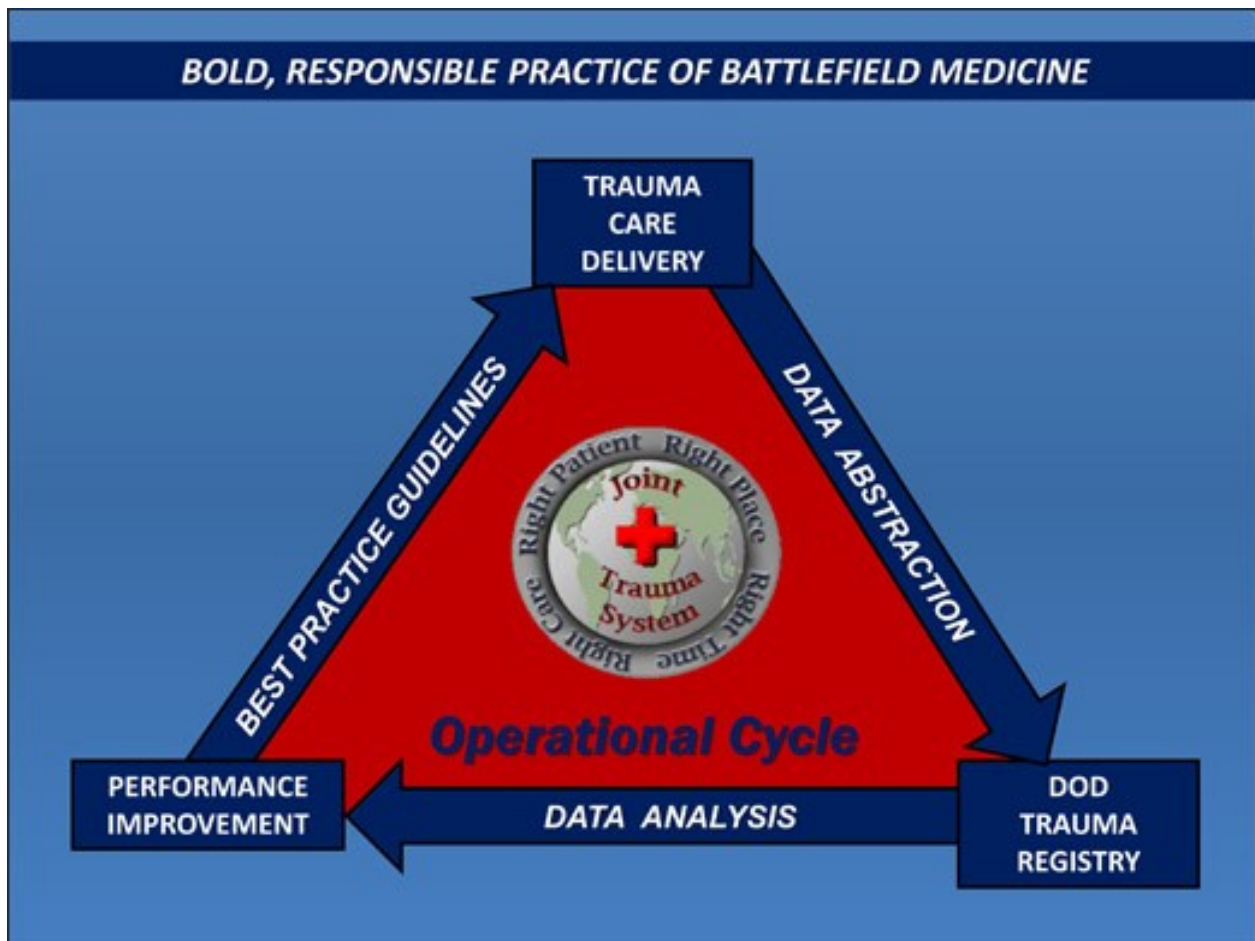


Committee on Surgical Combat Casualty Care
(CoSCCC)



Journal Watch

2nd Quarter

FY2019

Journal Watch Key Terminology Searched:

