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**Surveillance of Suicidal Behavior: U.S. Army Active and Reserve Component
Soldiers, 2019 and 2020**

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14. ABSTRACT The Defense Centers for Public Health – Aberdeen routinely conducts surveillance of suicidal behaviors among U.S. Army Active and Reserve Component Soldiers. For 2020, the rates for Active Component (AC) Soldiers were 36 suicides and 90 suicide attempts per 100,000 AC Soldiers. Among both activated and non-activated Army National Guard (ARNG) and U.S. Army Reserve (USAR) Soldiers there were 31 suicides per 100,000 ARNG Soldiers and 22 suicides per 100,000 USAR Soldiers. Among activated ARNG and USAR Soldiers only, there were 91 suicide attempts per 100,000 activated ARNG Soldiers and 148 attempts per 100,000 activated USAR Soldiers. Suicide rates increased from 2019 to 2020 for AC and ARNG Soldiers. Groups most at risk for suicide include male, younger (under 35 years of age), enlisted, and White AC and RC Soldiers while those most at risk for attempt include female, 17–24-year-old, junior enlisted, Asian/Pacific Islander, and Black AC Soldiers. From 2016 to 2020, an increasing trend in suicide rates was found for AC Soldiers overall and for male, 17–24-year-old, Black, and White AC Soldiers. These findings highlight the importance of developing and implementing effective suicide prevention programs across all components, of targeting high risk groups, and of continuous surveillance of suicidal behaviors and evaluation of prevention efforts.					
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**PUBLIC HEALTH REPORT NO.
SURVEILLANCE OF SUICIDAL BEHAVIOR:
U.S. ARMY ACTIVE AND RESERVE COMPONENT SOLDIERS
2019 and 2020**

1 SUMMARY

1.1 Purpose

The Defense Centers for Public Health—Aberdeen (DCPH-A) (formerly the U.S. Army Public Health Center (APHC)) Division of Behavioral and Social Health Outcomes Practice (BSHOP) collects, analyzes, and disseminates surveillance data on suicide among all activated and nonactivated Soldiers and suicide attempt among Active Component (AC) and activated Reserve Component (RC) (U.S. Army National Guard [ARNG] and U.S. Army Reserve [USAR]) Soldiers during each calendar year. This surveillance publication examines established risk factors of suicidal behavior cases including demographic and military characteristics, legal/administrative history, personal history, event characteristics, and behavioral health (BH) history. Rates—both overall and stratified by personal characteristics—are calculated to identify high risk groups. This analysis was conducted during the coronavirus disease 2019 (COVID-19) pandemic. Thus, trends in suicide counts and rates were assessed by component before and during the pandemic. Continued epidemiological monitoring over the next 3–5 years is needed to assess changes in trends through and after the pandemic. This information can help guide military leaders, prevention program specialists, scientists, public health practitioners, and clinicians in determining where to focus prevention, policy, and research efforts to mitigate suicide outcomes.

1.2 Methods

Suicide cases among AC and activated RC Soldiers were obtained from the Armed Forces Medical Examiner System (AFMES) and include both confirmed and pending cases. Suicide cases among nonactivated RC Soldiers were obtained from the Office of the Deputy Chief of Staff for Personnel (Army G-1). Suicide attempt cases among AC and activated RC Soldiers were identified by the Department of Defense Suicide Event Reports (DoDSERs). Suicidal ideations are not reported, as the Office of The Surgeon General Medical Command Policy Memo 20-012 no longer requires DoDSER completion for ideation cases. The most serious and recent suicidal behavior event was identified for each Soldier for each calendar year. Legal/administrative histories and personal stressors were captured from DoDSERs. Medical encounters and diagnoses for BH conditions during a Soldier's time in service in an active status were obtained from the Military Health System Data Repository (MDR). Although this report relies on a comprehensive set of data sources with information pertaining to suicidal behavior in the U.S. Army, information on the health status of RC Soldiers is limited. RC Soldiers—particularly those who are not activated—often seek healthcare services at medical facilities outside the Army beneficiary network.

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Descriptive statistics (i.e., counts and percents) for each component for calendar years 2019 and 2020 are reported, including demographic and military characteristics, as well as legal/administrative and personal history, event characteristics, and BH history. Suicide and suicide attempt rates, both unadjusted and stratified, for both years were calculated and trends in suicide rates were assessed from January 2016 to December 2020 using Poisson regression in SAS® version 9.4. Unadjusted rate ratios and 95% confidence intervals are reported and interpreted.

1.3 Results

1.3.1 Demographic and Military Characteristics, Legal/Administrative History, Personal History, and Event Characteristics

The following includes the most recent and/or serious suicidal behavior for 2020:

- 175 suicides and 434 suicide attempts among AC Soldiers.
- 104 suicides and 28 attempts among ARNG Soldiers.
- 42 suicides and 22 attempts among USAR Soldiers.

In 2020, suicidal behavior occurred most often in the U.S. Army among junior enlisted, Whites, and males across components. Although most suicide and suicide attempt cases were single, a higher proportion of AC Soldiers who died by suicide were married. AC suicide and attempt cases and RC suicide attempt cases were predominantly under age 25, while RC suicide cases were over age 24. The majority of RC suicide cases were nonactivated. The principal stressors among AC and ARNG suicide and attempt cases, and USAR attempt cases with a completed DoDSER, were relationship and work-related problems. The primary methods of suicide and suicide attempt were gunshot wound and drug/alcohol overdose, respectively. Slightly over one-third of ARNG suicide cases with a completed DoDSER had communicated their thoughts to someone close to them. DoDSERs were missing for 88% of USAR suicides, most of which were among nonactivated Soldiers, so stressors and certain event characteristics are not reported for this group.

1.3.2 Behavioral Health and Medical History

The majority of suicidal behavior cases among AC Soldiers had engaged with the behavioral healthcare system, usually within 30 days prior to the event. A low proportion of RC suicide and suicide attempt cases sought BH care while activated. This may be because medical care obtained outside the military behavioral healthcare system by RC Soldiers while not activated does not appear in the military medical records or MDR. For all components the majority of suicidal behavior cases who engaged with the behavioral healthcare system were diagnosed with adjustment or mood disorder. AC and USAR suicide cases were also frequently diagnosed with substance use and anxiety disorders, respectively.

1.3.3 Rates of Suicidal Behavior

The 2020 rates of suicidal behavior among AC Soldiers were 36 suicides and 90 suicide attempts per 100,000 Soldiers. The following suicide rates for RC Soldiers included both activated and nonactivated Soldiers: 31 per 100,000 ARNG Soldiers and 22 per 100,000 USAR Soldiers. Suicide attempts among RC Soldiers included only those by activated Soldiers, with rates of 91 attempts per 100,000 activated ARNG Soldiers and 148 attempts per 100,000 activated USAR Soldiers.

Suicide and attempt rates were also examined by demographic and military characteristics. Suicide rates for AC Soldiers were highest for Soldiers who were 17–24 years old and White. Suicide rates among ARNG Soldiers 17–24 and 25–34 were comparable to one another, and higher than the rate for those over 34 years of age. Suicide rates were similar among AC and ARNG Soldiers in the E1–E4 and E5–E6 ranks. The rates of suicide attempt among AC Soldiers were highest among female, 17–24-year-old, junior enlisted, Black, and Asian/Pacific Islander Soldiers. Stratified suicide and suicide attempt rates by demographic and military characteristics were not calculated for USAR Soldiers because most categories had counts less than 20.

1.3.4 Trend Analysis of Suicide Rates

A statistically significant increasing trend was observed in suicide rates from 2016 to 2020 for AC Soldiers. Differences in suicide rates for ARNG and USAR Soldiers over the 5-year period were not statistically significant. Male, 17–24 year-old, White and Black AC Soldiers had statistically significant increasing trends over the specified time frame.

1.4 Conclusions

These findings highlight the continuing threat to public health posed by suicidal behavior and the importance of effective suicide prevention programs targeting all components. Implementation and evaluation of current force-wide suicide prevention efforts, including population-specific suicide prevention trainings (for trainees, Soldiers, family members) and risk-reduction tools for first-line leaders, should continue to be a critical priority for military leaders, prevention program specialists, and other engaged stakeholders. While targeting prevention programs and efforts toward young and enlisted AC Soldiers remains important, such programs and efforts should also target RC Soldiers over age 24 and expand to include nonactivated RC Soldiers, as the latter group accounted for the majority of suicide cases. Soldiers who are junior enlisted, female, 17–24 years old, Asian/Pacific Islander or Black should continue to be the focus of efforts to prevent suicide attempt. Relationship and work stress, as well as BH diagnoses (specifically adjustment, mood, and anxiety disorders) continue to be important factors in suicidal behavior. As a result, BSHOP is exploring new areas for future public health studies with implications for suicidal behavior prevention including assessing the availability and quality of couples therapy services and examining a variety of other behavioral and social health conditions affecting health and readiness. In addition, BSHOP will continue its efforts to address gaps in the data on suicidal behavior including improving completion of DoDSERs for USAR Soldiers.

Subsequent publications will seek to address gaps in monitoring trends in suicidal behavior rates across components, including assessing the impacts of the COVID-19 pandemic. The ongoing COVID-19 pandemic presents new short and long-term impacts to the health of Soldiers and their families. It is critical for those engaged with military public health, including leaders, public health researchers, and clinicians, to continue to monitor suicidal behavior in order to assess for opportunities to prevent and mitigate risk factors and continue to provide early access to clinical treatment for BH conditions.

2 REFERENCES

Appendix A lists references used in this report.

3 AUTHORITY

The authority for this report is Department of the Army Regulation 40–5, *Army Public Health Program*.

4 BACKGROUND

Throughout the previous decade suicide has been identified as one of the top two leading causes and manners of death in the U.S. Army and the U.S. Armed Forces more broadly (AFHSC 2014; APHC 2016). Suicide and other suicidal behaviors impact Soldiers from all backgrounds and experiences. Previous reports indicate most suicides occur in Soldiers who are male or of younger age, and the highest rates of suicide attempts and ideations are found in Soldiers who are female, younger aged, American Indian, or Black (APHC 2018). In addition to the possibility of injury or a devastating loss of life when a Soldier or other Service member attempts suicide, fellow Service members, Family members, and the community may face numerous negative impacts including experiencing feelings of shame, guilt, and distress, increased risk of diagnosis with mental health disorders, and increased risk of suicide attempt and suicidal ideations (Hom et al. 2017; Petersen et al. 2022; Ursano et al. 2017). Specific impacts can be seen at the unit level, with assessments of the impact of suicidal behavior occurring within Army units showing that a Soldier's risk of attempting suicide increased as the number of past year suicide attempts within their unit increased, while more broadly military units dealing with a suicide death experienced lower unit cohesion and low morale (Petersen et al. 2022; Ursano et al. 2017). In response to increasing suicide rates across the services during the 2000s, the Department of Defense (DoD) undertook multiple steps to better understand the problem and establish standardized reporting requirements and other policies to prevent suicide more effectively (DoD 2018). DoD Instruction (DoDI) 6490.16 provides guidance for the operation of the DoD Suicide Prevention Program and establishes standardized data collection and reporting of suicides and suicide attempts. Additionally, Section 741 of the National Defense Authorization Act requires annual reporting on suicidal behavior among Service members to the U.S. Congress. This report has been developed in support of fulfilling these requirements and in an effort to provide up-to-date information on suicidal behavior specifically for the U.S. Army population.

The BSHOP released the first Surveillance of Suicidal Behavior Publication (SSBP) in 2009. The suicide rate for AC Soldiers peaked at 30 deaths per 100,000 Soldiers during calendar year 2012 before declining; however, beginning in 2016 the suicide rate has again shown an upward trend (APHC 2018). The ongoing COVID-19 pandemic and accompanying societal disruptions have sparked concerns that rates of suicidal behavior in the Army will continue to increase.

The first case of COVID-19 in the U.S. was reported on 27 February 2020 (CDC 2020), and the World Health Organization declared a pandemic on 11 March 2020. Shortly after, control measures such as social distancing and statewide stay-at-home orders were implemented to reduce the spread of the virus. These practices have led to unintended consequences that threaten BH and well-being, such as feelings of loneliness, lack of social support, job insecurity, and economic hardship—all of which are also risk factors of suicidal behavior (Banerjee et al. 2021; Ganesan 2021; Rains et al. 2021; Saltzman et al. 2020; Serafini et al. 2020; Sher 2020). Studies have reported high levels of anxiety, depression and alcohol consumption, resulting in poor mental health (Jacob et al. 2021; Soji et al. 2021; Liu et al. 2020) and suicidal ideation (Czeisler et al. 2020) primarily among young adults under age 35 (Vahratian et al. 2021; Soji et al. 2021; Liu et al. 2020), as well as among minorities and those with less than a high school education (Vahratian et al. 2021; Czeisler et al. 2020). A history of BH diagnosis and contact with the behavioral healthcare system are also risk factors of suicidal behavior. Due to interruptions in or lack of access to adequate psychiatric or BH services during the pandemic, those with pre-existing BH conditions were more likely to report suicidal ideation (Czeisler et al. 2020), and a high percentage of adults reported unmet mental health care needs (Sher 2020; Vahratian et al. 2021). This reduction or reconfiguration of available BH services also occurred in the military population. When health protection condition levels were elevated, and access to on-base services and resources was limited, technologies such as tele-behavioral health were maximized to continue to serve military Service members and their families. Nonetheless, the short and long-term impacts of pandemic related circumstances are still unfolding.

The patterns observed in the general population mirror findings reported in prior SSBPs regarding populations deemed high risk for suicidal behavior: Soldiers who are young (18-24 years old or junior enlisted), who had prior contact with the behavioral healthcare system, and who experienced frequent socioeconomic stressors. The additional stress of the COVID-19 pandemic may contribute to increases in suicidal behavior in the Army population over the next few years. Although initial assessments in the general population observed no change or even a decline in the number of suicides during the pandemic (Pirkis et al. 2021; Faust et al. 2021; Appleby 2021), these studies were all conducted using data collected during the early months of the pandemic and psychological impacts on suicidal behavior often take time to manifest (Jacob et al. 2021). This surveillance publication examines established risk factors of suicidal behavior cases occurring in 2019 and 2020 including demographic and military characteristics, legal/administrative and personal history, event characteristics, and BH history. This publication also assesses overall trends in suicide rates from January 2016 through December 2020. This assessment captures the initial impact of the COVID-19 pandemic on suicidal behavior in the Army population. Subsequent reports will continue to assess these trends through the duration of the pandemic.

5 METHODS

A summary of the methodology is provided below. Appendix B details the full methods used to generate this report. Appendix C presents BH conditions of interest and their corresponding diagnosis codes (Table C-2).

5.1 Data Sources, Population, and Measures

This surveillance report describes the population of U.S. AC and RC Soldiers aged 17–64 who experienced suicidal behavior during calendar years 2019 and 2020. Information on Soldiers who exhibited suicidal behavior was obtained from various data sources. Suicide cases among AC and activated RC Soldiers were obtained from the AFMES and include both confirmed and pending cases. Suicide cases among nonactivated RC Soldiers were obtained from the Army G-1. Suicide attempt cases among AC and activated RC Soldiers were identified by DoDSERs. Suicidal ideations are not reported, as the Office of The Surgeon General Medical Command Policy Memo 20-012 no longer requires the completion of a DoDSER for ideation cases.

