

# Risk of Death for Veterans on Release From Prison



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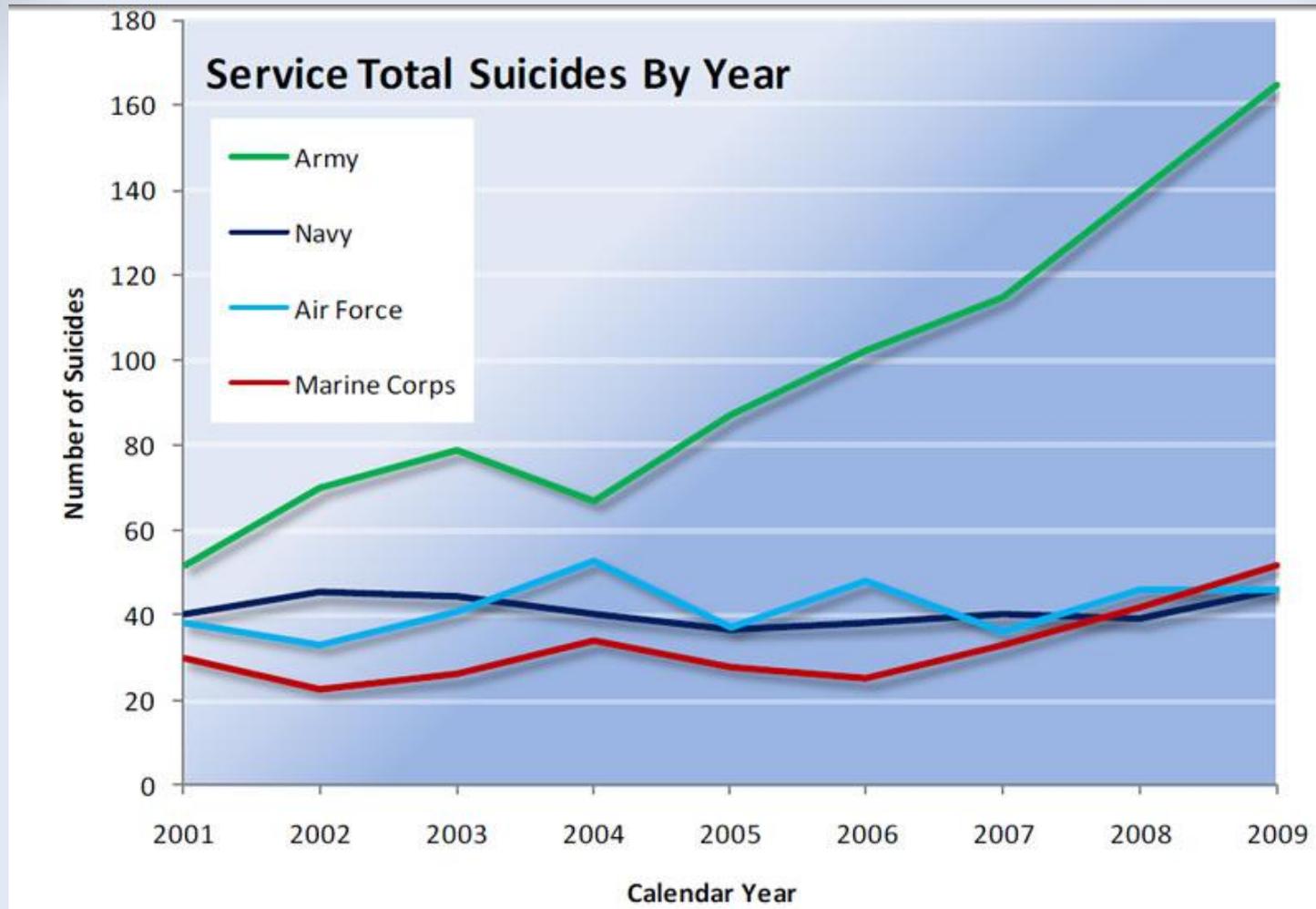
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<http://www.health.mil/dhb/downloads/Suicide%20Prevention%20Task%20Force%20final%20report%208-23-10.pdf>



# U.S. Veteran Suicide Risk

- Kang and Bullman (2008)
  - Published studies do not suggest increased risk of suicide among veterans of the Vietnam War or the 1991 Gulf War
  - Recent increased risk of suicide observed for OEF/OIF veterans when compared to the U.S. population, though not statistically significant, mandates attention
- It does seem likely that returning veterans with service-related neuropsychiatric injuries (TBI and/or PTSD) face increased risk
- **The same injuries may also increase risk and/or contribute to justice-involvement**

# ***“Across America, Deadly Echoes of Foreign Battles”***

January 13, 2008



Matthew Sepi, left, shot two people, one fatally, after he was confronted in a Las Vegas alley in 2005. Seth Strasburg, right, is serving a prison term of 22 to 36 years for shooting and killing Thomas Tiffany Varney on Dec. 31, 2005.

