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Suicide & Suicidality:

Epidemiological Findings in Army Suicides in the United States (STARRS)

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Center for the Study of Traumatic Stress

Uniformed Services University
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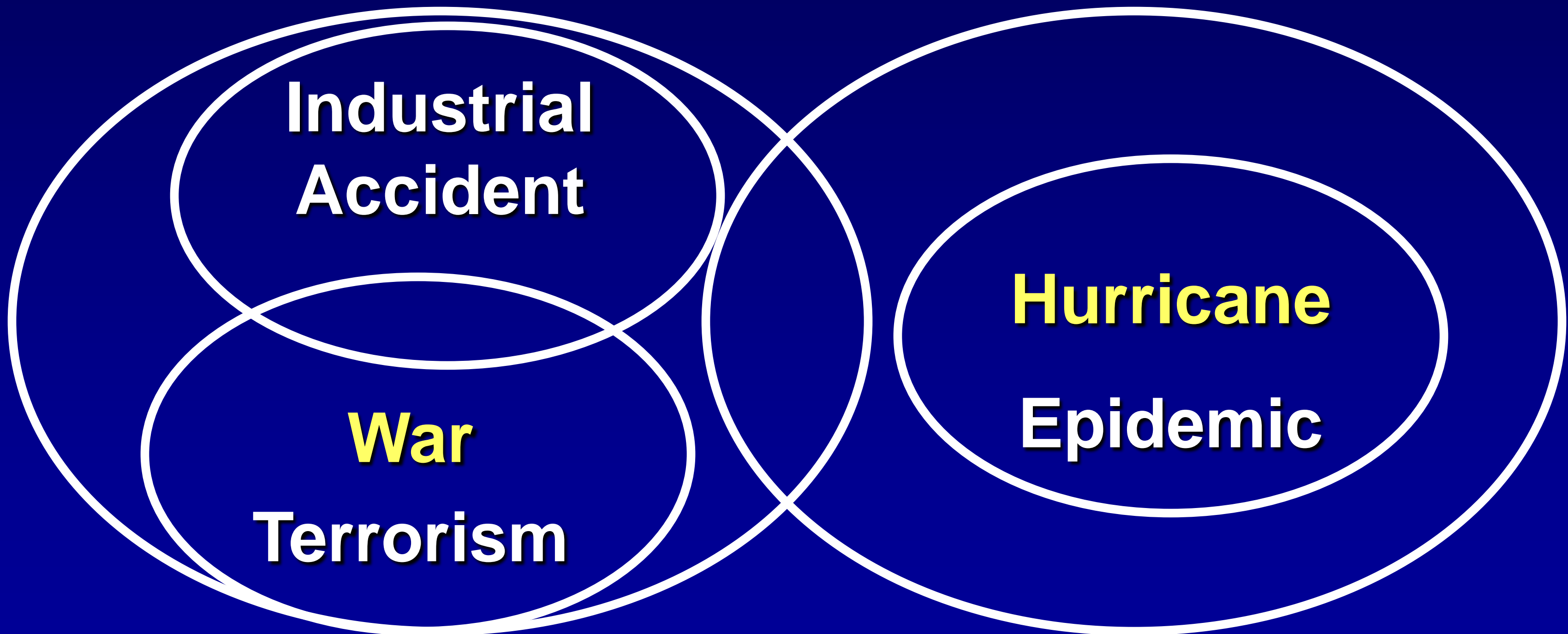
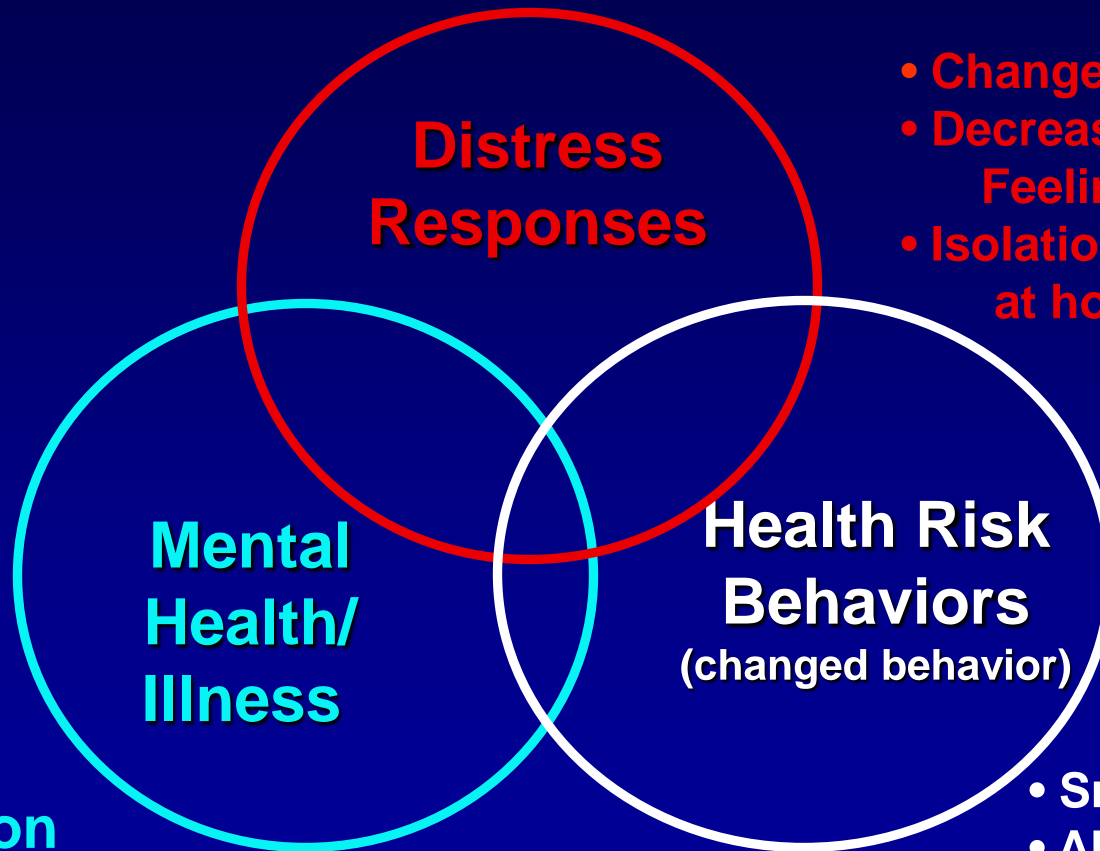
Trauma and Disasters



Psychiatric Responses to Trauma



- Change in Sleep
- Decrease in Feeling Safe
- Isolation (staying at home)

- Anxiety
- PTSD
- Depression
- Resilience

- Smoking
- Alcohol
- Over dedication
- Change in travel
- Separation anxiety

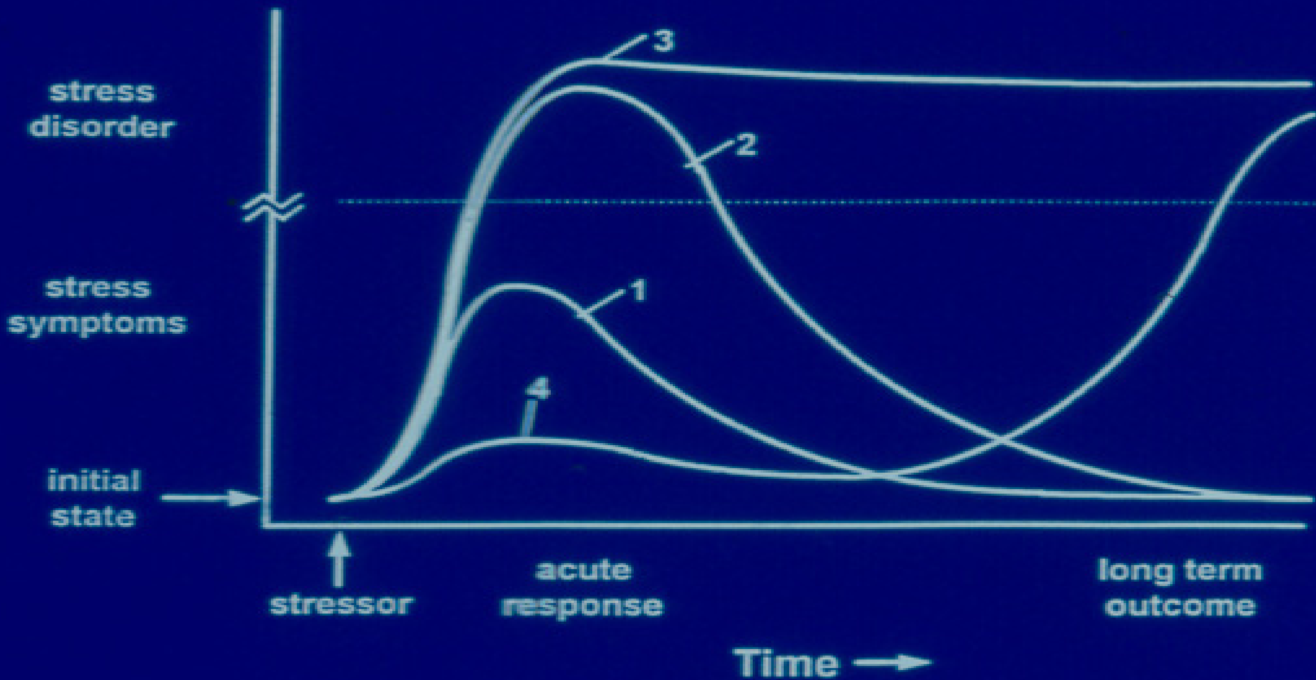


Figure 3. Traumatic stress responses over time. Line 1 represents acute stress symptoms that resolve with time; 2 depicts ASD that also resolves; 3 is ASD that progresses to PTSD; and 4 shows delayed onset PTSD.

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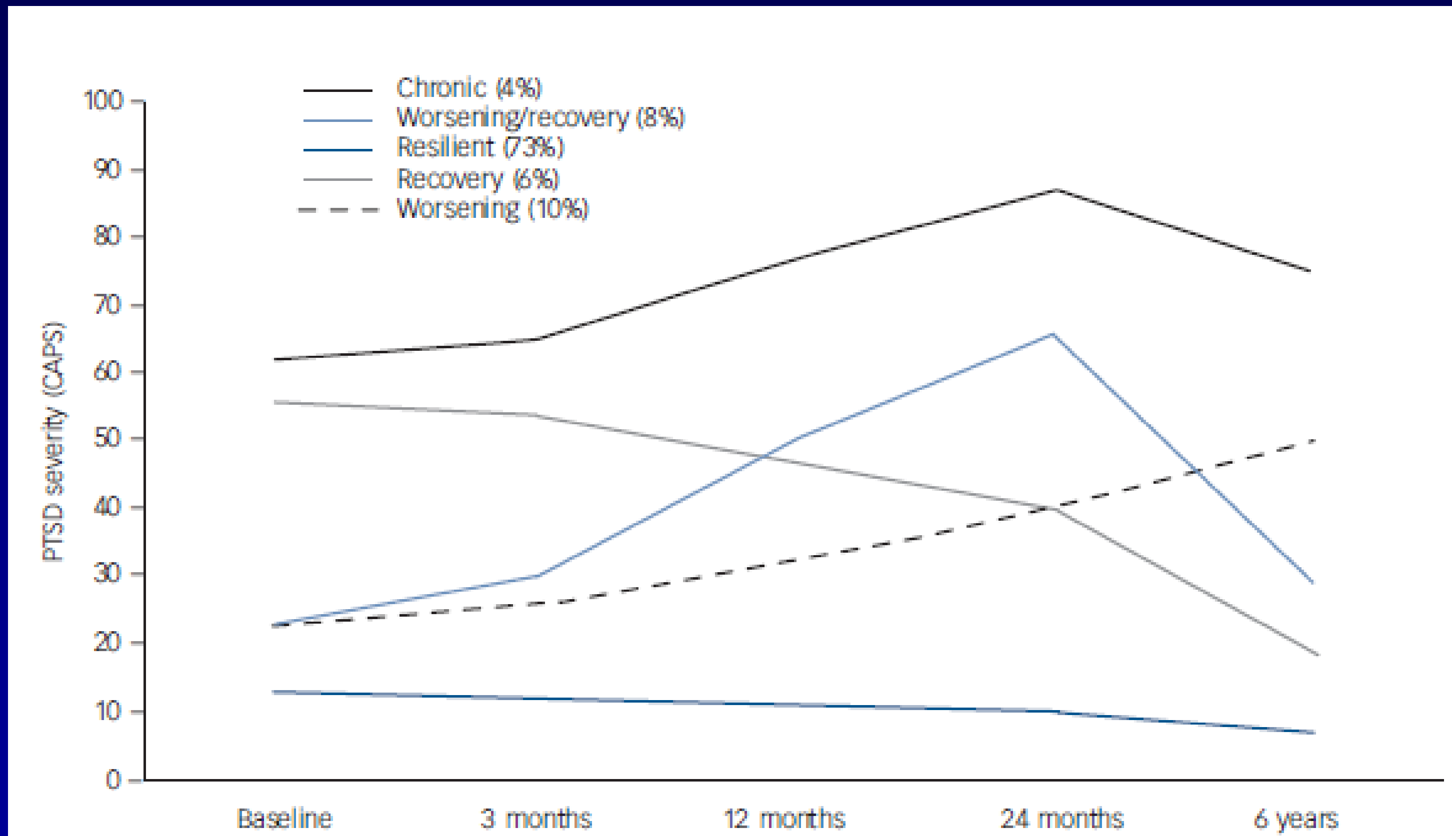
Trajectories of PTSD After Injury

N=1084 hospitalized >24hrs



Bryant et al BJP 2015

Center for the Study of Traumatic Stress

DSM 5 Key Points
Chapters

- Anxiety Disorders
- Obsessive Compulsive and Related Disorders
- Trauma and Stressor-Related Disorders
- Dissociative Disorders

