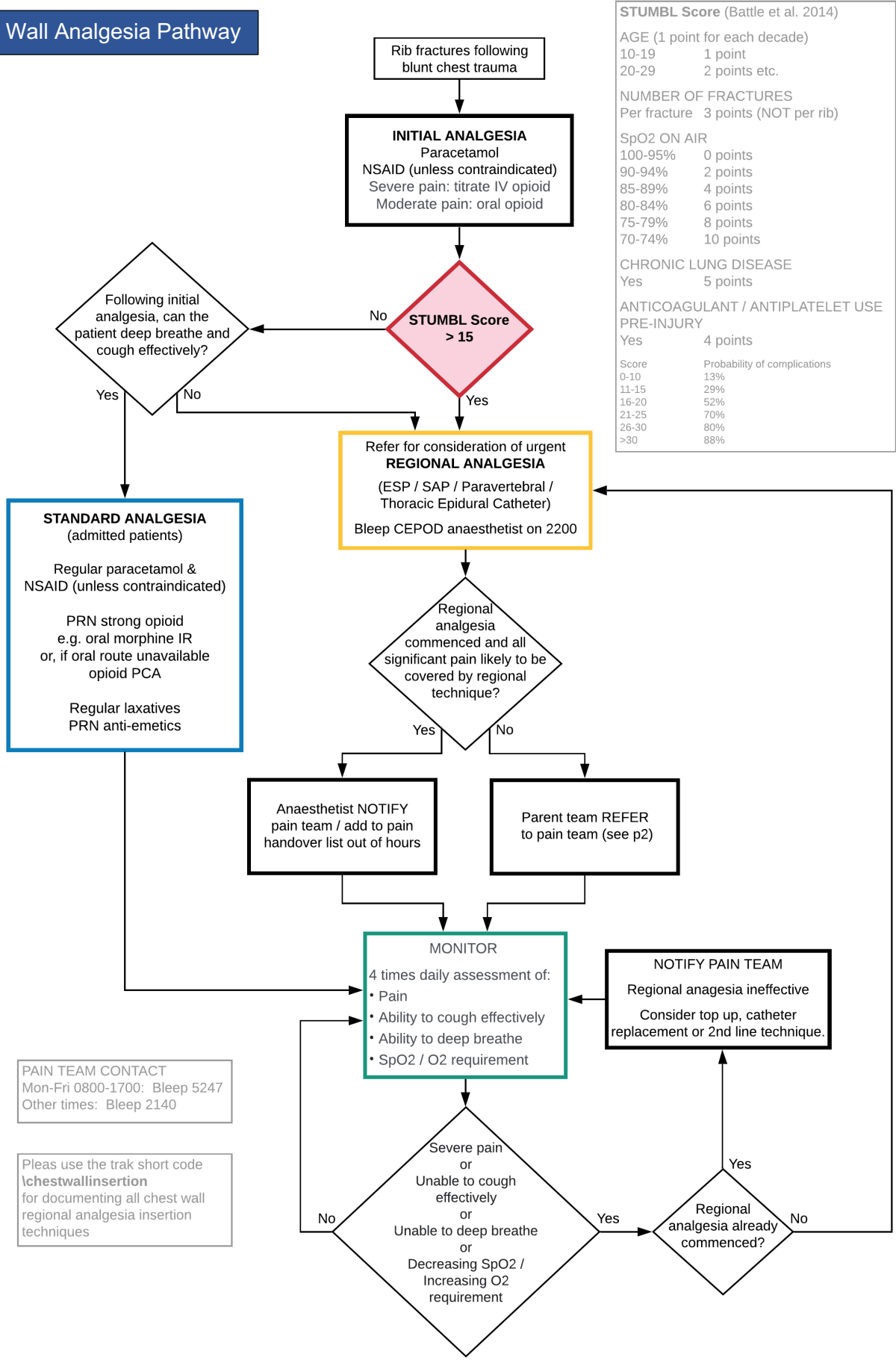


Chest Wall Analgesia Pathway



STUMBL Score (Battle et al. 2014)

AGE (1 point for each decade)
 10-19 1 point
 20-29 2 points etc.

