Status **Active** PolicyStat ID **15157355**

Origination	01/2025	Contact	Stephanie Spain: Trauma Prgm Mgr Adult
Last Approved	01/2025	Area	Trauma Surgical Critical Care
Effective	01/2025	Applicability	Erlanger Health - Baroness
Last Revised	01/2025		
Next Review	01/2028		

Fracture Reduction in the Isolated Orthopaedic and Multiply Injured Trauma Patient

Background

Acutely injured trauma patients require multiple disciplinary approaches during their initial stabilization. An essential part of stabilization is reduction and splinting of fractures and joint dislocations in a timely, safe and humane fashion. The following guideline directs application of resources for the appropriate management of patients with orthopaedic injuries requiring acute fracture management in the Emergency Department (ED).

Guideline Statement

To develop and provide a systematic and safe approach to the care of the adult trauma patient requiring stabilization of orthopaedic injuries.

Scope:

Emergency Department Attendings, Emergency Department Residents, Trauma Residents, Trauma Attendings, Orthopedic Residents, Orthopedic Attending, Anesthesiology, Nursing- Trauma Services and Emergency Department

Guideline:

A.	The operating room (OR) typically should not be used for general fracture reduction and splinting of patients with multiple orthopaedic injuries. OR readiness is dedicated to neurosurgical, trauma, vascular and general surgery availability. Burdening the OR with routine fracture and joint reduction will limit availability for other critical services. Exceptions to this caveat should be determined by the Attending Orthopaedist of record and may include rare hip

	dislocations and foot and ankle fracture dislocations that require a general anesthetic for adequate sedation and relaxation, typically after having failed reduction attempt in the ED under moderate or deep sedation. Compared to ED sedation, taking patients to the OR for sedation and fracture/joint reduction has been shown to have a ten-fold increased time to reduction and length of stay. Additionally, sedation at the point of arrival (ED), has not been associated with any increase in complications compared to general anesthesia, and typically yields the same quality of orthopaedic reduction.
B.	The Emergency Physician (EP) can perform moderate or deep sedation with limited availability due to their other work-flow obligations. EP availability is up to the attending EP on duty but their presence at the bedside for the supervision of sedation for fracture reduction should not typically exceed 15-30 minutes.
C.	The Trauma Surgeon on duty may be available for supervision of sedation for fracture and joint reduction but they also have other work-flow obligations limiting their availability.
D.	Finally, anesthesia does not have the manpower to report to the ED for the purpose of fracture reduction and anesthesia is not an available resource for this purpose. While a rare failed closed reduction in the ED may require taking the patient to the OR for general anesthesia, the anesthesia department also does not have the capacity to provide routine care in the operating room for basic fracture/joint reductions, regardless of the comorbidities of a patient.

Procedure:

A.	One or two simple fracture/joint reductions or traction pin placements should be performed by the first call Orthopaedic Resident in house with moderate or deep sedation performed by the EP. Prior to this, the Ortho Resident and the EP should have a brief huddle discussing what procedure(s) will be performed and time anticipated for the intervention. The EP attending holds the final decision on whether or not they will provide the procedural sedation service. If the patient has isolated orthopaedic trauma not requiring sedation for the orthopaedic team. If the patient has isolated orthopaedic trauma not requiring sedation for the orthopaedic team, for appropriate fractures/injuries, the Orthopaedic Resident may proceed with local anesthetic in the case of simple fracture reduction or traction pin placement. These patients should be on pulse oximetry, telemetry, and monitored for pain control during in the peri-procedure time frame. When a complicated/protracted reduction or more than two simple reductions is anticipated, a second Orthopaedic Provider should be present and assist with fracture reduction in order to expedite the process. If the EP on duty does not feel that they are capable of providing adequate sedation under the circumstances or there is concern about the patient's overall stability due to altered mental status, hypotension, aspiration risk or expected duration of sedation, the EP should have a conversation with the Trauma Attending on duty about the risks and benefits of intubating the patient. If the decision to intubate is reached, the service performing the intubation should also be determined. Once intubated, patient sedation during the procedure should be under the supervision of the PGY-4 or greater Surgical Resident, Surgical Critical Care Fellow or the Trauma Attending of record. If patients are intubated for fracture reduction, it is anticipated that the patient will remain intubated until their condition has stabilized. Except under rare circumstances, adequate sedation for fracture or joint

reduction will be performed in the ED under the supervision of either the EP or Trauma Attending.
As the physician of record, the EP is expected to coordinate this process for all patients while they remain in the ED, even if ultimately another services provides the sedation procedure.

Fortunately, the incidence of serious adverse events during procedural sedation and analgesia in the ED is rare, and shared decision making should be used to provide the safest and most effective delivery of care to orthopaedic patients.

Adult Procedural Sedation Adverse Events (5)		
Respiratory Events	**Incidence (per 1,000)**	**Percentage**
Laryngospasm	4.2	0.4
Intubation	1.6	0.2
Aspiration	1.2	0.1
Hypoxia	40.2	4
Apnea	12.4	1
Other Events		
Hypotension	15.2	2
Vomiting	16.4	2
Agitation	9.8	1
Serious		
Common/potentially serious		
Common/non-serious		

References:
1. Procedural Sedation in the Emergency Department. Eberson CP, Hsu RY, Borenstein TR. 4, 2015, J AM Acad Orthop Surgeons, Vol. 23 pp. 233-241
2. Incidence of Adverse Events in Adults Undergoing Procedural Sedation in the Emergency Department: A Systematic Review and Meta-analysis. Bellolio MF, Gilani WI, Barrionuevo P, Murad H, Erwin PJ, Anderson JR, Miner JR, Hess EP. 2, s.l : Acad Emerg Med, 2016, Vol. 23, pp. 119-134.

Approval Signatures

Step Description	Approver	Date
COO	John Winks: Executive Vice President-COO	01/2025
Medical Executive Committee	Alisa Bolt: Medical Staff Svcs Manager	01/2025
Trauma Services Committee Approval	Stephanie Spain: Trauma Program Manager	02/2024

Stephanie Spain: Trauma Program Manager	02/2024

Applicability

Erlanger Health - Baroness