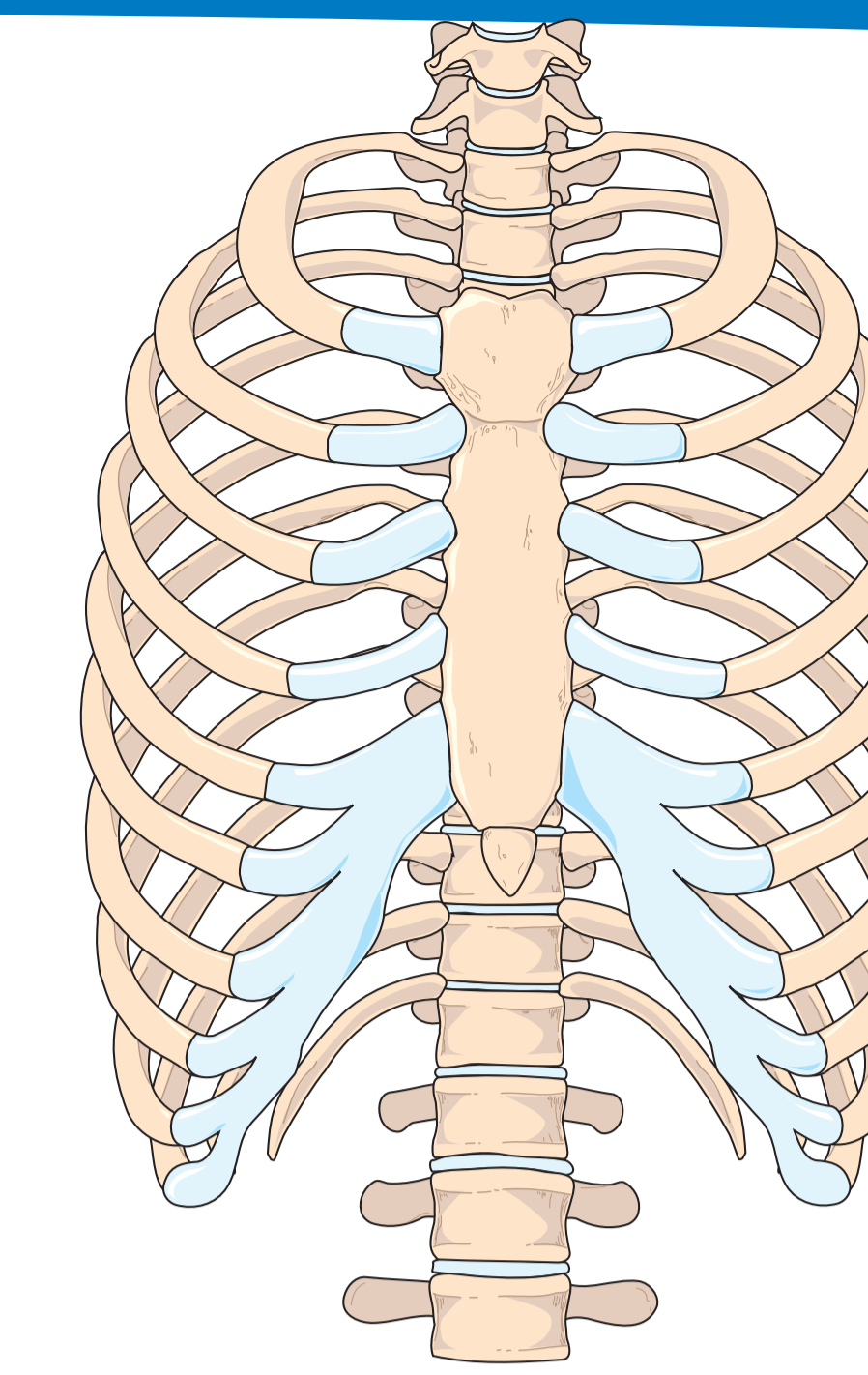


Improving Reliability of Pain Management following Rib Fracture: Introduction of a Rib Fracture Analgesic Ladder

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Introduction

- Following the development of a Trauma Service at our Trust the Acute Pain Team has seen a tenfold increase in referrals for patients with fractures ribs
- Rib fractures account for more than half of the thoracic injuries sustained from non-penetrating trauma (Karmakar and Ho, 2003)
- Multiple fractures increase the mortality outcome as they may compromise normal movement of the costovertebral and diaphragmatic muscles causing ventilatory insufficiency (Ziegler and Agarwal, 1994) which can result in atelectasis, retention of secretions and possible respiratory failure (Middleton et al, 2003)
- Development of major trauma centre at Salford Royal and increase number of admissions of patients with multiple fractured ribs
- Identified delays in access to care
- No clear pathway in Salford Royal or across the North West.