# Cases, Victims, and Charges

## The Cases

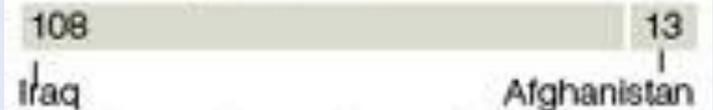
The New York Times found 121 cases in which veterans of Iraq and Afghanistan committed a killing in this country, or were charged with one, after their return from war.



## Branch of military



## Where they served\*

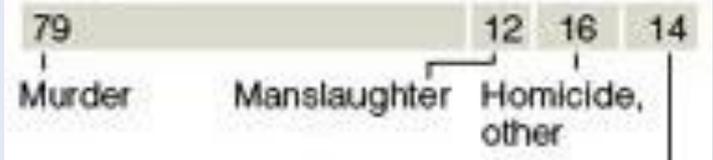


\*Two Iraq war veterans also served in Afghanistan.

## The victims



## Charges



No charges (*suicides, killed by the police*)

\* In four cases, the victim was also in the military.

# PTSD and Intimate Partner Aggression Among Combat Veterans

- 236 male combat vets seeking services at VA for PTSD
- 33% of those in intimate relationship reported perpetrating partner physical aggression in previous year
- 91% reported partner psychological aggression
- PTSD and depression symptoms associated with aggression across subgroups and forms of aggression
- PTSD symptoms reflecting arousal and lack of control were generally the strongest predictors of aggression

Taft et al. 2009



# TBI → Aggression → Suicide

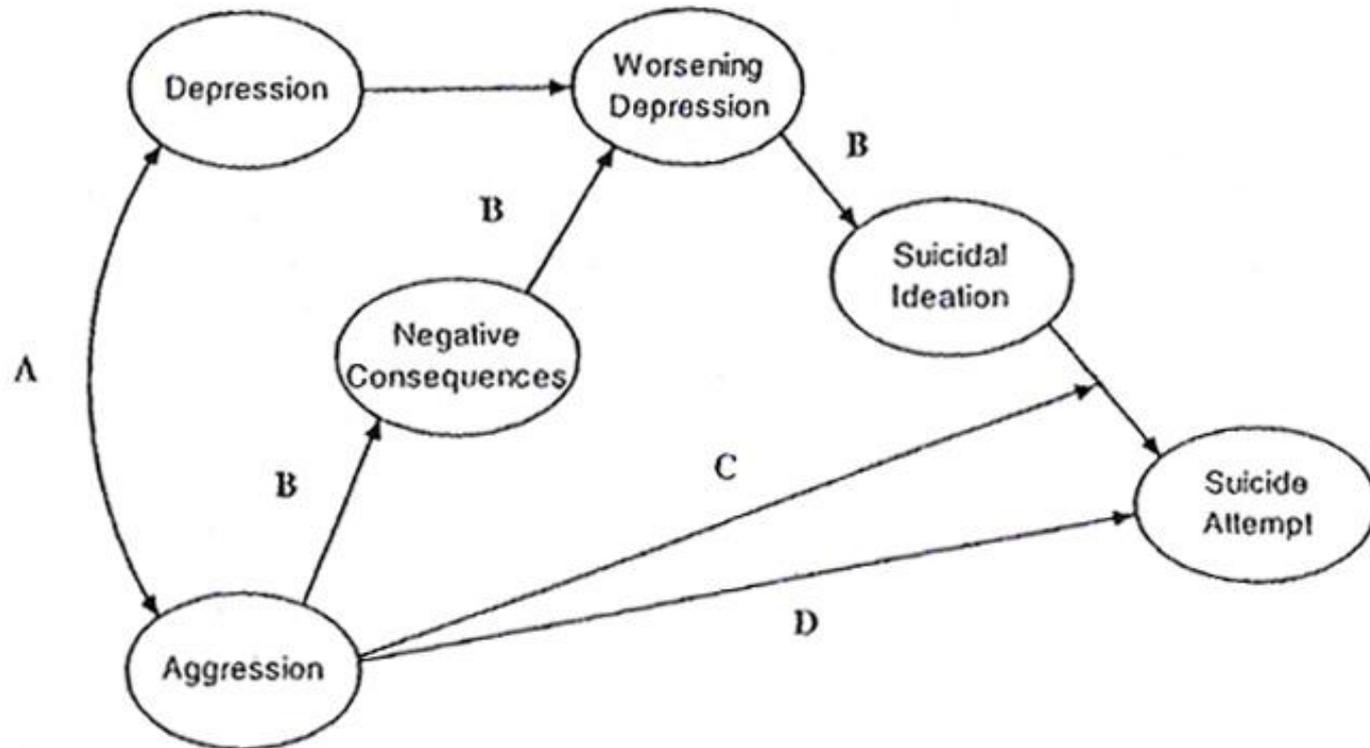
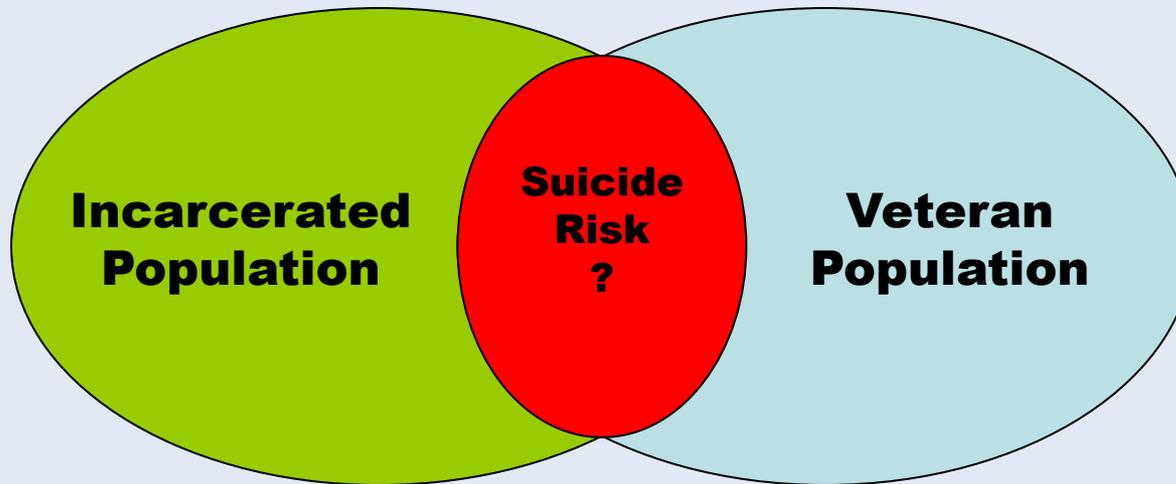


