U.S. Army Public Health Center

Public Health Report

Surveillance of Suicidal Behavior January through December 2016

PHR No. S.0008057-16

Approved for public release, distribution unlimited

General Medical: 500A, Public Health Data

December 2017

APHC

Clinical Public Health and Epidemiology Directorate
Division of Behavioral and Social Health Outcomes Practice

Surveillance of Suicidal Behavior is published by the Division of Behavioral and Social Health Outcomes Practice (BSHOP), Clinical Public Health and Epidemiology Directorate, U.S. Army Public Health Center.
For questions concerning the content of this publication please send all correspondence to:

E-mail: usarmy.apg.medcom-phc.list.eds-bshop-ops@mail.mil

The following authors contributed to this Report:
Nkechinyere Gibson
Elizabeth Corrigan
Keri Kateley
Eren Youmans Watkins
Joseph A. Pecko

Table of Contents

Public Health Report
Surveillance of Suicidal Behavior
PHR No. S.0008057-16
January through December 2016

1 Summary

1.1 Introduction

The U.S. Army Public Health Center (APHC), Division of Behavioral and Social Health Outcomes Practice (BSHOP) collects, analyzes, and disseminates surveillance data on suicidal behavior cases (suicides, suicide attempts, and suicidal ideations) among Active Army Soldiers in the U.S. Army. The surveillance data presented do not include information on U.S. Army National Guard or Reserve Soldiers. Data related to suicidal behavior are stored in BSHOP's Army Behavioral Health Integrated Data Environment (ABHIDE, Appendix B), the most comprehensive data warehouse for information pertaining to suicidal behavior in the U.S. Army. *Surveillance of Suicidal Behavior Publication*, published annually by BSHOP, describes the characteristics of Active Army Soldiers who engaged in suicidal behavior, as reported through data sources in the ABHIDE, and presents observed trends and changes in risk factors over time. Suicide surveillance data are used by key military leaders, public health practitioners, and behavioral health (BH) providers (e.g., psychologists, social workers, and psychiatrists) in the U.S. Army to focus prevention efforts, plan programs, allocate resources, develop policy, monitor trends, and suggest actionable recommendations in order to mitigate adverse outcomes.

1.2 Purpose

This publication presents characteristics of Active Army Soldiers with suicidal behavior during 2016. This includes suicides identified by the Armed Forces Medical Examiner System (AFMES), as well as suicide attempts and suicidal ideations reported in Department of Defense Suicide Event Reports (DoDSERs).

1.3 Summary of Change

The following are new to this publication:

- This report does not include information on activated National Guard and activated U.S. Army Reserve Soldiers. BSHOP plans to provide a separate, more in-depth, technical report to examine each of these important populations within the Total Force. The future report will help provide recommendations specific to Civilian-Soldiers who are often geo-dispersed from military installation resources.

- In an effort to reduce redundancies and streamline this report:

    - A Synopsis provides an overall summary of the suicidal behavior data and adds context to the findings.

    - The main text has been replaced with bulleted key findings for each suicidal behavior. Each behavior's key findings are followed by tables and figures which provide a more detailed breakdown of characteristics.

2 Synopsis

During the 2016 calendar year, 2,129 Active Army Soldiers engaged in suicidal behavior. Of these, 127 Soldiers died by suicide, 532 attempted suicide, and 1,470 Soldiers had a suicidal ideation. The counts of suicidal behavior for this publication are current as of 28 April 2017.

Suicide Rate: The crude suicide rate for 2016 was 26.7 per 100,000 persons. This is the second highest observed rate in the last 10 years; the highest was 29.9 per 100,000 persons in 2012 (Table 2). From 2001 through 2007, the direct age- and sex-adjusted suicide rate among Active Army Soldiers aged 17–59 years was lower than the U.S. population rate (Figure 1). However, from 2008 through 2015, the Active Army rate surpassed the U.S. population rate. Adjusted Active Army and U.S. population rates differed statistically from 2001–2006, 2009–2010, and in 2012.

Suicide attempt rate: The crude suicide attempt rate for 2016 was 112 per 100,000 persons, the second highest observed rate in the last 10 years. The highest was 151.9 per 100,000 persons in 2007 (Table 20). The increase in suicide attempt rates may partly be a result of on-going updates to policies and procedures, and training efforts with BH providers to identify cases and complete the DoDSERs.

Suicidal ideation rate: The crude suicidal ideation rate for 2016 was 309.5 per 100,000 persons, the highest observed rate in the last 10 years (Table 37). The increase in suicidal ideation rates may partly be a result of a procedural emphasis for BH providers to identify cases and complete a limited number of fields on the DoDSER.

Demographics: The majority of suicidal behavior cases in 2016 were non-Hispanic white, males, between 17 and 34 years of age, and of enlisted ranks. Soldiers from the E1–E4 ranks made up a smaller proportion of suicide cases (47%) than attempt cases (76%) or suicidal ideation cases (70%). Fifty-nine percent of suicidal behavior cases had no history of deployments (i.e., Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), or Operation New Dawn (OND)). In addition, suicide and suicide attempts primarily occurred in the United States (86%). The data indicate that Junior Enlisted Soldiers may be a population to focus interventions for suicidal ideations and treatment for suicide attempts. Suicide prevention strategies continue to be essential in a state-side garrison environment for Soldiers of all ages and ranks.

Lethal means: The most common method of suicide was gunshot wound, and the most common method among suicide attempts was overdosing on drugs/alcohol. Access to lethal means is a priority topic for public health policy development. In addition, civilian and military public health efforts are collaborating to address alcohol and substance use and misuse within communities.

Social indicators: Personal problems within the previous year were reported among more than three-fourths (77%) of suicide and suicide attempt cases. The principal personal issues reported for suicide and suicide attempt cases were relationship problems, work stress, physical health problems, and ever being a victim of abuse. Legal/administrative issues within the previous year were reported among 31 percent of suicide and suicide attempt cases. The principal legal/administrative issues were Article 15, civil legal, and administrative separation. The most prevalent personal and legal/administrative issues reported for Soldiers (relationship problems, work stress, legal problems) are consistent with risk for suicidal behavior in the U.S. population.[1] The identification and proactive management of personal and legal/administrative issues can improve a Soldier's overall quality of life. Prevention efforts may be enhanced through the active engagement of leadership and community, which support individuals and families through unit and community-based outreach programs and services.

Behavioral Health indicators: Nearly three-fourths (73%) of Soldiers with suicidal behavior had a previous BH diagnosis, the most prevalent diagnoses being adjustment, mood, and other anxiety disorders. This may suggest the success of efforts to bring Soldiers into BH care. It may also signal improvements in identifying Soldiers in need, a greater willingness of Soldiers to seek care, and improved access to BH care. In the 30 days preceding the suicidal event, 66 percent of Soldiers with an attempt or ideation had a BH encounter, compared to 35 percent of suicide cases. The identification of non-fatal events provides an opportunity to save lives. Through education, training, and outreach efforts, prevention programs and BH providers aim to increase awareness and decrease stigma surrounding BH conditions and treatment services.

Medical indicators: Other medical indicators affecting Soldiers with suicidal behavior included sleep problems, chronic pain, and polypharmacy. In the year before their event, more than one-quarter (26%) of suicidal behavior cases were diagnosed with a sleep disorder. Sleep problems may indicate other BH issues including posttraumatic stress disorder and major depression, both of which are also associated with suicidal behavior. Seven percent of suicidal behavior cases received chronic pain diagnoses. Chronic pain is a "complex experience that affects thoughts, moods, and behaviors and can lead to isolation, immobility, and drug dependence."[2] At the time of the event, 5 percent of suicidal behavior cases met the criteria for polypharmacy. Polypharmacy carries the risk of drug interactions (such as an increase or decrease in the effectiveness or side effects) and overdoses, and has been associated with suicide and accidental deaths.[3,4] The Army continues to promote a comprehensive approach to prevention through the Ready and Resilient Campaign, with initiatives such as the Performance Triad comprehensive plan to promote sleep, activity and nutrition. Additionally, Army Medicine employs the Patient Centered Medical Home model to provide integrated and coordinated comprehensive care.

3 References

See Appendix A for a listing of references used in this report.

4 Authority

Army Regulation (AR) 40-5 (Preventive Medicine, 25 May 2007), Section 2-19.

5 Key Findings, Tables, and Figures

5.1 Suicide Cases

Demographics/Military Characteristics:

- During 2016, 127 Soldiers died by suicide, 1 more than in 2014 and 7 more than in 2015. The suicide rate for Active Army Soldiers aged 17–59 was 26.7 per 100,000 persons.

- Most suicide cases were male (92%), 17–34 (82%), non-Hispanic white (68%), married (50%), and from the E1–E4 ranks (47%). A little more than half (51%) had no history of OEF, OIF, or OND deployment.

Event Characteristics:

- Most (91%) suicides occurred in the United States. The largest number of suicide cases occurred at Fort Hood (n=17), Fort Bragg (n=13), and Fort Carson (n=10), which have some of the largest populations of Soldiers.

- The most common method of suicide was gunshot wound (65%).

- The prevalence of alcohol or drug involvement during the suicide event was 17 percent and 7 percent, respectively. Eighteen percent of Soldiers communicated suicidal intentions in advance.

Personal and Legal/Administrative History:

- Personal problems were reported among 71 percent of suicide cases; 25 percent of suicide cases reported legal/administrative problems. The principal personal issues reported within a year of the suicide were relationship problems (52%), work stress (22%), and physical health problems (21%); principal legal/administrative issues were Article 15 (11%) and civil legal problems (9%).

- Sixteen percent of cases utilized the Army Substance Abuse Program (ASAP), and 5 percent used the Family Advocacy Program (FAP) within a year before their death.

BH Indicators:

- Almost one-quarter (22%) of suicide cases had an inpatient BH encounter during their military careers and 75 percent had an outpatient BH encounter since accession. Thirty-five percent of suicide cases had a BH encounter in the 30 days preceding the event.

- A little more than half (54%) of suicide cases had been diagnosed with a BH disorder before their death. Suicide cases were primarily diagnosed with adjustment (39%), mood (31%), and other anxiety disorders (24%).

Other Medical Indicators:

- In the year preceding the suicide, 8 percent of 2016 suicide cases had a medical encounter for chronic pain. Few (2%) had a medical encounter for chronic pain within 30 days of their death. In the year before their death, 7 percent of suicide cases received a chronic pain diagnosis.

- In the year before the suicide, almost one-fourth (22%) of 2016 suicide cases had a medical encounter for sleep problems, 9 percent within 30 days of their death. In the year before their death, 19 percent of suicide cases were diagnosed with a sleep disorder.

Polypharmacy:

- At the time of the event, 7 percent (n=9) of Soldiers met the criteria for polypharmacy. Of suicide cases who met the criteria for polypharmacy, 22 percent met polypharmacy criteria under a single definition, and 78 percent met the criteria under two or more definitions.

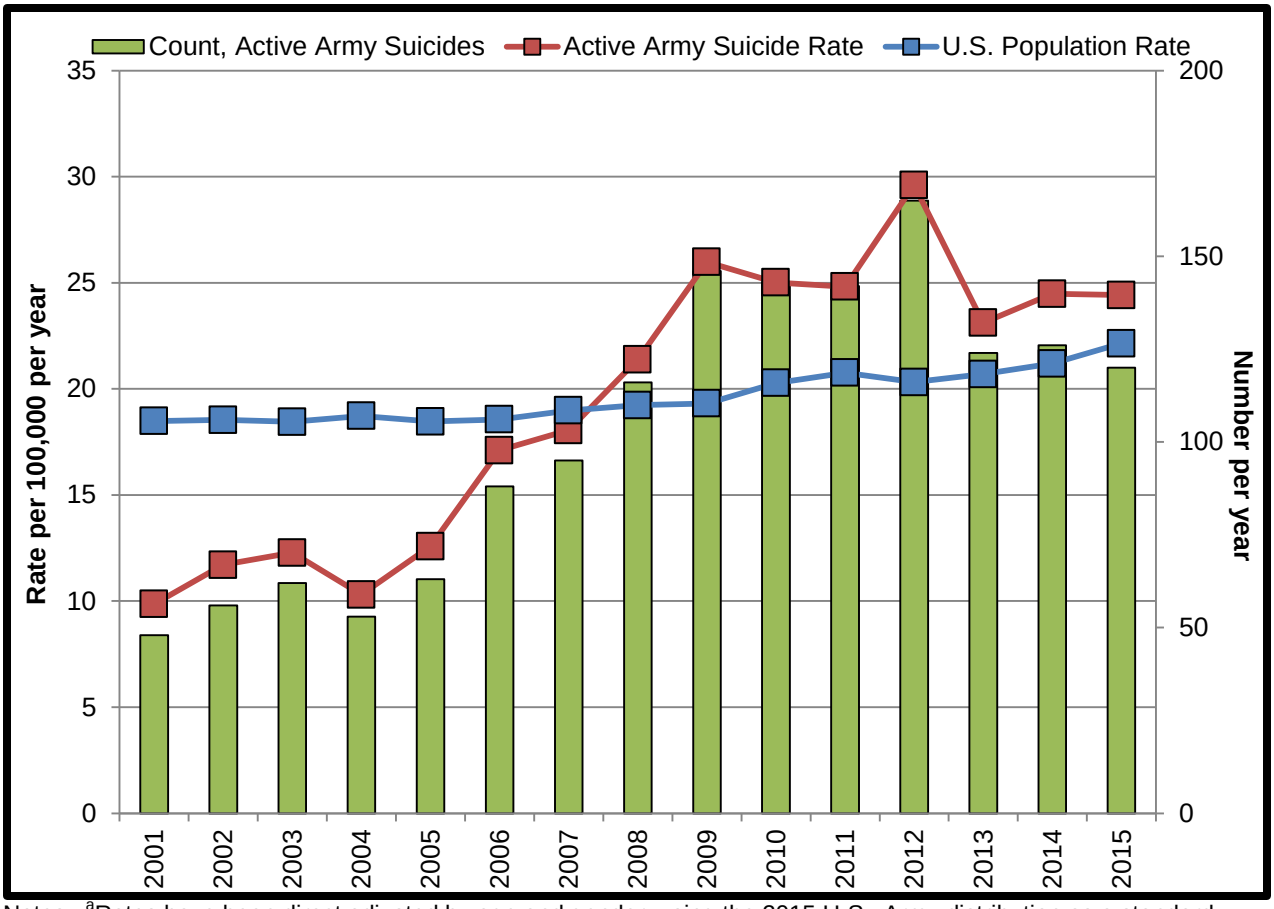
Drug Testing and ASAP Screening:

- Of suicide cases with drug testing data (n=120), few (4%) had a positive drug test at some time during their military career (excluding positive tests for drugs for which the Soldier had a prescription). Of these, 20 percent had two or more positive drug tests, and 80 percent had a positive drug test within a year of their deaths. Positive drug tests were for cannabis (80%) and opiates (20%).

- In the year preceding the suicide, 12 percent of cases were screened for intake into the ASAP program. Of these, 87 percent enrolled in the program.

Suicides—Tables and Figures:

- The following tables and figures provide analysis details for suicide cases. The tables present counts and proportions of suicide cases. Characteristics of cases from 2016 were compared statistically with those from 2014 and 2015 using Chi-squared or Fisher's exact tests, where appropriate. P-values in bold indicate a significant difference, $p<0.05$.



Notes: [a]Rates have been direct adjusted by age and gender, using the 2015 U.S. Army distribution as a standard population. [b]U.S. Army suicide rates and counts include Active Army Soldiers, aged 17-59.

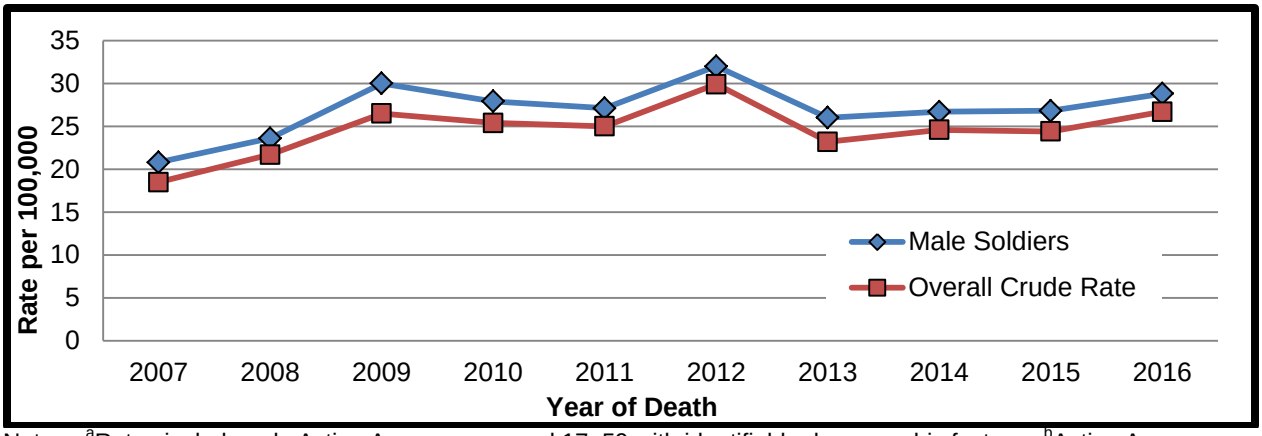
Figure 1. Counts and Rates of Suicide by Year, 2001–2015

Table 1. Demographic Characteristics, Suicide Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Army Distribution[b] (%) 2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
SEX					0.637	0.527
Male	118 (94)	113 (94)	117 (92)	85		
Female	8 (6)	7 (6)	10 (8)	15		
AGE (YR)					0.254	0.198
17–24	39 (31)	36 (30)	52 (41)	37		
25–34	60 (48)	59 (49)	52 (41)	39		
35–64	27 (21)	25 (21)	23 (18)	NA		
Mean	29 (±7.4)	29 (±6.4)	28 (±7.5)	NA	0.144[d]	0.175[d]
Mode	21	27 & 33	21	NA		
RACE-ETHNICITY					0.282	0.274
Non-Hispanic White	73 (58)	71 (59)	86 (68)	NA		
Non-Hispanic Black	27 (21)	27 (23)	17 (13)	NA		
Hispanic	17 (13)	11 (9)	16 (13)	NA		
Non-Hispanic Asian/ Pacific Islander	8 (6)	8 (7)	5 (4)	NA		
Non-Hispanic American Indian/Alaska Native	1 (1)	3 (3)	3 (2)	NA		
MARITAL STATUS					0.134	0.553
Single	35 (28)	39 (33)	48 (38)	NA		
Married	73 (58)	71 (59)	64 (50)	NA		
Divorced	18 (14)	9 (8)	13 (10)	NA		
Other[e]	0 (0)	1 (1)	2 (2)	NA		

Legend: NA – not available.