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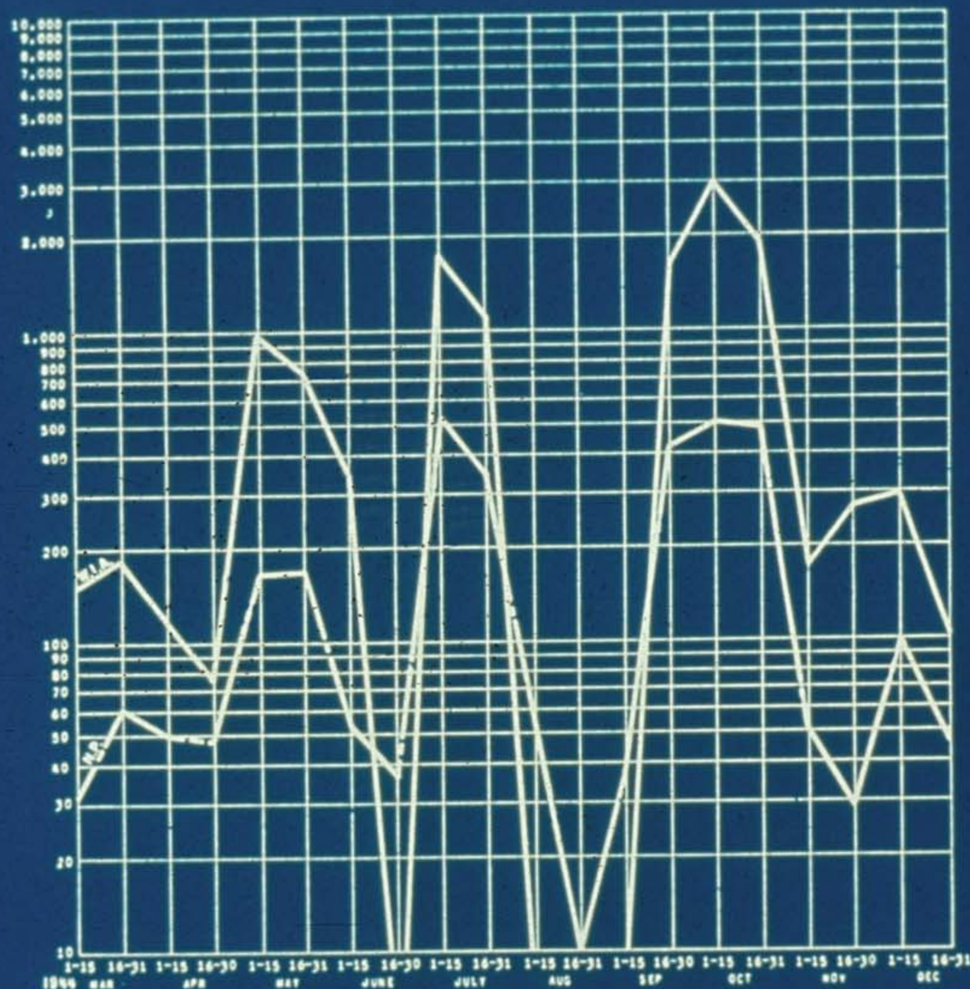
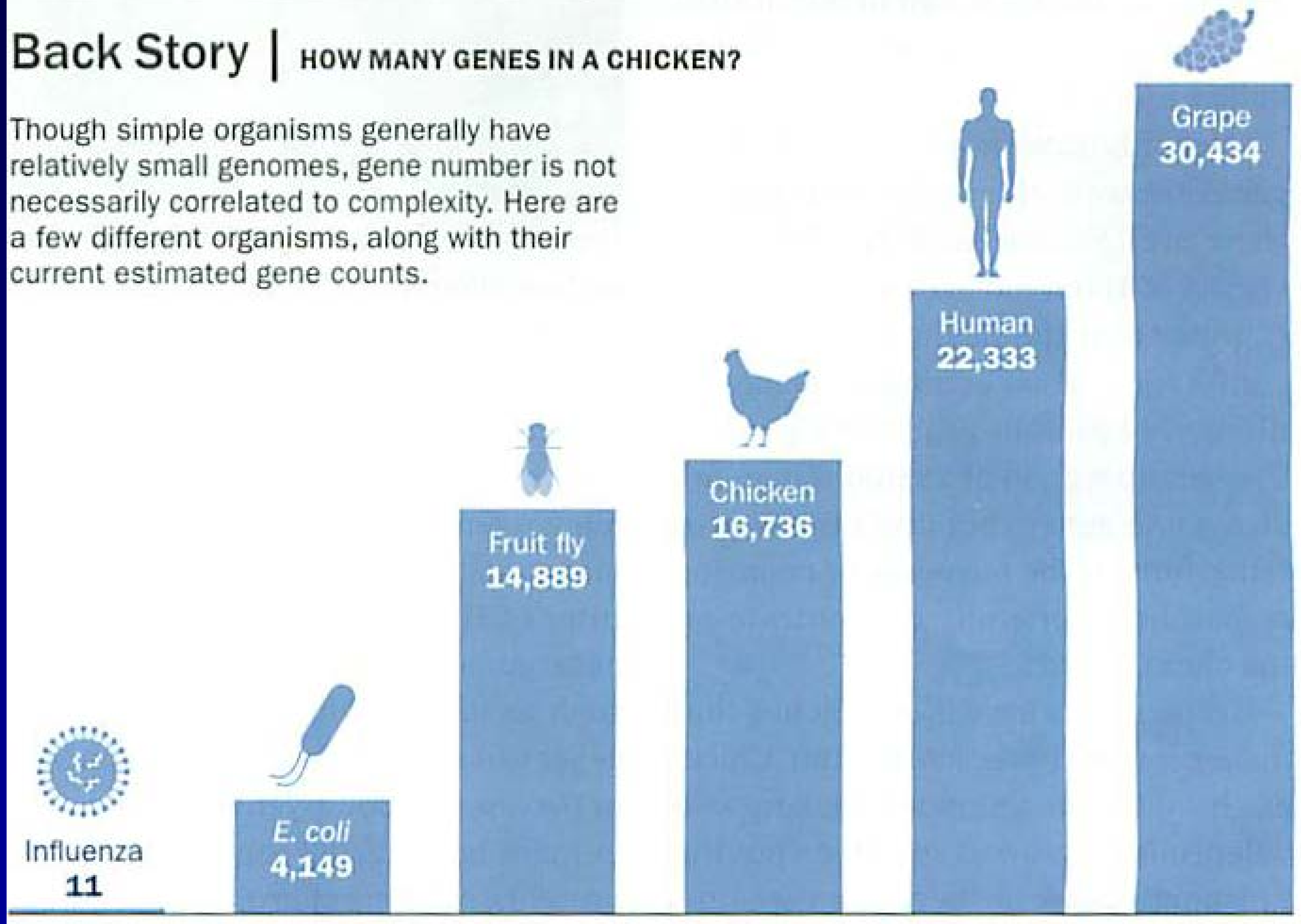


U.S. Army Child Neglect Rates Age 1-2 year olds, 1989-2004

McCarroll J et al CSTS USU, 2005



Pertea & Salzberg, Science 2010

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Barriers to Care and Mental Health Risk*

	Screen pos	Screen neg
I would be seen as weak	65	31
My unit leadership might treat me differently	63	33
Members of my unit might have less confidence in me	59	31
My leaders would blame me for the problem	51	20
It would harm my career	50	24

0 10 20 30 40 50 60 70 80

Agree or Strongly Agree, %

*Participants were asked to "rate each of the possible concerns that might affect your decision to receive mental health counseling or services if you ever had a problem." Hoge CW, et al. *N Engl J Med*. 2004;351:13-22.

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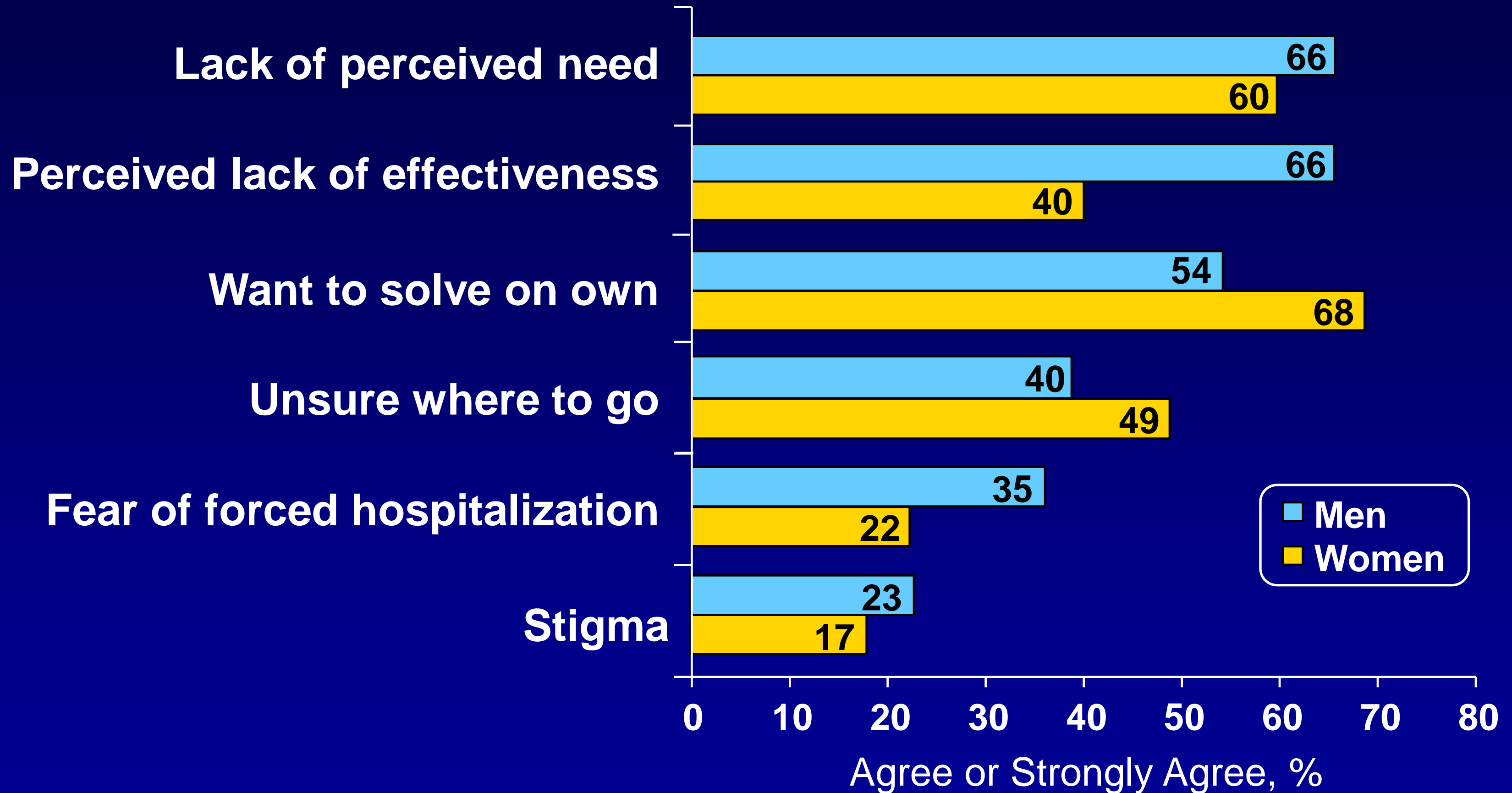
Is Stigma Unique to Military?



Maybe Less Than One Might Think…!

Kessler RC. *J Clin Psychiatry.* 2000;61(suppl 5):4-12.

CSTS

Center for the Study of Traumatic Stress

The Past…

- “One type of symptomatic behavior associated with depressions, either neurotic or psychotic in type, is suicide. Between July, 1940, and June 1946, there were 2,214 suicides in the Army, 300 of which occurred among officers.[1] ….these figures represent a sharp drop during the war period from the peacetime suicide rate in the Army. [2] There was also a sharp drop in the number of suicides in the Army in World War “

Menninger, K. *Psychiatry in a Troubled World*. Pp. 166-167, 1948

And we think we have answers…

- "Suicides have always been of special interest to psychiatrists because they represent a symptom of serious maladjustment. It is not surprising that the rate would fall in the Army during the war. There are superficial though valid explanations that the individual makes a major change in his job and relationships, has a new outlook, enlists in a mission of great social importance and distinctions, and becomes identified with a group of like-minded public servants. It is possible that better psychiatric screening and better psychiatric treatment facilities were responsible in some degree for the lowered rate. Probably more important, the war gave many opportunities for the direct expression of aggressive."
-

Menninger, K. *Psychiatry in a Troubled World*. Pp. 166-167, 1948

Sobering Statistics

Suicide rates among active-duty military, per 100,000

25
20
15
10
5
0

2001 '02 '03 '04 '05 '06 '07 '08 '09 '10

Army 22
Marines 17.2
Air Force 15.5
Navy 11.1

Note: 2011 and later figures haven't yet been officially released

Source: Department of Defense, Suicide Event Report

The Wall Street Journal

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Rates for leading causes of total unintentional and intentional injury mortality in the US (2000-2009)

