Australian Trauma Team Training Course

Participant Manual
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Disclaimer

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Edition

May 2013
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1. Introduction

Background

Despite improvements in safety, medical practice and the introduction of trauma and other emergency care teams, human error continues to be a significant cost to health care both financially, and in adverse outcomes for patients.\(^1,2,3\) An effective team structure may mitigate or prevent 79\% of errors.\(^4\)

Current educational strategies for trauma in Australia focus on development of clinical skill proficiency in individuals. However a team of experts does not necessarily make an expert team.\(^5\) There are non technical skills involved in team interactions which go beyond the individual clinician’s skill. This is what determines the effectiveness and synergy of the team. Improvement in emergency department team’s performance through team training has been shown to reduce human error and increase patient safety.\(^6\)

Simulation training has been identified as a way to ensure that medical personnel have the content knowledge to deal with the task at hand as well as the ability to process information to deal with crises and other complex challenges.\(^6\) High fidelity (immersive) simulation recreates the clinical environment with a high level of realism requiring clinicians to manage clinical scenarios in real time just as they do in their places of work. This allows participants to engage in the same cognitive processes that they would use when looking after patients. Team training using immersive simulation techniques is well established\(^8\) A BEME\(^1\) systematic review of all the literature from 1969 to 2003 concluded that high fidelity simulations are educationally effective.

Course Objectives

This course concentrates on the team skills and human performance skills required to make a team based resuscitation work. By the end of the course participants will be better able to:

Clinical objectives

- Use a structured approach to assess and resuscitate patients with severe trauma
- Recognise an unstable patient and initiate appropriate early treatment
- Implement evidence based treatment protocols for common traumatic injuries including head injury, multi-trauma and major haemorrhage.

\(^1\) Best Evidence Medical Education collaboration
Teamwork objectives

- Recognise effective and ineffective teamwork in trauma teams
- Describe patient and staff outcomes that can be affected by teamwork factors
- Demonstrate the non-technical tasks of a trauma team including maintaining team structure and roles, planning and preparation, resource management, people management, team leadership and team-member support, safety checking and communication.
- Demonstrate the basic skills, behaviours and attitudes of individuals in a team that underpin effective teamwork including leadership attributes, communication style, conflict resolution skills, stress management and other performance-shaping factors.
- Manage organizational factors that affect teamwork
- Work effectively to manage trauma within a trauma team

Prerequisite Knowledge and Skills

No formal pre-requisite training is required prior to this course however participants will find the course most beneficial if they have a basic familiarity with the following topics:

- The organisation of trauma services in NSW
- The patient journey in trauma
- A structured approach to clinical assessment and early management of trauma - including primary and secondary survey and tertiary care

The pre reading in the manual will have a brief summary of the listed topics. An introduction to the principles of teamwork and communication will also be provided.

It is also expected that the candidates will have knowledge of fundamental clinical skills of commonly used technical skills at a level consistent with their work place roles and responsibilities including:

- Clinical skills including patient assessment, examination and investigation
- IV access
- Spinal immobilisation
- Intubation including rapid sequence induction
- Thoracic drainage
2. Trauma Services in NSW

Current NSW Trauma System

NSW has an established Statewide Trauma System based on a networked system of hospitals designated to provide different levels of trauma service in metropolitan and rural settings. It includes a pre-hospital component whereby trauma patients are triaged by Ambulance Officers according to specified criteria to ensure they are transported to the most appropriate hospital: ‘the right patient to the right hospital’.

Specific Services

There is a three tiered level of care within the greater metropolitan area and the rural areas of the state provided by Major Trauma Services, Regional Trauma Services and Local Hospitals.

NSW Major Trauma Services are concentrated in metropolitan Sydney and Newcastle, with hospitals outside these geographic areas forming part of specified referral networks for both trauma and critical care patients requiring specialised care.

- **Major Trauma Services** are Tertiary care facilities, which provide all clinical specialties including Trauma Rehabilitation services. The Major Trauma Services are responsible for the support of all levels of Trauma Services within their designated Trauma Networks.

- **Paediatric Major Trauma Services** there are three designated paediatric major trauma centres in NSW. Seriously injured children should be transported directly to these paediatric centres by the Ambulance Service where possible. When direct transport is not appropriate, the injured child should be transported to the most appropriate trauma service for initial assessment, stabilisation and appropriate transfer.

- **Regional Trauma Services** are hospitals capable of providing a high level of care to the injured patient. They may not be able to provide the full range of services required within a Major Trauma Service, but may still be able to care for a defined group of seriously injured patients. They provide initial assessment, stabilisation and definitive care. They initiate transfer to the Major Trauma Service when a patient requires services not available at the regional centre.

- **Local Hospitals** are hospitals serving local communities in urban areas. They manage large numbers of minor and medium severity injuries. They provide initial resuscitation and stabilisation for severely injured patients prior to transfer to a Major or Regional Trauma Service. They are part of the Area Health Service comprehensive Injury Management Program.
State wide Services

- The Statewide services of Spinal Cord Injury and Severe Burn Injury, while independently managed are still considered members of the State Trauma System.

- Statewide Spinal Cord Injury Service (SSCIS) - is responsible for the statewide planning and coordination of spinal cord injury resources within NSW Health.

- State-wide Severe Burns Service (SSBS) - is responsible for the state wide planning and coordination of Severe Burn injury resources within NSW Health.

There are defined lines of responsibility and accountability for the care of the injured patient within the trauma system. NSW ITIM, as part of NSW Health, is the body responsible for overseeing, coordinating and supporting the NSW Trauma System. Further information about NSW ITIM can be found at www.itim.nsw.gov.au.

