



# American Osteopathic College of Occupational and Preventive Medicine 2011 Annual Meeting, November 1, 2011

## MHAT Data: Combat Exposure Rates

Combat Experiences (OEF)	Percent		
	2005	2007	2009
<b>During this deployment did you experience being attacked or ambushed</b>	<b>49.9%</b>	<b>74.3%</b>	<b>83.3%</b>
During this deployment did you experience receiving small arms fire	48.5%	68.6%	74.1%
During this deployment did you experience witnessing violence within the local population or between ethnic groups	44.5%	48.4%	53.8%
During this deployment did you experience seeing dead or seriously injured Americans	49.1%	63.5%	62.2%
<b>During this deployment did you experience knowing someone seriously injured or killed</b>	<b>70.4%</b>	<b>87.1%</b>	<b>82.9%</b>
During this deployment did you experience being in threatening situations where you were unable to respond because of rules of engagement	33.1%	49.2%	58.2%
During this deployment did you experience shooting or directing fire at the enemy	36.0%	58.8%	74.8%
During this deployment did you experience calling in fire on the enemy	17.0%	30.8%	44.1%
<b>During this deployment did you experience receiving incoming artillery rocket or mortar fire</b>	<b>75.2%</b>	<b>91.0%</b>	<b>92.9%</b>
During this deployment did you experience being directly responsible for the death of an enemy combatant	12.9%	30.9%	51.6%
<b>During this deployment did you experience having a member of your own unit become a casualty</b>	<b>56.4%</b>	<b>75.0%</b>	<b>77.1%</b>
During this deployment did you experience a close call dud landed near you	19.6%	38.7%	39.2%
During this deployment did you experience a close call equipment shot off your body	3.0%	16.1%	11.5%
During this deployment did you experience a close call was shot or hit but protective gear saved you	2.5%	11.9%	11.0%
<b>During this deployment did you experience having a buddy shot or hit who was near you</b>	<b>8.8%</b>	<b>24.1%</b>	<b>36.4%</b>

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## Pain and Substance Use

- In 2009, nearly 3.8 million prescriptions were written for pain medications, up from 866,773 such prescriptions in 2001
- Pentagon records also show that abuse of prescription drugs by the military is more than twice that seen in the civilian population ---- 5% compared to 11%, according to a 2008 military survey measured against a 2007 civilian survey
  - OxyContin and Vicodin most abused painkillers
  - Out of nearly 30,000 troops, 1 in 4 admitted abusing prescription drugs, most being pain relievers, in a 1 year period
- Pain is the most commonly reported complaint of Iraq- and Afghanistan-era veterans treated by the VA

Armed Forces Health Surveillance Center, "Number of Service Members Deployed to OEF or OIF Who Were Prescribed Antidepressants by Year of Deployment Start," undated.

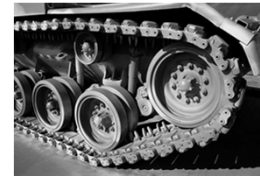
## History of PTSD



- ✓ Evolution – fight or flight and survival
- ✓ Increased pupil size
- ✓ Increased heart rate
- ✓ Rapidly contracting muscles
- ✓ Modern hard-wired stress response

## History of PTSD

- ✓ 19<sup>th</sup> century 'Railroad Spine'
- ✓ WWI & WWII
  - ✓ Shell shock
  - ✓ Battle fatigue
  - ✓ Traumatic neurosis
  - ✓ Concentration camp syndrome
  - ✓ Sica, 1996



## History of PTSD

- ✓ 1970's – Vietnam Syndrome
- ✓ 1970's – Rape Trauma Syndrome
- ✓ 1980 – PTSD recognized as a generalized anxiety disorder in the then DSM-III
- ✓ 1980's – PTSD issues and controversy emerge in worker's compensation, disability claims and medicolegal fronts
- ✓ 1990's – PTSD becomes one of the most highly compensated psychological injury claims (Levy, 1995)