Rockett et al., 2012

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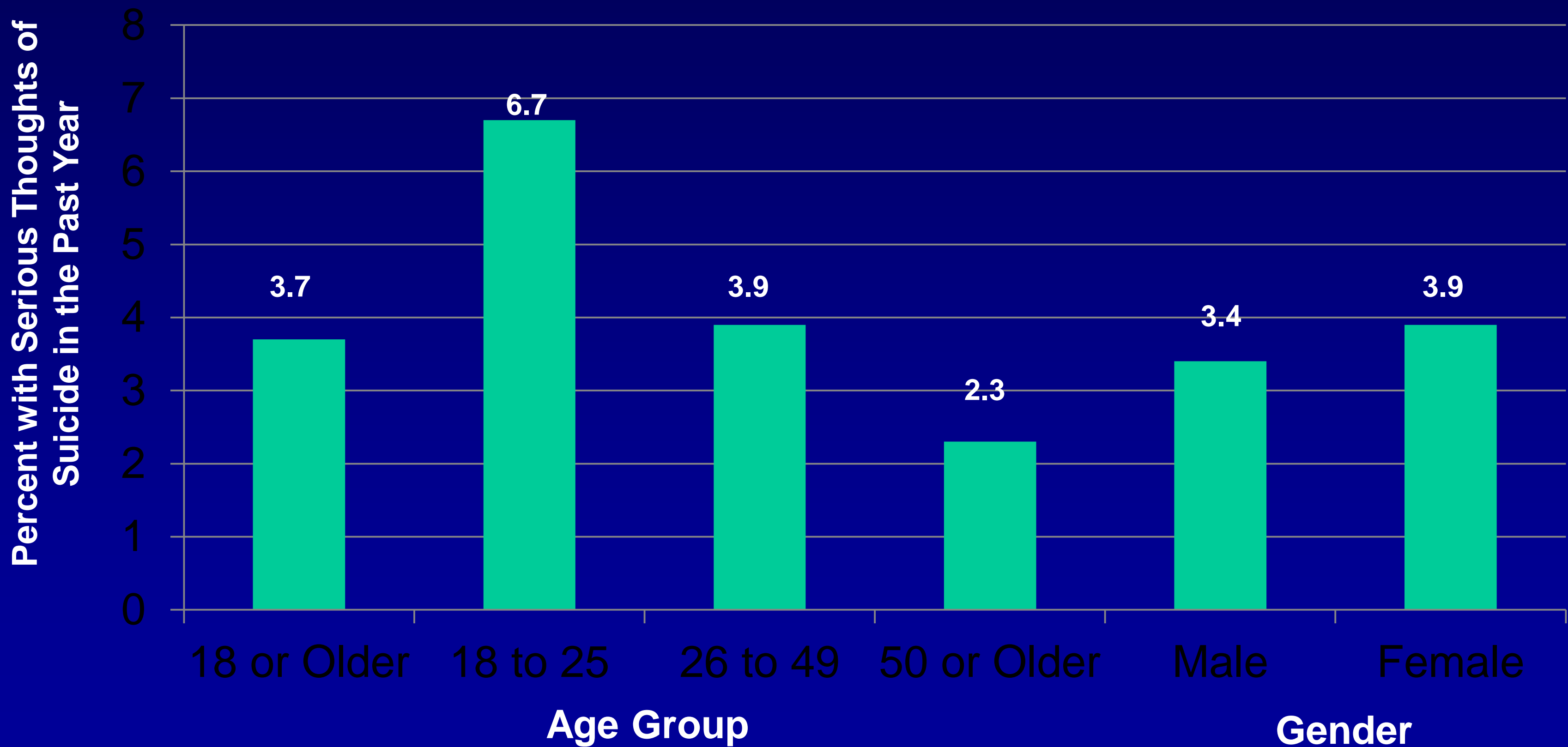
Suicide
State of Knowledge and Need

"Suicide is among the leading causes of death and disease burden around the world. Although there have been significant advances in suicide research as well as increases in the treatment of suicidal people, the rate of suicidal behaviors has not changed as a result"

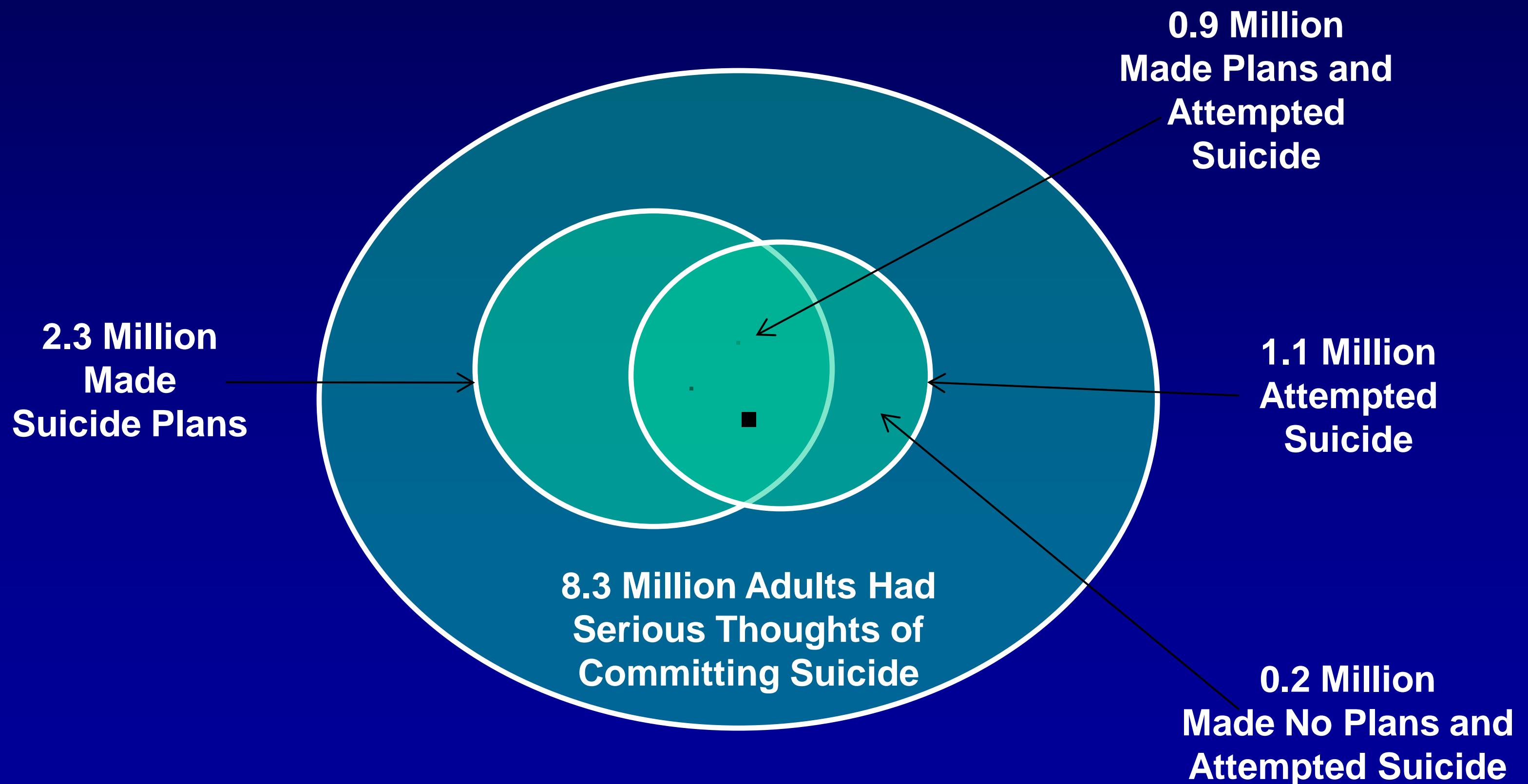
Nock M, et al WHO PLoS 2009

Suicidal Thoughts in the Past Year among Adults Aged 18 or Older, by Age & Gender: 2008



(SAMHSA, 2008)

Suicidal Thoughts and Behavior in the Past Year among Adults Aged 18 or Older: 2008



(SAMHSA, 2008)

Suicide Ideation

WHO Study: 108,664 respondents from 21 countries

A wide range of mental disorders increased the odds of experiencing suicide ideation.

Nock M, et al WHO PLoS 2009

And who will attempt…

After controlling for psychiatric comorbidity, only disorders characterized by anxiety and poor impulse-control predict which people with suicide ideation act on such thoughts

…… but less than 10% associated these conditions

Nock M, et al WHO PLoS 2009

NCS-R (N=9282 US adults)

- Depression predicts suicide ideation, but not suicide plans or attempts among those with ideation.

- Instead, disorders characterized by severe anxiety/agitation (for example, post-traumatic stress disorder) and poor impulse control (for example, conduct disorder, substance use disorders) predict which suicide ideators go on to make a plan or attempt.

Nock M, et al NCM-R Molec Psych 2009

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Army Study to Assess Risk and Resilience in Servicemembers

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Approach to Producing Actionable Findings

Concentration of Risk

- Who (e.g., military occupation, rank, demographics, mental disorders).
- When (e.g., time in service, deployment status, time pre/post deployment).
- Where (e.g., installations, training, combat zones).

Risk variables

- Identify risk sub-groups (who, when, where) so Army can consider programs to target for intervention.

Neurocognitive

- Use neurocognitive tests to identify those at risk and possible neurocognitive functioning associations with suicidal behavior.

Biomarkers

- Identify biomarkers for those at risk and determine possible neurobiologic mechanisms.

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Number of Soldiers in Each Component Study

1	Historical Admin. Data Study (HADS)	• >1.6 million active duty Soldiers from 2004 to 2009 • Integrated >1.1 billion de-identified records (from 38 Army/DoD sources)
2	New Soldier Study (NSS)	• 55,814 Soldiers participated in survey (at 3 sites) • 34,986 Soldiers provided a blood sample
3a	All Army Study (AAS)	• 32,272 Soldiers participated in survey (at >50 sites CONUS & OCONUS)
3b	AAS In-Theater (in Kuwait)	• "Outbound" & "inbound" Soldiers during R&R processing in Kuwait • 8,938 Soldiers participated in survey
4	Pre/Post Deployment Study (PPDS)	Longitudinal study with 4 waves of data collection (4 time-points) at 3 sites • 1 mo pre-deployment (T0): 9,488 Soldiers participated; 8,090 gave blood • 1 mo post-deployment (T1): 10,116 Soldiers participated; 8,822 gave blood • 3 mos post-deployment (T2): 9,193 Soldiers participated • 9 mos post-deployment (T3): 6,977 Soldiers participated
5	SHOS-A (case-control)	• Interviewed in-patient suicide attempters (cases) at 5 sites & controls • 561 Soldiers enrolled (186 cases, 375 controls) & 296 blood samples
6	SHOS-B (case-control)	• Interviewed Army supervisors & next-of-kin of suicide cases & controls • 603 interviews completed for 150 cases & 276 controls
7	Criminal Investigation Division Study (CID)	• Systematic review & abstraction of Army death reports from 2005 to 2009 • Reviewed, abstracted, thematically-coded 1,311 CID case files
8	Clinical Reappraisal Study (CRS)	• To calibrate clinical survey measures used in AAS and NSS • Conducted clinical interviews with 460 Soldiers

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Data Collection Summary: Soldiers, Surveys, Biosamples

For Studies with Data Collection from Soldiers (HADS, CID, CRS not included)

Studies		Number of Soldiers Who Participated*	Number of Surveys Collected	Number of Biosamples: Soldiers Who Provided Blood	Number of Biosamples: Blood Tubes Collected	Number of Biosamples: Vials in Frozen Storage
Cohort Studies						
NSS (2 survey sessions/Soldier)		55,814	111,628	34,986	34,986	37,477
AAS (including Guard & Reserve)		32,272	32,272	-	-	-
AAS in-theater (Kuwait)		8,938	8,938	-	-	-
PPDS	Pre-deployment Time 0	10,116	9,488	8,090	23,791	53,966
	Post-deployment Time 1		10,116	8,822	17,542	55,136
	Post-deployment Time 2		9,193	-	-	-
	Post-deployment Time 3		6,977	-	-	-
Total Participants in Cohort Studies		107,140				
Case-Control Studies						
SHOS-A		186	756	296	592	873
SHOS-B		150	603	-	-	-
Total for All Studies		107,476	189,971	52,194	76,911	147,452

*Participation is defined as starting a survey. For SHOS-A and SHOS-B, number of participants includes only cases (because controls are already counted in AAS) but number of surveys includes cases and controls. For SHOS-B cases (deceased) and controls (living), surveys were administered to Army supervisors and/or next-of-kin.

NOTE: NSS blood collection started 6 months after data collection began and about 80% of Soldiers who were asked gave blood.

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Uniqueness of Project

- **Broad:**

  Examined outcomes across the range of suicide behaviors and precursors (completed suicide, attempts, ideation, accidents, and psychological health)
- **Complex:**

  Suicide behavior is a function of multiple, interrelated risk & protective factors including individual psychological health, neurobiology, cognition & group/unit function, context & adversities
- **Rich:**

  Data and biospecimens collected directly from Soldiers (both longitudinal & cross-sectional) linked with extensive Army administrative data
- **Groundbreaking:**

  Emphasize developing practical, actionable information to guide development & refinement of suicide risk reduction efforts in and beyond the Army
- **Rapid Dissemination:**

  Findings/actions communicated to Senior Army leadership (SA, CSA, VCSA and DUSA) in quarterly in-person briefings

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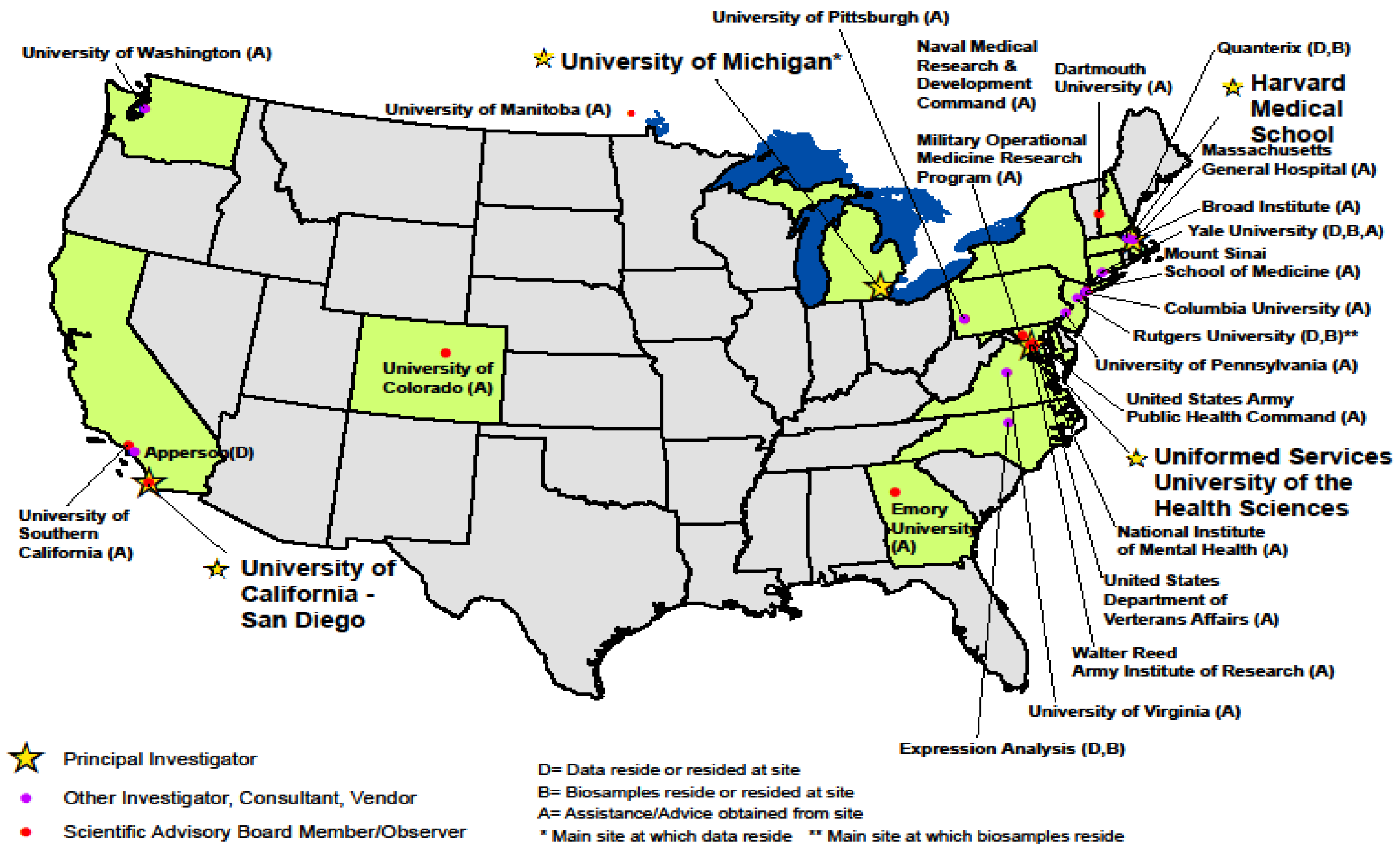
Locations of All Collaborators

