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The 12-year period between Operation Desert Storm and the ongoing conflict in Iraq was unique in the development of combat casualty care research. The increasing lethality of penetrating and concussive blast injuries caused military surgeons and joint combat development system laboratories to consider a more aggressive approach to their treatment. One focus in this decade of research and development was the alignment of potentially lethal or limb-threatening injuries and their relationship with the time between injury and surgical resuscitation. The combat death rate historically has not changed dramatically (20%). The rate of death by hemorrhage is 50% of all combat deaths, with nearly 25% succumbing between 10 and 60 minutes of injury. This smaller subset of injured were of concern. Efforts were directed at the development of advanced surgical platform(s) that would hopefully positively impact on the increased survival of this group of patients. Time from wounding, time to surgery, and decision making based on wounds were considered. Surgical support in large scale military combat operations nearly exclusively is found in rear echelons where the injured patients arrive by ground evacuation or airframe. These level III theatre hospitals (Army Combat Surgical Hospital, Navy Fleet Hospital) have an impressive array of technology with highly specialized surgical and medical specialists. It is intuitive, the key factor in the survival equation of this identified group is the time which elapses between injury and arrival at these large and static facilities. The Fleet Marine Force with its organic Navy Medicine Health Service Support has embraced the concept of Far Forward Surgery (level II) to mitigate the loss of these selected severely injured who would be expected to die before or during medical evacuation to rear area surgical expertise.

The conflict in Iraq beginning in March 2003 allowed for the initial use and engagement of this concept. The strengths and vulnerabilities of moving small level II surgical teams far forward into harm's way with maneuver elements of marine combat forces is a daunting challenge long before the first patient is seen. Decision making for the surgeon oftentimes requires him or her to make immediate decisions of a professional and ethical nature he or she was never taught to make during surgical training in a hospital. It is this concept, unique surgical platform(s), our experiences in Iraq and lessons learned in combat that is presented.

References

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2. Stevens RA, Bohman HR, et al. The US Navy's forward resuscitative surgery system during Operation Iraqi Freedom. *Mil Med* 2005; 17:297-301.