USACHPPM

Behavioral and Social Health Outcomes Program (BSHOP) Update

Michael R. Bell MD, MPH

Lieutenant Colonel, Medical Corps

Michael.r.bell@us.army.mil

10 November 2009

Briefing Outline

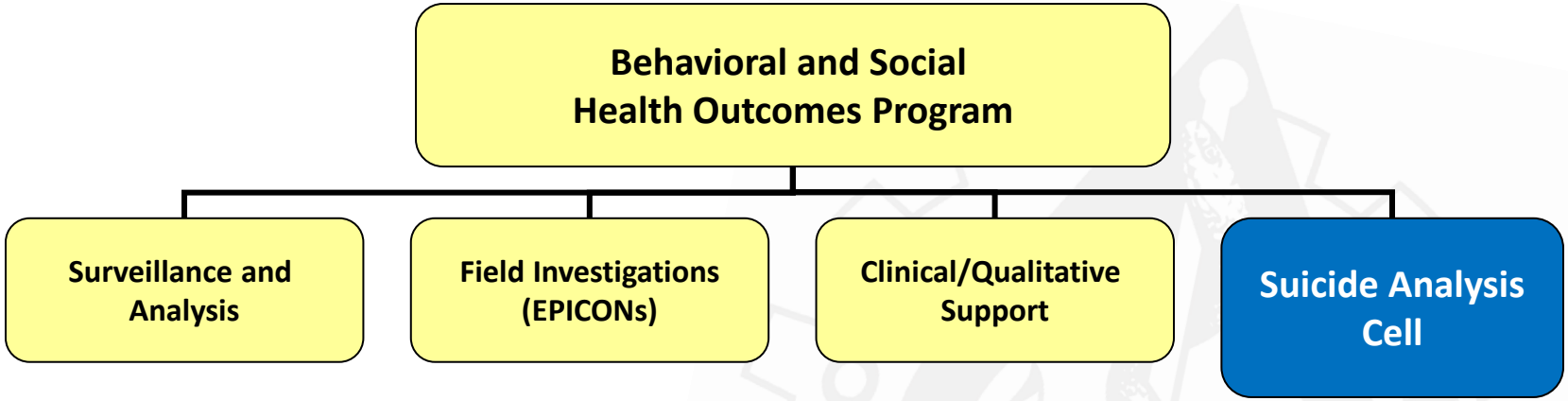
- Overview of BSHOP Mission and Capabilities
- Epidemiology of Suicide in the US Army
- Underlying Factors
- Population Health Implications

Mission & Objectives

- BSHOP Mission: Maximize total Soldier health and combat readiness by addressing psychological and social threats through the public health process

- BSHOP Program Objectives
  - Surveillance
  - Response (EPICON)
  - Clinical/Qualitative Support
  - Strategic Analysis Cell (SAC): Establish and maintain a registry of all Army suicides and provide immediate actionable intelligence to senior Army leaders.

Functional Organization



Focus Areas

- Behavioral Health
  - Adjustment Disorders
  - Anxiety Disorders
  - Substance Abuse Disorders
  - Depression
- Deployment Health
  - Post Traumatic Stress Disorder
  - Post Traumatic Growth
  - ARFORGEN Cycle
  - Combat Intensity/Deployments
- Suicide
  - Suicide
  - Suicide Ideation
  - Suicide Attempts
- Homicide/Violent Crime

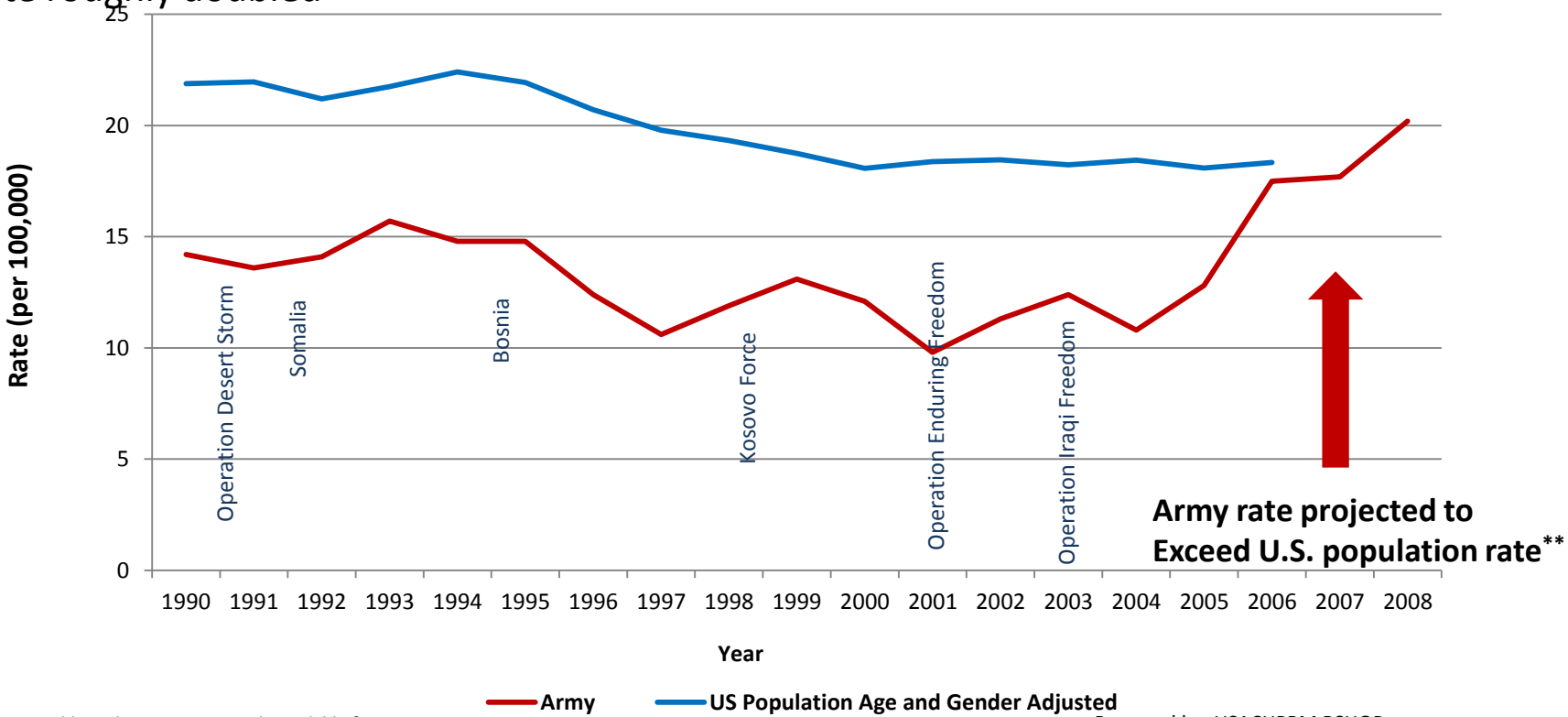
Army Behavioral Health Integrated Data Environment (ABHIDE)