Notes: [a]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [b]Data for the Army distribution include Active Army cases aged 17–59. These data were provided by AFMES. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [d]T-test of means. [e]Includes widowed and legally separated.



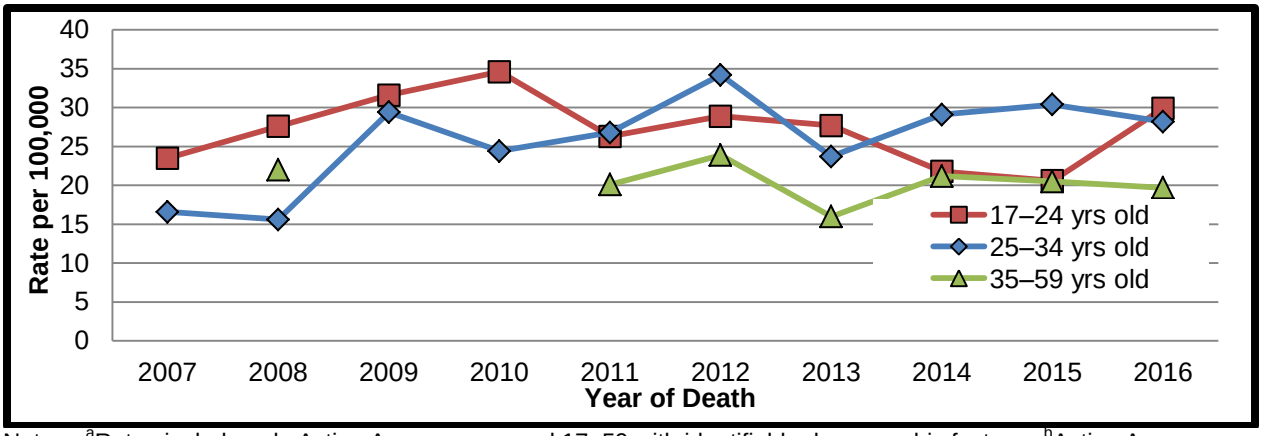
Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, fewer than 20 female Soldiers died by suicide in any year, so rates could not be calculated for that group.

Figure 2. Overall Crude Rate vs. Sex-Specific Suicide Rates,[a–c] per 100,000, Active Army Soldiers, 2007–2016

Table 2. Overall Crude Rate and Sex-Specific Suicide Rates,[a–c] per 100,000, Active Army Soldiers, 2007–2016

	Overall		Sex			
			Male		Female	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
Year of Death						
2007	18.5	14.8 – 22.2	20.8	16.5 – 25.0	—	—
2008	21.7	17.8 – 25.7	23.6	19.2 – 28.0	—	—
2009	26.5	22.2 – 31.0	30.0	24.9 – 34.7	—	—
2010	25.4	21.2 – 29.5	27.9	23.2 – 32.6	—	—
2011	25.0	20.9 – 29.1	27.1	22.5 – 31.7	—	—
2012	29.9	25.3 – 34.4	32.0	27.0 – 37.1	—	—
2013	23.2	19.1 – 27.3	26.0	21.4 – 30.7	—	—
2014	24.6	20.3 – 28.9	26.7	21.9 – 31.6	—	—
2015	24.4	20.1 – 28.8	26.8	21.9 – 31.7	—	—
2016	26.7	22.1 – 31.4	28.8	23.6 – 34.1	—	—

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, fewer than 20 female Soldiers died by suicide in any year, so rates could not be calculated for that group.



Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, for some years, fewer than 20 Soldiers between 35-59 years of age died by suicide, so rates could not be calculated for those years.

Figure 3. Age-Specific Suicide Rates,[a–c] per 100,000, Active Army Soldiers, 2007–2016

Table 3. Age-Specific Suicide Rates,[a–c] per 100,000, Active Army Soldiers, 2007–2016

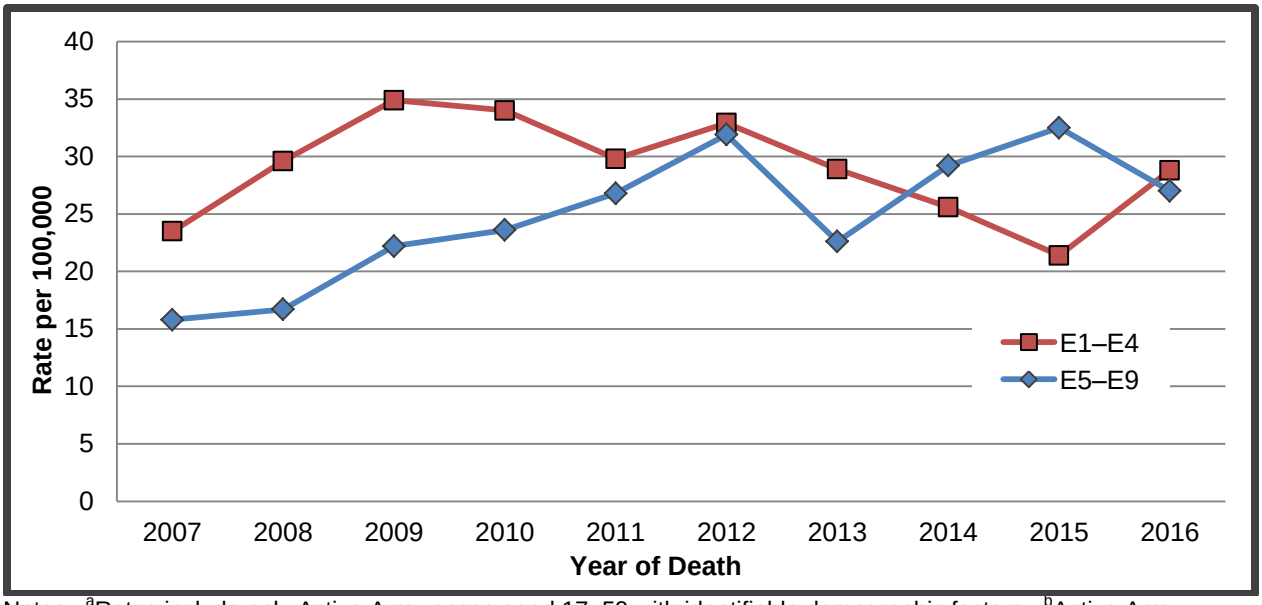
Age	17 – 24 yrs old		25 – 34 yrs old		35 – 59 yrs old	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
Year of Death						
2007	23.5	16.9 – 30.2	16.6	10.9 – 22.4	—	—
2008	27.6	20.4 – 34.8	15.6	10.2 – 21.0	22.0	13.7 – 30.3
2009	31.6	23.9 – 39.3	29.4	22.2 – 36.5	—	—
2010	34.6	26.5 – 42.7	24.4	18.0 – 30.8	—	—
2011	26.3	19.1 – 33.4	26.8	20.2 – 33.4	20.1	12.5 – 27.7
2012	28.9	21.2 – 36.6	34.2	26.6 – 41.7	23.9	15.6 – 32.1
2013	27.7	20.1 – 35.3	23.7	17.3 – 30.2	16.0	9.2 – 22.9
2014	21.8	15.0 – 28.7	29.1	21.7 – 36.4	21.2	13.2 – 29.2
2015	20.6	13.8 – 27.3	30.4	22.7 – 38.2	20.5	12.4 – 28.5
2016	29.9	21.8 – 38.1	28.2	20.5 – 35.9	19.7	11.6 – 27.7

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, for some years, fewer than 20 Soldiers between 35-59 years of age died by suicide, so rates could not be calculated for those years.

Table 4. Military Characteristics, Suicide Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Army Distribution[b] (%) 2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
RANK					0.641	0.120
E1–E4	56 (44)	45 (38)	60 (47)	44		
E5–E9	56 (44)	59 (49)	46 (36)	36		
W1–W5	2 (2)	5 (4)	3 (2)	3		
Cadets	0 (0)	1 (1)	0 (0)	1		
O1–O3	9 (7)	9 (8)	13 (10)	NA		
O4–O8	3 (2)	1 (1)	5 (4)	NA		
NUMBER OF DEPLOYMENTS[d]					**0.023**	**0.003**
0	39 (31)	32 (27)	65 (51)	NA		
1	27 (21)	31 (26)	19 (15)	NA		
2	30 (24)	21 (18)	18 (14)	NA		
3	18 (14)	23 (19)	15 (12)	NA		
4+	12 (10)	13 (11)	10 (8)	NA		

Legend: DoDSER – Department of Defense Suicide Event Report, E – Enlisted, NA – Not Available, O – Officer, OEF – Operation Enduring Freedom, OIF – Operation Iraqi Freedom, OND – Operation New Dawn, W – Warrant Officer.
Notes: [a]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [b]Data for the Army distribution include Active Army cases aged 17–59. These data were provided by AFMES. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, $p<0.05$. [d]Refers to lifetime history of OEF, OIF, or OND deployment.



Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, fewer than 20 Officers, or Warrant Officers died by suicide any year, so rates could not be calculated for those groups.

Figure 4. Rank-Specific Suicide Rates,[a–c] per 100,000, Active Army Soldiers, 2007–2016

Table 5. Rank-Specific Suicide Rates,[a–c] per 100,000, Active Army Soldiers, 2007–2016

Rank	E1 – E4		E5 – E9		O1 – O9		W1 – W5	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF DEATH								
2007	23.5	17.2 – 29.7	15.8	10.3 – 21.4	—	—	—	—
2008	29.6	22.7 – 36.5	16.7	11.1 – 22.3	—	—	—	—
2009	34.9	27.5 – 42.2	22.2	15.8 – 28.6	—	—	—	—
2010	34.0	26.9 – 41.2	23.6	17.0 – 30.2	—	—	—	—
2011	29.8	23.2 – 36.4	26.8	19.7 – 33.9	—	—	—	—
2012	32.9	25.7 – 40.1	31.9	24.1 – 39.7	—	—	—	—
2013	28.9	22.0 – 35.8	22.6	16.0 – 29.2	—	—	—	—
2014	25.6	18.9 – 32.3	29.2	21.5 – 36.8	—	—	—	—
2015	21.4	15.1 – 27.6	32.5	24.2 – 40.8	—	—	—	—
2016	28.8	21.5 – 36.1	27.0	19.2 – 34.9	—	—	—	—

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, fewer than 20 Officers or Warrant Officers died by suicide in any year, so rates could not be calculated for those groups.

Table 6. Distribution of Active Army[a] Suicides by Installation, 2014–2016

Installation – n (%)	2014 (n = 126)	2015 (n = 120)	2016 (n = 127)
Asia[b]	1 (0.8)	5 (4.2)	4 (3.1)
Europe[c]	4 (3.2)	2 (1.7)	4 (3.1)
Carlisle Barracks	0 (0.0)	0 (0.0)	1 (0.8)
Fort Belvoir	0 (0.0)	2 (1.7)	1 (0.8)
Fort Benning	5 (4.0)	7 (5.8)	4 (3.1)
Fort Bliss	12 (9.5)	7 (5.8)	6 (4.7)
Fort Bragg	13 (10.3)	11 (9.2)	13 (10.2)
Fort Campbell	13 (10.3)	9 (7.5)	6 (4.7)
Fort Carson	4 (3.2)	12 (10.0)	10 (7.9)
Fort Drum	6 (4.8)	3 (2.5)	3 (2.4)
Fort Gordon	1 (0.8)	1 (0.8)	4 (3.1)
Fort Hood	17 (13.5)	14 (11.7)	17 (13.4)
Fort Huachuca	0 (0.0)	1 (0.8)	0 (0.0)
Fort Irwin	0 (0.0)	0 (0.0)	1 (0.8)
Fort Jackson	1 (0.8)	3 (2.5)	2 (1.6)
Fort Knox	2 (1.6)	5 (4.2)	0 (0.0)
Fort Lee	2 (1.6)	0 (0.0)	1 (0.8)
Fort Leonard Wood	2 (1.6)	0 (0.0)	2 (1.6)
Fort McCoy	0 (0.0)	0 (0.0)	1 (0.8)
Fort Meade	1 (0.8)	0 (0.0)	1 (0.8)
Fort Polk	2 (1.6)	2 (1.7)	2 (1.6)
Fort Riley	6 (4.8)	3 (2.5)	7 (5.5)
Fort Rucker	1 (0.8)	0 (0.0)	1 (0.8)
Fort Sill	2 (1.6)	2 (1.7)	2 (1.6)
Fort Stewart	8 (6.3)	7 (5.8)	4 (3.1)

Table 6. Distribution of Active Army Suicides by Installation, 2014–2016 (cont'd.)

Installation – n (%)	2014 (n = 126)	2015 (n = 120)	2016 (n = 127)
Fort Wainwright	2 (1.6)	0 (0.0)	3 (2.4)
Joint Base Elmendorf Richardson	0 (0.0)	1 (0.8)	1 (0.8)
Joint Base Langley Eustis	0 (0.0)	0 (0.0)	0 (0.0)
Joint Base Lewis McChord	6 (4.8)	9 (7.5)	8 (6.3)
Joint Base Myer Henderson Hall	0 (0.0)	0 (0.0)	1 (0.8)
Joint Base San Antonio	2 (1.6)	1 (0.8)	2 (1.6)
Pentagon[d]	1 (0.8)	0 (0.0)	0 (0.0)
Presidio of Monterey	1 (0.8)	0 (0.0)	0 (0.0)
Redstone Arsenal	1 (0.8)	0 (0.0)	1 (0.8)
Rock Island Arsenal	0 (0.0)	1 (0.8)	0 (0.0)
USAG Hawaii	3 (2.4)	6 (5.0)	8 (6.3)
USAREC	2 (1.6)	1 (0.8)	2 (1.6)
West Point	0 (0.0)	1 (0.8)	1 (0.8)
Other[e]	5 (4.0)	4 (3.3)	3 (2.4)

Legend: USAG – U.S. Army Garrison, USAREC – U.S. Army Recruiting Command.
Notes: [a]Installation confirmation of suicide counts are for Active Army personnel only (not activated National Guard or US Army Reserve). [b]Asia includes Japan and Korea. [c]Europe includes Germany, Italy, and Norway. [d]Pentagon refers to Army personnel at the Pentagon. [e]Includes Arlington, VA, Camp Atterbury, Federal Emergency Management Agency Incident Management Assistance Team, Sioux Falls, U.S. Air Force Installations, Washington Headquarters, Zimbabwe.

Table 7. Location and Method,[a] Suicide Cases,[b] Active Army, 2014–2016

Characteristic	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
LOCATION OF DEATH				0.071	0.651
USA	115 (91)	111 (93)	116 (91)		
In Theater	6 (5)	2 (2)	1 (1)		
Other[d]	5 (4)	7 (6)	10 (8)		
METHOD OF DEATH				0.533	0.846
Gunshot Would	89 (71)	74 (62)	83 (65)		
Hanging/Asphyxiation	27 (21)	34 (28)	32 (25)		
Drug/Alcohol Overdose	5 (4)	3 (3)	2 (2)		
Other[e]	5 (4)	8 (7)	7 (6)		
Unknown	0 (0)	1 (1)	3 (2)		

Notes: [a]Location and method of death from Defense Casualty Information Processing System. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [d]Primarily Europe or Korea. [e]Includes carbon monoxide and other poisoning, jumping from heights or in front of vehicles, vehicle crashes, or drowning.

Table 8. Additional Event Characteristics, Suicide Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Cases n (%) 2014[c] (n = 118)	2015 (n = 120)	2016[d] (n = 126)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
SUBSTANCE INVOLVEMENT					
Event Involved Alcohol	35 (30)	27 (23)	22 (17)	—	—
Event Involved Drugs	6 (5)	8 (7)	9 (7)	—	—
OTHER EVENT CHARACTERISTICS					
Communicated Prior to Event	29 (25)	34 (28)	23 (18)	—	—

Legend: DoDSER – Department of Defense Suicide Event Report .

Notes: [a]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. Comparison omitted where >10% unknown or missing. [c]DoDSERs were not available for 8 cases. [d]A DoDSER was not available for 1 case.

Table 9. Personal and Legal/Administrative History[a] from DoDSERs, Suicide Cases,[b] Active Army, 2014–2016

Personal and Legal/ Administrative History	Suicide Cases n (%)			Test for Significant Difference[c] (p-value)	
	2014[d] (n = 118)	2015 (n = 120)	2016[e] (n = 126)	2016 vs 2014	2016 vs 2015
LEGAL/ADMINISTRATIVE HISTORY[f]					
Article 15	17 (14)	12 (10)	14 (11)	—	—
Civil Legal Problems	17 (14)	17 (14)	11 (9)	—	—
Administrative Separation[g]	9 (8)	10 (8)	8 (6)	—	—
AWOL	7 (6)	3 (3)	4 (3)	—	0.720
Nonselection[h]	7 (6)	8 (7)	6 (5)	—	—
Courts Martial	3 (3)	5 (4)	2 (2)	—	0.446
Any of the Above	36 (31)	33 (28)	31 (25)	—	—
MEDICAL BOARD[i]					
Yes	8 (7)	11 (9)	7 (6)	0.671	0.299
PERSONAL HISTORY[f]					
Relationship Problem	62 (53)	78 (65)	65 (52)	—	—
Work Stress	31 (26)	39 (33)	28 (22)	—	—
Physical Health Problem	24 (20)	24 (20)	27 (21)	—	0.764
Victim of Abuse				—	—
Previous Year	1 (1)	2 (2)	4 (3)	—	—
Ever	11 (9)	13 (11)	18 (14)	—	—
Emotional	5 (4)	7 (6)	11 (9)	—	—
Physical	6 (5)	9 (8)	9 (7)	—	—
Sexual	8 (7)	7 (6)	9 (7)	—	—
Perpetrator of Abuse	12 (10)	15 (13)	13 (10)	—	—
Spouse/Family/Friend Death	8 (7)	8 (7)	7 (6)	—	—
Financial Stress	9 (8)	5 (4)	5 (4)	—	—
Spouse/Family Health Problem	6 (5)	0 (0)	1 (1)	—	—
Spousal/Family/Friend Suicide				—	—
Previous Year	2 (2)	3 (3)	1 (1)	—	—
Ever	2 (2)	5 (4)	7 (6)	—	—
Any of the Above	85 (72)	95 (79)	90 (71)	—	—

Table 9. Personal and Legal/Administrative History[a] from DoDSERs, Suicide Cases,[b] Active Army, 2014–2016 (cont'd.)

