

# CCATT Population Trends From 2010-2019: Implications for CCATT Training



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On behalf of:

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The opinions expressed on this document are solely those of the author(s) and do not represent an endorsement by or the views of the United States Air Force, the Department of Defense, or the United States Government.

This study was conducted under a protocol reviewed and approved by the Wilford Hall Ambulatory Surgical Center IRB and in accordance with the approved protocol.

# Background

Mogadishu, 1993

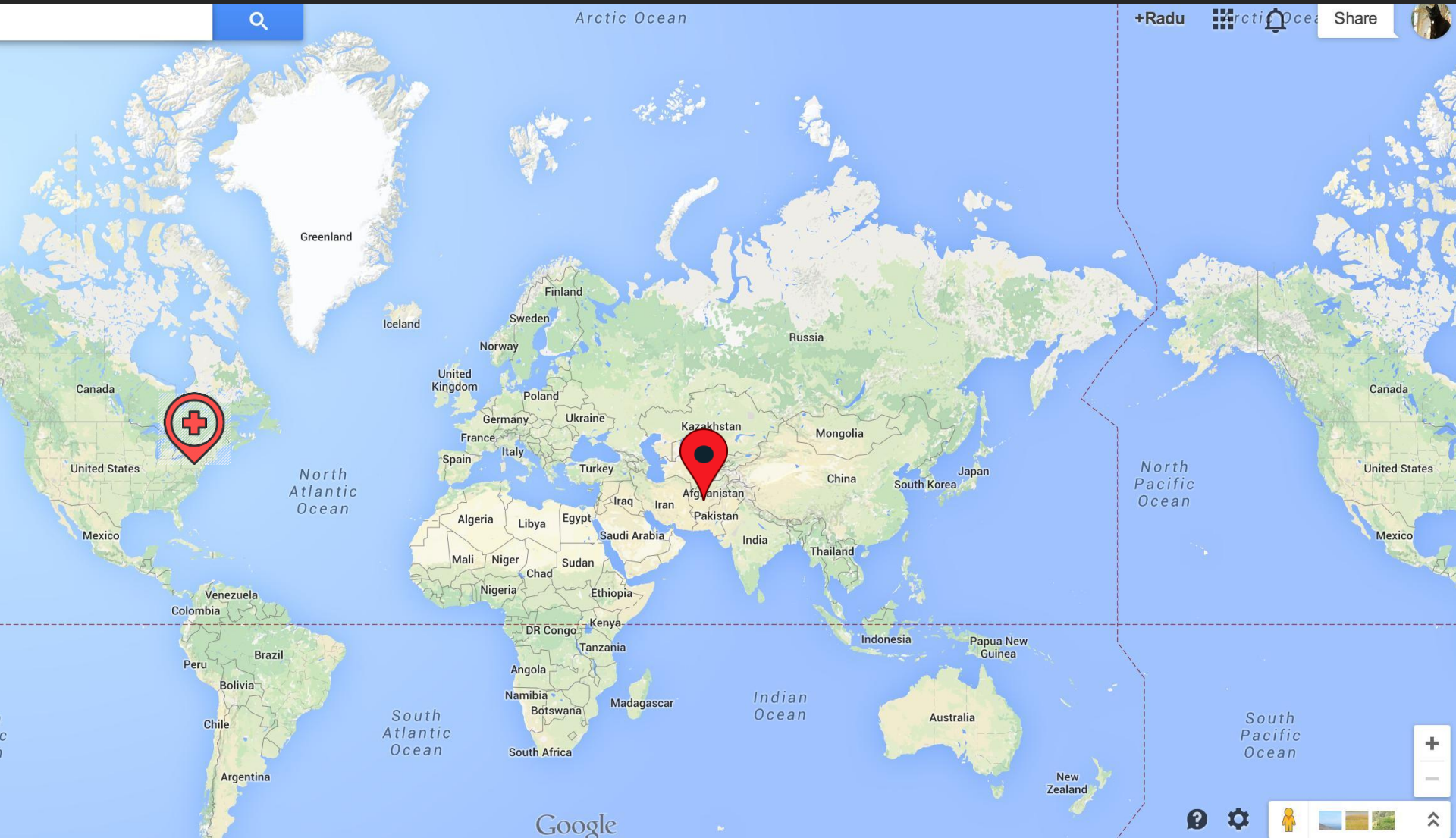
Resource logistics:

Personnel

Medical

Transport





Google



United Spinal Association, 120-34 Queens Blvd  
Battery Park, New York, NY 10004

**Route options** CLOSE

Prefer

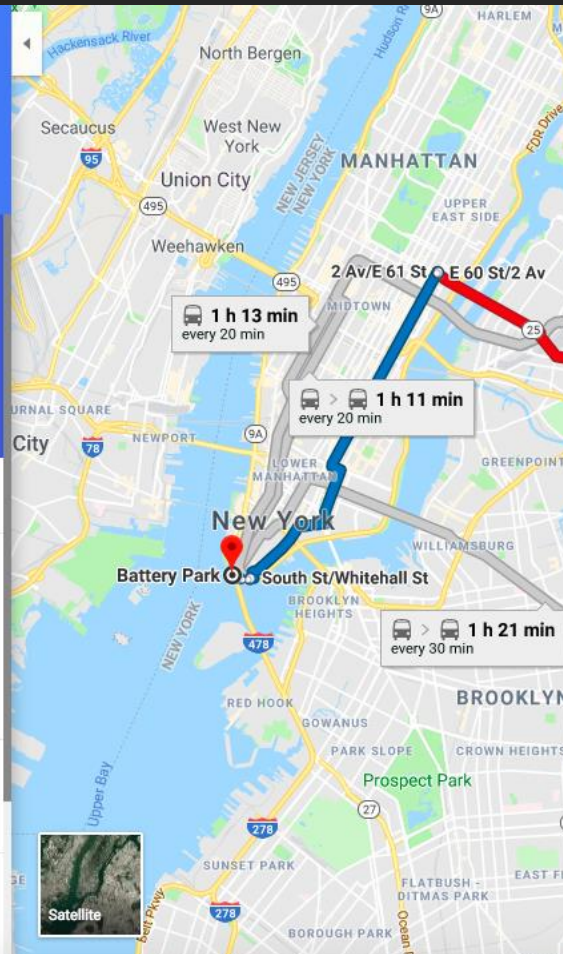
- Bus
- Subway
- Train
- Tram / Light rail

**Routes**

- Best route
- Fewer transfers
- Less walking
- Wheelchair accessible

Send directions to your phone

	2:21 AM–3:51 AM	1 h 30 min
	Q60 > M15 >	
	2:24 AM from Queens Bl/Union Tpk	
	10 min every 30 min	
	<a href="#">DETAILS</a>	
	2:16 AM–3:29 AM	1 h 13 min
	> E >	
	2:15 AM–3:36 AM	1 h 21 min
	Q60 > J >	