Microcirculation	Trauma Management	Haemorrhage
Shock	Sublingual	Ethics committees
Human subject research	IDF	Institutional review board
Haemorrhagic shock	Multiple trauma	Shock index
Traumatic brain injury	Coagulopathy	Diagnostic accuracy
Plasma	Pre-hospital	Thrombelastography (TEG)
Transfusion	Trauma	Imaging
RBCs	Resuscitation	Severe trauma
Stability	Ultrasound	Afghanistan
Blast	Facial trauma	War
Amputation	Multiple	Transfusion
Traumatic Clinical outcomes	Clinical parameters	Damage control
Injury	Pelvic fracture	Trauma
Coagulopathy	Cryoprecipitate	Fibrinogen
Fibrinogen concentrate	Massive transfusion	ABO
Viscoelastic haemostatic assays	Angiography	External fixation
Guidelines	Internal fixation	Pelvic ring
fractures	X-ray	Pre-peritoneal pelvic packing
REBOA	Antibiotic prophylaxis	Long bone fractures
Orthopaedic trauma	Perioperative antibiotics	Surgical site infection
Wound ballistics	Faecal diversion	Primary repair
Cause of injury	Head injuries	Pain management
Battlefield Trauma	Austere	Austere Surgery

Emergency trauma laparotomy and/or thoracotomy in the emergency department: risks and benefits.

[Ito K¹](#), [Nakazawa K¹](#), [Nagao T¹](#), [Chiba H¹](#), [Miyake Y¹](#), [Sakamoto T¹](#), [Fujita T¹](#).

Author information

¹ Division of Acute Care Surgery, Department of Emergency Medicine, Teikyo University School of Medicine, Tokyo, Japan.

Abstract

Background: It is not mandatory for Japanese trauma centers to have an operating room (OR) and OR team available 24 hours a day/7 days a week. Therefore, emergency laparotomy/thoracotomy is performed in the emergency department (ED). The present study was conducted to assess the safety of this practice.

Methods: The data were reviewed from 88 patients who underwent emergency trauma laparotomy and/or thoracotomy performed by our acute care surgery group during the period from April 2013 to December 2017. Operation was performed in the ED for 43 of 88 patients (51%, ED group), and in the OR for 45 of 88 patients (49%, OR group). The perioperative outcomes of the two groups were compared.

Results: Compared with the OR group, the ED group had a higher Injury Severity Score (30 ± 15 vs. 13 ± 10 , $p<0.01$), greater incidence of blunt trauma (74% (32/43) vs. 36% (16/45), $p<0.01$), larger volume of red blood cell transfusion (18 ± 18 units vs. 5 ± 10 units, $p<0.01$), higher incidence of new-onset shock after sedation among patients who received sedation in the ED (59% (17/29) vs. 25% (6/24), $p<0.01$), and higher in-hospital mortality rate (49% (21/43) vs. 0, $p<0.01$). All five patients who underwent laparotomy followed by thoracotomy died in the ED; none of these patients underwent preoperative placement of resuscitative endovascular balloon occlusion of the aorta (REBOA). Of the 21 patients in the ED group who died, 17 (81%) died immediately postoperatively; furthermore, 12 of the 22 patients who survived (55%) were not in shock prior to operation.

Discussion: Emergency trauma laparotomy and/or thoracotomy outcomes were related to injury severity. The resources for trauma operations in the ED seemed suboptimal. The outcome of trauma operations may be improved by reviewing the protocols for anesthetic care, and by the usage of REBOA rather than aortic cross-clamping.

Level of evidence: IV.

KEYWORDS: acute care surgery; laparotomy; thoracotomy; trauma/critical care

PMID: 30899796 PMCID: [PMC6407529](#) DOI: [10.1136/tsaco-2018-000269](#)

Description of trauma among French service members in the Department of Defense Trauma Registry: understanding the nature of trauma and the care provided.

[Schweizer MA](#)¹, [Janak JC](#)², [Stockinger ZT](#)³, [Monchal T](#)⁴.

Author information

¹ United States Department of Defense Joint Trauma System, Joint Base San Antonio Fort Sam Houston, Houston, TX, 78234, USA. marc.a.schweizer2.ctr@mail.mil.

² United States Department of Defense Joint Trauma System, Joint Base San Antonio Fort Sam Houston, Houston, TX, 78234, USA.