Principal Investigators, Other Investigators, Scientific Advisory Board Members, Labs & Vendors



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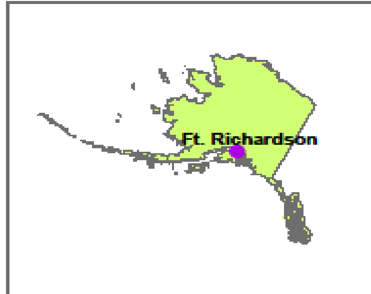
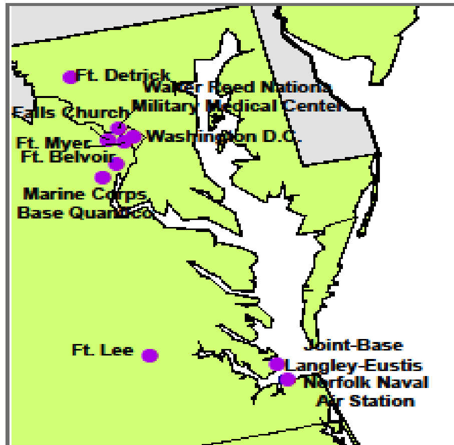
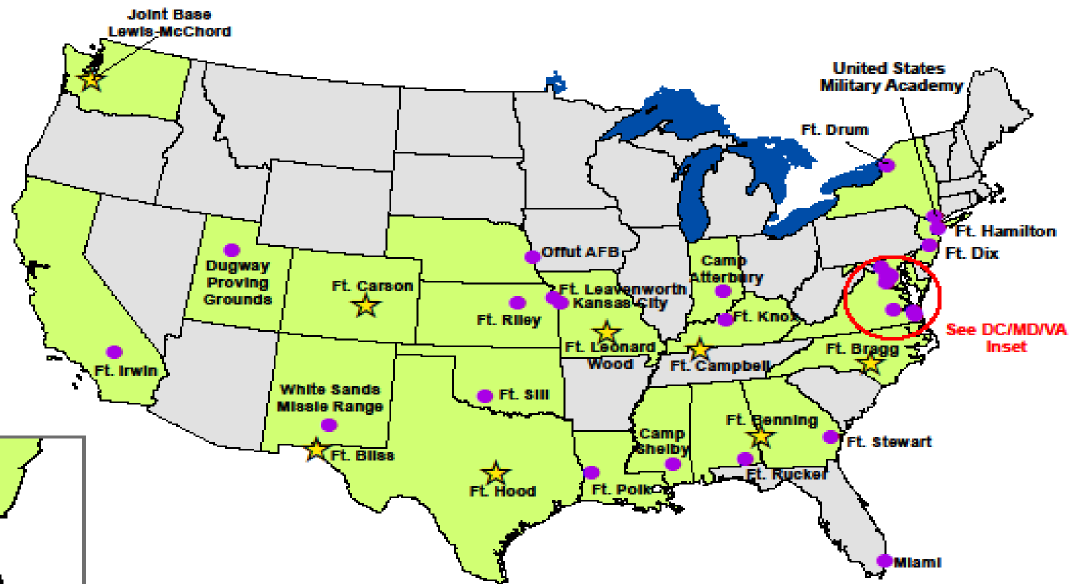
AAS Data Collection Locations

Alaska Inset

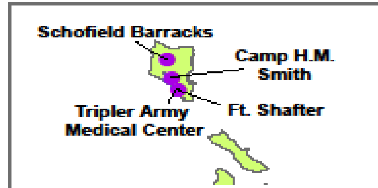


DC/MD/VA Inset





Hawaii Inset



● Paper and Pencil Interviewing Site
☆ Computer-Assisted Interviewing Site

OCONUS Paper and Pencil Interviewing Sites

- Supreme Headquarters Allied Powers Europe - Belgium
- US Army Garrison Ansbach - Germany
- US Army Garrison Grafenwoehr - Germany
- US Army Garrison Wiesbaden - Germany
- US Army Medical Activity - Germany
- Camp Ederle - Italy
- Ali Al Salen Air Base (In-theater) - Kuwait
- Camp Arifjan - Kuwait
- Camp Casey - South Korea
- Camp Humphreys - South Korea

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Selected Findings

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U.S. Army (AAS Q2–4 2011)

- 13.9% reported lifetime suicidal ideation
- 5.3% reported lifetime suicide plans
- 2.4% reported lifetime suicide attempts

Nock et al. (2014). *JAMA Psychiatry*

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U.S. Army (AAS Q2–4 2011)

- Among the 13.9% of Soldiers who reported lifetime suicide ideation:
  - 38.5% of ideators had developed suicide plans.
  - 17.1% of ideators had made a suicide attempt.
  - 34.4% of ideators with plans had made suicide attempts.
  - Only 6.3% of ideators *without* plans had made attempts.

- Analysis of age-at-onset indicated the importance of the past year:
  - Within 1 year of the onset of suicide ideation:
    - 62.4% of transitions from ideation to plans occurred.
    - 58.3% of transitions from ideation to attempts occurred.
  - Within 1 year of the onset of suicide plans:
    - 63.3% of transitions from plans to attempts occurred.

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Nock et al. (2014). *JAMA Psychiatry*

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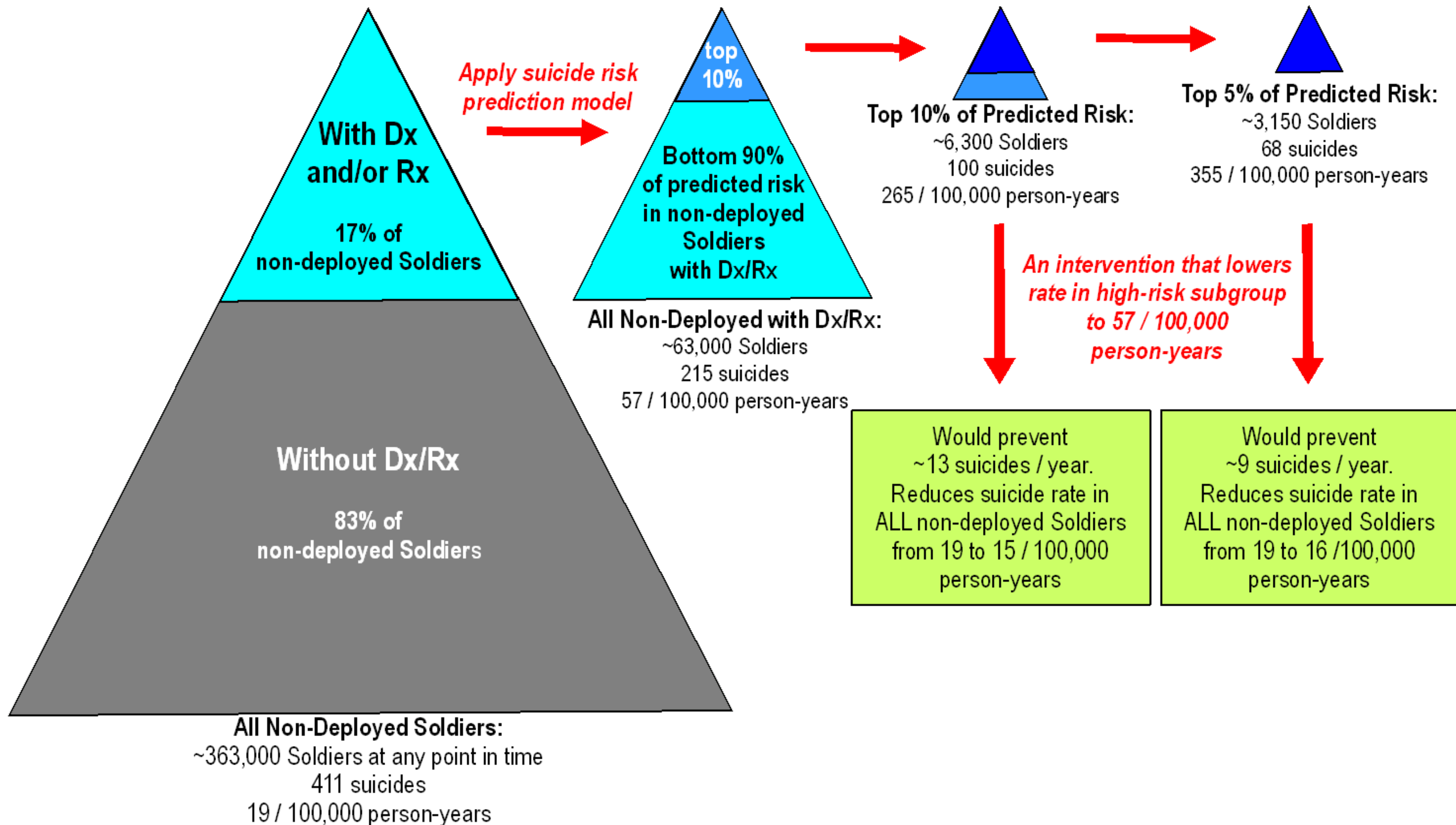
Concentration of Risk



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New U.S. Army Soldiers (NSS 2011-2012)

- 38,237 survey respondents
- Pre-enlistment prevalence estimates:
  - 14.1% reported lifetime suicidal ideation
  - 2.3% reported lifetime suicide plans
  - 1.9% reported lifetime suicide attempts

Ursano et al. (2015). *Depression and Anxiety*

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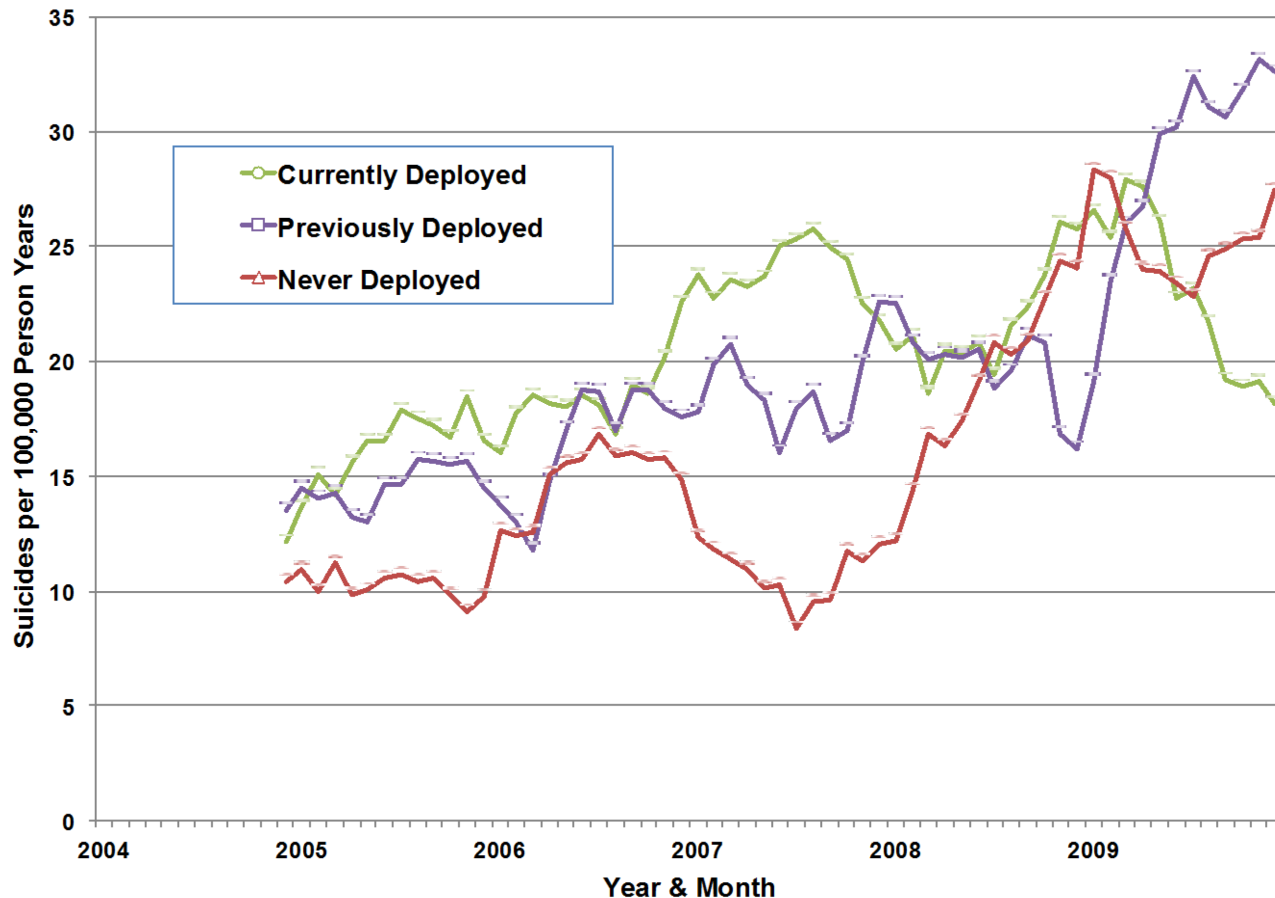
U.S. Army Suicide Deaths (HADS 2004-2009)

Regular Army suicide deaths per 100,000 person-years of Active duty Army service (12-month moving average)



Schoenbaum et al. (2014). *JAMA Psychiatry*

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Suicide Deaths by Time in Service & Deployment Status (HADS 2004-2009)

- The mean suicide rate for all soldiers, enlisted and officers: 18.5 per 100,000 person-years.
- 90.9% of Regular Army suicides were completed by enlisted soldiers.