In this report, the term suicidal behavior refers to both deaths by suicide and suicide attempts (see Appendix B for the definitions of these terms). The most serious and recent suicidal behavior event was identified for each Soldier for each calendar year. Demographic and military characteristics were obtained from the following sources in the order of most to least complete: (1) Defense Manpower Data Center (DMDC), (2) AFMES, and/or (3) DoDSER. Legal/administrative histories (i.e., Article 15, administrative separation, etc.) and personal histories (i.e., work stress, physical health problems, etc.) were captured from DoDSERs. Event characteristics including location and method of event, substance involvement (drugs and alcohol), and communication prior to event were obtained from the Defense Casualty Information Processing System (DCIPS) and DoDSERs. Medical encounters and diagnoses for BH conditions were based on medical encounter data obtained from the MDR.

Descriptive statistics (i.e., counts and percents) for each component by type of suicidal behavior and calendar year were calculated, including demographic and military characteristics, as well as legal/administrative and personal history, event characteristics, and BH history. Suicide and suicide attempt rates, both crude and stratified by demographic and military characteristics, were calculated along with 95% confidence intervals. Rates were generally not calculated where the number of events was fewer than 20 due to instability in rate calculations; however these rates were calculated and presented for certain categories when an overall multi-rate trend was found to be statistically significant. Trends in suicide rates from January 2016 to December 2020 by component and demographic and military characteristics among AC soldiers were assessed for statistical significance. Poisson regression was used to test for overall and strata-specific trends over the specified time period. Rate ratios and 95% confidence intervals were reported.

Age and sex-adjusted suicide rates by year for AC Soldiers and the U.S. general population were also assessed and are presented in Appendix C, Figure C-1. The 2015 U.S. Army AC

population was used as the standard population for age and sex adjustment. Direct standardization was applied.

All data management and analytical procedures were performed using SAS version 9.4 and Microsoft® Excel®.

5.2 Limitations

Although this report relies on a comprehensive set of data sources with information pertaining to suicidal behavior in the U.S. Army, it does not include medical claims data from care received outside of the Military Healthcare System (MHS). In particular, RC Soldiers who are not activated do not typically receive care under the MHS. Additionally, DoDSERs are not currently being submitted for suicide attempts among nonactivated RC Soldiers and for suicides among nonactivated USAR Soldiers. Thus, the information for RC Soldiers is more limited than that for AC Soldiers.

6 RESULTS

6.1 U.S. Army Active Component

6.1.1 Demographic and Military Characteristics

Table 1 describes demographic and military characteristics of U.S. Army AC Soldiers who died by or attempted suicide in 2019 and 2020, including total number, sex, age, race-ethnicity, marital status and rank of Soldiers who exhibited suicidal behavior. This same information (excluding marital status, which was unavailable at the time of reporting) is also presented for total AC Soldier populations in 2019 and 2020 for comparison. This and the following subsections will describe key results from each table. Results from the most recent data year, 2020, will be discussed in detail.

In 2020, there were 175 suicides and 434 suicide attempts among AC Soldiers. The total population of AC Soldiers in 2020 (N = 480,893) was 84.5% male, 55.4% White, and 43.7% junior enlisted. A similar percentage among all AC Soldiers were ages 17–24 years old (38.4%) and 25–34 years old (38.8%). By comparison, higher proportions of Soldiers who died by suicide (n = 175) were male (94.9%), White (64.6%), and junior enlisted (50.9%) compared to the total population. Among age groups, the 17–24 year-old age group comprised the largest proportion of suicide deaths (48.0%), higher than the proportion represented in the total population. Nearly half of Soldiers (49.7%) who died by suicide were married. Compared to the total population, Soldiers who attempted suicide (n = 434) were proportionately less male (70.3%) and were predominantly 17–24 years old (68.4%) and junior enlisted (E1–E4) (77.9%). Among race-ethnicity categories, while White soldiers still comprised the largest proportion of suicide attempts (47.7%), the proportion was lower among suicide attempts compared to the total AC population. The majority of attempt cases were single (59.2%). Comparing Soldiers who died by suicide and those who attempted, Soldiers who attempted suicide were skewed less male, were younger, more non-White, more often single, and lower ranked than the those who died by suicide.

6.1.2 Legal/Administrative and Personal History

Table 2 describes legal, administrative, and personal history of AC Soldiers with suicidal behavior in 2019 and 2020. Legal and administrative history includes legal problems and career-related actions that could significantly impact a Soldier including civil legal problems, absent without leave, and courts martial experienced in the year prior to the event. Personal history includes significant life-related psychosocial stressors experienced in the year prior to event including relationship problems, work stress, and financial stress.

In 2020, 27.1% (n=46) of suicide cases and 22.4% (n=95) of suicide attempt cases had a history of legal and/or administrative actions. The most common actions for those who died by suicide were civil legal problems (50.0%), administrative separation (37.0%), and Article 15 (non-judicial punishment) (30.4%). For suicide attempt cases the most common actions were the same as for suicide cases but with Article 15 (54.7%) being the most prevalent action followed by administrative separation (50.5%) and civil legal problems (20.0%). Personal problems were more prevalent compared to legal and/or administrative problems, with approximately 70.0% (n=119) of suicide and 72.5% (n=308) of attempt cases having a history of personal problems within 1 year prior to the event. Relationship problems (76.5%), work stress (29.4%), and physical health problem (29.4%) were the most commonly documented problems for suicide cases. The top two personal problems for suicide attempt cases mirrored suicides with 50.8% and 44.5% of cases experiencing relationship problems and work stress, and another 28.3% experiencing the death of a spouse, family member, or friend prior to the attempt. A higher percentage of those who died by suicide (22.7%) were perpetrators of abuse compared with those who attempted suicide (6.2%), while conversely the percentage of suicide cases who were victims of abuse (6.7%) was smaller than the percentage of attempt cases (23.1%).

6.1.3 Event Characteristics

Table 3 describes characteristics of the suicidal behavior event including the location of event (U.S. [including both within and outside the contiguous U.S.], in theater, other, or unknown) and the method of event (gunshot wound, hanging/asphyxiation, drug/alcohol overdose, cutting, poisoning, other, or unknown). The table also includes whether there was substance involvement (drugs and alcohol) as well as communication of the potential for self-harm by the Soldier prior to the event.

Nearly all suicides (93.7%) and most attempts (78.1%) in 2020 occurred in the U.S. The most common method of suicide was gunshot wound (70.3%) versus only 4.6% of attempts. In contrast most attempts were overdoses by drugs or alcohol (52.3%) compared to only 1% among suicide deaths. Alcohol was involved in 35.9% of suicides and 36.6% of suicide attempts in 2020, a notable increase in comparison to the percentages in 2019 (21.6% and 29.5% respectively). While the proportion of suicide cases involving drugs was small (4.1%), nearly half of suicide attempts had drug involvement (45.8%).

6.1.4 Behavioral Health and Medical History

Table 4 presents BH related history including any history of inpatient and outpatient encounters during a Soldier's military career, history of outpatient encounters in the 30 days before the suicidal behavior event, and history of BH diagnoses. Diagnoses analyzed include mood disorder, posttraumatic stress disorder (PTSD), anxiety disorder, adjustment disorder, and substance use disorder.

Most Soldiers with suicidal behavior in 2020 had a BH encounter during their military career—72.3% (n=125) of suicide and 54.9% (n=230) of suicide attempt cases. Most of these encounters for both Soldiers who died by suicide (n=118, 94.4%) and those who attempted suicide (n=199, 86.5%) occurred in an outpatient setting. A slightly higher proportion of attempt cases (56.5%) sought care within 30 days before the event compared to suicide cases (43.2%). Nearly half of suicide cases (49.6%) and 39.4% of attempt cases had a BH diagnosis during their military career. Of those with a BH diagnosis, over half among both suicide (69.4%) and suicide attempt cases (59.3%) were diagnosed with multiple disorders. Adjustment disorder was the most frequent diagnosis for suicide (67.1%) and attempt (74.4%) cases, followed by substance use disorder among suicide cases (49.4%) and mood disorder among attempt cases (52.3%). Additional disorders were also prevalent among these groups, including mood disorder (44.7%) and anxiety disorder (41.2%) diagnoses among Soldiers who died by suicide and substance use disorder (35.5%) and anxiety disorder (30.8%) among suicide attempt cases.

6.1.5 Rates of Suicidal Behavior

Table 5 includes rates for suicide deaths and Soldiers who attempted suicide for years 2019 and 2020 overall and by sex, rank, age, and race-ethnicity. All rates are calculated as the number of Soldiers who died by suicide or attempted suicide during the calendar year per 100,000 total AC soldiers, based on the population of AC Soldiers as recorded during the respective year in the DMDC.

In 2020, suicidal behavior occurred at a rate of 36 suicides and 90 suicide attempts per 100,000 AC Soldiers per year. The suicide rate for male Soldiers was 41 per 100,000 Soldiers. The rate for female Soldiers could not be reported due to the low numbers of events. AC Soldiers 17–24 years old had the highest rate of suicide (45/100,000 Soldiers per year) compared to those over age 24. White Soldiers (43/100,000 Soldiers per year) had the highest suicide rate among race-ethnicity categories with calculated rates, followed secondly by Black Soldiers (32/100,000 Soldiers per year). Junior enlisted Soldiers (E1–E4) (42/100,000 Soldiers per year) and noncommissioned officers (E5–E6) (45/100,000 Soldiers per year) had similar suicide rates while the rate for senior noncommissioned officers (E7–E9) (39/100,000 Soldiers per year) was lower. The rates of attempt among AC Soldiers were higher for those who were female (173/100,000 Soldiers per year) than for those who were male (75/100,000 Soldiers per year). Junior enlisted Soldiers (161/100,000 Soldiers per year) had a higher rate of attempt compared to noncommissioned officers (55/100,000 Soldiers per year). Among the different age groups, Soldiers who were 17–24 years old (161/100,000 Soldiers per year) had the highest attempt rate. Asian/Pacific Islander (122/100,000 Soldiers per year) followed by Black Soldiers (105/100,000 Soldiers per year) had the highest attempt rates by race-ethnicity category.

6.1.6 U.S. Army Active Component Tables

Tables 1-5 present AC results.

Table 1. Demographic and Military Characteristics^a of U.S. Army Active Component Soldiers for the Total Population and by Suicidal Behavior, 2019–2020

	Total Population ^b		Suicidal Behavior n (%)			
			Suicide ^c		Suicide Attempt ^d	
	2019 (n=479,411)	2020 (n=480,893)	2019 (n=145)	2020 (n=175)	2019 (n=480)	2020 (n=434)
SEX						
Male	406,094 (84.7)	406,348 (84.5)	133 (91.7)	166 (94.9)	352 (73.3)	305 (70.3)
Female	73,317 (15.3)	74,545 (15.5)	12 (8.3)	9 (5.1)	128 (26.7)	129 (29.7)
AGE						
17–24	188,049 (39.2)	184,648 (38.4)	74 (51.0)	84 (48.0)	327 (68.1)	297 (68.4)
25–34	183,525 (38.3)	187,096 (38.9)	51 (35.2)	61 (34.9)	122 (25.4)	101 (23.3)
35–64	107,829 (22.5)	108,913 (22.7)	20 (13.8)	30 (17.1)	31 (6.5)	36 (8.3)
RACE-ETHNICITY						
Non-Hispanic White	263,399 (55.4)	262,729 (55.1)	97 (66.9)	113 (64.6)	237 (49.4)	207 (47.7)
Non-Hispanic Black	99,416 (20.9)	98,816 (20.7)	23 (15.9)	32 (18.3)	114 (23.8)	104 (24.0)
Hispanic	77,046 (16.2)	79,690 (16.7)	15 (10.3)	23 (13.1)	83 (17.3)	69 (15.9)
Non-Hispanic Asian/Pacific Islander	30,872 (6.5)	31,226 (6.5)	9 (6.2)	5 (2.9)	37 (7.7)	38 (8.8)
Non-Hispanic American Indian	4,439 (0.9)	4,473 (0.9)	1 (0.7)	2 (1.1)	9 (1.9)	16 (3.7)
MARITAL STATUS ^e						
Single	-	-	60 (41.4)	76 (43.4)	290 (60.4)	257 (59.2)
Married	-	-	80 (55.2)	87 (49.7)	176 (36.7)	157 (36.2)
Divorced	-	-	5 (3.5)	12 (6.9)	13 (2.7)	20 (4.6)
Other	-	-	0 (0.0)	0 (0.0)	1 (0.2)	0 (0.0)
RANK ^f						
E1–E4	212,900 (44.4)	209,970 (43.7)	79 (54.5)	89 (50.9)	370 (77.1)	338 (77.9)
E5–E6	123,795 (25.8)	127,043 (26.4)	47 (32.4)	57 (32.6)	82 (17.1)	70 (16.1)
E7–E9	50,306 (10.5)	50,898 (10.6)	11 (7.6)	20 (11.4)	12 (2.5)	10 (2.3)
W1–W5	14,282 (3.0)	14,341 (3.0)	3 (2.1)	5 (2.9)	5 (1.0)	3 (0.7)
O1–O8	78,115 (16.3)	78,624 (16.4)	4 (2.8)	4 (2.3)	11 (2.3)	13 (3.0)

Legend:

E=Enlisted, O=Officer, W=Warrant Officer

Notes:

^aObtained from the Defense Manpower Data Center.

^bObtained from the Defense Manpower Data Center. Records with missing information for a particular characteristic were excluded from counts and percentage calculations.

^cIncludes suicides confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^dFrom Department of Defense Suicide Event Reports, which are completed only for cases that were hospitalized or evacuated.

^eIncludes widowed and legally separated. Total population counts were not available at the time of reporting.

^fOne (1) suicide was reported among Cadets in 2019.