Ambulance Service of NSW - Trauma Triage

The Ambulance Service of NSW provides the out of hospital component of care to the injured patient. Within NSW, injured patients are subjected to a pre hospital trauma triage process, which enables hospitals to be bypassed where appropriate. The Ambulance Service NSW utilises an algorithm process to determine which category an injured patient meets.

NSW Aeromedical and Medical Retrieval Service

The NSW Aeromedical and Medical Retrieval Service (AMRS) is responsible for the transport of the seriously injured patient in the “out of hospital environment” in NSW. Clinical services provided include:

- Coordination of aero-medical (prehospital and interhospital) and road transfers
- Clinical advice where required to referring hospital staff
- Early notification of severe trauma in both urban and rural environments
- Dispatch of appropriate retrieval team and vehicle
- Assistance with finding intensive care unit beds
- Initial contact point for patients with severe burns and acute spinal cord injuries

The transfer of a critically ill trauma patient can be accessed by all hospitals within NSW by calling 1800 650 004
3. The patient's journey in trauma

An injured patient is delivered to the trauma system via two means:

- Non ambulance arrival occurs when the patient arrives at a hospital outside of the ambulance / emergency services arrangements.

- Ambulance / helicopter arrival occurs after the patient has been subjected to a Trauma Triage process whereby a decision is reached which determines which hospital is the most appropriate for the patient.

Upon arrival at a hospital, by whichever mode of transport, the patient undergoes a systematic assessment of their injuries. If deemed necessary a patient may require transfer to a more appropriate level of service within the trauma system.

Injury diagnosis, treatment and progress through the hospital are planned and monitored. Injured patients should progress to recovery, rehabilitation and discharge in a timely fashion with appropriate referral to post acute care as required.

Pre hospital

A number of mechanisms exist in NSW to fast track the seriously injured patient through the hospital system.

The first is the pre-hospital triage system used by NSW ambulance to identify patients with a high probability of serious trauma. These patients are then bypassed to major trauma services. This is based in the criteria of the NSW Ambulance pre hospital Trauma Triage Protocol (Protocol 4).

The second mechanism is pre notification. The receiving hospital is forewarned by telephone using a structured handover. Advanced preparation can then occur at the trauma centre to ensure appropriate personnel and services are available upon the patient’s arrival. This pre notification will greatly enhance the quality of care these patients receive by ensuring that a fully briefed team of specialised clinicians is prepared and assembled in the emergency room.

Pre hospital notification information is often conveyed using the MIST acronym. This helps to ensure that all relevant information is presented in a concise, ordered fashion without things being forgotten.

<table>
<thead>
<tr>
<th>M</th>
<th>Mechanism of injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Injuries found or suspected</td>
</tr>
<tr>
<td>S</td>
<td>Signs and Symptoms</td>
</tr>
<tr>
<td>T</td>
<td>Treatment given</td>
</tr>
</tbody>
</table>
Trauma Triage

The major trauma services in metropolitan Sydney all use trauma team activation criteria. The activation of a multi-disciplinary team to deal with serious trauma has been shown to improve patient outcome.\(^\text{10}\)

Whilst there are differences in activation criteria between the centres they are all based upon history (mechanism of injury), vital signs (physiological parameters) and injuries (anatomical features or nature of injuries).\(^\text{11}\) When a patient meets the criteria, a call goes out assembling a predetermined trauma team.

The Trauma Team

A trauma team consists of two or more people who work together to manage the resuscitation and care of an injured patient. In the larger trauma services a team may contain predetermined roles and duties. Some may specifically allocate clinical positions to the role; for example the team leader may always be the emergency doctor.

For the management of serious trauma in the major trauma services there is generally a 6-member, multi-disciplinary team consisting of the following types of roles. As can be seen the medical and nursing roles are complimentary. A team approach allows simultaneous assessment and resuscitation of the patient by experienced clinicians.

<table>
<thead>
<tr>
<th>Medical</th>
<th>Nursing</th>
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<tbody>
<tr>
<td>Team Leader</td>
<td>T/L - Scribe</td>
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<tr>
<td>Airway</td>
<td>Airway</td>
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<tr>
<td>Circulation &amp; procedures</td>
<td>Circulation &amp; procedures</td>
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</table>
4. Structured Approach to the Seriously Injured Patient

Preparing to Receive the Trauma Patient

Advanced planning for the trauma patient’s arrival is essential.

Notify

The ambulance service will contact a receiving hospital to notify them of incoming critically ill patient (code 3). This is achieved ideally using a dedicated phone line which is a direct link to the ambulance coordinators. This notification gives the trauma team some time to SPEND organising for the patient’s arrival.

Staff

The roles of all personnel in the trauma team should be identified prior to the arrival of the trauma patient, and be easily identifiable eg, using role tags or colour coded trauma gowns. Once the roles have been determined, each member of team should familiarise themselves with their responsibilities. Information regarding these responsibilities could be available on task cards stored in the resuscitation room for easy access.

Patient Plan

Notification information can be very valuable in formulating a patient care plan. Sustained hypotension may require a surgeon on site, extensive pelvic trauma may require interventional radiology and pregnant trauma may require advice from an obstetrician and foetal monitoring. Functionality of the team improves when team members are aware of a basic treatment plan and treatment goals.

Equipment

Ergonomics in the resuscitation room need careful consideration as it can become very crowded. It can be useful to assemble regularly used equipment for traumas in the resuscitation bays. This might include:

- Airway management devices including difficult airway tray
- Trays for invasive procedures: central access, thoracic drainage, urinary catheterisation, thoracic access.
- Splints: C Spine, donway traction, pelvic binders
- Diagnostic equipment: FAST scan, bronchoscope etc.
**Non Invasive Monitoring**

Turn on and calibrate monitors prior to patient arrival. Check transport monitor is available.

