War

War has influenced the evolution of global neurosurgery throughout the past century. Armed conflict and mass casualty disasters (MCDs), including Humanitarian Assistance Disaster Relief missions, require military surgeons to innovate to meet extreme demands. However, the military medical apparatus is seldom integrated into the civilian healthcare sector. Neurosurgeons serving in the military have provided a pragmatic template for global neurosurgeons to emulate in humanitarian disaster responses.

Asfaw et al. performed a narrative review of the literature examining the influence of wars and MCD on contemporary global neurosurgery practices.

Wartime innovations that influenced global neurosurgery include the development of triage systems and modernization with airlifts, the implementation of ambulance corps, early operation on cranial injuries in hospital camps near the battlefield, the use of combat body armor, and the rise of damage control neurosurgery. In addition to promoting task-shifting and task-sharing, workforce shortages during wars and disasters contributed to establishing the physician assistant/physician associate profession in the USA. Low- and middle-income countries (LMICs) face similar challenges in developing trauma systems and obtaining advanced technology, including neurosurgical equipment like battery-powered computed tomography scanners. These challenges-ubiquitous in low-resource settings have underpinned innovations in triage and wound care, rapid evacuation to tertiary care centers, and minimizing infection risk.

War and MCDs have catalyzed significant advancements in neurosurgical care both in the pre-hospital and inpatient settings. Most of these innovations originated in the military and spread to the civilian sector as military neurosurgeons and reservist civilian neurosurgeons returned from the battlefront or other low-resource locations. Military neurosurgeons have utilized their experience in low-resource settings to make volunteer global neurosurgery efforts in LMICs successful. LMICs have, by necessity, responded to challenges arising from resource shortages by developing innovative, context-specific care paradigms and technologies [1)]

The treatment of craniospinal war wounds proved to be a significant driving force in the early growth of neurosurgery as a specialty.

Whether it's the basic management principles for intracranial projectile wounds derived from World War I experiences, the drastic improvement in the outcomes and management of spinal cord injuries observed in World War II, or the fact that both of these wars played a crucial role in the development of a training system that is the origin of modern residency programs, the influence of wartime experiences is pervasive [2)].

Shell shock is a term coined in World War I by British psychologist Charles Samuel Myers to describe the type of posttraumatic stress disorder many soldiers were afflicted with during the war (before PTSD was termed).

Peripheral nerve injuries are a major component of war related injuries mainly involving the upper limbs. Electrodiagnostic studies help in assessing severity and determining prognosis. Precise documentation of severity of nerve injuries is important to estimate the burden on our resources and to extend rehabilitation services [3].

see Combat injury

1)
Asfaw ZK, Greisman JD, Comuniello B, Shlobin NA, Etienne M, Zuckerman SL, Laeke T, Al-Sharshahi ZF, Barthélemy EJ. Global Neurosurgery Advances From Trenches to Bedside: Lessons From Neurosurgical Care in War, Humanitarian Assistance, and Disaster Response. Mil Med. 2023 Jun 1:usad170. doi: 10.1093/milmed/usad170. Epub ahead of print. PMID: 37261884.
2)
Dowdy J, Pait TG. The influence of war on the development of neurosurgery. J Neurosurg. 2014 Jan;120(1):237-43. doi: 10.3171/2013.8.JNS122369. Epub 2013 Oct 11. PubMed PMID: 24116730.
3)
Razaq S, Yasmeen R, Butt AW, Akhtar N, Mansoor SN. The pattern of peripheral nerve injuries among Pakistani soldiers in the war against terror. J Coll Physicians Surg Pak. 2015 May;25(5):363-6. doi: 05.2015/JCPSP.363366. PubMed PMID: 26008664.