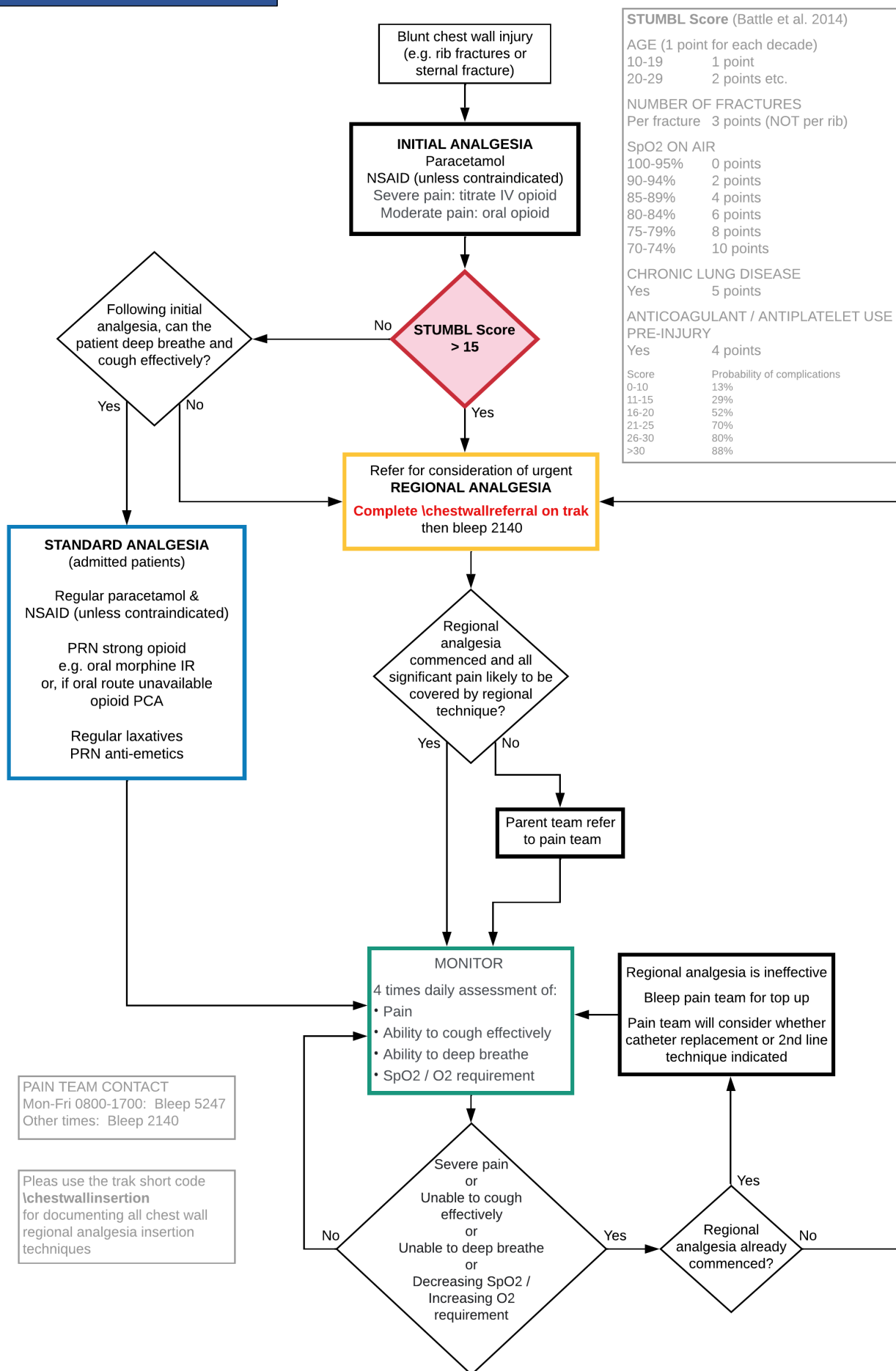


Chest Wall Analgesia Pathway



INDICATIONS FOR REGIONAL ANALGESIA

The goals in all patients with rib fractures are the ability cough effectively, deep breathe and (if applicable) mobilize.