Personal and Legal/ Administrative History	Suicide Cases n (%) 2014[d] (n = 118)	2015 (n = 120)	2016[e] (n = 126)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
PROGRAM UTILIZATION					
Substance Abuse Services	12 (10)	19 (16)	20 (16)	0.164	0.955
Family Advocacy Program	12 (10)	14 (12)	6 (5)	0.117	0.051
Ever Received Suicide Prevention Training	58 (49)	47 (39)	48 (38)	—	—

Legend: AWOL – absent without leave, DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Personal and legal/administrative history within year before suicide, except as noted. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, p<0.05. Comparison omitted where >10% unknown or missing. [d]DoDSERs were not available for 8 cases. [e]A DoDSER was not available for 1 case. [f]More than one may apply. [g]Considered for separation from the Army on the basis of conduct or inability to meet standards of duty performance and discipline. [h]Not selected for advanced schooling, promotion, or command. [i]Medical evaluation board to determine fitness for continued duty.

Table 10. Behavioral Health Indicators from PDHAs and PDHRAs,[a] Suicide Cases,[b] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014	2015	2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
POST-DEPLOYMENT HEALTH ASSESSMENTS	(n = 18)	(n = 20)	(n = 11)		
Depression Symptoms[d]	8 (44)	4 (20)	1 (9)	0.098	0.640
Posttraumatic Stress Symptoms[e]	6 (33)	6 (30)	1 (9)	0.364	0.372
Suicidal Thoughts	1 (6)	0 (0)	0 (0)	1.000	—
Referred to BH Care	4 (22)	3 (15)	0 (0)	0.268	0.535
POST-DEPLOYMENT HEALTH REASSESSMENTS	(n = 18)	(n = 21)	(n = 12)		
Depression Symptoms[d]	5 (28)	9 (43)	3 (25)	1.000	0.465
Posttraumatic Stress Symptoms[e]	7 (39)	8 (38)	2 (17)	0.412	0.425
Suicidal Thoughts	0 (0)	0 (0)	0 (0)	—	—
Referred to BH Care	2 (11)	3 (14)	1 (8)	1.000	1.000

Legend: BH – behavioral health, PDHA – Post-Deployment Health Assessment, PDHRA – Post-Deployment Health Reassessment.

Notes: [a]Data from the most recent PDHA and PDHRA in the 12 months before the suicide. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [d]Patient Health Questionnaire-2 (PHQ 2). [e]Primary Care Posttraumatic Stress Disorder Screen (PC-PTSD).

Table 11. Alcohol Misuse Indicators,[a] Suicide Cases,[b] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014 (n = 111)	2015 (n = 98)	2016 (n = 95)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
ALCOHOL MISUSE					
Unhealthy Drinking[d]	9 (8)	7 (7)	8 (8)	—	—
Probable Alcohol Disorder[e]	0 (0)	1 (1)	2 (2)	—	—
Referred to ASAP	4 (4)	5 (5)	7 (7)	0.231	0.514
Received Alcohol-Related Education	33 (30)	38 (39)	47 (49)	**0.004**	0.134

Legend: ASAP – Army Substance Abuse Program, AUDIT-C – Alcohol Use Disorders Identification Test - Consumption, PHA – Periodic Health Assessment.
Notes: [a]Based on AUDIT-C scores from the most recent PHA in the 15 months before the suicide. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. Comparison omitted where >10% unknown or missing. [d]The threshold for a positive screen indicating unhealthy drinking is 5 or more for men and 4 or more for women. [e]A high positive screen, indicating probable alcohol disorder, is 8 and above.

Table 12. Behavioral Health Indicators, Suicide Cases,[a] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014 (n = 126)	2015 (n =120)	2016 (n = 127)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS[c]					
Inpatient Encounter Involving BH	30 (24)	34 (28)	28 (22)	0.739	0.255
Outpatient Encounter Involving BH	101 (80)	89 (74)	95 (75)	0.308	0.909
Encounter Involving BH in 30 Days Before Event	55 (44)	43 (36)	44 (35)	0.142	0.845
BH DIAGNOSIS[c]					
Any BH Diagnosis[d]					
Prevalence[e] Before Event	77 (61)	75 (63)	68 (54)	0.224	0.154
Incidence in Year Before Event	41 (33)	33 (28)	38 (30)	0.653	0.674
More Than One BH Diagnosis[f]					
Prevalence[e] Before Event	55 (44)	50 (42)	42 (33)	0.084	0.163
Incidence in Year Before Event	15 (12)	15 (13)	21 (17)	0.292	0.369
Any Mood Disorder					
Prevalence[e] Before Event	49 (39)	39 (33)	39 (31)	0.172	0.762
Incidence in Year Before Event	24 (19)	14 (12)	19 (15)	0.387	0.447
~Major Depression					
Prevalence[e] Before Event	17 (13)	23 (19)	28 (22)	0.075	0.576
Incidence in Year Before Event	11 (9)	10 (8)	20 (16)	0.089	0.075
~Other Depressive Disorders					
Prevalence[e] Before Event	43 (34)	35 (29)	23 (18)	**0.004**	**0.040**
Incidence in Year Before Event	24 (19)	16 (13)	5 (4)	**<0.001**	**0.008**
~Bipolar Disorder					
Prevalence[e] Before Event	5 (4)	7 (6)	6 (5)	0.768	0.696
Incidence in Year Before Event	3 (2)	4 (3)	4 (3)	1.000	1.000
PTSD					
Prevalence[e] Before Event	20 (16)	23 (19)	17 (13)	0.576	0.218
Incidence in Year Before Event	7 (6)	6 (5)	7 (6)	0.988	0.857
Other Anxiety Disorder[g]					
Prevalence[e] Before Event	28 (22)	28 (23)	30 (24)	0.791	0.957
Incidence in Year Before Event	9 (7)	9 (8)	17 (13)	0.102	0.132

Table 12. Behavioral Health Indicators, Suicide Cases,[a] Active Army, 2014–2016 (cont'd.)

Indicator	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
BH DIAGNOSIS[c]					
Adjustment Disorder					
Prevalence[e] Before Event	54 (43)	47 (39)	49 (39)	0.489	0.925
Incidence in Year Before Event	18 (14)	14 (12)	20 (16)	0.745	0.352
Substance Use Disorder[h]					
Prevalence[e] Before Event	35 (28)	40 (33)	28 (22)	0.292	**0.047**
Incidence in Year Before Event	10 (8)	12 (10)	11 (9)	0.834	0.717
Personality Disorder[i]					
Prevalence[e] Before Event	7 (6)	4 (3)	8 (6)	0.802	0.279
Incidence in Year Before Event	3 (2)	3 (3)	3 (2)	1.000	1.000
Psychosis					
Prevalence[e] Before Event	1 (1)	5 (4)	2 (2)	1.000	0.270
Incidence in Year Before Event	1 (1)	3 (3)	2 (2)	1.000	0.676
Previous Suicide Attempt/Self Harm[j]					
Prevalence[e] Before Event	12 (10)	14 (12)	14 (11)	0.694	0.873
Incidence in Year Before Event	6 (5)	10 (8)	9 (7)	0.434	0.713
Previous Suicidal Ideation[k]					
Prevalence[e] Before Event	17 (13)	22 (18)	18 (14)	0.875	0.375
Incidence in Year Before Event	9 (7)	13 (11)	10 (8)	0.825	0.424

Legend: BH – behavioral health, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification, PTSD – posttraumatic stress disorder.
Notes: [a]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, p<0.05. [c]May have more than one. [d]Any BH diagnosis includes diagnoses with one or more of the following: mood, PTSD, other anxiety disorders, adjustment disorder, substance use disorders, personality disorders, psychosis. [e]Ever diagnosed during time in service. [f]More than one BH diagnosis includes more than one of the aforementioned diagnoses. [g]Includes, for example, panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder. [h]Includes drug or alcohol use disorders. [i]Includes, for example, borderline or antisocial personality disorders. [j]Based on ICD-9 E-codes and ICD-10 X-,T-, and Z-codes for self-inflicted injuries. [k]Based on an ICD-9 V-code and ICD-10 R-code for suicidal ideation.

Table 13. Traumatic Brain Injuries,[a] Suicide Cases,[b] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS[d]					
Inpatient Encounter Involving TBI	4 (3)	5 (4)	4 (3)	1.000	0.743
Outpatient Encounter Involving TBI	23 (18)	27 (23)	18 (14)	0.378	0.090
Encounter Involving TBI in Year Before Event	12 (10)	16 (13)	5 (4)	0.076	**0.008**
Encounter Involving TBI in 30 Days Before Event	3 (2)	6 (5)	4 (3)	1.000	0.531
TBI DIAGNOSES[d]					
Any TBI Diagnosis	21 (17)	26 (22)	19 (15)	0.710	0.172
First TBI Diagnosis in Year Before Event	8 (6)	11 (9)	3 (2)	0.120	**0.021**

Legend: ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification, TBI – traumatic brain injury.

Notes: [a]Based on ICD-9 and 10 codes for traumatic brain injuries provided by the Defense and Veterans Brain Injury Center (DVBIC): ICD-9 (800–801.99, 803–804.99, 850–854.19), ICD-10: F07.81, S04.02-S04.04, S06.0-S06.6, S06.8-S06.9, S02.0-S02.1, S02.8-S02.9, S07.1, Z87.820, DOD0102, DOD0103, DOD0104, and DOD0105. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]May have more than one.

Table 14. Chronic Pain,[a] Suicide Cases,[b] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS					
Encounter for Chronic Pain in Year Before Event	9 (7)	10 (8)	10 (8)	0.825	0.895
Encounter for Chronic Pain in 30 Days Before Event	0 (0)	3 (3)	3 (2)	0.247	1.000
DIAGNOSES					
Chronic Pain Diagnosis in Year Before Event	7 (6)	6 (5)	9 (7)	0.617	0.493

Legend: ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification.

Notes: [a]ICD-9 codes indicating chronic pain include 338.2, 338.3, and 338.4. ICD-10 codes include G89.21, G89.22, G89.28, G89.29, G89.3, and G89.4. Based on coding guidance from the American Academy of Professional Coders. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$.

Table 15. Sleep Problems,[a] Suicide Cases,[b] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS					
Encounter for Sleep in Year Before Event	37 (29)	29 (24)	28 (22)	0.183	0.693
Encounter for Sleep in 30 Days Before Event	12 (10)	11 (9)	12 (9)	0.984	0.939
DIAGNOSES					
Sleep Disorder Diagnosis in Year Before Event	32 (25)	21 (18)	24 (19)	0.213	0.776

Legend: ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification.
Notes: [a]ICD-9 codes indicating sleep problems include 307.4–307.48, 327–327.8, 780.5–780.56, 291.82, 292.85, 780.58, and V694. ICD-10 codes include F51, G47, and Z72.820. [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05.

Table 16. Polypharmacy, Suicide Cases,[a] Active Army, 2014–2016

Category	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
POLYPHARMACY					
Any Polypharmacy[c]	6 (5)	5 (4)	9 (7)	0.434	0.321
CATEGORIES OF POLYPHARMACY[d]					
1. Met all criteria[e]	0 (0)	0 (0)	0 (0)	—	—
2. Psychotropics & opioid[f]	0 (0)	0 (0)	2 (22)	—	—
3. Psychotropics & ER visits[g]	0 (0)	0 (0)	0 (0)	—	—
4. Opioid & ER visits[h]	0 (0)	0 (0)	0 (0)	—	—
5. ≥ 4 prescriptions, at least one opioid[i]	1 (17)	2 (40)	2 (22)	—	—
6. Multiple psychotropic prescriptions[j]	5 (83)	2 (40)	4 (44)	—	—
7. 3+ ER visits with opioids prescribed[k]	0 (0)	1 (20)	1 (11)	—	—

Legend: OTSG – Office of the Surgeon General, ER – Emergency Room.

Notes: [a]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. Statistical test omitted for small counts. [c]Met at least one criterion for polypharmacy, as defined by OTSG Policy 15-039 definition, at the time of the event. [d]Proportion of cases with any polypharmacy. [e]Met all three polypharmacy criteria (categories 5, 6, and 7). [f]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event and had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [g]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event and had at least 3 ER visits in the year preceding the event where an opioid was prescribed. [h]Had at least 3 ER visits in the year preceding the event where an opioid was prescribed and had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [i]Had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [j]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event. [k]Had at least 3 ER visits in the year preceding the event where an opioid was prescribed.

Table 17. Drug Testing History,[a] Suicide Cases,[b] Active Army, 2014–2016

Measure	Suicide Cases n (%) 2014 (n = 123)	2015 (n = 118)	2016 (n = 120)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
DRUG TEST HISTORY					
Positive Drug Test	6 (5)	4 (3)	5 (4)	0.790	1.000
More than One Positive Drug Test[d]	1 (17)	1 (25)	1 (20)	—	—
Positive Drug Test in Year Before Event[d]	4 (67)	1 (25)	4 (80)	—	—
Amphetamines[d]	0 (0)	1 (25)	0 (0)	—	—
Cannabis[d]	3 (50)	2 (50)	4 (80)	—	—
Cocaine[d]	2 (33)	0 (0)	0 (0)	—	—
Oxycodone/Oxymorphone[d]	0 (0)	1 (25)	0 (0)	—	—
Opiates[d]	1 (17)	0 (0)	1 (20)	—	—
Heroin[d]	0 (0)	0 (0)	0 (0)	—	—
Steroids[d]	0 (0)	0 (0)	0 (0)	—	—
Barbiturates[d]	0 (0)	0 (0)	0 (0)	—	—

Legend: NA – not available.
Notes: [a]Drug testing history is available only for cases who have a record of a drug test in the Drug and Alcohol Management Information System (DAMIS). [b]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. Statistical test omitted for small counts.
[d]Proportion out of cases with any positive drug test.

Table 18. ASAP Intake History,[a,b] Suicide Cases,[c] Active Army, 2014–2016

Indicator	Suicide Cases n (%) 2014 (n = 126)	2015 (n = 120)	2016 (n = 127)	Test for Significant Difference[d] (p-value) 2016 vs 2014	2016 vs 2015
ASAP INTAKE SCREENING					
Screened for Intake	13 (10)	18 (15)	15 (12)	0.705	0.462
Enrolled for Treatment[e]	8 (62)	13 (72)	13 (87)	0.198	0.413

Legend: ASAP – Army Substance Abuse Program.
Notes: [a]Data from the Drug and Alcohol Management Information System (DAMIS). [b]ASAP screening and enrollment in the year before the event. [c]Suicide cases in this table include those confirmed by the AFMES or pending confirmation and thus may differ from counts published by G-1. [d]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [e]Proportion out of cases screened for intake.

5.2 Suicide Attempt Cases

Demographics/Military Characteristics:

- The number of suicide attempts cases reported for 2016 was 532, an increase from 464 in 2014 and 420 in 2015. The suicide attempt rate for Active Army Soldiers aged 17–59 was 112 per 100,000 persons.
- Most suicide attempt cases were male (74%), 17–24 (63%), non-Hispanic White (48%), and single (52%).
- The majority of a suicide attempts were from the E1–E4 ranks (76%). Sixty-two percent of cases had no history of an OEF, OIF, or OND deployment.

Event Characteristics:

- The majority of suicide attempt cases occurred in the United States (84%).
- Approximately half (49%) of the cases attempted suicide by overdosing on drugs/alcohol. Twenty-seven percent of suicide attempts involved alcohol and approximately half (49%) involved drugs.
- One-quarter (26%) of cases communicated suicidal intentions prior to their attempt.

Personal and Legal/Administrative History:

- Personal issues were reported among the majority of suicide attempts (78%). The principal personal issues reported within a year prior to the event were relationship problems (50%), work stress (36%), and at any time in their lives, being a victim of abuse (32%). Thirty-two percent of cases reported legal/administrative issues; primary issues reported were Article 15 (17%) and administrative separation (13%) issues.
- Thirteen percent of cases utilized the ASAP, and 6 percent of Soldiers used the FAP within a year before their event.

BH Indicators:

- Twenty-eight percent of suicide attempt cases had an inpatient BH encounter during their military career. The majority (82%) of cases had an outpatient BH encounter since accession, and more than half (60%) had a BH encounter in the 30 days preceding the event.

- Two-thirds (67%) of suicide attempt cases had been diagnosed with a behavior health disorder before their event. The primary diagnoses were adjustment (54%) and mood (39%) disorders.

Other Medical Indicators:

- In the year preceding their suicide attempt, 9 percent of cases had a medical encounter for chronic pain. Three percent had a medical encounter for chronic pain within 30 days of their attempt. In the year before their event, 7 percent of suicide attempt cases received a chronic pain diagnosis.

- In the year before the suicide attempt, one-third (33%) of suicide attempt cases had a medical encounter for sleep problems. Fifteen percent had a medical encounter for sleep within 30 days of the event. In the year before the suicide attempt, 27 percent of cases were diagnosed with a sleep disorder.

Polypharmacy:

- At the time of their suicide attempt, 6 percent (n=34) of cases met criteria for polypharmacy. Of cases who met the criteria for polypharmacy, 12 percent met the criteria under a single definition; 88 percent of cases met the criteria under two or more definitions.

Drug Testing and ASAP Screening:

- Of suicide attempt cases with drug testing data, 6 percent (n=461) had a positive drug test at some time during their military career (excluding positive tests for drugs for which the Soldier had a prescription). Of those, 39 percent had two or more positive drug tests, and 93 percent a positive test in the year preceding their attempt. Positive drug tests were primarily for cannabis (57%), amphetamines (25%), and cocaine (21%).

- In the year before their suicide attempts, 14 percent of cases were screened for intake into the ASAP program; 79 percent of those who were screened enrolled in the program.