## DSM-IV Diagnosis

- ✓ Exposure to a traumatic event in which both of the following were present:
  - ✓ Person experienced, or witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
  - ✓ Person's response involved intense fear, helplessness or horror

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## DSM-IV Diagnosis

- ✓ The traumatic event is persistently re-experienced in one or more ways:
  - ✓ Recurrent and intrusive recollections of the event including images/thoughts/perceptions
  - ✓ Recurrent distressing dreams of the event
  - ✓ Acting or feeling as if the event were recurring (flashbacks, reliving, illusions)
  - ✓ Intense psychological distress on exposure to internal or external cues of event
  - ✓ Physiological reactivity on exposure to internal or external cues of event

## DSM-IV Diagnosis

- ✓ Persistent avoidance of stimuli associated with trauma & numbing of general responsiveness indicated by:
  - ✓ Avoidance of thoughts, feelings or conversations associated with trauma
  - ✓ Avoidance of activities, places, people that arouse recollections of the trauma
  - ✓ Inability to recall important aspect of trauma
  - ✓ Diminished interest/participation in activities
  - ✓ Feeling of detachment/estrangement
  - ✓ Restricted range of affect
  - ✓ Sense of foreshortened future

## DSM-IV Diagnosis

- ✓ Persistent symptom of increased arousal as indicated by (2):
  - ✓ Difficulty falling or staying asleep
  - ✓ Irritability or outbursts of anger
  - ✓ Difficulty concentrating
  - ✓ Hypervigilance
  - ✓ Exaggerated startle response
- ✓ Duration more than one month
- ✓ Disturbance causes clinically significant distress or impairment in social/occupational/other fxn

## PTSD in the General Population

- ✓ 2-20% of civilians exposed to trauma
- ✓ Lifetime 5% males, 10% females
- ✓ Women 4x more likely if exposed
- ✓ PTSD beyond 3 months often becomes chronic



## Predictors of PTSD



- ✓ Other anxiety disorders
- ✓ Depression
- ✓ Substance abuse
- ✓ Abuse/PTSD history
- ✓ Avoidant coping style
- ✓ Behavioral acting out style
- ✓ External attribution of blame
- ✓ Prior unemployment
- ✓ Loss of control during event
- ✓ Fear of death
- ✓ Chronic pain

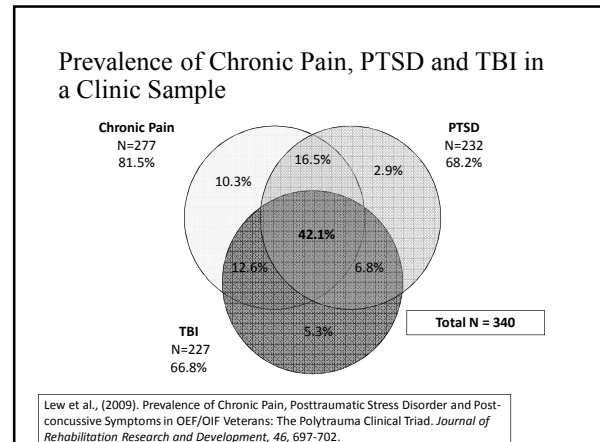
## Polytrauma Definition

- ✓ **Polytrauma:** Two or more injuries to physical regions or organ systems, one of which may be life threatening, resulting in physical, cognitive, psychological, or psychosocial impairments and functional disability
  - ✓ Moderate-Severe Traumatic Brain Injury
  - ✓ Traumatic amputation; vision loss; hearing loss; musculoskeletal injury; chronic pain syndromes, other injuries
- ✓ **TBI and Co-Occurring Conditions**