Proposal

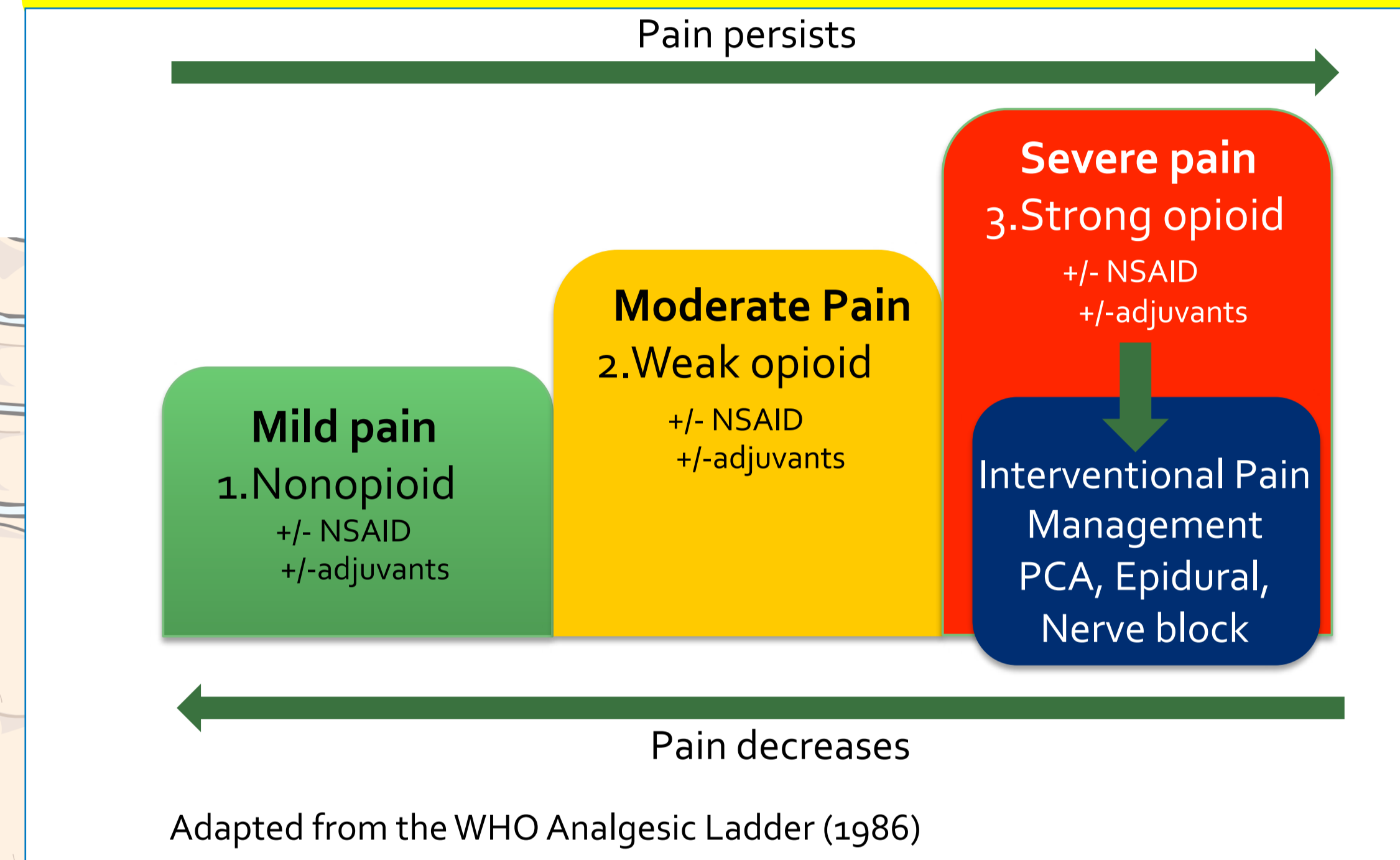
- Produce a collaborative care pathway and policy to be used in the Trust and highlight as best practice for other Trusts to adopt
- Disseminate the fractured rib pathway to stakeholders
- Introduce the scoring system and analgesic ladder into clinical practice to direct and influence care.

