Methods: Injury surveillance air evacuation records were used to identify non-fatal NBIs that required medical air evacuation from Afghanistan or Iraq between October 2001 and December 2012. Cause of injury was determined by experienced coders based on narratives in patient movement records. Medical diagnosis codes in the air evacuation records provided the injury type and anatomical location. Descriptive statistics were used to report incidence, causes, injury types, and anatomical location.

Results: There were 66,556 soldiers air evacuated from Afghanistan and Iraq between 2001 and 2012. NBIs accounted for 33% of air evacuations, compared to 17% for battle injuries. Overall, the three leading causes of injury were sports/physical training (PT) (24%), falls/jumps (18%), and motor vehicle-related accidents (11%). The leading injury types were fractures (19%; the majority of which were caused by falls/jumps), dislocations (11%), and sprains/strains (8%). The top four anatomic injury sites were the back (17%), knee (15%), wrist/hand (14%), and ankle/foot (12%).

Conclusion: Ongoing surveillance shows non-fatal occupational injuries negatively impact soldier performance and unit readiness during military deployments. Leading causes of injury among soldiers were similar to occupational injury causes in the civilian workforce. Fractures dislocations, and sprains/strains, as well as back injuries, can require lengthy periods of time for treatment, rehabilitation, and return to full duty. Continued focus is needed to develop prevention strategies for these occupational injuries to lessen their impact during deployments.

C1.2

Title: **Wildland fire fighter deaths in the United States: A comparison of existing surveillance systems**

Authors: Corey Butler, Suzanne Marsh

Background: Wildland firefighting is a high-risk occupation requiring considerable physical and psychological demands. Multiple agencies publish annual fatality data and/or summary statistics for wildland fire fighters (WFFs); however, the number and types of deaths reported varies. These differences create challenges to accurately characterize these fatal events. There are at least five different surveillance systems that capture deaths, including traumatic WFF occupational injuries, each with varying case definitions and case inclusion/exclusion criteria. Four of these are population systems and one is a case-based system.

Methods: We examined the data within each of the five surveillance systems to better understand the types of WFF data collected, to assess each system's utility in characterizing wildland fire fighters fatalities, and to determine each system's potential to inform prevention strategies. To describe similarities and differences in how data were recorded and characterized, we also matched the wildland fire deaths for three of the population based systems* and compared individual fatalities across systems.

Results: Between 2001 and 2012, 247 unique deaths were captured among the systems; 73% of these were captured in all three systems. The most common causes of death in all systems were traumatic injuries associated with aviation, vehicles and medical events (i.e., heart attacks), and entrapments/burn overs. Our data show that, although the three systems often report similar annual summary statistics, the actual events captured in each system vary by roughly 20% each year, depending on the types of events that the system is designed to track.

Conclusions: The overarching and central goal of each system was to collect accurate and timely information to improve WFF safety and health. Each system is unique and has varying inclusion and exclusion criteria for capturing and tracking different subsets of WFF tasks/duties. Use of a common case definition and better descriptions/interpretations of the data and the results would help to more accurately characterize WFF traumatic injuries, lessen the likelihood for misinterpretation of WFF fatality data, and assist with defining the true occupational injury burden within this high-risk population.

C1.3

Title: **Non-fatal occupational injuries in the Alaskan commercial fishing industry during 2006 - 2010**

Authors: Laura Syron, Devin Lucas, Viktor Bovbjerg, Laurel Kincl

Objectives: While commercial fishing has the highest occupational fatality rate in the United States, information on far more frequent non-fatal injuries is limited, despite the potential for these injuries to cause lower productivity, lost wages, lost quality of life, and/or disability. This descriptive epidemiological study describes non-fatal injuries in the Alaskan commercial fishing industry during 2006 - 2010.

Methods**:** Data were extracted from United States Coast Guard investigation reports. Hazardous work processes were identified. Workers' age and position on board were used to identify groups with frequent injuries. Non-fatal injury rates by fishery and gear type were quantified.

Results**:** One hundred thirty six injury cases were included in this study. By the vessel's gear type, 67 injury cases (49%) occurred on trawlers, 19 (14%) on vessels using pots, and 15 (11%) on longliners. Analysis of work process by gear type showed: for trawlers, injuries occurred most frequently during the main work process of handling frozen fish (31%); for pot gear vessels during

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