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Technical Expert Panel (TEP)

To ensure robust, scientifically relevant work, the TEP guides topic refinement; provides input on key questions and eligibility criteria, advising on substantive issues or possibly overlooked areas of research; assures VA relevance; and provides feedback on work in progress.

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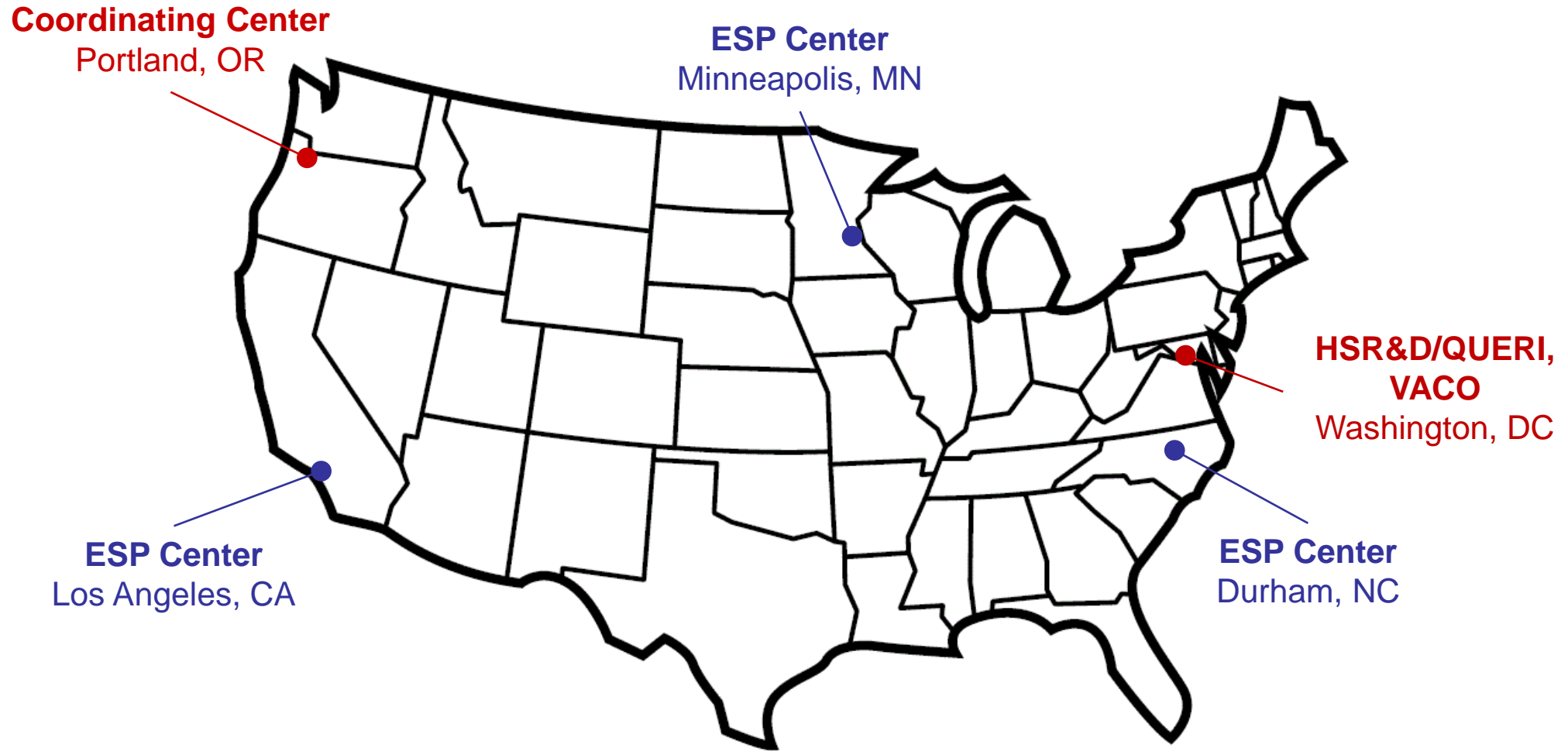
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- Three ESP Centers across the US:
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- ESP Coordinating Center in Portland:
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 - Produces rapid products to inform more urgent policy and program decisions

To ensure responsiveness to decision-maker needs, ESP is governed by a Steering Committee comprised of health system leadership and researchers.

The program solicits nominations for review topics several times a year via the [program website](#).

