3	7.9	28	13.7
Unknown	0	0.0	0	0.0
Current event similar to prior	0	0.0	29	14.2
No	**30**	**78.9**	**137**	**67.2**
Unknown	**3**	**7.9**	**11**	**5.4**
Psychotropic medications, last 90 days				
Yes[1]	**2**	**5.3**	**63**	**30.9**
Antidepressant	2	5.3	55	27.0
Antianxiety	0	0.0	21	10.3
Antimanic	0	0.0	2	1.0
Anticonvulsant	0	0.0	1	0.5
Antipsychotic	0	0.0	4	2.0
Sleep medication	1	2.6	38	18.6
No	**36**	**94.7**	**141**	**69.1**
Unknown	**0**	**0.0**	**0**	**0.0**

Table 30 (cont). Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Pain medication, last 90 days				
Yes	**5**	**13.2**	**20**	**9.8**
Opioid medication	0	0.0	5	2.5
No	**23**	**60.5**	**172**	**84.3**
Unknown	**10**	**26.3**	**12**	**5.9**
Health/social services, last 90 days				
Yes[1]	**21**	**55.3**	**131**	**64.2**
Medical treatment facility	20	52.6	114	55.9
Substance Abuse Services	4	10.5	14	6.9
Family Assistance Program	2	5.3	6	2.9
Outpatient mental health	7	18.4	90	44.1
Inpatient mental health	3	7.9	28	13.7
No	**16**	**42.1**	**72**	**35.3**
Unknown	**1**	**2.6**	**1**	**0.5**

[1]Subcategories are not mutually exclusive.

Table 31. Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Failed or failing relationship, last 90 days				
Yes[1]	**18**	**47.4**	**81**	**39.7**
Intimate relationship	14	36.8	72	35.3
Other relationship	7	18.4	21	10.3
No	**16**	**42.1**	**118**	**57.8**
Unknown	**4**	**10.5**	**5**	**2.5**
Friend and family stressors, last 90 days				
Yes[1]	**4**	**10.5**	**16**	**7.8**
Death of spouse or other family member (not suicide)	2	5.3	5	2.5
Death of friend (not suicide)	0	0.0	4	2.0
Serious illness of friend or family member	3	7.9	7	3.4
No	**30**	**78.9**	**184**	**90.2**
Unknown	**4**	**10.5**	**4**	**2.0**
History of friend or family death by suicide				
Yes[1]	**6**	**15.8**	**26**	**12.7**
Spouse	0	0.0	0	0.0
Family other than spouse	2	5.3	9	4.4
Friend	5	13.2	20	9.8
No	**30**	**78.9**	**174**	**85.3**
Unknown	**2**	**5.3**	**4**	**2.0**
Administrative/legal problems, last 90 days				
Yes[1]	**7**	**18.4**	**54**	**26.5**
Courts martial proceedings	2	5.3	2	1.0
Article 15/Non-judicial punishment	0	0.0	0	0.0
Administrative separation proceedings	1	2.6	14	6.9
Away without leave/deserter status	1	2.6	7	3.4
Medical evaluation board proceedings	1	2.6	15	7.4
Civil legal proceedings	1	2.6	8	3.9
Non-selection for promotion	0	0.0	7	3.4
Under investigation	2	5.3	19	9.3
No	**31**	**81.6**	**147**	**72.1**
Unknown	**0**	**0.0**	**3**	**1.5**
Excessive debt/bankruptcy, last 90 days				
Yes	**1**	**2.6**	**9**	**4.4**
No	**26**	**68.4**	**186**	**91.2**
Unknown	**11**	**28.9**	**9**	**4.4**
Workplace, last 90 days				
Yes[1]	**3**	**7.9**	**54**	**26.5**
Job problems	2	5.3	39	19.1
Supervisor/coworker issues	0	0.0	31	15.2
Poor performance review	1	2.6	19	9.3
Unit/workplace hazing	0	0.0	5	2.5
No	**31**	**81.6**	**145**	**71.1**
Unknown	**4**	**10.5**	**5**	**2.5**

Table 31 (cont). Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Marine Corps				
	Suicide (n = 38)		Suicide attempt (n = 204)	
	No.	%	No.	%
Abuse, assault, or harassment victimization, last year				
Yes[1]	**2**	**5.3**	**19**	**9.3**
Physical abuse or assault	0	0.0	5	2.5
Sexual abuse or assault	0	0.0	7	3.4
Emotional abuse	2	5.3	8	3.9
Sexual harassment	0	0.0	2	1.0
No	**32**	**84.2**	**180**	**88.2**
Unknown	**4**	**10.5**	**5**	**2.5**
Abuse, assault, or harassment perpetration, last year				
Yes[1]	**3**	**7.9**	**4**	**2.0**
Physical abuse or assault	1	2.6	3	1.5
Sexual abuse or assault	2	5.3	0	0.0
Emotional abuse	2	5.3	2	1.0
Sexual harassment	0	0.0	1	0.5
No	**30**	**78.9**	**195**	**95.6**
Unknown	**5**	**13.2**	**5**	**2.5**

[1]Subcategories are not mutually exclusive.

CHAPTER 7

U.S. Navy

DoDSER Results Summary: Navy

This chapter presents data collected on cases of suicide and suicide attempt involving members of the Navy. The DoDSER system collects data on demographic, contextual, behavioral health, historical, and risk-related factors for all incidences of suicide and all suicide attempts that result in hospitalization or evacuation from a military theater of operations. Cases involving both Active Component Service members and SELRES Service members who were in a duty status at the time of the event are subject to this reporting requirement. Particular variables of interest are presented in the following text, however, the reader is encouraged to examine the DoDSER data tables that follow this chapter's text for the full Navy data, presented separately by event type.

Suicide Mortality

As of March 31, 2017, the AFMES had identified 55 confirmed or pending cases of suicide that occurred during CY 2016 and involved a Navy Sailor. A total of 50 of these deaths occurred among members of the Navy's Active Component. The remaining 5 cases occurred among SELRES Sailors who were in a duty status at the time of their death. DoDSER surveys were submitted for all 55 of these deaths, which were used to populate the data tables included in this chapter.

A total of 3 deaths were associated with one or more reported suicide attempts that occurred between CY 2008 and CY 2016. The median number of days between the most recent suicide attempt and the date of death was 113.

Incidence of Attempted Suicide

Over the course of CY 2016, 176 suicide attempts were identified. These reports provided data on suicide attempts for 170 unique individuals. A total of 164 had a single suicide attempt recorded, while 6 Sailors (3.4%) had two or more suicide attempts recorded, dating back to 2010. The median number of days between the most recent suicide attempt and the penultimate attempt was 52.5 days.

Event Information

It is important to examine whether the Sailors who died by suicide had made an effort to communicate their suicidal thoughts or feelings to their family, social, and peer networks prior to engaging in suicidal behavior. Data from CY 2016 suggest that 32.7 percent of those who died by suicide had communicated their desire to die prior to engaging in the behavior that would ultimately cause their death. Most frequently, these communications involved verbal communications about their thoughts and feelings (14.5%) or sending electronic (14.5%) messages. Most commonly, spouses (12.7%), friends (16.4%), and behavioral health providers (10.9%) were the recipients of these messages. Communication of suicidal thoughts and feelings were either not made or not recognized in 63.6 percent of suicide cases. Separately, suicide notes were left in 36.4 percent of deaths.