³ Naval Medical Readiness Training Command Jacksonville, Jacksonville, FL, 32212, USA.

⁴ Sainte Anne Military Hospital, 600-83800, Toulon Cedex 9, BP, France.

Abstract

BACKGROUND: Since 2001, the French Armed Forces have sustained many casualties during the Global War on Terror; however, even today, there is no French Military trauma registry. Some French service members (SMs) were treated in US Military Medical Treatment Facilities (MTFs) and were recorded in the US Department of Defense Trauma Registry (DoDTR). Our objective was to conduct a descriptive analysis of the injuries sustained by French SMs reported in the DoDTR and subsequent care provided to them to assist in understanding the importance of building a French Military trauma registry.

METHODS: Using DoDTR data collected from 2001 to 2017, a retrospective descriptive analysis was conducted. We identified 59 French SMs treated in US MTFs. The characteristics of the SMs' demographics, injuries, care provided to them, and discharge outcomes were summarized.

RESULTS: Among the 59 French SMs identified, 46 (78%) sustained battle injuries (BIs) and 13 (22%) sustained nonbattle injuries (NBIs). There were 47 (80%) SMs injured in Afghanistan (Opération Pamir), while 12 (20%) were injured in Opération Chammal in Iraq and Syria. Explosives accounted for 52.5% of injuries, while 25.4% were due to gunshot wounds; all were BIs. The majority of reported injuries were penetrating (59.3%), most of which were BIs (71.7%). The mean Injury Severity Score for BIs was 12 (SD = 8.9) compared to 6 (SD = 1.7) for NBIs. Around half of SMs (n = 30; 51%) were injured in Afghanistan between the years 2008-2010. Among a total of 246 injuries sustained by 59 patients, extremities were the body part most prone to BIs followed by the head and face. Four SMs died after admission (6.8%).

CONCLUSIONS: The DoDTR provides extensive data on trauma injuries that can be used to inform injury prevention and clinical care. The majority of injuries sustained by French SMs were BIs, caused by explosives, and predominantly occurring to the extremities; these findings are similar to those of other studies conducted in combat zones. There is a need to establish a French Military trauma registry to improve the combat casualty care provided to French SMs, and its creation may benefit from the DoDTR model.

KEYWORDS: French service members; Trauma registry; U.S. military treatment facility

Civilian-Military Trauma Partnerships and the Visiting Surgeon Model for Maintaining Medical Readiness.

[Hall MA](#)¹, [Speegle D](#)², [Glaser CJ](#)³.

[Author information](#)

1 Center for the Sustainment of Trauma and Readiness Skills, St. Louis, Missouri. Electronic address: andrew.hall.2@us.af.mil.

2 Department of Mathematics and Statistics, Saint Louis University, St. Louis, Missouri.

3 Naval Medical Research Unit San Antonio, San Antonio, Texas.

Abstract

OBJECTIVE: The main objective of this paper is to create a model to predict the amount of trauma experience at a level 1 trauma center a visiting surgeon can expect to obtain with near certainty, in a specific amount of time, to maintain trauma skills.

DESIGN: The trauma database of level 1 trauma center (Saint Louis University Hospital, a military civilian partnership site) was examined to identify all urgent trauma cases between 1 October 2015 and 30 September 2017. Using retrospective data, a prospective hypothesis of a mixture of various case exposures a visiting surgeon may experience was made using Monte Carlo statistical methods, various probabilities for wartime relevant specialties were examined.

SETTING: Saint Louis University Hospital, a level 1 trauma and tertiary referral center.

PARTICIPANTS:

Trauma patients between the dates October 1, 2015 and September 30, 2017 that underwent an operation at Saint Louis University Hospital.

RESULTS: Orthopedics and general/trauma surgery had the largest number of urgent trauma cases with an average daily amount of 1.03 and 0.49 cases, respectively. Using Monte Carlo methods, various scenarios and probabilities were tabulated. For example, a general surgeon on shift for 10 days could expect to experience 4.9 (95% confidence interval 1-11) urgent cases or a visiting surgeon would require twenty-six 24-hour shifts in the summer to have a 95% certainty to experience at least 10 cases.