Suicide Attempts–Tables and Figures:

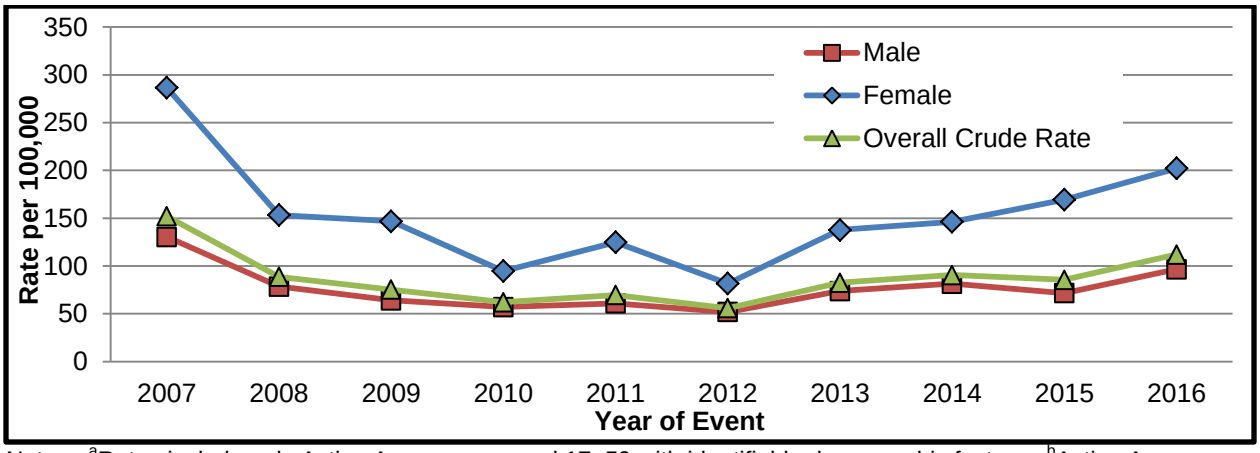
- The following tables and figures provide analysis details for suicide attempt cases. The tables present counts and proportions of suicide attempt cases. Characteristics of cases from 2016 were compared statistically with those from 2014 and 2015 using Chi-squared or Fisher's exact tests, where appropriate. P-values in bold indicate a significant difference, $p<0.05$.

Table 19. Demographic Characteristics, Suicide Attempt Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Army Distribution[b] (%) 2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
SEX					0.153	0.540
Male	360 (78)	302 (72)	392 (74)	85		
Female	104 (22)	118 (28)	140 (26)	15		
AGE (YR)					**0.003**	0.302
17–24	244 (53)	251 (60)	336 (63)	37		
25–34	168 (36)	139 (33)	152 (29)	39		
35–64	52 (11)	30 (7)	44 (8)	NA		
Mean	26 (±6)	25 (±6)	25 (±6)	NA	**0.006**[d]	0.482[d]
Mode	21	24	19	NA		
RACE-ETHNICITY					0.070	0.063
Non-Hispanic White	264 (57)	231 (55)	256 (48)	NA		
Non-Hispanic Black	94 (20)	93 (22)	131 (25)	NA		
Hispanic	80 (17)	72 (17)	102 (19)	NA		
Non-Hispanic Asian/ Pacific Islander	22 (5)	16 (4)	38 (7)	NA		
Non-Hispanic American Indian/Alaska Native	4 (1)	6 (1)	4 (1)	NA		
Missing	0 (0)	2 (<1)	1 (<1)	NA		
MARITAL STATUS					0.071	**0.013**
Single	225 (48)	186 (44)	279 (52)	NA		
Married	209 (45)	200 (48)	229 (43)	NA		
Divorced	24 (5)	31 (7)	24 (5)	NA		
Other[e]	5 (1)	2 (<1)	0 (0)	NA		
Unknown	1 (<1)	1 (<1)	0 (0)	NA		

Legend: DoDSER – Department of Defense Suicide Event Report, NA – not available.

Notes: [a]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Data for the Army distribution include Active Army cases aged 17–59. These data were provided by AFMES. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]T-test of means. [e]Includes widowed and legally separated**.**



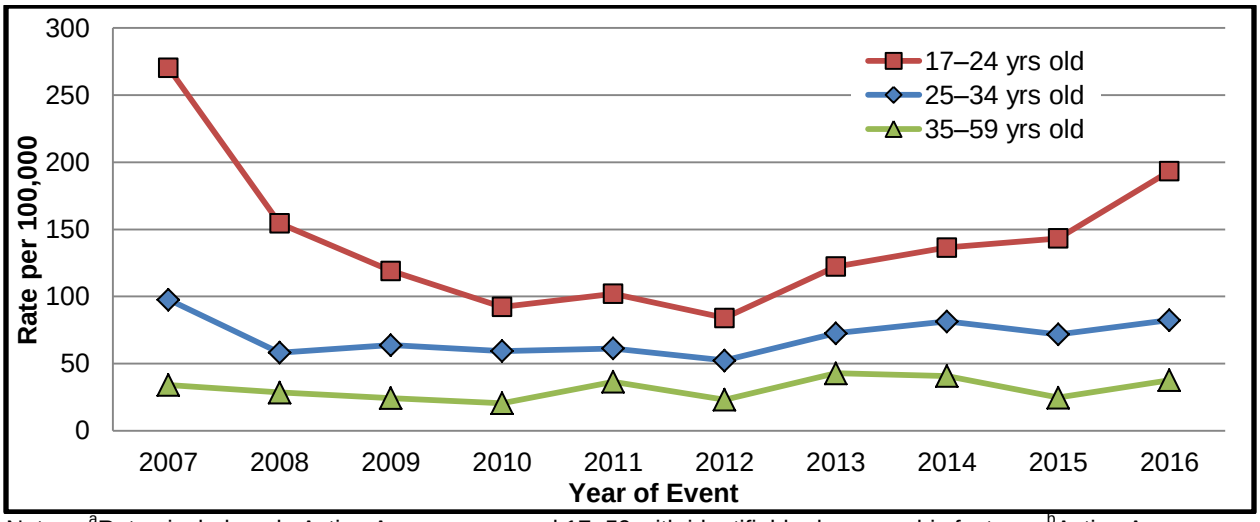
Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.

Figure 5. Overall Crude Rate vs. Sex-Specific Rates[a,b] of Suicide Attempt, per 100,000, Active Army Soldiers, 2007–2016

Table 20. Overall Crude Rate vs. Sex-Specific Rates[a,b] of Suicide Attempt, per 100,000, Active Army Soldiers, 2007–2016

	Overall		Sex			
			Male		Female	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF ATTEMPT						
2007	151.9	141.3 – 162.6	130.4	119.8 – 141.1	286.6	247.2 – 326.0
2008	88.6	80.6 – 96.5	78.4	70.3 – 86.5	153.3	124.7 – 181.8
2009	75.3	68.0 – 82.5	64.1	57.0 – 71.3	146.8	119.2 – 174.3
2010	62.1	55.6 – 68.6	57.0	50.3 – 63.7	94.7	72.9 – 116.6
2011	69.6	62.7 – 76.4	60.9	54.0 – 67.8	124.9	99.9 – 149.8
2012	55.9	49.7 – 62.2	51.9	45.5 – 58.4	81.7	61.2 – 102.2
2013	82.4	74.7 – 90.1	73.7	65.9 – 81.5	137.7	110.7 – 164.6
2014	90.5	82.3 – 98.8	81.5	73.1 – 90.0	146.3	118.2 – 174.4
2015	85.5	77.3 – 93.7	71.6	63.6 – 79.7	169.3	138.7 – 199.8
2016	112.0	102.5 – 121.5	96.6	87.1 – 106.2	202.2	168.7 – 235.7

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.



Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.

Figure 6. Age-Specific Rates[a,b] of Suicide Attempt, per 100,000, Active Army Soldiers, 2007–2016

Table 21. Age-Specific Rates[a,b] of Suicide Attempt, per 100,000, Active Army Soldiers, 2007–2016

Age	17 – 24 yrs old		25 – 34 yrs old		35 – 59 yrs old	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF ATTEMPT						
2007	270.4	247.9 – 293.0	97.6	83.7 – 111.6	34.1	23.5 – 44.7
2008	154.5	137.6 – 171.5	58.1	47.6 – 68.5	28.5	19.1 – 38.0
2009	119.1	104.2 – 134.0	63.7	53.1 – 74.3	24.3	15.8 – 32.9
2010	92.3	79.1 – 105.5	59.3	49.3 – 69.3	20.5	12.7 – 28.2
2011	102.0	88.0 – 116.1	61.2	51.2 – 71.2	36.5	26.3 – 46.7
2012	84.0	70.8 – 97.1	52.3	43.0 – 61.7	23.1	15.0 – 31.2
2013	122.3	106.3 – 138.3	72.6	61.3 – 83.9	42.8	31.6 – 54.0
2014	136.5	119.3 – 153.6	81.4	69.1 – 93.7	40.8	29.7 – 51.9
2015	143.3	125.6 – 161.0	71.7	59.8 – 83.6	24.6	15.8 – 33.3
2016	193.3	172.7 – 214.0	82.4	69.3 – 95.6	37.7	26.5 – 48.8

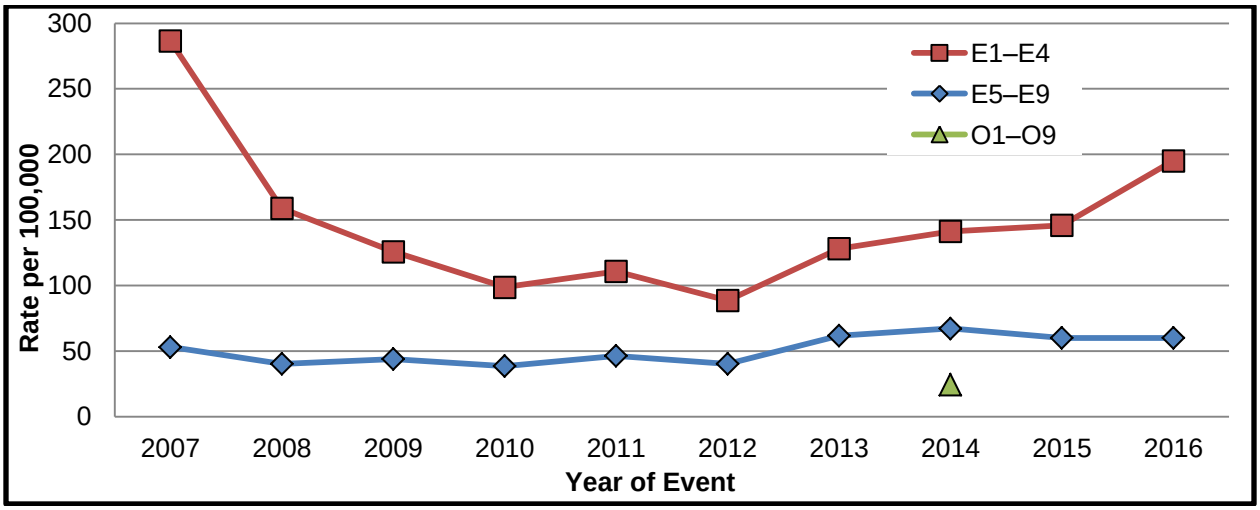
Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.

Table 22. Military Characteristics, Suicide Attempt Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Army Distribution[b] (%) 2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
RANK					**0.007**	0.107
E1–E4	309 (67)	307 (73)	406 (76)	44		
E5–E9	128 (28)	107 (25)	107 (20)	36		
W1–W5	7 (2)	1 (<1)	3 (1)	3		
Cadets	0 (0)	0 (0)	0 (0)	1		
O1–O3	17 (4)	3 (1)	11 (2)	NA		
O4–O8	3 (1)	2 (<1)	5 (1)	NA		
NUMBER OF DEPLOYMENTS[d]					**0.000**	0.228
0	231 (50)	250 (60)	331 (62)	NA		
1	110 (24)	85 (20)	113 (21)	NA		
2	57 (12)	39 (9)	51 (10)	NA		
3	43 (9)	32 (8)	22 (4)	NA		
4+	23 (5)	14 (3)	15 (3)	NA		

Legend: DoDSER – Department of Defense Suicide Event Report, E – Enlisted, NA – Not Available, O – Officer, OEF – Operation Enduring Freedom, OIF – Operation Iraqi Freedom, OND – Operation New Dawn, W – Warrant Officer.

Notes: [a]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Data for the Army distribution include Active Army cases aged 17–59. These data were provided by AFMES. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, p<0.05. [d]Refers to lifetime history of OEF, OIF, or OND deployment.



Legend: DoDSER – Department of Defense Suicide Event Report
Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n<20) are not reported. Specifically, there were fewer than 20 suicide attempts by Officers or Warrant Officers in most years, so rates could not be calculated for those years.

Figure 7. Rank-Specific Rates[a-c] of Suicide Attempt, per 100,000, Active Army Soldiers, 2007–2016

Table 23. Rank-Specific Rates[a-c] of Suicide Attempt, per 100,000, Active Army Soldiers, 2007–2016

RANK	E1 – E4		E5 – E9		O1 – O9		W1 – W5	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF ATTEMPT								
2007	286.6	264.8 – 308.5	53.1	42.9 – 63.4	—	—	—	—
2008	158.9	143.0 – 174.9	40.3	31.6 – 49.0	—	—	—	—
2009	125.8	111.9 – 139.7	43.9	34.9 – 52.9	—	—	—	—
2010	98.7	86.5 – 110.8	38.5	30.1 – 47.0	—	—	—	—
2011	110.8	98.1 – 123.6	46.3	37.0 – 55.7	—	—	—	—
2012	88.6	76.8 – 100.3	40.2	31.5 – 49.0	—	—	—	—
2013	128.1	113.6 – 142.7	61.7	50.8 – 72.6	—	—	—	—
2014	141.3	125.5 – 157.1	66.7	55.1 – 78.2	24.4	13.7 – 35.1	—	—
2015	145.9	129.5 – 162.2	58.9	47.8 – 70.1	—	—	—	—
2016	195.1	176.1 – 214.1	62.9	51.0 – 74.8	—	—	—	—

Legend: DoDSER – Department of Defense Suicide Event Report
Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army populatic counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, the were fewer than 20 suicide attempts by Officers or Warrant Officers in most years, so rates could not be calculated for those years.

Table 24. Location and Method, Suicide Attempt Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
LOCATION OF ATTEMPT				**0.030**	**<0.001**
USA	372 (80)	376 (90)	449 (84)		
In Theater	18 (4)	1 (<1)	27 (5)		
Other[c]	71 (15)	39 (9)	53 (10)		
Missing	3 (1)	3 (1)	3 (1)		
Unknown	0 (0)	1 (<1)	0 (0)		
METHOD OF ATTEMPT				**0.005**	**0.048**
Gunshot Would	44 (9)	28 (7)	22 (4)		
Hanging/Asphyxiation	58 (13)	41 (10)	72 (14)		
Drug/Alcohol Overdose	234 (50)	227 (54)	263 (49)		
Cutting	53 (11)	36 (9)	65 (12)		
Other[d]	70 (15)	85 (20)	108 (20)		
Unknown	5 (1)	3 (1)	2 (<1)		

Legend: DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [c]Primarily Europe or Korea. [d]Includes carbon monoxide and other poisoning, jumping from heights or in front of vehicles, vehicle crashes, or drowning.

Table 25. Additional Event Characteristics, Suicide Attempt Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
SUBSTANCE INVOLVEMENT					
Event Involved Alcohol	138 (30)	156 (37)	146 (27)	0.455	**0.002**
Event Involved Drugs	230 (50)	234 (56)	263 (49)	0.860	0.052
OTHER EVENT CHARACTERISTICS					
Communicated Prior to Event	111 (24)	104 (25)	139 (26)	0.311	0.635

Legend: DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05.

Table 26. Personal and Legal/Administrative History[a] from DoDSERs, Suicide Attempt Cases,[b] Active Army, 2014–2016

Personal and Legal/ Administrative History	Suicide Attempt Cases n (%)			Test for Significant Difference[c] (p-value)	
	2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	2016 vs 2014	2016 vs 2015
LEGAL/ADMINISTRATIVE HISTORY[d]					
Article 15	71 (15)	52 (12)	88 (17)	0.531	0.063
Civil Legal Problems	41 (9)	27 (6)	41 (8)	0.542	0.443
Administrative Separation[e]	53 (11)	47 (11)	68 (13)	0.463	0.407
AWOL	13 (3)	8 (2)	15 (3)	0.978	0.355
Nonselection[f]	22 (5)	21 (5)	25 (5)	0.932	0.870
Courts Martial	9 (2)	4 (1)	8 (2)	0.606	0.448
Any of the Above	148 (32)	116 (28)	170 (32)	0.725	0.115
MEDICAL BOARD[g]					
Yes	51 (11)	59 (14)	56 (11)	0.808	0.085
PERSONAL HISTORY[d]					
Relationship Problem	236 (51)	218 (52)	268 (50)	0.849	0.539
Work Stress	204 (44)	189 (45)	190 (36)	**0.021**	**0.004**
Physical Health Problem	77 (17)	95 (23)	102 (19)	0.310	0.148
Victim of Abuse					
Previous Year	66 (14)	58 (14)	59 (11)	0.150	0.173
Ever	166 (36)	155 (37)	170 (32)	0.225	0.089
Emotional	123 (27)	111 (26)	96 (18)	**0.001**	**0.001**
Physical	100 (22)	92 (22)	98 (18)	0.223	0.149
Sexual	77 (17)	75 (18)	104 (20)	0.227	0.611
Perpetrator of Abuse	29 (6)	26 (6)	35 (7)	0.848	0.868
Spouse/Family/Friend Death	98 (21)	58 (14)	82 (15)	**0.024**	0.512
Financial Stress	36 (8)	29 (7)	40 (8)	0.938	0.679
Spouse/Family Health Problem	30 (6)	42 (10)	35 (7)	0.938	0.051
Spousal/Family/Friend Suicide					
Previous Year	38 (8)	22 (5)	27 (5)	**0.047**	0.884
Ever	99 (21)	79 (19)	78 (15)	**0.007**	0.075
Any of the Above	378 (81)	344 (82)	415 (78)	0.177	0.060

Table 26. Personal and Legal/Administrative History[a] from DoDSERs, Suicide Attempt Cases,[b] Active Army, 2014–2016 (cont'd.)

