PEA Cardiac Arrest in Major Trauma

Does not apply to medical CA with minimal trauma (e.g. elderly patient who has sustained minor HI in course of collapsing)

- This pathway differs from ALS.
- Individual Trauma Team Leaders (TTL) may choose whether to implement this pathway or follow standard ALS algorithms in Traumatic Cardiac Arrest. **Trauma Team must follow TTL decision.**
- Resuscitating patients who arrive in asystolic CA (or older persons in VF arrest) is likely to be futile: on a case-by-case basis it may be appropriate to start CPR whilst rapidly addressing 1-4.

In traumatic PEA arrest, the patient has a low/very low output state, **this is not a true “cardiac arrest”**.

Raising the intrathoracic pressure by doing chest compressions or over-enthusiastic IPPV makes things worse.

Adrenaline increases mortality in blunt trauma (patient already in state of massive catecholamine release).

Treat 4 reversible pathologies simultaneously

1. **Hypoxia**
   - Oxygenate: intubate/LMA, ventilate.
   - Slow, shallow ventilations - look at capnography trace, **do not over-ventilate**

2. **↓ Volume**
   - Give 4 units of O negative packed cells stat.
   - Use Level 1 if immediately available - otherwise squeeze in manually/pressure bag.

3. **Tension PTx**
   - Bilateral open thoracostomies unless **certain** no tension pneumothorax.
   - Just make the holes in 5th ICS: there is **no need for chest drain at this stage**.

4. **Tamponade**
   - Cardiac tamponade can occur (and rapidly) in blunt trauma.
   - Ultrasound the heart. **Immediate ED thoracotomy** (clamshell) if tamponade seen.

   **AND THEN...**
   - X-ray the pelvis.
     - If significant disruption & BP comes up with blood, go to theatre
   - X-ray the chest.
     - If massive haemothorax (whiteout) & BP comes up with blood, go to theatre if surgeon available who is willing and able to collapse lung to attempt haemostasis.

- If the patient remains in PEA despite oxygenation, 4 units of blood, bilateral thoracostomies and tamponade treated/excluded, then in the DGH setting of Bangor (100 miles from our Major Trauma Centre and any cardiothoracic surgeons), further resuscitation attempts are probably futile. **It is reasonable to cease resuscitation efforts at this point.**
- The next steps in treatment in persistent PEA would be ED thoracotomy, lung collapse (if massive haemothorax), aortic compression if exsanguinating below the diaphragm and further blood/products prior to theatre. **TTL may consider these steps only if relevant surgical capability is immediately available:** otherwise resuscitation efforts **should cease at this point.**