Table 2. Legal/Administrative and Personal History^a of U.S. Army Active Component Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^a	
	2019 (n=145)	2020 (n=175)	2019 (n=480)	2020 (n=434)
LEGAL/ADMINISTRATIVE HISTORY^d	29 (21.6)	46 (27.1)	120 (26.6)	95 (22.4)
Article 15	8 (27.6)	14 (30.4)	66 (55.0)	52 (54.7)
Civil Legal Problems	16 (55.2)	23 (50.0)	30 (25.0)	19 (20.0)
Administrative Separation ^e	8 (27.6)	17 (37.0)	51 (42.5)	48 (50.5)
Absent Without Leave	2 (6.9)	4 (8.7)	11 (9.2)	7 (7.4)
Nonselection ^f	4 (13.8)	7 (15.2)	14 (11.7)	12 (12.6)
Courts Martial	4 (13.8)	5 (10.9)	13 (10.8)	7 (7.4)
Medical Board ^g	8 (6.0)	4 (2.4)	42 (9.3)	30 (7.1)
PERSONAL HISTORY^d	93 (69.4)	119 (70.0)	344 (76.6)	308 (72.5)
Relationship Problem	69 (74.2)	91 (76.5)	167 (48.6)	156 (50.8)
Work Stress	25 (26.9)	35 (29.4)	170 (49.4)	137 (44.5)
Physical Health Problem	24 (25.8)	35 (29.4)	80 (23.3)	61 (19.8)
Victim of Abuse				
Previous Year	10 (10.8)	8 (6.7)	67 (19.5)	71 (23.1)
Perpetrator of Abuse	15 (16.1)	27 (22.7)	26 (7.6)	19 (6.2)
Spouse/Family/Friend Death	14 (15.1)	16 (13.5)	101 (29.4)	87 (28.3)
Financial Stress	13 (14.0)	11 (9.2)	28 (8.1)	25 (8.1)
Spouse/Family Health Problem	4 (4.3)	2 (1.7)	36 (10.5)	41 (13.3)
Spousal/Family/Friend Suicide				
Previous Year	12 (12.9)	7 (5.9)	40 (11.6)	41 (13.3)

Notes:

^a Personal and legal/administrative history within 1-year before event, except as noted. Data were obtained from Department of Defense Suicide Event Report (DoDSER), except as noted.

^b Total number of cases includes Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages. DoDSERs were not available for 8 suicides in 2019.

^c Includes suicides confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Not mutually exclusive.

^e Considered for separation from the Army on the basis of conduct or inability to meet standards of duty performance and discipline.

^f Not selected for advanced schooling, promotion, or command.

^g Medical evaluation board to determine fitness for continued duty.

Table 3. Event Characteristics^a of U.S. Army Active Component Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^a	
	2019 (n=145)	2020 (n=175)	2019 (n=480)	2020 (n=434)
LOCATION OF EVENT^d				
USA	129 (88.9)	164 (93.7)	383 (80.0)	339 (78.1)
In Theater	4 (2.8)	4 (2.3)	9 (1.9)	4 (0.9)
Other ^e	7 (4.8)	5 (2.9)	38 (7.9)	57 (13.1)
METHOD OF EVENT^d				
Gunshot wound	83 (57.2)	123 (70.3)	20 (4.17)	20 (4.6)
Hanging/asphyxiation	49 (33.8)	43 (24.6)	66 (13.8)	73 (16.8)
Drug/alcohol overdose	3 (2.1)	2 (1.1)	260 (54.2)	227 (52.3)
Cutting	1 (0.7)	1 (0.6)	47 (9.8)	52 (12.0)
Poisoning	4 (2.8)	2 (1.1)	31 (6.5)	15 (3.5)
Other ^f	5 (3.5)	4 (1.3)	26 (5.4)	23 (5.3)
SUBSTANCE INVOLVEMENT				
Event Involved Alcohol	29 (21.6)	61 (35.9)	134 (29.5)	156 (36.6)
Event Involved Drugs	6 (4.5)	7 (4.1)	208 (45.7)	195 (45.8)
OTHER EVENT CHARACTERISTICS				
Communicated Prior to Event	38 (28.4)	48 (28.2)	112 (24.6)	94 (22.1)

Notes:

^a Data were obtained from Department of Defense Suicide Event Report (DoDSER), except as noted.

^b Total number of cases included Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages. DoDSERs were not available for 8 cases in 2019.

^c Includes suicides confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Obtained from the Defense Casualty Information Processing System for suicides.

^e Primarily Europe or Korea.

^f Includes jumping from a high place, struck by moving object, crashing a motor vehicle, walked into traffic, drowning, self-injury, and not specified.

Table 4. Behavioral Health History^a of U.S. Army Active Component Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^d	
	2019 (n=145)	2020 (n=175)	2019 (n=480)	2020 (n=434)
BH MEDICAL ENCOUNTERS^e	105 (72.4)	125 (72.3)	243 (52.2)	230 (54.9)
Inpatient	34 (32.4)	37 (29.6)	95 (39.1)	91 (39.6)
Outpatient	100 (95.2)	118 (94.4)	214 (88.1)	199 (86.5)
30 Days Before Event	53 (50.5)	54 (43.2)	155 (63.8)	130 (56.5)
BH DIAGNOSIS^{e,f}	71 (49.0)	85 (49.6)	200 (42.9)	172 (39.6)
Multiple BH Diagnosis	43 (60.6)	59 (69.4)	122 (61.0)	102 (59.3)
Mood Disorder	36 (50.7)	38 (44.7)	87 (43.5)	90 (52.3)
Posttraumatic Stress Disorder	14 (19.7)	14 (16.5)	26 (13.0)	26 (15.1)
Anxiety Disorder ^g	27 (38.0)	35 (41.2)	68 (34.0)	53 (30.8)
Adjustment Disorder	47 (66.2)	57 (67.1)	159 (79.5)	128 (74.4)
Substance Use Disorder	32 (45.1)	42 (49.4)	69 (34.5)	61 (35.5)

Notes:

^a Medical claims data were obtained from the Military Health System Data Repository. *International Classification of Diseases, Tenth Revision* codes used to isolate encounters and diagnoses can be found in Appendix C, Table C-2.

^b Total number of cases included Soldiers with missing information. Medical claims data were not available for 14 attempts in 2019, and for 2 suicides and 15 attempts in 2020.

^c Included those confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Obtained from the Department of Defense Suicide Event Report.

^e Not mutually exclusive.

^f Diagnosed with one or more of the following during their military career: mood disorder, posttraumatic stress disorder, other anxiety disorder, adjustment disorder, and substance use disorder.

^g Includes panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder.

Table 5. Crude and Stratum-Specific Rates^{a,b} of U.S. Army Active Component Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior, Rate ^c (95% CI)			
	Suicide ^d		Suicide Attempt ^e	
	2019	2020	2019	2020
Overall	30 (28-32)	36 (34-39)	100 (96-104)	90 (87-94)
SEX				
Female	-	-	175 (147-208)	173 (146-206)
Male	33 (27-39)	41 (35-48)	87 (78-96)	75 (67-84)
AGE				
17–24	39 (31-49)	45 (37-56)	174 (156-194)	161 (144-180)
25–34	28 (21-37)	33 (25-42)	66 (56-79)	54 (44-66)
35–64	19 (12-29)	28 (19-39)	29 (20-41)	33 (24-46)
RACE-ETHNICITY				
Non-Hispanic White	37 (30-45)	43 (36-52)	90 (79-102)	79 (69-90)
Non-Hispanic Black	23 (15-35)	32 (23-46)	115 (95-138)	105 (87-128)
Hispanic	-	29 (19-43)	108 (87-134)	87 (68-110)
Non-Hispanic Asian/Pacific Islander	-	-	120 (87-165)	122 (89-167)
Non-Hispanic American Indian	-	-	-	-
RANK				
E1–E4	37 (30-46)	42 (34-52)	174 (157-192)	161 (145-179)
E5–E6	38 (29-51)	45 (35-58)	66 (53-82)	55 (44-70)
E7–E9	-	39 (25-61)	-	-
O1–O10	-	-	-	-
W1–W5	-	-	-	-

Legend:

E = Enlisted

O = Officer

W = Warrant

CI = confidence intervals

Notes:

^a Included U.S. Army Active Soldiers aged 17–64 with identifiable demographic factors.

^b Population counts were provided by Defense Manpower Data Center.

^c Cells without reported values reflect counts greater than 0 but less than 20; rates were not calculated or reported for counts less than 20. Rates are interpreted as the number of events per 100,000 Active Soldiers.

^d Counts of U.S. Army Active suicide cases were provided by the Armed Forces Medical Examiner System.

^e Counts of U.S. Army Active suicide attempt cases were obtained from the Department of Defense Suicide Event Report.

6.2 U.S. Army National Guard

6.2.1 Demographic and Military Characteristics

Table 6 describes demographic and military characteristics of ARNG Soldiers who died by or attempted suicide in 2019 and 2020, including total number of Soldiers who exhibited suicidal behavior, and the sex, age, race-ethnicity, marital status, rank, and activation status of these Soldiers. This same information (excluding marital status, which was unavailable at the time of reporting) is also presented for the total ARNG Soldier populations in 2019 and 2020 for comparison. Key results from each table for the year 2020 are discussed in detail below.

In 2020, there were 104 suicides among all ARNG Soldiers with 74% (n=77) of these deaths being among nonactivated Soldiers. Twenty-eight suicide attempts were reported among activated ARNG Soldiers. Information on attempts among nonactivated Soldiers was not available. The total population of ARNG Soldiers (N = 336,129) in 2020 was 81.1% male, 66.7% White, and 51.4% junior enlisted. The largest percentage by age group were Soldiers 17–24 years old (37.6%) followed by those 25–34 years old (34.9%). Non-activated soldiers comprised 90.8% of the total population of ARNG Soldiers. By comparison, suicide cases (n = 104) were also mostly male (97.1%), White (73.1%), and junior enlisted (53.9%), but at higher proportions than in the total ARNG population. A nearly equal proportion of suicide cases occurred in the 17–24 year-old (39.8%) and 25–34 year-old (40.8%) age groups, which represented a higher proportion of suicides than their proportion in the total ARNG population. Most Soldiers who died by suicide were single (64.4%). Activated Soldiers who attempted suicide (n = 28) were also predominantly male (64.3%) but with a much larger proportion being comprised of female Soldiers (35.7%). A smaller majority were White (57.1%), and a larger proportion were junior enlisted (64.3%). Most attempt cases were in the 17–24 year-old age group (53.6%). Most Soldiers who attempted suicide were also single (63.0%). Comparing all ARNG Soldiers who died by suicide and activated ARNG Soldiers who attempted, Soldiers who attempted skewed less male, were younger, more non-White, similarly single, and lower ranked than those who died by suicide.

6.2.2 Legal/Administrative and Personal History

Table 7 describes legal, administrative, and personal history of ARNG Soldiers with suicidal behavior in 2019 and 2020. Legal and administrative history includes legal problems and career-related actions that could significantly impact a soldier including civil legal problems, absent without leave, and courts martial experienced in the year prior to the event. Personal history includes significant life-related psychosocial stressors experienced in the year prior to event including relationship problems, work stress, and financial stress. DoDSERs, which are used for completing this section of the report, were not available for 24.0% (n=25) of suicide events in 2020 affecting the completeness of this reporting.

In 2020, 26.0% (n=20) of suicide cases and 18.5% (n=5) of activated Soldiers with a suicide attempt event with completed DoDSERs had a history of legal and/or administrative actions. The most common action for ARNG Soldiers who died by suicide was civil legal problem (60.0%), while the most common action for suicide attempt cases was administrative separation

(80.0%). As with AC Soldiers, personal problems were more prevalent compared to legal and/or administrative problems, with 67.5% (n=52) of suicide and 74.1% (n=20) of attempt cases having a history of personal problems within 1-year prior to the event. Relationship problems and work stress were the most commonly documented problems for both ARNG Soldiers who died by suicide and activated Soldiers who attempted suicide, with relationship problems (67.3%) leading work stress (42.3%) as the most common problem for suicide cases and conversely work stress (55.0%) being more prevalent than relationship problems (35.0%) for suicide attempt cases.

6.2.3 Event Characteristics

Table 8 describes characteristics of the suicidal behavior event including the location of event (U.S. [including both within and outside the contiguous U.S.], in theater, other, or unknown) and the method of event (gunshot wound, hanging/asphyxiation, drug/alcohol overdose, cutting, poisoning, other, or unknown). The table also includes whether there was substance involvement (drugs and alcohol) as well as communication of the potential for self-harm by the Soldier prior to the event. DoDSERs, which are used for completing this section of the report, were not available for 24.0% (n=25) of suicide events in 2020 affecting the completeness of this reporting.

Almost all ARNG suicide cases (95.0%) and attempts among activated ARNG Soldiers (85.7%) in 2020 occurred in the U.S. Gunshot wound (74.0%) was the most common method of suicide, while drug/alcohol overdose was the most common method of attempt (60.7%). About a quarter of ARNG suicide cases (24.7%) and attempt cases (26.0%) had alcohol involvement, and notably more than half of attempt cases (51.9%) had drug involvement. About one-third (33.8%) of ARNG suicide cases communicated their intentions to someone close to them, such as a friend, co-worker, or Family member.

6.2.4 Behavioral Health and Medical History

Table 9 presents BH related history including any history of inpatient and outpatient encounters during a Soldier's military career, history of outpatient encounters in the 30 days before the suicidal behavior event, and history of BH diagnoses. Diagnoses analyzed include mood disorder, PTSD, anxiety disorder, adjustment disorder, and substance use disorder. BH information is typically only available for activated RC Soldiers, therefore BH care received when nonactivated will not be captured in this reporting.

Among ARNG Soldiers who died by suicide, 38.0% (n=38) had a history of at least one outpatient or inpatient BH encounter while on active status during their military career. Among activated ARNG Soldiers who attempted suicide, 46.2% (n=12) of cases had a history of BH encounters. Most encounters occurred in an outpatient setting, with 84.2% of suicide cases and 91.7% of activated Soldiers with an attempt event having a history of outpatient encounters. More than one-quarter of Soldiers who died by suicide (26.3%) and two-thirds of activated Soldiers who attempted (66.7%) had an outpatient encounter in the 30 days prior to the event. While on active status, 24.0% of all ARNG suicide cases and 42.3% of ARNG suicide attempt cases had received a BH diagnosis at some point during their military career. Of those with a

BH diagnosis, at least half of suicide cases (50.0%) and attempt cases (54.6%) had received multiple BH diagnoses. Adjustment disorder (54.2%) and mood disorder (45.8%) were the most frequent diagnoses for suicide cases, while 100% of suicide attempt cases with BH diagnoses had been diagnosed with adjustment disorder.

6.2.5 Rates of Suicidal Behavior

Table 10 includes rates for ARNG suicide deaths and activated Soldiers who attempted suicide for the years 2019 and 2020 overall and by sex, rank, age, and race-ethnicity. All rates are calculated as the number of Soldiers who died by suicide or attempted suicide during the calendar year per 100,000 total ARNG soldiers and per 100,000 activated ARNG Soldiers respectively, based on the population of ARNG Soldiers as recorded during the respective year in the DMDC.

In 2020, the overall rates of suicidal behavior were 31 suicides per 100,000 ARNG Soldiers per year and 91 attempts per 100,000 activated ARNG Soldiers per year. ARNG Soldiers in age groups 17–24 (32/100,000 Soldiers per year) and 25–34 years (36/100,000 Soldiers per year) had higher suicide rates compared to Soldiers over 34 years of age (22/100,000 Soldiers per year). Suicide rates for junior enlisted Soldiers (32/100,000 Soldiers) and noncommissioned officers (31/100,000 Soldiers) were comparable.

6.2.6 U.S. Army National Guard Tables

Tables 6–10 present the ARNG results.