Aims

- Develop a protocol for pain management incorporating a scoring system which identifies a pathway of care
- Pain team have early initial contact with each patient
- Multidisciplinary team collaboration
- Improve patient clinical outcome and overall experience.

Methods

1 Recognise limitation in the traditional approach of the analgesic ladder. At step 3 consider interventional methods

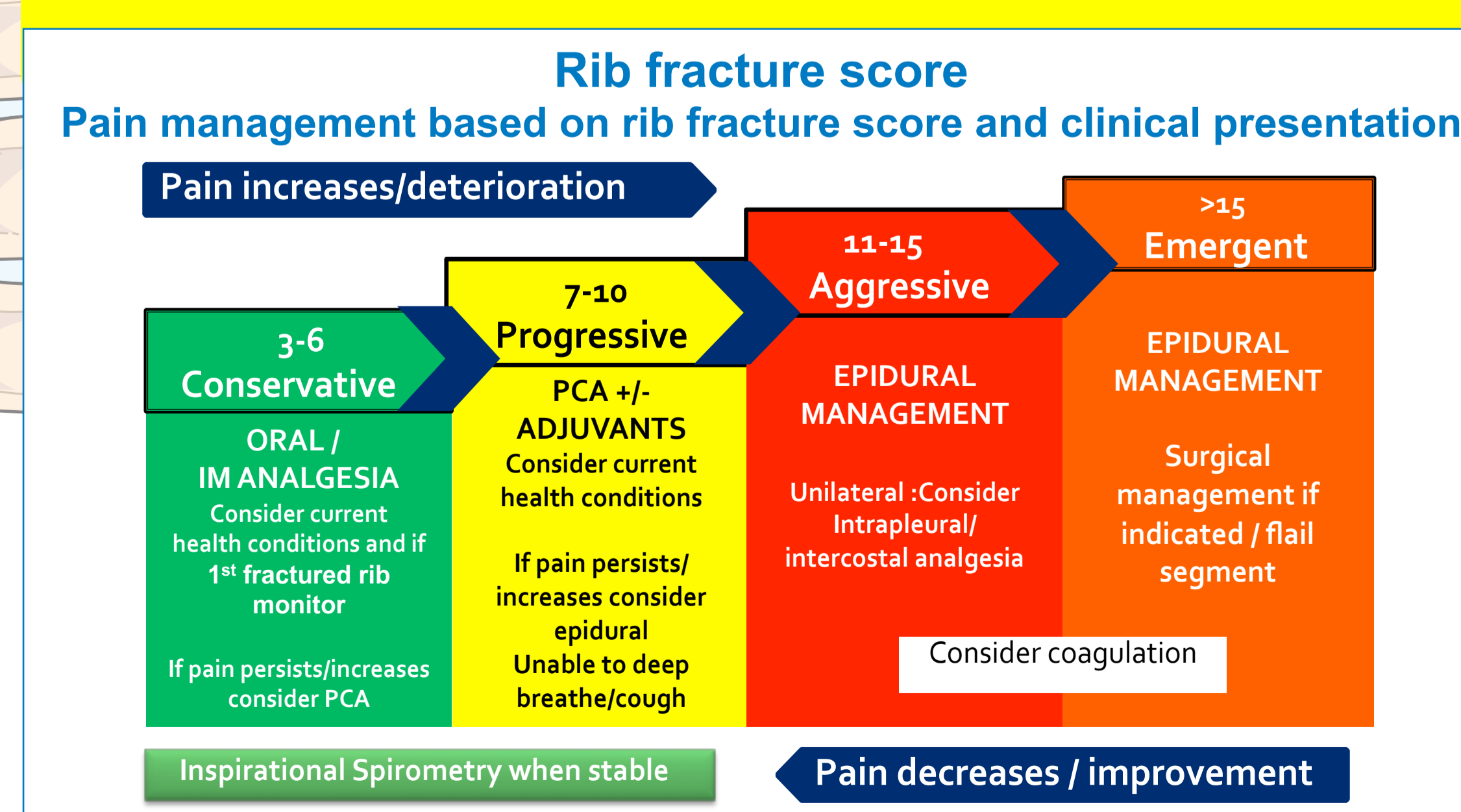


2 Incorporate rib fracture score - to identify appropriate pain management

Proposed Rib Fracture Analgesic Ladder breaks x sides + age factor		
Breaks	Sides	Age factor
Number of fractures	Unilateral = 1 Bilateral = 2	<50 years = 0 51-60 years = 1 61-70 years = 2 71-80 years = 3 >80 years = 4

Adapted from Easter's Rib fracture score and protocol (2004)

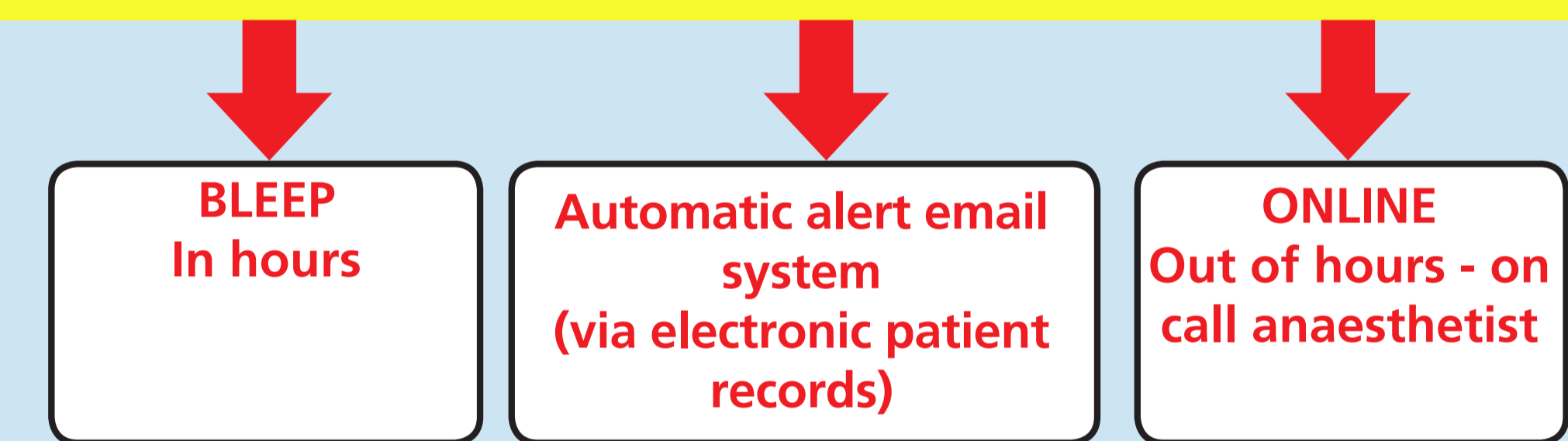
3 Combine rib fracture scores and analgesic ladder



Implementation

- Education and awareness - collaboration with A&E, Trauma and Pain
- Identify pathways of care to highlight patient at risk and refer to pain management
- Develop policy for early detection and referral to pain services
- Utilise electronic systems to 'alert' to admissions with fractured ribs
- Organisation of pain and anaesthetic services to access timely intervention of pain management.

If a patient has been identified to have fractured ribs and is being admitted as an inpatient please contact the Pain Team



Conclusion

- Targeted pain management is key in providing the best outcome
- Implementation of the protocol supports professional development and evidenced based practice
- Rib fracture analgesic ladder sets out clear guidelines
- Red flag system adopted in emergency department supports multidisciplinary working and seamless care.

References

- Karmakar, M.K., & Ho, A.M. (2003) Acute pain management of patients with multiple fractured ribs. J Trauma. 54(3), 615-25.
- Ziegler, D.W., & Agarwal, N.N. The morbidity and mortality of rib fractures. Journal of Trauma, 37(6), 975-9.
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