Personal and Legal/ Administrative History	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
PROGRAM UTILIZATION					
Substance Abuse Services	85 (18)	87 (21)	68 (13)	**0.019**	**0.001**
Family Advocacy Program	26 (6)	43 (10)	33 (6)	0.655	**0.023**
Ever Received Suicide Prevention Training	324 (70)	296 (70)	289 (54)	—	—

Legend: AWOL – absent without leave, DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Personal and legal/administrative history within year before suicide attempt, except as noted. [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, p<0.05. Comparison omitted where >10% unknown or missing. [d]More than one may apply. [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 27. Behavioral Health Indicators from PDHAs and PDHRAs,[a] Suicide Attempt Cases,[b] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%)			Test for Significant Difference[c] (p-value)	
	2014	2015	2016	2016 vs 2014	2016 vs 2015
POST-DEPLOYMENT HEALTH ASSESSMENTS	(n = 41)	(n = 37)	(n = 28)		
Depression Symptoms[d]	26 (63)	16 (43)	10 (36)	**0.024**	0.540
Posttraumatic Stress Symptoms[e]	22 (54)	10 (27)	6 (21)	**0.010**	0.661
Suicidal Thoughts	4 (10)	0 (0)	0 (0)	0.141	—
Referred to BH Care	17 (41)	7 (19)	3 (11)	**0.007**	0.495
POST-DEPLOYMENT HEALTH REASSESSMENTS	(n = 40)	(n = 34)	(n = 30)		
Depression Symptoms[d]	19 (48)	19 (56)	15 (50)	0.836	0.638
Posttraumatic Stress Symptoms[e]	18 (45)	14 (41)	9 (30)	0.202	0.306
Suicidal Thoughts	2 (5)	0 (0)	0 (0)	0.503	—
Referred to BH Care	12 (30)	4 (12)	1 (3)	**0.005**	0.400

Legend: BH – behavioral health, PDHA – Post-Deployment Health Assessment, PDHRA – Post-Deployment Health Reassessment.
Notes: [a]Data from the most recent PDHA and PDHRA in the 12 months before the suicide attempt. [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Patient Health Questionnaire-2 (PHQ 2). [e]Primary Care Posttraumatic Stress Disorder Screen (PC-PTSD).

Table 28. Alcohol Misuse Indicators,[a] Suicide Attempt Cases,[b] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%) 2014 (n = 351)	2015 (n = 313)	2016 (n = 374)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
ALCOHOL MISUSE					
Unhealthy Drinking[d]	29 (8)	27 (9)	24 (6)	—	—
Probable Alcohol Disorder[e]	5 (1)	4 (1)	7 (2)	—	—
Referred to ASAP	8 (2)	12 (4)	18 (5)	0.067	0.532
Received Alcohol-Related Education	114 (32)	122 (39)	124 (33)	0.846	0.113

Legend: ASAP – Army Substance Abuse Program, AUDIT-C – Alcohol Use Disorders Identification Test - Consumption, DoDSER – Department of Defense Suicide Event Report, PHA – Periodic Health Assessment.

Notes: [a]Based on AUDIT-C scores from the most recent PHA in the 15 months before the suicide attempt. [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. Comparison omitted where >10% unknown or missing. [d]The threshold for a positive screen indicating unhealthy drinking is 5 or more for men and 4 or more for women. [e]A high positive screen, indicating probable alcohol disorder, is 8 and above.

Table 29. Behavioral Health Indicators, Suicide Attempt Cases,[a] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%) 2014 (n = 455)[c]	2015 (n = 414)[d]	2016 (n = 523)[e]	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS[f]					
Inpatient Encounter Involving BH	140 (31)	153 (37)	145 (28)	0.296	**0.003**
Outpatient Encounter Involving BH	390 (86)	349 (84)	429 (82)	0.119	0.357
Encounter Involving BH in 30 Days Before Event	283 (62)	274 (66)	315 (60)	0.529	0.061
BH DIAGNOSIS[f]					
Any BH Diagnosis[g]					
Prevalence[h] Before Event	354 (78)	324 (78)	352 (67)	**<0.001**	**<0.001**
Incidence in Year Before Event	268 (59)	245 (59)	262 (50)	**0.006**	**0.006**
More Than One BH Diagnosis[i]					
Prevalence[h] Before Event	252 (55)	259 (63)	245 (47)	**0.008**	**<0.001**
Incidence in Year Before Event	144 (32)	143 (35)	146 (28)	0.202	**0.029**
Any Mood Disorder					
Prevalence[h] Before Event	220 (48)	227 (55)	205 (39)	**0.004**	**<0.001**
Incidence in Year Before Event	130 (29)	136 (33)	128 (24)	0.147	**0.005**
~Major Depression					
Prevalence[h] Before Event	118 (26)	143 (35)	168 (32)	**0.034**	0.435
Incidence in Year Before Event	73 (16)	103 (25)	135 (26)	**<0.001**	0.744
~Other Depressive Disorders					
Prevalence[h] Before Event	182 (40)	188 (45)	104 (20)	**<0.001**	**<0.001**
Incidence in Year Before Event	107 (24)	104 (25)	41 (8)	**<0.001**	**<0.001**
~Bipolar Disorder					
Prevalence[h] Before Event	13 (3)	17 (4)	16 (3)	0.853	0.388
Incidence in Year Before Event	8 (2)	14 (3)	12 (2)	0.555	0.314
PTSD					
Prevalence[h] Before Event	107 (24)	73 (18)	80 (15)	**0.001**	0.337
Incidence in Year Before Event	66 (15)	46 (11)	52 (10)	**0.029**	0.562
Other Anxiety Disorder[j]					
Prevalence[h] Before Event	158 (35)	151 (36)	145 (28)	**0.018**	**0.004**
Incidence in Year Before Event	95 (21)	76 (18)	81 (15)	**0.029**	0.243

Table 29. Behavioral Health Indicators, Suicide Attempt Cases,[a] Active Army, 2014–2016 (cont'd.)

Indicator	Suicide Attempt Cases n (%) 2014 (n = 455)[c]	2015 (n = 414)[d]	2016 (n = 523)[e]	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
BH DIAGNOSIS[f]					
Adjustment Disorder					
Prevalence[h] Before Event	272 (60)	258 (62)	282 (54)	0.065	**0.010**
Incidence in Year Before Event	142 (31)	122 (29)	145 (28)	0.233	0.557
Substance Use Disorder[k]					
Prevalence[h] Before Event	128 (28)	116 (28)	124 (24)	0.115	0.133
Incidence in Year Before Event	61 (13)	70 (17)	76 (15)	0.613	0.319
Personality Disorder[l]					
Prevalence[h] Before Event	33 (7)	29 (7)	42 (8)	0.648	0.556
Incidence in Year Before Event	24 (5)	22 (5)	35 (7)	0.353	0.381
Psychosis					
Prevalence[h] Before Event	7 (2)	11 (3)	6 (1)	0.594	0.086
Incidence in Year Before Event	4 (1)	6 (1)	5 (1)	1.000	0.550
Previous Suicide Attempt/Self Harm[m]					
Prevalence[h] Before Event	44 (10)	54 (13)	82 (16)	**0.005**	0.255
Incidence in Year Before Event	34 (7)	44 (11)	69 (13)	**0.004**	0.231
Previous Suicidal Ideation[n]					
Prevalence[h] Before Event	117 (26)	133 (32)	144 (28)	0.521	0.126
Incidence in Year Before Event	98 (22)	108 (26)	119 (23)	0.648	0.237

Legend: BH – behavioral health, DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification, PTSD – posttraumatic stress disorder.
Notes: [a]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, $p<0.05$. [c]Medical claims data were available for all but 9 cases. [d]Medical claims data were available for all but 6 cases. [e]Medical claims data were available for all but 9 cases. [f]May have more than one. [g]Any BH diagnosis includes one or more of the following: mood, PTSD, other anxiety disorders, adjustment disorder, substance use disorders, personality disorders, psychosis. [h]Ever diagnosed during time in service. [i]More than one BH diagnosis includes more than one of the aforementioned diagnoses. [j]Includes, for example, panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder. [k]Includes drug or alcohol use disorders. [l]Includes, for example, borderline or antisocial personality disorders. [m]Based on ICD-9 E-codes and ICD-10 X-,T-, and Z-codes for self-inflicted injuries. [n]Based on an ICD-9 V-code and ICD-10 R-code for suicidal ideation.

Table 30. Traumatic Brain Injuries,[a] Suicide Attempt Cases,[b] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%) 2014 (n = 455)[d]	2015 (n = 414)[e]	2016 (n = 523)[f]	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS[g]					
Inpatient Encounter Involving TBI	11 (2)	8 (2)	11 (2)	0.741	0.854
Outpatient Encounter Involving TBI	66 (15)	63 (15)	74 (14)	0.874	0.646
Encounter Involving TBI in Year Before Event	33 (7)	38 (9)	42 (8)	0.648	0.532
Encounter Involving TBI in 30 Days Before Event	10 (2)	10 (2)	15 (3)	0.508	0.669
TBI DIAGNOSES[g]					
Any TBI Diagnosis	62 (14)	59 (14)	70 (13)	0.912	0.702
First TBI Diagnosis in Year Before Event	21 (5)	24 (6)	29 (6)	0.510	0.868

Legend: DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification, TBI – traumatic brain injury.

Notes: [a]Based on ICD-9 and 10 codes for traumatic brain injuries provided by the Defense and Veterans Brain Injury Center (DVBIC): ICD-9 (800–801.99, 803–804.99, 850–854.19), ICD-10: F07.81, S04.02-S04.04, S06.0-S06.6, S06.8-S06.9, S02.0-S02.1, S02.8-S02.9, S07.1, Z87.820, DOD0102, DOD0103, DOD0104, and DOD0105. [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Medical claims data were available for all but 9 cases. [e]Medical claims data were available for all but 6 cases. [f]Medical claims data were available for all but 9 cases. [g]May have more than one.

Table 31. Chronic Pain,[a] Suicide Attempt Cases,[b] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%) 2014 (n = 455)[d]	2015 (n = 414)[e]	2016 (n = 523)[f]	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS					
Encounter for Chronic Pain in Year Before Event	45 (10)	52 (13)	49 (9)	0.783	0.118
Encounter for Chronic Pain in 30 Days Before Event	20 (4)	18 (4)	14 (3)	0.143	0.162
DIAGNOSES					
Chronic Pain Diagnosis in Year Before Event	40 (9)	42 (10)	38 (7)	0.380	0.117

Legend: DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification.

Notes: [a]ICD-9 codes indicating chronic pain include 338.2, 338.3, and 338.4. ICD-10 codes include G89.21, G89.22, G89.28, G89.29, G89.3, and G89.4. Based on coding guidance from the American Academy of Professional Coders. [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Medical claims data were available for all but 9 cases. [e]Medical claims data were available for all but 6 cases. [f]Medical claims data were available for all but 9 cases.

Table 32. Sleep Problems,[a] Suicide Attempt Cases,[b] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%) 2014 (n = 455)[d]	2015 (n = 414)[e]	2016 (n = 523)[f]	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS					
Encounter for Sleep in Year Before Event	154 (34)	169 (41)	173 (33)	0.800	**0.014**
Encounter for Sleep in 30 Days Before Event	53 (12)	62 (15)	77 (15)	0.158	0.914
DIAGNOSES					
Sleep Disorder Diagnosis in Year Before Event	124 (27)	134 (32)	142 (27)	0.972	0.082

Legend: DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification.

Notes: [a]ICD-9 codes indicating sleep problems include 307.4–307.48, 327–327.8, 780.5–780.56, 291.82, 292.85, 780.58, and V694. ICD-10 codes include F51, G47, and Z72.820. [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Medical claims data were available for all but 9 cases. [e]Medical claims data were available for all but 6 cases. [f]Medical claims data were available for all but 9 cases.

Table 33. Polypharmacy, Suicide Attempt Cases,[a] Active Army, 2014–2016

Characteristic	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
POLYPHARMACY					
Any Polypharmacy[c]	45 (10)	38 (9)	34 (6)	0.054	0.124
CATEGORIES OF POLYPHARMACY[d]					
1. Met all criteria[e]	2 (4)	2 (5)	1 (3)	—	—
2. Psychotropics & opioid[f]	1 (2)	1 (3)	0 (0)	—	—
3. Psychotropics & ER visits[g]	2 (4)	0 (0)	1 (3)	—	—
4. Opioid & ER visits[h]	1 (2)	2 (5)	2 (6)	—	—
5. ≥ 4 prescriptions, at least one opioid[i]	10 (22)	1 (3)	5 (15)	—	—
6. Multiple psychotropic prescriptions[j]	22 (49)	25 (66)	14 (41)	—	—
7. 3+ ER visits with opioids prescribed[k]	7 (16)	7 (18)	11 (32)	—	—

Legend: DoDSER – Department of Defense Suicide Event Report, OTSG – Office of the Surgeon General, ER – Emergency Room.

Notes: [a]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. Statistical test omitted for small counts. [c]Met at least one criterion for polypharmacy, as defined by OTSG Policy 15-039 definition, at the time of the event. [d]Proportion of cases with any polypharmacy. [e]Met all three polypharmacy criteria (categories 5, 6, and 7). [f]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event and had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [g]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event and had at least 3 ER visits in the year preceding the event where an opioid was prescribed. [h]Had at least 3 ER visits in the year preceding the event where an opioid was prescribed and had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [i]Had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [j]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event. [k]Had at least 3 ER visits in the year preceding the event where an opioid was prescribed.

Table 34. Drug Testing History,[a] Suicide Attempt Cases,[b] Active Army, 2014–2016

Characteristic	Suicide Attempt Cases n (%)			Test for Significant Difference[c] (p-value)	
	2014 (n = 433)	2015 (n = 386)	2016 (n = 461)	2016 vs 2014	2016 vs 2015
DRUG TEST HISTORY					
Positive Drug Test	31 (7)	23 (6)	28 (6)	0.514	0.944
More than One Positive Drug Test[d]	10 (32)	7 (30)	11 (39)	0.573	0.510
Positive Drug Test in Year Before Event[d]	26 (84)	17 (74)	26 (93)	0.428	0.119
Amphetamines[d]	4 (13)	4 (17)	7 (25)	0.234	0.734
Cannabis[d]	14 (45)	14 (61)	16 (57)	0.358	0.788
Cocaine[d]	5 (16)	3 (13)	6 (21)	0.602	0.489
Oxycodone/Oxymorphone[d]	6 (19)	2 (9)	2 (7)	0.259	1.000
Opiates[d]	2 (6)	1 (4)	0 (0)	0.493	0.451
Heroin[d]	0 (0)	0 (0)	0 (0)	—	—
Steroids[d]	0 (0)	0 (0)	0 (0)	—	—
Barbiturates[d]	0 (0)	0 (0)	0 (0)	—	—

Legend: DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Drug testing history is available only for cases who have a record of a drug test in the Drug and Alcohol Management Information System (DAMIS). [b]Suicide attempt cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Proportion out of cases with any positive drug test.

Table 35. ASAP Intake History,[a,b] Suicide Attempt Cases,[c] Active Army, 2014–2016

Indicator	Suicide Attempt Cases n (%) 2014 (n = 464)	2015 (n = 420)	2016 (n = 532)	Test for Significant Difference[d] (p-value) 2016 vs 2014	2016 vs 2015
ASAP INTAKE SCREENING					
Screened for Intake	81 (17)	64 (15)	73 (14)	0.104	0.508
Enrolled for Treatment[e]	67 (83)	53 (83)	58 (79)	0.605	0.617

Legend: ASAP – Army Substance Abuse Program, DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Data from the Drug and Alcohol Management Information System (DAMIS). [b]ASAP screening and enrollment in the year before the event. [c]Suicide attempt cases are from DoDSERs, which area available only for cases serious enough to warrant hospitalization or evacuation. [d]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [e]Proportion out of cases screened for intake.

5.3 Suicidal Ideation Cases

Demographics/Military Characteristics:

- The number of suicidal ideation cases in 2016 was 1,470, more cases than in 2014 (n=929) and 2015 (n=990). The increase in 2016 may, in part, be a result of the reduction in the number of required fields on DoDSERs for suicidal ideations, allowing for improved ease of completion. The suicidal ideation rate for Active Army Soldiers aged 17–59 was 309.5 per 100,000 persons, the highest observed rate since suicidal ideation cases became available in 2007.

- Most suicidal ideation cases were male (78%), 17–24 (55%), and non-Hispanic white (54%). Approximately half were single (48%) and half were married (47%).

- Most suicidal ideations cases were from Soldiers in the E1–E4 ranks (70%). Over half (59%) of cases had no history of an OEF, OIF, or OND deployment.

BH Indicators:

- One-fourth (25%) of suicidal ideation cases had an inpatient BH encounter during their military career. The majority (86%) of cases had an outpatient BH encounter since accession, and approximately two-thirds (68%) had a BH encounter in the 30 days preceding the event.

- Approximately three-fourths (76%) of cases were diagnosed with a BH disorder before their event. Suicidal ideation cases were primarily diagnosed with adjustment (60%) and mood (45%) disorders.

Other Medical Indicators:

- In the year preceding the event, 9 percent of suicidal ideation cases had a medical encounter for chronic pain. Three percent had a medical encounter for chronic pain within 30 days of their ideation. In the year before their event, 6 percent of suicidal ideation cases received a chronic pain diagnosis.

- In the year before the suicidal ideation, one-third (33%) of cases had a medical encounter for sleep problems. Fourteen percent had a medical encounter for sleep within 30 days of the event. In the year before the event, 26 percent of cases were diagnosed with a sleep disorder.

Polypharmacy:

- At the time of the event, 5 percent (n=69) of suicidal ideation cases met criteria for polypharmacy. Of those cases, 14 percent met criteria under a single polypharmacy definition; 86 percent of cases met criteria under two or more polypharmacy definitions.

Drug Testing and ASAP Screening:

- Of suicidal ideation cases with drug testing data, 5 percent (n=1,311) had a positive drug test at some time during their military career (excluding positive tests for drugs for which the Soldier had a prescription). Of those, 31 percent had two or more positive drug tests, and 73 percent a positive test in the year preceding the ideation. Positive drug tests were primarily for cannabis (48%) and cocaine (33%).

- In the year before their event, 10 percent of suicidal ideation cases were screened for intake into the ASAP program; 77 percent of those who were screened enrolled in the program.