Public Health Report No. S.0094100.1-20, Surveillance of Suicidal Behavior: U.S. Army Active and Reserve Component Soldiers, 2019 and 2020

Table 6. Demographic and Military Characteristics^a of U.S. Army National Guard Soldiers for the Total Population and by Suicidal Behavior, 2019–2020

	Total Population ^b		Suicidal Behavior ^c n (%)			
	2019 (n=335,973)	2020 (n=336,129)	Suicide ^d		Suicide Attempt ^e	
			2019 (n=75)	2020 (n=104)	2019 (n=36)	2020 (n=28)
SEX						
Male	274,815 (81.8)	272,742 (81.1)	71 (94.7)	101 (97.1)	23 (63.9)	18 (64.3)
Female	61,158 (18.2)	63,387 (18.9)	4 (5.3)	3 (2.9)	13 (36.1)	10 (35.7)
AGE						
17–24	123,716 (36.8)	126,417 (37.6)	30 (40.0)	41 (39.8)	22 (61.1)	15 (53.6)
25–34	119,225 (35.5)	117,456 (34.9)	29 (38.7)	42 (40.8)	10 (27.8)	6 (21.4)
35–64	93,008 (27.7)	92,226 (27.4)	16 (21.3)	20 (19.4)	4 (11.1)	7 (25.0)
RACE-ETHNICITY						
Non-Hispanic White	226,800 (67.6)	218,540 (66.7)	60 (80.0)	76 (73.1)	26 (72.2)	16 (57.1)
Non-Hispanic Black	52,549 (15.7)	50,715 (15.5)	8 (10.7)	15 (14.4)	8 (22.2)	5 (17.9)
Hispanic	35,917 (10.7)	39,183 (12.0)	4 (5.3)	5 (4.8)	1 (2.8)	4 (14.3)
Non-Hispanic Asian/Pacific Islander	15,566 (4.6)	15,532 (4.7)	3 (4.0)	3 (2.9)	1 (2.8)	3 (10.7)
Non-Hispanic American Indian	4,427 (1.3)	3563 (1.1)	0 (0.0)	5 (4.8)	0 (0.0)	0 (0.0)
MARITAL STATUS						
Single	-	-	43 (57.3)	67 (64.4)	25 (69.4)	17 (63.0)
Married	-	-	25 (33.3)	32 (30.8)	10 (27.8)	10 (37.0)
Divorced	-	-	7 (9.3)	5 (4.8)	1 (2.8)	0 (0.0)
Other ^f	-	-	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
RANK ^g						
E1–E4	171,102 (50.9)	172,873 (51.4)	40 (53.3)	56 (53.9)	26 (72.2)	18 (64.3)
E5–E6	91,381 (27.2)	89,719 (26.7)	23 (30.7)	28 (26.9)	8 (22.2)	7 (25.0)
E7–E9	27,702 (8.2)	27,689 (8.2)	5 (6.7)	7 (6.7)	1 (2.8)	1 (3.6)
W1–W5	8,804 (2.6)	8,786 (2.6)	2 (2.7)	3 (2.9)	0 (0.0)	1 (3.6)
O1–O8	36,984 (11.0)	37,061 (11.0)	5 (6.7)	10 (9.6)	1 (2.8)	1 (3.6)
ACTIVATION STATUS						
Activated	31,293 (9.3)	30,902 (9.2)	11 (14.7)	27 (26.0)	36 (100.0)	28 (100.0)
Non-Activated	304,680 (90.7)	305,227 (90.8)	64 (85.3)	77 (74.0)	0 (0.0)	0 (0.0)

Legend:

E=Enlisted, O=Officer, W=Warrant Officer

Notes:

^aObtained from the Defense Manpower Data Center.

^bObtained from the Defense Manpower Data Center. Records with missing information for a particular characteristic were excluded when calculating percentages.

^cTotal number of cases includes Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages.

^dIncludes suicides confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^eObtained from Department of Defense Suicide Event Reports (DoDSERs), which are completed only for activated National Guard cases that were hospitalized or evacuated.

^fIncludes widowed and legally separated.

^gNo cases reported among Cadets.

Table 7. Legal/Administrative and Personal History^a of U.S. Army National Guard Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^d	
	2019 (n=75)	2020 (n=104)	2019 (n=36)	2020 (n=28)
LEGAL/ADMINISTRATIVE HISTORY^e	23 (33.8)	20 (26.0)	9 (26.5)	5 (18.5)
Article 15	6 (26.1)	6 (30.0)	2 (22.2)	1 (20.0)
Civil Legal Problems	9 (30.1)	12 (60.0)	1 (11.1)	0 (0.0)
Administrative Separation ^f	7 (30.4)	5 (25.0)	5 (66.7)	4 (80.0)
Absent Without Leave	8 (34.8)	2 (10.0)	2 (22.2)	0 (0.0)
Nonselection ^g	5 (21.7)	3 (15.0)	2 (22.2)	1 (20.0)
Courts Martial	2 (8.7)	1 (5.0)	1 (11.1)	0 (0.0)
Medical Board ^h	3 (4.4)	3 (3.9)	0 (0.0)	1 (3.7)
PERSONAL HISTORY^e	53 (77.9)	52 (67.5)	28 (82.4)	20 (74.1)
Relationship Problem	37 (69.8)	35 (67.3)	13 (46.4)	7 (35.0)
Work Stress	24 (45.3)	22 (42.3)	13 (46.4)	11 (55.0)
Physical Health Problem	7 (13.2)	4 (7.7)	6 (21.4)	2 (10.0)
Victim of Abuse				
Previous Year	1 (1.9)	2 (3.9)	5 (17.9)	4 (20.0)
Perpetrator of Abuse	8 (15.1)	10 (19.2)	1 (4.0)	1 (5.0)
Spouse/Family/Friend Death	5 (9.4)	10 (19.2)	8 (28.6)	3 (15.0)
Financial Stress	8 (15.1)	5 (9.6)	3 (10.7)	2 (10.0)
Spouse/Family Health Problem	0 (0.0)	2 (3.9)	7 (25.0)	1 (5.0)
Spousal/Family/Friend Suicide				
Previous Year	2 (3.8)	4 (7.7)	3 (10.7)	1 (5.0)

Notes:

^a Personal and legal/administrative history within 1 year before event, except as noted. Data were obtained from Department of Defense Suicide Event Report (DoDSER).

^b Total number of cases included Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages. DoDSERs were not available for 7 suicides in 2019 and 25 suicides in 2020.

^c Included those confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Included only activated Soldiers.

^e Not mutually exclusive.

^f Considered for separation from the Army on the basis of conduct or inability to meet standards of duty performance and discipline.

^g Not selected for advanced schooling, promotion, or command.

^h Medical evaluation board to determine fitness for continued duty.

Table 8. Event Characteristics^a of U.S. Army National Guard Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^d	
	2019 (n=75)	2020 (n=104)	2019 (n=36)	2020 (n=28)
LOCATION OF EVENT^e				
USA	68 (97.1)	75 (95.0)	28 (77.8)	24 (85.7)
In Theater	1 (1.4)	1 (1.3)	3 (8.3)	0 (0.0)
Other ^f	0 (0.0)	1 (1.3)	1 (2.8)	2 (7.1)
Unknown	1 (1.4)	2 (2.5)	4 (11.1)	2 (7.1)
METHOD OF EVENT^e				
Gunshot wound	60 (80.0)	77 (74.0)	1 (2.8)	1 (3.6)
Hanging/asphyxiation	10 (13.3)	17 (16.4)	8 (22.2)	5 (17.9)
Drug/alcohol overdose	0 (0.0)	0 (0.0)	12 (33.3)	17 (60.7)
Cutting	1 (1.3)	0 (0.0)	7 (19.4)	2 (7.1)
Poisoning	2 (2.7)	10 (9.6)	4 (11.1)	1 (3.6)
Other ^g	2 (2.7)	0 (0.0)	2 (5.6)	0 (0.0)
Unknown	0 (0.0)	0 (0.0)	2 (5.6)	2 (7.1)
SUBSTANCE INVOLVEMENT				
Event Involved Alcohol	21 (30.4)	19 (24.7)	6 (17.7)	7 (26.0)
Event Involved Drugs	9 (13.0)	2 (2.6)	9 (26.5)	14 (51.9)
OTHER EVENT CHARACTERISTICS				
Communicated Prior to Event	26 (37.7)	26 (33.77)	8 (23.5)	5 (18.52)

Notes:

^a Data were obtained from Department of Defense Suicide Event Reports (DoDSERs, except as noted).

^b Total number of cases included Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages. DoDSERs were not available for 7 suicides in 2019 and 25 suicides in 2020.

^c Included suicides confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Included only activated Soldiers.

^e Obtained from the Defense Casualty Information Processing System for suicide cases.

^f Primarily Europe or Korea.

^g Includes jumping from a high place, self-injury, drowning, struck by a moving object, and not specified.

Table 9. Behavioral Health History^a of U.S. Army National Guard Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^d	
	2019 (n=75)	2020 (n=104)	2019 (n=36)	2020 (n=28)
BH MEDICAL ENCOUNTER^e	25 (34.3)	38 (38.0)	17 (47.2)	12 (46.2)
Inpatient	7 (28.0)	11 (29.0)	5 (29.4)	3 (25.0)
Outpatient	25 (100.0)	32 (84.2)	15 (88.2)	11 (91.7)
30 Days Before Event	7 (28.0)	10 (26.3)	11 (64.7)	8 (66.7)
BH DIAGNOSIS^{e,f}	18 (24.7)	24 (24.0)	13 (36.1)	11 (42.3)
Multiple BH Diagnosis	12 (66.7)	12 (50.0)	6 (46.2)	6 (54.6)
Mood Disorder	11 (61.1)	11 (45.8)	5 (38.5)	4 (36.4)
Posttraumatic Stress Disorder	8 (44.4)	5 (20.8)	0 (0.0)	3 (27.3)
Other Anxiety Disorder ^g	8 (44.4)	7 (29.2)	4 (30.8)	2 (18.2)
Adjustment Disorder	9 (50.0)	13 (54.2)	8 (61.5)	11 (100.0)
Substance Use Disorder	7 (38.9)	8 (33.3)	2 (15.4)	3 (27.3)

Notes:

^a Medical claims data were obtained from the Military Health System Data Repository. *International Classification of Diseases, Tenth Revision* codes used to isolate encounters and diagnoses can be found in Appendix C Table C-2.

^b Total number of cases included Soldiers with missing information. Medical claims data were not available for 2 suicides in 2019 and for 4 suicides and 2 attempts in 2020.

^c Included those confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Obtained from the Department of Defense Suicide Event Report for activated Soldiers.

^e Not mutually exclusive.

^f Diagnosed with one or more of the following during their military career: mood disorder, posttraumatic stress disorder, other anxiety disorders, adjustment disorder, and substance use disorders.

^g Included panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder.

Table 10. Crude and Stratum-Specific Rates^{a,b} of U.S. Army National Guard Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior, Rate ^c (95% CI)			
	Suicide ^d		Suicide Attempt ^e	
	2019	2020	2019	2020
Overall	22 (20-25)	31 (28-34)	117 (101-135)	91 (77-107)
Sex				
Female	-	-	-	-
Male	26 (20-33)	37 (30-45)	91 (61-137)	-
Age				
17–24	24 (17-35)	32 (24-44)	3254 (2143-4943)	-
25–34	24 (17-35)	36 (26-48)	-	-
35–64	-	22 (14-34)	-	-
Race-Ethnicity				
Non-Hispanic White	26 (21-34)	35 (28-44)	110 (75-161)	-
Non-Hispanic Black	-	-	-	-
Hispanic	-	-	-	-
Non-Hispanic Asian/Pacific Islander	-	-	-	-
Non-Hispanic American Indian	-	-	-	-
Rank				
E1–E4	23 (17-32)	32 (25-42)	4943 (3366-7260)	-
E5–E6	25 (17-38)	31 (22-45)	-	-
E7–E9	-	-	-	-
W1–W5	-	-	-	-
O1–O8	-	-	-	-

Legend:

E = Enlisted

O = Officer

W = Warrant,

CI = confidence intervals

Notes:

^a Included U.S. Army National Guard (ARNG) Soldiers aged 17–64 with identifiable demographic factors.

^b Population counts were provided by Defense Manpower Data Center.

^c Cells without reported values reflect counts greater than 0 but less than 20; rates were not calculated or reported for counts less than 20. Rates are interpreted as the number of suicides per 100,000 ARNG Soldiers, and number of attempts per 100,000 activated ARNG Soldiers.

^d Counts of ARNG suicide cases were provided by the Armed Forces Medical Examiner System.

^e Counts of activated ARNG suicide attempt cases were obtained from the Department of Defense Suicide Event Report.

6.3 U.S. Army Reserve

6.3.1 Demographic and Military Characteristics

Table 11 describes demographic and military characteristics of USAR Soldiers who died by or attempted suicide in 2019 and 2020, including total number of Soldiers who exhibited suicidal behavior, and the sex, age, race-ethnicity, marital status, rank, and activation status of these Soldiers. This same information (excluding marital status, which was unavailable at the time of reporting) is also presented for the total USAR Soldier populations in 2019 and 2020 for comparison. Key results from each table for the year 2020 are discussed in detail below.

In 2020, there were 42 suicides among all USAR Soldiers, with 83% (n=35) of these deaths being among nonactivated Soldiers. Twenty-two suicide attempts were reported among activated USAR Soldiers. Information on attempts among nonactivated Soldiers was not available. The total population of USAR Soldiers in 2020 (N = 188,543) was 75.2% male, 50.8% White, and 43.1% junior enlisted. Soldiers aged 35–64 comprised the largest age group (38.1%) followed by those 25–34 years old (35.7%). Non-activated soldiers comprised 91.2% of the total population of USAR Soldiers. By comparison, suicide cases were overwhelmingly male (95.2%), had a similar distribution of race-ethnicity, and were comprised of a greater percentage of junior enlisted Soldiers (57.1%). Suicide cases skewed younger than the general USAR population, with Soldiers aged 25–34 comprising the largest age group (46.3%) followed by those 17–24 years old (34.2%). Most USAR Soldiers who died by suicide were single (66.7%). Activated soldiers who attempted suicide (n = 22) were comprised of a closer split between male (59.1%) and female (40.9%) Soldiers compared to the total population. They were more diverse racially and ethnically (40.0% White, 30.0% Black, and 30.0% Hispanic) and a greater percentage were junior enlisted (68.2%). The majority of suicide attempt cases were among Soldiers aged 17–24 years old (63.4%), and as with suicide cases most were single (59.1%). Activated USAR Soldiers who attempted suicide were less male, younger, more non-White, and lower ranked than USAR suicide cases.

6.3.2 Legal/Administrative and Personal History

Table 12 describes legal, administrative, and personal history of USAR Soldiers with suicidal behavior in 2019 and 2020. Legal and administrative history includes legal problems and career-related actions that could significantly impact a soldier including civil legal problems, absent without leave, and courts martial experienced in the year prior to the event. Personal history includes significant life-related psychosocial stressors experienced in the year prior to event including relationship problems, work stress, and financial stress. DoDSERs, which are used for completing this section of the report, were not available for 88.1% (n=37) of USAR suicide cases in 2020 including for all nonactivated cases. As a result, legal/administrative history and personal history for this group were not reported.