Table 1. Suicide Rates among Enlisted Soldiers in the HADS.

	Deployment Status			
	Never Deployed	Currently Deployed	Previously Deployed	Total
Time in Service				
First 4 Years	18.4	31.3	29.4	23.6
More than 4 Years	12.1	13.1	20.8	16.8
Total	16.3	21.8	23.1	20.1

- Currently and previously deployed enlisted soldiers in their first 4 years of service had rates meaningfully higher than the mean suicide rate for all soldiers (Table 1).

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Gilman et al. (2014). *Psychological Medicine*

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Additional Findings on Suicide (HADS 2004–2009)

- Suicide risk increased for those never, currently, & previously deployed.
- Currently & previously deployed had greater risk than never deployed.

- Suicide risk lower for females than males (as with civilians), but this difference narrowed substantially during deployment.
- Suicide risk increased for those demoted in past 2 years.

- Factors NOT associated with increased suicide risk:
  - Accession waivers in any category (e.g., medical, substance use, conduct).
  - Length of time since return from most recent deployment.
  - Total number of deployments.
  - Interval between 2 most recent deployments (dwell time).

Schoenbaum et al. (2014). *JAMA Psychiatry*
Gilman et al. (2014). *Psychological Medicine*

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Suicide Attempts (HADS 2004-2009)

- **98.6% of all suicide attempt cases during 2004-2009 were enlisted soldiers.**
  - **Overall enlisted rate: 377 per 100,000 person-years.**
- **Suicide attempt risk was higher for females than males (as with civilians).**
- **After adjusting for socio-demographic and service-related variables, risk of suicide attempt was highest for enlisted soldiers who were:**
  - **In their first 2 years of service.**
  - **Never or previously deployed.**
  - **Recently diagnosed with a mental disorder (Table 2).**

Table 2. Multivariate Associations with Suicide Attempts among Enlisted Soldiers in the HADS.[1]

	OR	(95% CI)	Standardized Risk (per 100,000 Person-Years)
I. Time in Service			
1–2 Years	2.4	(2.2–2.6)*	585.6
3–4 Years	1.5	(1.4–1.6)*	369.7
5–10 Years	1.0	–	245.1
> 10 Years	0.5	(0.4–0.5)*	106.3
X^2_3	589.3*		
II. Deployment Status			
Never Deployed	2.8	(2.6–3.0)*	443.9
Currently Deployed	1.0	–	165.7
Previously Deployed	2.6	(2.4–2.8)*	423.8
X^2_2	839.3*		
III. Time Since Most Recent Mental Health Diagnosis			
No Diagnosis	1.0	–	191.0
1 Month	18.2	(17.4–19.1)*	3,490.7
2–3 Months	5.8	(5.4–6.3)*	1,127.7
4–12 Months	2.9	(2.7–3.1)*	552.6
≥ 13 Months	1.4	(1.3–1.6)*	276.4
X^2_4	15,255.6*		

[1]Ursano et al. (2015). *JAMA Psychiatry*

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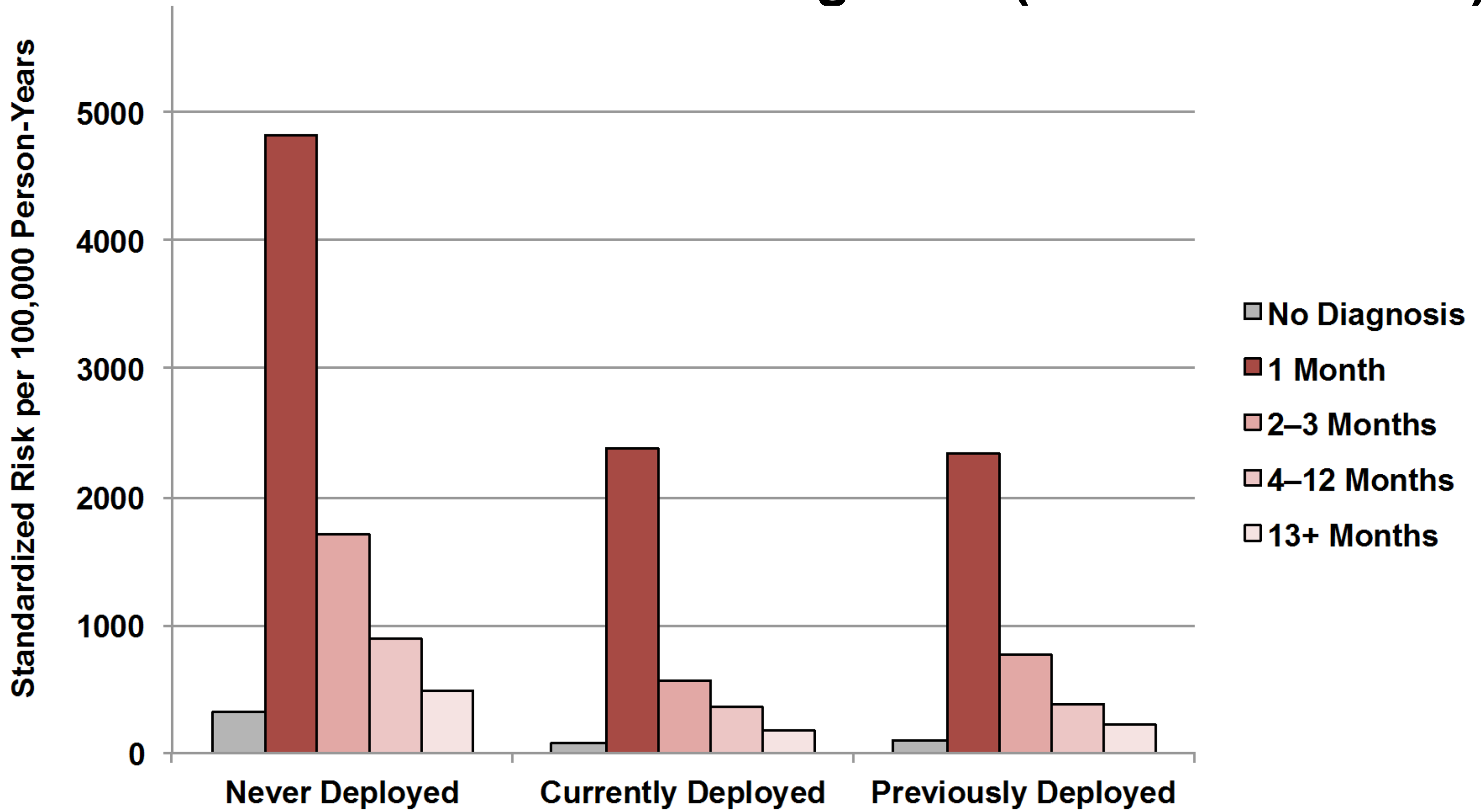
Suicide Attempts among Enlisted Soldiers by Deployment Status & Time Since Most Recent Mental Health Diagnosis (HADS 2004-2009)



Ursano et al. (2016). *JAMA Psychiatry*

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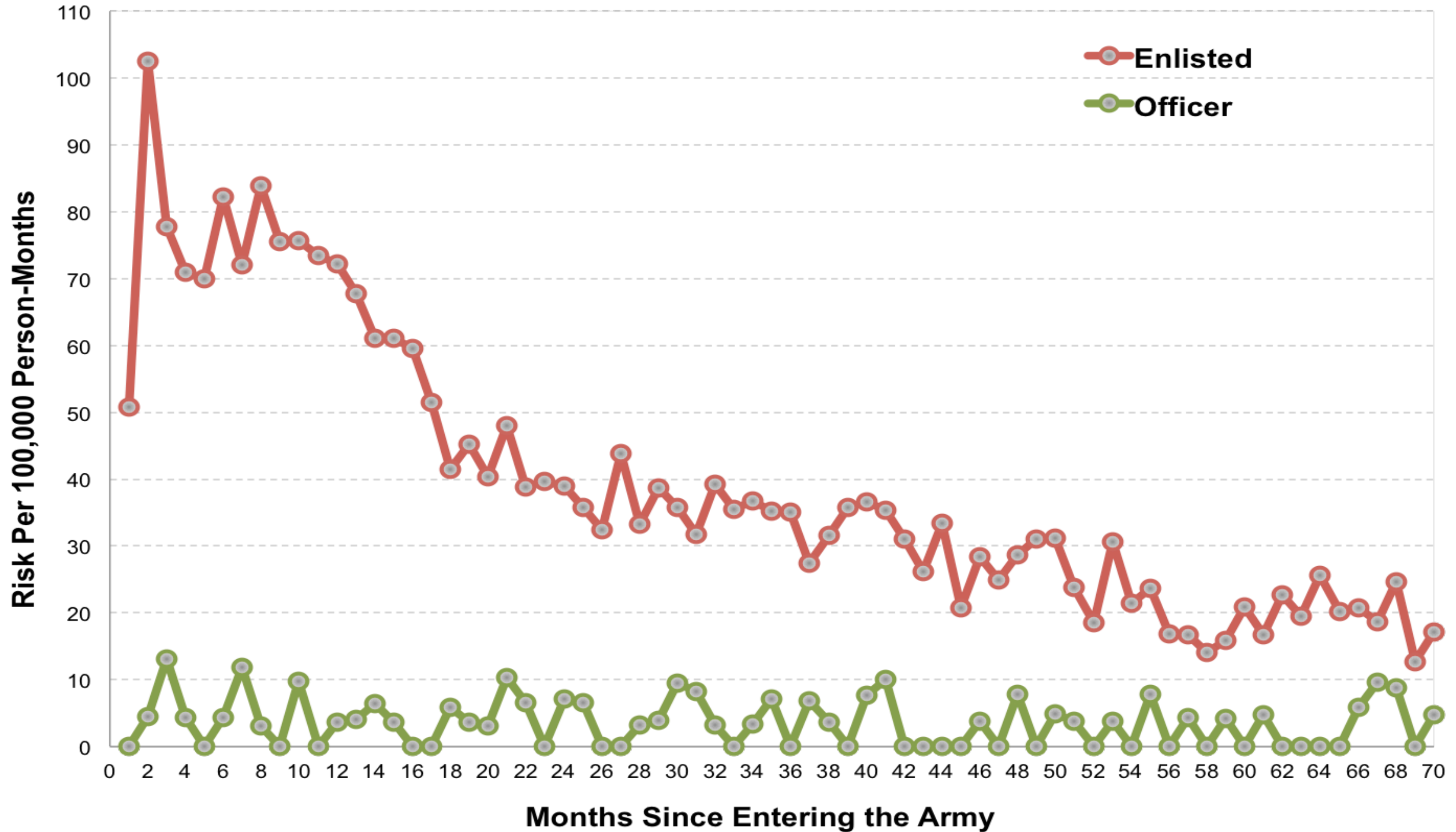
Suicide Attempt Risk by Time in Service (HADS 2004-2009)



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Ursano et al. (2015). *JAMA Psychiatry*

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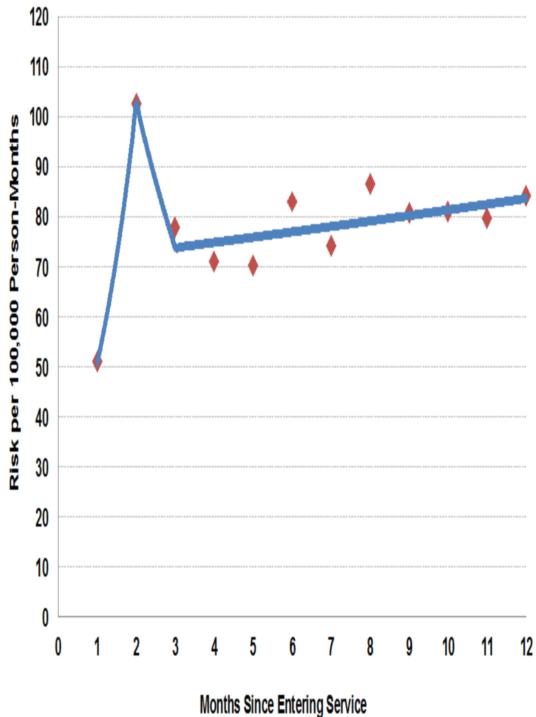
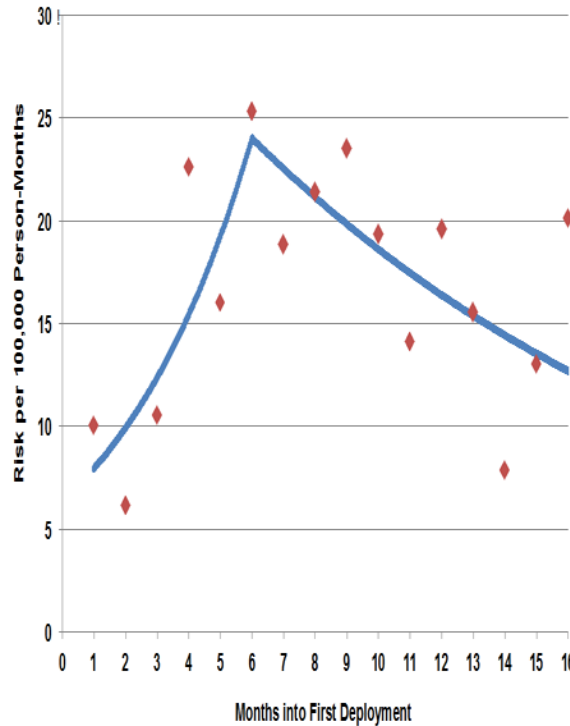
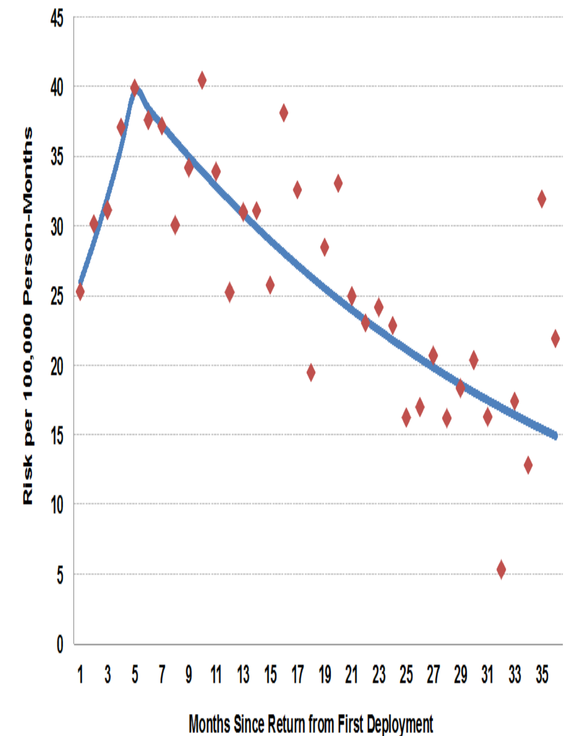
Suicide Attempt Risk among Enlisted Soldiers by Deployment Status (HADS 2004-2009)