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# CCATT

Critical Care Air Transport Team

“Flying ICU” developed in 1990’s<sup>1,2</sup>

3 person team-MD, RN, RT

Critically ill patients evacuated hours from injury

<sup>1</sup>Johannigman J, *J Trauma*, 2008

<sup>2</sup>Grissom TE, *Crit Care Med*, 2006



# Objective

Describe CCATT missions over a 10 year period: 2010-2019



# Pilot Unit End of Year Statistical Reports

Counts

Service Affiliation

Origination Location

Trauma vs. Medical

Diagnoses

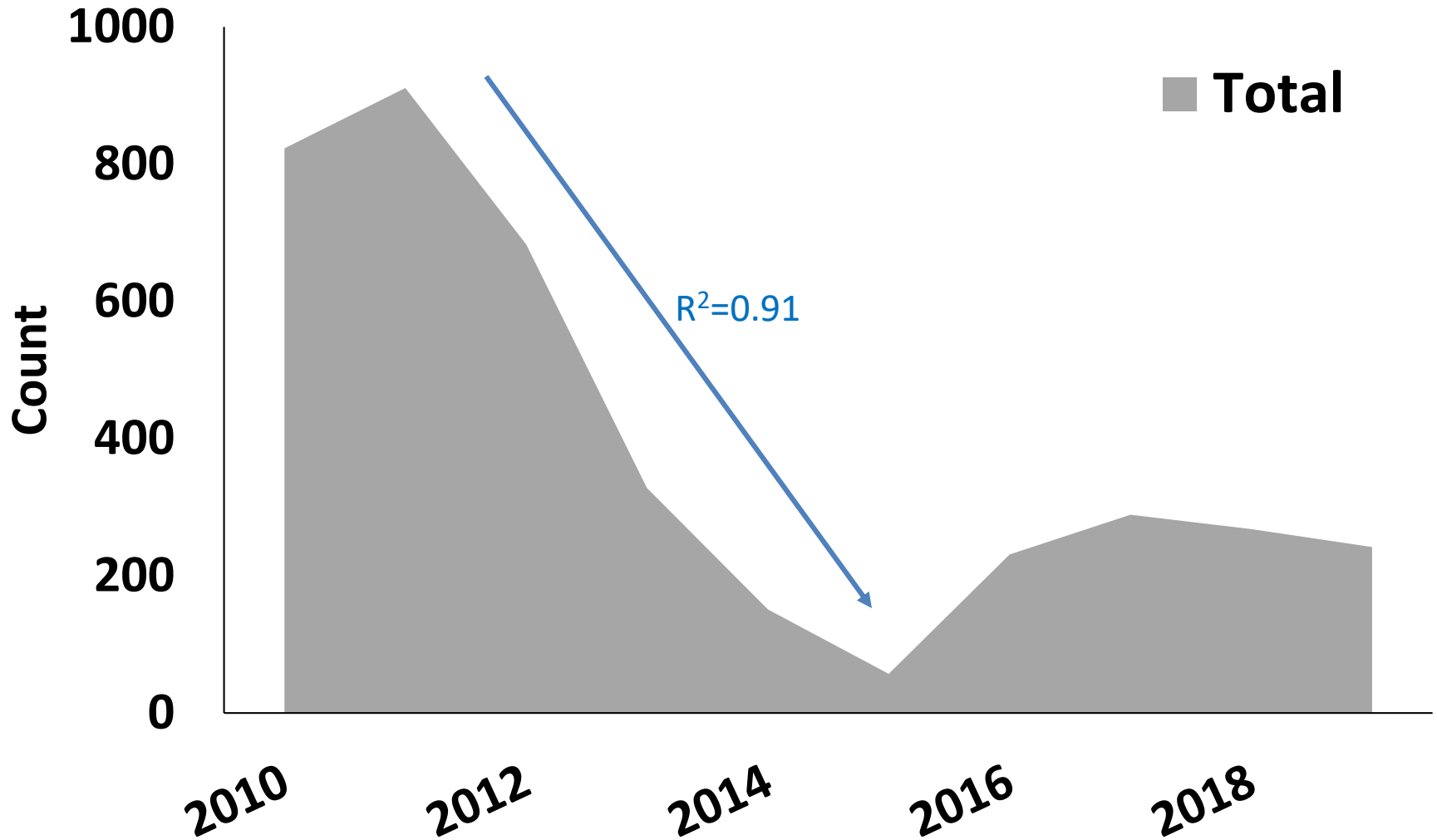
Events

2010 to 2019

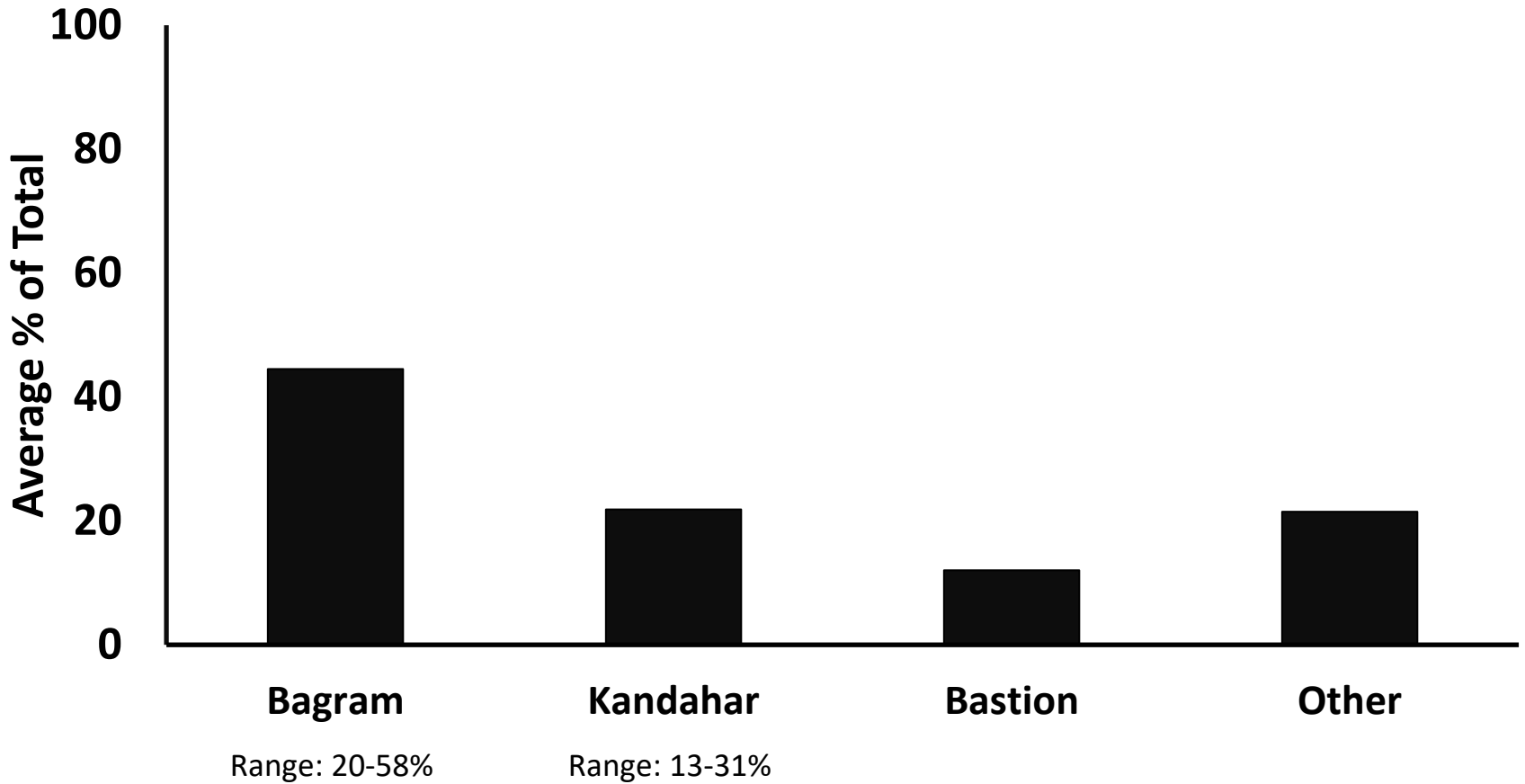