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Author	Subjects	Pain Sx	PTSD Sx	TBI Sx	SUD Sx
Clark et al., 2007	PRC inpatients (Tampa)	96%	44%	80%	4%
Hoge et al., 2008	Soldiers with LOC	50%-100%*	44%	100%	N/A
Kalra et al., 2008	Outpatients with pain (Tampa)	100%	16%	N/A	12%
Kang & Hyams, 2007	OEF/OIF VA disability evals	N/A	15%	N/A	3%
Lew et al., 2007	Outpatients with H/O mild TBI	97%	42%	100%	N/A
Ruff et al., 2008	OEF/OIF outpatients with mild TBI	93%**	90%	100%	N/A
Sayer et al., 2008	PRC inpatients (all PRCs)	82%	42%	88%	N/A
Shipherd et al., 2007	Outpatients seeking PTSD Tx	66%	100%	N/A	28%
Villano et al., 2007	295 OEF/OIF Mental Health patients	40%	46%***	N/A	49%

\*Headaches only; Total pain % not reported.  
\*\*Headaches only; Total pain % not reported.



## Suicidality and Chronic Pain

- ✓ Tang & Crane (2006)\*
- ✓ Review of literature
- ✓ Risk of death doubles in those with chronic pain
  - ✓ Back pain & widespread body pain: higher risk of future death by suicide
- ✓ Pain > 3 months = greater likelihood of experiencing suicidal ideation
- ✓ Suicidal ideation > in those with chronic pain with insomnia

\*Psychological Medicine, 36, 575-586

## Suicidality and Chronic Pain

- ✓ Edwards, et al. (2006)\* \*Pain, 126, 272-279
- ✓ 1512 patients seeking treatment at a University multidisciplinary pain management center
- ✓ 32% self-reported recent suicidal ideation
- ✓ Predictors of degree of suicidal ideation: magnitude of depressive symptoms and pain-related catastrophizing cognitive coping strategy
  - ✓ "It is terrible and I feel it is never going to get any better"
  - ✓ "I worry all of the time about whether it will end"

## Intervention

- ✓ Safety Plans and Polytrauma
  - ✓ Consider cognitive capacity
  - ✓ Written / multiple copies / smartphone
  - ✓ Review / rehearse / incorporate in cognitive rehab strategies
  - ✓ Collateral support and family education

## Intervention

- ✓ Incorporation of activities that are incompatible with self-harm behavior
  - ✓ Pleasant events planning [Lewinsohn]
  - ✓ Physical activity, aerobic conditioning
  - ✓ "Tools of efficacy"
    - ✓ Cognitive aids, compensatory strategies, planning experiences of efficacy
    - ✓ Coping strategies for pain and other polytrauma conditions [can the person exert some sense of control or mastery over symptoms?]

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## Reducing Excess Disability

- ✓ Increase function, reduce the consequences of pain [Do more; then hurt less]
- ✓ Headache management
- ✓ Treat vestibular dysfunction
- ✓ Treat mood symptoms; facilitate self-coping and resilience
  - ✓ Depression-Anger-Anxiety
- ✓ Reduce alcohol/substances
- ✓ Nutrition/healthy lifestyle

## Patient-Family Interventions in Support of Neurorehabilitation

- ✓ Alignment of Expectations
- ✓ Modifying the Interpersonal Environment
  - ✓ Trust-Warmth-Safety
  - ✓ Reduction of Burden
  - ✓ Sense of Belongingness

## Interdisciplinary Rehabilitation Team as a Transformational Process

- ✓ Effective rehabilitation team functioning impacts patient outcomes<sup>1</sup>
- ✓ Team functioning can be changed by process improvement interventions<sup>2</sup>
- ✓ Team processes need to be optimized in working with those who have Polytrauma /TBI and co-occurring conditions

1 - Strasser, D. C., Falconer, J. A., Herrin, J., Bowen, S., Stevens, A. B. & Uomoto, J. (2005). Team functioning and patient outcomes in stroke rehabilitation. *Archives of Physical Medicine & Rehabilitation*, 86, 403-409.

2 - Strasser D.C., Falconer J.A., Stevens A.B., Uomoto, J.M., Herrin, J., Bowen, S.E., and Burridge, A.B. (200) Team Training and Stroke Rehabilitation Outcomes: A cluster randomized trial. *Archives of Physical Medicine & Rehabilitation*, 89, 10-15.