Fig. 1 Theoretical model of non-causal (*Path A*), indirect (*B*), moderating (*C*), and direct (*D*) effects of aggression on risk for suicidal thoughts and behavior

# Justice-Involved Veterans

- Estimates suggest that 10% of incarcerated persons in 2004 were veterans
- VA officially recognizes that some veterans are arrested for a variety of offenses, some of which may be related to extended periods of battle readiness and combat exposure during multiple deployments and to maladaptive coping with the return to civilian life.
- VA's Uniform Mental Health Services Package now calls not only for assistance for veterans re-entering the community from state and federal prisons, but also for outreach efforts to veterans who are interfacing with jails, courts, and law enforcement
- ***A potentially crucial subpopulation of veterans to target in suicide prevention efforts?***

# Suicide Among Justice-Involved Veterans



Incarcerated veterans seemingly lie at the intersection of two populations with elevated suicide rates. The risk incurred by this status remains unknown.

## **Release from Prison — A High Risk of Death for Former Inmates**

- Retrospective cohort study of all inmates released from the Washington State DOC July 1999 - December 2003
- Prison records linked to the National Death Index
- Mortality rates among former inmates were compared with those among other state residents with adjustment for age, sex, and race

Binswanger IA, et al: NEJM 2007; 356:157-65

# **Release from Prison — A High Risk of Death for Former Inmates**

- Of 30,237 released inmates, 443 died during a mean follow-up period of 1.9 years
- Overall mortality rate was 777 deaths per 100,000 person-years
- During the first 2 weeks after release, the risk of death among former inmates was 12.7 (95% CI, 9.2 to 17.4) times that among other state residents
- Leading causes of death among former inmates were drug overdose, cardiovascular disease, homicide, and suicide

Binswanger IA, et al: NEJM 2007; 356:157-65

# **Risk of Death for Veterans on Release from Prison**

- Data linkage study using data from a retrospective cohort study of inmates released from Washington State DOC linked to data from the Veterans Benefit Administration (VBA)
- VBA matches based on exact matching of first name, last name, sex, birth month, and birth day, 8 of the 9 SSNs, and within 1 year on birth year
- VBA returned a total of 3,806 matches, comprising our subgroup of veterans, which was compared with the 26,431 non-veterans for analyses