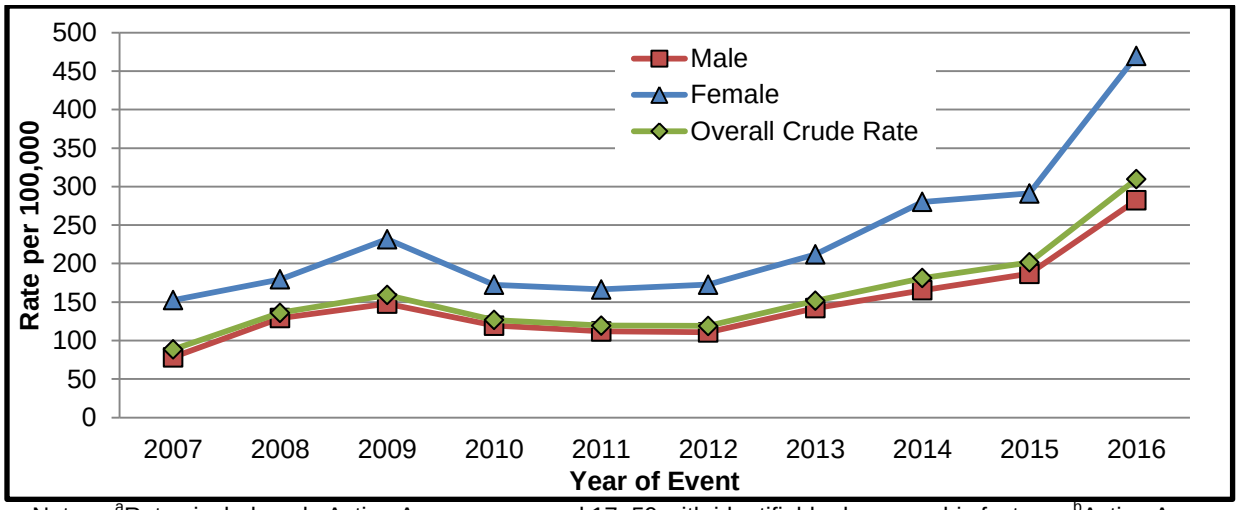
Suicidal Ideations - Tables and Figures:

- The following tables and figures provide analysis details for suicidal ideation cases. The tables present counts and proportions of suicidal ideation cases. Characteristics of cases from 2016 were compared statistically with those from 2014 and 2015 using Chi-squared or Fisher's exact tests, where appropriate. P-values in bold indicate a significant difference, $p<0.05$.

Table 36. Demographic Characteristics, Suicidal Ideation Cases,[a] Active Army, 2014–2016

Characteristic	Suicidal Ideation Cases n (%) 2014 (n = 929)	2015 (n = 990)	2016 (n = 1470)	Army Distribution[b] (%) 2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
SEX					0.691	0.342
Male	730 (79)	787 (79)	1145 (78)	85		
Female	199 (21)	203 (21)	325 (22)	15		
AGE (YR)					**0.008**	0.055
17–24	461 (50)	521 (53)	809 (55)	37		
25–34	325 (35)	321 (32)	490 (33)	39		
35–64	143 (15)	148 (15)	171 (12)	NA		
Mean	27 (±7.1)	26 (±7.1)	26 (±6.7)	NA	**<0.001[d]**	**0.036[d]**
Mode	22	20	20	NA		
RACE-ETHNICITY					**0.028**	0.081
Non-Hispanic White	537 (58)	580 (59)	792 (54)	NA		
Non-Hispanic Black	188 (20)	225 (23)	367 (25)	NA		
Hispanic	142 (15)	123 (12)	196 (13)	NA		
Non-Hispanic Asian/ Pacific Islander	52 (6)	51 (5)	104 (7)	NA		
Non-Hispanic American Indian/Alaska Native	9 (1)	11 (1)	11 (1)	NA		
Missing	1 (<1)	0 (0)	0 (0)	NA		
MARITAL STATUS					**0.005**	**0.003**
Single	400 (43)	462 (47)	709 (48)	NA		
Married	469 (50)	467 (47)	690 (47)	NA		
Divorced	55 (6)	52 (5)	71 (5)	NA		
Other[e]	4 (<1)	9 (1)	0 (0)	NA		
Unknown	1 (<1)	0 (0)	0 (0)	NA		

Legend: DoDSER – Department of Defense Suicide Event Report, NA – not available.
Notes: [a]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Data for the Army distribution include Active Army cases aged 17–59. These data were provided by AFMES. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [d]T-test of means. [e]Includes widowed and legally separated.



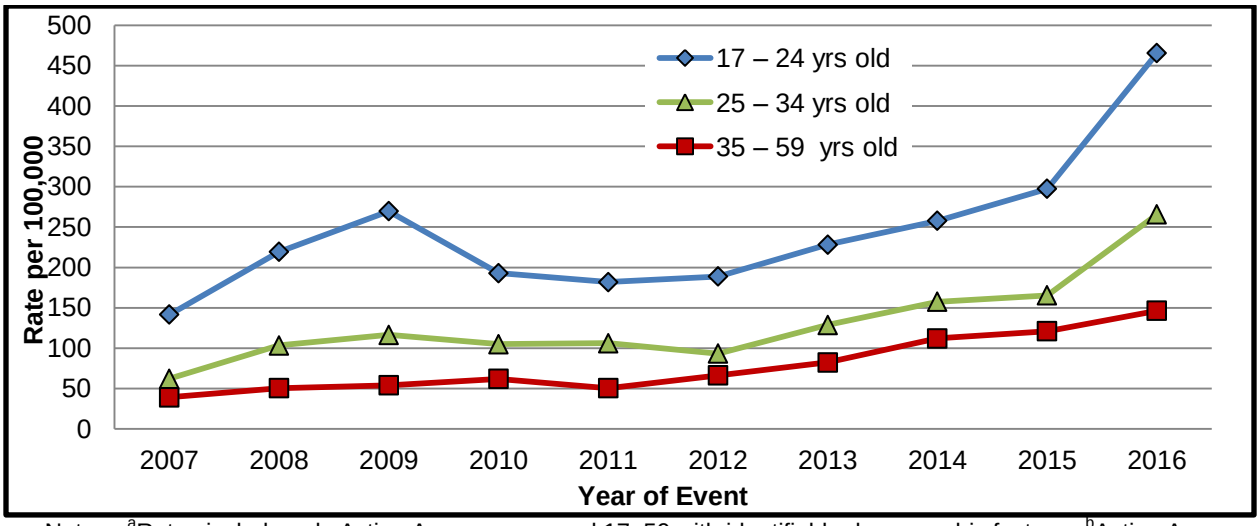
Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.

Figure 8. Overall Crude Rate vs. Sex-Specific Rates[a,b] of Suicidal Ideation, per 100,000, Active Army Soldiers, 2007–2016

Table 37. Overall Crude Rate vs. Sex-Specific Rates[a,b] of Suicidal Ideation, per 100,000, Active Army Soldiers, 2007–2016

	Overall		Sex			
			Male		Female	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF EVENT						
2007	88.5	80.4 – 96.7	78.3	70.1 – 86.5	152.5	123.7 – 181.2
2008	136.1	126.2 – 146.0	129.3	118.9 – 139.7	179.5	148.6 – 210.3
2009	159.2	148.7 – 169.8	148.0	137.1 – 158.9	231.6	197.0 – 266.2
2010	126.7	117.4 – 136.0	119.5	109.8 – 129.2	172.4	142.8 – 201.9
2011	119.4	110.4 – 128.4	112.1	102.7 – 121.4	166.5	137.6 – 195.3
2012	119.1	110.0 – 128.2	110.8	101.3 – 120.2	172.7	142.9 – 202.5
2013	151.7	141.3 – 162.2	142.2	131.3 – 153.1	212.0	178.5 – 245.5
2014	181.2	169.6 – 192.9	165.4	153.4 – 177.3	280.0	241.1 – 318.9
2015	201.5	189.0 – 214.1	186.7	173.6 – 199.7	291.2	251.1 – 331.2
2016	309.5	293.7 – 325.3	282.2	265.9 – 298.5	469.5	418.4 – 520.5

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.



Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.

Figure 9. Age-Specific Rates[a,b] of Suicidal Ideation, per 100,000, Active Army Soldiers, 2007–2016

Table 38. Age-Specific Rates[a,b] of Suicidal Ideation, per 100,000, Active Army Soldiers, 2007–2016

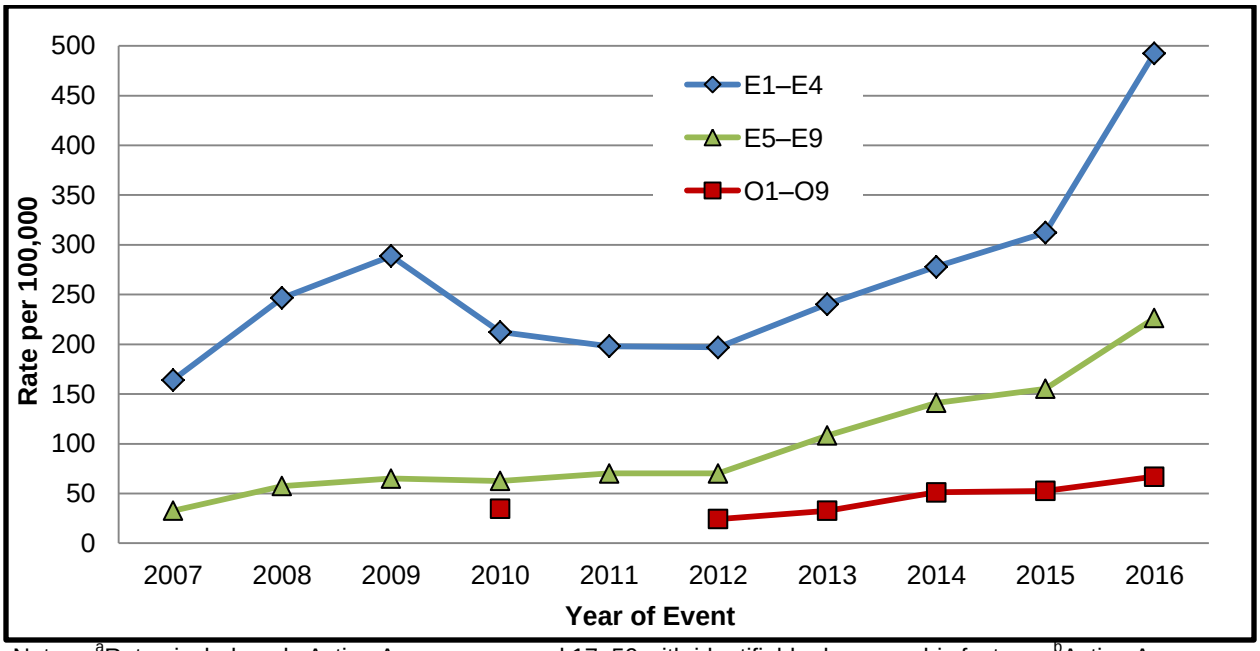
Age	17 – 24 yrs old		25 – 34 yrs old		35 – 59 yrs old	
	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF EVENT						
2007	141.6	125.3 – 157.9	62.3	51.2 – 73.4	39.2	27.9 – 50.6
2008	219.4	199.2 – 239.6	103.4	89.5 – 117.3	50.5	38.0 – 63.1
2009	269.7	247.3 – 292.2	116.5	102.2 – 130.8	54.1	41.3 – 66.9
2010	193.0	173.9 – 212.1	105.1	91.8 – 118.4	62.1	48.7 – 75.6
2011	181.9	163.1 – 200.6	106.2	93.0 – 119.4	50.6	38.6 – 62.7
2012	188.8	169.1 – 208.5	93.4	81.0 – 105.9	66.3	52.6 – 80.1
2013	228.3	206.5 – 250.2	128.8	113.7 – 143.8	82.5	66.9 – 98.0
2014	257.8	234.3 – 281.4	157.5	140.4 – 174.6	112.2	93.8 – 130.6
2015	297.4	271.9 – 330.0	165.5	147.4 – 183.6	121.1	101.6 – 140.6
2016	465.5	433.4 – 497.6	265.8	242.2 – 289.3	146.4	124.5 – 168.3

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES.

Table 39. Military Characteristics, Suicidal Ideation Cases,[a] Active Army, 2014–2016

Characteristic	Suicidal Ideation Cases n (%) 2014 (n = 929)	2015 (n = 990)	2016 (n = 1470)	Army Distribution[b] (%) 2016	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
RANK					0.302	0.319
E1–E4	608 (65)	657 (66)	1025 (70)	44		
E5–E9	271 (29)	282 (28)	385 (26)	36		
W1–W5	5 (1)	9 (1)	8 (1)	3		
Cadets	0 (0)	0 (0)	0 (0)	1		
O1–O3	33 (4)	31 (3)	42 (3)	NA		
O4–O8	9 (1)	11 (1)	10 (1)	NA		
Missing	3 (<1)	0 (0)	0 (0)	NA		
NUMBER OF DEPLOYMENTS[d]					**<0.001**	**0.017**
0	433 (47)	552 (56)	870 (59)	NA		
1	243 (26)	197 (20)	306 (21)	NA		
2	121 (13)	127 (13)	148 (10)	NA		
3	82 (9)	52 (5)	87 (6)	NA		
4+	50 (5)	62 (6)	59 (4)	NA		

Legend: DoDSER – Department of Defense Suicide Event Report, E – Enlisted, NA – Not Available, O – Officer, OEF – Operation Enduring Freedom, OIF – Operation Iraqi Freedom, OND – Operation New Dawn, W – Warrant Officer.
Notes: [a]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Data for the Army distribution include Active Army cases aged 17–59. These data were provided by AFMES. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, p<0.05. [d]Refers to lifetime history of OEF, OIF, or OND deployment.



Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, in all years there were fewer than 20 cases of suicidal ideation by Warrant Officers, so rates could not be calculated for that group.

Figure 10. Rank-Specific Rates[a–c] of Suicidal Ideation, per 100,000, Active Army Soldiers, 2007–2016

Table 40. Rank-Specific Rates,[a–c] of Suicidal Ideation, per 100,000, Active Army Soldiers, 2007–2016

Rank	E1 – E4		E5 – E9		O1 – O9		W1 – W5	
	Rate	95% CI	Rate	95% CI	Rate	95% CI	Rate	95% CI
YEAR OF EVENT								
2007	164.2	147.6 – 180.7	32.7	24.7 – 40.7	—	—	—	—
2008	246.6	226.7 – 266.4	57.5	47.1 – 67.9	—	—	—	—
2009	288.8	267.7 – 309.9	65.1	54.1 – 76.1	—	—	—	—
2010	212.4	194.6 – 230.2	62.6	51.8 – 73.4	34.7	21.6 – 47.9	—	—
2011	198.0	180.9 – 215.0	70.2	59.2 – 82.2	—	—	—	—
2012	197.0	179.5 – 214.5	70.2	58.7 – 81.7	24.4	13.7 – 35.1	—	—
2013	240.3	220.4 – 260.3	108.3	93.9 –122.8	32.7	20.4 – 45.0	—	—
2014	278.0	255.9 – 300.1	141.1	124.3–157.9	51.2	35.7 – 66.7	—	—
2015	312.2	288.3 – 336.0	155.3	137.2–173.4	52.7	36.7 – 68.6	—	—
2016	492.6	462.4 – 522.7	226.3	203.7–248.9	67.0	48.8 – 85.2	—	—

Notes: [a]Rates include only Active Army cases aged 17–59 with identifiable demographic factors. [b]Active Army population counts used to calculate rates were provided by the AFMES. [c]Unstable rates (n < 20) are not reported. Specifically, in all years there were fewer than 20 cases of suicidal ideation by Warrant Officers, so rates could not be calculated for that group.

Table 41. Behavioral Health Indicators from PDHAs and PDHRAs,[a] Suicidal Ideation Cases,[b] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%)			Test for Significant Difference[c] (p-value)	
	2014	2015	2016	2016 vs 2014	2016 vs 2015
POST-DEPLOYMENT HEALTH ASSESSMENTS	(n = 94)	(n = 55)	(n = 90)		
Depression Symptoms[d]	45 (48)	32 (58)	43 (48)	0.992	0.249
Posttraumatic Stress Symptoms[e]	24 (26)	24 (44)	24 (27)	0.859	**0.039**
Suicidal Thoughts	4 (4)	0 (0)	2 (2)	0.683	0.526
Referred to BH Care	17 (18)	12 (22)	13 (14)	0.504	0.254
POST-DEPLOYMENT HEALTH REASSESSMENTS	(n = 112)	(n = 72)	(n = 70)		
Depression Symptoms[d]	72 (64)	42 (58)	27 (39)	**<0.001**	**0.014**
Posttraumatic Stress Symptoms[e]	51 (46)	31 (43)	21 (30)	**0.029**	0.093
Suicidal Thoughts	5 (4)	3 (4)	5 (7)	0.511	0.490
Referred to BH Care	14 (13)	10 (14)	7 (10)	0.608	0.475

Legend: BH – behavioral health, PDHA – Post-Deployment Health Assessment, PDHRA – Post-Deployment Health Reassessment.
Notes: [a]Data from the most recent PDHA and PDHRA in the 12 months before the suicidal ideation. [b]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Patient Health Questionnaire-2 (PHQ 2). [e]Primary Care Posttraumatic Stress Disorder Screen (PC-PTSD).

Table 42. Alcohol Misuse Indicators,[a] Suicidal Ideation Cases,[b] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 711)	2015 (n = 681)	2016 (n = 1069)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
ALCOHOL MISUSE					
Unhealthy Drinking[d]	55 (8)	52 (8)	72 (7)	—	—
Probable Alcohol Disorder[e]	7 (1)	6 (1)	11 (1)	—	—
Referred to ASAP	27 (4)	19 (3)	26 (2)	0.097	0.645
Received Alcohol-Related Education	279 (39)	265 (39)	412 (39)	0.767	0.876

Legend: ASAP – Army Substance Abuse Program, AUDIT-C – Alcohol Use Disorders Identification Test - Consumption, DoDSER – Department of Defense Suicide Event Report, PHA – Periodic Health Assessment.
Notes: [a]Based on AUDIT-C scores from the most recent PHA in the 15 months before the suicidal ideation. [b]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. Comparison omitted because >10% unknown or missing. [d]The threshold for a positive screen indicating unhealthy drinking is 5 or more for men and 4 or more for women. [e]A high positive screen, indicating probable alcohol disorder, is 8 and above.