ESP Center locations



Risk and Protective Factors Across Socioecological Levels of Risk for Suicide: An Evidence Map



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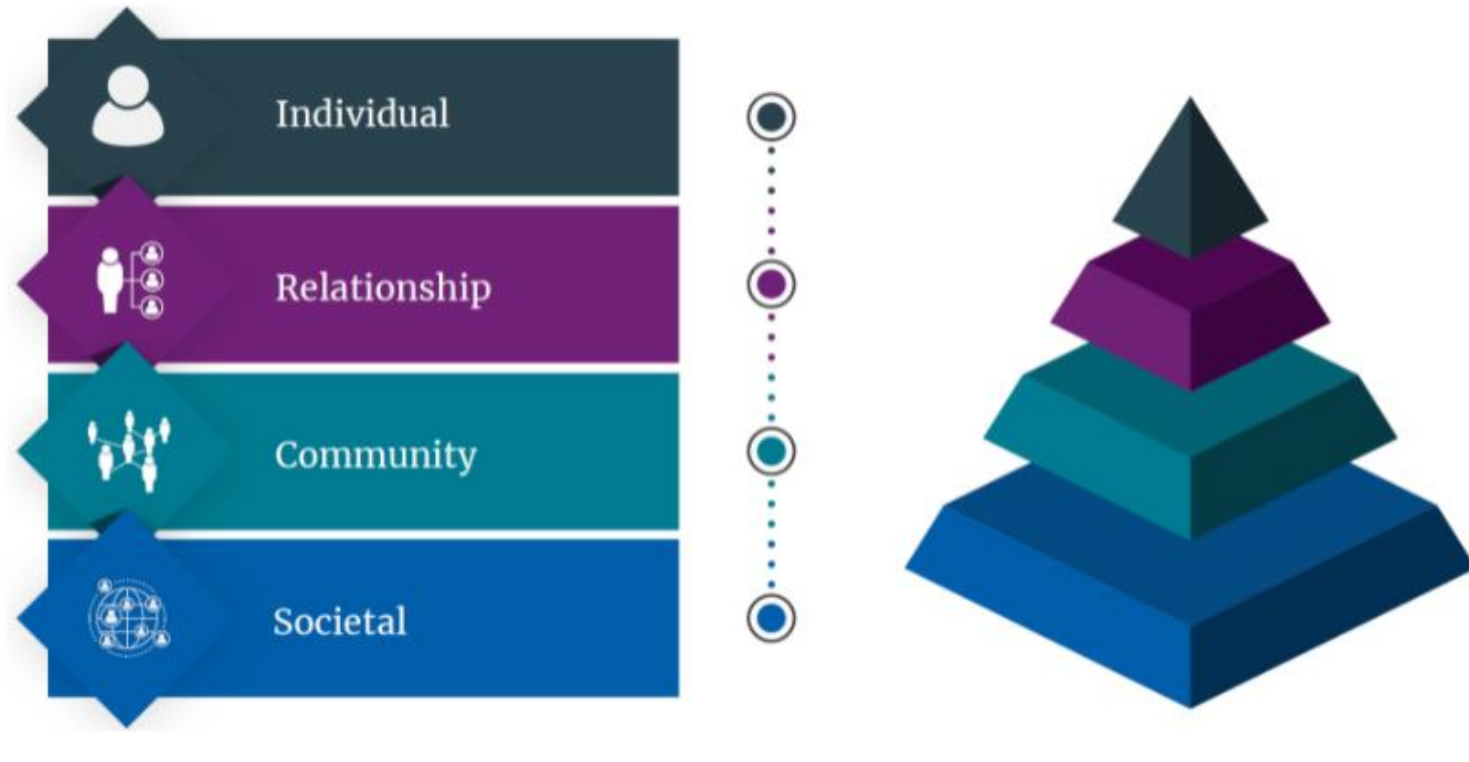
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Full-length report available on ESP website:

<http://www.hsrd.research.va.gov/publications/esp/reports.cfm>

- Suicide remains a critical public health issue
 - Suicide rates increased by 33% between 1999 and 2019 in the United States
 - Variation in rates by sex, race, age, and occupation – including military service
- 13.8% of all suicides in the US in 2018 were among Veterans
 - Veterans Comprise 8% of US general population
 - Veterans are 1.5x more likely to commit suicide than general population
- Multiple Agencies have active initiatives to address suicide prevention
 - WHO
 - US Office of the Surgeon General
 - VA
- National Strategy for Preventing Veteran Suicide 2018 – 2028 Goals
 - Increase surveillance
 - Conduct research to identify at-risk individuals & evaluate additional risk & protective factors