Firearms were the method of injury most often identified in Navy suicide cases (60.0%). The majority (97.0%) of the firearms used were personal possessions, with only 3.0 percent of firearm deaths resulting from self-directed use of a military-issued weapon. Regardless of the method of injury, firearms were present in the immediate environment of 60.0 percent of those Sailors who died by suicide. Figure 43 identifies the two most common methods of injury and the proportion of deaths that are due to those methods.
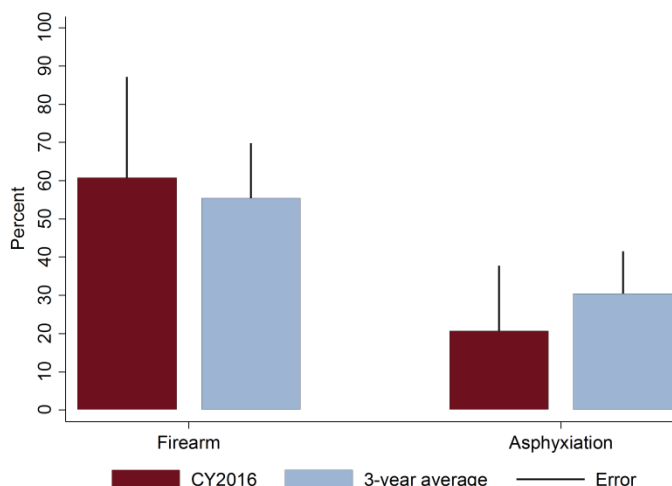
Figure 43. Proportion of CY 2016 Navy DoDSER suicide cases' method of injury compared to the three-year average of CY 2013 - CY 2015

With regard to suicide attempts, drug and/or alcohol overdose was the most frequently reported (54.5%) mechanism of injury amongst the Navy's suicide-attempt DoDSER reports. As seen in Figure 44, the other common methods of attempting suicide involved the self-directed use of a sharp or blunt object (22.2%) and hanging/asphyxiation (15.3%).

A Sailor's primary residence, including military barracks, was the most common setting in which fatal suicidal behavior occurred (54.5%), with a few cases occurring in other settings, for example, their work environment (3.6%), a vehicle (12.7%), or a hotel room (7.3%). Table 34 provides a descriptive overview of the settings and circumstances involved in these cases of suicide and attempted suicide.

Figure 44. Proportion of CY 2016 Navy DoDSER suicide-attempt cases' method of injury compared to the three-year average of CY 2013 - CY 2015

Demographic Characteristics

The most common demographic characteristics of suicide decedents closely resembles the makeup of the Navy overall. The most common profile was enlisted, non-Hispanic, white men below age 25 with a high school education at 27.3 percent of the suicide cases.

The occurrence of suicide among female Sailors continues to account for fewer than 20 cases a year, precluding a rate calculation. Similar to previous years, the proportion of male and female Sailors identified in each event type produced a demographic distinction between cases of suicide and cases of suicide attempt. Female Sailors accounted for 7.3 percent of DoDSER suicide cases and 34.1 percent of DoDSER suicide-attempt cases.

Demographic and military service characteristics for all Navy DoDSER suicide and suicide attempt cases are detailed in Tables 32 and 33.

Behavioral Health History

Of those individuals who died by suicide in CY 2016, 40.0 percent had met criteria for at least one current or past behavioral health diagnosis. Mood (18.2%) disorders were common, however the most frequent diagnoses were anxiety (20.0%), adjustment (20.0%), and substance abuse (20.0%) disorders. Conversely, 52.7 percent of Sailors who died by suicide had no known history of a behavioral health diagnosis.

Among those who attempted to die by suicide, 60.8 percent had at least one current or past behavioral health diagnosis present in their medical record. Anxiety (22.2%) and adjustment (24.4%) disorders were common. However, the most frequent diagnoses were mood (29.5%) and substance use (30.7%) disorders. Among those Sailors who attempted suicide, 38.6 percent had no known behavioral health history.

Table 35 provides data on behavioral health variables related to both common diagnoses and treatment utilization. Figure 45 displays the prevalence of various diagnoses, prior self-harm, and the use of psychotropic medication in the 90 days prior to a suicide-related death. Figure 46 displays the prevalence of the same factors among DoDSER suicide-attempt cases.

Substance Use

Alcohol use, during the time period immediately preceding death, was identified in 34.5 percent of Navy suicide cases, though the "unknown" response for this item was endorsed for a
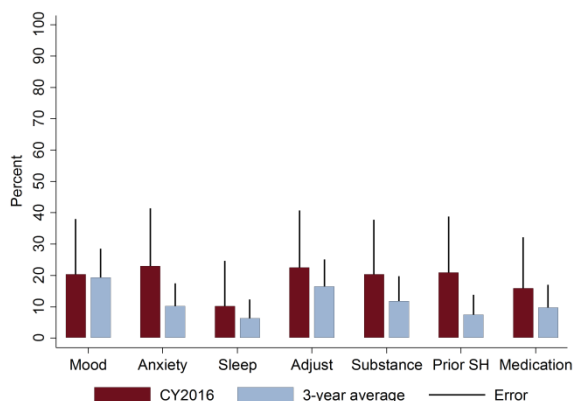
Figure 45. Proportion of behavioral health risk factors in CY 2016 Navy DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
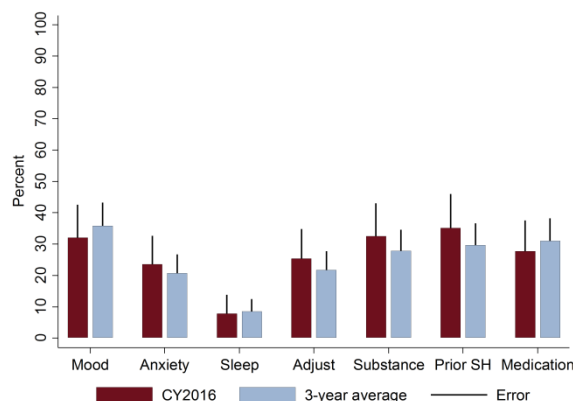
Figure 46. Proportion of behavioral health risk factors in CY 2016 Navy DoDSER suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

substantial proportion of cases (29.1%; Table 34). Drug use (including illicit, prescription, and over-the-counter substances) was identified in 7.3 percent of Navy suicides. Proportionally, few deaths resulted from drug/alcohol overdose (9.1%).

Alcohol use immediately prior to the suicidal behavior was present in 31.3 percent of suicide-attempt cases, and 42.6 percent of cases were positive for drug use immediately prior to the suicidal behavior. Prescription-drug misuse was the most common method of overdose (21.6%).

Health Care Utilization

Regardless of whether or not an individual voluntarily disclosed—or was assessed for—suicidal thoughts, feelings, and behavior, 43.6 percent of the Sailors who died by suicide in CY 2016 had been in contact with the MHS in the 90 days prior to their death (Table 35). A total of 23.6 percent had received either inpatient (7.3%) or outpatient (21.8%) behavioral health services. Additionally, 4.3 percent had participated in substance-abuse programs. No suicides occurred among Sailors engaged in family assistance programs.

A similar pattern was observed for suicide-attempt cases. Of the Sailors who attempted suicide in CY 2016, 59.1 percent had been in contact with the MHS in the 90 days prior to the behavior. A total of 44.9 percent had received either inpatient (11.4%) or outpatient (42.6%) behavioral health services. Additionally, 10.2 percent had participated in substance-abuse services and 1.7 percent had participated in family assistance programs.