Nearly one-third of activated USAR Soldiers who attempted suicide (30.0%) had a history of legal and/or administrative actions. The most common action was administrative separation (66.7%). The majority of these attempt cases had a history of personal problems (85.7%) within

one year of the event, with the most commonly reported problems being relationship problems (55.6%), work stress (50.0%), and the death of a spouse, family member, or friend.

6.3.3 Event Characteristics

Table 13 describes characteristics of the suicidal behavior event including the location of event (U.S.[including both within and outside the contiguous U.S.], in theater, other, or unknown) and the method of event (gunshot wound, hanging/asphyxiation, drug/alcohol overdose, cutting, poisoning, other, or unknown). The table also includes whether there was substance involvement (drugs and alcohol) as well as communication of the potential for self-harm by the Soldier prior to the event. DoDSERs, which are used for completing several of the measures in this table, were not available for 88.1% (n=37) of USAR suicide cases in 2020 including for all nonactivated cases. As a result, location of event, substance involvement, and communication of the potential for self-harm for this group were not reported.

The method of injury for USAR suicide cases was primarily by gunshot wound (73.8%), while the most common methods of injury for attempt events among activated Soldiers were drug/alcohol overdose (54.6%) followed by cutting (22.7%). Attempts most commonly occurred in the US (81.8%) and nearly half (47.6%) involved drugs.

6.3.4 Behavioral Health and Medical History

Table 14 presents BH related history including any history of inpatient and outpatient encounters during a Soldier's military career, history of outpatient encounters in the 30 days before the suicidal behavior event, and history of behavioral health diagnoses. Diagnoses analyzed include mood disorder, PTSD, anxiety disorder, adjustment disorder, and substance use disorder. BH information is typically only available for activated RC Soldiers, therefore BH care received when nonactivated will not be captured in this reporting.

Among USAR Soldiers who died by suicide, 45.0% (n=18) had a history of at least one outpatient or inpatient BH encounter while on active status during their military career. Among activated USAR Soldiers who attempted suicide, 55.0% (n=11) had a history of BH encounters. As with AC and ARNG Soldiers, most encounters among USAR Soldiers occurred in an outpatient setting. Most suicide cases (88.9%) and attempt cases (91.7%) with a history of BH encounters had a history of outpatient encounters, with 22.2% of Soldiers who died by suicide and 54.5% of activated Soldiers who attempted having had an outpatient encounter in the 30 days prior to the event. While on active status, 30.0% of all USAR suicide cases and 45.0% of USAR suicide attempt cases had received a BH diagnosis at some point during their military career. Of those with a BH diagnosis, more than half of suicide cases (58.3%) and slightly fewer than half of attempt cases (44.4%) had received multiple BH diagnoses. Other anxiety disorders (58.3%) were the most frequent diagnoses for suicide cases, while the most frequent diagnosis for suicide attempt cases was adjustment disorder (88.9%).

6.3.5 Rates of Suicidal Behavior

In 2020, the overall rates were 22 suicides per 100,000 USAR Soldiers per year and 148 attempts per 100,000 activated USAR Soldiers per year (not shown in a table). Stratified rates were not reported because most categories had less than 20 cases. Rates with fewer than 20 cases are not reported due to concerns over the stability of rates.

6.3.4 U.S. Army Reserve Tables

Tables 11–14 present USAR results.

Public Health Report No. S.0094100.1-20, Surveillance of Suicidal Behavior: U.S. Army Active and Reserve Component Soldiers, 2019 and 2020

Table 11. Demographic and Military Characteristics^a of U.S. Army Reserve Soldiers for the Total Population and by Suicidal Behavior, 2019–2020

	Total Population ^b		Suicidal Behavior ^c n (%)			
			Suicide ^d		Suicide Attempt ^e	
	2019 (n=190,564)	2020 (n=188,543)	2019 (n=38)	2020 (n=42)	2019 (n=29)	2020 (n=22)
SEX						
Male	144,315 (75.7)	141,802 (75.2)	35 (92.1)	40 (95.2)	20 (69.0)	13 (59.1)
Female	46,249 (24.3)	46,741 (24.8)	3 (7.9)	2 (4.8)	9 (31.0)	9 (40.9)
AGE						
17–24	49,500 (26.0)	49,228 (26.1)	9 (23.7)	14 (34.2)	18 (62.1)	14 (63.4)
25–34	69,453 (36.5)	67,387 (35.7)	19 (50.0)	19 (46.3)	7 (24.1)	4 (18.2)
35–64	71,573 (37.6)	71,892 (38.1)	10 (26.3)	8 (19.5)	4 (13.8)	4 (18.2)
RACE-ETHNICITY						
Non-Hispanic White	96,917 (51.4)	94,799 (50.8)	30 (79.0)	23 (54.8)	12 (41.4)	8 (40.0)
Non-Hispanic Black	40,606 (21.5)	39,906 (21.4)	4 (10.5)	7 (16.7)	10 (34.5)	6 (30.0)
Hispanic	33,207 (17.6)	33,753 (18.1)	1 (2.6)	6 (14.3)	5 (17.2)	6 (30.0)
Non-Hispanic Asian/Pacific Islander	16,008 (8.5)	16,317 (8.7)	3 (7.9)	4 (9.8)	1 (3.5)	0 (0.0)
Non-Hispanic American Indian	1,846 (1.0)	1,792 (1.0)	0 (0.0)	1 (2.4)	1 (3.5)	0 (0.0)
MARITAL STATUS						
Single	-	-	18 (47.4)	28 (66.7)	18 (62.1)	13 (59.1)
Married	-	-	19 (50.0)	14 (33.3)	11 (37.9)	5 (22.7)
Divorced	-	-	1 (2.6)	0 (0.0)	0 (0.0)	4 (18.2)
Other ^f	-	-	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
RANK^g						
E1–E4	82,262 (43.2)	81,327 (43.1)	18 (47.4)	24 (57.1)	20 (69.0)	15 (68.2)
E5–E6	49,776 (26.1)	46,918 (24.9)	10 (26.3)	11 (26.2)	6 (20.7)	6 (27.3)
E7–E9	20,067 (10.5)	21,138 (11.2)	3 (7.9)	3 (7.1)	3 (10.3)	0 (0.0)
W1–W5	3,558 (1.9)	3,621 (1.9)	2 (5.3)	1 (2.4)	0 (0.0)	0 (0.0)
O1–O8	34,901 (18.3)	35,539 (18.8)	5 (13.2)	3 (7.1)	0 (0.0)	1 (4.6)
ACTIVATION STATUS						
Activated	16,473 (8.6)	16,614 (8.8)	7 (18.4)	7 (16.7)	29 (100.0)	22 (100.0)
Non-Activated	174,091 (91.4)	171,929 (91.2)	31 (81.6)	35 (83.3)	0 (0.0)	0 (0.0)

Legend:

E=Enlisted, O=Officer, W=Warrant Officer

Notes:

^aObtained from the Defense Manpower Data Center.

^bObtained from the Defense Manpower Data Center. Records with missing information for a particular characteristic were excluded when calculating percentages.

^cTotal number of cases includes Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages.

^dIncludes suicides confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^eObtained from Department of Defense Suicide Event Reports (DoDSERs), which are completed only for activated Reserve Soldiers that were hospitalized or evacuated.

^fIncludes widowed and legally separated.

^gNo cases reported among Cadets.

Table 12. Legal/Administrative and Personal History^{a,b} of U.S. Army Reserve Soldiers by Suicidal Behavior, 2019–2020

	Suicide Attempt ^c n (%)	
	2019 (n=29)	2020 (n=22)
LEGAL/ADMINISTRATIVE HISTORY^d	6 (28.6)	6 (30.0)
Article 15	3 (50.0)	3 (50.0)
Civil Legal Problems	3 (50.0)	0 (0.0)
Administrative Separation ^e	0 (0.0)	4 (66.7)
Absent Without Leave	2 (33.3)	0 (0.0)
Nonselection ^f	1 (16.7)	1 (16.7)
Courts Martial	0 (0.0)	0 (0.0)
Medical Board ^g	6 (22.2)	1 (4.8)
PERSONAL HISTORY^d	22 (81.5)	18 (85.7)
Relationship Problem	12 (54.6)	10 (55.6)
Work Stress	9 (40.9)	9 (50.0)
Physical Health Problem	7 (31.8)	4 (22.2)
Victim of Abuse		
Previous Year	5 (22.7)	5 (27.8)
Perpetrator of Abuse	0 (0.0)	1 (5.6)
Spouse/Family/Friend Death	8 (36.4)	8 (44.4)
Financial Stress	0 (0.0)	2 (11.1)
Spouse/Family Health Problem	2 (9.1)	3 (16.7)
Spousal/Family/Friend Suicide		
Previous Year	4 (18.2)	4 (22.2)

Notes:

^a Personal and legal/administrative history within 1 year before event, except as noted. Data were obtained from Department of Defense Suicide Event Reports (DoDSERs).

^b Total number of cases included Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages. Since DoDSERs were not available for 31 suicides in 2019 and 37 suicides in 2020, data for suicide cases were excluded from this table.

^c Obtained from DoDSERs for activated Soldiers.

^d Not mutually exclusive.

^e Considered for separation from the Army on the basis of conduct or inability to meet standards of duty performance and discipline.

^f Not selected for advanced schooling, promotion, or command.

^g Medical evaluation board to determine fitness for continued duty.

Table 13. Event Characteristics^a of U.S. Army Reserve Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^d	
	2019 (n=38)	2020 (n=42)	2019 (n=29)	2020 (n=22)
LOCATION OF EVENT^e				
USA	–	–	22 (75.9)	18 (81.8)
In Theater	–	–	2 (6.9)	0 (0.0)
Other ^f	–	–	1 (3.5)	1 (4.6)
Unknown	–	–	4 (13.8)	3 (13.6)
METHOD OF EVENT^e				
Gunshot wound	27 (71.1)	31 (73.8)	4 (13.8)	2 (9.1)
Hanging/asphyxiation	9 (23.7)	8 (19.1)	4 (13.8)	0 (0.0)
Drug/alcohol overdose	1 (2.6)	1 (2.4)	14 (48.3)	12 (54.6)
Cutting	0 (0.0)	1 (2.4)	1 (3.5)	5 (22.7)
Poisoning	0 (0.0)	0 (0.0)	3 (10.3)	0 (0.0)
Other ^g	0 (0.0)	1 (2.4)	1 (3.5)	2 (9.1)
Unknown	1 (2.6)	0 (0.0)	2 (6.9)	1 (4.6)
SUBSTANCE INVOLVEMENT				
Event Involved Alcohol	–	–	9 (33.3)	4 (19.1)
Event Involved Drugs	–	–	11 (40.7)	10 (47.6)
OTHER EVENT CHARACTERISTICS				
Communicated Prior to Event	–	–	7 (25.9)	5 (23.8)

Notes:

^a Data were obtained from Department of Defense Suicide Event Reports (DoDSERs), except as noted. DoDSERs were not available for 31 suicides in 2019 and 37 suicides in 2020.

^b Total number of cases included Soldiers with missing information. Cases with missing information for a particular characteristic were excluded when calculating percentages.

^c Includes those confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Obtained from DoDSERs for activated Soldiers.

^e Obtained from the Defense Casualty Information Processing System for suicide cases.

^f Primarily Europe or Korea.

^g Includes crashing a motor vehicle, jumping from a high place, walked into traffic, and not specified.

Table 14. Behavioral Health History^a of U.S. Army Reserve Soldiers by Suicidal Behavior, 2019–2020

	Suicidal Behavior ^b n (%)			
	Suicide ^c		Suicide Attempt ^d	
	2019 (n=38)	2020 (n=42)	2019 (n=29)	2020 (n=22)
BH MEDICAL ENCOUNTERS^e	21 (56.8)	18 (45.0)	13 (44.8)	11 (55.0)
Inpatient	7 (33.3)	3 (16.7)	4 (30.8)	3 (27.3)
Outpatient	21 (100.0)	16 (88.9)	12 (92.3)	9 (81.8)
30 Days Before Event	4 (19.1)	4 (22.2)	8 (61.5)	6 (54.5)
BH DIAGNOSIS^{e,f}	16 (43.2)	12 (30.0)	9 (31.0)	9 (45.0)
Multiple BH Diagnosis	10 (62.5)	7 (58.3)	8 (88.9)	4 (44.4)
Any Mood Disorder	8 (50.0)	5 (41.7)	8 (88.9)	4 (44.4)
Posttraumatic Stress Disorder	4 (25.0)	3 (25.0)	3 (33.3)	2 (22.2)
Other Anxiety Disorder ^g	8 (50.0)	7 (58.3)	3 (33.3)	4 (44.4)
Adjustment Disorder	7 (43.8)	5 (41.7)	8 (88.9)	8 (88.9)
Substance Use Disorder	7 (43.8)	5 (41.7)	1 (11.1)	1 (11.1)

Notes:

^a Medical claims data were obtained from the Military Health System Data Repository. *International Classification of Diseases, Tenth Revision* codes used to isolate encounters and diagnoses can be found in Appendix C Table C-2.

^b Total number of cases included Soldiers with missing information. Medical claims data were not available for 1 suicide in 2019, and for 2 suicides and 2 attempts in 2020.

^c Included those confirmed or pending confirmation by the Armed Forces Medical Examiner System.

^d Obtained from the Department of Defense Suicide Event Report for activated Soldiers.

^e Not mutually exclusive.

^f Diagnosed for one or more of the following during their military career: mood, posttraumatic stress disorder, other anxiety disorders, adjustment disorder, and substance use disorders.

^g Included panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder.

6.4 Trend Analysis

Figures 1–5 present unadjusted suicide rates for years 2016–2020 by component for all Soldiers and by sex, age group, rank, and race among AC Soldiers. Rates for categories with suicide counts less than 20 for most years were not reported. Table C-1 presents annual stratum-specific suicide rates, crude rate ratios, and accompanying 95% confidence intervals for each characteristic (component, sex, age group, rank, and race).

Suicide rates for AC Soldiers increased by 8% per year (RR=1.08, 95% CI: 1.03–1.14) over the 5-year period and demonstrated a statistically significant increasing trend. In contrast, suicide rates for ARNG (RR= 0.95, 95% CI: 0.90–1.01) and USAR (RR= 0.96, 95% CI: 0.88–1.06) Soldiers decreased over the time period but were not statistically significant. The rate for the ARNG was lower in 2019 compared to 2020. Trends in suicide rates over time were also assessed by sex, age group, rank, and race-ethnicity among AC Soldiers. Several categories experienced statistically significant increases in rates. Suicide rates for male Soldiers increased by 9% per year (RR=1.09, 95% CI: 1.03–1.15) over the time period of interest. The suicide rate

for Soldiers under age 25 increased by 11% (RR=1.11, 95% CI: 1.03–1.20) for every one unit increase in year. Suicide rates for junior enlisted and noncommissioned officers increased by 10% (RR=1.10, 95% CI: 1.03–1.19) and 9% (RR=1.09, 95% CI (0.99–1.20) for every one unit increase in year, respectively. For race-ethnicity, suicide rates increased by 8% (RR=1.08, 95% CI: 1.01–1.15) and 19% (RR=1.19, 95% CI: 1.03–1.36) for every one unit increase in year for White and Black Soldiers, respectively. Suicide rates for Black Soldiers should be interpreted with caution since suicide counts for 2016 to 2018 were less than 20. These rates are potentially unstable.