Evaluated for trends and correlations

\*Some proportions are not mutually exclusive

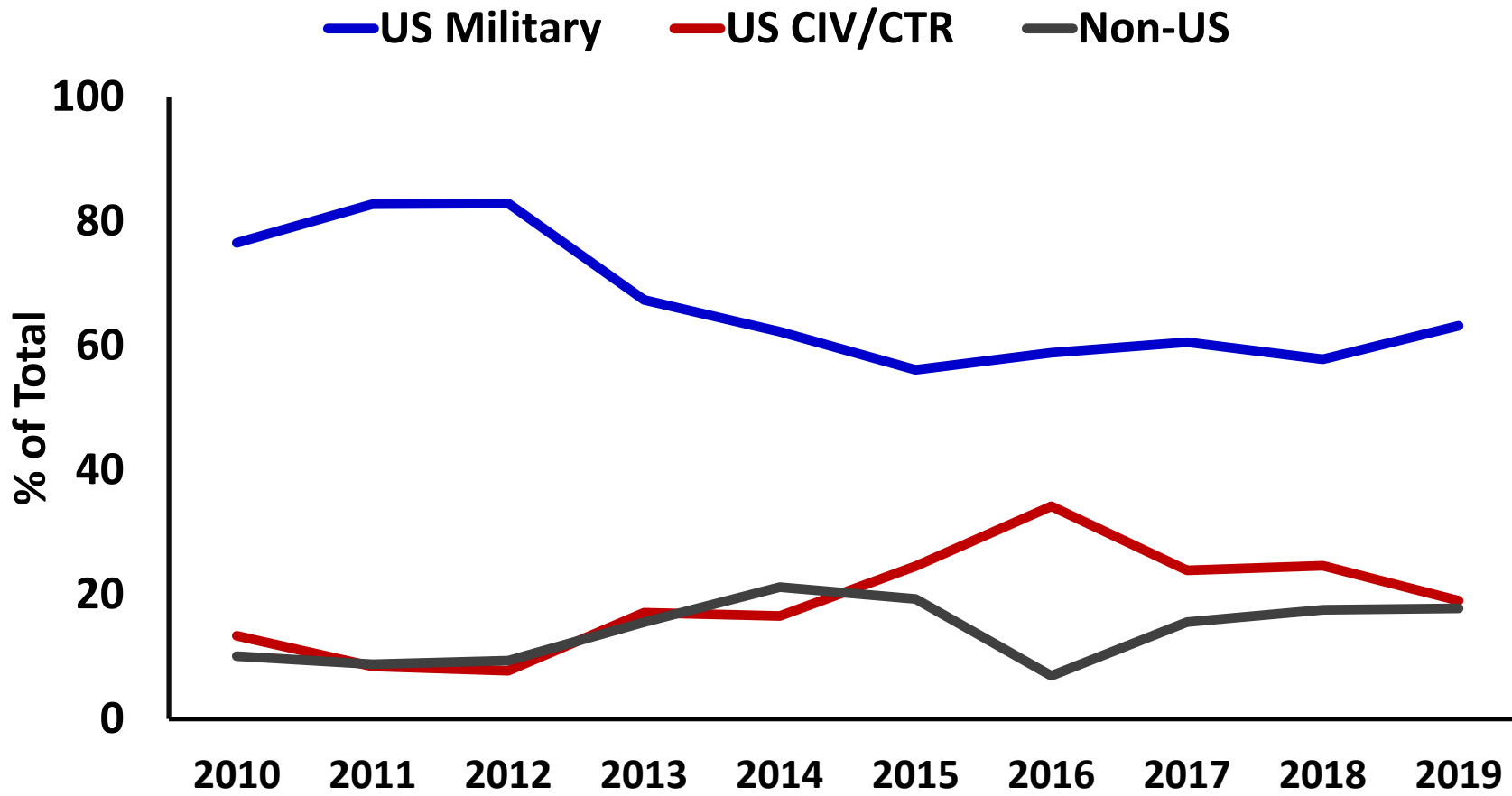
# Number CCATT Transports: 2010 to 2019



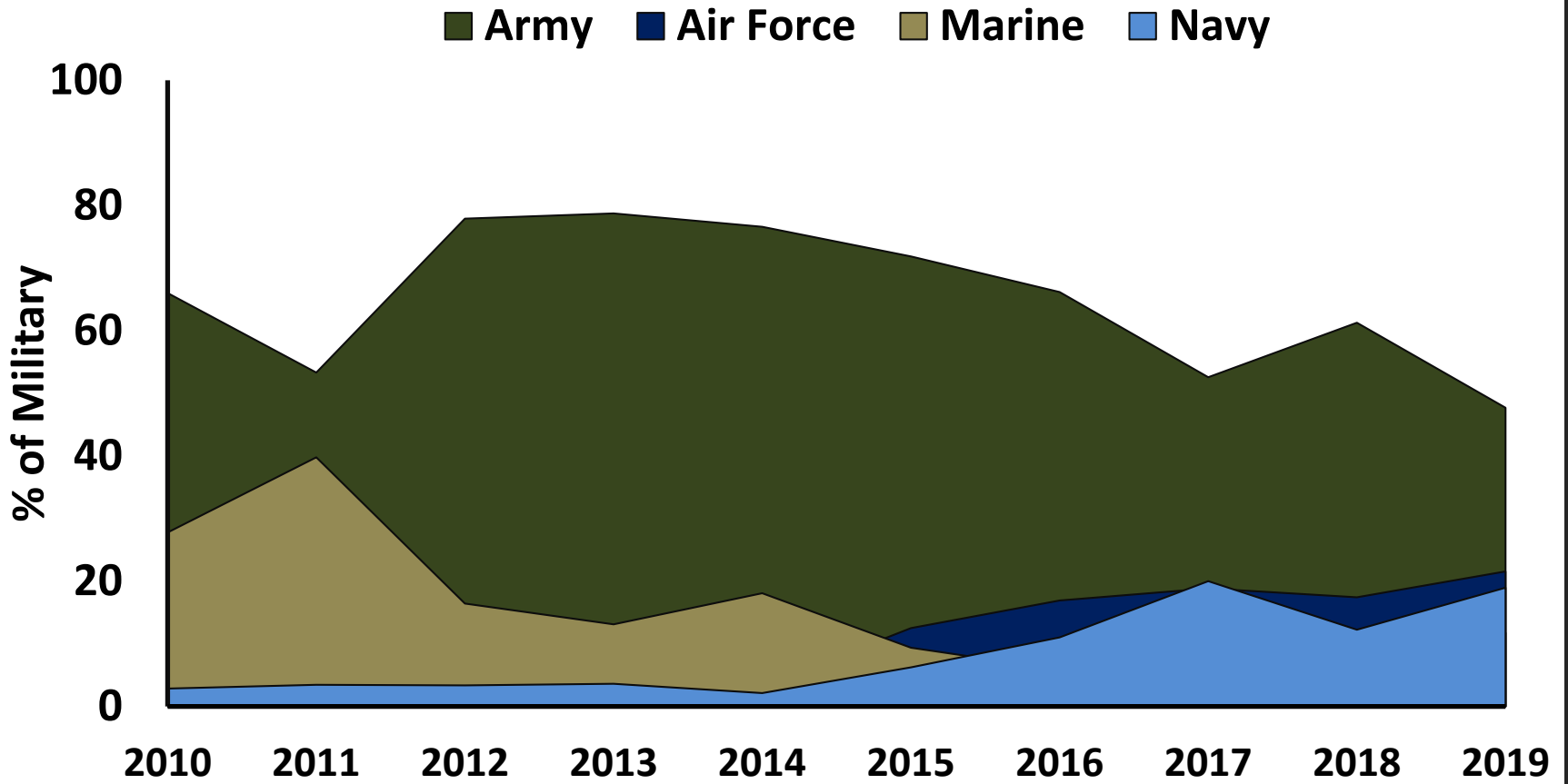
# Origination



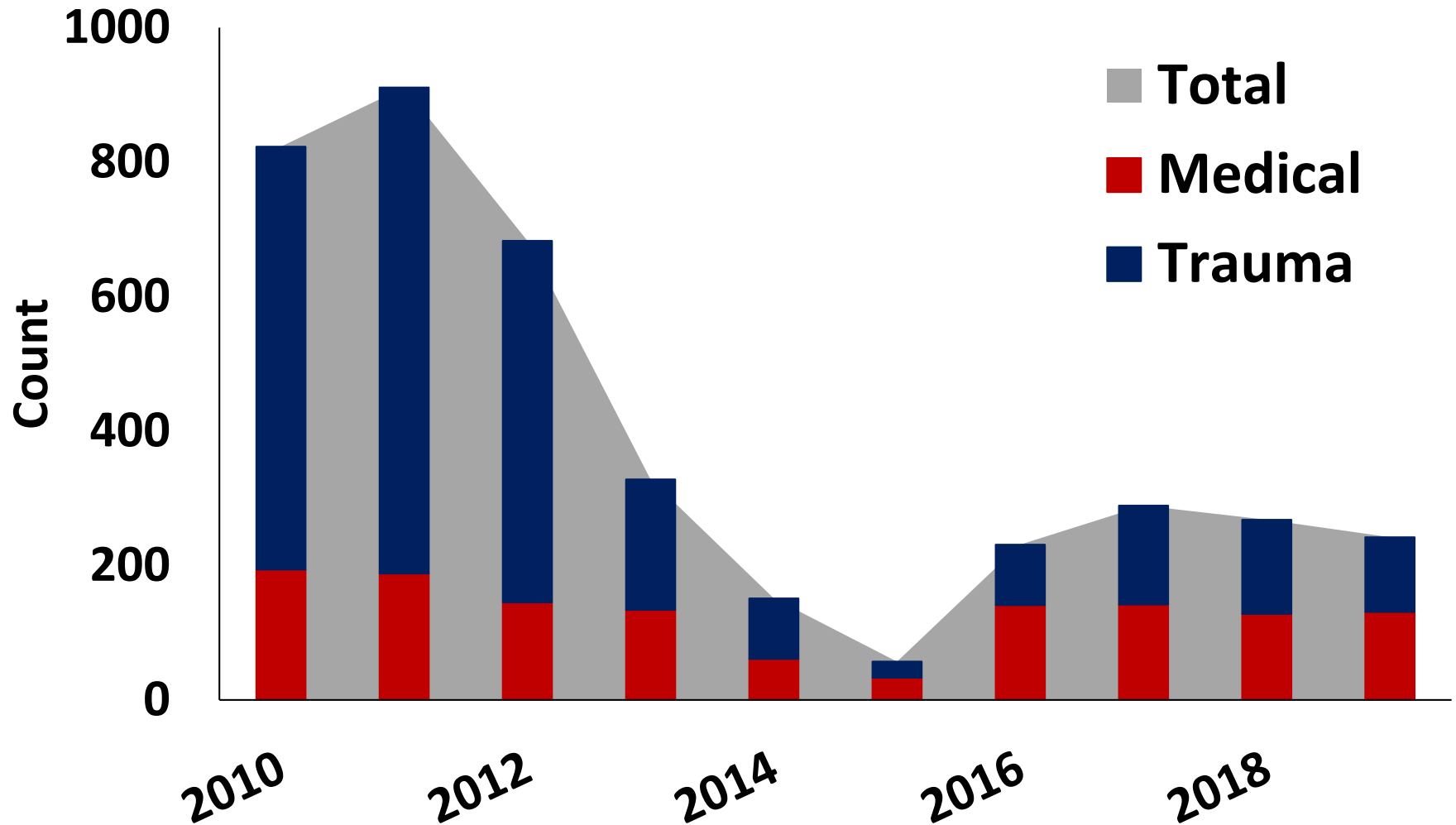
# Affiliation



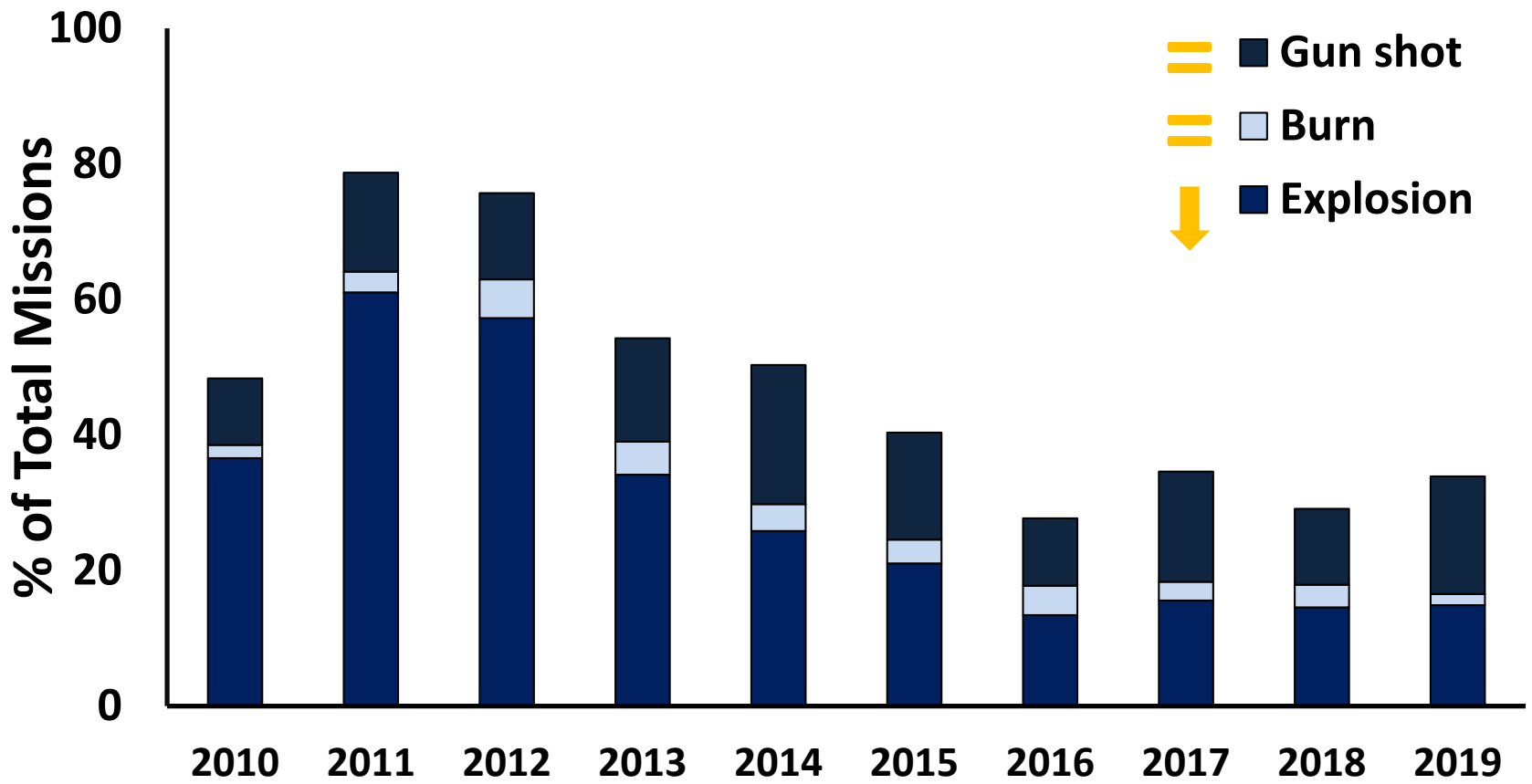
