# THE MAGNITUDE OF THE PROBLEM

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In western industrialised countries, trauma accounts for the largest number of deaths and disability in children and young adults. According to the World Health Organization, there are an estimated 5 million injury fatalities worldwide, representing about 9% of global deaths. This rate is 1.7 times higher than deaths caused by malaria, tuberculosis and human immuno deficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS). Road tra ffi c accidents (RTAs), falls and intentional violence continue to be the most prevalent causes of trauma fatalities, with a combined rate of 64%. Of note, the major burden of injury is increasing in low- and middle-income countries sec ondary to industrialisation and increasing motorised transpor tation. Interestingly , the annual incidence and trends over time show that there is variation from country to country . Infor mation is usually obtained from na tional statistics organisa tions that use the International Classification of Diseases, a system that can be limited in providing accurate descriptions of injury severity . In contrast, the Ab breviated Injury Scale dictio nary consists of a greater level of detail (including more than 2000 injury codes) and assigns to every injury a severity score between 1 (mild) and 6 (maximum). This can be summated into the so-called injury severity score (ISS), which provides an indication of the anatomical severity of injury su ff ered by the individual patient. Major trauma is defined as an ISS greater than 15. The majority of patients admitted to hospital with injury have low ISS values, ranging between 4 and 9, with injuries such as an isolated limb fracture and/or isolated mild head injury . Overall, major trauma a ff ects approximately 15% of all injured patients. According to the UK Department of Transport, in 2019, the overall number of casualties following an RTA reported to the police, including all severities, was 153 158, of whom 25 945 had sustained severe injuries. Overall, 1752 individuals died as a result of their injuries. Across Europe, according to the data presented by the European Transport Safety Council’s Performance Index (PIN) report, it appears that the overall number of fatalities was reduced by 3% compared with 2018, and was estimated to be 22 /uni00A0 660. In 16 countries, the death rate decreased whereas in 12 it increased, with the four remaining countries registering no change. As countries do not use the same definition of serious injury , international comparisons are based on road deaths per - million inhabitants. In the 27 Member States of the European Union (EU27), the overall level of road mortality was 42 dea ths per million inhabitants in 2020 compared with 67 per million in 2010 ( Figure 26.1 ). The EU road mortality rate was 51 per million in 2019; the unprecedented drop in mortality between 2019 and 2020 was mainly due to the tra ffi c restrictions to - contain the pandemic. - Norway remains the leader among PIN countries with 17 road deaths per million inhabitants, followed by Sweden with - 20 deaths per million inhabitants in 2020. In Malta, the UK, - Switzerland and Denmark, road mortality is below 27 per mil - lion. T he highest road mortality is in Romania and Latvia, with 85 and 73 road deaths per million inhabitants, respectively . - A large proportion of severely injured survivors experi - ence long-ter m or permanent disability as a result

of their injuries. Approximately one-third of severely injured survivors sustained life-changing injuries and were unable to r eturn to

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their previous level of function and occupation, undergoing profound lifestyle changes including long-term pain and su ff er ing. It should be emphasised that an injury a ff ects not only the injured person but also everyone who is involved in the injured per son's life. The impact of the modern epidemic of RTAs on the universal epidemic of violent injury cannot be overstated. The annual direct medical cost of injuries treated in hospi tals and additional care facilities is estimated to be somewhere between £3.5 billion and £4 billion. Moreover, additional indirect costs, due to loss of earnings, loss of productivity and a reduced quality of life, increase the total sum significantly . Multiple injuries are often thought to occur primarily in younger patients who are involved in incidents with a high energy transfer. Lately , multiple injuries are also seen in the older population as patients live longer , are more active and we have better diagnostics. The last point is particularly important as older adult patients were often underinvestigated, so the full extent of injury was not appreciated. Recent data published by the UK's National Institute for Health and Care Excellence (NICE) revealed that there are an estimated 500 /uni00A0 000 new patients with fragility fractures per year in the UK; approximately 70 /uni00A0 000 of these are admitted with proximal femoral fractures, among whom 6.7% of those aged >65 years will die within 30 days of the incident, as reported by the National Hip Fracture Database. Most of the remaining patients with proximal femoral fractures will have diminished independence and functional capacity . It is therefore unsur prising that this particular cohort of patients, the number of whom will increase in coming years owing to the anticipated - increase in life expectancy , is thought to represent a huge bur - den on healthcare services and society in general. In summary , the overwhelming majority of trauma is not life- or limb-threatening and full recovery with return to preinjur y status is usually expected. However, it remains of - paramount importance that injuries are detected early in order to properly intervene and therefore achieve a favourable out - come. For instance, one must be vigilant not to miss paediatric non-accidental injury (NAI) (see Chapter 44 ) or injuries sec - ondary to a chronic underlying disease process rather than the injury itself, for example pathological fractures in older age g roups. Of note, it has been shown that, in 66% of cases when children die as a r esult of abuse, there has been some previous interaction with a health professional or with social services, but the seriousness of the situation was not fully appreciated. Summary box 26.1 Trauma: the magnitude of the problem /uni25CF /uni25CF /uni25CF /uni25CF -

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As soon as a severe injury occurs, every second counts, and all aspects of decision making and management are critical for a patient's long-term quality of life and even their survival. The concepts of initial assessment and management have specific goals that are based on practice over a long period of time. In the modern era, new protocols have been formulated that are centred on a profound understanding of the physiology of the host response to an acute threat to homeostasis; these protocols allow clinicians to use standardised measures and to speak a common language. They also reduce delays and expedite patient care, especially when clinicians are under pressure to make a critical decision. However, an understanding of the reasoning behind them remains crucial. As in other acute conditions, the patient is particularly reliant upon the clinician when trauma occurs. A patient with a chronic condition is familiar with the nature of their problem and the way in which it is progressing. The surgeon may o ff er a remedy and the patient may consider the potential benefits and choose appropriately whether to accept the remedy . The injured patient does not know what will happen without treat ment and so relies on the surgeon to inform them of both the natural history and the potential benefits of any intervention. The implication is that, as surgeons, we have a duty to be aware of both. THE MAGNITUDE OF THE PROBLEM

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Revision #1
Created 2025-12-31 15:11:58 UTC by Omar Ayman
Updated 2025-12-31 15:11:58 UTC by Omar Ayman