Mitigating Errors in Trauma Reception

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Causes of preventable death

- In US trauma centres 2.5% deaths preventable (2004/5 data)
  - Airway 16%
  - Haemorrhage 25%
  - Excessive fluid resus 5%
  - Excessive early surgery 8%
  - ICU management 14%

- Auckland Critical incidents (M&M)
  - Airways
  - Shock management
  - Head injury underestimate
Potential for Disaster

- Get patient to right hospital
- Trauma team activation
- Senior ED leadership
- Airway management
- Shock management
- Thorough secondary survey
- Departmental culture
Function of an ED

- Resuscitate
- Alleviate
- Relocate
Get patient to right hospital

- Improved mortality from trauma centres

Evidence of benefit in US: NEJM 2006
National evaluation of the effect of trauma centre care on mortality
(14 US states / 5,000 patients) showed 25% relative risk
mortality reduction, more marked in more severe injuries)
Activate trauma team

- Early surgical activation
- Facilitation of critical care support
Team leadership

- Seniority
- Task allocation
- Crowd control
- Handover

Who’s the boss?
Resuscitation

- Circulatory access
  - Peripheral
  - Central
  - Intra-osseous
  - Bloods / cross match
- Monitoring
- Pressure on external haemorrhage
Resuscitation

- Airway
  - Standardised equipment
  - Simple protocols
  - Placement paranoia

- Early intubation of agitated patients

- Early chest drain if obvious need
Airway algorithms

Difficult airway

Recognized

UNCOOPERATIVE PATIENT

Proper preparation

Awake intubation choices

Succeed

Surgical airway

Cancel case, regroup (e.g., different personnel/equipment)

Fail

Surgeon

Regional anesthesia

Yes (non-emergency pathway)

Mask ventilation

No (emergency pathway)

General anesthesia ± paralysis

Awaken

Intubation choices

Succeed

Confirm

Awaken

Anesthesia with mask ventilation

Surgical airway

Intubation choices

Extubate over jet stylet

IMA, Combitube, TTJV

LMA

**Always consider calling for help (e.g., technical, medical, medical, surgical etc.) when difficulty with mask ventilation and/or tracheal intubation is encountered

** Consider the need to preserve spontaneous ventilation
Airway equipment
Resuscitation

- Theatre now?
  - Shocked penetrating trauma
  - Shocked obvious abdo injury

- Significant blood loss / bleeding
  - CXR, pelvis, FAST
  - ABG / arterial line / catheter

- Angio / Theatre now?
  - Hypotension / positive FAST
  - Exsanguinating pelvic haemorrhage

- Head CT now?
  - Deteriorating GCS / pupil dilating
Next steps

- Alleviate – pain relief and splintage
- Further details – ambos, notes and relatives
- Secondary survey – trauma surgeon?
- Planned radiology (CT)
- Relocate – agreed destination
- Avoid access block
- Frequent reassessment
Balance of thinking

- Intuitive
- Analytical
Departmental Culture

- Low power distance
- Avoidance of prejudice
Audit

MISTAKES
It could be that the purpose of your life is only to serve as a warning to others.