# Military Affiliation



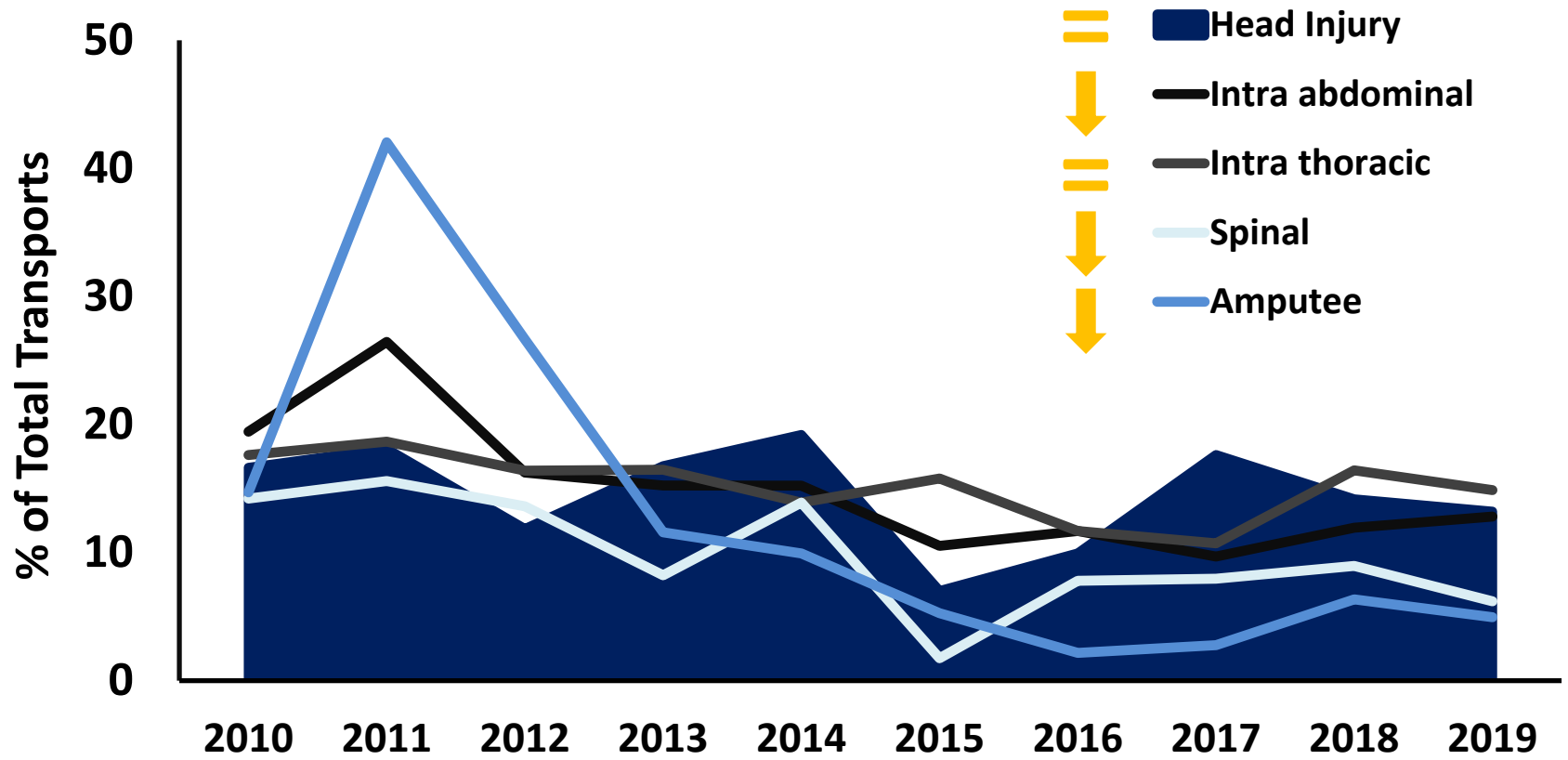
# Number CCATT Transports: 2010 to 2019



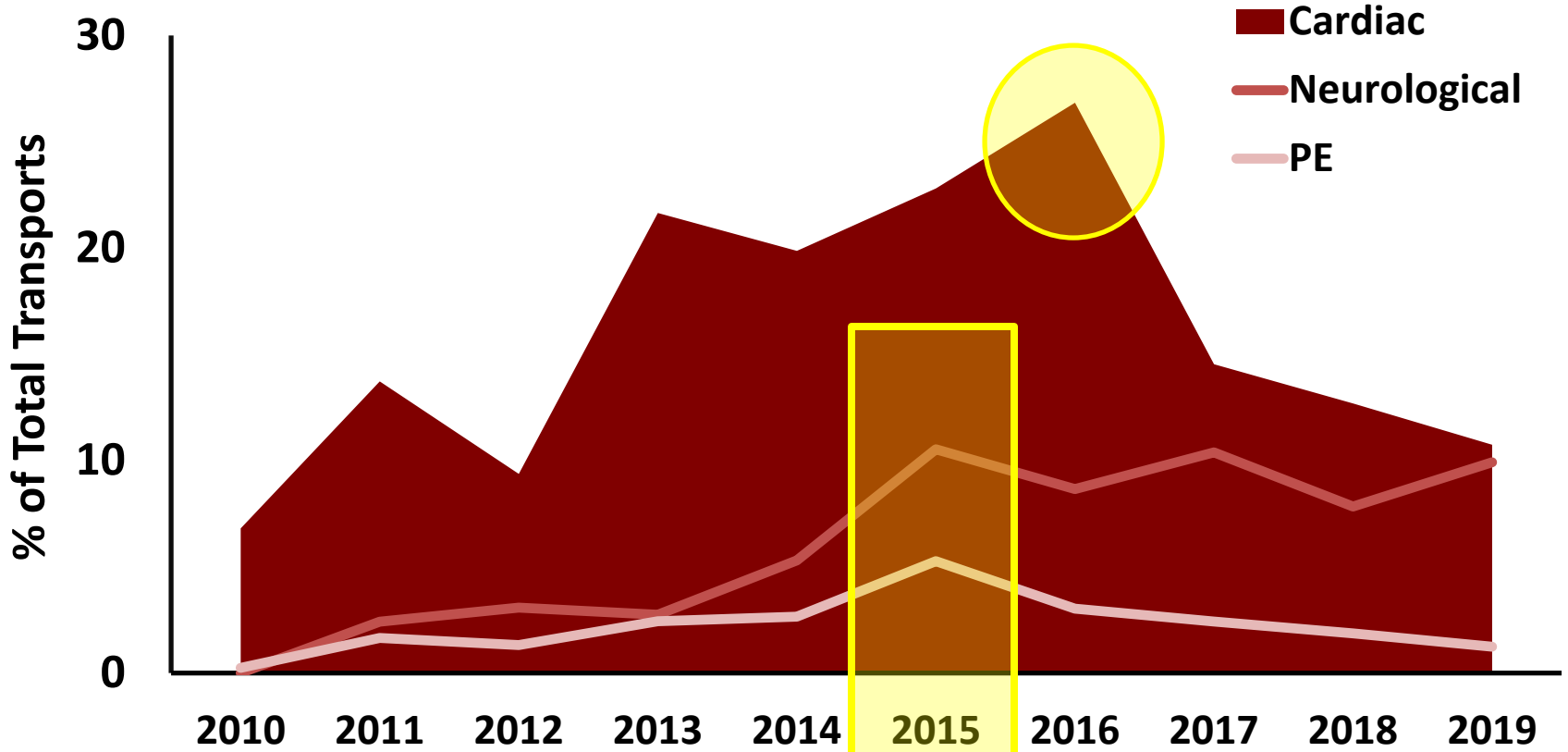
# Mechanisms of Traumatic Injury



# Traumatic Injury Types



# Medical Diagnoses



# Multitude of Diagnoses

VIRAL MENINGITIS

LUNG MASS

RENAL FAILURE

