

middle-income regions face huge trauma burdens with significant resource challenges while higher income countries often face a reducing operative experience because of higher proportions of blunt trauma lending itself to a more non-operative management (NOM), along with a reduction in open surgical experience. Furthermore, many surgeons are largely devolved from ICU patient management, an essential aspect of care for the polytrauma patient [14–16]. To date there are only three published studies of ERAS concepts applied to trauma care, and these demonstrated the feasibility of selected aspects and challenges with other aspects but included only patients not requiring ICU admission, or prolonged ventilation [17–19].

For the sake of readability and grouping of recommendations the results of the ERATIC guidelines have been divided into three papers with part 1 covering the introduction and main methods, the PICO questions related to initial management, operative and non-operative care, part 2 covers the post-operative and intensive care aspects (with some overlap from part 1 highlighted at the end of part 1), and part 3 covers the aspects of ethical decision-making, end-of-life care and trauma systems requirements impacting ultimate outcome (The papers documenting paper 2 and 3 are found as <https://doi.org/10.1002/wjs.70004> and <https://doi.org/10.1002/wjs.70003> in the *World Journal of Surgery*).

1.2 | Methods

The project was initiated by the IATSIC group (www.iatsic.org), during the ISW 2022 meeting in Vienna Austria, and a project proposal was submitted to the ERAS Society for approval. Approval was provided and the guidelines development group (GDG) was constituted. The group was from varied surgical (trauma surgeons, general surgeons, vascular surgeons, pediatric, and orthopedic surgeons) or anesthesia critical-care backgrounds, from various world-regions and country income levels as well as representing both sexes. Topic lists were generated, and search questions were derived using the patient, intervention, comparator (where available), outcome (PICO), or similar approaches and using the definitions provided in paper 1. The topics were divided across the spectrum to smaller teams of two or three reviewers, with different backgrounds and from different countries, based on their expertise, to perform a literature review of English language publications and then to generate summary recommendations using the GRADE structure, with the grading of the summarized evidence rather than each article considered for inclusion, given this is not a systematic review. All included articles are referenced in the main text summary of the evidence prior to the take-home ‘Summary of Evidence and the Recommendation’. The time period chosen was 2008–2023 (15 years), but allowing for the inclusion of older sentinel publications where relevant. PubMed, Cochrane, Embase, and MEDLINE database searches on English language publications were performed. Greater emphasis was placed on recent publications, randomized controlled trials, systematic reviews, meta-analyses and large cohort studies where these existed,

however, retrospective or older studies were considered where no other higher level of evidence was available, and if there was particular relevance to either trauma care or trauma intensive care. Where no good evidence was available, expert opinion, if published, was considered, or generated by the group experts. Excluded were letters to editors and small case series. An example flow-chart of the search process is provided in Addendum 1 (Supporting Information S1) and examples of some of the search strings in Addendum 2 (Supporting Information S2).

Where relevant, prior ERAS guidelines that apply to the PICO questions were also incorporated, or the reader is referred to the topic in those previous guidelines. Expert guidelines from other related organizations in the field of trauma were reviewed, where available and relevant aspects included. Excluded from this review are *isolated* traumatic brain injury, drowning, and burn trauma, unless of relevance to overall patient care. Pediatric-specific considerations are addressed where deemed relevant in each section and in the ‘systems’ section (Paper 3). The results were then summarized into sections with a summative recommendation graded by level of evidence and grade of recommendation. These 37 recommendations were split into sub-points and were subject to a two-round Delphi process with 80% agreement required to accept the recommendation.

2 | Definitions

In these ERATIC guidelines, trauma refers to the medical and surgical consequences and sequelae of sudden acute kinetic energy transfer to the body causing injury, both intentional and unintentional. The torso constitutes the regions of the body from the neck to the hips including the pelvis, thorax, and abdomen with the typical junctional zones (thoracic inlet, thoraco-abdominal region, and pelvic outlet). The term major trauma (also called multiple or multi-system injury) relates to injury to more than one organ system of moderate or severe extent, whereas the term ‘polytrauma patient’ relates to one with multisystem injury *with physiological aberrations* [5, 6].

The pre-operative phase relates to the time from incident, emergency medical care, initial assessment in the emergency department, and decisions around whether operative or non-operative management (NOM) are appropriate. The operative phase includes urgent surgical intervention, and this may be in the form of early total care or damage control surgery.

Post-operative ICU care relates to the admission of patients with major trauma either post-intervention (surgical or endovascular) or directly from the emergency department in cases selected for NOM, where the patient needs intubation or non-invasive ventilation, vasoactive drug therapy, or renal replacement therapy.

2.1 | Commentary

The components of the ERAS emergency laparotomy pathway were reviewed in relation to the patient sustaining acute trauma