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Ursano et al. (2015). *JAMA Psychiatry*

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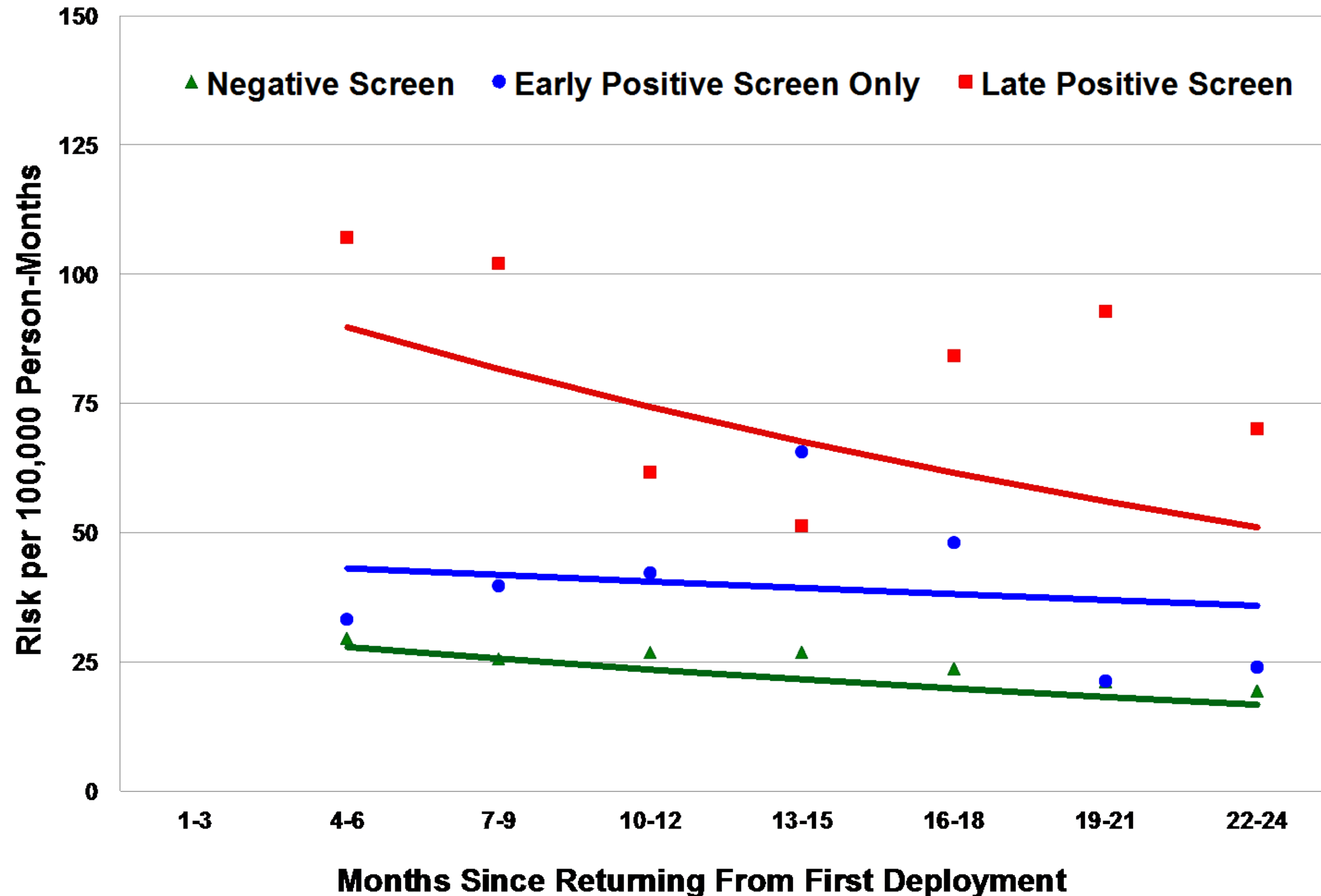
Suicide Attempt Risk Among Enlisted Soldiers Based on Post-Deployment PTSD & Depression Screening (HADS 2004-2009)



Positive Screen = either PTSD or Depression; Early Screen = PDHA; Late Screen = PDHRA

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Ursano et al. (2016). *JAMA Psychiatry*

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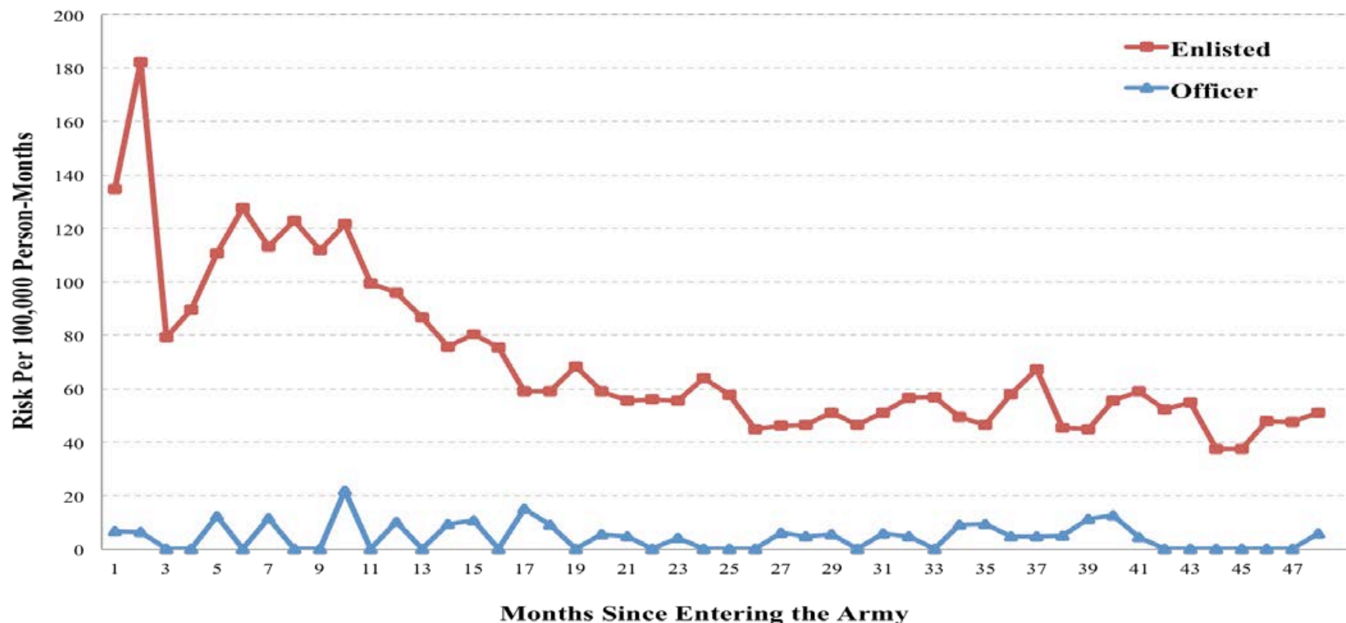
Risk of Suicide Ideation among Enlisted Soldiers and Officers by Month Since Entering the Army (HADS)

Sample of 2006-2009 enlisted Soldiers (n=10,232 cases, 104,369 control person-months) and officers (n=234 cases, 20,590 control person-months)



Ursano et al. (2016). *Suicide and Life-Threatening Behavior*

Medically Documented Suicide Ideation among U.S. Army Soldiers (HADS 2006-2009)

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Enlisted Soldiers:

- 83.5% of active duty Regular Army Soldiers
- 97.8% of all suicide ideators (n=10,232)
- Overall SI rate of 587.9 per 100,000 person-years (95% CI: 576.9-599.8)

Officers (commissioned and warrant officers):

- 16.5% of active duty Regular Army Soldiers
- 2.2% of all suicide ideators (n=234)
- Overall SI rate of 68.2 per 100,000 person-years (95% CI: 60.0-77.5)

Ursano et al. (2016). *Suicide and Life-Threatening Behavior*

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Army Study to Assess Risk and Resilience in Servicemembers

Predicting Suicide after Outpatient Mental Health Visits: Male non-deployed Regular Army Soldiers (HADS 2004-2009)

	% of all soldiers	% of all suicides	Count of suicides	Suicides/ 100,000 PY
Psychiatric hospitalization with subsequent outpatient visits to				
Total (MHS/GM)	0.9	12.0	68	252.3
Outpatient visits with mental disorder diagnoses without hospitalization				
Total (MHS/GM)	24.5	42.2	240	31.7
All other soldiers				
Total (None)	74.6	45.9	261	11.3

Kessler, et al. (2016) *Molecular Psychiatry*

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Predicting Suicide after Outpatient Mental Health Visits: Male non-deployed Regular Army Soldiers (HADS 2004-2009)

- 41.5% of Army suicides in 2004-2009 occurred among the 12.0% of Soldiers seen as outpatient by mental health specialists, with risk especially high within 26 weeks of visits.
- The 5% of visits with highest risk included 0.1% of Soldiers (1047.1 suicides/100,000 person-years in the 5 weeks after the visit).
- This is a high enough concentration of risk to have implications for targeting preventive interventions.

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Kessler, et al. (2016) *Molecular Psychiatry*

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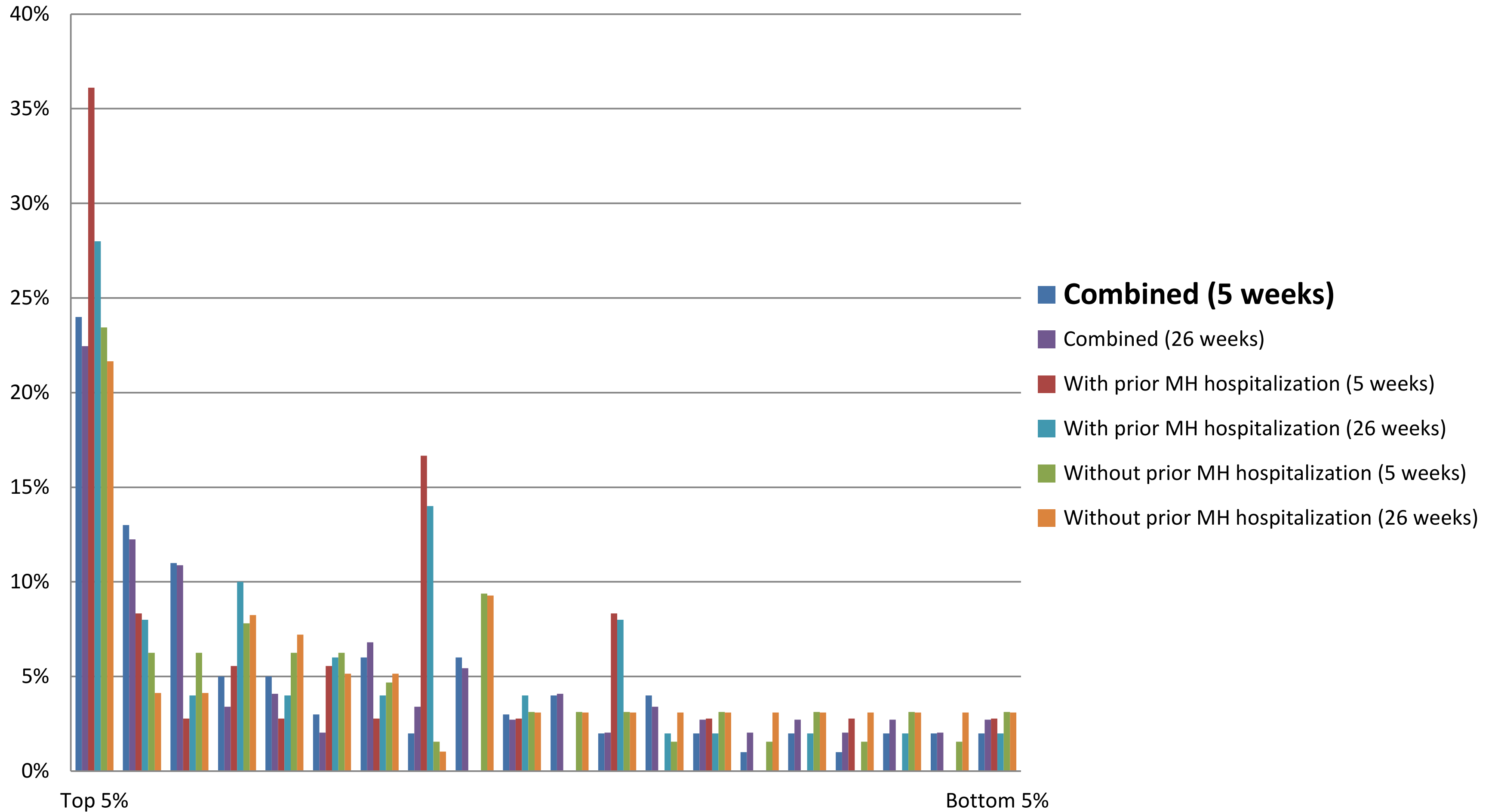

Kessler, et al. (2016) *Molecular Psychiatry*

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Army Study to Assess Risk and Resilience in Servicemembers

Predicting Suicides after Psychiatric Hospitalization in U.S. Army Soldiers (HADS 2004-2009)

- Sixty-eight hospitalized soldiers died by suicide within 12 months of hospital discharge (263.9 suicides per 100,000 person-years versus 18.5 suicides per 100,000 in the total U.S. Army)
- Represented 12.0% of all Army suicides

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Kessler, et al. (2015) *JAMA Psychiatry*