- In 2008 the U.S. Army directed development of a suicide registry to facilitate ongoing analysis and generation of actionable information
- System captures all deaths by suicide and suicide attempts/ideations that result in hospitalization or evacuation from theater
- Current data elements include: demographics, Army Suicide Event Reports (ASER), deployment history, medical history, post-deployment health assessments, family advocacy and substance abuse records
- Efforts are underway to include pharmacy data, crime data, drug and alcohol testing, financial data, and medical profiles

Epidemiology of Suicide in the US Army

Suicide Rates from 1990-2008

- Historically, the US Army rate has been lower than the US population rate
- Both populations experienced a downward trend from the mid-90's to 2001
- From 2001 to 2006, the US population rate was steady around 18/100k while the Army rate roughly doubled

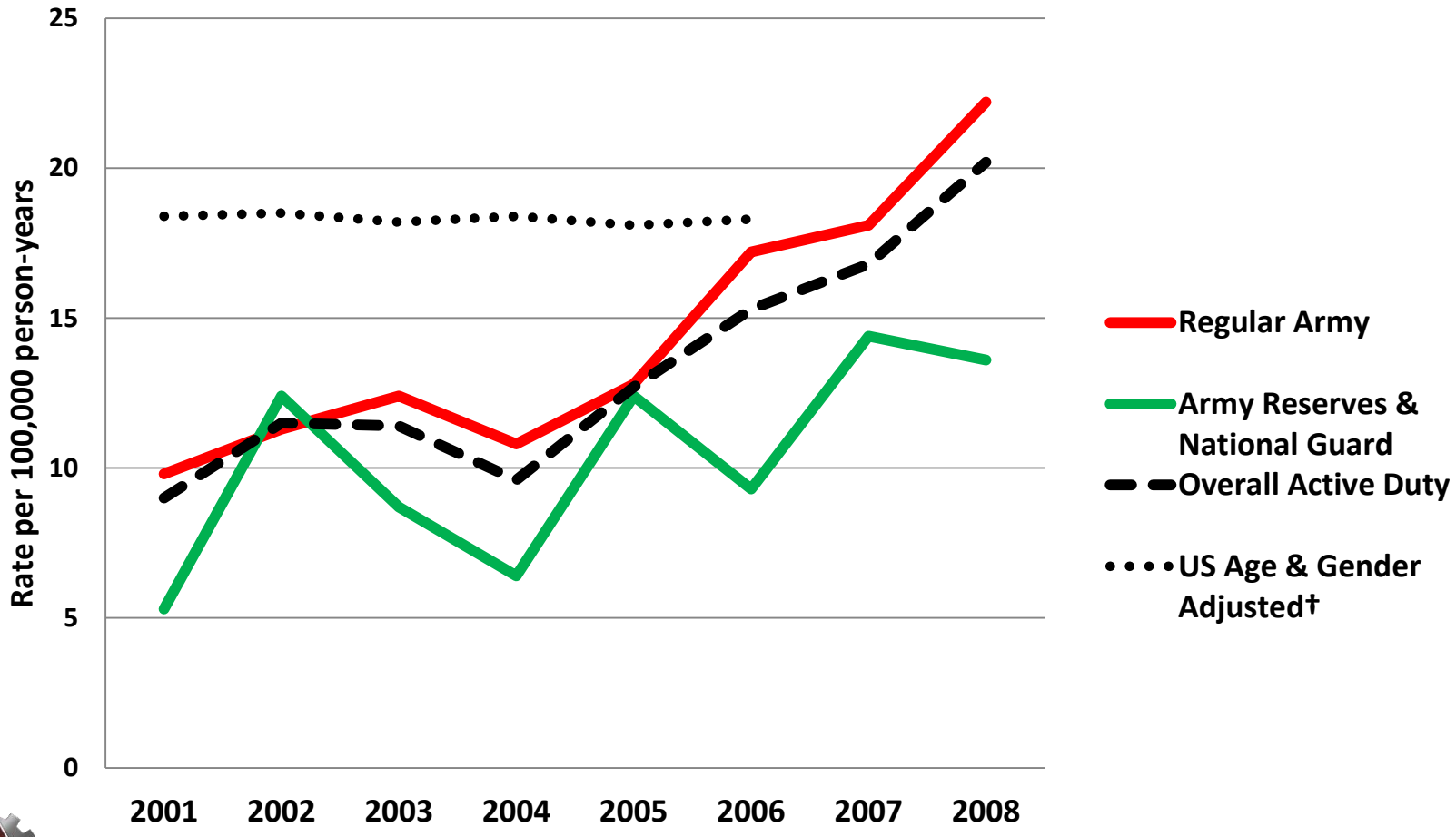


**Comparable civilian rates were only available from 1990-2006

Data Sources CDC/NCHS, National Vital Statistics System (civilian data). G1 (Army data)