**Drugs & Fluids**

Check stocks uncross-matched blood, warmed IV fluids and draw up intubation drugs if appropriate.

**Resuscitation – Primary Survey**

A structured clinical approach will greatly enhance the quality of care trauma patients receive by ensuring it is timely and appropriate and delivered in an organised manner which is free of preventable errors and stress for the staff. The principles of trauma management in Australia are based upon the Early Management of Severe Trauma (EMST) guidelines from the American College of Surgeons.12

1. **Call for assistance**

   The first step is to consider if and when to request assistance. The goal of this may be to recruit extra people to assist, or to consult more experienced staff. The appropriate time will depend upon the complexity of the problem, the experience of the staff present and the availability and location of backup staff.

2. **Primary Survey**

   Those clinicians familiar with Advanced Life Support principles will note that the EMST approach is very similar to the DR-ABCDE used in the assessment and treatment of unstable patients. The use of the EMST management principles allows for a common language and approach. It should be able to be completed within minutes if the vital functions are intact.

<table>
<thead>
<tr>
<th>1. RESUSCITATION-PRIMARY SURVEY</th>
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<tbody>
<tr>
<td>1. Call for assistance</td>
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<tr>
<td>2. Conduct Primary Survey (ABCDE)</td>
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<tr>
<td>3. Initiate Emergency Treatment</td>
</tr>
<tr>
<td>4. Re-evaluate (repeat steps 1 - 3)</td>
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<table>
<thead>
<tr>
<th>2. SECONDARY SURVEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conduct secondary survey (history, examination and investigations)</td>
</tr>
<tr>
<td>2. Initiate specific definitive treatments</td>
</tr>
<tr>
<td>3. Supportive care</td>
</tr>
<tr>
<td>4. Actively seek and manage complications</td>
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</table>

<table>
<thead>
<tr>
<th>3. TERTIARY CARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Consult</td>
</tr>
<tr>
<td>2. Check results</td>
</tr>
<tr>
<td>3. Reassess patient</td>
</tr>
<tr>
<td>4. Arrange appropriate disposition</td>
</tr>
<tr>
<td>5. Provide continuity of care</td>
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<tr>
<td>6. Document management</td>
</tr>
</tbody>
</table>
Resuscitation and adjuncts to the primary survey include oxygenation, fluids, commencement of monitoring, arterial blood gases, urinary and gastric catheters, x-rays and diagnostic studies like FAST (focused abdominal sonography in trauma).

3. Emergency treatment

Progression to secondary care should not occur until abnormalities identified in the assessment are addressed. While the primary survey is the “find early” part of the resuscitation, emergency treatment represents the “fix first” component. The main goal of emergency treatment is to stabilise the situation so that the patient does not deteriorate any further. This phase of care can be highly dynamic. The patient’s condition may change rapidly. New signs may express themselves, which alert you to further deterioration or definitive causes. Often several cycles of resuscitation are required (repeat ABCDE again).

Secondary Survey and Management

1. Secondary survey

This is a complete head to toe review of the patient. A physical examination, history and reassessment of physiological parameters are required. The AMPLE mnemonic is a useful tool when taking the history.

The head to toe assessment is incomplete without an examination of the patient’s back and other posterior surfaces. Unless the patient’s back and posterior surfaces are examined, significant injuries may be missed. Whilst maintaining cervical spine stabilisation, log roll the patient, supporting extremities with suspected injuries. Ideally roll the patient to the right side to facilitate easier identification of blood in Morrison’s Pouch on the FAST. Palpate the vertebral column and all other posterior surfaces for deformity and areas of tenderness. Palpate the anal sphincter for presence or absence of anal tone.

A full neurological examination is performed, including a formal GCS. Plain and specialised radiological examinations and further laboratory studies are undertaken. Full documentation of all findings, investigations and plan of care is necessary.
2. **Specific treatments**

These depend upon the mechanism of injury and presenting findings but may include:

- Repeat FAST
- Additional x-ray’s
- CT / MRI scans
- Angiography
- Plaster application for fractures
- Wound cleaning and dressing

3. **Supportive Care**

Includes:

- Analgesia
- Tetanus prophylaxis
- Antibiotic’s

**Tertiary Care**

The goal of this phase of care is to ensure continuity of care and the best possible recovery for the patient. Specific measures should be taken in this phase of care to prevent relapse and future recurrence in the long term. Substantial evidence exists which indicates that a major cause of adverse events in hospitals is breaches in the continuity of care. Examples include failure to re-evaluate, check investigations or communicate past events and future plans to medical and nursing staff who will be caring for the patient. Ongoing care should be arranged to ensure the following needs are provided:

1. **Consultation**

Inpatient admitting teams and other relevant specialists should be consulted regarding definitive management decisions, admission or transfer.

2. **Patient Reassessment**

Check laboratory results; ensure that interventions are achieved within an appropriate time frame; and review the response to treatment.

3. **Patient Disposition**

Once stabilized, patients require transfer to a clinical unit where they will receive an appropriate level of care. This may or may not be in your hospital facility. The first step is to determine the level of care they require and assess the capacity of the hospital wards to provide it. Transfer will require consultation with the relevant staff and preparation and planning. A specialised retrieval unit may be required for inter-hospital transfers.
4. **Continuity of care**

Provision must be made that the patient is appropriately monitored in the ED while the patient awaits discharge, admission or transfer and that their management is not disrupted by communication failures between staff.

