

Supplementary Materials for

Clinical practice guideline for the integrated management of major trauma by the Italian Institute of Health: process and methods

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Table 1

List of potential CPGs

Table 2

Complete list of questions included in the Clinical practice guideline for the integrated management of major trauma by the Italian National Institute of Health, by macro area

Table 1
List of potential CPGs and reasons for inclusion/exclusion

Guideline	Decision	Reason for inclusion/exclusion
1. National Clinical Guideline Centre (UK). Major Trauma: Service Delivery. London: National Institute for Health and Care Excellence (UK); 2016 Feb. PMID: 26913313.	Included	AGREE II score of 7 out of 7. It covers the organizational aspects of major trauma management. It has a detailed publicly available material (e.g., identifiable PICO elements, presence of full systematic reviews, accessible search strategy, and analysis method and evidence tables/summaries) for updating and GRADE ADOLOPMENT application.
2. National Clinical Guideline Centre (UK). Major Trauma: Assessment and Initial Management. London: National Institute for Health and Care Excellence (UK); 2016 Feb. PMID: 26913320.	Included	AGREE II score of 7 out of 7. It covers the clinical aspects of major trauma management in pre-hospital and hospital settings. It has a detailed publicly available material (e.g., identifiable PICO elements, presence of full systematic reviews, accessible search strategy, and analysis method and evidence tables/summaries) for updating and GRADE ADOLOPMENT application.
3. Expert Panel on Major Trauma Imaging, Shyu JY, Khurana B, Soto JA, Biffi WL, Camacho MA, Diercks DB, Glanc P, Kalva SP, Khosa F, Meyer BJ, Ptak T, Raja AS, Salim A, West OC, Lockhart ME. ACR Appropriateness Criteria® Major Blunt Trauma. J Am Coll Radiol. 2020;17(5S):S160-S174. doi: 10.1016/j.jacr.2020.01.024. PMID: 32370960.	Excluded	It focuses mainly on the imaging modalities for diagnosis and evaluation of major blunt trauma
4. Cannon JW, Khan MA, Raja AS, Cohen MJ, Como JJ, Cotton BA, Dubose JJ, Fox EE, Inaba K, Rodriguez CJ, Holcomb JB, Duchesne JC. Damage control resuscitation in patients with severe traumatic hemorrhage: A practice management guideline from the Eastern Association for the Surgery of Trauma. J Trauma Acute Care Surg. 2017;82(3):605-17. doi: 10.1097/TA.0000000000001333. PMID: 28225743.	Excluded	Poor quality with reference to: composition of Guideline Development Group, consistency between the evidence and recommendations, external review, updating.
5. Bouzat P, Valdenaire G, Gauss T, Charbit J, Arvieux C, Balandraud P, Bobbia X, David JS, Frandon J, Garrigue D, Long JA, Pottecher J, Prunet B, Simonnet B, Tazarourte K, Trésallet C, Vaux J, Viglino D, Villoing B, Zieleskiewicz L, Gil-Jardiné C, Weiss E. Early management of severe abdominal trauma. Anaesth Crit Care Pain Med. 2020;39(2):269-77. doi: 10.1016/j.accpm.2019.12.001. Epub 2019 Dec 13. PMID: 31843714.	Excluded	Limited topic: it addresses only severe abdominal trauma.
6. American Academy of Orthopaedic Surgeons (AAOS), Major Extremity Trauma and Rehabilitation Consortium (METRC). American Academy of Orthopaedic Surgeons clinical practice guideline for limb salvage or early amputation. Rosemont (IL): American Academy of Orthopaedic Surgeons (AAOS); 2019 Dec 6.	Excluded	Poor quality with reference to: composition of Guideline Development Group. Limited topic: it addresses only limb salvage or early amputation.

Table 2

Complete list of questions included in the Clinical Practice Guideline for the Integrated Management of Major Trauma by the Italian National Institute of Health, by macroarea

N.	Macroarea	Topic and review question	Source guideline vs de novo
1	Pre-hospital triage	Pre-hospital triage to the appropriate destination What pre-hospital triage tool is the most accurate for adults with suspected major trauma.	DE NOVO
2	Pre-hospital triage	Pre-hospital triage to the appropriate destination What is the accuracy of ambulance triage tools in people with major trauma?	NG40
3	Assessment early and management	Airway management What is the most clinically and cost effective strategy for managing the airway in patients with trauma pre-hospital?	NG39
4	Assessment early and management	Management of open pneumothorax Which occlusive dressing used in the pre-hospital setting is the most clinically and cost effective in improving outcomes for patients with open pneumothoraces as a part of major trauma? (CQ10)	NG39
5	Assessment early and management	Pre-hospital chest imaging What is the most clinically and cost effective technique (pre-hospital) to manage tension pneumothoraces?	NG39
6	Assessment and early management	Pre-hospital chest imaging (US) What is the clinical and cost effectiveness of performing FAST compared to clinical examination pre-hospital in children, young people and adults who have suffered a suspected major chest trauma?	NG39
7	Assessment and early management	Anticoagulation reversal What is the most clinically and cost effective regimen for reversal of pre-existing therapeutic anticoagulation (laboratory effect) in major trauma?	NG39
8	Assessment and early management	Control of external haemorrhage Are haemostatic dressings clinically and cost effective in improving outcomes in patients with haemorrhage in major trauma? (CQ5)	NG39
9	Assessment and early management	Control of uncontrolled/uncompressible sites haemorrhage Is Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) clinically and cost effective in the Management of major exsanguination in trauma? (CQ7)	DE NOVO
10	Assessment and early management	Control of external haemorrhage Is the use of pneumatic or mechanical tourniquets clinically and cost effective in improving outcomes in patients with haemorrhage in major trauma?	NG39
11	Assessment and early management	Fluid replacement What is the best volume expansion fluid to use in the resuscitation of haemorrhagic shock?	NG 39
12	Assessment and early management	Haemorrhage shock prediction/risk tools What is the most accurate risk tool to predict the need for massive transfusion in patients with major trauma (pre-hospital and hospital)?	NG 39
13	Assessment and early management	Haemorrhage shock prediction/risk tools Which method for massive transfusion protocol?	DE NOVO
14	Assessment and early management	Haemostatic agents Is the use of systemic haemostatic agents clinically and cost effective in improving outcomes in patients with confirmed or suspected haemorrhage in major trauma?	NG39
15	Assessment and early management	Intraosseous (IO)/intravenous (IV) access What is the most clinically and cost effective technique for circulatory access in patients with major trauma, including following a failed attempt at initial peripheral access?	NG 39
16	Assessment and early management	Pelvic binders Is the application of pelvic binders pre-hospital in patients suspected of pelvic fracture clinically and cost effective in improving outcomes?	NG39
17	Assessment and early management	Volume resuscitation What are the most clinically and cost effective fluid resuscitation strategies in the major trauma patient (hypotensive versus normotensive)?	NG 39
18	Assessment and early management	Damage control surgery What are the most clinically and cost-effective surgical intervention strategies in the major trauma patient with active haemorrhage (damage control versus definitive surgery)?	NG 39