Prepared by: USACHPPM BSHOP

ARMY Suicide Rate Trends, by Component



Source: ABHIDE; Not Available for 2009

Prepared by: USACHPPM BSHOP

Army Suicides: CY 2001 through 31 JULY 2009

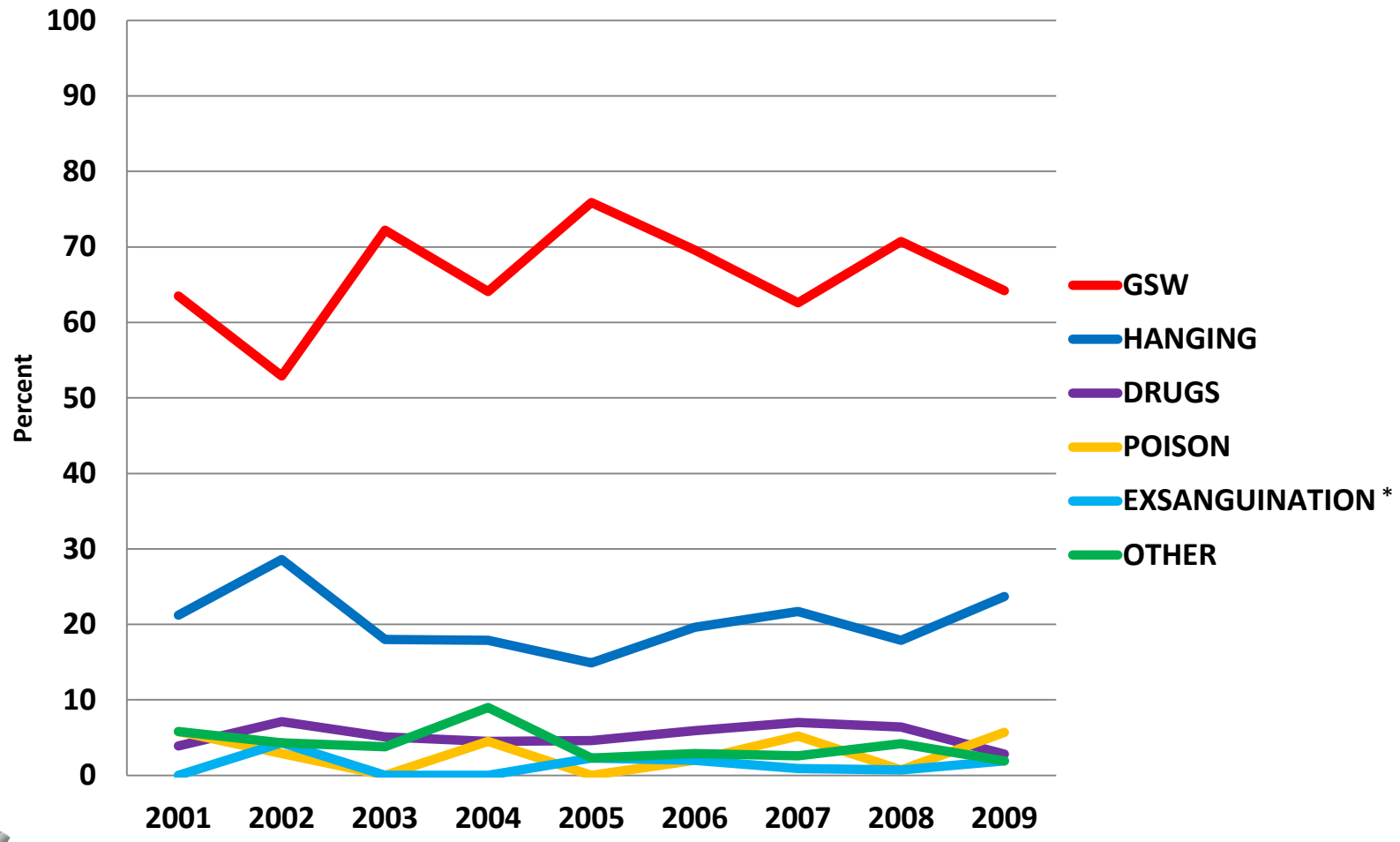
	2001-2009†		Overall ARMY‡	
NUMBER OF SUICIDES	**817**			
	N	**%**		
MALE	**774**	**94.7**	**86.0**	***
FEMALE	**43**	**5.3**	**14.0**	
AVERAGE AGE	**28**		**25**	***
Aged 18-25	**365**	**44.7**	**43.2**	
Aged 25-35	**287**	**35.1**	**38.4**	
Aged 36-60	**165**	**20.2**	**18.4**	
RACE-ETHNICITY				
Caucasian/White	**615**	**75.3**	**74.6**	*
African American	**104**	**12.7**	**15.7**	
Hispanic and Other	**98**	**12.0**	**9.7**	
MARITAL STATUS				
SINGLE	**365**	**44.7**	**39.1**	***
MARRIED	**423**	**51.8**	**53.4**	
DIV/SEP/WIDOWED	**29**	**3.5**	**7.5**	

† Through 31 July 2009; ‡ Based on 2008 figures; * p<.05; p<.01; ***p<.001**

Source: ABHIDE

Prepared by: USACHPPM BSHOP

US ARMY Suicides: Method of Death



Source: ABHIDE

*Bleeding

Prepared by: USACHPPM BSHOP

Estimated Rate of Suicide by Army Functional Group, 2004-2009

Functional Group	# Suicides (N=508)	% of Suicides	Population 2004-July 2009	Estimated Rate per 100,000*	99% Confidence Limits
OVERALL	***508***	***100***	***2,831,568***	***18.1***	***18.07-18.13***
Maneuver, Fire & Effects	267	52.6	1,226,517	21.8	21.75-21.86
Force Sustainment	118	23.2	708,260	16.7	16.65-16.75
Operations Support	70	13.8	559,224	12.5	12.46-12.54
Special Branches	36	7.1	212,933	16.9	16.81-16.99
Other	17	3.3	106,574	16.0	15.87-16.13

* Based on number of individuals, not person-years;

Significantly greater than average

Note: These data are not adjusted for age, gender, and other demographic factors
Data represents 508 Soldiers for whom MOS group data was available