- **CDC Social-Ecological Model:** four tiered framework for organizing risk and protective factors which may then inform prevention strategies



[The Social-Ecological Model: A Framework for Prevention |Violence Prevention|Injury Center|CDC](#)

- CDC Social-Ecological Model: examples of risk factors categorized into each domain

Individual	Relationship
<ul style="list-style-type: none">• Previous suicide attempt• Mental illness, such as depression• Gender• Criminal Problems• Financial Strain• Impulsive or aggressive tendencies• Job problems/unemployment• Legal Problems• Serious illness• Substance use disorder	<ul style="list-style-type: none">• Adverse childhood experiences, such as child abuse and neglect• Bullying• Family history of suicide• Relationship problems such as a break-up, violence, or loss• Sexual violence
Community	Societal
<ul style="list-style-type: none">• Barriers to health care• Cultural and religious beliefs, such as a belief that suicide is a noble resolution of a personal problem• Suicide cluster in a community	<ul style="list-style-type: none">• Economic downturn/depression• Seasonal variation• Stigma associated with mental illness or help-seeking• Easy access to lethal means, such as firearms or medications• Unsafe media portrayals of suicide

Study Characteristics

Risk Factors	Number of Studies (k)
Social-Ecological Individual Level	
Previous suicide attempt/suicide ideation	10
Posttraumatic stress disorder	12
Other mental illness (eg, depression, anxiety, psychiatric conditions)	22
Emotions, such as anger, numbness, or hopelessness	4
Alcohol, tobacco, and/or drug use	17
Physical illness or pain	8
Sleep disorders	4
Cognitive or physical decline in functioning	3

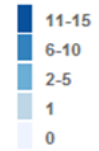
Risk Factors	Number of Studies (k)
Social-Ecological Individual Level	
Sexual minority status	1
Transition from incarceration to civilian life	1
Military occupation	7
Military rank	9
Service connected (service-related disability)	2
Deployment status	14
Service branch	5
Service component	5
Time spent in service	9
Time deployed	3
Time since military separation	4
Military part time vs. full-time	1
Military former vs. current service member	2

Risk Factors	Number of Studies (k)
Social-Ecological Individual Level	
Body mass index	2
Healthcare services use	10
Criminal or legal problems	7
Financial problems	2
Job problems or loss	5
Homelessness or housing instability	4
Life stressors (non-specific)	8
Firearm ownership/use/storage/accessibility	1
Demographics (eg, age, sex, race, education)	22