Table 43. Behavioral Health Indicators, Suicidal Ideation Cases,[a] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 913)[c]	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS[d]					
Inpatient Encounter Involving BH	247 (27)	238 (24)	373 (25)	0.364	0.453
Outpatient Encounter Involving BH	794 (87)	831 (84)	1265 (86)	0.528	0.147
Encounter Involving BH in 30 Days Before Event	614 (67)	642 (65)	995 (68)	0.825	0.143
BH DIAGNOSIS[d]					
Any BH Diagnosis[e]					
Prevalence[f] Before Event	723 (79)	732 (74)	1117 (76)	0.070	0.249
Incidence in Year Before Event	506 (55)	540 (55)	839 (57)	0.429	0.215
More Than One BH Diagnosis[g]					
Prevalence[f] Before Event	527 (58)	536 (54)	775 (53)	**0.017**	0.489
Incidence in Year Before Event	250 (27)	286 (29)	418 (28)	0.578	0.807
Any Mood Disorder					
Prevalence[f] Before Event	469 (51)	475 (48)	662 (45)	**0.003**	0.151
Incidence in Year Before Event	254 (28)	277 (28)	387 (26)	0.424	0.365
~Major Depression					
Prevalence[f] Before Event	242 (27)	257 (26)	508 (35)	**<0.001**	**<0.001**
Incidence in Year Before Event	142 (16)	179 (18)	399 (27)	**<0.001**	**<0.001**
~Other Depressive Disorders					
Prevalence[f] Before Event	402 (44)	392 (40)	348 (24)	**<0.001**	**<0.001**
Incidence in Year Before Event	215 (24)	217 (22)	102 (7)	**<0.001**	**<0.001**
~Bipolar Disorder					
Prevalence[f] Before Event	38 (4)	32 (3)	43 (3)	0.105	0.664
Incidence in Year Before Event	25 (3)	24 (2)	30 (2)	0.270	0.524
PTSD					
Prevalence[f] Before Event	195 (21)	191 (19)	244 (17)	**0.004**	0.086
Incidence in Year Before Event	98 (11)	113 (11)	137 (9)	0.260	0.092
Other Anxiety Disorder[h]					
Prevalence[f] Before Event	334 (37)	336 (34)	478 (33)	**0.042**	0.462
Incidence in Year Before Event	167 (18)	163 (16)	258 (18)	0.646	0.483

Table 43. Behavioral Health Indicators, Suicidal Ideation Cases,[a] Active Army, 2014–2016 (cont'd.)

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 913)[c]	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
BH DIAGNOSIS[d]					
Adjustment Disorder					
Prevalence[f] Before Event	580 (64)	564 (57)	885 (60)	0.105	0.110
Incidence in Year Before Event	255 (28)	271 (27)	478 (33)	**0.018**	**0.007**
Substance Use Disorder[i]					
Prevalence[f] Before Event	200 (22)	222 (22)	307 (21)	0.554	0.362
Incidence in Year Before Event	94 (10)	121 (12)	154 (10)	0.888	0.178
Personality Disorder[j]					
Prevalence[f] Before Event	54 (6)	56 (6)	73 (5)	0.316	0.451
Incidence in Year Before Event	37 (4)	40 (4)	47 (3)	0.271	0.267
Psychosis					
Prevalence[f] Before Event	30 (3)	24 (2)	35 (2)	0.187	0.945
Incidence in Year Before Event	24 (3)	21 (2)	26 (2)	0.154	0.531
Previous Suicide Attempt/Self Harm[k]					
Prevalence[f] Before Event	36 (4)	51 (5)	88 (6)	**0.029**	0.379
Incidence in Year Before Event	17 (2)	32 (3)	65 (4)	**0.001**	0.137
Previous Suicidal Ideation[l]					
Prevalence[f] Before Event	211 (23)	209 (21)	398 (27)	**0.031**	**0.001**
Incidence in Year Before Event	166 (18)	173 (17)	336 (23)	**0.007**	**0.001**

Legend: BH – behavioral health, DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification, PTSD – posttraumatic stress disorder.
Notes: [a]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P values in bold indicate significant difference, p<0.05. [c]Medical claims data were available for all but 16 cases. [d]May have more than one. [e]Any BH diagnosis includes one or more of the following: mood, PTSD, other anxiety disorders, adjustment disorder, substance use disorders, personality disorders, psychosis. [f]Ever diagnosed during time in service. [g]More than one BH diagnosis includes more than one of the aforementioned diagnoses. [h]Includes, for example, panic disorder, generalized anxiety disorder, or obsessive-compulsive disorder. [i]Includes drug or alcohol use disorders. [j]Includes, for example, borderline or antisocial personality disorders. [k]Based on ICD-9 E-codes and ICD-10 X-,T-, and Z-codes for self-inflicted injuries. [l]Based on an ICD-9 V-code and ICD-10 R-code for suicidal ideation.

Table 44. Traumatic Brain Injuries,[a] Suicidal Ideation Cases,[b] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 913)[d]	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS[e]					
Inpatient Encounter Involving TBI	17 (2)	30 (3)	35 (2)	0.399	0.325
Outpatient Encounter Involving TBI	146 (16)	177 (18)	237 (16)	0.932	0.254
Encounter Involving TBI in Year Before Event	72 (8)	99 (10)	126 (9)	0.556	0.228
Encounter Involving TBI in 30 Days Before Event	27 (3)	30 (3)	39 (3)	0.660	0.578
TBI DIAGNOSES[e]					
Any TBI Diagnosis	130 (14)	155 (16)	214 (15)	0.829	0.454
First TBI Diagnosis in Year Before Event	39 (4)	51 (5)	68 (5)	0.685	0.551

Legend: DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification, TBI – traumatic brain injury.

Notes: [a]Based on ICD-9 and 10 codes for traumatic brain injuries provided by the Defense and Veterans Brain Injury Center (DVBIC): ICD-9 (800–801.99, 803–804.99, 850–854.19), ICD-10: F07.81, S04.02-S04.04, S06.0-S06.6, S06.8-S06.9, S02.0-S02.1, S02.8-S02.9, S07.1, Z87.820, DOD0102, DOD0103, DOD0104, and DOD0105. [b]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Medical claims data were available for all but 16 cases. [e]May have more than one.

Table 45. Chronic Pain,[a] Suicidal Ideation Cases,[b] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 913)[d]	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS					
Encounter for Chronic Pain in Year Before Event	89 (10)	86 (9)	132 (9)	0.530	0.802
Encounter for Chronic Pain in 30 Days Before Event	26 (3)	32 (3)	40 (3)	0.855	0.461
DIAGNOSES					
Chronic Pain Diagnosis in Year Before Event	74 (8)	69 (7)	95 (6)	0.129	0.621

Legend: DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification.

Notes: [a]ICD-9 codes indicating chronic pain include 338.2, 338.3, and 338.4. ICD-10 codes include G89.21, G89.22, G89.28, G89.29, G89.3, and G89.4. Based on coding guidance from the American Academy of Professional Coders. [b]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Medical claims data were available for all but 16 cases.

Table 46. Sleep Problems,[a] Suicidal Ideation Cases,[b] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 913)[d]	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
MEDICAL ENCOUNTERS					
Encounter for Sleep in Year Before Event	331 (36)	346 (35)	482 (33)	0.083	0.266
Encounter for Sleep in 30 Days Before Event	136 (15)	135 (14)	205 (14)	0.520	0.827
DIAGNOSES					
Sleep Disorder Diagnosis in Year Before Event	266 (29)	281 (28)	388 (26)	0.145	0.277

Legend: DoDSER – Department of Defense Suicide Event Report, ICD-9 – International Classification of Diseases, 9th revision, Clinical Modification, ICD-10 – International Classification of Diseases, 10th revision, Clinical Modification.

Notes: [a]ICD-9 codes indicating sleep problems include 307.4–307.48, 327–327.8, 780.5–780.56, 291.82, 292.85, 780.58, and V694. ICD-10 codes include F51, G47, and Z72.820. [b]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [d]Medical claims data were available for all but 16 cases.

Table 47. Polypharmacy, Suicidal Ideation Cases,[a] Active Army, 2014–2016

Characteristic	Suicidal Ideation Cases n (%) 2014 (n = 929)	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[b] (p-value) 2016 vs 2014	2016 vs 2015
POLYPHARMACY					
Any Polypharmacy[c]	75 (8)	66 (7)	69 (5)	**0.001**	**0.035**
CATEGORIES OF POLYPHARMACY[d]					
1. Met all criteria[e]	2 (3)	4 (6)	1 (1)	—	—
2. Psychotropics & opioid[f]	6 (8)	6 (9)	5 (7)	—	—
3. Psychotropics & ER visits[g]	1 (1)	0 (0)	3 (4)	—	—
4. Opioid & ER visits[h]	3 (4)	1 (2)	1 (1)	—	—
5. ≥ 4 prescriptions, at least one opioid[i]	13 (17)	11 (17)	7 (10)	—	—
6. Multiple psychotropic prescriptions[j]	32 (43)	34 (52)	38 (55)	—	—
7. 3+ ER visits with opioids prescribed[k]	18 (24)	10 (15)	14 (20)	—	—

Legend: DoDSER – Department of Defense Suicide Event Report, OTSG – Office of the Surgeon General, ER – Emergency Room.

Notes: [a]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [b]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. Statistical test omitted for small counts. [c]Met at least one criterion for polypharmacy, as defined by OTSG Policy 15-039 definition, at the time of the event. [d]Proportion of cases with any polypharmacy. [e]Met all three polypharmacy criteria (categories 5, 6, and 7). [f]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event and had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [g]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event and had at least 3 ER visits in the year preceding the event where an opioid was prescribed. [h]Had at least 3 ER visits in the year preceding the event where an opioid was prescribed and had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [i]Had 4 or more prescriptions in the 30 days prior to the event, at least one of which was an opioid. [j]Had 4 or more prescriptions for psychotropic drugs in the 30 days prior to the event. [k]Had at least 3 ER visits in the year preceding the event where an opioid was prescribed.

Table 48. Drug Testing History,[a] Suicidal Ideation Cases,[b] Active Army, 2014–2016

Characteristic	Suicidal Ideation Cases n (%) 2014 (n = 846)	2015 (n = 905)	2016 (n = 1311)	Test for Significant Difference[c] (p-value) 2016 vs 2014	2016 vs 2015
DRUG TEST HISTORY					
Positive Drug Test	54 (6)	47 (5)	67 (5)	0.210	0.931
More than One Positive Drug Test[d]	18 (33)	16 (34)	21 (31)	0.816	0.762
Positive Drug Test in Year Before Event[d]	43 (80)	28 (60)	49 (73)	0.405	0.128
Amphetamines[d]	8 (15)	3 (6)	5 (7)	0.194	1.000
Cannabis[d]	21 (39)	24 (51)	32 (48)	0.328	0.728
Cocaine[d]	14 (26)	9 (19)	22 (33)	0.409	0.106
Oxycodone/Oxymorphone[d]	5 (9)	6 (13)	5 (7)	0.751	0.357
Opiates[d]	4 (7)	5 (11)	3 (4)	0.699	0.271
Heroin[d]	1 (2)	1 (2)	0 (0)	0.446	0.412
Steroids[d]	0 (0)	1 (2)	1 (1)	1.000	1.000
Barbiturates[d]	0 (0)	0 (0)	1 (1)	1.000	1.000
Spice[d]	3 (6)	1 (2)	0 (0)	0.086	0.412

Legend: DoDSER – Department of Defense Suicide Event Report.

Notes: [a]Drug testing history is available only for cases who have a record of a drug test in the Drug and Alcohol Management Information System (DAMIS). [b]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [c]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, $p<0.05$. [d]Proportion out of cases with any positive drug test.

Table 49. ASAP Intake History,[a,b] Suicidal Ideation Cases,[c] Active Army, 2014–2016

Indicator	Suicidal Ideation Cases n (%) 2014 (n = 929)	2015 (n = 990)	2016 (n = 1470)	Test for Significant Difference[d] (p-value) 2016 vs 2014	2016 vs 2015
ASAP INTAKE SCREENING					
Screened for Intake	125 (13)	126 (13)	154 (10)	**0.027**	0.085
Enrolled for Treatment[e]	101 (81)	107 (85)	119 (77)	0.473	0.107

Legend: ASAP – Army Substance Abuse Program; DoDSER – Department of Defense Suicide Event Report.
Notes: [a]Data from the Drug and Alcohol Management Information System (DAMIS). [b]ASAP screening and enrollment in the year before the event. [c]Suicidal ideation cases are from DoDSERs, which are available only for cases serious enough to warrant hospitalization or evacuation. [d]Chi-squared or Fisher's exact test p-values, as appropriate. P-values in bold indicate significant difference, p<0.05. [e]Proportion out of cases screened for intake.

6 Point of Contact

The APHC Division of BSHOP is the point of contact for this publication, e-mail usarmy.apg.medcom-phc.list.eds-bshop-ops@mail.mil, or phone number 410-436-9292, DSN 584-9292.

NKECHINYERE GIBSON, MPH
Epidemiologist
Division of Behavioral and Social Health Outcomes Practice

Approved:

JOSEPH A. PECKO, PhD, LCSW
Division Chief
Division of Behavioral and Social Health Outcomes Practice

Appendix A

References

1. Nock, M.K., G. Borges, E.J. Bromet, C.B. Cha, R.C. Kessler, and S. Lee. 2008. Suicide and Suicidal Behavior. *Epidemiologic Reviews*. 30(1): 133–154. doi: 10.1093/epirev/mxn002.

2. American Chronic Pain Association. 2016. Pain Management Tools Glossary. Accessed 28 June 2016. https://theacpa.org/glossary

3. Gallaway M.S., C. Lagana-Riordan, C.R. Dabbs, et al. 2015. A mixed methods epidemiological investigation of preventable deaths among U.S. Army Soldiers assigned to a rehabilitative Warrior Transition Unit. [published online 16 September 2014] Work, doi: 10.3233/WOR-141928.

4. Gazalle F.K., P.C. Hallal, J. Tramontina, et al. 2007. Polypharmacy and suicide attempts in bipolar disorder. *Revista Brasiliera de Psiquiatria*. 29(1): 35–38.

5. Office of the Under Secretary of Defense–Personnel and Readiness. 2011. Standardized Suicide Nomenclature (Self-Directed Violence Classification System) Policy. Washington, DC: Department of Defense.

6. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. 2017. Fatal Injury Reports, National and Regional, 1999–2015. Last modified 19 February 2017. Web-based Injury Statistics Query and Reporting System (WISQARS). https://webappa.cdc.gov/sasweb/ncipc/mortrate.html

7. Centers for Disease Control and Prevention. 2017. Multiple Cause of Death, 1999–2015 Request. CDC Wide-ranging On-line Data for Epidemiological Research (CDC WONDER). https://wonder.cdc.gov/controller/datarequest/D77

8. The Office of the Deputy Assistant Secretary of Defense (Force Health Protection & Readiness) and the Deployment Health Clinical Center Walter Reed Army Medical Center. 2011. Training to Administer DOD Deployment Mental Health Assessments. Updated 18 January 2011. http://www.aangfs.com/wp-content/uploads/2012/05/RSV-3.a-Human-Performance-Dod-Resiliency-Training-by-Col-Pond.pdf

9. Department of Defense. 2014. Department of Defense Instruction 6025.19, *Individual Medical Readiness (IMR).* http://www.nps.edu/documents/106881057/108020710/DODI+602519p.pdf/c61f6f98-2030-4e4b-84b7-b6a9c64b41a9

10. Hyman, J., R. Ireland, L. Frost, and L. Cottrell. 2012. Suicide Incidence and Risk Factors in an Active Duty U.S. Military Population. *American Journal of Public Health*. 102 (S1): S138–S146. doi: 10.2105/AJPH.2011.30.

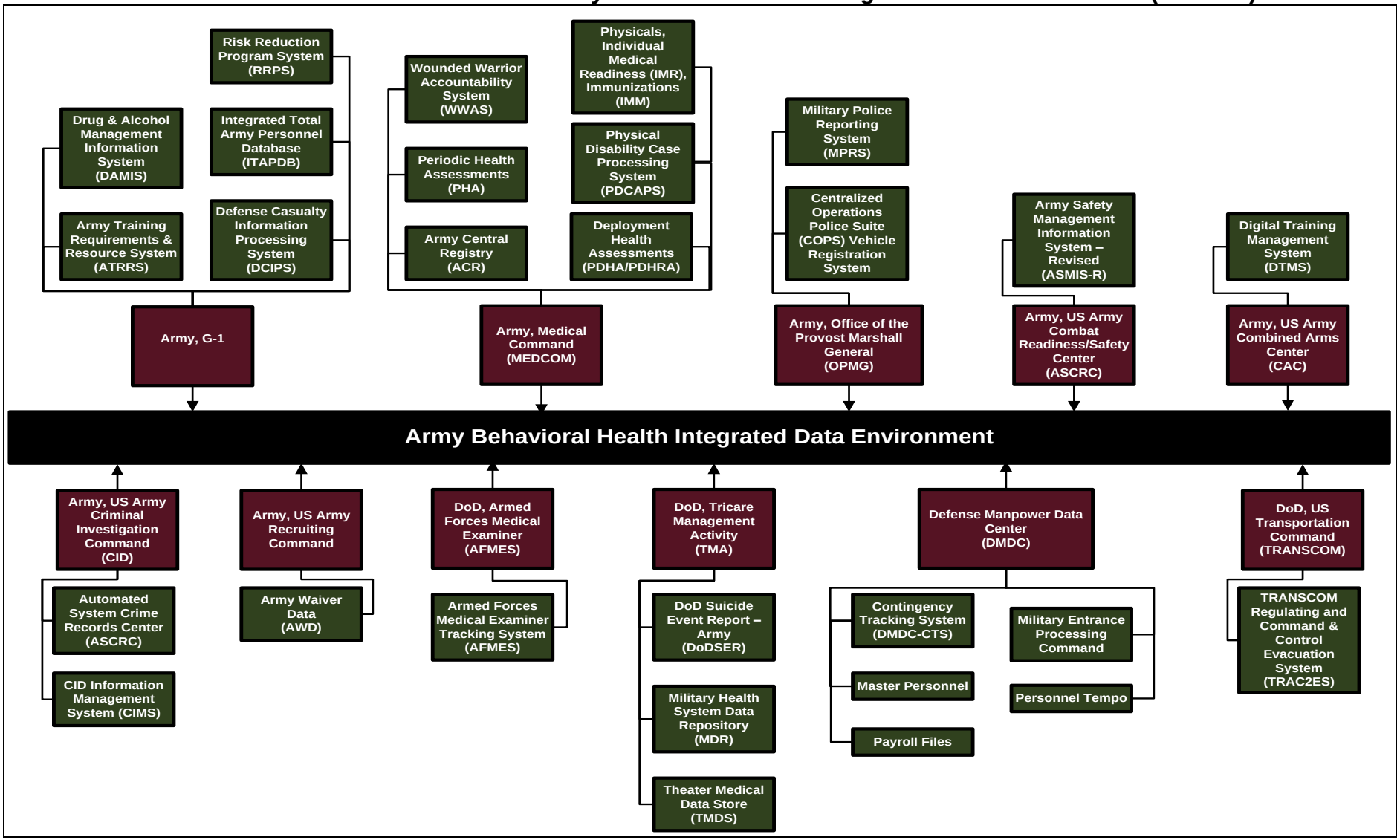
11. Armed Forces Health Surveillance Branch. 2016. Surveillance Case Definitions. Accessed 1 April, 2016. http://health.mil/Military-Health-Topics/Health-Readiness/Armed-Forces-Health-Surveillance-Branch/Epidemiology-and-Analysis/Surveillance-Case-Definitions

12. DVBIC. 2016. DoD Worldwide Numbers for TBI. Accessed 16 July 2014. http://dvbic.dcoe.mil/dod-worldwide-numbers-tbi

13. Office of the Surgeon General. 2015. U.S. Army Medical Command Policy No. 15-039, Guidance for Managing Polypharmacy and Preventing Overdose in Soldiers Prescribed Psychotropic Medications and Central Nervous System Depressants. Washington, DC: Office of the Surgeon General. 17 July 2015.

