Lessons learned from Operation PHANTOM FURY:

The Landstuhl experience during the second Fallujah offensive [8-19 November 2004]

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INTRODUCTION:

Landstuhl Regional Medical Center (LRMC) serves as the echelon IV receiving hospital for all United States military casualties injured in support of Operation IRAQI FREEDOM (OIF). Combat casualties are initially evaluated and stabilized at deployed medical facilities in the combat theater. Casualties requiring further medical care are subsequently evacuated to LRMC by the US Air Force aeromedical evacuation (AE) system. From 8 to 19 November, 2004, combat operations in Fallujah, Iraq related to Operation PHANTOM Fury led to a sustained increase in casualty evacuations to LRMC. Retrospective analysis of LRMC admissions during this period provided insight into current mechanisms of injury and injury patterns, demonstrated the effectiveness of rapid AE and contributed to modifications in pre-deployment training due to specific "lessons learned."

METHODS:

Inpatient medical records for all patients evacuated from Iraq to LRMC between 8 and 19 November 2004 were reviewed.

RESULTS:

During the 12-day period reviewed, 573 patients were evacuated from the Iraq theater of operations to LRMC. Of these, 292 were in-patients and 281 were out-patients. Seventy-eight percent of in-patient admissions were related specifically to Operation PHANTOM FURY. Fragment injuries due to mortars, grenades, and improvised explosive devices accounted for 64% of the combat casualties. Bullet wounds accounted for 27% of the wounded. Blunt trauma, crush injuries, and burns caused the remaining 9% of injuries. More than 16% of the injured patients required admission into the critical care unit. Injuries to the extremities were noted in 83% of patients. Of patients suffering extremity injuries, fasciotomies were performed on 21% while 12% underwent an amputation due to injury severity. Fifteen percent of fasciotomies were performed at LRMC after initial surgical treatment downrange. One patient died at LRMC as a result of his injuries.

Photo 1. Satellite view of Fallujah, Iraq in Al Anbar province approximately 43 miles west of Baghdad

(Photo used with permission from images.military.com/pics/FallujahOverhead2)

Photo 2. US Marine with 3rd Recon Battalion provides security as fellow Marines conduct a patrol in Fallujah, Iraq

(Photo by Sgt Chad Simon, USMC)

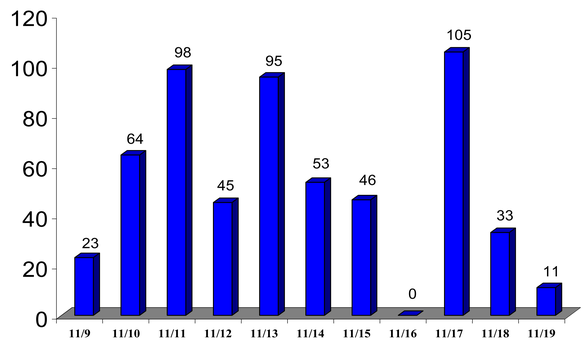

Figure 1: Total arrivals to Landstuhl by day

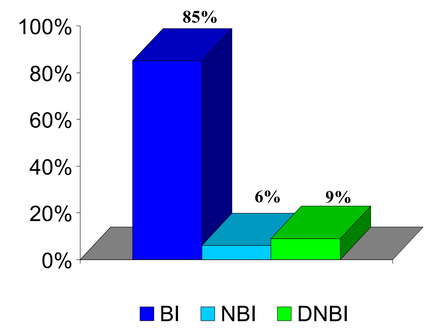

Figure 2: Reason for evacuation
(BI-battle injury, NBI-non battle injury, D-disease)

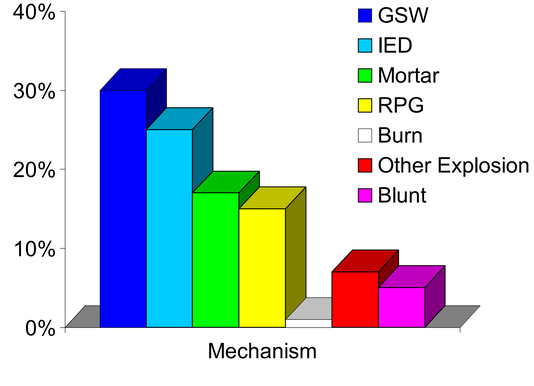

Figure 3: Mechanisms of battle injury

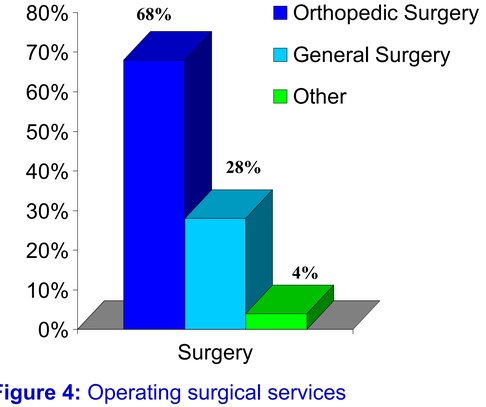

Figure 4: Operating surgical services

CONCLUSIONS:

Wounding mechanisms and injury patterns related to Operation PHANTOM FURY are reflective of those sustained in the overall Global War on Terrorism. Extremity injuries are extremely common in the modern battlefield. Casualty care featuring rapid evacuation to progressively higher echelons resulted in acceptable outcomes and high survival rates despite requiring intercontinental patient movements and the surge in operational tempo. The incidence of extremity compartment syndrome in combat injuries mandated special attention and led to modifications in predeployment training and theater casualty care guidelines.