*Establish a process for review and handover.*

- Nominate an appropriate time frame for review and the person who will re-evaluate the patient.
- Clarify the safe range of vital signs so that the nursing staff have directives about requesting review earlier to any planned follow-up.
- Document these in patient notes.
- Identify which staff to call and provide a contact number.

*Communicate with all relevant people*

- Nursing staff - inform them of changes and proposed plans; seek clarification and feedback about whether these can be carried out; clarify re-evaluation criteria.
- After-hours medical staff - explicitly hand care over - include a history of events; predicted progress and likely future events, tests to check and other duties to complete; appropriate time for review.
- In Patient Teams - inform the team and other involved teams of events. Consult in decision-making as appropriate.
- Speak with patient and relatives.
5. ABCDE specifics

A. Airway Maintenance with Cervical Spine Stabilisation

Assessment:

The rapid assessment for signs of airway obstruction includes:

- Observation for vocalisation
- Tongue obstructing airway
- Foreign bodies such as broken teeth, blood, vomitus
- Facial, jaw and tracheal / laryngeal fractures, all which may result in airway obstruction.

If the patient is able to communicate verbally, it is unlikely the airway is not in immediate jeopardy, but still may be partially obstructed. The airway requires repeated assessment during the primary and secondary survey, as patency of the airway can deteriorate rapidly.

Severe head injured patients with an altered level of consciousness or a GCS score of eight or less require the placement of a definitive airway.

Interventions:

Patent Airway:

- Position patient in the supine position.
- Maintain cervical spine stabilisation and immobilisation. This includes application of a rigid cervical collar with the head in a neutral position, sand bags by the head, and tape as required.
- All patients with mechanism, symptoms or clinical findings suggestive of a spinal injury should have cervical spine immobilised until cleared clinically and radiologically.

Partial / Total Airway Obstruction:

- Position patient in the supine position.
- Maintain cervical spine stabilisation and immobilisation as above.
- If the immobilisation devices must be removed temporarily, the head and neck should be stabilised with manual, in-line immobilisation by a member of the trauma team.
- Open and clear the airway by means of a jaw thrust or chin lift, remove any foreign objects and apply gentle suctioning.
- Insert an oropharyngeal or nasopharyngeal airway. Use of a nasopharyngeal airway is contraindicated in patients with head injuries or facial fractures, as there may be a base of skull fracture. Insertion of any device nasally in a patient with a base of skull fracture may result in direct damage to the brain.
• Assist with endotracheal intubation using rapid sequence induction. This is the definitive measure in establishing airway patency.

• Consider needle or surgical cricothyroidotomy if the patient's airway is unable to be secured by oral intubation.

• These measures to establish airway patency should be instituted immediately

B. Breathing and Ventilation

Assessment:

• Position of trachea and jugular veins
• Spontaneous respirations
• Chest rise and fall (including symmetry)
• Skin colour
• Respiratory rate and depth
• Integrity of chest wall (include soft tissue and bony structures)
• Use of accessory muscles
• Bilateral breath sounds (auscultate the lungs bilaterally at the second intercostal space mid-clavicular line and at the fifth intercostal space anterior axillary line).

Life-threatening breathing and ventilations injuries that should be identified in the primary survey include:

• Tension pneumothorax
• Massive haemotherax
• Open pneumothorax
• Flail chests
C. Circulation with external haemorrhage control

Assessment:

- Palpate the pulse for rate and quality.
- Inspect and palpate the skin for colour, temperature and diaphoresis.
- Inspect for any obvious signs of external bleeding.
- Auscultate blood pressure if spare trauma team member available. Otherwise, auscultate blood pressure at beginning of secondary survey.

Interventions:

**Circulation Effective / Ineffective:**

- Control any external bleeding with direct pressure over the bleeding site and / or elevating the extremity if applicable and / or applying pressure over arterial pressure points. A tourniquet may be required if stated interventions are ineffective in controlling the bleeding (rarely used).
- Insert two large bore cannulas.
- Collect blood for baseline haematologic studies, type and cross match. Do not forget to take blood ETOH if the patient was a driver of a vehicle (including bicycles) at time of injury or a pedestrian >15yrs old.
- Commence warm IVT through blood giving pump set.
- Consider use of pressure bags to facilitate rapid infusion of fluids / blood if required.
- Consider inserting a central venous device for definitive venous access.
- Splint long bone fractures to control bleeding.

**Circulation Absent:**

- Initiate Basic Life Support / Advanced Life Support
- Control any external bleeding with direct pressure over the bleeding site and / or elevating the extremity if applicable and / or applying pressure over arterial pressure points. A tourniquet may be required if stated interventions are ineffective in controlling the bleeding (rarely used).
- Insert two large bore cannulas.
- Administer fluid bolus.
• Consider a FAST to identify possible pericardial tamponade.

• Identify possible tension pneumothorax.

• Consider an ED thoracotomy only if the patient has a penetrating chest wound and has had documented vital signs within the last five mins.

D. Disability

Determine the patient’s level of consciousness by using the AVPU mnemonic as follows:

A for alert. The patient is alert, awake, responsive to voice, and orientated.

V for Verbal. The patient responds to voice but not alert or orientated.

P for Pain. The patient does not respond to voice but responds to painful stimulus.

U for Unresponsive. The patient does not respond to voice or painful stimulus.

Also, assess pupils for size, shape, equality and reactivity to light.

Interventions:

If the assessment of the patient’s disability using the AVPU mnemonic indicates a decreased level of consciousness:

• Immediately re-evaluate the patient’s oxygenation, ventilation and perfusion status.

• Consider hypoglycaemia

• Consider ingestion of ETOH & Drugs. Be wary of the intoxicated patient with a head injury.

• Conduct further investigations during the secondary assessment such as a focused neurological exam; obtain a GCS, and a CT brain as required.