Appendix B

Administrative Data Sources in the Army Behavioral Health Integrated Data Environment (ABHIDE)



Appendix C

Methods, Definitions, Data, and Caveats

This publication includes estimated counts and proportions of suicidal behaviors among Active Army Soldiers. The Department of Defense defines suicide as "death caused by self-inflicted injurious behavior with any intent to die as a result of the behavior."[5] A suicide attempt is defined as "a nonfatal self-inflicted potentially injurious behavior with any intent to die as a result of the behavior."[5] Suicidal ideation is defined as "thoughts of engaging in suicide-related behavior."[5]

Suicide cases are identified by the AFMES and may differ from counts by G-1, which are identified primarily from the Casualty and Mortuary Affairs Operation Center. Counts of suicide cases include pending as well as confirmed cases. Although most suicide cases presented in this report are confirmed, formal confirmation by AFMES can take up to 1 year. Suicide attempt and suicidal ideation cases are identified by DoDSERs, which are completed only for cases serious enough to warrant hospitalization or evacuation. Therefore, the numbers presented in this publication may underestimate the full scope of suicidal behavior within the U.S. Army.

Data on suicide cases became available in 2001. Data on suicide attempt cases became available in 2004. Data on suicidal ideation cases became available in 2007.

U.S. Army suicide rates presented in this publication include Active Army Soldiers, aged 17–59. Population counts used to calculate rates were provided by AFMES. Denominator data stratified by for Soldiers aged 60-64 were not available, so that information was omitted from this report.

Crude and stratified rates per 100,000 persons for each year were calculated using counts of suicidal events (suicides, suicide attempts, or suicidal ideations) and the count of Active Army Soldiers aged 17–59. Therefore, yearly changes in both the number of suicidal events and the number of Soldiers are reflected. In order to calculate a denominator, APHC BSHOP summed the Active Army population totals for each month and divided by 12 to calculate a monthly average of the population. To make appropriate comparisons between suicide rates in the U.S. Army and U.S. general population, rates should control for the higher prevalence of young and male Soldiers in the U.S. Army. Suicide rates (per 100,000 persons) of Active Army Soldiers aged 17–59, adjusted for age and sex using the direct adjustment method, were calculated for the U.S. Army and the U.S. general population, 2001–2015. The adjusted rates are rates that would have existed if the populations had the same age and gender distribution. The 2015 U.S. Army distribution was used as the standard population, as it reflects the drawdown of Active Army Soldiers and is the year in which all military occupations were opened to women. However, it is important to note that any population can be used as a standard population. Adjusted suicide rates for the U.S. general population are based on available data from the Centers for Disease Control and Prevention.[6,7]

Self-reported depression symptoms from the PDHA and PDHRA refer to responding with "More than half the days" or "Nearly every day" for at least one of the two questions on the PHQ-2.[8] Self-reported PTSD symptoms from the PDHA and PDHRA refer to a "Yes" response to at least two of the four questions on the Primary Care Posttraumatic Stress Disorder Screen.[8]

The PHA is a preventive screening tool designed to improve the reporting and visibility of Individual Medical Readiness for all Soldiers. Although all Active Duty Service members are required to complete a PHA annually, a PHA is considered current if less than 15 months have passed since the last PHA was completed.[9]

Deployment information in this publication is only for deployments in support of OED, OIF, and OND because deployments in support of earlier conflicts or other operations are not available in the data received. In addition, deployments are lifetime deployments to those operations while in any service; they are not limited to deployments during service in the Army.[10]

The BH encounters and diagnoses (defined in Appendix D) are based on medical claims during the Soldier's time in service and only include claims from medical treatment facilities and claims from purchased care submitted for payment by the government.[11]

Several caveats must be considered when reviewing this report. The BSHOP is notified of a suicide attempt or suicidal ideation case when a DoDSER is completed. Missing (unreported) DoDSERs are not distributed evenly or randomly, and variation in reporting occurs by installation, time, and event type. Thus, an increase in the number of cases may be the result of increased documentation and not a true change in the number of cases for a specified time period. Event characteristics and personal and legal/administrative issues on the DoDSER were omitted for suicidal ideations to improve the ease of completion. Required fields for suicidal ideations are now limited to: event type, event date, name, social security number, date of birth, and gender. Therefore, DoDSER data is only presented for suicide and suicide attempt cases.

The DoDSER questions about personal and legal/administrative history ask whether the issue occurred and how recently. Issues described within a year of the event are reported. Variables related to having a family member or friend die by suicide and being the victim of abuse are also reported if they occurred at any time during the Soldier's life. Lifetime histories for these variables are reported due to their potential to have a lasting negative impact on Soldiers. Information on four variables—work problems, death of a family member or friend, and being the victim or perpetrator of abuse—combine answers from several DoDSER questions. Any indication of work problems includes workplace hazing, job problems, poor performance, and coworker issues. The death of a family member or friend includes the death of a spouse, other family member, or friend from any cause, including suicide. Being the victim or perpetrator of abuse includes emotional, physical, or sexual abuse or harassment.

The DoDSERs for suicide cases are completed by BH professionals within 60 days of AFMES confirmation of the suicide. Because this publication includes cases being investigated as probable suicides but have not yet been confirmed, information on personal and legal/administrative history and other variables obtained from the DoDSER are not available for those cases.

The DoDSER data for suicide cases are generally more complete because they are typically completed by a provider who is familiar with the case. However, some DoDSER data on suicide attempts are more complete because the Soldiers were alive and, thus, able to provide information about the event.

Additional caveats relate to interpreting surveillance data. Surveillance data typically improve as data collection becomes refined over time. This may result in frequencies and proportions appearing to increase in later years, although these increases may be the result of improved data capture. This publication presents proportions as well as rates. Although proportions are appropriate for public health planning, differences in the underlying U.S. Army population over time are not taken into account. Rates provide better comparisons across years and subpopulations. In addition, the data presented in this publication lack the context of similar data on the Army as a whole. For example, it is unclear to what extent finding 25 percent of suicide cases diagnosed with a substance use disorder indicates a difference from or mirrors the pattern of substance use disorders in the Army as a whole.

Appendix D

Definition of Behavioral Health Encounters and Diagnoses

Medical information in this report is based on data from the Military Health System, which includes claims from medical treatment facilities and claims from purchased care that are submitted for payment by the government. Prior to October 1, 2015, medical claims data use codes from the ICD-9. Medical claims on or after October 1, 2015 use codes from the ICD-10.

Medical Encounters. In inpatient data, an ICD-9 or 10 code for the condition in any diagnosis position Dx1–Dx8 is considered an encounter for that condition. In outpatient data, an ICD-9 or 10 code for the condition in any diagnosis position Dx1–Dx4 is considered an encounter for that condition.

Diagnoses. In inpatient data, an ICD-9 or 10 code for the condition in any diagnosis position Dx1–Dx8 is considered a diagnosis of that condition. In outpatient data, an ICD-9 or 10 code for the condition in the first diagnosis position (Dx1) is considered a diagnosis of the condition. However, ICD-9 or 10 codes in the second through fourth diagnosis positions (Dx2–Dx4) in outpatient data are also considered to indicate a diagnosis if a second code from the same group of codes occurs in Dx2–Dx4 within a year but not on the same day. For example, a Soldier with an ICD-9 code of 300.00 (anxiety state) in the third position would be considered to have a diagnosis of anxiety other than PTSD only if he or she had an ICD-9 code from the range (300.00–300.3) in the second through fourth position within a year but not on the same day. The same rules apply for ICD-10 codes. These definitions follow a Healthcare Effectiveness Data and Information Set guideline from the National Committee from Quality Assurance.

D-1 Behavioral Health Encounters and Diagnoses

In this analysis, BH ICD-9 codes include those in the range 290–319.99 (excluding tobacco use diagnoses), as well as certain codes related to sleep disorders, and V-codes related to life circumstance problems, personal trauma, and maltreatment. BH ICD-10 codes include those in the range F01-F99 (excluding tobacco use diagnoses), as well as R-, T-, X-, and Z-codes related to life circumstance problems, personal trauma, and maltreatment. ICD-9 V-codes and ICD-10 R-, T-, X-, and Z-codes may indicate encounters, but not diagnoses.

- *Mood disorders* based on ICD-9 codes include major depression (296.2 or 296.3), dysthymia (300.4), depression not otherwise specified (NOS; 311), bipolar disorder (296.0, 296.4, 296.5, 296.6, 296.7, and 296.8), or other mood disorders (296, 296.1, 296.9). Mood disorders based on ICD-10 codes include major depression (F32 or F33), dysthymia (F34.1), depression NOS (F34.8 or F34.9), bipolar disorder (F30, F31, F34.0), or other mood disorders (F39).

- *PTSD* is based on the ICD-9 code 309.81 and ICD-10 code F43.1.

- *Other anxiety disorders* (i.e., anxiety disorders other than PTSD) are based on the ICD-9 codes 300.0, 300.10, 300.2, and 300.3. ICD-10 codes include F40, F41, and F42.

- *Adjustment disorder* includes ICD-9 codes in the 309 range, except 309.81 (PTSD). ICD-10 codes include F43.2, F43.8, and F43.9.

- *Substance use disorders* are based on ICD-9 codes related to alcohol and drug use (291, 292, 303, 304, 305.0, and 305.2–305.9) and exclude codes related to tobacco use (305.1–305.12).

ICD-10 codes include F10, F11, F12, F13, F14, F15, F16, F18, and F19 and exclude codes related to tobacco use (F17.20–F17.29).

- *Personality disorders* are indicated by ICD-9 codes 301–301.9. ICD-10 codes include F21 and F60.

- *Psychoses* are indicated by ICD-9 codes 290.8, 290.9, 295, 297, and 298. ICD-10 codes include F20, F22, F23, F24, F25, F28, and F29.

- *Any BH disorder* includes only those disorders listed above.

D-2 Traumatic Brain Injury

In this analysis, ICD-9 codes indicating TBI include 800–801.99, 803–804.99, and 850–854.19. ICD-10 codes include F07.81, S04.02-S04.04, S06.0-S06.6, S06.8-S06.9, S02.0-S02.1, S02.8-S02.9, S07.1, Z87.820, DOD0102, DOD0103, DOD0104, and DOD0105. ICD-9 and 10 codes are provided by the DVBIC.[12]

D-3 Chronic Pain Encounters and Diagnoses

In this analysis, ICD-9 codes indicating chronic pain include the following: 338.2, 338.3, and 338.4. ICD-10 codes include G89.21, G89.22, G89.28, G89.29, G89.3, and G89.4.

D-4 Sleep Problem Encounters and Diagnoses

In this analysis, ICD-9 codes indicating sleep problems include the following: 291.82, 292.85, 307.4–307.48, 327–327.8, 780.5–780.56, 780.58, and V694. ICD-10 codes indicating sleep problems include F51, G47, and Z72.820.

D-5 Polypharmacy

According to OTSG/MECOM Policy Memo No. 15-039,[13] polypharmacy occurs when a Soldier meets one or more criteria—

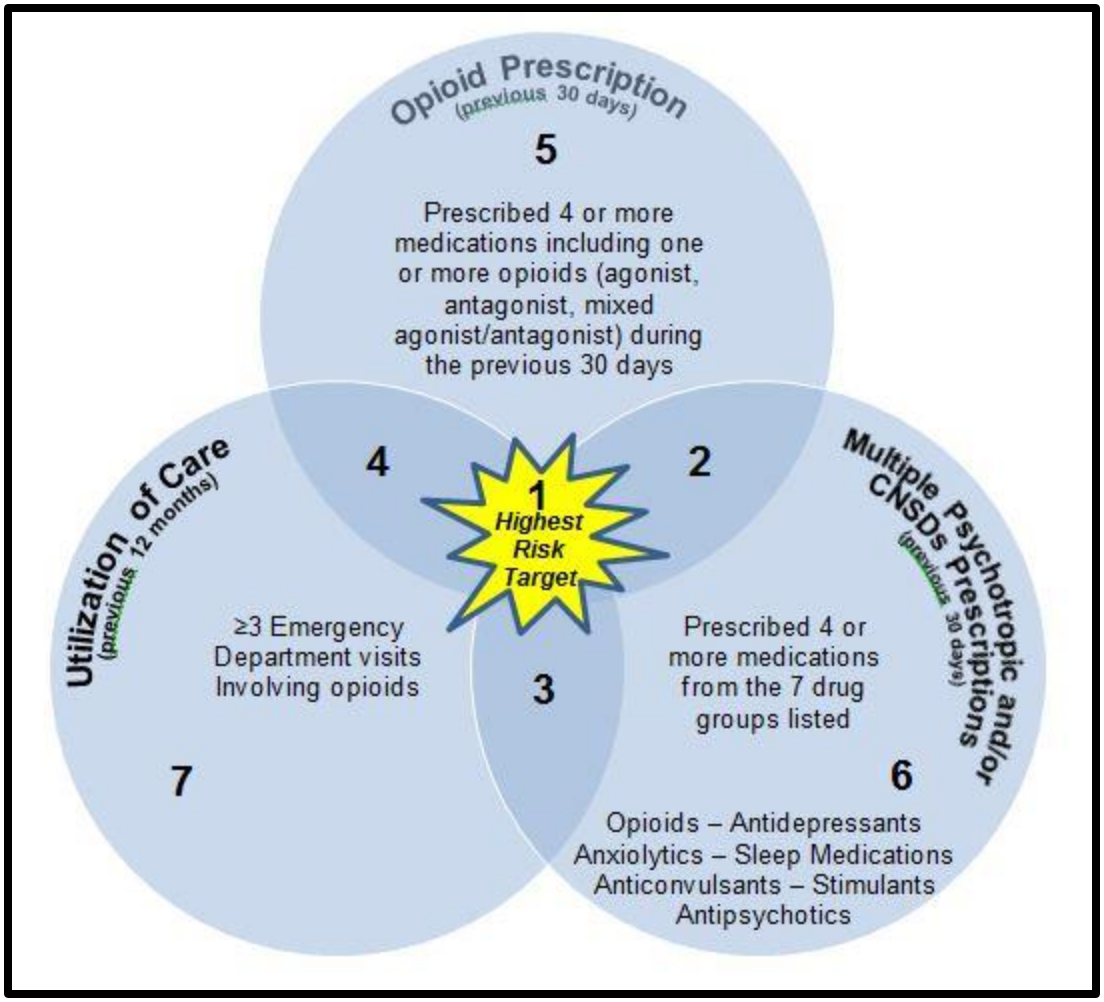
- Prescribed four or more unique medications, including one opioid, within the previous 30 days

- Prescribed four or more medications from the seven categories of psychotropics and central nervous system depressants within the previous 30 days

- Three or more emergency room visits within last 12 months where each visit is linked with an opioid prescription, and at least one visit was within previous 30 days

This publication reports the number and proportion of Soldiers who met one or more of these criteria.

Figure D-1 shows categories of polypharmacy, adapted from the Defense Health Agency's Pharmacoeconomic Center. Cases in Categories 5, 6, and 7 meet one criterion for polypharmacy. Cases in Categories 2, 3, and 4 meet two criteria, and cases in Category 1 meet all three criteria.



Notes: Polypharmacy definition from Office of the Surgeon General (OTSG) Policy No. 15-039. Opioid Prescription is defined as "Prescriptions for four or more of any type of medication, including one or more opioid within the previous 30 days." Multiple Psychotropic Prescriptions is defined as "Prescriptions for four or more medications from the seven categories of psychotropics and Central Nervous System Depressants (opioid, stimulant, anxiolytic, antidepressant, antipsychotic, anticonvulsant, or sleep medication) within the previous 30 days." Utilization of Care is defined as "Three or more Emergency Department visits in the past year in which an opioid was prescribed at each visit." Category definitions, drug categorizations, and figure (adapted) are from Defense Health Agency's Pharmacoeconomic Center. Cases in Categories 5, 6, and 7 meet one criterion for polypharmacy. Cases in Categories 2, 3, and 4 meet two criteria, and cases in Category 1 meet all three criteria.

Figure D-1. Polypharmacy Categories

Glossary

Acronyms

ABHIDE
Army Behavioral Health Integrated Data Environment

AFMES
Armed Forces Medical Examiner System

APHC
U.S. Army Public Health Center

ASAP
Army Substance Abuse Program

BH
behavioral health

BSHOP
Division of Behavioral and Social Health Outcomes Practice

DAMIS
Drug and Alcohol Management Information System

DOD
Department of Defense

DoDSER
Department of Defense Suicide Event Report

DVBIC
Defense and Veterans Brain Injury Center

E1–E9
Enlisted rank

ER
emergency room

ICD-9
International Classification of Diseases, Ninth Revision, Clinical Modification

ICD-10
International Classification of Diseases, 10th Revision, Clinical Modification

O1–O8
Officer rank

OEF
Operation Enduring Freedom

OIF
Operation Iraqi Freedom

OND
Operation New Dawn

OTSG
Office of the Surgeon General

PC-PTSD
Primary Care Posttraumatic Stress Disorder

PCL-C
PTSD Checklist - Civilian

PDHA
Post-Deployment Health Assessment

PDHRA
Post-Deployment Health Reassessment

PHA
Periodic Health Assessment

PHQ-2
Patient Health Questionnaire - 2

PTSD
Posttraumatic Stress Disorder

TBI
traumatic brain injury

W1–W5
Warrant Officer rank