Continues

Table 2
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N.	Macroarea	Topic and review question	Source guideline vs de novo
19	Assessment and early management	Haemorrhage protocol What type of major haemorrhage protocol is the most clinically and cost effective for improving outcomes in patients with major trauma?	NG39
20	Assessment and definitive management	Interventional radiology Is the use of interventional radiology for definitive haemorrhage control in major trauma patients clinically and cost effective?	NG39
21	Assessment and definitive management	Whole-body CT What is the clinical and cost effectiveness of whole-body CT imaging in major trauma?	NG39
22	Assessment and definitive management	Hemorrhage imaging What are the most clinically and cost effective imaging strategies for detecting life threatening internal haemorrhage in major trauma patients?	NG39
23	Assessment and early management	Imaging assessment of chest trauma What are the most clinically and cost effective hospital strategies for assessing chest trauma (tension pneumothorax, haemothorax, cardiac tamponade, pneumothorax, pulmonary contusion, flail chest and aortic injury) in patients with major trauma on initial presentation?	NG 39
24	Assessment and early management	Imaging assessment of chest trauma Diagnostic accuracy of hospital imaging strategies in people presenting with major trauma	NG39
25	Assessment and early management	In-hospital tension pneumothoraces What is the most clinically and cost effective technique (in-hospital) to manage tension pneumothoraces?	NG 39
26	Assessment and early management	Monitoring What is the most clinically and cost effective frequency of blood test monitoring for people with suspected haemorrhage following major trauma?	NG 39
27	Assessment and early management	Monitoring Is the use of point-of-care coagulation testing versus laboratory coagulation testing clinically and cost effective in people with major trauma?	NG39
28	Assessment and early management	Monitoring Does monitoring of lactate levels to guide management of hypovolemic shock improve outcomes?	NG 39
29	Assessment and early management	Pain assessment What is the most appropriate pain assessment tool (pre-hospital and hospital) in patients with major trauma?	NG 39
30	Assessment and early management	Pain management What are the most clinically and cost effective first-line pharmacological pain management strategies (pre-hospital and hospital) in patients with major trauma?	NG39
31	Assessment and early management	Timing of trauma patient evaluation Does the structured clinical approach in primary and secondary evaluation change the patient's outcomes?	DE NOVO
32	Assessment and early management	Warming Is warming clinically and cost effective in people who have experienced major trauma?	NG 39
33	Service organization	Continuity of care Is there a benefit of multidisciplinary trauma ward care versus specialist ward care?	NG40
34	Service organization	Continuity of care: the trauma coordinator role What trauma coordination approach is the most clinically and cost effective?	NG40
35	Service organization	Documentation and transfer of information How to transfer patient information and documentation?	DE NOVO
36	Service organization	Documentation and transfer of information Is documentation using a standard form across all clinical settings (pre-hospital and hospital) in which a major trauma patient might be treated clinically and cost effective?	NG39
37	Information and support	Information and support How should information and support be provided to families and carers?	NG40
38	Information and support	Information and support What information and support do people with major trauma and their families/ carers want in-hospital/on discharge from ED?	NG 39

Continues

Table 2
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N.	Macroarea	Topic and review question	Source guideline vs de novo
39	Service organization	Paediatric trauma training What aspects (type and frequency) of paediatric training for trauma improve outcomes for providers which experience high volumes of adult trauma and experience of trauma in children?	NG40
40	Service organization	Pre-alert processes What is the accuracy of pre-alert?	NG 40
41	Service organization	Receiving trauma teams What is the clinical and cost effectiveness of providing a tiered response to patients arriving at a MTC or TU?	NG 40
42	Service organization	Rehabilitation What are the barriers to providing early rehabilitation following early rehabilitation assessment? What are the implications for service delivery?	NG40
43	Service organization	Transfer between emergency departments Is it clinically and cost effective to provide a retrieval service?	NG 40
44	Service organization	Trauma audit Is audit and feedback effective for improving health provider performance and healthcare outcomes?	NG40
45	Service organization	Trauma audit What features are needed in a national audit system to ensure that audit improves service performance as measured by patient outcomes?	NG 40