Psychosocial Stressors

Overall, the presence of psychosocial stressors among Sailors in CY 2016 is consistent with the proportionality of stressors in the previous four years. Relationship difficulties, especially strife
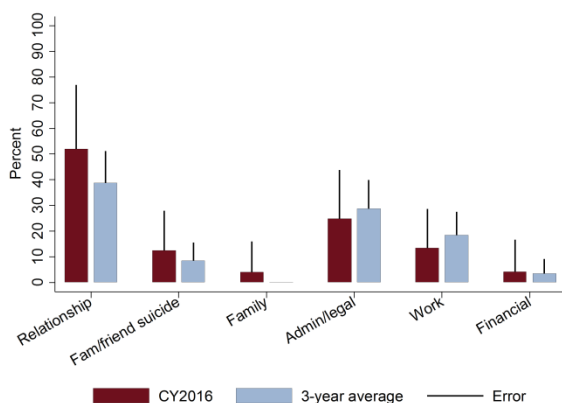
Figure 47. Proportion of stress-related risk factors in CY 2016 Navy DoDSER suicide cases compared to the three-year average of CY 2013 - CY 2015
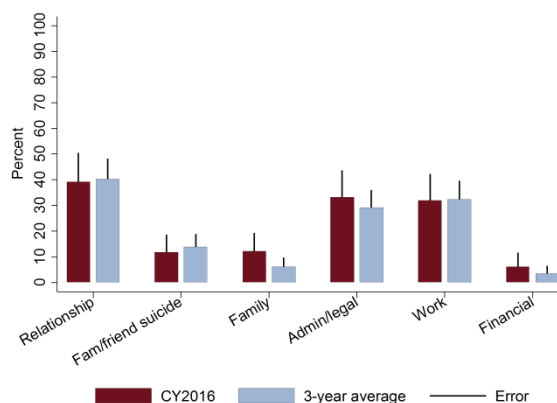
Figure 48. Proportion of stress-related risk factors in CY 2016 Navy DoDSER suicide-attempt cases compared to the three-year average of CY 2013 - CY 2015

within—or termination of—an intimate partner relationship, were present in 43.6 percent of Navy suicide cases and 35.8 percent of suicide attempts.

Individuals who died by suicide were frequently involved with legal and administrative stressors (23.6%), as were those who attempted to die by suicide (29.0%). Those who died by suicide were most frequently facing an investigation (12.7%). For suicide attempts, being under investigation (10.8%) or medical (8.5%) and administrative (9.7%) separation from service were the most frequently cited administrative issues. Figures 47 (cases of suicide) and 48 (cases of suicide attempt) display the prevalence of six stressors queried in the DoDSER system from CY 2016 compared to the three-year average from CY 2013 - CY 2015. Table 36 also provides data for stressors pertaining to relationships, family issues, legal or administrative problems, work and financial difficulties, and abuse victimization or perpetration.

Sexual Assault

To better assess and understand any potential association between sexual assault and the occurrence of suicide-related behavior, Navy data collected from the DoDSER system were matched against records related to the filing of an unrestricted report of sexual assault. According to the analysis of these data, no Navy DoDSER suicide cases and 2 Navy DoDSER suicide-attempt cases were associated with an unrestricted report of a sexual assault that occurred during the 12 months preceding the suicide-related event. When the limit of the 12 months preceding the suicide-related behavior was removed, no cases of suicide and 4 cases of attempted suicide were associated with unrestricted reports of sexual assault. Table 36 provides the number of sexual assaults recorded directly by the DoDSER system. Discrepancies between those cases identified by SAPRO and those identified on the DoDSER surveys could be due to several factors, including utilization of the restricted reporting option.

Table 32. Demographic characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Sex				
Male	**51**	**92.7**	**116**	**65.9**
Female	**4**	**7.3**	**60**	**34.1**
Age				
17–19	**3**	**5.5**	**16**	**9.1**
20–24	**26**	**47.3**	**93**	**52.8**
25–29	**14**	**25.5**	**30**	**17.0**
30–34	**5**	**9.1**	**17**	**9.7**
35–39	**5**	**9.1**	**6**	**3.4**
40–44	**1**	**1.8**	**9**	**5.1**
45–64	**1**	**1.8**	**5**	**2.8**
Race				
American Indian/Alaska Native	**0**	**0.0**	**4**	**2.3**
Asian/Pacific Islander	**2**	**3.6**	**16**	**9.1**
Black/African American	**8**	**14.5**	**46**	**26.1**
White/Caucasian	**45**	**81.8**	**106**	**60.2**
Other/Unknown	**0**	**0.0**	**4**	**2.3**
Ethnicity				
Hispanic	**7**	**12.7**	**25**	**14.2**
Not Hispanic	**48**	**87.3**	**151**	**85.8**
Unknown	**0**	**0.0**	**0**	**0.0**
Education				
Less than high school	**0**	**0.0**	**0**	**0.0**
Alternative high school	**4**	**7.3**	**5**	**2.8**
High school graduate	**43**	**78.2**	**137**	**77.8**
Associate's or technical degree	**3**	**5.5**	**16**	**9.1**
Four-year degree	**5**	**9.1**	**11**	**6.3**
Postgraduate	**0**	**0.0**	**7**	**4.0**
Unknown	**0**	**0.0**	**0**	**0.0**
Marital status				
Never married	**28**	**50.9**	**96**	**54.5**
Married	**27**	**49.1**	**80**	**45.5**
Separated	**0**	**0.0**	**0**	**0.0**
Divorced	**0**	**0.0**	**0**	**0.0**
Widowed	**0**	**0.0**	**0**	**0.0**

[1]Data on demographic characteristics primarily provided by DMDC.

Table 33. Military characteristics[1] of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Component				
Active	**50**	**90.9**	**169**	**96.0**
Reserve	**5**	**9.1**	**7**	**4.0**
Guard	**0**	**0.0**	**0**	**0.0**
Rank/grade				
Cadet/midshipman	**0**	**0.0**	**0**	**0.0**
Enlisted, unknown grade	**0**	**0.0**	**3**	**1.7**
E1–E4	**33**	**60.0**	**111**	**63.1**
E5–E9	**21**	**38.2**	**54**	**30.7**
Warrant	**0**	**0.0**	**0**	**0.0**
Officer	**1**	**1.8**	**8**	**4.5**
Enlisted occupational group				
Infantry, gun crews, and seamanship specialists	**5**	**9.1**	**13**	**7.4**
Electronic equipment repairers	**7**	**12.7**	**28**	**15.9**
Communications and intelligence specialists	**7**	**12.7**	**18**	**10.2**
Health care specialists	**6**	**10.9**	**23**	**13.1**
Other technical and allied specialists	**0**	**0.0**	**0**	**0.0**
Functional support and administration	**3**	**5.5**	**14**	**8.0**
Electrical/mechanical equipment repairers	**18**	**32.7**	**43**	**24.4**
Craftsworkers	**2**	**3.6**	**8**	**4.5**
Service and supply handlers	**5**	**9.1**	**9**	**5.1**
Non-occupational	**1**	**1.8**	**10**	**5.7**
Unknown	**0**	**0.0**	**2**	**1.1**
Officer occupational group				
General officers and executives	**0**	**0.0**	**0**	**0.0**
Tactical operations officers	**1**	**1.8**	**4**	**2.3**
Intelligence officers	**0**	**0.0**	**0**	**0.0**
Engineering and maintenance officers	**0**	**0.0**	**1**	**0.6**
Scientists and professionals	**0**	**0.0**	**0**	**0.0**
Health care officers	**0**	**0.0**	**2**	**1.1**
Administrators	**0**	**0.0**	**0**	**0.0**
Supply, procurement, and allied officers	**0**	**0.0**	**0**	**0.0**
Non-occupational	**0**	**0.0**	**1**	**0.6**
Unknown	**0**	**0.0**	**0**	**0.0**
History of deployment				
Yes	**33**	**60.0**	**80**	**45.5**
Number of deployments				
1	16	29.1	47	26.7
2	12	21.8	13	7.4
3 or more	5	9.1	20	11.4
Specific deployment locations[2]				
Afghanistan	3	5.5	5	2.8
Iraq	1	1.8	2	1.1
Kuwait	2	3.6	3	1.7
No	**22**	**40.0**	**96**	**54.5**
Unknown	**0**	**0.0**	**0**	**0.0**

[1]Data on military characteristics primarily provided by DMDC.
[2]Subcategories are not mutually exclusive.