# **Risk of Death for Veterans on Release from Prison**

## Aims:

- Calculate the risk of death faced by veterans after release from prison
- Investigate whether veterans had a higher risk of death after release from prison compared to non-veterans
- Assess whether veterans had a higher risk of suicide upon release from prison relative to non-veterans
- Determine if veterans with VA benefits demonstrated decreased risk

# **Risk of Death for Veterans on Release from Prison**

- Released veterans were on average 7.5 years older than non-veteran released inmates
- Of 3,806 released veterans identified, 89 died during the study period, and 12 of these deaths occurred in the first month following prison release
- Like non-veterans released from prison, released veterans most frequently died of overdose, cardiovascular disease, cancer, hepatic disease, homicide, motor vehicle accidents, and suicide

<b>Variable</b>	<b>N</b>	<b>%</b>
<b>Branch of Service</b>		
Air Force	413	10.85
Army	1866	49.03
Marines	442	11.61
Navy	859	22.57
Missing/Unknown	188	4.94
Other	38	1.00
<b>Service Discharge</b>		
Honorable	2937	77.17
Dishonorable	88	2.31
Missing/Unknown	313	8.22
Other	468	12.30
<b>VA Benefits</b>		
No	3233	84.94
Yes*	573	15.06

<b>Cause of Death</b>	<b>Total Deaths</b>	<b># Of Veteran Deaths</b>
All Causes	443	89
Self/Other Cause	232	38
-Overdose	103	21
-Suicide	40	5
-Homicide	54	6
-Motor vehicle	35	6
Medical Cause	136	41
-HIV	7	1
-Cardiovascular	56	16
-Liver	23	7
-Diabetes	6	3
-Cancer	39	13
-COPD	5	1

# **Risk of Death for Veterans on Release from Prison**

- For all-cause death, crude veteran death rate was 1,195 per 100,000 person-years of risk, significantly higher than the death rate of 714 observed for the non-veterans (p-value <0.001)
- For most causes of death, a higher crude death rate was observed in veterans than in non-veterans
- For example, veteran death rate from cardiovascular causes was 2.7 times greater than it was for non-veterans (175 vs. 52 per 100,000 person-years of risk, p-value = 0.021)

# Risk of Death for Veterans on Release from Prison

- But models adjusting for demographic covariates (sex, race, age, and length of incarceration) indicated veteran status was not a statistically significant risk factor
- Of the 3,806 veterans identified, 573 veterans were receiving some form of VA benefits
- VA benefits appeared to offer protective effect; hazard ratio associated with VA benefits for all-cause deaths was 0.376 (95% confidence interval [CI] 0.18-0.78). The protective effect of VA benefits for deaths resulting from medical causes featured a hazard ratio of 0.262 (95% CI 0.08-0.82)

<b>Cause of Death</b>	<b>Hazard Ratio</b>	<b>95% CI Lower</b>	<b>95% CI Upper</b>
All Causes	1.08	0.85	1.38
Self/Other Cause	1.12	0.78	1.62
-Suicide	0.89	0.34	2.37
-Overdose	1.36	0.81	2.26
-Homicide	0.77	0.32	1.86
Medical Causes	1.34	0.91	1.98
-Cardiovascular	1.22	0.66	2.24
-Cancer	1.39	0.68	2.81

# Conclusions

- Veterans appear to share the heightened risk for deaths due to injury by self or other (including suicide) that had previously been established for released inmate population
- VA benefits seems to offer some degree of protection, particularly in terms of medical deaths
- Findings lend support to recently expanded VA programming aimed at identifying justice-involved veterans and directing them towards appropriate medical and mental health resources
- Additional research is warranted to more precisely characterize the medical and neuropsychiatric status of the justice-involved veterans, and expand findings to veterans from current conflicts

# Next Steps...

*WA DOC – Cohort 1999 to 2009 – Causes of Death*

<b>Cause Of Death</b>	<b>Frequency</b>
Accident	825
Cancer	242
Infectious Disease	140
Cardiovascular Disease	319
Suicide	<b>212</b>
Homicide	218
Other Death	505
<b>Total</b>	<b>2,461</b>

***What is the impact of OEF/OIF?***

# Read more...

- Wortzel HS, Blatchford P, Conner L, Adler LE, Binswanger IA: Risk of Death for Veterans on Release from Prison. Journal of the American Academy of Psychiatry and the Law (in press – anticipated September 2012)
- Wortzel HS, Binswanger IA, Anderson CA, Adler L: Suicide Among Incarcerated Veterans. Journal of the American Academy of Psychiatry and the Law 37(1):82-91, 2009

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