ALLERGIC REACTIONS

REPIRATORY ARREST

CARDIAC

NEUROLOGICAL

PNEUMONIA

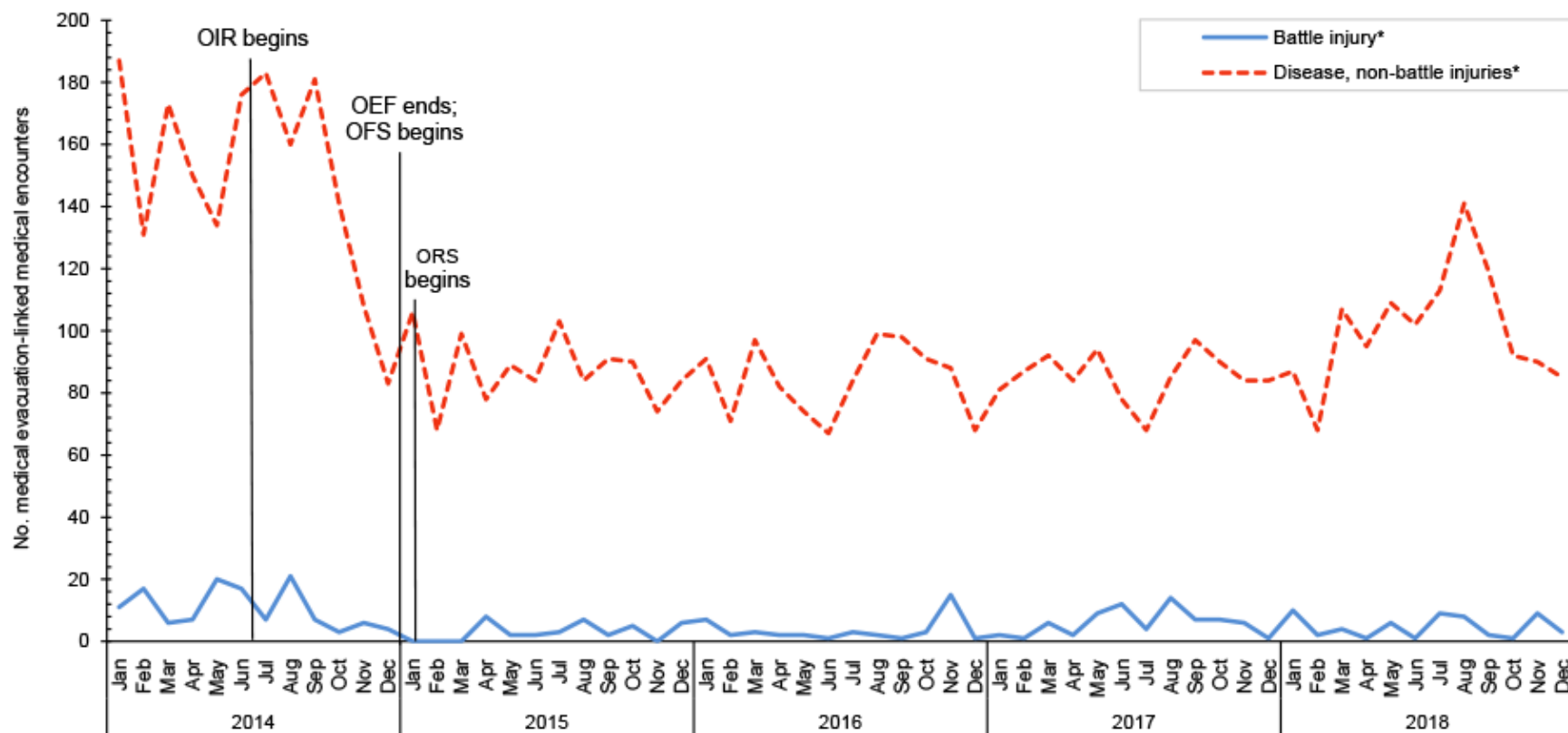
OVERDOSE (SELF)

PULMONARY EMBOLI

DIABETIC KETOACIDOSIS

OTHER

**FIGURE.** Numbers of battle injury and disease vs. non-battle injury medical evacuations of U.S. service members, by month, 2014–2018