Table 34. Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Event location country				
United States	**50**	**90.9**	**161**	**91.5**
Iraq	**0**	**0.0**	**0**	**0.0**
Afghanistan	**0**	**0.0**	**0**	**0.0**
Kuwait	**0**	**0.0**	**0**	**0.0**
Korea	**0**	**0.0**	**0**	**0.0**
Other Europe	**1**	**1.8**	**5**	**2.8**
North America	**0**	**0.0**	**1**	**0.6**
Central or South America	**0**	**0.0**	**1**	**0.6**
Japan	**1**	**1.8**	**2**	**1.1**
Belgium	**0**	**0.0**	**0**	**0.0**
Germany	**0**	**0.0**	**0**	**0.0**
United Kingdom	**0**	**0.0**	**0**	**0.0**
Other	**3**	**5.5**	**5**	**2.8**
Event setting				
Own residence	**22**	**40.0**	**78**	**44.3**
Barracks	**8**	**14.5**	**48**	**27.3**
Residence of friend or family	**4**	**7.3**	**6**	**3.4**
Work/jobsite	**2**	**3.6**	**8**	**4.5**
Automobile	**7**	**12.7**	**9**	**5.1**
Inpatient medical facility	**0**	**0.0**	**2**	**1.1**
Hotel	**4**	**7.3**	**4**	**2.3**
Other	**8**	**14.5**	**20**	**11.4**
Unknown	**0**	**0.0**	**1**	**0.6**
Event method[1]				
Drugs/alcohol	**5**	**9.1**	**96**	**54.5**
Hanging/asphyxiation	**13**	**23.6**	**27**	**15.3**
Poisoning	**0**	**0.0**	**6**	**3.4**
Firearm	**33**	**60.0**	**5**	**2.8**
Military firearm	1	1.8	2	1.1
Non-military firearm	32	58.2	3	1.7
Firearm of unknown origin	0	0.0	0	0.0
Trauma, sharp or blunt force	**4**	**7.3**	**39**	**22.2**
Other	**0**	**0.0**	**2**	**1.1**
Pending/unknown	**0**	**0.0**	**1**	**0.6**
Used alcohol during event				
Yes	**19**	**34.5**	**55**	**31.3**
No	**20**	**36.4**	**113**	**64.2**
Unknown	**16**	**29.1**	**8**	**4.5**

Table 34 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Used drugs during event				
Yes[2]	**4**	**7.3**	**75**	**42.6**
Illegal drugs				
Used, overdose	0	0.0	4	2.3
Used, no overdose	1	1.8	8	4.5
Prescription drugs				
Used, overdose	1	1.8	38	21.6
Used, no overdose	0	0.0	6	3.4
Non-prescription drugs				
Used, overdose	2	3.6	36	20.5
Used, no overdose	0	0.0	6	3.4
No	**33**	**60.0**	**92**	**52.3**
Unknown	**18**	**32.7**	**9**	**5.1**
Death-risk gambling				
Yes	**0**	**0.0**	**4**	**2.3**
No	**54**	**98.2**	**168**	**95.5**
Unknown	**1**	**1.8**	**4**	**2.3**
Planned/premeditated				
Yes	**31**	**56.4**	**31**	**17.6**
No	**22**	**40**	**124**	**70.5**
Unknown	**2**	**3.6**	**21**	**11.9**
Observable				
Yes	**14**	**25.5**	**78**	**44.3**
No	**41**	**74.5**	**91**	**51.7**
Unknown	**0**	**0.0**	**7**	**4.0**
Suicide note left				
Yes	**20**	**36.4**	**14**	**8.0**
No	**34**	**61.8**	**156**	**88.6**
Unknown	**1**	**1.8**	**6**	**3.4**
Communicated potential for self-harm (other than suicide note)				
Yes	**18**	**32.7**	**33**	**18.8**
How communicated[2]				
Written	1	1.8	0	0.0
Verbal	8	14.5	21	11.9
Text	8	14.5	11	6.3
Other	3	5.5	2	1.1
To whom communicated[2]				
Supervisor	3	5.5	3	1.7
Chaplain	0	0.0	1	0.6
Mental health staff	6	10.9	7	4.0
Friend	9	16.4	9	5.1
Spouse	7	12.7	11	6.3
Family	1	1.8	4	2.3
Other	2	3.6	4	2.3
No	**35**	**63.6**	**128**	**72.7**
Unknown	**2**	**3.6**	**15**	**8.5**

Table 34 (cont). Event characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Residence at time of event				
Barracks	**11**	**20.0**	**54**	**30.7**
Bachelor Enlisted/Officer Quarters	**5**	**9.1**	**4**	**2.3**
On-base family housing	**5**	**9.1**	**9**	**5.1**
Off-base	**29**	**52.7**	**83**	**47.2**
Ship	**3**	**5.5**	**19**	**10.8**
Other	**2**	**3.6**	**6**	**3.4**
Unknown	**0**	**0.0**	**1**	**0.6**
Reside alone at time of event				
Yes	**22**	**40.0**	**49**	**27.8**
No	**33**	**60.0**	**125**	**71**
Unknown	**0**	**0.0**	**2**	**1.1**
Gun in home/immediate environment				
Yes	**33**	**60.0**	**15**	**8.5**
No	**19**	**34.5**	**151**	**85.8**
Unknown	**3**	**5.5**	**10**	**5.7**
Duty environment[2]				
Garrison/permanent duty station	**41**	**74.5**	**125**	**71.0**
Leave	**1**	**1.8**	**6**	**3.4**
Temporary duty	**1**	**1.8**	**1**	**0.6**
Training	**10**	**18.2**	**19**	**10.8**
Other	**7**	**12.7**	**23**	**13.1**
Deployed at time of event				
Yes	**2**	**3.6**	**3**	**1.7**
Location				
Afghanistan	0	0.0	0	0.0
Kuwait	0	0.0	0	0.0
Other/Unknown	2	3.6	3	1.7
No	**53**	**96.4**	**173**	**98.3**

[1]Data on the cause of the death were provided by AFMES.
[2]Subcategories are not mutually exclusive.

Table 35. Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Any mental health diagnosis				
Yes[1]	**22**	**40.0**	**107**	**60.8**
Mood disorder[1]	10	18.2	52	29.5
Anxiety disorder[1]	11	20.0	39	22.2
Personality disorder	1	1.8	11	6.3
Psychotic disorder	0	0.0	0	0.0
Adjustment disorder	11	20	43	24.4
Substance abuse disorder	11	20	54	30.7
No	**29**	**52.7**	**68**	**38.6**
Unknown	**4**	**7.3**	**1**	**0.6**
Sleep disorder				
Yes	**5**	**9.1**	**13**	**7.4**
No	**46**	**83.6**	**160**	**90.9**
Unknown	**4**	**7.3**	**3**	**1.7**
History of traumatic brain injury				
Yes	**1**	**1.8**	**3**	**1.7**
No	**50**	**90.9**	**168**	**95.5**
Unknown	**4**	**7.3**	**5**	**2.8**
Family history of mental illness				
Yes	**7**	**12.7**	**58**	**33.0**
No	**29**	**52.7**	**108**	**61.4**
Unknown	**19**	**34.5**	**10**	**5.7**
Prior self-injury				
Yes	**11**	**20.0**	**61**	**34.7**
Number of prior self-injuries				
One	8	14.5	35	19.9
More than one	3	5.5	26	14.8
Unknown	0	0.0	0	0.0
Current event similar to prior	2	3.6	35	19.9
No	**2**	**3.6**	**35**	**19.9**
Unknown	**8**	**14.5**	**8**	**4.5**
Psychotropic medications, last 90 days				
Yes[1]	**8**	**14.5**	**50**	**28.4**
Antidepressants	7	12.7	46	26.1
Antianxiety	3	5.5	21	11.9
Antimanic	0	0.0	1	0.6
Anticonvulsant	0	0.0	1	0.6
Antipsychotic	1	1.8	2	1.1
Sleep medication	6	10.9	28	15.9
No	**47**	**85.5**	**126**	**71.6**
Unknown	**0**	**0.0**	**0**	**0.0**