NUMBER OF FRACTURES
 Per fracture 3 points (NOT per rib)

SpO2 ON AIR
 100-95% 0 points
 90-94% 2 points
 85-89% 4 points
 80-84% 6 points
 75-79% 8 points
 70-74% 10 points

CHRONIC LUNG DISEASE
 Yes 5 points

ANTICOAGULANT / ANTIPLATELET USE PRE-INJURY
 Yes 4 points

Score	Probability of complications
0-10	13%
11-15	29%
16-20	52%
21-25	70%
26-30	80%
>30	88%

PAIN TEAM CONTACT
 Mon-Fri 0800-1700: Bleep 5247
 Other times: Bleep 2140

Pleas use the trak short code **\chestwallinsertion** for documenting all chest wall regional analgesia insertion techniques

INDICATIONS

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).

PATIENT ASSESSMENT

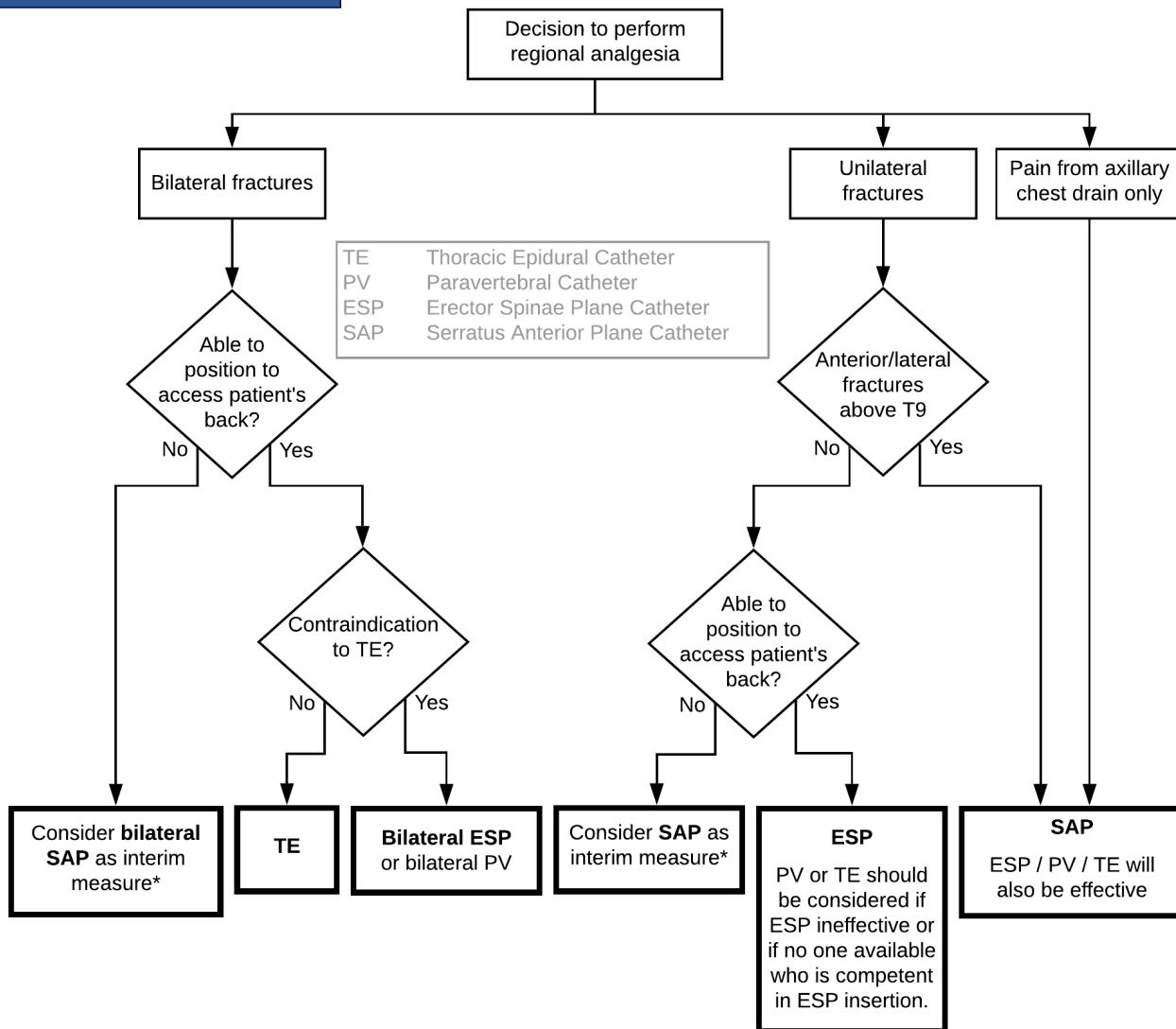
Obtain the following information:

