



Pit Crew Approach to Pre Hospital Trauma Resuscitation

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Introduction & Aims

Pre hospital trauma care is often delivered by dual crewed ambulances supported by additional resources as necessary and available. Coordinating resuscitation of a critically injured patient may require multiple simultaneous actions. Equally a large number of practitioners can hinder patient care if not coordinated. We aim to describe a multidisciplinary, scalable approach to pre hospital trauma care suitable for small and large multi disciplinary teams.

Methods

The MCI Medical Team (as part of Motorsport Rescue Services) is a PHECC-registered multidisciplinary team which provides medical cover at motorcycle road racing events in Ireland. The MCI Medical Team has significant experience of major trauma and routinely performs pre hospital anaesthesia for trauma patients.

We have evolved a pit crew approach to trauma care with predefined roles and interventions assigned to a five person team: three clinical members, a scribe and a team lead. The approach is both scalable and collapsible, meaning that if multiple patients are present, roles can be merged; if additional clinical input is required, roles can also be supplemented. Each team member carries equipment and medications specific to their role, allowing efficiencies at the patient's side.

Principles

- Simple, straightforward system
- Allows coordinated simultaneous activity
- All team members cross-trained insofar as possible.
- Roles pre-assigned.
- If less than 5 team members initially, assume in order of A, B, C sequence.
- Clinical team members feed back to team leader.

Airway

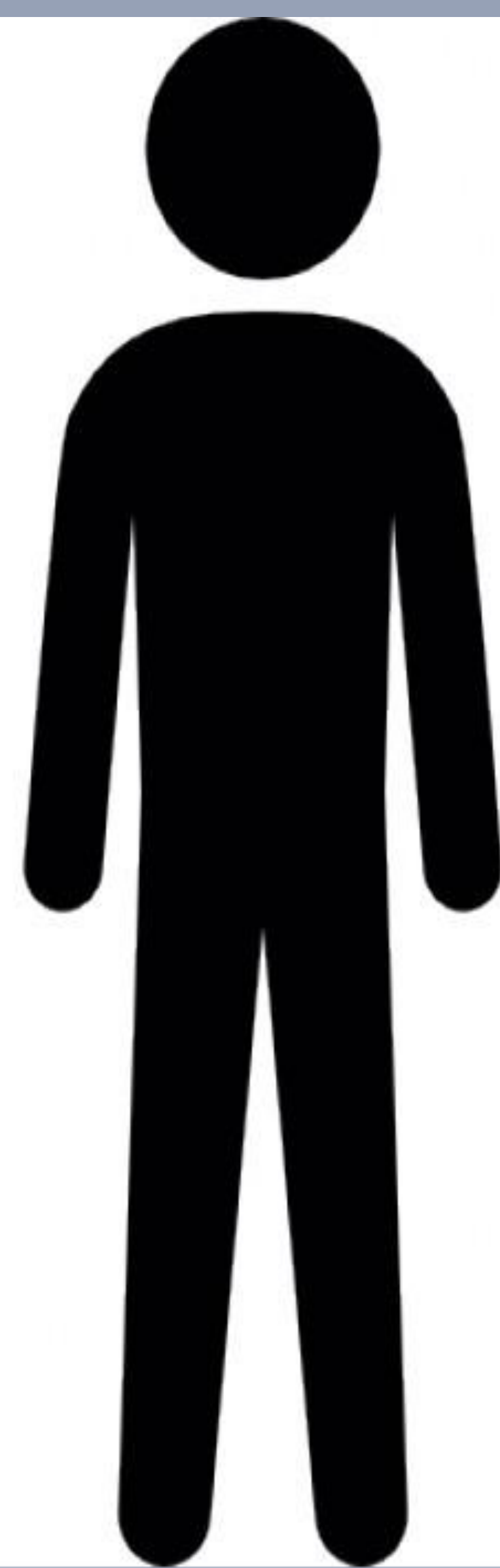
- Must be able to intubate
- Takes oxygen, c-circuit, basic airway adjuncts and suction to patient's side
- Removes helmet
- Assesses and manages airway
- Takes AMPLE history
- Protects c-spine
- Primary survey down to clavicles

Circulation

- Must be IV/IO competent
- Takes haemorrhage control pack to patient's opposite side
- Controls external haemorrhage
- Obtains IV (or IO) access
- Administers 1g TXA
- Applies pelvic binder and traction splints as required
- Assists in removal of leathers
- Primary survey of abdomen and limbs.
- Thoracostomy if required

Scribe

- Stands beside TL
- Assists with crowd control at scene
- Provides 10 minute time reminders
- Establishes patient identification
- Scribes chronologically all observations and interventions.



Breathing

- Trained to RSI kit dump and assist
- Takes cardiac monitor to patient's most accessible side
- Assists with helmet removal
- Applies all monitoring
- Primary survey of breathing & chest
- Thoracostomy if required

Team Leader

- Not necessarily clinical lead
- Stands back
- Brings trauma drugs bag to patient
- Directs primary survey
- Defines order of therapies according to clinical lead
- Directs additional resources
- Logistical planning and extrication
- Monitors scene time

Results & Conclusions

The pit crew approach to pre hospital trauma care has evolved over a decade and is routinely implemented at motorcycle road races in Ireland. The pit crew trauma approach, although applicable to a pre defined five person team in unique circumstances, may also be applicable to ad hoc clinical teams that typically form in the pre hospital arena.

References

1. PHECC Clinical Practice Guidelines, 2017
2. ATLS manual, 2016
3. ATACC manual, 2014
4. MCI Medical Team SOPs, 2018