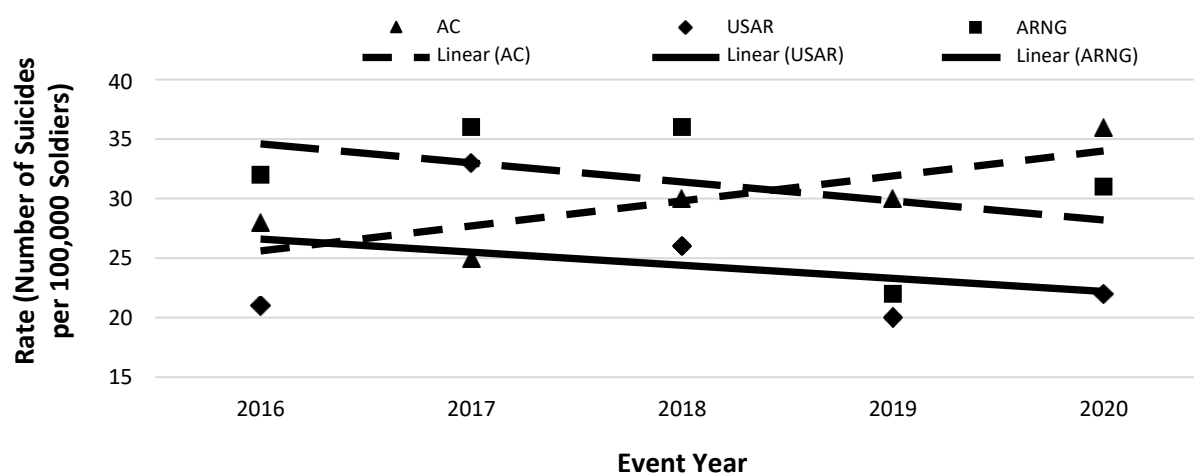


Figure 1. Unadjusted Annual Suicide Rates of U.S. Army Soldiers by Component, 2016–2020

Legend:

AC = Active Component

USAR = U.S. Army Reserve

ARNG = U.S. Army National Guard

Notes: U.S. Army suicide counts for activated Soldiers were obtained from the Armed Forces Medical Examiner System and suicide counts for nonactivated ARNG and USAR Soldiers were obtained from Army G1 for Soldiers between ages 17 and 64 with identifiable demographic factors. Rates are interpreted as the number of suicides per 100,000 Soldiers. Denominator data were obtained from the Defense Manpower Data Center.

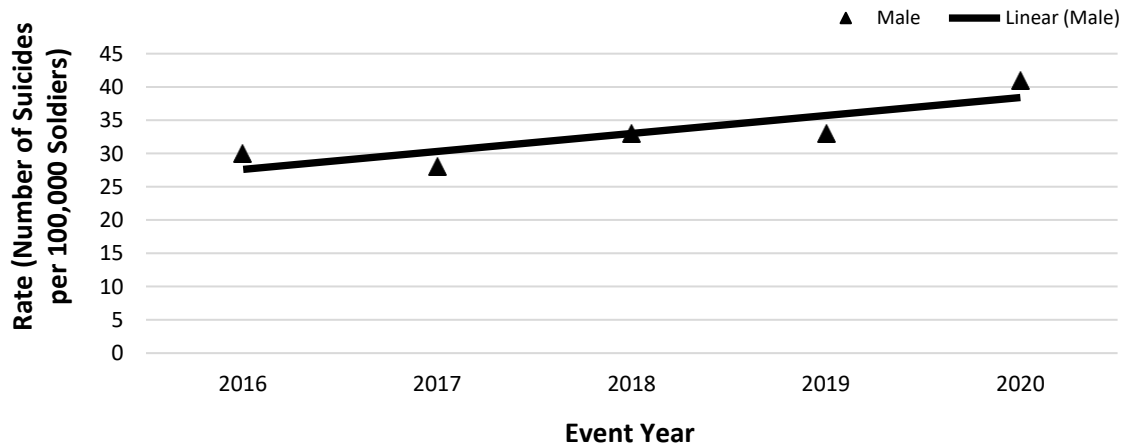


Figure 2. Annual Suicide Rates of Male U.S. Army Active Component Soldiers, 2016–2020

Notes: Annual rates were not calculated or reported for female Soldiers because annual suicide counts were less than 20 for all 5 years. U.S. Army suicide counts were obtained from the Armed Forces Medical Examiner System for Soldiers between ages 17 and 64 with identifiable demographic factors. Rates are interpreted as the number of suicides per 100,000 Soldiers. Denominator data were obtained from the Defense Manpower Data Center.

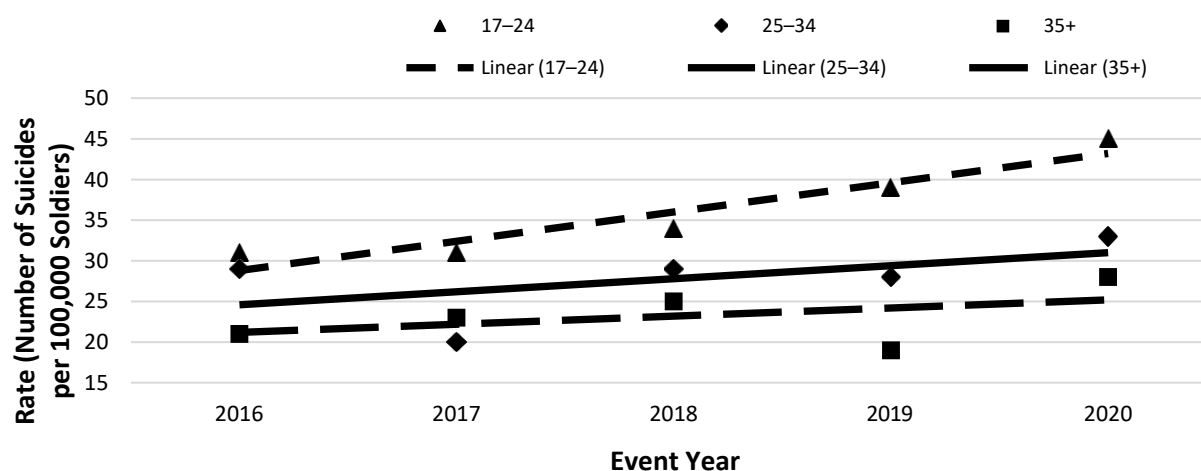


Figure 3. Stratified Annual Suicide Rates of U.S. Army Active Component Soldiers by Age Group, 2016–2020

Notes: U.S. Army suicide counts were obtained from the Armed Forces Medical Examiner System for Soldiers between ages 17 and 64 with identifiable demographic factors. Rates are interpreted as the number of suicides per 100,000 Soldiers. Denominator data were obtained from the Defense Manpower Data Center.

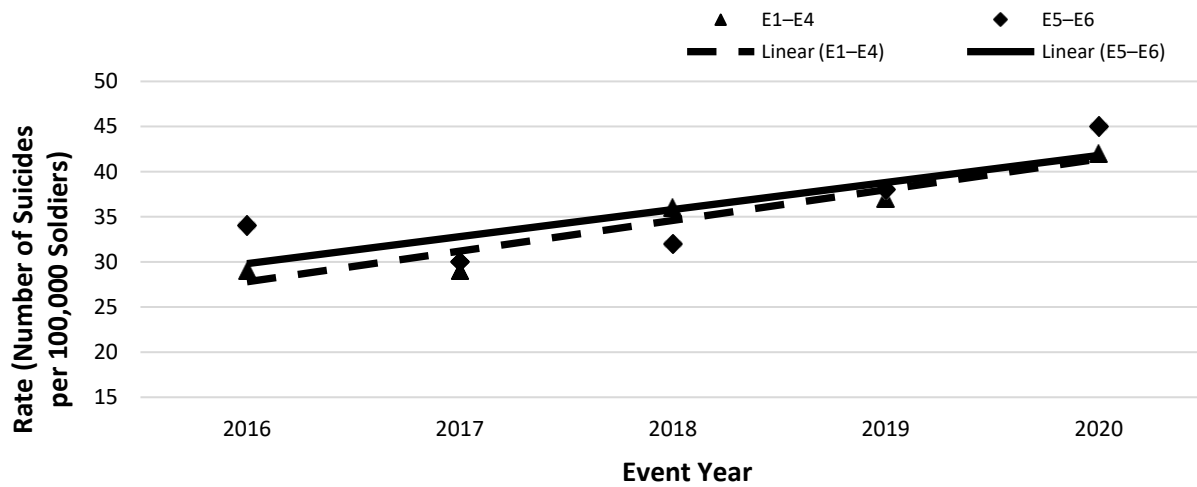


Figure 4. Stratified Annual Suicide Rates of U.S. Army Active Component Soldiers by Rank, 2016 to 2020.

Legend: E=Enlisted

Notes: U.S. Army suicide counts were obtained from the Armed Forces Medical Examiner System for Soldiers between ages 17 and 64 with identifiable demographic factors. Rates are interpreted as the number of suicides per 100,000 Soldiers. Denominator data were obtained from the Defense Manpower Data Center. Annual rates were not calculated or reported for Officer or Warrant Officers because annual suicide counts were less than 20.

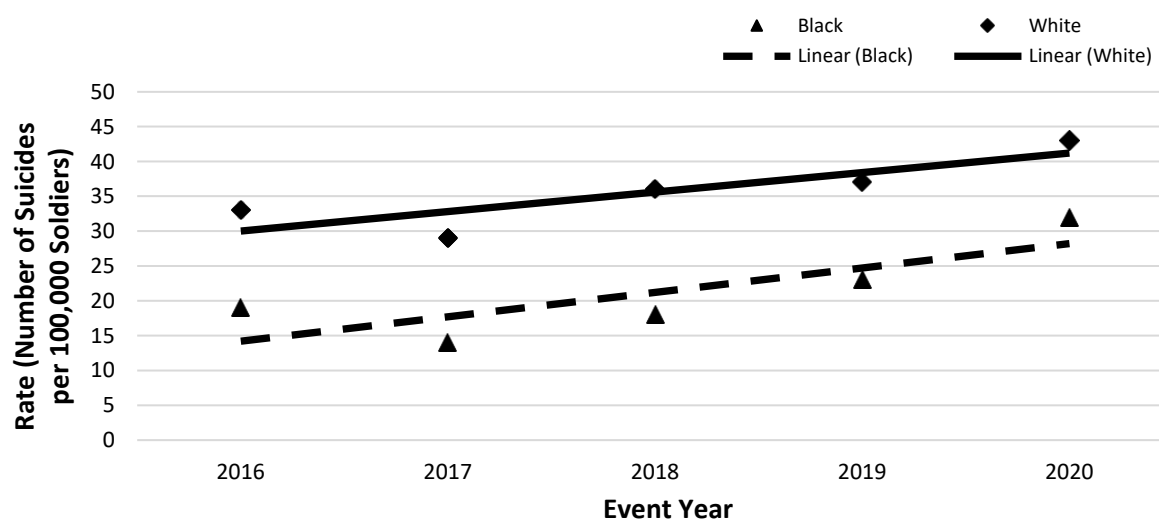


Figure 5. Stratified Annual Suicide Rates of U.S. Army Active Component Soldiers by Race-Ethnicity, 2016 to 2020.

Notes: U.S. Army suicide counts were obtained from the Armed Forces Medical Examiner System for Soldiers between ages 17 and 64 with identifiable demographic factors. Rates are interpreted as the number of suicides per 100,000 Soldiers. Denominator data were obtained from the Defense Manpower Data Center. Annual rates were not calculated or reported for Hispanic, Asian/Pacific Islander and American Indians because annual suicide counts were less than 20.

7 DISCUSSION

The findings in this report indicate that suicide rates are increasing amongst AC Soldiers and certain RC Soldiers, while suicide attempt rates have decreased across both components. In both 2019 and 2020, AC Soldiers had the highest suicide rates when compared to ARNG and USAR Soldiers. In addition, suicide rates for AC Soldiers showed a statistically significant increasing trend from 2016 through 2020. Although suicide rates among ARNG and USAR Soldiers did not show a statistically significant trend across that same time period, for ARNG Soldiers the rate in 2020 was higher than the rate in 2019. This increase indicates that continued assessments of trends among RC Soldiers are warranted, particularly among ARNG Soldiers. Attempt rates for both AC and RC Soldiers were significantly lower in 2020 compared to attempt rates in 2019. This notable decrease in suicide attempt rates, concurrent with the start of the COVID-19 pandemic, warrants continued monitoring of the trends over time. Specifically, an improved understanding of how changes in access to and utilization of healthcare during the height of the pandemic impacted help seeking for BH concerns and reporting of suicidal behavior can shed light on the nature of the decline in suicide attempts as well as benefit planning for the provision of prevention and clinical services during future interruptions in services.

The patterns observed based on stratum-specific rates are mostly consistent with previous reports; enlisted, 17 to 24-year-old, and White AC Soldiers remain at high risk for suicide (APHC 2018). Characteristics of Soldiers who died by suicide roughly followed the demographic distributions found in the overall U.S. Army population with white, male, younger, and junior enlisted Soldiers representing the largest categories of AC and most RC Soldiers, these groups being overrepresented among suicide cases. Increasing trends in suicide rates over the 5-year period were observed for male, junior enlisted, 17 to 24-year-old, White and Black AC Soldiers. Of note, while the yearly suicide rates for Black AC Soldiers for years 2016 through 2018 are considered unstable due to the small number of events, the overall increasing trend from 2016 to 2020 was found to be statistically significant and thus a finding that warrants further assessment and surveillance. Also of note, ARNG Soldiers under the age of 35 years old were at higher risk for suicide when compared to Soldiers ages 35 and older, and the rates of suicide were similar among AC and ARNG junior enlisted Soldiers (E1-E4) and noncommissioned officers (E5-E6). Noncommissioned officers may face increased stress due to their position as front-line leaders responding to the needs of both senior officers and junior enlisted Soldiers which may explain the increasing suicide rates. Consistent with previous SSBP reporting, female, 17 to 24-year-olds, and junior enlisted AC Soldiers were at high risk for attempting suicide (APHC 2018). With regard to race-ethnicity, AC Black and Asian/Pacific Islander Soldiers were most at risk for attempt. Stratified rates were not calculated for USAR Soldiers, as counts were generally less than 20 and unstable thus statistically unreliable. These results indicate that a broad spectrum of Soldiers are at high risk for both suicide and suicide attempt. While an Army-wide strategy for reducing suicidal behavior is critical, preventive efforts to include messaging, screening and early intervention services that target specific subgroups at increased risk should be considered. It is important for unit and community prevention program leaders to ensure that these Soldiers are also receiving the necessary outreach, prevention, and support services.