- Age
- Date, time & mechanism of injury
- Exact nature of rib fractures (look at the imaging, discuss with radiology if unsure):
 - Which side or bilateral?
 - Which ribs?
 - Anterior / lateral / posterior?
 - Clinical or radiological flail?
- Vertebral injuries
- Intrathoracic injuries
- Other injuries
- Past medical history
- Coagulation issues
 - Anticoagulant / antiplatelet drugs
 - Platelet count / APTTR / INR
- Can the patient's back be accessed (or are they too sore or in spinal precautions)? If not, will this be possible soon (i.e. spinal precautions likely to be cleared, or IV analgesia planned for positioning)?
- Analgesia given so far and clinical trend (pain, ability to cough / deep breathe, oxygen requirement)
- STUMBL score
- Presence of red flag features

PAIN TEAM (Bleep 5247 / 2140)

Situation Following Anaesthetic Review	Pain Team Involvement
Regional analgesia commenced and expected to cover all painful areas.	Anaesthetist <i>notifies</i> pain team. Routine review not required but pain team can help with local anaesthetic pump issues and should be consulted by parent team if regional analgesia not fully effective.
Regional analgesia commenced but other significant injuries/pain that will not be covered by regional technique.	Parent team <i>refers</i> to pain team. Pain team review & assist with analgesic plan.
Regional analgesia desirable but not possible due to contraindication or lack of expertise.	Parent team <i>refers</i> to pain team. Pain team review & assist with analgesic plan. Adjuvant analgesia considered (e.g. SC ketamine).
Regional analgesia not currently required, patient remains at risk of deterioration.	Parent team <i>refers</i> to pain team. Pain team review to optimize analgesia and expedite regional analgesia if required later.

Technique Choice Flowchart



NOTES

- Usually multiple regional analgesia options exist. The first choice technique is in **bold**. Choice depends on:
 - Location of fractures.
 - Clinician's skillset.
 - Ability to position the patient.
 - Ability to obtain ultrasound images (e.g. surgical emphysema may make US difficult/impossible).
 - Presence of vertebral fractures & associated haematoma.
 - Contraindications including disordered coagulation (see below).
- If a technique proves to be too difficult or is ineffective, consider trying a different one.
- Patients with disordered coagulation:
 - TE: Consult local & national guidelines.
 - PV: Risk vs benefit decision. Bleeding into the PV space or chest is a serious complication.
 - ESP/SAP: Limited evidence. Likely to be safer than epidural & paravertebral given location. DOACs are not a contraindication.
- *Access to the patient's back may be prevented by spinal precautions or difficulty positioning due to severe pain despite IV analgesia. In this situation consider performing a single-shot unilateral/bilateral SAP block which may improve the situation or permit positioning to access back. Ensure safe LA dosing.