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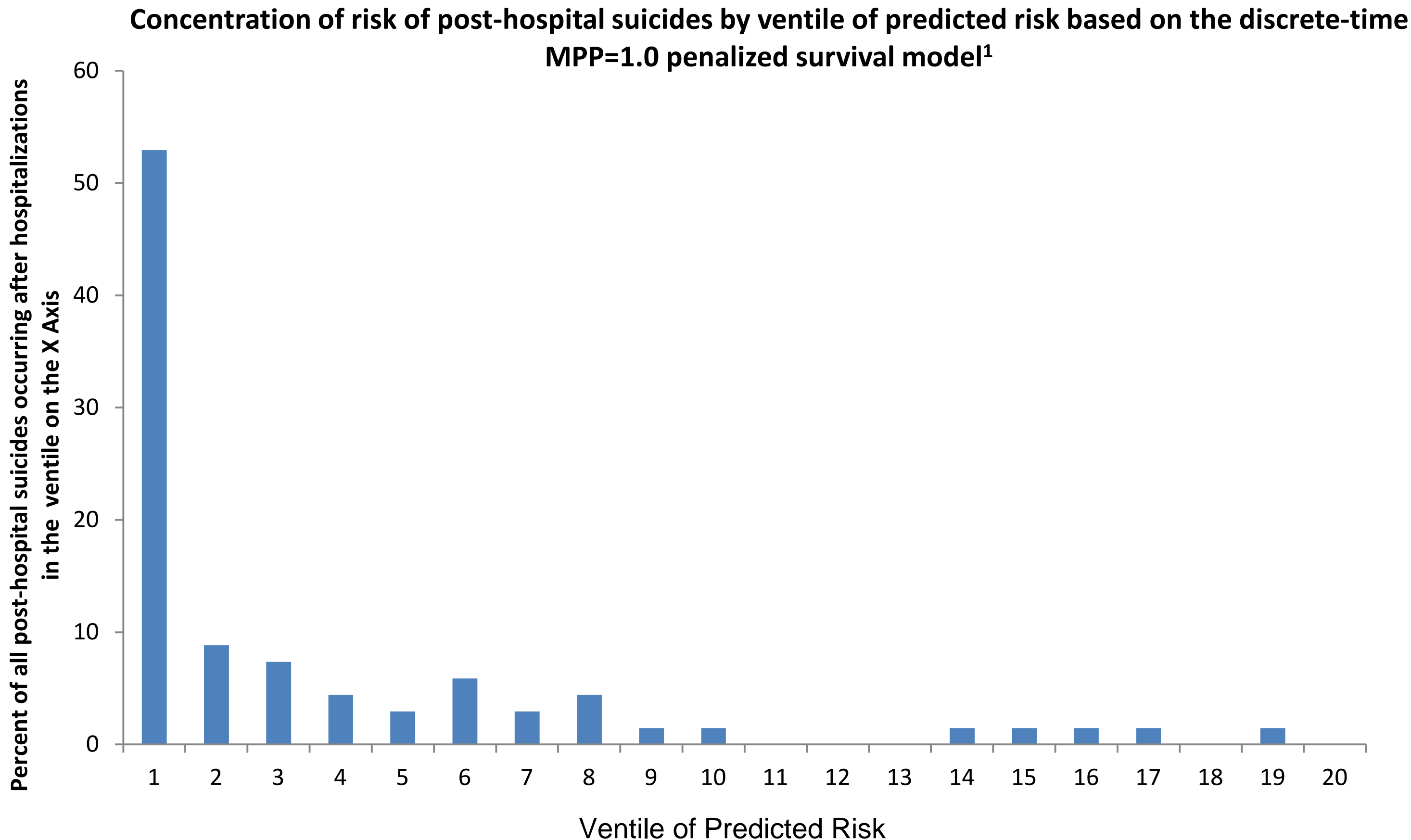

[1]Ventiles are 20 groups of hospitalizations of equal frequency (2688 or 2689) dividing the total sample of 53,769 hospitalizations into groups defined by level of predicted suicide risk.

Kessler, et al. (2015) *JAMA Psychiatry*

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Army Study to Assess Risk and Resilience in Servicemembers

Predicting Suicides after Psychiatric Hospitalization in U.S. Army Soldiers (HADS 2004-2009)

Concentration of risk (CR) of post-hospital suicides

	Highest Risk Stratum (1st ventile)	Total
Observed number of suicides	36	68
CR	52.9%	--
Number/100,000 person-years	3824.1	263.9

Kessler, et al. (2015) *JAMA Psychiatry*

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Predicting Suicides after Psychiatric Hospitalization in U.S. Army Soldiers (HADS 2004-2009)

- Soldiers in the highest-risk stratum also had elevated risks of other adverse outcomes in the year after hospital discharge, including unintentional injury deaths, suicide attempts, and re-hospitalizations.
- Soldiers in the highest predicted suicide risk stratum had 7 unintentional injury deaths, 830 suicide attempts, and 3,765 re-hospitalizations within 12 months of hospital discharge.

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Kessler, et al. (2015) *JAMA Psychiatry*

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Predicting Suicides after Psychiatric Hospitalization in U.S. Army Soldiers (HADS 2004-2009)

Coefficients (odds-ratios) in the discrete-time (person month) logistic survival model using forward stepwise selection of predictors and a .05 level entry criterion (n=53,769)

	OR	(95% CI)	VIF
Socio-demographics			
Male (Yes/no)	7.9*	(1.9-32.6)	1.0
Age of Enlistment 27+ (Yes/no)	1.9*	(1.0-3.5)	1.0
AFQT score above 50th percentile (Yes/No)	3.3*	(1.7-10.0)	1.0
Access to firearms			
Number of registered pistols	1.3*	(1.0-1.6)	1.0
Crime perpetration			
Number of verbal assault offenses in past 12 months	2.2*	(1.2-4.0)	1.0
Any non-violent weapons offense in past 24 months (Yes/No)	5.6*	(1.7-18.3)	1.0
Suicidal behavior			
Any prior suicide attempt since enlistment (Yes/No)	2.9*	(1.7-4.9)	1.0
Number of outpatient visits with suicidal ideation in past 12 months	1.6*	(1.1-2.5)	1.1

*Significant at the .05 level (2-sided test)

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Kessler, et al. (2015) *JAMA Psychiatry*

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Army Study to Assess Risk and Resilience in Servicemembers

Predicting Suicides after Psychiatric Hospitalization in U.S. Army Soldiers (HADS 2004-2009)

Coefficients (odds-ratios) in the discrete-time (person month) logistic survival model using forward stepwise selection of predictors and a .05 level entry criterion (n=53,769)

	OR	(95% CI)	VIF
Other prior treatment			
Six or more outpatient visits with a mental health specialty provider in past 12 months (Yes/No)	1.9*	(1.0-3.6)	1.4
Number of antidepressant prescriptions filled in past 12 months	1.3*	(1.1-1.7)	1.1
Number of psychiatric hospitalizations/time in service above the 50% percentile (Yes/No)	0.3*	(0.2-0.6)	1.2
Any prior inpatient psychiatric treatment in past 12 months (Yes/No)	1.8	(0.8-3.7)	1.8
Number of inpatient days in past 12 months with a diagnoses of …			
Major depression	2.2*	(1.1-4.4)	1.4
Somatoform/dissociative disorder	5.6*	(1.8-17.7)	1.0
Characteristics of focal hospitalization			
Hospitalized in a civilian psychiatric hospital or civilian facility with a psychiatric unit (Yes/No)	1.6*	(1.0-2.7)	1.0
Disorders diagnosed during current hospitalization (Yes/No)			
PTSD	0.4*	(0.2-0.7)	1.1
Suicidal ideation	2.4*	(1.3-4.7)	1.0
Non-affective psychosis	2.9*	(1.2-7.0)	1.0
Somatoform/dissociative disorder	3.6*	(1.2-10.8)	1.0
Hearing loss	6.0*	(2.1-17.4)	1.0

*Significant at the .05 level (2-sided test)

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Kessler, et al. (2015) *JAMA Psychiatry*

Uniformed Services University
of the Health Sciences

Relationship of Brain Regions Implicated in PTSD to Regions Vulnerable to TBI

Vulnerable to TBI
Involved in PTSD
Involved in TBI and PTSD

Dorsolateral prefrontal cortex
Medial prefrontal cortex (BA 9)
Anterior cingulate
Orbitofrontal cortex
BA 25
Cerebellum
Temporal pole

Frontal white matter
Hippocampus
Amygdala
Hypothalamus
Pituitary
Orbitofrontal cortex
Temporal pole

Center for the Study of Traumatic Stress

Stein MB & McAllister TW. *Am J Psychiatry* 2009; 166:768-776

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Associations Between TBI and Mental Disorders (AAS Q2-4 2011)

Lifetime Mental Disorders	Antecedent TBI Predicting Mental Disorders[1]		Antecedent Mental Disorders Predicting TBI[1]	
	OR	[95% CI]	OR	[95% CI]
Panic or Agoraphobia	**1.6**	**[1.4-1.8]**	1.3	[0.9-1.9]
Major Depression	**1.6**	**[1.5-1.8]**	**1.4**	**[1.0-1.9]**
GAD	**1.7**	**[1.6-1.8]**	0.9	[0.6-1.3]
Social Phobia	**1.6**	**[1.4-1.8]**	1.1	[0.8-1.4]
PTSD	**1.8**	**[1.6-2.0]**	1.0	[0.7-1.4]
OCD	**1.5**	**[1.3-1.7]**	1.1	[0.7-1.6]
Substance Use Disorders	**1.7**	**[1.6-1.8]**	0.9	[0.6-1.3]

[1]controlling for person years, demographics

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Multivariate model predicting suicidality (AAS Q2-4 2011)

	Lifetime Suicide Ideation		Lifetime Suicide Plan		Lifetime Suicide Attempt	
	OR	[95% CI]	OR	[95% CI]	OR	[95% CI]
Antecedent TBI[1]	**1.7**	**[1.4-2.0]**	**1.9**	**[1.5-2.5]**	**1.6**	**[1.2-2.2]**
Antecedent TBI[2] (full model)	**1.4**	**[1.2-1.6]**	**1.6**	**[1.1-2.1]**	1.3	[0.9-1.8]

[1]Multivariate model predicting suicidality outcomes with TBI (0,1,2) controlling for all demographics and interaction between "not entered army yet" and "birth place"; controlling for years since ideation for outcomes among ideators

[2]As above and controlling for mental disorders

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Stein (2012) presented at ACNP Annual Meeting

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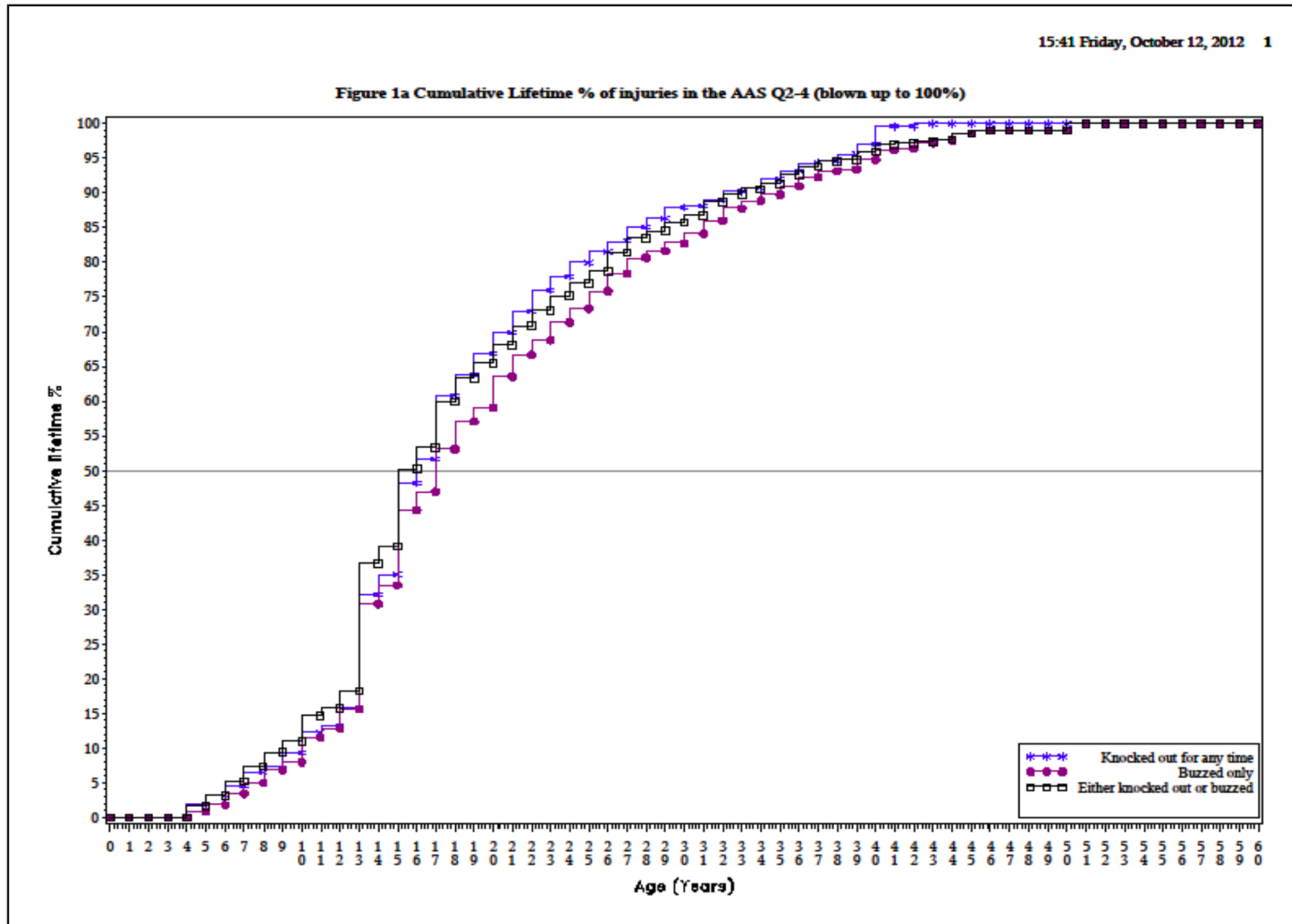
U.S. Army: Age at First TBI (AAS Q2-4 2011)



Stein (2012) presented at ACNP Annual Meeting

Army STARRS Public Use Survey Data

Available through the
Inter-university Consortium for Political and Social Research (ICPSR)
at the University of Michigan

www.icpsr.umich.edu

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Army Study to Assess Risk and Resilience in Servicemembers

STARRS-LS Website
www.starrs-ls.org

STARRS-LS HOME ABOUT CONTACT BACKGROUND GOALS PUBLICATIONS DATA NEWS INSTRUMENTS

The Study to Assess Risk and Resilience in Servicemembers — Longitudinal Study (STARRS-LS) is a research project funded by the U.S. Department of Defense (DoD) to create practical, actionable information on risk reduction and resilience-building for suicide, suicide-related behavior, and other mental/behavioral health issues in the military. It continues and expands the vital work begun by the Army STARRS project.