Source: ABHIDE

Prepared by: USACHPPM BSHOP

Estimated Rate of Suicide by Army Branch, 2004-2009

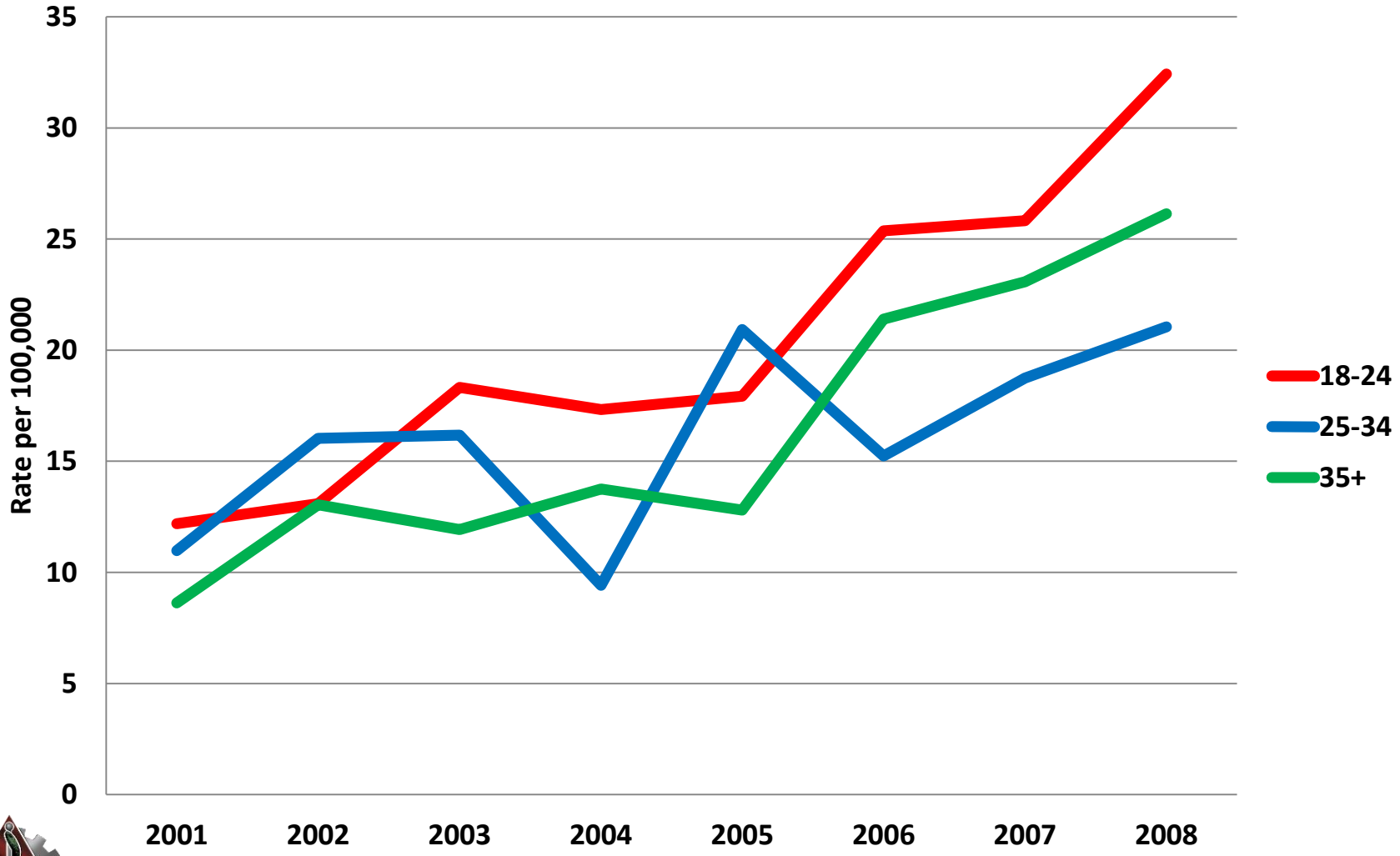
MOS Group	# Suicides (N=508)	% of Suicides	Population 2004-2009	Estimated Rate per 100,000*
Infantry	106	20.9	369,267	28.7
Mechanical Maintenance	42	8.3	186,414	22.5
Communications	33	6.5	196,615	16.8
Supply	30	5.9	300,425	10.0
Field Artillery	29	5.7	161,169	18.0
Medical ‡	29	5.7	178,487	16.2
Armor	27	5.3	131,009	20.6
Military Intelligence	25	4.9	141,952	17.6
Engineers	24	4.7	116,869	20.5
Aviation	23	4.5	159,867	14.4
Military Police	21	4.1	105,487	19.9
Ordnance	18	3.5	105,240	17.1
Transport	13	2.6	123,596	10.5
Recruiting & Retention	13	2.6	20,916	62.2
Chemical-Biological	12	2.4	47,488	25.3
Air Defense	10	2.0	62,124	16.1
Other	53	10.4	406,643	13.0

Note: These data are not adjusted for age, gender, and other demographic factors
Categories with estimated rates > 20 per 100,000 are highlighted
Data represents 508 Soldiers for whom MOS group data was available