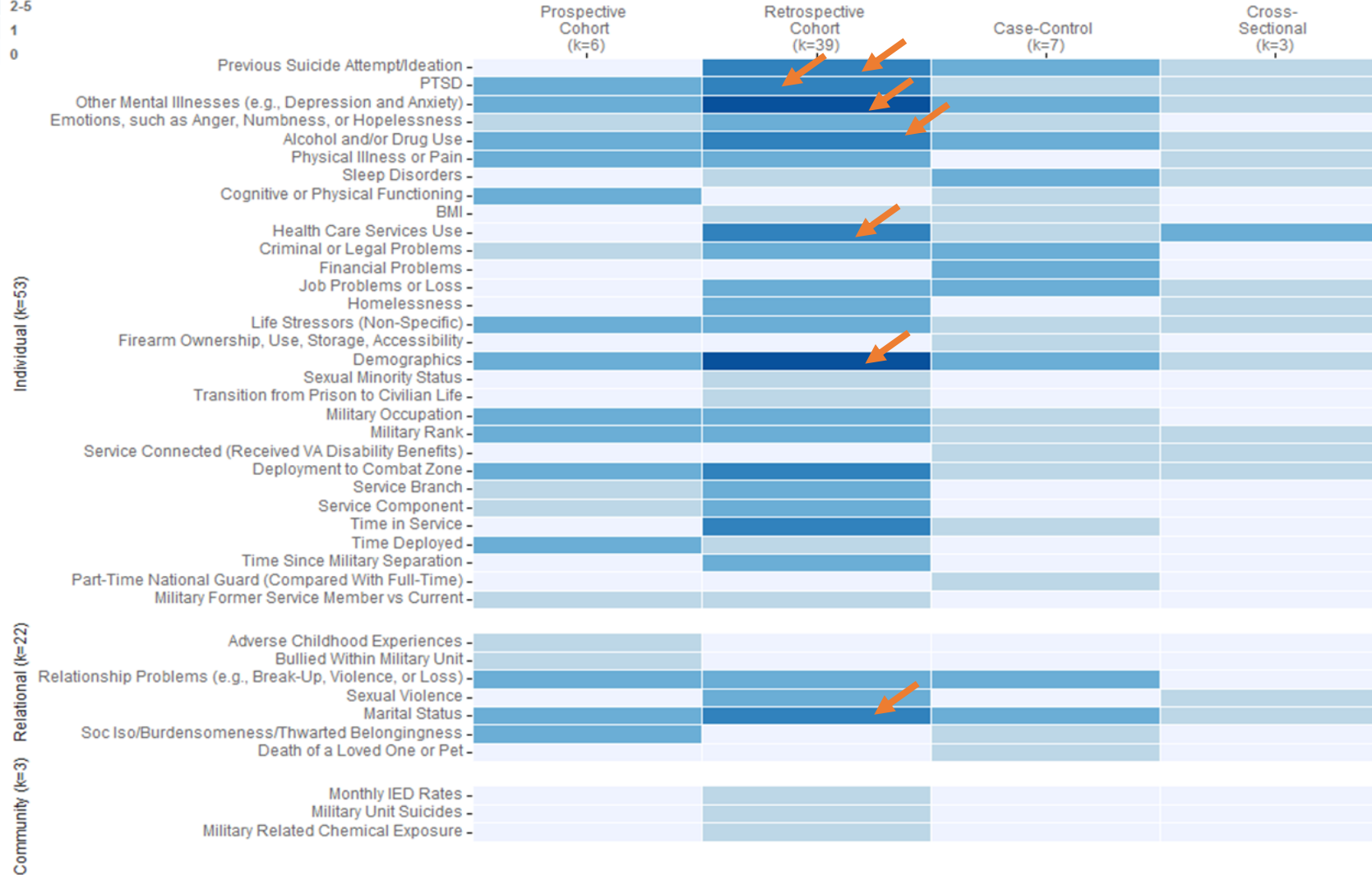
Risk Factors	Number of Studies (k)
Social-Ecological Relational Level	
Adverse childhood experiences	1
Bullying	1
Relationship problems (eg, break-up, violence, loss)	9
Sexual violence	4
Marital status	12
Social isolation/perceived burdensomeness/thwarted belonging	3
Death of a loved one or pet	1

Risk Factors	Number of Studies (k)
Social-Ecological Community Level	
Access to mental health care	0
Monthly IED rates	1
Military unit suicides	1
Military related chemical exposures	1

Low-Moderate ROB Studies



Risk and Protective Factors for Suicides and Attempts



Direction of Effect (Individual Level)

↑=increased risk
 ↓=decreased risk
 ↔=no difference or inconsistent
 Blue=Low risk of bias study
 Orange=Moderate risk of bias study

Risk/Protective Factor		Prospective Cohort (k=6)		Retrospective Cohort (k=39)		Case-Control (k=7)		Cross-Sectional (k=3)	
		Deaths (k=4)	Attempts (k=3)	Deaths (k=28)	Attempts (k=13)	Deaths (k=6)	Attempts (k=3)	Deaths (k=3)	Attempts (k=0)
	Previous suicide attempt/ideation			↑↑↑↑	↑↑↑	↑ ↔↔↔↔	↑↑	↑	
	PTSD	↔↔↔↔		↑↑↑↑ ↓↓↓	↑↑↑		↑	↑	
	Other mental illnesses (eg. depression and anxiety)	↑↑	↔↔	↑↑↑↑↑↑↓	↑↑↑↑↑↑↔	↑↑↑↑	↑↑ ↔↔	↑	

Direction of Effect (Relational Level)

Risk/Protective Factor		Prospective Cohort (k=6)		Retrospective Cohort (k=39)		Case-Control (k=7)		Cross-Sectional (k=3)	
		Deaths (k=4)	Attempts (k=3)	Deaths (k=28)	Attempts (k=13)	Deaths (k=6)	Attempts (k=3)	Deaths (k=3)	Attempts (k=0)
Relational (k=22)	Adverse childhood experiences	↑							
	Bullied within military unit		↑						
	Relationship problems (eg. break-up, violence, or loss)	↑	↔	↑	↑↑	↑↑↑ ↔	↑↑		
	Sexual Violence			↑	↑ ↔			↑	
	Marital status (unmarried)	↔↔		↑↑↑	↑↑ ↔↔↔↔	↔↔↔		↔	
	Social isolation/ perceived burdensomeness/ thwarted belongingness	↑	↔			↔			
	Death of a loved one or pet					↔			

