

Appendix

Appendix A: Rib Fracture Grade Calculation

****Rib Fracture Grade Calculation**

Step one: Determine number of sides

Unilateral = 1

Bilateral = 2

Step two: Determine number of fractures

Step three: Determine Age Score

0 = <50 years

1 = 51–60 years

2 = 61–70 years

3 = 71–80 years

4 = >80 years

Step four: Calculate Rib Fracture Grade

(# of rib fractures x # of sides)

+ Age Score

Rib Fracture Grade

Easter A. Management of patients with multiple rib fractures. Am J of Critical Care. 2001;10:320–9.

May L, Hillermann C, Patil S. Rib fracture management. BJA Education. 2016 Jan 1;16(1):26–32.

Ziegler DW, Agarwal NN. The morbidity and mortality of rib fractures. J Trauma. 1994;37:965–979.

KEY PERFORMANCE INDICATORS

Purpose: To measure improvements in the system, including CPG compliance.

INDICATOR	RATIONALE
1. CPG compliance Moderate BCT (Definition: RFS ≥ 7 , not mechanically ventilated in ICU within 12 hours of admission) <ul style="list-style-type: none"> • CT chest diagnostic imaging completed • Intermediate care monitoring • Pain service/anesthesia consultation • Referral for rib fixation (thoracoplasty) if appropriate 	
2. Number of patients with flail chest (Defined radiologically as three or more consecutive bi-costal fractures, one of which in each rib is $\geq 100\%$ displaced) By rib fixation procedure (thoracoplasty), time to thoracoplasty	
3. Number of patients with multiple (four or more) rib fractures	
4. Moderate BCT patients with unexpected intubation and ICU admission By time to ICU admission, by RFS	
5. Moderate BCT patients receiving epidural analgesia	
6. Time to rib fixation (open reduction and internal fixation) <ul style="list-style-type: none"> • Proportion of rib fixation patients receiving surgery >3 days after the time of injury. 	
7. Mortality By BCT severity: <ul style="list-style-type: none"> • Minor (RFS < 7, not initially ventilated x 12 hours) • Moderate (RFS ≥ 7, not initially ventilated x 12 hours) • Severe (RFS ≥ 7, pulmonary contusions, initially ventilated) 	

BCT = blunt chest trauma

RFS = Rib Fracture Score (see algorithm or Appendix 1 in the guideline document for RFS calculation)