Source: ABHIDE

Prepared by: USACHPPM BSHOP

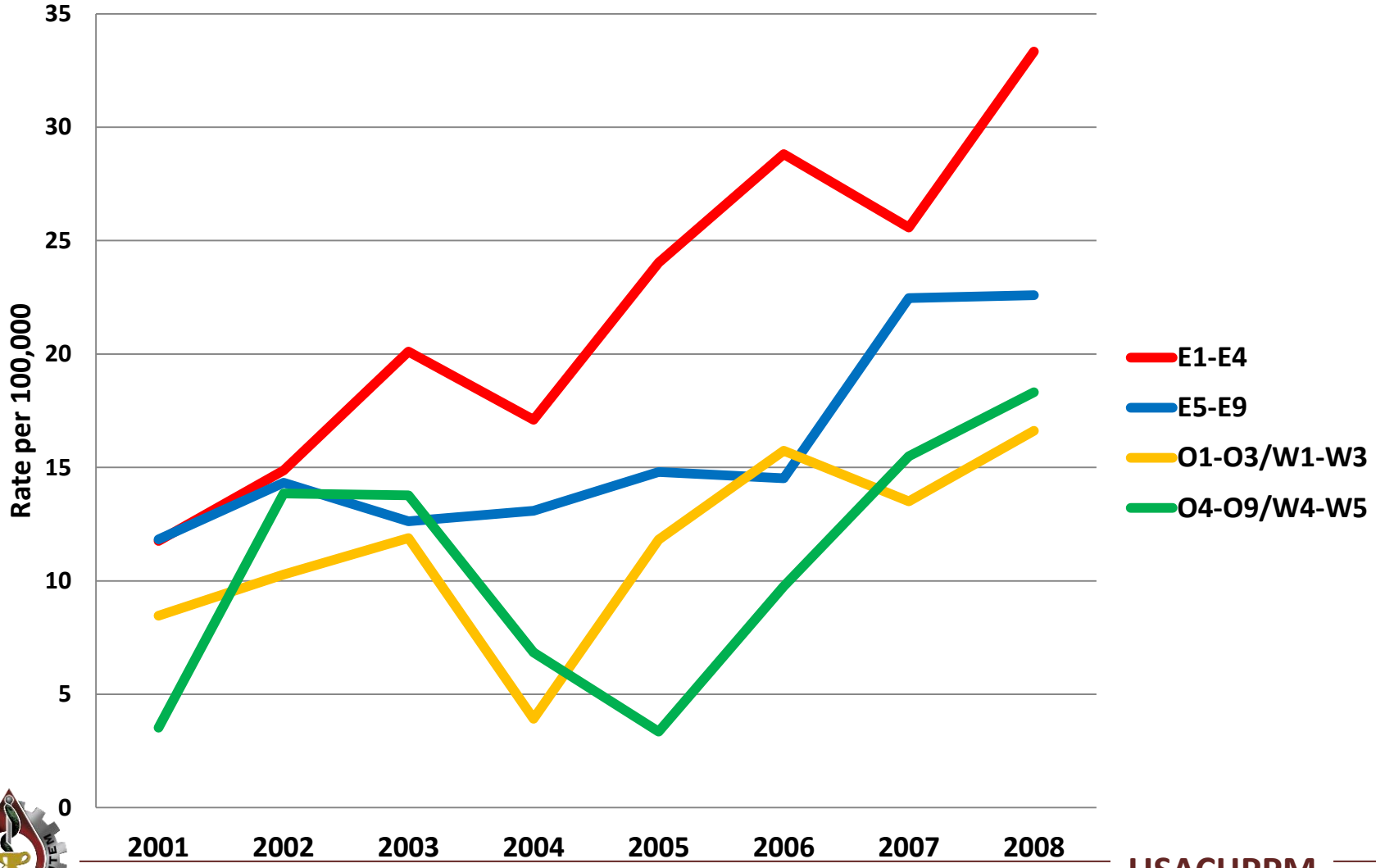
ARMY Suicide Rate Trends, by Age Group



Source: ABHIDE

Prepared by: USACHPPM BSHOP

Army Suicide Rate Trends, by Rank

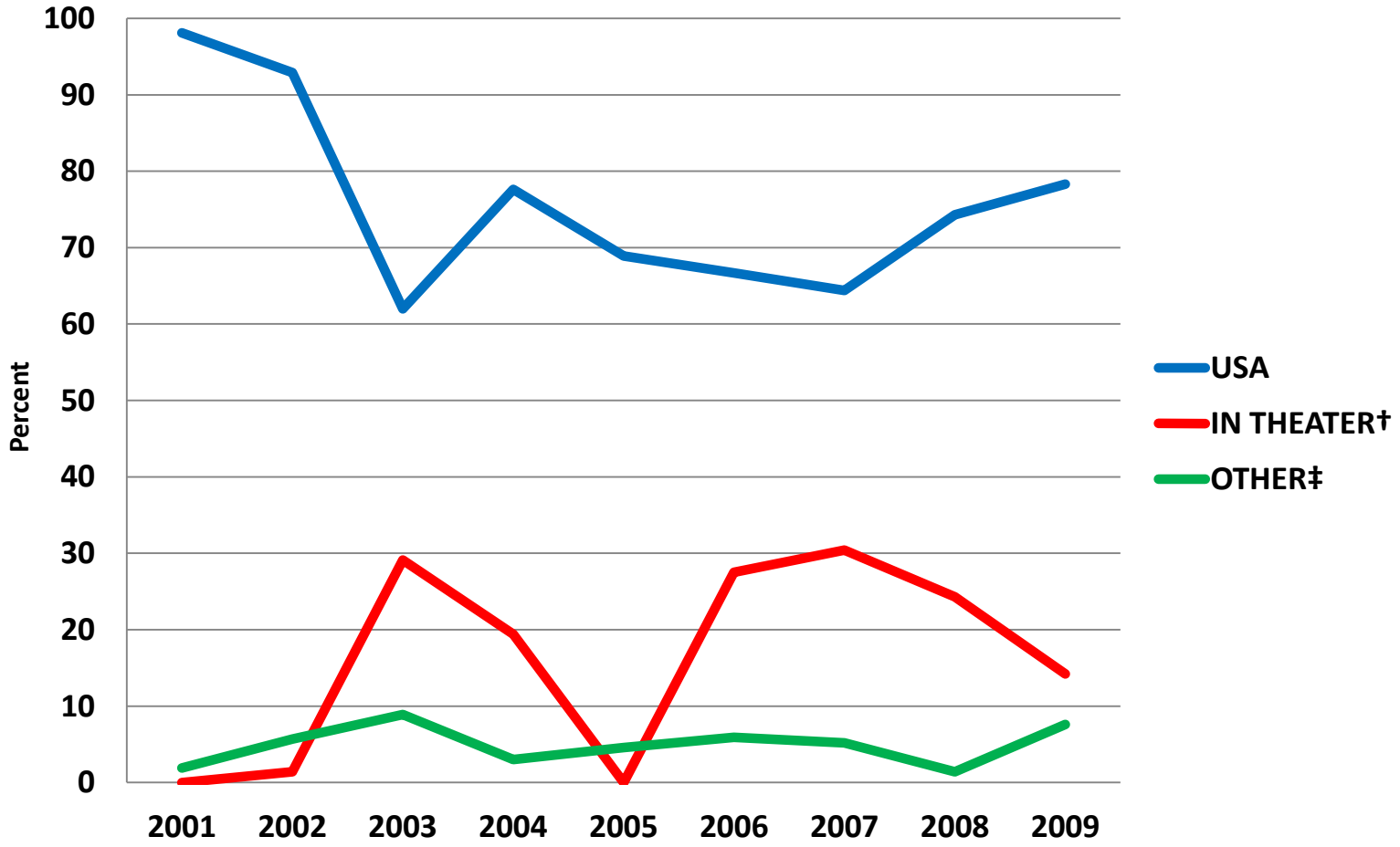


Source: ABHIDE

Prepared by: USACHPPM BSHOP

USACHPPM

US Army Suicides by Place of Death, 2001-2009



† OEF/OIF

‡ Africa, Cyprus, Germany, Kosovo, South Korea, Cuba, Italy, Belgium, Djibouti, Mexico, Poland, Thailand, Uzbekistan

Source: ABHIDE

Prepared by: USACHPPM BSHOP

US Army Suicides 2003-2009*: Mental Health Diagnoses

	N = 696	
	N	%
INPATIENT CARE for any MH Disorder	107	15.4
OUTPATIENT CARE for any MH Disorder	306	44.0
Any MH Disorder	313	45.0
More than one MH Disorder	198	28.5
ANY MOOD DISORDER	136	19.6
Major Depression	59	8.5
Bipolar	17	2.5
Dysthymia	31	4.5
Any Anxiety Disorder (not PTSD)	88	12.7
Post-Traumatic Stress Disorder	50	7.2
Acute Stress Disorder	21	3.0
Adjustment Disorder	161	23.2
Personality Disorders	37	5.3
Psychotic Disorders	19	2.7
Substance-Related Disorders	114	16.4
Previous Suicidal Behavior (E-codes)	49	7.1

