



Prehospital Combat Wound Medication Pack Administration in Iraq and Afghanistan: Department of Defense Trauma Registry Analysis

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Background





- Pain and open wounds common with war injuries¹
- Lack of analgesia associated with negative outcomes²
- Wound prophylaxis for penetrating injury associated with decreased infection rates³

<https://www.wj.com/article/war-u-s-soldiers-dying-from-survivable-wounds-141145360>

Methods

- Department of Defense Trauma Registry (DODTR)
- Jan 2007 – Aug 2016
- U.S. service members only
- CWMP or any of its components
- TCCC-based indications for CWMP administration
 - Gunshot wound
 - Tourniquet application
 - Major amputation
 - Open fractures
 - Serious injury to thorax, abdomen or extremities (AISBR >=3)
- USAISR approved (Protocol #H-16-005)

Results

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            graph TD
            A[38,769 DODTR Subjects] --> B[28,222 Pre-defined ED]
            B --> C[11,655 U.S. Military]
            C --> D[84 CWMP]
            C --> E[11,571 No CWMP]
            
```


		Recipients n=84	Non-recipients n=11581	p-value
Demographics	Age	24 (21-30)	24 (21-28)	0.783
	Male	100% (84)	97% (11286)	0.138
Mechanism of Injury	Explosive	64% (54)	62% (7212)	0.707
	GSW	17% (14)	15% (1791)	
	MVC	7% (6)	6% (679)	
	Other	12% (10)	16% (1899)	
Country	Afghanistan	98% (82)	68% (7870)	<0.001
	Iraq	2% (2)	32% (3711)	
Injury Score	Composite	4 (1-6)	6 (4-14)	<0.001
	Serious Injury by Body Region			
	Head/neck	2% (2)	10% (1112)	0.023
	Face	0% (0)	1% (51)	1.000
	Thorax	4% (3)	10% (1119)	0.061
	Abdomen	1% (1)	6% (735)	0.065
	Extremities	13% (11)	23% (2688)	0.028
	Skin/Superficial	2% (2)	2% (279)	1.000
Outcome	Discharged Alive	100% (84)	98% (11294)	0.274

Results


```


            graph TD
            A[38,769 DODTR Subjects] --> B[28,222 Pre-defined ED]
            B --> C[11,655 U.S. Military]
            C --> D1[2,699 Extremity Injury]
            C --> D2[2,425 Open Fracture]
            C --> D3[1,912 Tourniquet]
            C --> D4[803 Amputation]
            C --> D5[1,805 Gunshot Wound]
            C --> D6[1,122 Thoracic Injury]
            C --> D7[736 Abd Injury]
            D1 --> E1[11 CWMP]
            D2 --> E2[10 CWMP]
            D3 --> E3[11 CWMP]
            D4 --> E4[5 CWMP]
            D5 --> E5[14 CWMP]
            D6 --> E6[3 CWMP]
            D7 --> E7[1 CWMP]
            
```

- <1% of subjects with TCCC-based indications for CWMP administration received the intervention




Discussion






- CWMP administration was rare
- Recipients less severely injured
 - Consistent with analgesia
 - Not antibiotic though
 - >33% non-recipients with blast/ GSW to extremities and thorax
 - Perhaps not PO tolerant
 - CWMP subordinated to other life-saving interventions


<https://www.gim.com/articles/operations/special-topics/battling-clamp-benning-qattafelds-city-of-reds.html>




Discussion




- Pill pack data derived from surveys
 - 96% of 26 Role 1s in Afghanistan did not issue CWMP²¹
 - CWMP limited to Special Operations and Marine Corps forces²⁰
- Previous reports cite theater logistical supply issues and inadequate pre-deployment training as factors^{4,18,20,21}




<https://www.bing.com/news/health/defense/21106942/British-heroes-wounded-in-Afghanistan-and-raq-could-be-forgotten-by-Ministry-of-Defence.html>



Discussion







- 2 studies of 75th Ranger Regiment only for antibiotic of CWMP^{5,6}
 - 19-21% received antibiotic^{5,6}
 - 75th uniquely high TCCC adherence rates
- <1% in our study and 7 of 84 (8.3%) were the antibiotic
 - Conventional forces, all services
 - Logistical issues partly responsible
 - Significantly larger data set

<https://www.seattletimes.com/military/news/10m-soldiers-receive-awards-including-for-valorous-action/>



 **Discussion** 



- Recommend CWMP not individually issued, but supplied to CLS and medics
 - Infrequently utilized
 - Difficult to maintain: field degradation, medication expiration, logistical limitations
 - \$11.45 each x millions deployed = tens of millions of dollars^{23,24}

 **Limitations** 

- Selection bias—DODTR comprises casualties admitted to surgical MTFs
- Unable to report self, buddy, medic, SOF, conventional, etc administrations
- Available pain scores not reported before or after CWMP
- No wound infection rates available
- Retrospective design reliant on data susceptible to failures of entry, retrieval, and inclusion



 **Conclusion** 

- Subjects receiving the CWMP were less severely injured
- CWMP was infrequently administered among the study population

*Note: Pending publication in JSOM






Questions?

Acknowledgement

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References

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