CONCLUSIONS: Other than for orthopedics, prolonged training timelines would be required to expose a visiting surgeon to multiple operative trauma cases. Though a specific number of cases to achieve "readiness" is undefined, a visiting-surgeon model may be unacceptable if a large number of cases are required prior to military deployment. This predictive model could be extrapolated to other centers and assist in identifying adequate settings and durations of trauma training sites.

Published by Elsevier Inc.

KEYWORDS: Military-Civilian Partnerships; Readiness; Systems-Based Practice; Training; Trauma

Prehospital fresh frozen plasma: Universal life saver or treatment in search of a target population?

[Makris M](#)¹, [Iorio A](#)².

Author information

1 Haemophilia and Thrombosis Centre Royal Hallamshire Hospital Sheffield UK.

2 Department of Clinical Epidemiology and Biostatistics McMaster University Hamilton Ontario Canada.

Recently within 2 days of each other, two of the leading medical journals published trials on the use of prehospital fresh frozen plasma (FFP) for trauma patients, reaching apparently different conclusions. In the *New England Journal of Medicine* article reporting on the Prehospital Air Medical Plasma (PAMPer) trial, Sperry et al¹ found that two units of prehospital FFP was associated with an almost 10% survival advantage. In the Control of Major Bleeding After Trauma Trial (COMBAT) reported in the *Lancet*, Moore et al² found that the same volume of plasma had no survival advantage.

PMID: 30656270 PMCID: PMC6332771 DOI: 10.1002/rth2.12172

The Survival Benefit of a Novel Trauma Workflow that Includes Immediate Whole-body Computed Tomography, Surgery, and Interventional Radiology, All in One Trauma Resuscitation Room: A Retrospective Historical Control Study.

[Kinoshita T](#)¹, [Yamakawa K](#)¹, [Matsuda H](#)¹, [Yoshikawa Y](#)¹, [Wada D](#)², [Hamasaki T](#)³, [Ono K](#)⁴, [Nakamori Y](#)², [Fujimi S](#)¹.

[Author information](#)

1 Division of Trauma and Surgical Critical Care, Osaka General Medical Center, Osaka, Japan.

2 Department of Emergency and Critical Care Medicine, Kansai Medical University General Medical Center, Osaka, Japan.

3 Department of Data Science, National Cerebral and Cardiovascular Center, Osaka, Japan.

4 Clinical Research and Medical Innovation Center, Hokkaido University Hospital, Hokkaido, Japan.

Abstract

OBJECTIVE: The aim of this study was to evaluate the impact of a novel trauma workflow, using an interventional radiology (IVR)-computed tomography (CT) system in severe trauma.

BACKGROUND: In August 2011, we installed an IVR-CT system in our trauma resuscitation room. We named it the Hybrid emergency room (ER), as it enabled us to perform all examinations and treatments required for trauma in a single place.

METHODS: This retrospective historical control study conducted in Japan included consecutive severe (injury severity score ≥ 16) blunt trauma patients. Patients were divided into 2 groups: Conventional (from August 2007 to July 2011) or Hybrid ER (from August 2011 to July 2015). We set the primary endpoint as 28-day mortality. The secondary endpoints included cause of death and time course from arrival to start of CT and surgery. Multivariable logistic regression analysis adjusted for clinically important variables was performed to evaluate the clinical outcomes.

RESULTS: We included 696 patients: 360 in the Conventional group and 336 in the Hybrid ER group. The Hybrid ER group was significantly associated with decreased mortality [adjusted odds ratio (OR), 0.50 (95% confidence interval, 95% CI, 0.29-0.85); $P = 0.011$] and reduced deaths from exsanguination [0.17 (0.06-0.47); $P = 0.001$]. The time to CT initiation [Conventional 26 (21 to 32) minutes vs Hybrid ER 11 (8 to 16) minutes; $P < 0.0001$] and emergency procedure [68 (51 to 85) minutes vs 47 (37 to 57) minutes; $P < 0.0001$] were both shorter in the Hybrid ER group.

CONCLUSION: This novel trauma workflow, comprising immediate CT diagnosis and rapid bleeding control without patient transfer, as realized in the Hybrid ER, may improve mortality in severe trauma.