STARRS-LS, which runs from 2015 to 2020, is being led by Co-Principal Investigators Robert J. Ursano, MD (Uniformed Services University of the Health Sciences) and Murray B. Stein, MD, MPH (University of California, San Diego). Other major contributors are Ronald C. Kessler, PhD (Harvard Medical School) and James Wagner, PhD (University of Michigan).

FOR IMMEDIATE ASSISTANCE

National Suicide Prevention Lifeline

1-800-273-TALK (8255)

En Español: 1-888-628-9454

Military Crisis Line

Text to 838255

Click now for confidential chat

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BACK UP

ARMY STARRS

Army Study to Assess Risk and Resilience in Servicemembers

Medically Documented Suicide Ideation among U.S. Army Soldiers

Socio-demographic characteristics:

- Among enlisted Soldiers, higher odds of SI were observed in those who were female (OR=1.6 [95% CI: 1.5-1.7]); younger (age <21 years, OR=3.9 [95% CI: 3.6-4.3]); entered the Army at age ≥25 (OR=1.6 [95% CI: 1.5-1.8]); and had less than a high school education (OR=1.8 [95% CI: 1.7-1.9]). Odds of SI were lower among non-Whites (OR=0.7-0.9).
- Enlisted females had more than 6 times the risk of female officers (rate ratio [RR]=6.5 [95% CI: 5.1-8.3]). Having a current age of ≥40 was protective for both enlisted and officers, but risk among enlisted personnel in this age group was more than 4 times higher than officers (RR=4.1 [95% CI: 3.0-5.6]).

Mental Health Diagnosis:

- Adjusting for socio-demographics, enlisted soldiers with a mental health diagnosis in the previous month had the highest odds of ideation (OR=14.4 [95% CI: 13.7-15.0]) compared to those without a diagnosis, with odds decreasing as the time since most recent diagnosis increased from 2-3 months (OR=5.0 [95% CI: 4.7-5.4]) to ≥13 months (OR=1.3 [95% CI: 1.2-1.4])

Ursano et al. (2016). *Suicide and Life-Threatening Behavior*

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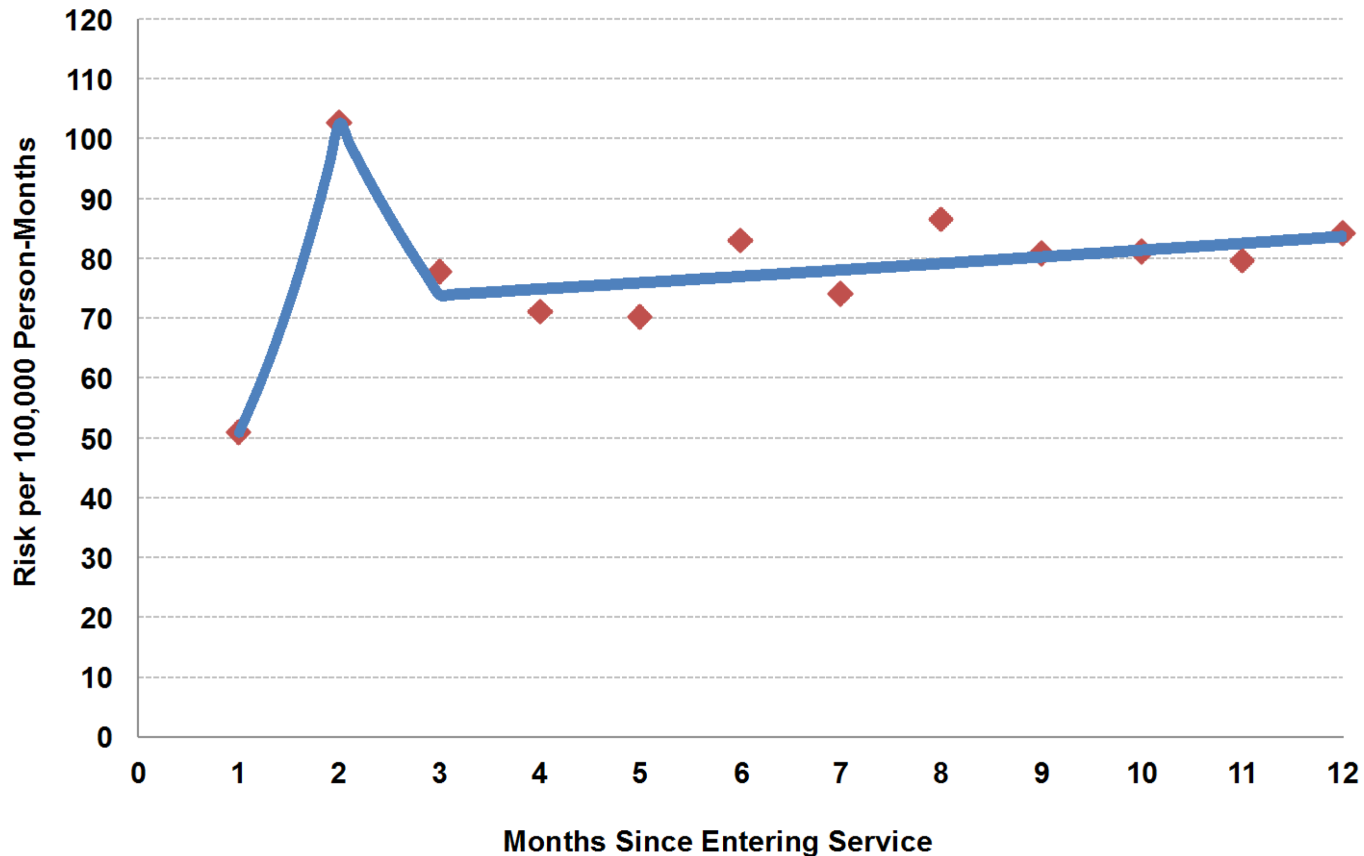
Army Study to Assess Risk and Resilience in Servicemembers

Suicide Attempt Risk among Never Deployed Enlisted Soldiers (HADS 2004-2009)



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Ursano et al. (2016). *JAMA Psychiatry*

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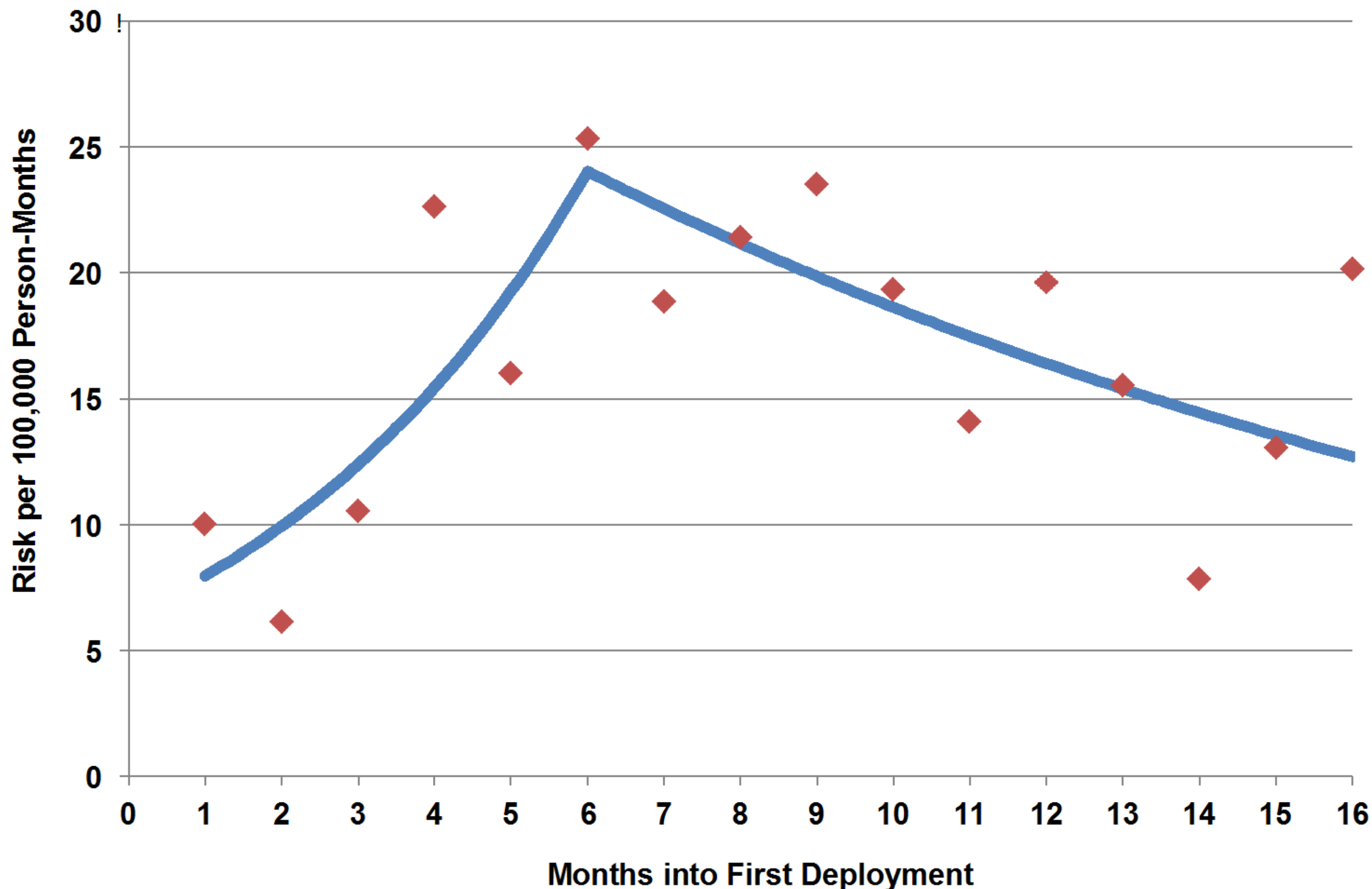
Army Study to Assess Risk and Resilience in Servicemembers

Suicide Attempt Risk among Currently Deployed Enlisted Soldiers (HADS 2004-2009)



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Ursano et al. (2016). *JAMA Psychiatry*

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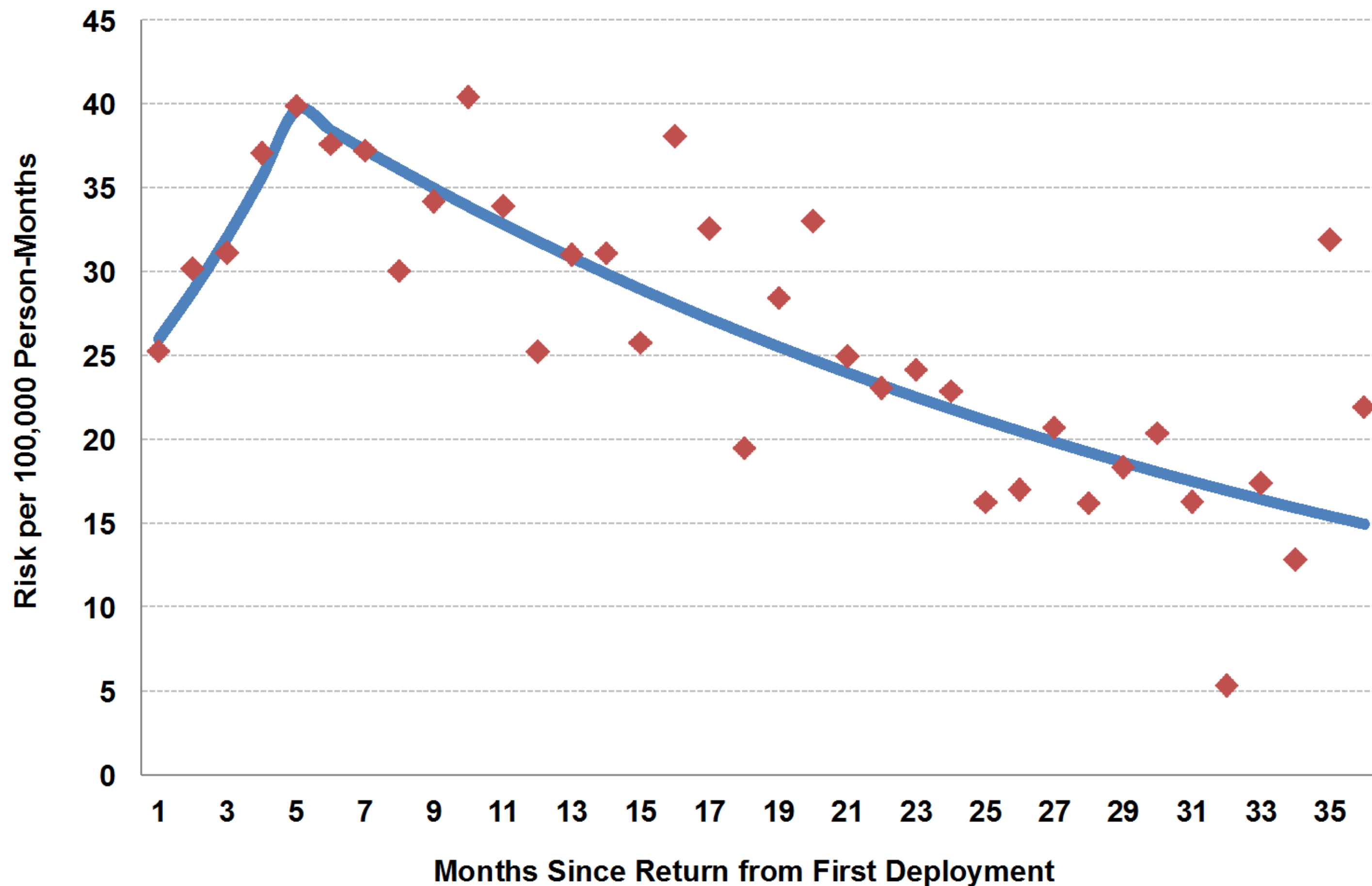
Army Study to Assess Risk and Resilience in Servicemembers

Suicide Attempt Risk among Previously Deployed Enlisted Soldiers (HADS 2004-2009)



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