Perform regional analgesia early (i.e. consider from the point of admission). *Do not wait for patient to deteriorate with late complications such as pneumonia or respiratory failure (which effective regional analgesia can help to prevent).*

Consider regional analgesia in any patient with rib fractures or a chest drain who despite reasonable attempts to use multimodal oral/IV analgesia including strong opioid:

- Has severe pain, or
- Is unable to cough effectively, or
- Is unable to deep breathe, or
- Has worsening oxygenation due to pain-associated hypoventilation

The following **red flag** features, particularly in combination, identify patients at high risk of complications and should lower threshold for starting regional analgesia:

- **Age >65**
- **Flail segment**
- **>3 rib fractures**
- **Hypoxia / oxygen requirement**
- **Chronic lung disease**

STUMBL score >15 on admission should prompt early consideration of regional analgesia (see p1).

PAIN TEAM (Bleep 5247 / 2140)

The pain team does not currently see all patients with rib fractures / chest wall regional analgesia.

Please refer the following patients:

1. Patients receiving chest wall regional analgesia with other injuries causing significant pain which are not covered by the technique.
2. Regional analgesia is desirable but not possible at present due to contraindications.

LOCAL ANAESTHETIC DOSING

Please see the NHS Lothian Local Anaesthetic PIB Pump Prescription & Monitoring Chart (search intranet for "PIB Chart") for recommendations.

PATIENT ASSESSMENT

The referring team should complete a referral proforma on trak using the **chestwallreferral** short code prior to bleeping the anaesthetist on 2140. The following key information is required:

- Clinical summary (including date & mechanism of injury)
- Description of chest wall injury including level & position of rib fractures (discuss with radiology if necessary)
- STUMBL score
- Other injuries
- Spinal immobilization
- Relevant past medical history
- Allergies
- Bloods (platelets, INR, APTTR)
- Antiplatelet & anticoagulant medications
- Current analgesia
- Ability to deep breathe and cough
- Pain score at rest and on deep breathing / coughing / movement
- Oxygen saturation on air
- Current oxygen therapy

RIB FIXATION

See the South East Trauma Network Major Trauma Centre - Rib Fixation Referrals Guide (search intranet for "rib fixation referrals").

Referral criteria:

Injury related

- Clinical flail
- Significant chest wall deformity
- Bilateral chest wall injury
- ≥8 rib fractures in total