• If the patient’s injuries are isolated to the head, consider raising the head of the bed to 30°, which may assist in reducing intracranial pressure (ICP).

• Reassessment of the patient is vitally important in all trauma patients, especially those with head injuries, as they can deteriorate very rapidly. Be aware of the “talk and die” patients (one minute they are talking, next minute they are dead).
E. Exposure and Environment Control

The patient must be adequately exposed to facilitate the complete assessment of the patient's injuries. If criminal activity is suspected, preserve all evidence. Place clothes in paper bags (clothes in a plastic bag sweat, which damages evidence).

Removal of the patient's clothing to facilitate a comprehensive assessment exposes the patient to the local environment (ambient temperature) of the resuscitation room. Exposure to this environment, together with the consequences of severe injury and the subsequent resuscitation interventions, may result in the patient becoming hypothermic.

Hypothermia is classified as mild (32-35°C), moderate (28-32°C), and severe (<28°C). Hypothermia has a significant effect in the morbidity and mortality in the critically injured patient. The most significant effect of hypothermia in trauma is coagulopathic bleeding. Hypothermic coagulopathy is attributed to prolonged clotting cascade enzyme reactions, dysfunctional platelets, and fibrinolysis. Other effects of hypothermia include cardiac arrhythmias, decreased cardiac output and decreased level of consciousness.

Interventions:

If the patient is determined to be hypothermic:

- Remove from the cold environment (remove wet clothes, heat room to ≥21°C).
- Use passive external rewarming techniques for mild hypothermia (warm blankets on top of space blanket, overhead radiation).
- Use active core rewarming techniques for moderate to severe hypothermia or failure to rewarm with passive external rewarming techniques (warm humidified oxygen, heated IV fluids, warm peritoneal lavage, warm gastrointestinal irrigation, warm bladder irrigation).
- Techniques that are more aggressive include warm thoracic cavity lavage, diathermy, cardiopulmonary bypass, and haemodialysis.
6. Teamwork – the big picture

An effective team will make appropriate decisions and execute them well resulting in good outcomes for patients and staff.

There is evidence that good teamwork has long term benefits including improved quality of patient care and reduced adverse events. Teamwork also influences staff well-being; evidence suggesting that staff who work in functional teams experience less stress and remain in their jobs for longer than those who don’t. ²

We also need short term outcome measures that enable us to assess and evaluate the quality of our teamwork as we deliver care. Immediate and long term goals we can work toward are shown in Figure 6.1.

Figure 6.1

Good teamwork: Outcomes

<table>
<thead>
<tr>
<th>Immediate</th>
<th>Long term</th>
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<tbody>
<tr>
<td><strong>To patients</strong></td>
<td><strong>To patients</strong></td>
</tr>
<tr>
<td>➔ Timely response</td>
<td>➔ Numbers treated</td>
</tr>
<tr>
<td>➔ Correct assess’t /diagnosis</td>
<td>➔ Satisfaction</td>
</tr>
<tr>
<td>➔ Correct treatment</td>
<td>➔ Response to treatment</td>
</tr>
</tbody>
</table>
| ➔ Errors prevented and/or dealt with | ➔ Adverse events
                                       | ➔ Complaints                  |
| **To staff**             | **To staff**                  |
| ➔ Work load              | ➔ Mental or physical illness  |
| ➔ Stress                 | ➔ Absenteeism                 |
| ➔ Errors                 | ➔ Career length               |
| ➤ Sense of achievement   |                               |
| ➤ Sense of belonging     |                               |

² Evidence includes reports of major sentinel events ¹³, ¹⁴ and original research. Research studies have investigated primary care and low acuity multidisciplinary health-care teams ¹⁵, including breast cancer teams ¹⁶. The “Med Teams” study investigated high acuity teams in adult emergency departments ¹⁷.
We often equate “good teamwork” with good interaction within the team. Being friendly and cooperative is not alone sufficient to ensure good teamwork. Good teamwork results from good management, at a number of levels:

- support from the organisation
- the behaviour and attitudes of individuals
- the attributes and behaviour of the team leader

All of these factors can be related in an “input – process-outcome” model of care (Figure 6.1).

**Effective Teamwork: Conditions + Outcomes**

<table>
<thead>
<tr>
<th>PRE-REQUISITES</th>
<th>PROCESSES</th>
<th>OUTCOMES</th>
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<tr>
<td>Environment/ Hospital</td>
<td>Team</td>
<td>Patients and staff</td>
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**Figure 6.2**
Team decision-making in emergencies

Good outcomes from emergencies result from appropriate clinical decisions, which are executed well.

Decisions made with shared knowledge

Effective teams generally have conspicuous leaders who make good decisions. Good decisions made by teams can be likened to goals scored in team sports - the quality of ball play leading up to a goal is an essential but sometimes overlooked criterion for scoring. The quality of decisions made by leaders in clinical teams can be considerably improved if team mates make observations, prompt, provide input and critique appropriately. This is a creative process. Ideas are progressively built upon which enhances the diagnostic reasoning of the team-leader and provides him or her with a range of options regarding management.

Well executed decisions

Executing management decisions well in time critical situations requires a tightly coordinated team who act upon management decisions without delays. This implies equipment, drugs and services are prepared and staff are able to respond rapidly. Teamwork is thus a coordinated process of receiving and acting upon information involving multiple people focused on the same goal.