Table 35 (cont). Medical and behavioral characteristics of suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Pain medication at time of event				
Yes	**5**	**9.1**	**20**	**11.4**
Opioid medication	0	0.0	8	4.5
No	**38**	**69.1**	**148**	**84.1**
Unknown	**12**	**21.8**	**8**	**4.5**
Health/social services, last 90 days				
Yes[1]	**24**	**43.6**	**104**	**59.1**
Medical treatment facility	24	43.6	86	48.9
Substance Abuse Services	4	7.3	18	10.2
Family Assistance Program	0	0.0	3	1.7
Outpatient mental health	12	21.8	75	42.6
Inpatient mental health	4	7.3	20	11.4
No	**28**	**50.9**	**70**	**39.8**
Unknown	**3**	**5.5**	**2**	**1.1**

[1]Subcategories are not mutually exclusive.

Table 36. Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Failed or failing relationship, last 90 days				
Yes[1]	**27**	**49.1**	**71**	**40.3**
Intimate relationship	24	43.6	63	35.8
Other relationship	7	12.7	19	10.8
No	**26**	**47.3**	**100**	**56.8**
Unknown	**2**	**3.6**	**5**	**2.8**
Friend and family stressors, last 90 days				
Yes[1]	**4**	**7.3**	**21**	**11.9**
Death of spouse or other family member (not suicide)	1	1.8	7	4.0
Death of friend (not suicide)	1	1.8	8	4.5
Serious illness of friend or family member	2	3.6	7	4.0
No	**47**	**85.5**	**149**	**84.7**
Unknown	**4**	**7.3**	**6**	**3.4**
History of friend or family death by suicide				
Yes[1]	**6**	**10.9**	**20**	**11.4**
Spouse	0	0.0	0	0.0
Family other than spouse	3	5.5	9	5.1
Friend	3	5.5	13	7.4
No	**47**	**85.5**	**153**	**86.9**
Unknown	**2**	**3.6**	**3**	**1.7**
Administrative/legal problems, last 90 days				
Yes[1]	**13**	**23.6**	**51**	**29**
Courts martial proceedings	0	0.0	0	0.0
Article 15/Non-judicial punishment	0	0.0	0	0.0
Administrative separation proceedings	2	3.6	17	9.7
Away without leave/deserter status	3	5.5	6	3.4
Medical evaluation board proceedings	1	1.8	15	8.5
Civil legal proceedings	2	3.6	7	4.0
Non-selection for promotion	2	3.6	2	1.1
Under investigation	7	12.7	19	10.8
No	**42**	**76.4**	**123**	**69.9**
Unknown	**0**	**0.0**	**2**	**1.1**
Excessive debt/bankruptcy, last 90 days				
Yes	**2**	**3.6**	**11**	**6.3**
No	**47**	**85.5**	**156**	**88.6**
Unknown	**6**	**10.9**	**9**	**5.1**
Workplace, last 90 days				
Yes[1]	**8**	**14.5**	**61**	**34.7**
Job problems	7	12.7	39	22.2
Supervisor/coworker issues	4	7.3	30	17.0
Poor performance review	2	3.6	18	10.2
Unit/workplace hazing	0	0.0	6	3.4
No	**47**	**85.5**	**110**	**62.5**
Unknown	**0**	**0.0**	**5**	**2.8**

Table 36 (cont). Psychosocial determinants described in suicide and suicide-attempt DoDSER reports submitted for CY 2016, Navy				
	Suicide (n = 55)		Suicide attempt (n = 176)	
	No.	%	No.	%
Abuse, assault, or harassment victimization, last year				
Yes[1]	**1**	**1.8**	**26**	**14.8**
Physical abuse or assault	0	0.0	12	6.8
Sexual abuse or assault	0	0.0	10	5.7
Emotional abuse	1	1.8	16	9.1
Sexual harassment	0	0.0	6	3.4
No	**47**	**85.5**	**144**	**81.8**
Unknown	**7**	**12.7**	**6**	**3.4**
Abuse, assault, or harassment perpetration, last year				
Yes[1]	**3**	**5.5**	**10**	**5.7**
Physical abuse or assault	0	0.0	6	3.4
Sexual abuse or assault	1	1.8	5	2.8
Emotional abuse	1	1.8	1	0.6
Sexual harassment	1	1.8	0	0.0
No	**46**	**83.6**	**160**	**90.9**
Unknown	**6**	**10.9**	**6**	**3.4**

[1]Subcategories are not mutually exclusive.

Chapter 8

SELECTED RESERVE
NON DUTY STATUS

Selected Reserve, Not in Duty Status

Historically, the DoDSER system collected standardized data on demographic, contextual, behavioral health, historical, and risk-related factors for all identified suicides and suicide attempts that occur among Active Component members of the Armed Forces of the United States as well as Service members in the Reserves and National Guard who were in a duty status at the time of the event.

However, evolving policy directed the incorporation of surveillance of suicide events that occur among members of the Reserve Component who are not in a duty status at the time of their death. In service of that goal, CY 2016 represents the first year that DoDSER reports were entered for Service men and women who were in a civilian (non-duty) status at the time of their death.

These individuals are considered to be part of the Selected Reserve, or SELRES. The SELRES is defined as those service members within the Ready Reserve of each of the reserve components. The Selected Reserve consists of units, and, as designated by the Secretary concerned, of Reserves, trained as prescribed in section 10147(a)(1) of title 10 U.S. Code § 10143 or section 502(a) of title 32, as appropriate. The organization and unit structure of the Selected Reserve shall be approved in the case of all reserve components other than the Coast Guard Reserve, by the Secretary of Defense based upon recommendations from the military departments as approved by the Chairman of the Joint Chiefs of Staff in accordance with contingency and war plans. (Source: 10 U.S. Code § 10143).

Identifying and collecting extensive data on non-duty suicide events was a major challenge for the Services. The processes that are used to achieve this goal are being refined to ensure that the reporting compliance and data-quality goals for DoDSER reports can be achieved. For the CY 2016 DoDSER report, data on demographic variables were obtained from the DMDC after suicide cases were provided by the Services to the AFMES.

Over the course of CY 2016, 178 deaths due to suicide were recorded among Service members in the Reserve and Guard Components who were not in a duty status at the time of their death. Table 37 displays the demographic and Service characteristics of these Service members who died by suicide. While not formally compared using a statistical analysis, these distributions were qualitatively similar to those for Service members who died by suicide in an Active Duty status (Tables 12 and 13).

Table 37. Characteristics of suicide cases reported from the Services to the AFMES from among SELRES Service members not in a duty status at the time of death.	Count (n = 178)	%
Service		
Air Force	19	10.7
Army	136	76.4
Marine Corps	18	10.1
Navy	5	2.8
Component		
Reserve	69	38.8
Guard	109	61.2
Sex		
Male	169	94.9
Female	9	5.1
Age		
17–19	16	9.0
20–24	65	36.5
25–29	55	30.9
30–34	17	9.6
35–39	9	5.1
40–44	7	3.9
45–64	9	5.1
Education		
Less than high school	6	3.4
Alternative high school	19	10.7
High school graduate	116	65.2
Associate's or technical degree	21	11.8
Four-year degree	12	6.7
Postgraduate	2	1.7
Unknown	2	1.7
Ethnicity		
Hispanic	8	4.5
Not Hispanic	170	95.5
Unknown	0	0.0
Race		
American Indian/Alaska Native	5	2.8
Asian/Pacific Islander	9	5.1
Black/African American	15	8.4
White/Caucasian	142	79.8
Other/Unknown	7	3.9
Marital Status		
Never married	120	67.4
Married	51	28.7
Legally separated	0	0.0
Divorced	7	3.9
Widowed	0	0.0
Rank/Grade		
E1-E4	117	65.7
E5-E9	53	29.8
Warrant officer	0	0.0
Officer	8	4.5

[1]Demographic and Service characteristics provided by the DMDC.