* Through 31 July 2009

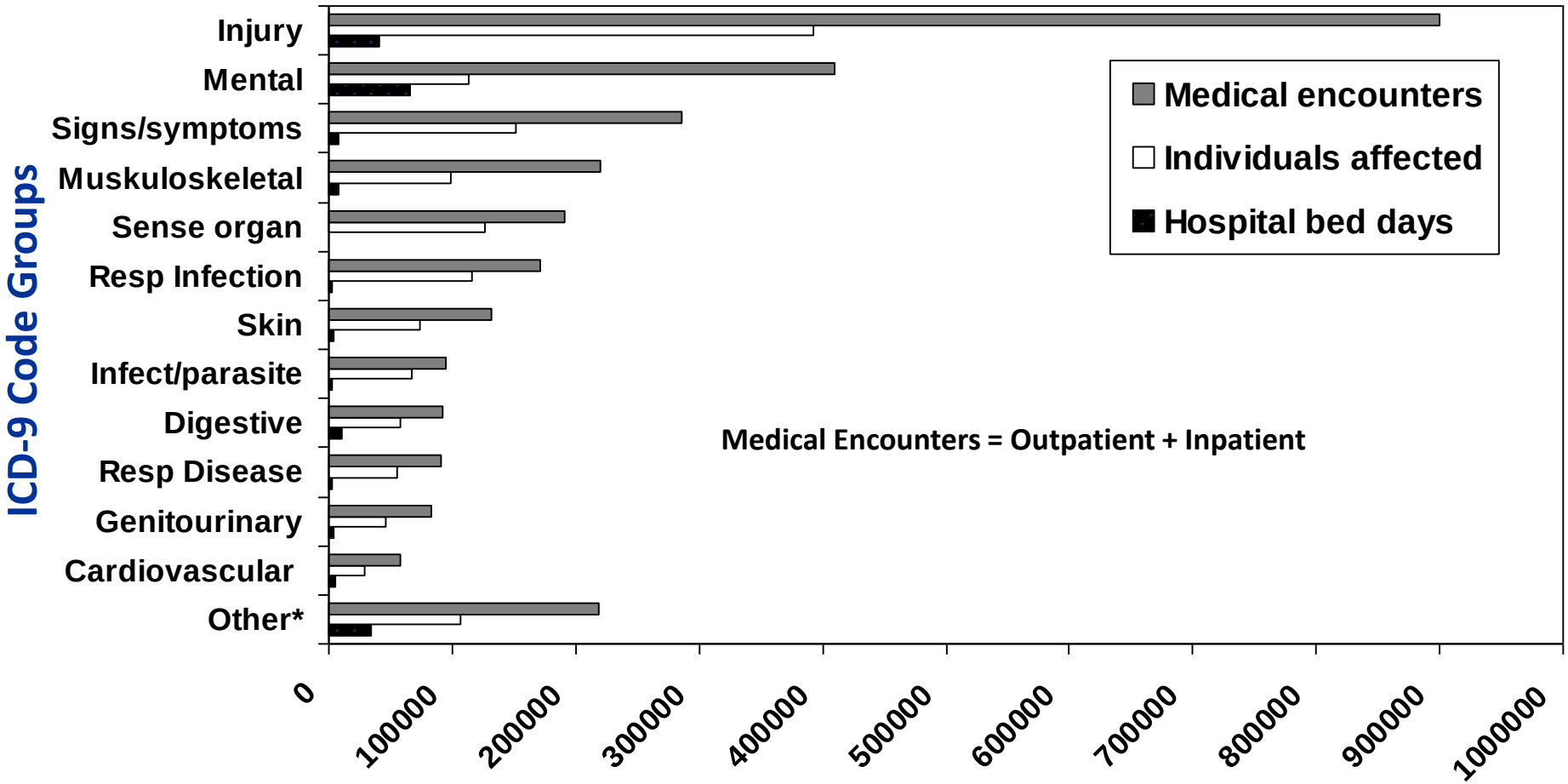
Source: ABHIDE

Prepared by: USACHPPM BSHOP

Epidemiology of Suicide in the US Army: Underlying Factors

Burden of Injuries and Diseases

U.S. Army active duty, 2007



* Includes all ICD-9 codes groups with less than 50,000 medical encounters

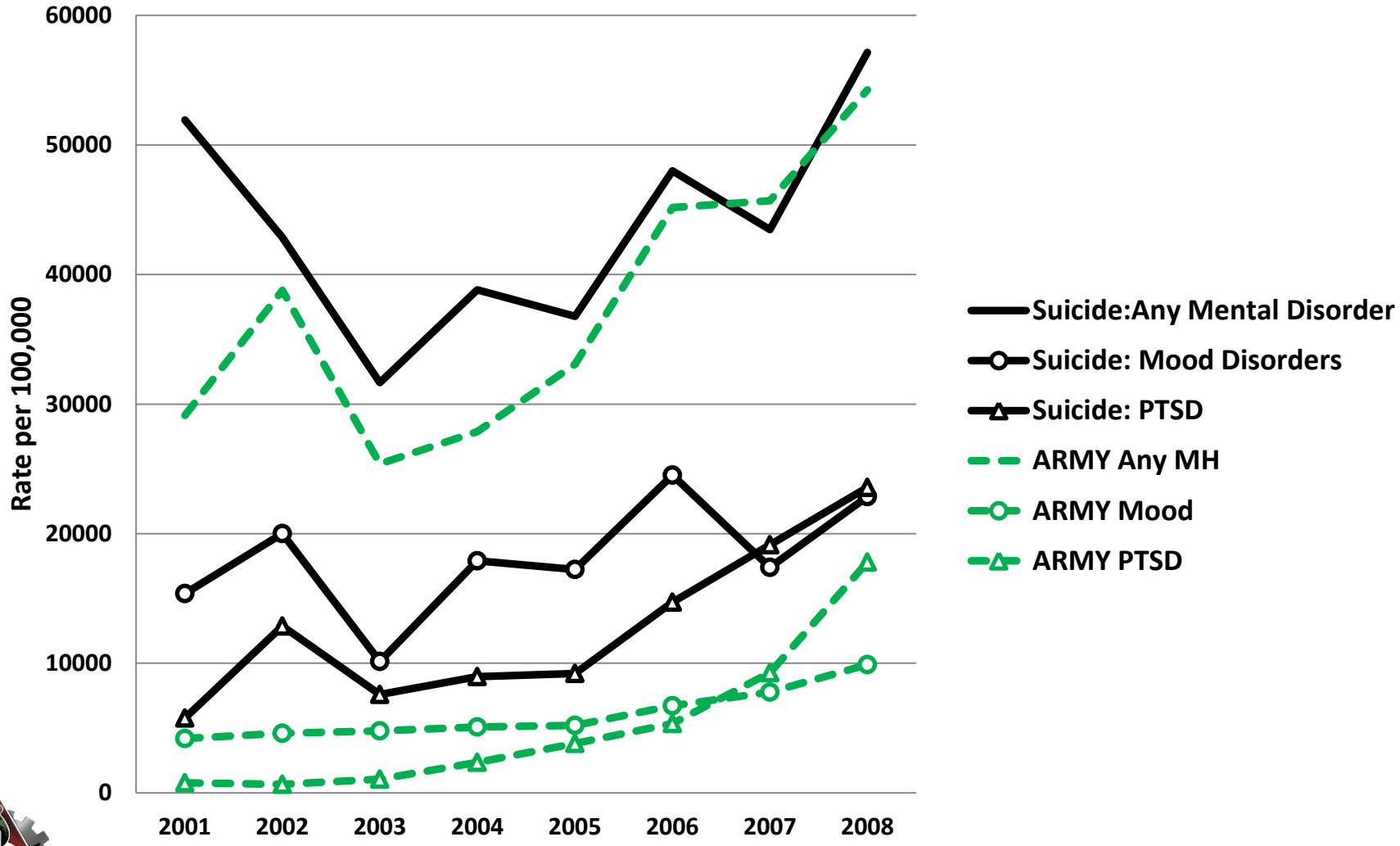
Medical Encounters/ Individuals Affected