Managing workload

Implementing treatments during emergencies requires parallel processing of tasks. The associated workload creates demands on peoples’ attention which would otherwise be available for decision-making. Poorly managed workload creates unnecessary demands on people’s attention and has the potential to seriously compromise the quality of care provided by the emergency team.
7. Team interaction

Decision-making is a higher order task that is best understood by addressing the factors that influence it. This includes:

- **Technical knowledge**
- **Non-technical tasks**

**Technical expertise, shared knowledge and clinical guidelines**

Good decisions are underscored by appropriate clinical management.

There is good evidence that emergency teams who follow clinical guidelines achieve better patient outcomes than those who don’t. This is not just because the guideline is agreed best practice; if everyone in the team has the same “mental model” or goal, then they are likely to be better coordinated and experience less conflict – both of these factors will decrease the team’s workload.

---

**Effective Team Interaction**

![Diagram showing the relationship between pre-requisites, process, and outcomes for effective team interaction.](#)
The “BIG 7” non-technical team tasks

Non-technical tasks (NTTs) are activities that are not clinical in their focus but rather address interaction between people, their environment and one another. NTTs significantly affect the performance of individuals acting alone and within a team both in terms of quality of performance, and ability to prevent and deal with errors. (Table 7.1) 

<table>
<thead>
<tr>
<th>Non-technical team tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assemble the right team (Call for help)</td>
</tr>
<tr>
<td>2. Prepare &amp; plan</td>
</tr>
<tr>
<td>3. Manage resources</td>
</tr>
<tr>
<td>4. Manage people</td>
</tr>
<tr>
<td>5. Monitor and evaluate</td>
</tr>
<tr>
<td>6. Support each other</td>
</tr>
<tr>
<td>7. Communicate effectively</td>
</tr>
</tbody>
</table>

1. Assemble the right team (Call for help early)

An effective team requires an appropriate number of people who have an appropriate mix of skills. If there are insufficient people, or inadequate expertise, then you should request assistance. Even if you have adequate expertise, additional help can considerably reduce workload by improved parallel tasking and may considerably reduce the stress of experienced by the key decision-maker. Useful advice can be also be provided by peers and experts in other medical disciplines, via telephone, and paramedics can be deployed, if other staff are unavailable.

---

3 The framework incorporates teamwork models validated in non-health care work teams (Team Climate 18), low acuity health care teams (West 19) high adult emergency department teams (Med Teams 20) and aviation (Gaba 21).
2. Prepare and plan

Familiarise yourself with your working environment:

*Equipment:* the type, and location of equipment, ensures it is in good working condition.

*Colleagues:* find out about the skill mix, roles and expectations of other staff. Get to know their names so you will know one another if an emergency arises.

*Situation awareness.* Find out about patient load, and mix, and other events which may impact upon your resources.

Prepare

Anticipate the events you will deal with and prepare yourself for them. Do this well ahead of time, where possible.

This includes:

- Train staff in management of conditions, use of equipment etc.
- Develop guidelines and procedures
- Perform simulations (Mock drills and mental rehearsal)
- Check equipment at the beginning of shifts
- Conduct team briefings at the beginning of shifts
- Use any time available to allocate roles and brief staff on plans prior to receiving sick patients

Plan

You should plan as much as you can, as far in advance as possible. The whole team should be briefed, as far as possible in advance regarding roles. Use the minutes available before arrival of a trauma patient to allocate team roles, calculate relevant age or gender specific components management (e.g. airway equipment), notify relevant support staff and services (blood bank, X Ray, operating theatres) airway equipment.
3. Manage resources

Aviation models particularly emphasise the importance of minimizing workload and thinking laterally when vital resources are scarce.

Components:

- Allocate attention wisely
- Prioritize
- Allocate roles and distribute the workload
- Use all available resources

Allocate attention wisely

High situation awareness contributes to good decisions. Situation awareness falls when people are focused on specific tasks or their workload is poorly managed. The team leader should minimize his/her involvement in focused tasks and rather stand back with a “hands-in-pockets” approach wherever possible to maximize their attentional capacity. Their primary responsibility is to ensure information is gathered, tasks are prioritized, progress is monitored and decisions are made based on all available information and good judgment.

Prioritise

Priorities can change rapidly. This is also usually the role of the team leader.

Distribute the workload

During emergencies there is likely to be more tasks than people available to perform them. Moreover, the standard demarcation of duties which operates in routine situations may fail to meet the needs of the situation. More experienced people may feel compelled to execute most of the tasks. People tend to focus on tasks with which they are familiar – even when they do not carry a high priority. So, it is essential that the team-leader actively reviews peoples’ tasks and ensure they are distributed as evenly as possible and address treatment priorities.

In an emergency, the “right man for the job” means that tasks are equitably distributed to people who can complete them at an acceptable level rather than by the most highly skilled individual present. Individuals will need to adaptable to the needs of the situation.
Use all available resources

Vital resources (including expertise, services, and equipment) may be limited or delayed in time critical situations. Don’t give up easily – be tenacious and think laterally about what you need.

Use resources effectively:

*Evaluate your needs*

e.g. “Do we have enough people here?”

*Know where to find help*

“There are several people (in other wards, on call, etc) who can help”

*Be tenacious and positive*

“We must obtain this somehow”

*Think laterally*

“What other avenues are there?”

“Who else is around, on call?”

4. Manage people

Good “people management” involves providing structure and managing relationships between people.

Structure: People feel comfortable in teams when they know who other people are and their roles; they understand their own roles and the team’s overall goals.

Relationships: People relate well to others when they know their names (and preferably have met beforehand); when they are included in decision-making, feel valued and feel safe to make suggestions and raise concerns.

5. Monitoring and Evaluating

The team should cross check each other’s actions, provide feedback to each other and suggest opportunities for improvement.
6. Supporting each other

Leader roles

All team members should have a good grasp of NTTs as these will be the primary responsibility of the team leader. The team leader has a primary role in managing people, both the structural and relationship factors described above.