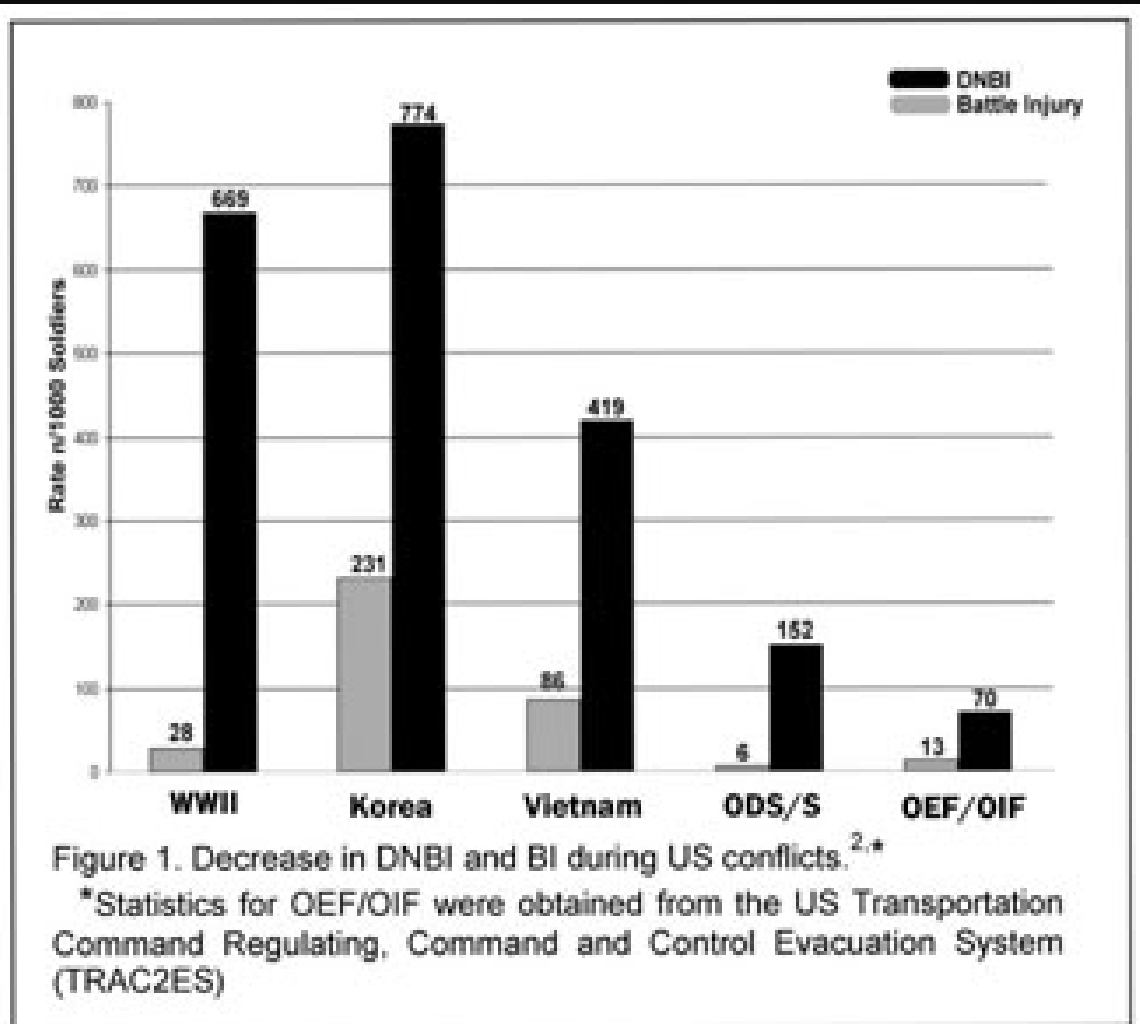
\*These classifications are based on the causal event of medical evacuation medical encounters.

No., number; OIR, Operation Inherent Resolve; OEF, Operation Enduring Freedom; OFS, Operation Freedom's Sentinel; ORS, Operation Resolute Support.

# Previous Studies:

Consistent burden of nonbattle related illness<sup>1-3</sup>

30-60%



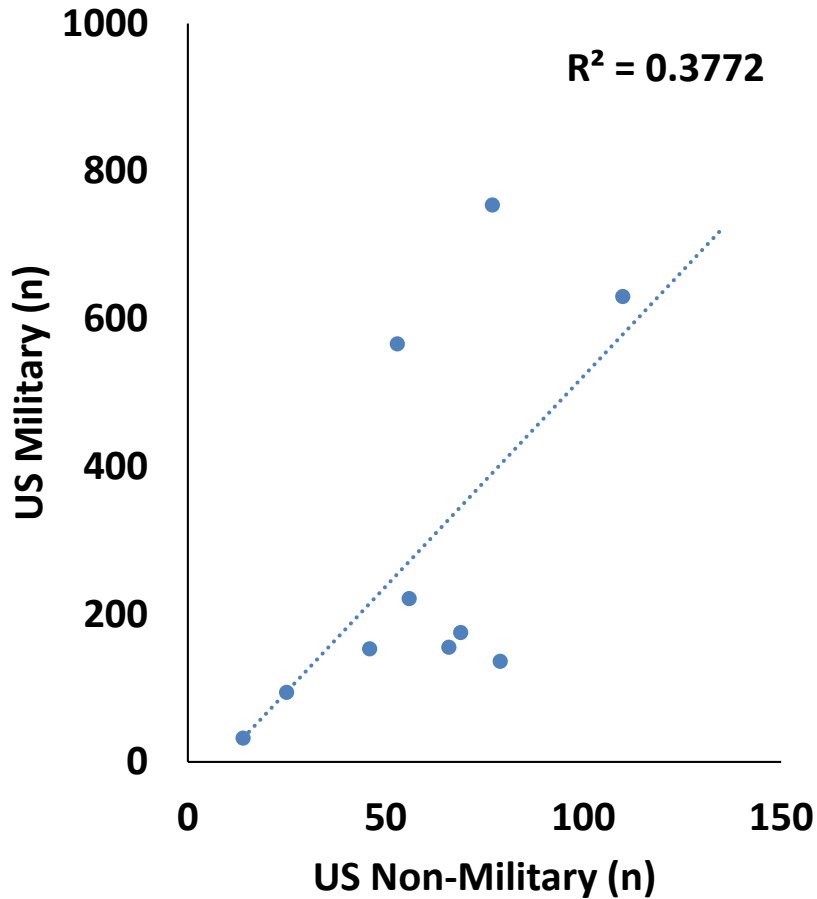
<sup>1</sup>Cates, Michael B. "Prevention is the best way to health." *U.S. Army Medical Department Journal*, Apr.-June 2006

<sup>2</sup>Belmont Jr, P. J., Goodman, G. P., Waterman, B., DeZee, K., Burks, R., & Owens, B. D. (2010). Disease and nonbattle injuries sustained by a US Army brigade combat team during Operation Iraqi Freedom. *Military medicine*, 175(7), 469-476.