Appendix A

PROPORTIONATE MORTALITY ANALYSIS

Chapter two provided the results of the statistical analysis of the suicide mortality rates for each Component and Service in the DoD. The analyses also compared these rates to estimates from previous years and to the US total population (age 17 –59). This appendix provides one additional analysis of the data – proportionate mortality. The rates from chapter two examined the overall occurrence in the population. The rates were constructed as the number of suicides that occurred over a particular CY divided by the approximate population at risk for the service (the twelve-month end-strength average). Proportionate mortality, in contrast, considers the number of cases and the population size separately. Proportions (often expressed as percentages) are calculated across categories of interest and compared.

As an example of proportionate mortality, consider the data from a fictitious population described in Table 38 below. The population is evenly divided between males and females. If we assume that sex has no effect on suicide risk, these percentages (50.0 and 50.0) serve as expected values for the distribution of cases. In other words, we expect one-half of the cases to be male and the other half to be female. In the data, we observe that 66.7 percent of cases were male, and the remaining 33.3 percent were female. As estimates, these values are clearly not the same as 50 percent. However, similar to the analysis of rates, the consideration of uncertainty, or error, is paramount here. The 95% CI provides upper and lower bounds on percentage values consistent with our data. Part of the analysis is to consider whether or not the expected value (the population percentage; in this case, 50) is contained within the interval. If it is, then there is insufficient evidence to conclude that the percentage of suicide cases differs from the population expected value. In contrast, if the interval excludes the expected value, then it is reasonable to conclude that there is a difference between the distribution of suicide cases across categories a particular variable and the distribution of the total population across the same categories.

One caveat about these values is that they are not adjusted for other demographic variables. As a result, over- or under-representation of a group in terms of proportionate mortality may be explained by another variable. As an example, if we observe a disproportionate number of cases in the junior enlisted ranks, it may be because this group is younger than other rank groups.

Table 38. Example of proportionate mortality analysis					
	Suicide deaths			Population	
	Count	Percent	95% CI	Count	Percent
Males	200	66.7	61.0, 72.0	20,000	50.0
Females	100	33.3	28.0, 39.0	20,000	50.0

Tables 39–45 below provide the observed distribution of suicide cases for each Component (total force) and for the Active Component of each Service, CY 2016. They also provide the 95% confidence interval and the distribution of the characteristic in the population. For the Active Component, total force, the following demographic groups had a higher proportion of cases than expected based on the population of the total force: male, non-Hispanic, white/Caucasian, not Hispanic, age 20–24, at or below a high school education, and divorced. Some demographic groups had a lower proportion than expected. These were: females, officers, and those with some college or a four-year college degree.

Table 39. Percent of suicides in the Active Component, all Services, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	92.7	89.0, 95.5	84.1
Female	7.3	4.5, 11.0	15.9
Race			
American Indian/Alaska Native	2.2	0.8, 4.7	1.2
Asian/Pacific Islander	3.3	1.5, 6.1	5.4
Black/African American	11.6	8.1, 16.0	17.3
White/Caucasian	77.1	71.7, 81.9	68.1
Ethnicity			
Hispanic	9.8	6.6, 14.0	14.2
Non-Hispanic	88.0	83.6, 91.6	81.7
Age			
17–19	5.1	2.8, 8.4	7.0
20–24	41.1	35.2, 47.2	32.0
25–29	23.6	18.7, 29.1	23.2
30–34	12.7	9.0, 17.3	16.2
35–39	9.5	6.3, 13.5	11.3
40–44	4.4	2.3, 7.5	6.3
45–64	2.9	1.3, 5.7	2.9
Rank/Grade			
E1–E4	49.1	43.0, 55.2	43.3
E5–E9	38.2	32.4, 44.2	38.2
Officer	11.6	8.1, 16.0	16.1
Warrant officer	1.1	0.2, 3.2	1.4
Education			
Alternative high school certification	7.3	4.5, 11.0	2.8
High school graduate	67.6	61.8, 73.1	60.2
Some college, no degree	6.2	3.6, 9.7	4.1
Associate's degree or technical certification	2.9	1.3, 5.7	8.6
Four-year college degree	8.7	5.7, 12.7	13.1
Master's degree or greater	6.9	4.2, 10.6	8.2
Marital Status			
Never married	42.9	37.0, 49.0	42.7
Married	48.4	42.3, 54.4	53.3
Divorced	7.6	4.8, 11.4	3.8

Table 40. Percent of suicides in the Reserve Component, all Services, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	95.0	87.7, 98.6	78.3
Female	5.0	1.4, 12.3	21.7
Race			
American Indian/Alaska Native	0.0	0.0, 4.5	0.9
Asian/Pacific Islander	1.3	0.0, 6.8	6.3
Black/African American	6.3	2.1, 14.0	19.5
White/Caucasian	78.8	68.2, 87.1	67.4
Ethnicity			
Hispanic	8.8	3.6, 17.2	14.4
Non-Hispanic	91.3	82.8, 96.4	83.7
Age			
17–19	6.3	2.1, 14.0	5.1
20–24	31.3	21.3, 42.6	20.2
25–29	32.5	22.4, 43.9	20.7
30–34	11.3	5.3, 20.3	17.0
35–39	6.3	2.1, 14.0	13.0
40–44	5.0	1.4, 12.3	9.0
45–64	2.5	0.3, 8.7	8.1
Rank/Grade			
E1–E4	57.5	45.9, 68.5	40.0
E5–E9	36.3	25.8, 47.8	40.9
Officer	6.3	2.1, 14.0	18.1
Warrant officer	0.0	0.0, 4.5	1.0
Education			
Alternative high school certification	7.5	2.8, 15.6	2.6
High school graduate	75.0	64.1, 84.0	54.9
Some college, no degree	2.5	0.3, 8.7	4.4
Associate's degree or technical certification	5.0	1.4, 12.3	7.6
Four-year college degree	6.3	2.1, 14.0	17.3
Master's degree or greater	2.5	0.3, 8.7	9.6
Marital Status			
Never married	60.0	48.4, 70.8	45.8
Married	35.0	24.7, 46.5	46.7
Divorced	5.0	1.4, 12.3	7.3

Table 41. Percent of suicides in the National Guard Component, Air Force and Army, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	95.1	89.7, 98.2	82.6
Female	4.9	1.8, 10.3	17.4
Race			
American Indian/Alaska Native	3.3	0.9, 8.1	0.7
Asian/Pacific Islander	4.9	1.8, 10.3	3.3
Black/African American	7.3	3.4, 13.4	14.3
White/Caucasian	80.5	72.4, 87.1	79.1
Ethnicity			
Hispanic	3.3	0.9, 8.1	8.6
Non-Hispanic	96.7	91.9, 99.1	91.3
Age			
17–19	8.9	4.5, 15.4	7.3
20–24	35.0	26.6, 44.1	24.5
25–29	29.3	21.4, 38.1	20.7
30–34	9.8	5.1, 16.4	15.7
35–39	4.9	1.8, 10.3	11.4
40–44	6.5	2.8, 12.4	7.7
45–64	3.3	0.9, 8.1	6.7
Rank/Grade			
E1–E4	60.2	50.9, 68.9	43.9
E5–E9	32.5	24.4, 41.6	42.6
Officer	6.5	2.8, 12.4	11.5
Warrant officer	0.8	0, 4.4	1.9
Education			
Alternative high school certification	10.6	5.7, 17.4	4.8
High school graduate	53.7	44.4, 62.7	40.8
Some college, no degree	15.4	9.6, 23.1	24.8
Associate's degree or technical certification	1.6	0.2, 5.8	6.3
Four-year college degree	12.2	7, 19.3	15.2
Master's degree or greater	0.8	0, 4.4	5.2
Marital Status			
Never married	65.9	56.8, 74.2	51.3
Married	30.1	22.1, 39	42.3
Divorced	4.1	1.3, 9.2	6.2

