



Editorial

Implementation of trauma systems: Not inventing the wheel over and over again!



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Trauma systems represent a coordinated, organised, and patient-centric approach to the care of the injured patient [1]. In this issue of *Anaesthesia Critical Care & Pain Medicine*, Gauss et al. present a potential landmark strategic plan for implementation of a national trauma system in France [2]. The authors report the findings from an expert panel regarding how a national trauma system could be established in France by describing fourteen proposals that could be implemented within the next decade. These proposals outline the structure for a national trauma system spanning numerous domains, from research and prevention efforts, creation of a national trauma registry, approaches to surgical and radiology training, to innovative educational initiatives including the use of simulation. Indeed, a structured approach to acute trauma care has been associated with improved outcomes and the effectiveness of trauma systems in decreasing injury mortality has been well demonstrated; when trauma systems have been implemented, mortality has been shown to decrease by over 15% [3]. Moreover, the realisation of such systems has also been linked to reduced healthcare costs – an issue of paramount importance in an era of increasing worldwide economic pressure to curtail excessive spending for healthcare [4].

The fundamental mission for any trauma system is one of assuring that the right patient receives the right service at the right time and in the right place by the right caregivers [5]. With regard to territory, France is the largest country in central Europe, ranks fourth in population with over 67 million people, but has not yet implemented a structured and organised nationwide trauma system. Whereas its neighbouring country Germany started to structure its trauma care in 1993 with a registry to document trauma cases (which would later expand into a valuable tool for quality control through the implementation of trauma networks) [6], France did not commence such efforts until ten years ago with

the development of small local networks, first in the Rhone-Alpine region, and, more recently, in the metropolitan area of Paris.

As outlined by Gauss and co-workers [2], and as also occurred in Germany and North America, the initial drivers for the development of trauma systems were passionate individuals who shared the same goal – to improve the care and the outcome of the severely injured patient. Following the landmark National Academy of Sciences report “Accidental Death and Disability: The Neglected Disease of Modern Society” in 1966 [7], a framework for trauma systems was developed by the American College of Surgeons Committee on Trauma [8,9]. The Germans were highly impressed by the systematic approach to trauma once implemented on the other side of the Atlantic and the later maturation of the German system paralleled the US process that began as the Major Trauma Outcome Study (MTOS), and now is the Trauma Quality Improvement program (TQIP) for North America [10]. In the same spirit but due to differences, in particular related to pre-hospital care, adaptations to local environments and concepts were necessary.

Today, trauma care in Germany is standardised as outlined in the “Whitebook Medical Care of the Severely Injured” [11] and monitored through the national TraumaRegistry DGU (Deutsche Gesellschaft für Unfallchirurgie) [12]. The Whitebook summarises current multidisciplinary recommendations on structure, organisation, installations and equipment to promote quality, safety and reliability in the medical care of the severely injured in the context of certified trauma networks (TraumaNetzwerk TNW) which form a structured nationwide network of approved clinics qualified to deliver medical care to the severely injured in compliance with uniform care and quality standards. This should guarantee that every severely injured person has the same chances of survival at all times and in all places in Germany [11]. The TR-DGU annual report from 2017 confirms the documentation of more than 40,000 trauma patients from 645 participating hospitals and 46 certified TNWs across Germany [12].

France and Germany apparently share similar concepts when it comes to pre-hospital and early in-hospital care and both countries may benefit from each others experiences. Gauss et al. [2] outline a roadmap for trauma care for the next decade for France and highlight specific aspects and challenges that need to be addressed for improvement. Trauma systems may be organised and structured differently according to different concepts, environment and demands locally in place and as described by David and co-workers [13]. They may also undergo evolution as strategies

and settings may change over time. Therefore, the classical diversion into “exclusive” and “inclusive” may no longer be valid in an advanced system, which should rather consider the individual patient with its distinct injury and pathophysiology for optimum and timely flow to avoid both under- and over-triage and to economise resources. Trauma networks such as the TNWs in Germany consist of interconnected centres providing different levels of trauma care and infrastructure with tight intercommunication to guarantee timely appropriate care and bidirectional transfer for the severely injured [14]. Such systems have been demonstrated to be effective in Germany, and the roadmap outlined for France by Gauss et al. is likely to result in improved outcomes.

As the leading cause of death among patients 46 years and younger, having a well-organised system in place for the care of trauma patients is of great importance for the overall public health. The proposals summarised by Gauss et al. [2] represent a commendable effort to decrease morbidity and mortality for the seriously injured.

Disclosure of interest

The authors declare that they have no competing interest.

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