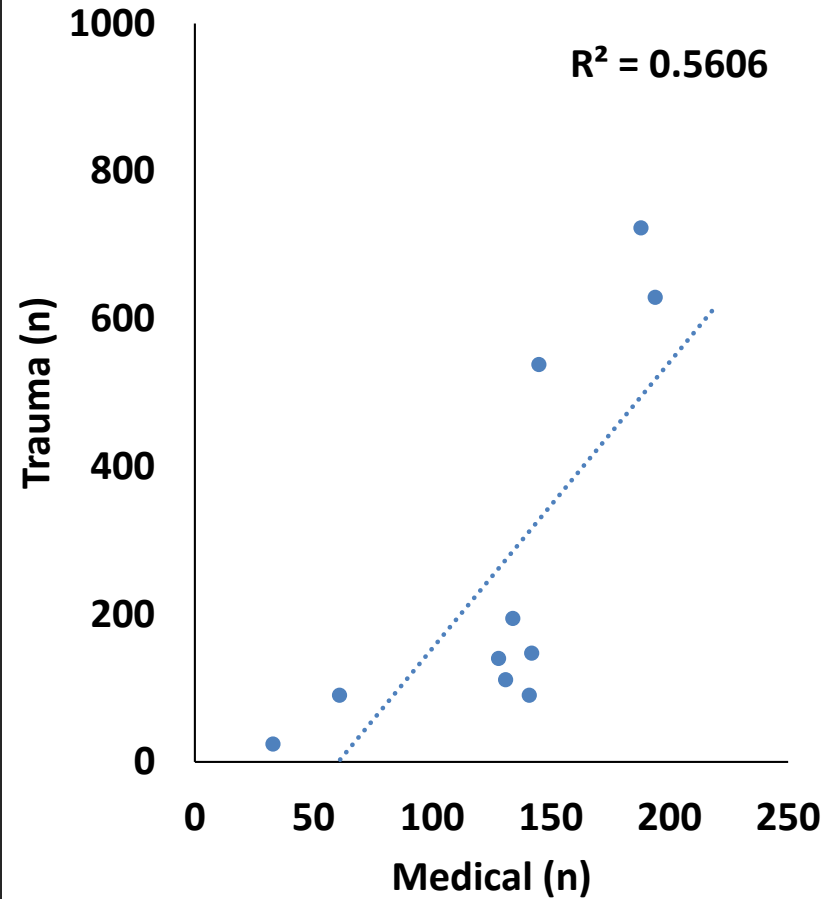
<sup>3</sup>Wojcik, B. E., Humphrey, R. J., Czejdo, B., & Hassell, L. H. (2008). US Army disease and nonbattle injury model, refined in Afghanistan and Iraq. *Military medicine*, 173(9), 825-835.

# Correlation of Counts

## US Non-Mil vs US Mil

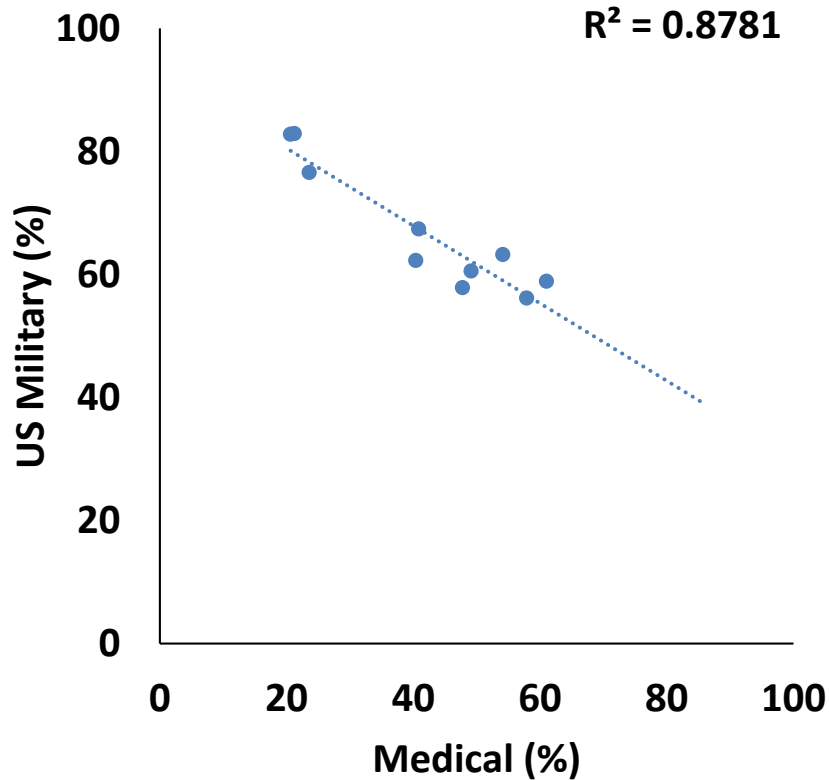


## Medical vs Trauma Numbers

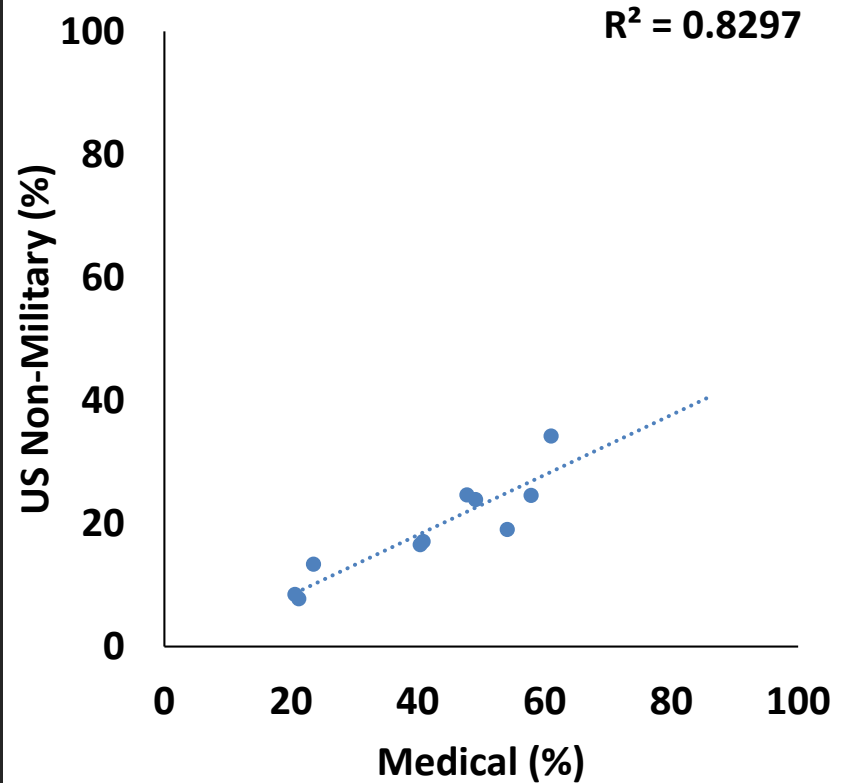


# Correlations of Proportions

## Medical vs US Mil



## Medical vs US Non-Mil



# Events

	<b>Preventable</b>	<b>Non-Preventable</b>
<b>Description</b>	Missing documentation (98%) Medication Errors (2%)	Equipment Failure Abnormal Patient Vitals
<b>Resolution</b>	PI Manager addressed CCATT	PI Manager addressed CCATT



# Conclusions

**2010**

**Trauma (76%) ↑**  
Non-trauma (24%)

**2019**

Trauma (46%)  
**Non-Trauma (54%) ↑**

**↑ Medical ~ ↑ US CIV/CTR**

# Conclusions

Characterization of patients adds context for strategic planning, resource utilization, and training.

CCATTs must remain clinically competent in **Traumatic & Medical Critical Care.**

# Limitations

Availability and accuracy of CCATT records

Missing or unavailable data

Limited to coding



# Acknowledgements:

Pilot Unit

Andre Gholson

CCATTs (Past, Current, Future)

ECRC staff