Prior contact with the military behavioral healthcare system continues to be prevalent among suicidal behavior cases in the Army. The majority of cases had a history of at least one BH encounter while on active status, and many were diagnosed with adjustment or mood disorders. This is consistent with prior SSBP reports and other studies among U.S. Army populations demonstrating that at least half of Soldiers who die by or attempt suicide had a history of one or more outpatient or inpatient BH visits (APHC 2018; Bachynski et al 2012; Ryan et al 2020). With the exception of RC Soldiers who died by suicide, most cases had a BH encounter in the 30 days before their event. A considerable number of Soldiers were diagnosed with multiple BH disorders, suggesting comorbidity. Continued access to and engagement with treatment services through the behavioral healthcare system continues to be crucial. While engaging in the traditional behavioral healthcare system is important, nonclinical interventions and resources, including Chaplain counseling, continue to be an upstream and supportive component of care. Leadership modeling and encouraging the use of BH resources is necessary to reduce stigma and foster a climate that normalizes help-seeking for BH problems among Soldiers. The “Call to Action – Suicide Prevention – Reducing Suicide in Army Formations – BDE and BN Commander’s Handbook,” developed by the Army Resilience Directorate, highlights the previously discussed resources and strategies and provides a framework for unit leaders to implement suicide prevention programming.

Relationship and work-related problems were the most frequently reported stressors for all suicidal behavior cases. A notable proportion of ARNG suicide cases communicated their intentions to a family member, friend or healthcare provider before dying by suicide. Among AC Soldiers, there was a substantial increase in suicides involving alcohol use in 2020 compared to 2019. Findings from early in the COVID-19 pandemic found significant increases in alcohol consumption in civilian populations, which could explain the increase in alcohol use among those who died by suicide in 2020 found in this report (Jacob et al 2021). Awareness regarding the impact of psychosocial factors or stressors on both physical and BH has been growing, as these factors are associated with increased risk of suicidal behavior (Bernecker et al 2019; Blossnich et al 2020; Miranda-Mendizabal et al 2019). “A Decade of BH EPICONS,” published by BSHOP in 2021, highlights gaps in social health (SH) and the organizational environment that contribute to suicidal behavior and other BH issues and provides recommendations for addressing these gaps. Recommendations include increasing social support and connectivity, developing a comprehensive leader development program to enhance skills for addressing BH and SH stressors, and providing protected time for family and for professional development. Furthermore, new and existing prevention activities should consider the unique impacts and challenges of the COVID-19 pandemic, including addressing social isolation and providing alternative means of engagement when traditional in-person activities, such as hails, farewells, or unit-level organization day activities, are not feasible. Additionally, the collection of data pertaining to SH of the Soldier population should be expanded to better aid in the development of prevention efforts and policies and the prioritization of resources.

The DoD continues efforts to reach Service members through a comprehensive public health approach to suicide prevention. The Army is in the process of updating and evaluating suicide prevention training, including the introduction of targeted modules for trainees, Soldiers, and Family members. Additionally, research is on-going to develop a practical, evidence-based tool to assist first-line leaders with engaging Soldiers to improve their BH readiness and reduce

suicidal behavior (Curley et al 2020). These prevention efforts, including the previously discussed recommended actions to improve behavioral and SH and continuing support for utilization of BH treatment, constitute primary, secondary, and tertiary prevention strategies to address suicidal behavior among Soldiers along the continuum of prevention. Continued evaluation of the Army's suicide prevention programming is needed to assess the effectiveness of ongoing prevention activities and facilitate their refinement and improvement. Additionally, BSHOP is exploring new areas for future public health studies with implications for suicidal behavior prevention including assessing factors related to substance use (inclusive of alcohol use) among Soldiers, the availability and quality of couples therapy services, and a variety of other behavioral and SH conditions affecting health and readiness.

The lack of completed DoDSERs for suicide deaths among nonactivated USAR Soldiers remains a significant gap in the data and limits our understanding of suicidal behavior among the RC. The DoDI 6490.16 requires completion of DoDSERs for suicide and suicide attempt cases among Selected Reserve Soldiers (DoD 2017a). The BSHOP and USAR have been discussing the feasibility of completing DoDSERs for all suicides among USAR Soldiers.

8 CONCLUSIONS

These findings highlight the continuing threat to public health posed by suicidal behavior and the importance of developing and implementing effective suicide prevention programs across all components. Implementation and evaluation of current force-wide suicide prevention efforts, including population-specific suicide prevention trainings (for trainees, Soldiers, Family members) and risk-reduction tools for first-line leaders, should continue to be a critical priority for military leaders, prevention program specialists, and other engaged stakeholders. While targeting prevention programs and efforts toward young and enlisted AC Soldiers remains important, such programs and efforts should also target RC Soldiers over age 24 and expand to include nonactivated RC Soldiers, as the latter group accounted for the majority of suicide cases. The increasing suicide rate for Black AC Soldiers and the increase in alcohol-involved suicide deaths warrant further attention and assessment. Soldiers who are junior enlisted, female, or 17–24 years old, Asian/Pacific Islander or Black populations should continue to be the focus of efforts to prevent suicide attempt. Relationship and work stress, as well as BH (specifically adjustment, mood, and anxiety disorders) continue to be important factors in suicidal behavior. BSHOP will continue its efforts to address gaps in the data on suicidal behavior including improving completion of DoDSERs for USAR Soldiers.

Subsequent publications will continue to monitor trends in suicidal behavior rates across components. The ongoing COVID-19 pandemic presents new short and long-term impacts to the health of Soldiers and their families. It is critical for those engaged with military publichealth, including leaders, public health researchers, and clinicians, to continue to monitor suicidal behavior in order to identify opportunities to prevent and mitigate risk factors and continue to provide early access to clinical treatment for BH conditions.

9. POINT OF CONTACT

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APPENDIX A

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APPENDIX B

METHODS

B-1. POPULATION

This surveillance report describes the population of U.S. Army Active Component (AC) and Reserve Component (RC) Soldiers aged 17–64 who experienced suicidal behavior during calendar year 2020. Suicidal behavior counts were provided for suicide cases among AC Soldiers, and both activated and nonactivated RC Soldiers; nonactivated RC suicide cases included only selected Reserve Soldiers. Suicide attempt cases were reported only for AC Soldiers and activated RC Soldiers.

B-2. DATA SOURCES

Historically, the Behavioral and Social Health Outcomes Practice (BSHOP) division maintained a comprehensive data warehouse containing information on Soldiers who exhibited a suicidal behavior while serving in the U.S. Army. This data warehouse was known as the Army Behavioral Health Integrated Data Environment (ABHIDE) (Spiess et al. 2016). The ABHIDE included datasets from multiple data sources including the Armed Forces Medical Examiner System (AFMES), the Defense Manpower Data Center (DMDC), the Military Health System Data Repository (MDR), the Department of Defense Suicide Event Report (DoDSER) system, and the Defense Casualty Information Processing System (DCIPS) among others. The ABHIDE is being formally decommissioned as of November 2022. The previously listed data sources, critical to the analysis of suicidal behavior, are currently being received directly by BSHOP and stored in secured shared drives.

The AFMES provides the Department of Defense (DoD) and other Federal agencies with comprehensive forensic investigative services, including medical mortality surveillance and forensic pathology. As such, the AFMES was the primary source for identifying suicide cases among AC and activated RC Soldiers (DHA 2018). Data for suicide cases among nonactivated RC Soldiers were obtained from Army G-1, which ensures current and future personnel readiness and well-being of the Army through the development and integration of policies and programs for all Army components. The DoDSER system is the principal suicide surveillance tool used to collect and report the contextual factors present among Service members who engaged in suicide-related behavior, and it was used to identify suicide attempt (DoD 2017b). DoDSERs are completed by behavioral health (BH) providers (e.g., mental health counselors, psychiatrists, or social workers) based on their review of the Soldier's health records and/or interviews with the Soldier's healthcare providers (medical professionals), Family members, friends, or coworkers. The DMDC is a data repository which receives and maintains demographic, military, and deployment information on all military personnel, thus creating an archive of information about a Soldier's military career (OUSD 2018). AC, The Army National Guard (ARNG), and the U.S. Army Reserves (USAR) population totals (or rate denominators) were obtained from DMDC. Medical encounters related to suicide were extracted from the MDR,

the centralized data repository captures and archives military healthcare data worldwide, including both direct and purchased care (DHA 2019). The DCIPS interfaces with the DMDC to retrieve personnel data. By providing casualty statistics, the DCIPS serves as a supplemental source for information pertaining to both the person and the suicide event (Department of the Army (DA) 2019).

B-3 MEASURES

B-3.1 Suicidal Behavior

The following National Center for Telehealth and Technology (T2) definitions (DoD 2017b) apply to this report:

- Suicide - Self-inflicted death with evidence (either explicit or implicit) of intent to die.
- Suicide attempt - A self-inflicted, potentially injurious behavior with a nonfatal outcome for which there is evidence (either explicit or implicit) of intent to die.

The identity of suicide cases among AC and activated RC Soldiers was obtained from the AFMES (including confirmed and pending cases); Army G-1 identified suicide cases among nonactivated RC Soldiers. Pending cases are those under investigation. DoDSERs for suicide cases are required to be completed within 60 days of AFMES confirmation.

Suicide attempt cases among AC and activated RC Soldiers were identified by DoDSERs, which are completed within 30 days of the event.

B-3.2 Personal and Event Characteristics

Demographic (i.e., sex, age, race-ethnicity, marital status) and *military* (i.e., rank and activation status) characteristics were obtained from the following sources in the order of most to least complete: (1) DMDC, (2) AFMES, and/or (3) DoDSER. Variables were categorized as follows: sex (male or female), age (17–24, 25–34, or 35–64), race-ethnicity (White, Black, Hispanic, Asian/Pacific Islander, or American Indian), marital status (Single, Married, Divorced, or Other), rank (E1–E4, E5–E6, E7–E9, W1–W5, O1–O9, or Cadet), and activation status (i.e., activated and nonactivated). The race-ethnicity category “American Indian” included Alaska Natives and Native Americans. The “other” category for marital status included widowed or legally separated.

Event characteristics included the following: location (U.S. [including both within and outside the contiguous U.S.], in theater, other, or unknown), method of event (gunshot wound, hanging/asphyxiation, drug/alcohol overdose, cutting, poisoning, other, or unknown), substance involvement (drugs and alcohol), and communication prior to event. The “other” location category does not include countries considered a theater of war such as Afghanistan or Iraq. Communication prior to the event was defined as communicating potential for self-harm verbally, through writing, or via text message to a supervisor, chaplain, mental health staff, friend, or spouse; suicide notes were excluded. The location and method of suicides and

attempts were obtained from the DCIPS and DoDSERs, respectively. All other event characteristics were obtained from DoDSERs.

B-3.3 Personal and Legal/Administrative History

Major life events and stressors of interest occurring within 1 year of the suicidal behavior event and reported on DoDSERs were grouped into two major, nonmutually exclusive themes: legal/administrative history and personal history. Legal/administrative and personal issues were collected only for those suicides and suicide attempts documented in DoDSERs. Information on legal/administrative and personal history and other variables obtained from the DoDSER are not available for pending/probable cases under investigation.

Legal/administrative history included Article 15, Uniform Code of Military Justice proceedings, civil legal problems, administrative separation, and medical board. Administrative separation is based on Soldier misconduct or inability to meet the standard of duty. Soldiers who were not selected for advanced schooling, promotion, or command were placed in the “nonselection” category. Soldiers on medical board status are being evaluated to determine their fitness for continued duty.

Personal history encompassed relationship problems; work stress; physical health problems; victim or perpetrator of abuse; financial stress; and the death, suicide, and/or health problems of a spouse, Family member, or friend. Indication of work problems included workplace hazing, job problems, poor performance, and coworker conflicts. Lifetime histories of being a victim of abuse or experiencing the suicide of a Family member or friend were collected due to their potential negative impact on Soldiers’ quality of life.

B-3.4 Behavioral Health and Other Health Conditions

Medical encounters and diagnoses for BH conditions were based on medical encounters in the military healthcare system while on active status during a Soldier’s time-in-service and were obtained from the MDR. Inpatient and outpatient medical encounters with an International Classification of Diseases (ICD) code (ICD-9 or ICD-10) of interest in any diagnosis (Dx) position (i.e., Dx1–Dx8 or Dx1–Dx4, respectively), were isolated. See Appendix C, Table C-2 for the list of health conditions of interest and their corresponding ICD-9/10 code(s).

A diagnosis was defined as either—

- An inpatient encounter with a ICD-9/10 code in any of the first eight diagnosis positions (Dx1–Dx8).
- An outpatient encounter with a ICD-9/10 code in the primary position (Dx1).
- A code for the same condition in the second through fourth diagnosis positions (Dx2–Dx4) dated twice within 1 year but not on the same day.

These definitions were based on the Healthcare Effectiveness Data and Information Set guidelines from the National Committee for Quality Assurance (NCQA) for major depressive disorders and were applied to all BH conditions (NCQA 2010).

B-4. ANALYSIS

Descriptive statistics (e.g., counts and proportions) were calculated for each variable by suicidal behavior for each component in 2019 and 2020. The most serious recent event was counted for Soldiers who had more than one suicidal event in a given year. Annual crude suicide and attempt rates were calculated for 2019 and 2020 by dividing the number of events by the total population of U.S. Army Soldiers aged 17–64 then multiplying by 100,000. Stratified rates were calculated by sex, rank, race-ethnicity, and age by dividing the number of events in a category by the total population of Soldiers within the same category. Rates are generally not calculated for categories where counts are less than 20 due to unstable rates; however in certain instances these rates will be calculated and presented when they contribute to a larger overall rate trend that is found to be statistically significant, based on the expert discretion of the report analysts. Comparison of rates, rather than case counts, accounts for differences in the total number of Soldiers across years and/or categories, which allows for more appropriate comparisons. Crude and stratified rates (number of events/100,000 Soldiers) and 95% confidence intervals were reported. Using data from January 2016 to December 2020, a trend analysis of suicide rates by component and stratified suicide rates among AC Soldiers was conducted to examine if there were statistically significant trends before and during the COVID-19 pandemic. Poisson regression was used to test for overall and strata-specific trends over the specified time period. Rate ratios and 95% confidence intervals were reported.

Direct standardization was applied to compare suicide rates between the U.S. Army Active Soldiers and U.S. general population, controlling for the higher prevalence of young and male Soldiers in the U.S. Army. See Appendix C, Figure C-1 for suicide rates from 2010–2019 adjusted for age and sex using the 2015 U.S. Army Active distribution as the standard population. This population was used as the standard population because it reflects the drawdown of U.S. Army Active Soldiers and is the year in which all military occupations were opened to women. The adjusted rates are rates which would have existed if both populations had the same age and sex distribution. Adjusted suicide rates for the U.S. general population are based on data from the Centers for Disease Control and Prevention (CDC) (CDC 2020). All data management and analytical procedures were performed using SAS® version 9.4 and Microsoft® Excel®.

B-5. LIMITATIONS

This report included suicide cases among activated and nonactivated Soldiers; however, suicide attempt cases were included for only activated RC Soldiers. Furthermore, we were only able to assess medical and BH encounters while activated for RC Soldiers, potentially missing any contacts made with the healthcare system while nonactivated. The person who completes the DoDSER may not be familiar with the case, resulting in missing fields/entries. However, to increase completeness, medical providers who were familiar with the suicidal behavior case are also interviewed to ascertain relevant information.