Table 42. Percent of suicides in the Active Component, Air Force, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	91.8	81.9, 97.3	80.6
Female	8.2	2.7, 18.1	19.4
Race			
American Indian/Alaska Native	0.0	0, 5.9	0.6
Asian/Pacific Islander	0.0	0, 5.9	4.6
Black/African American	9.8	3.7, 20.2	14.2
White/Caucasian	85.2	73.8, 93	71.3
Ethnicity			
Hispanic	8.2	2.7, 18.1	11.1
Non-Hispanic	90.2	79.8, 96.3	84.4
Age			
17–19	6.6	1.8, 15.9	5.0
20–24	23	13.2, 35.5	27.2
25–29	27.9	17.1, 40.8	25.7
30–34	16.4	8.2, 28.1	19.1
35–39	14.8	7, 26.2	13.1
40–44	6.6	1.8, 15.9	6.6
45–64	4.9	1, 13.7	2.5
Rank/Grade			
E1–E4	36.1	24.2, 49.4	37.9
E5–E9	44.3	31.5, 57.6	41.5
Officer	19.7	10.6, 31.8	19.2
Education			
Alternative high school certification	0.0	0, 5.9	0.0
High school graduate	65.6	52.3, 77.3	51.1
Some college, no degree	0.0	0, 5.9	0.0
Associate's degree or technical certification	9.8	3.7, 20.2	19.7
Four-year college degree	8.2	2.7, 18.1	13.9
Master's degree or greater	14.8	7, 26.2	12.9
Marital Status			
Never married	44.3	31.5, 57.6	37.7
Married	41.0	28.6, 54.3	56.0
Divorced	13.1	5.8, 24.2	6.2

Table 43. Percent of suicides in the Active Component, Army, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	92.1	86.0, 96.2	85.4
Female	7.9	3.8, 14.0	14.6
Race			
American Indian/Alaska Native	2.4	0.5, 6.7	0.7
Asian/Pacific Islander	3.9	1.3, 8.9	5.8
Black/African American	13.4	8, 20.6	21.9
White/Caucasian	76.4	68, 83.5	66.7
Ethnicity			
Hispanic	11.8	6.8, 18.7	13.8
Non-Hispanic	88.2	81.3, 93.2	85.2
Age			
17–19	2.4	0.5, 6.7	7.0
20–24	39.4	30.8, 48.4	29.6
25–29	25.2	17.9, 33.7	22.3
30–34	15	9.3, 22.4	16.5
35–39	8.7	4.4, 15	12.0
40–44	5.5	2.2, 11	7.3
45–64	3.1	0.9, 7.9	3.8
Rank/Grade			
E1–E4	47.2	38.3, 56.3	43.8
E5–E9	36.2	27.9, 45.2	35.8
Officer	14.2	8.6, 21.5	16.4
Warrant officer	2.4	0.5, 6.7	3.1
Education			
Alternative high school certification	10.2	5.6, 16.9	5.1
High school graduate	59.1	50, 67.7	53.8
Some college, no degree	11.8	6.8, 18.7	10.1
Associate's degree or technical certification	0.8	0, 4.3	5.3
Four-year college degree	10.2	5.6, 16.9	15.8
Master's degree or greater	7.9	3.8, 14	8.4
Marital Status			
Never married	37	28.6, 46	37.7
Married	51.2	42.2, 60.1	57.0
Divorced	10.2	5.6, 16.9	5.2

Table 44. Percent of suicides in the Active Component, Marine Corps, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	97.3	85.8, 99.9	92.0
Female	2.7	0.1, 14.2	8.0
Race			
American Indian/Alaska Native	8.1	1.7, 21.9	1.1
Asian/Pacific Islander	5.4	0.7, 18.2	3.8
Black/African American	10.8	3, 25.4	10.8
White/Caucasian	70.3	53, 84.1	79.5
Ethnicity			
Hispanic	2.7	0.1, 14.2	19.3
Non-Hispanic	97.3	85.8, 99.9	80.7
Age			
17–19	10.8	3, 25.4	13.4
20–24	64.9	47.5, 79.8	47.5
25–29	10.8	3, 25.4	17.6
30–34	2.7	0.1, 14.2	10.0
35–39	5.4	0.7, 18.2	6.4
40–44	2.7	0.1, 14.2	3.3
45–64	2.7	0.1, 14.2	1.4
Rank/Grade			
E1–E4	62.2	44.8, 77.5	59.1
E5–E9	35.1	20.2, 52.5	29.6
Officer	2.7	0.1, 14.2	10.2
Warrant officer	0.0	0, 9.5	1.1
Education			
Alternative high school certification	8.1	1.7, 21.9	1.9
High school graduate	86.5	71.2, 95.5	82.2
Some college, no degree	2.7	0.1, 14.2	0.7
Associate's degree or technical certification	0.0	0, 9.5	2.2
Four-year college degree	2.7	0.1, 14.2	9.6
Master's degree or greater	0.0	0, 9.5	2.2
Marital Status			
Never married	51.4	34.4, 68.1	53.7
Married	48.6	31.9, 65.6	43.1
Divorced	0.0	0, 9.5	3.1

Table 45. Percent of suicides in the Active Component, Navy, CY 2016, by demographic characteristics relative to the distribution of the total population			
	Suicide	95% CI	Population
Sex			
Male	92.0	80.8, 97.8	81.3
Female	8.0	2.2, 19.2	18.7
Race			
American Indian/Alaska Native	0.0	0.0, 7.1	2.7
Asian/Pacific Islander	4.0	0.5, 13.7	6.5
Black/African American	10.0	3.3, 21.8	17.1
White/Caucasian	74.0	59.7, 85.4	60.9
Ethnicity			
Hispanic	12.0	4.5, 24.3	15.0
Non-Hispanic	78.0	64.0, 88.5	74.5
Age			
17–19	6.0	1.3, 16.5	5.5
20–24	50.0	35.5, 64.5	31.3
25–29	24.0	13.1, 38.2	25.2
30–34	10.0	3.3, 21.8	16.5
35–39	8.0	2.2, 19.2	11.4
40–44	0.0	0.0, 7.1	6.2
45–64	0.0	0.0, 7.1	2.8
Rank/Grade			
E1–E4	60.0	45.2, 73.6	38.7
E5–E9	38.0	24.7, 52.8	43.3
Officer	2.0	0.1, 10.6	16.1
Warrant officer	0.0	0.0, 7.1	0.5
Education			
Alternative high school certification	8.0	2.2, 19.2	2.4
High school graduate	78.0	64.0, 88.5	65.8
Some college, no degree	2.0	0.05, 10.6	1.2
Associate's degree or technical certification	2.0	0.05, 10.6	6.1
Four-year college degree	10.0	3.3, 21.8	10.6
Master's degree or greater	0.0	0, 7.1	6.7
Marital Status			
Never married	50.0	35.5, 64.5	48.8
Married	50.0	35.5, 64.5	50.9
Divorced	0.0	0, 7.1	0.0

Appendix B

GLOSSARY

Active Component | Per the Office of the Deputy Chief Management Officer, the Active Component is, "the portion of the armed forces as identified in annual authorization acts as 'active forces,' and in section 115 of Title 10 USC as those active duty personnel paid from funds appropriated for active duty personnel."