Team members' roles

Other team members should support the team-leader by:

1. performing their allocated roles well
2. providing feedback on tasks to the leader
3. using spare attention to make observations, cross check others and provide input
4. contribute to managing relationships
8. Individual teams

Effective Team Interaction

<table>
<thead>
<tr>
<th>PRE-REQUISITES</th>
<th>PROCESS</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A good team leader</td>
<td>Good decisions</td>
<td>Executed well</td>
</tr>
</tbody>
</table>

**The team leader**

The Team-leader plays a pivotal role in teamwork because they are generally the key decision-maker.

**Attributes**

A good team leader:

1. Is recognisable as the leader generally as a result of their communication skills. The leader can be heard above the others and maintains a well modulated, calm and controlled tone of voice, using communication as a key tool in promoting a good team climate

2. Has credibility regarding clinical expertise and the quality of their own CRM and team climate skills. As a result gains the confidence of their team

3. Views themselves as a coordinator rather than as a controller and influences by role modelling. Does not try to control team members through power-based relationships. Rather the team grants them “legitimate” power.

4. Is calm and consistent in his/her dealings with others. Does not let stress “leak out”. Is decisive but adaptable

5. Is friendly and approachable, and invokes trust.

6. Manages non-technical tasks, is proficient with management of team climate factors

7. Is often but not necessarily a clinical expert (or at least proficient) with the tasks.
Managing resources

The co-ordination of the group's activities will be more successful if the leader minimises their participation in focussed tasks (intubation, cannulation etc). As the person who ultimately feels a great deal of responsibility for the case, it may be difficult to resist ‘doing things’. However, standing back with one’s hands in one’s pockets will afford the best conditions for seeing everything, making wise and informed decisions, and ensuring that the decisions made are able to be carried out within the time frame presented by the emergency.

Managing people

The team leader plays a crucial role in maintaining structure and relationships. Useful behaviours are shown in the table below:

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be prominent as the leader</td>
<td>Stand in a central location, speak to be heard by all</td>
</tr>
<tr>
<td>Assume the role of coordinator</td>
<td>Assimilate and share information, establish priorities, distribute workload, monitor response to treatment.</td>
</tr>
<tr>
<td>Provide clear attainable goals</td>
<td>Ensure goals are clear to the team, are felt to be attainable and are supported by the team</td>
</tr>
<tr>
<td>Allocate roles</td>
<td>Ensure people have clear roles and each role is respected.</td>
</tr>
<tr>
<td>Communicate effectively</td>
<td>Act as a relay, provide updates</td>
</tr>
<tr>
<td>Promote equality</td>
<td>Share information openly, invites team members to contribute to decision-making, and consider everyone’s views.</td>
</tr>
<tr>
<td>Cross monitor</td>
<td>Encourage the team to cross monitor each other’s actions, and suggest changes for improvement.</td>
</tr>
<tr>
<td>Provide security</td>
<td>Encourage everyone to raise any concerns or make suggestions</td>
</tr>
<tr>
<td>Acknowledge people’s input</td>
<td>Provide positive feedback</td>
</tr>
<tr>
<td>Maintain cohesiveness and mood</td>
<td>Be calm, don’t allow your stress to show, modulate the tone of your voice, avoid impulsive decisions</td>
</tr>
<tr>
<td>Manage conflict</td>
<td>Clarify potential points of tension first rather than enter into disputes prematurely</td>
</tr>
</tbody>
</table>
**Managing individuals**

The team leader encourages individuals to contribute in a positive manner. Generally this will occur if the team-leader shows the attributes described above and good NTTs.

The team leader should assess how well each individual copes and participates and should respond to their needs by providing additional support, guidance, and positive feedback where needed. On some occasions, this may require reallocation of roles. Occasionally the situation requires the team-leader to correct behaviours, set limits or place restrictions on the individual.

**Managing organisational factors**

The team leader should also assume primary responsibility for these including ensuring the environment is safe and the size and configuration of the team meet the needs of the situation. They should call or help if the latter are not adequate.

**Troubleshooting poor team leadership**

On occasion the team leader may not exhibit the attributes described above.

1. **When the existing leadership is weak – clarifying who the leader is**

   Problem: You arrive at an emergency and it may not be clear whether anyone has assumed a leadership role.

   Strategies
   
   - Introduce yourself so existing team members are aware that you are there - state your “rank” so that they understand what tasks you will be comfortable to carry out. (ie I am a medical registrar)
   
   - Ask a direct or rhetorical question to the individual who you suspect is the leader. “Who is leading here?” or “Are you are happy to continue leading?” If someone else considers they as the leader this tactic may encourage them to behave in a more assertive way or be more visible as a leader.

2. **If you feel that the leader is not allocating tasks effectively then try this:**

   Problem: There is a clear leader but CRM is being poorly conducted

   Strategies:
   
   - Start by playing a supporting role.
   
   - Then either ask the leader what needs to be done or suggest you taking a supporting role. The best supporting roles to take are generally discrete interventional tasks which require focused attention. The leader should avoid doing these. Make a reference to the imbalance of workload
- "Could I do that for you – you have other important things to do" or
- "Can I do anything to be of help – I am just standing here and you are juggling many things" or
- "I think we could work more effectively if I did that for you because it would free you up" or
- "What can I do to offload you so that you have more time to coordinate things?" or
- "You are very absorbed with that, would you like me to take over the lead for a while?"

- Graded assertiveness can be applied to improve the quality of leadership or rationalise it. If events are disorganised you could make an enquiry or suggest an alternative.

**Individuals**

Individuals working as part of a team should work toward the collective good while at the same time remaining independent and critical of events around them.