Physiology related

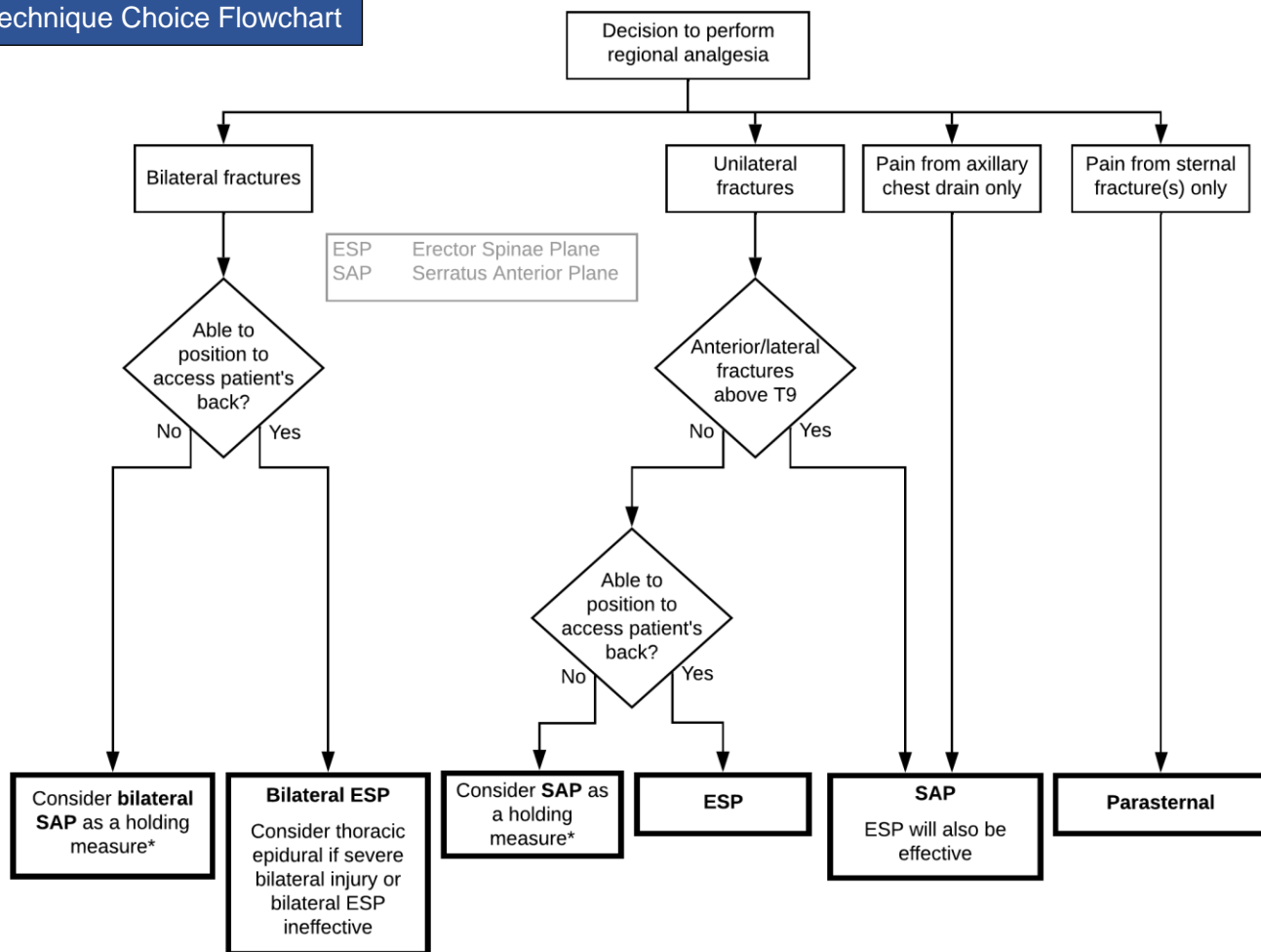
- Increasing oxygen requirements
- Incentive spirometry ≤1500ml
- Intubation
- Failed extubation

Pain related

- Uncontrolled pain despite regional analgesia

Please flag any patient meeting one or more of these criteria to the parent team, who should complete a rib fixation referral form (available on the intranet) and email it to loth.ribfixation@nhs.scot.

Technique Choice Flowchart



NOTES

- Catheter-based techniques are always preferable, but single shot blocks are useful when:
 - The emergency anaesthesia team does not have the time resource to allocate someone to perform a catheter-based technique. A single shot should last for at least 12 hours.
 - There is uncertainty over how much benefit a regional analgesia technique for rib fractures will provide, for example an upper chest injury where there are rib fractures plus clavicular / scapular fractures. Significant symptomatic benefit with a single shot means a catheter technique is worthwhile.
 - *A single shot SAP block can be used as a holding measure until a patient who warrants an ESP catheter is cleared from spinal precautions.
 - *A single shot SAP block can be used as a holding measure to aid with positioning for an ESP catheter in patients with severe pain who cannot move (be careful with LA dosing, consider delaying ESP loading bolus).

With a single shot block, the anaesthetist performing the block must make a plan for subsequent review / analgesia.

- If surgical emphysema makes US difficult or impossible, the only regional analgesia options may be landmark based techniques (i.e. landmark paravertebral or thoracic epidural).
- If a technique proves to be too difficult or is ineffective, consider trying a different one.
- There is limited evidence behind the safety of fascial plane techniques (e.g. ESP, SAP) in the presence of disordered coagulation. They are likely to be safer than epidural & paravertebral techniques given their location. DOACs are not a contraindication.