↑=increased risk
↓=decreased risk
↔=no difference or inconsistent
Blue=Low risk of bias study
Orange=Moderate risk of bias study

Direction of Effect (Prospective Cohort Studies)

Risk/ Protective Factor		Author, Publication Year, Population, Sample Size, Cohort Name											
		Bernecker 2019 ⁸ Active Military N: 10,000-99,999 STARRS		Bohnert 2014 ⁷ Veteran N: ≥100,000 VHA		Chu 2020 ⁸ Active Military N: 1,000-9,999 STARRS		LeardMann 2013 ⁹ Veteran and Active Military N: ≥100,000 Millennium Cohort Study		Naifeh 2017 ¹⁰ Active Military N: 10,000-99,999 STARRS		Phillips 2017 ¹¹ Active Military N: ≥100,000 Recruit Assess Program	
		SD	SA	SD	SA	SD	SA	SD	SA	SD	SA	SD	SA
Individual	PTSD							↔				↔	
	Other mental illnesses (eg, anxiety, depression)		↔					↑				↑	
	Hopelessness						↔						
	Alcohol, tobacco, or other drug use			↑				↑				↑	
	Physical illness or pain		↔									↑	
	Cognitive or physical decline in functioning							↔		↑	↑		
	Criminal or legal problems		↑										
	Life stressors (non-specific)		↔					↔					
	Military rank (enlisted vs officer)		↔					↔					
	Service branch (Army/Marine)							↔					
	Service component (active vs reserves)							↔					
	Longer time or larger proportion of time deployed							↓				↑	
	Military former vs current service member							↔					
Relational	Adverse childhood experiences											↑	
	Bullied within military unit		↑										
	Relationship problems		↔									↑	
	Marital status ^c							↔				↔	
	Social isolation/ perceived burdensomeness/ thwarted belongingness							↔				↑	

6 studies identified as low or moderate risk of bias with a prospective cohort design were summarized separately.

↑=increased risk
↓=decreased risk
↔=no difference or inconsistent
Blue=Low risk of bias study
Orange=Moderate risk of bias study



- All were cohort studies, predominantly retrospective
- The majority had study populations greater than 100,000 people
- All made use of secondary administrative datasets
- For those that investigated suicide attempts, researchers paid careful attention to temporality of risk factors and outcome
- Variables to control for potential confounders were included in the analyses

Military Employment Definition Variation

Griffith, 2017	LeardMann, 2013	Phillips, 2017	Trofimovich, 2013	Ursano, 2017a/2017b
<p>Combat military occupation (yes/no)</p>	<ul style="list-style-type: none"> • Combat specialist • Health care • Functional support, service and supply • Mechanical or electrical repair • Other 	<ul style="list-style-type: none"> • Occupational Grade E01 – E03 • Occupational Grade E04 – E07 	<ul style="list-style-type: none"> • Infantry, gun crews, and seamanship specialists • Functional support and administration • Service and supply handlers • Communications and intelligence specialists • Electronic equipment repairers • Health Care Specialists • Other Technical and allied specialists • Craftworkers • Tactical operations offices • Health care officers • Groups with < 25 	<ul style="list-style-type: none"> • Combat arms • Special forces • Combat Medic • Other

Model Adjustment Variation Example

Barry, 2018	Barth, 2016	Bishop, 2020	Blow, 2012	Bullman, 2019
<ul style="list-style-type: none">• Homelessness• Sum of 13 med. conditions• TBI• Any psychiatric disorder	<ul style="list-style-type: none">• Race• Branch of Service• Type of unit• age	<ul style="list-style-type: none">• Sleep-related breathing disorders• Insomnia• Nightmares• PTSD• Depression• Anxiety• Schizophrenia• Bipolar disorder• SUD• Medical comorbidity• Obesity• Number sleep medicine visits 180 days prior to the index date	<ul style="list-style-type: none">• Age	<ul style="list-style-type: none">• Age at entry• Race• sex

- Quality and quantity of information in Veterans and active military is limited
- Greatest amount of information is related to individual risk factors
- Individual-level factors, are consistently predictive of, or associated with suicide and attempts:
 - history of prior suicide ideation or attempts
 - mental illness (other than posttraumatic stress disorder)
 - substance, alcohol or tobacco use
- Community-level, relational-level, and other individual-level factors were reported in only one or two studies

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Full-length report and cyberseminar available on ESP website:

<http://www.hsrd.research.va.gov/publications/esp/>