

SURGERY

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Modern warfare has changed over recent decades. The causes of injury are particular to the individual conflict, nation and armed service. Historically, penetrating trauma was predominantly sustained by combat infantry, whereas naval and air personnel sustained more blunt injuries (Table 34.1). Improvements in trauma scoring systems and the development of a concise system for the recording of injuries and casualty care have increased the ability of modern armed services to analyse the injury patterns of their deployed personnel. A cohort analysis of combat injuries incurred by US forces showed significant differences in injury patterns sustained in the most recent Afghanistan and Iraq conflicts compared with those sustained in the Second World War and the Korean and Vietnamese Wars. Head and neck injuries were far more common in recent conflict whereas thoracic and extremity injuries were less so. This is probably because of the increased use of body armour and similar personnel protective equipment in more recent conflicts. The mechanism of injury has also changed. Although ballistic injuries remain an important contributor to battlefield trauma, injuries due to explosions (which include improvised explosive devices [IEDs], landmines, mortars, grenades and rockets) have become increasingly common and are now the predominant mode of wounding and fatality. The relative proportions of injuries caused by explosive and ballistic weapons are shown in Table 34.2. The emergence of explosive patterns of injury is due to the increasing use of IEDs within conflicts. IEDs have been the signature weapon within operations in Afghanistan and Iraq; however, their use has not been limited to these regions. The relative low cost, ease of production and widespread expertise means that IEDs are likely to play significant roles in most contemporary and future conflicts.

TABLE 34.1 Historical causes of injury among US service personnel. Service Mechanism Infantry Armoured Sea (%) Air (%) (%) (%) Ballistic 90 50 25 5 Blunt 2–3 5 10 50 Blast 2–3 5 10 <10 Thermal 2–3 25 30 25 Combined <5 15 25 10 9 Adapted from Champion et al.

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