Article 15 | A provision under the Uniform Code of Military Justice that gives commanding officers the ability to impose non-judicial punishment upon Service members who commit minor offenses within their units.

Confidence Interval (95%) | A band of plausible values that represent all 95% confidence intervals that could be constructed from repeated random samples of size n, 95% will contain the parameter (Rosner, 2006). Said another way, it is a range of values so defined that there is a 95% probability that the value of a parameter lies within it. See Rosner, B. 2006. Fundamentals of biostatistics. 6th Edition. Belmont, CA: Duxbury Press.

death-risk gambling | Any game of chance with death or serious injury as a potential outcome. Examples include "Russian roulette."

deployment | Per the Office of the Chairman, the Joint Chiefs of Staff, a deployment is defined as "a troop movement resulting from a Joint Chiefs of Staff (JCS)/combatant command deployment order for 30 continuous days or greater to a land-based location outside the United States. This deployment location does not have permanent U.S. military medical treatment facilities (i.e., funded by the Defense Health Program) and may or may not be directly supported by deployed medical forces." Service members who deployed and had at one location identified as part of Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF) or Operation New Dawn (OND) were considered to have been OEF/OIF/OND-deployed. Per the RAND report, "Army Deployments to OIF and OEF," published in 2010, the identified locations included: Afghanistan, Bahrain, Djibouti, Iraq, Kuwait, Kyrgyzstan, Oman, Qatar, Saudi Arabia and Uzbekistan. Additionally, the sea boundaries of the Red Sea, the Gulf of Aden, the Gulf of Oman and the Arabian Sea, north of the 10ºN latitude and west of the 68ºE longitude and the air space over all countries and sea boundaries listed here.

DoDSER annual report | A yearly summary providing a descriptive report of data from the United States Armed Forces on the incidence of suicides and suicide attempts between January 1 and December 31 each year. This report is prepared by the Psychological Health Center of Excellence, a component of the Defense Health Agency's Research and Development directorate.

DoDSER survey	The DoDSER data-collection form utilized by each Service to collect a core set of standardized data elements, as well as a set of Service-specific items, regarding cases of suicide and attempted suicide.
DoDSER system	A secure web-based data-collection program, available at https://dodser.t2.health.mil, through which DoDSER surveys are completed and submitted.
duty status	Service members are considered to be in a duty status if they are members of the Active Component and are not identified as being AWOL or in a deserter status. Per the Office of the Assistant Secretary of Defense for Reserve Affairs, Service members of the Selected Reserve are also considered to be in a duty status if they are identified as currently engaged in Drill or Training, or in the Simultaneous Membership Program, Active Guard/Reserve, or Full-Time Support roles.
medical evaluation board	Informal proceeding evaluating the medical history of a Service member to determine how the injury and/or disease will respond to treatment protocols. This is used to determine if the medical condition and/or physical defect will render the Service member unfit for duty.
planned and/or premeditated	Evidence that the event was planned and/or premeditated includes verbal discussion of plan, written notes, e-mail and/or chat-room discussion, or other evidence of plan such as preparatory behaviors (e.g., giving possessions away, purchase of materials to facilitate suicide, etc.).
protective factor	Factors that stem from physical, psychological, spiritual, family, social, financial, vocational, and emotional well-being. Factors that make it less likely those individuals will develop a disorder. Protective factors may encompass biological, psychological, or social factors in the individual, family, and environment.
psychotropic medications	A type of medication that directly affects the mental, emotional, and behavioral states when consumed by an individual. Such medications are used to treat disorders such as depression or bipolar disorder.
risk factor	Factors caused by stress, trauma, or other circumstances that cause a schism in protective factors. Factors that make it more likely those individuals will develop a disorder or pre-dispose one to high risk for self-injurious behaviors. Risk factors may encompass biological, psychological, or social factors in the individual, family, and environment.

Selected Reserve	Per the Office of the Assistant Secretary of Defense for Reserve Affairs, the Selected Reserve "consists of those units and individuals within the Ready Reserve designated by their respective Services and approved by the Chairman, Joint Chiefs of Staff, as so essential to initial wartime missions that they have priority over all other Reserves. All selected Reservists are in an active status, but not necessarily a duty status. This category includes all Guard and Reserve personnel who have Selected Reserve agreements, whether trained or not.
self-harm (without intent to die)	A self-inflicted, potentially injurious behavior for which there is evidence (either implicit or explicit) that the person did not intend to kill himself or herself (i.e., had no intent to die).
sexual assault	The use of physical force to compel a person to engage in a sexual act against his or her will, regardless of whether or not the act is completed. Or, an attempted or completed sex act involving a person who is unable to understand the nature or condition of the act, to decline participation, or to communicate unwillingness to engage in the sexual act (e.g., because of illness, disability, or the influence of alcohol or other drugs, or because of intimidation or pressure).
suicidal ideation	Any self-reported thoughts of engaging in suicide-related behaviors.
suicide	Self-inflicted death with evidence (either explicit or implicit) of intent to die.
suicide attempt	A self-inflicted, potentially injurious behavior with a non-fatal outcome for which there is evidence (either explicit or implicit) of intent to die.
Traumatic Brain Injury	A traumatically induced structural injury and/or physiological disruption of brain function as a result of an external force that is indicated by new onset or worsening of at least one of these clinical signs immediately following the event:
	a) Any period of loss of or a decreased level of consciousness;
	b) Any loss of memory for events immediately before or after the injury;
	c) Any alteration in mental state at the time of the injury (confusion, disorientation, slowed thinking, etc.) Neurological deficits (weakness, loss of balance, change in vision, praxis, paresis/plegia, sensory loss, aphasia, etc.) that may or may not be due to a transient intracranial lesion used to treat disorders such as depression or bipolar disorder.

unrestricted report of sexual assault	Within the DoD, a formal report of the occurrence of a sexual assault in which the victim desires medical treatment, counseling, legal assistance, SARC and/or SHARP Specialist assistance, and an official investigation of the crime.

Appendix C

ACRONYMS

AFMES	Armed Forces Medical Examiner System
AWOL	Absent Without Official Leave
CAC	Common Access Card
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
CY	Calendar Year
DHA	Defense Health Agency
DMDC	Defense Manpower Data Center
DoD	Department of Defense
DoDSER	Department of Defense Suicide Event Report
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision
DSPO	Defense Suicide Prevention Office
MHS	Military Health System
OEF	OPERATION ENDURING FREEDOM
OIF	OPERATION IRAQI FREEDOM
OMB	Office of Management and Budget
OND	OPERATION NEW DAWN
POC	Point of Contact
PHCoE	Psychological Health Center of Excellence
SAPRO	Sexual Assault Prevention and Response Office
SELRES	Selected Reserve
SMR	Standardized Mortality Ratio
SPARRC	Suicide Prevention and Risk Reduction Committee
SPPM	Suicide Prevention Program Manager
T2	National Center for Telehealth & Technology
U.S.	United States
WISQARS	Web-based Injury Statistics Query and Reporting System

Appendix D

LIST OF TABLES AND FIGURES

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Appendix E

FEEDBACK

In a continuing effort to provide a DoDSER annual report that is useful to the DoD community it serves, we request your feedback on the information we've provided and your suggestions for ways in which we could make the DoDSER annual report more useful.

Please return your completed survey by mail, fax or email to

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Joint Base Lewis-McChord, WA 98431
Fax: 253.968.4192
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	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I found the information in the CY 2016 DoDSER Annual Report helpful.					
What other statistics or comparisons would you like to have in future DoDSER annual reports?					
How did/will you use this report (e.g., inform leadership, policy, processes)?					
Do you have any other feedback or suggestions?					

Optional:

Name: _____ Title: _____

Organization: _____

Email: _____ Phone: _____