Source: Defense Medical Surveillance System, Jul08

USACHPPM

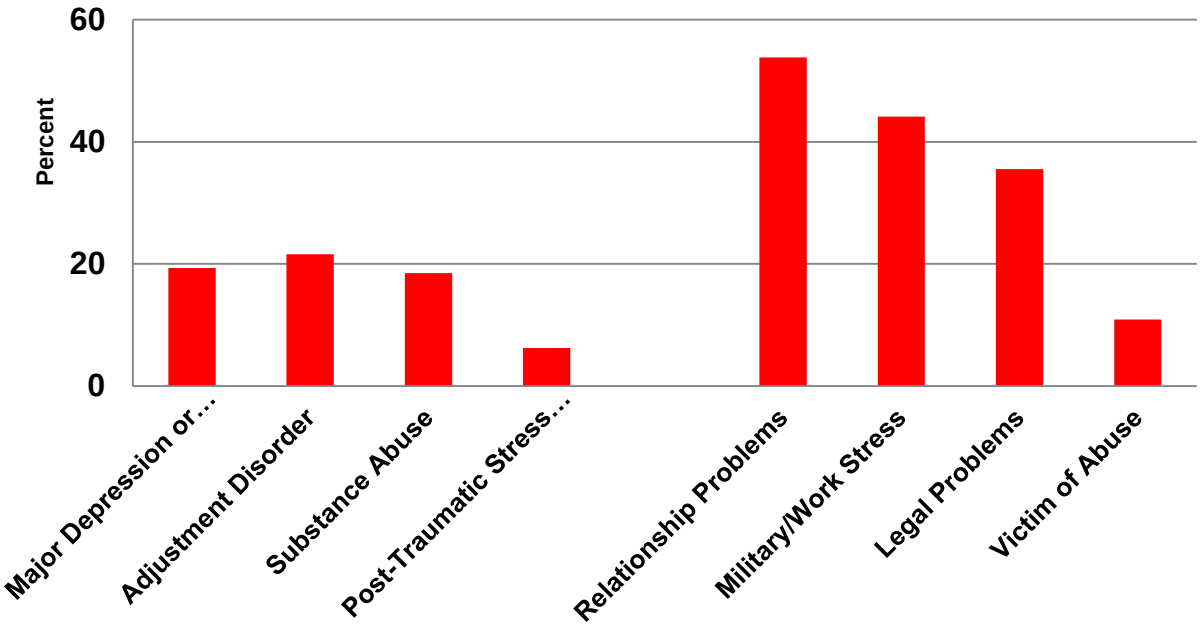
Prepared by: USACHPPM BSHOP

US Army Suicides: Mental Health Trends, 2001-2008

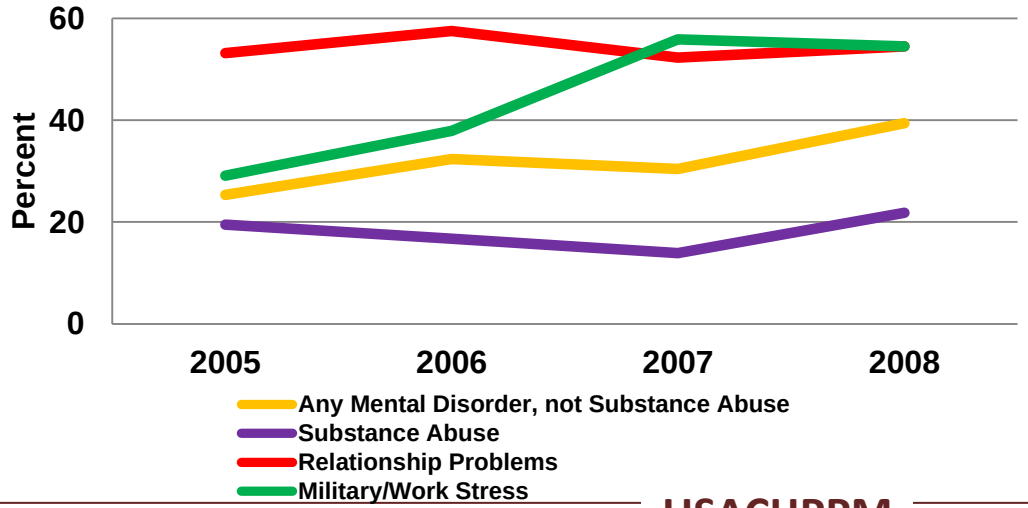


Source: ABHIDE & DMED

US Army Suicides: Modifiable Risk Factors 2005-2008



From 2005-2008, the proportion of suicides with identified risk factors of military/work stress and any mental disorder increased significantly



Source: AFHSC, PDHA
Data represents 245 Soldiers who redeployed and completed the PDHA

Stigma

•Focus Groups from a recent field study revealed fours types of stigma: career, leadership, peer-to-peer, and personal

• Stigma was reported differently across rank groups; lower enlisted were more concerned about peer and self-perceptions, senior enlisted were most concerned about their career and perceived leadership abilities