APPENDIX C

SUPPLEMENTAL TABLES AND FIGURES

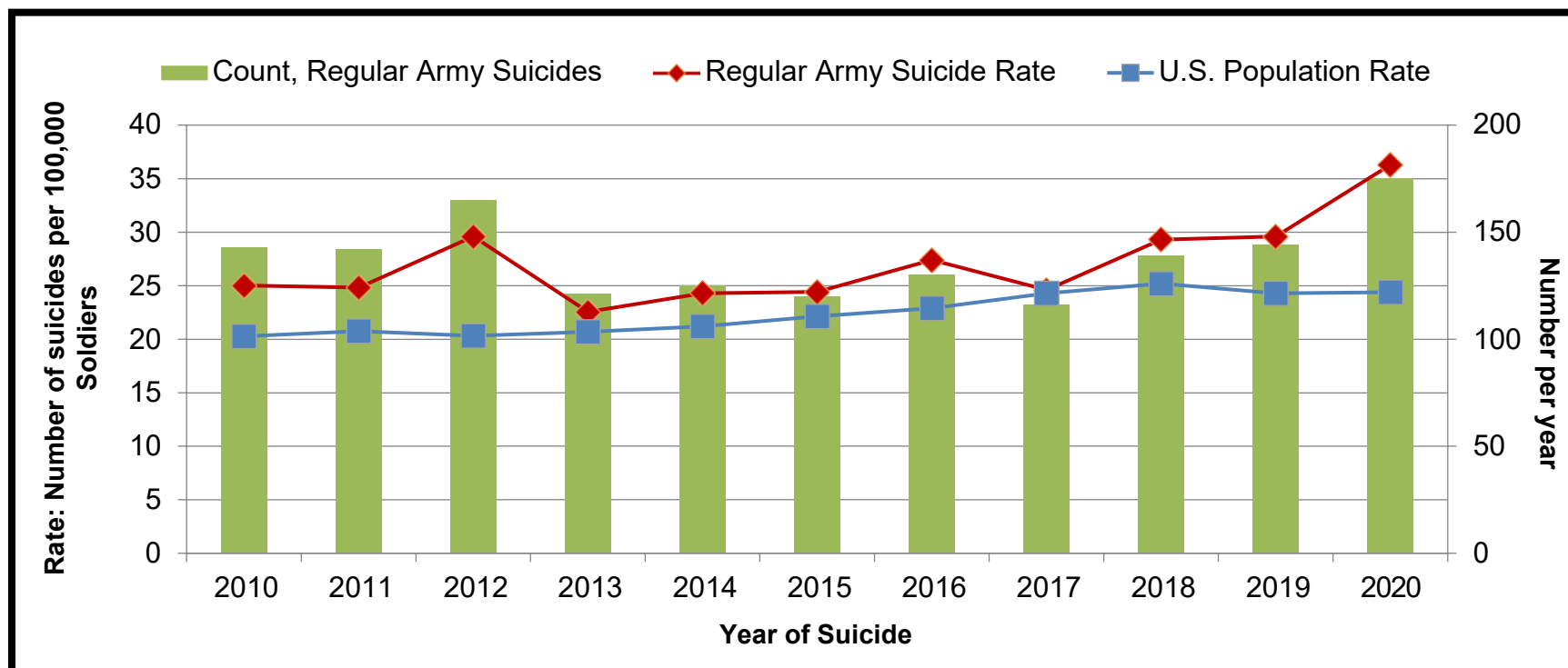


Figure C-1. U.S. Army Active Component and U.S. Population Age and Sex Adjusted Suicide Rates by Year, 2010–2020

Notes: Rates have been direct adjusted by age and sex, using the 2015 U.S. Army distribution as a standard population. U.S. Army suicide rates and counts include Active Component Army Soldiers, aged 17–59 (2010–2018) and aged 17–64 (2019–2020) which were obtained from the

Public Health Report No. S.0094100.1-20, Surveillance of Suicidal Behavior: U.S. Army Active and Reserve Component Soldiers, 2019 and 2020

Armed Forces Medical Examiner System (AFMES). Adjusted suicide rates for the U.S. general population are based on data from the Centers for Disease Control and Prevention.

Table C-1. Annual Stratum-Specific Rates of U.S. Army Soldiers and Unadjusted Rate Ratios, 2016–2020.

	Suicide ^d					
	Rates (95% CI) ^c					cRR (95%CI) ^e
	2016	2017	2018	2019	2020	
COMPONENT						
Active	28 (26–30)	25 (23–27)	30 (28–32)	30 (28–32)	36 (34–39)	1.08 (1.03–1.14)
National Guard	32 (29–34)	36 (33–38)	36 (33–39)	22 (20–25)	31 (28–34)	0.97 (0.91–1.03)
Reserve	21 (18–24)	33 (29–37)	26 (23–29)	20 (17–23)	22 (19–25)	0.96 (0.88–1.05)
SEX ^f						
Male	30 (25–36)	28 (23–33)	33 (28–40)	33 (27–39)	41 (35–48)	1.09 (1.03–1.15)
RANK ^f						
E1–E4	29 (23–37)	29 (23–37)	36 (29–45)	37 (30–46)	42 (34–52)	1.11 (1.03–1.19)
E5–E6	34 (25–46)	30 (22–42)	32 (23–44)	38 (29–51)	45 (35–58)	1.09 (0.99–1.20)
AGE ^f						
17–24	31 (23–40)	31 (24–40)	34 (27–43)	39 (31–49)	45 (37–56)	1.11 (1.03–1.20)
25–34	29 (22–38)	20 (14–28)	29 (22–38)	28 (21–37)	33 (25–42)	1.06 (0.97–1.15)
35–64	21 (14–31)	23 (15–33)	25 (17–37)	19 (12–29)	28 (19–39)	1.04 (0.92–1.18)
RACE-ETHNICITY ^f						
Non-Hispanic White	33 (27–41)	29 (23–37)	36 (30–44)	37 (30–45)	43 (36–52)	1.08 (1.01–1.15)
Non-Hispanic Black	19 (12–30)	14 (8–24)	18 (12–29)	23 (15–35)	32 (23–46)	1.19 (1.03–1.36)

Legend:

E = Enlisted

cRR = Crude Rate Ratios

CI = Confidence Intervals

Notes:

^a Included U.S. Army Soldiers aged 17–64 with identifiable demographic factors.

^b Population counts were provided by Defense Manpower Data Center.

^c Rates were not calculated or reported for characteristics with counts less than 20. Rates are interpreted as the number of events per 100,000 Soldiers.

Public Health Report No. S.0094100.1-20, Surveillance of Suicidal Behavior: U.S. Army Active and Reserve Component Soldiers, 2019 and 2020

^d Counts of suicide cases were provided by Armed Forces Medical Examiner System.

^e Rate Ratios were calculated to assess statistically significant trends in annual suicide rates using Poisson Regression and interpreted as a percent increase in the suicide rate for every one unit increase in year.

^f Included only Active Component Soldiers.

Table C-2. Categorizing Behavioral Health Medical Encounters and Diagnoses

Broad Category		Diagnosis Category	ICD-9 DX, V-Codes, E-Codes	ICD-10 DX, Z-Codes
Behavioral Health Conditions				
Organic Conditions			290, 293, 294, 310	F01-F04
Substance use	Alcohol		291, 303, 3050	F10
	Drugs		292, 304, 3052-3059	F11-F19
Personality Disorder			301	F21, F60
Psychosis	Schizophrenia		2950-2953, 2955-2959	F20
	Schizophreniform		2954	
	Delusional or Shared		'297 ', 2971, 2973	F22, F24
	Paranoia		2970, 2972, 2978, 2979, 2983, 2984	F22, F23
	Brief Psychotic Disorder		2988	F23
	Psychosis NOS		2989	F29
	Other Psychoses		2908, 2909, '298 ', 2980, 2981, 2982	F28
Mood Disorders	Bipolar		2960, 2964-2968	F30, F31, F340
	Major Depression		2962, 2963	F32 OR F33
	Dysthymia		3004	F341
	Depression NOS		311, 29699	F348 OR F349
	Other Mood		'296 ', 2961, 2969, V790	F39
Anxiety	Social Phobia		30023	F40
	Phobias		30020, 30022, 30029	
	Anxiety NOS		'300 ', '3000 ', 30000	
	Other Anxiety		30009, 30010	F41
	Panic		30001, 30021	
	GAD		30002	
	OCD		3003	F42
Acute Stress Reaction			308	F430
PTSD			30981	F431
Adjustment Disorder			All 309 (except 309.81)	F432, F438, F439
Dissociative			30012-30015, 3006	F44, F481
Conversion			30011	F44
Somatoform			3007, 3008, 3078	F45
Eating Disorder			3071, 3075	F50
Factitious			30016, 30019	F681
Attention Deficit Disorder			314	F90
Conduct/Emotional Disorder			312, 313	F91

Table C-2. Categorizing Behavioral Health Medical Encounters and Diagnoses (continued)

Broad Category	Diagnosis Category	ICD-9 DX, V-Codes, E-Codes	ICD-10 DX, Z-Codes
Unspecified Mental Disorder		3009	-
Psych Factors, Physical Condition		306, 316	-
Other BH conditions		299, 302, 315, 317-319, 3070, 3072, 3073, 3076, 3077	F52, F66, F70, F804, F808, F84, F95, F984, F985, F64-F659, F800-F802, F81-F82, F88-F89, F980-F981, F4321, F1010
BH Screening			Z046, Z0471, Z0472, Z134
Partner Relationship Problems		V6100-V6104, V6110	Z630
Family Circumstances Problems		V612, V618, V619	Z62, Z635-Z639
Maltreatment Problems		99580-99585, V6111, V6112, V6121, V6122, V6283	T74, T76, Z69-Z6982
Life Circumstance Problems		V620-V625, V628-V629	Z72810, Z72811, Z73-Z736, Z55-Z559, Z56-Z569, Z60-Z609, Z65-Z659
Mental or Behavioral Problems, Substance Abuse Counseling		'V40', V402, V403, V409, V6542	Z714-Z7142, Z715-Z7152
Personal Trauma		9955, V154, V6121	Z914, Z9149, Z91410, Z6281, Z69010, Z69020, Z6911, Z6981
Suicidal Ideation		V6284	R45851
Suicide Attempt/Self-harm		E95-E959, E98-E9890	X71-X83, X838XX, T3992X, T1491, T1491X, T1491XA, Z915, T360X2-T375X2, T378X2, T379X2-T387X2, T38802, T38812, T38892, T38902, T38992, T39012, T39092, T391X2, T392X2, T39312, T39392, T394X2, T398X2, T3992, T400X2-T405X2, T40602, T40692, T407X2, T408X2, T40902, T40992, T410X2, T411X2, T41202, T41292, T413X2, T4142, T415X2, T420X2-T426X2, T4272, T4272X, T428X2, T43012, T43022, T431X2, T43202, T43212, T43222, T43292, T433X2, T434X2, T43502, T43592, T43602, T43612, T43622, T43632, T43692, T438X2, T4392, T440X2-T448X2, T44902, T44992, T450X2-T454X2, T45512, T45522, T45602, T45612, T45622, T45692, T457X2, T458X2, T4592, T460X2-T468X2, T46902, T46992, T470X2-T478X2, T4792, T480X2, T481X2, T48202, T48992, T483X2-T486X2, T48902, T48992, T490X2-T498X2, T4992, T500X2-T508X2, T50902, T50992, T50A12, T50A22, T50, T50A92, T50B12, T50B92, T50Z14, T50Z92, T510X2-T513X2, T518X2, T5192, T5192X, T520X2-T524X2, T528X2, T5292, T530X2-T537X2, T5392, T540X2-T543X2, T5492, T550X2, T551X2,

Table C-2. Categorizing Behavioral Health Medical Encounters and Diagnoses (continued)

Suicide Attempt/Self-harm (continued)		T560X2-T568X2, T56892, T5692, T570X2-T573X2, T578X2, T5792, T5802, T5802X, T5812, T582X2, T588X2, T5892, T590X2-T597X2, T59812, T59892, T5992, T600X2-T604X2, T608X2, T6092, T6102, T6112, T61772, T61782, T618X2, T6192, T620X2-T622X2, T628X2, T6292, T63002, T63012, T63022, T63032, T63042, T63062, T63072, T63082, T63092, T63112, T63122, T63192, T632X2, T63302, T63312, T63322, T63332, T63392, T63412, T63422, T63432, T63442, T63452, T63462, T63482, T63512, T63592, T63612, T63622, T63632, T63692, T63712, T63792, T63812, T63822, T63832, T63892, T6392, T6402, T6482, T650X2, T651X2, T65212, T65222, T65292, T653X2-T656X2, T65812, T65822, T65832, T65892, T6592, T71112, T71122, T71132, T71152, T71162, T71192, T71222, T71232
Sleep Disorders	29182, 29285, 3074-30748, 327-3278, 7805- 78056, 78058, V694, 327-32780, 7805-78056, 78058, V694	F51, G47, Z72820
Psychosocial Circumstances		
Employment/Unemployment	V620, V621, V6229	Z56, Z562, Z563, Z564, Z565, Z566, Z568, Z5689, Z569
Deployment	V6221, V6222	Z5682
Social environment	V623, V624, V6281	Z559, Z600, Z602, Z603, Z604, Z608, Z609, Z72811, Z734, Z72811
Upbringing	V6120, V6121, V6129	Z62810, Z62811, Z62812, Z62819, Z62890, Z62898, Z629, Z69011, Z62810, Z6281, Z62812, Z62819, Z62890, Z62898, Z69011
Primary support	V610, V6102, V6107, V6108, V6109, V618, V619, V6282	Z6372, Z6379, Z638, Z639
Spousal issues	V6103, V6110, V6111, V6112, V6122	Z630, Z635, Z691, Z6912
Other psychosocial	V625, V6283, V629	Z651, Z653, Z655, Z658, Z659, Z6981
Substance use counseling	V6542	Z7141, Z7151
Life management	V6289, V694	Z72820, Z733, Z72820
V-codes and Z-codes are used to provide context for encounters but are not considered diagnostic codes.		

GLOSSARY

ABHIDE

Army Behavioral Health Integrated Data Environment

AC

Active Component

AFMES

Armed Forces Medical Examiner System

APHC

U.S. Army Public Health Center

ARNG

Army National Guard

BH

behavioral health

BSHOP

Division of Behavioral and Social Health Outcomes Practice

DCIPS

Defense Casualty Information Processing System

DHA

Defense Health Agency

DMDC

Defense Manpower Data Center

DoD

Department of Defense

DoDSER

Department of Defense Suicide Event Report

E1–E9

Enlisted rank

ICD-9

International Classification of Diseases, Ninth Revision, Clinical Modification

ICD-10

International Classification of Diseases, 10th Revision, Clinical Modification

MDR

Military Health System Data Repository

O1–O9

Officer rank

PTSD

Post-traumatic Stress Disorder

RC

Reserve Component

USAR

U.S. Army Reserve

W1–W5

Warrant Officer rank