Career	Leadership	Peer-to-Peer	Personal
On permanent record, affects future promotion and employment	Some old school, senior NCOs, and early promoted NCOs create/maintain stigma	Peer stigma is the worst	Weak, isolated, embarrassed
End career, lose retirement	More stigma for senior enlisted, others think they can't lead, fear of effecting retirement	More stigma if never deployed	Profile makes them feel worthless
Lose security clearance	Many squad/platoon leaders don't support	Treated differently, Ridiculed	Pride/Denial
"Boarded out" rather than rehabilitated	Treated differently; doubt 'warrior' abilities; ridicule those with a profile	Gossiped about/Perceived faking	Don't want to be viewed as a "bad" Soldier

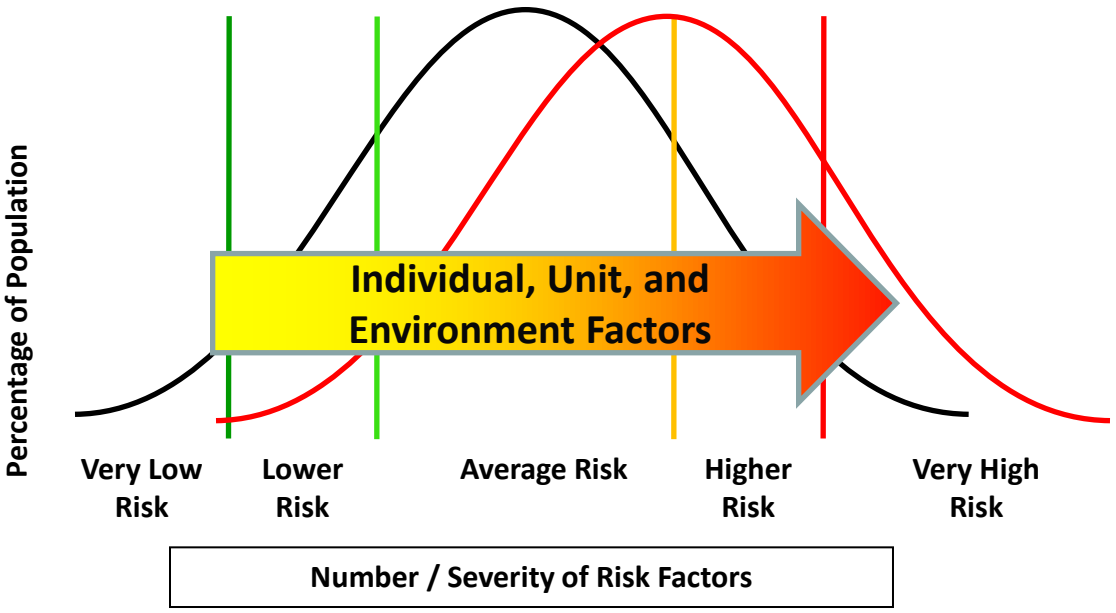
Source: USACHPPM BSHOP

Population Health Perspective

Multifactorial Risk Model

Multiple individual, unit, and environmental factors may converge to shift the population risk to the right

This would put more Soldiers in the Very High Risk category making increased numbers of adverse outcomes more likely



Hypothesized Risk Factors

Individual
- Adverse Childhood Events
- Prior history of Mental Illness
- Alcohol / Drugs
- Behavioral Health Issues (untreated/under-treated)

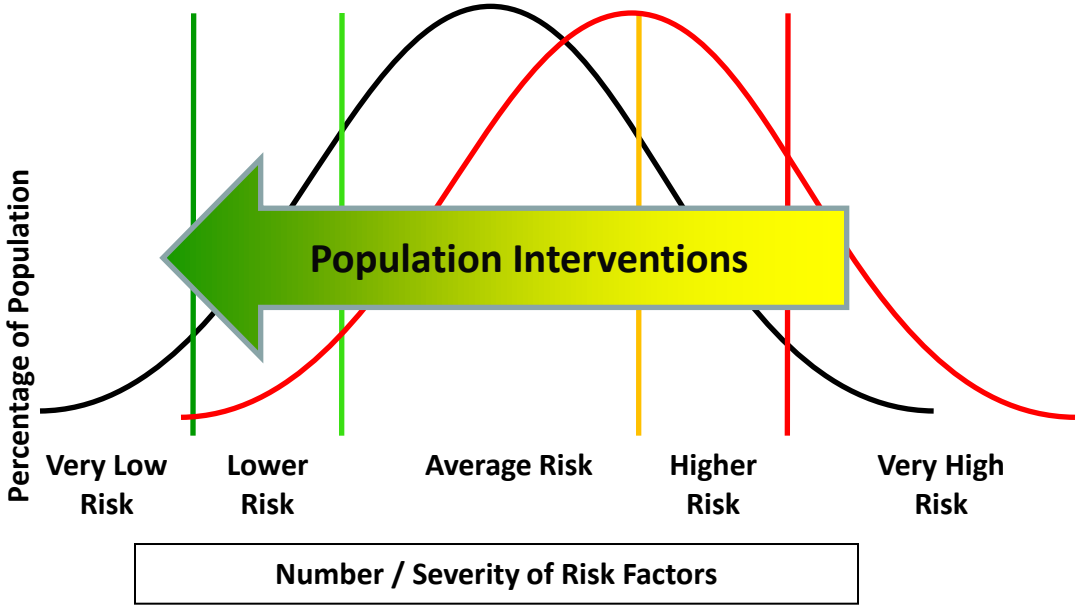
Unit
- Turnover
- Leadership (Stigma)
- Training / Skills

Environment
- Turbulence
- Family Stress / Deployment
- Community
- Stigma

Risk Mitigation Strategies

Programs that shift the overall population risk back to the left may have greatest impact.

The Army is implementing comprehensive programs designed to shift the curve back to the left, reducing underlying population risk, while continuing to improve individual-level care and follow-up



Comprehensive Soldier Fitness: Health Promotion, Risk Reduction, and Suicide Prevention

- Increase Resiliency
- Decrease Alcohol/Drug Abuse
- Decrease Untreated/Undertreated BH
- Decrease Stigma to Seeking Care
- Decrease Relationship/Family Problems
- Decrease Legal/Financial Issues

- Consistent Stigma Reduction themes

Population Based Strategies for Suicide Mitigation

- *The best evidence-based suicide mitigation strategies are optimal identification of high-risk groups and treatment of suicidal individuals*
- "Gatekeeper" strategies, which identify high risk individuals, may decrease suicides if identification leads to appropriate clinical management or reduction of stress
- Recent literature suggests interventions which decrease risk-factors in the population may impact suicide rates
- Current Army suicide mitigation programs focus on identification/treatment of high risk individuals, not groups.
- Incorporating strategies to mitigate risk-factors in the general Army population and among specific high risk groups may decrease risk for suicide in the population