### Effective Team Interaction

**PRE-REQUISITES**

- **A team player**
  - Is
  - Willing to work toward collective good
  - Flexible
  - Motivated to improve care
  - Able to reflect and self-critique
  - Appropriately assertive

**PROCESS**

- Effective Team interaction

**OUTCOMES**

- Good decisions
- Executed well
9. Managing Organisational Factors

Organisational factors are often overlooked because they may seem out of the control of individual team members. It is always useful to evaluate whether these factors are satisfactory - particularly if the team is not performing as well as it should be.

Conditions for Effective Teamwork

<table>
<thead>
<tr>
<th>Pre-Requisites</th>
<th>Process</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive management</td>
<td>provides teams with</td>
<td></td>
</tr>
<tr>
<td>- Clear purpose</td>
<td>Individuals</td>
<td>To patients</td>
</tr>
<tr>
<td>- Sufficient number and mix of skilled staff</td>
<td></td>
<td>To staff</td>
</tr>
<tr>
<td>- Safe, ergonomic environment</td>
<td>Team Interaction</td>
<td></td>
</tr>
<tr>
<td>- Adequate resources</td>
<td>Teamleader</td>
<td></td>
</tr>
</tbody>
</table>

Supportive organizational culture encourages teams to

- Cross check
- Report incidents
- Learn from mistakes
- Avoid blame

The organisation is not always as visible in patient-care teams. We can view it as having two parts: the first part is you, your team-mates, supervisors and managers. You are the organisation and will influence the fabric of it considerably by the way you work and what you bring to your role. The second part is less visible and includes non-clinical and executive units.

However they are more accessible than they may appear. Be proactive in including them in your efforts to improve team-work.

Managers and Supervisors should ensure the organisational responsibilities are adequately met for their teams, i.e. workplace is safe, adequately resourced, and operates efficiently. They should structure the workplace and work-practices to promote team-work. They should ensure the staff are adequately trained and have appropriate supervision, duties and workload. They should coach the staff they are responsible for in teamwork and be role-models.
## Organisational factors influencing teamwork

<table>
<thead>
<tr>
<th>Factor</th>
<th>Ask yourself</th>
</tr>
</thead>
</table>
| Membership: Size, skills and familiarity | Are there too few or too many people?  
Is there adequate expertise within the team?  
Are the team members familiar with each other? |
| Clear attainable goals                | Does everyone have the same understanding of the goals of treatment (e.g. Not for resuscitation)                                 |
| Roles                                 | Are there pre-assigned roles?                                                                                                               |
| Culture                               | Are other assumptions operant? (How are things done in this unit or institution?)  
Is the organisational culture supportive? (Will mistakes lead to punitive responses) |
| Resources                             | Are the equipment and other necessary resource available and appropriate?                                                                   |
| Safe ergonomic environment            | Are there any risks or challenges imposed by layout or environmental factors?                                                                  |
10. Six team communication strategies

We use language differently for different purposes. Several common purposes are shown below. Strategies that effective for each are discussed.

Table 10.1: Emergency team communication goals and strategies

<table>
<thead>
<tr>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clarity - Information is understood</td>
</tr>
<tr>
<td>2. Coordination - People work together effectively</td>
</tr>
<tr>
<td>3. Cohesion – There is agreement on goals and values</td>
</tr>
<tr>
<td>4. Cool and calm – Stress is kept to a minimum</td>
</tr>
<tr>
<td>5. Concern is freely expressed -</td>
</tr>
<tr>
<td>6. Conflict is avoided</td>
</tr>
</tbody>
</table>

Clarity

Poorly delivered information leads to omissions, delays or errors in care.

When giving and receiving information

- Be succinct
- Be specific
- Use universal terms (Does not rely upon local knowledge)
- Close loops
Coordination

Co-ordinated teams execute complex tasks well and respond rapidly in unpredictable rapidly changing situations. Coordination is influenced by all of the seven team tasks. Here are some effective communication strategies which enhance coordination:

- Refer to people by name
- Ask for confirmation that people have heard you, and have completed their tasks
- Relay communication through the leader
- Share information and provide updates and summaries

Even very experienced team members, who do not need prompting, prefer to be coordinated by a leader. This enables them to focus on their tasks while still understanding what’s happening more broadly. They feel confident that all important tasks have been performed and can make recommendations if some tasks are neglected. (Tables 8.3 and 8.4)

Example

Avoid

Leader

“Someone give blood”

Responder

“Who do you mean?”

Try instead

Leader

“Will you (address by name) start 1 unit of O positive blood IV and let me know when it has been commenced”

Responder

“1 unit of O positive blood has been commenced “
Cohesion

Cohesion within the team builds trust. People feel their expertise and ideas are valued and feel safe to make suggestions and express concern, without being humiliated or penalised.

Trauma teams routinely work under conditions, which undermine team cohesion. The tasks they undertake are stressful and difficult; the stakes are high and errors or under-performance are more likely than in routine situations. They may not work together frequently and have had little prior opportunity to develop trust. They often have little opportunity to prepare and plan before the event.

Teams can use communication to build cohesion by:

- Sharing information (provide updates and summaries)
- Listen to people and check how they are feeling
- Invite input and ask for agreement for important decisions

Keep cool and calm

People often judge the performance of a team on the level of noise, and apparent control, and it is common to hear someone say an emergency was poorly managed because it was “chaotic”. Panic is contagious. It may not be possible to be calm during an emergency, but it is possible to appear to be calm.

Try to:

- Speak slowly and use a low tone of voice
- Be positive
- Use humour effectively

Express concern freely (graded assertiveness)

Preventable errors occur when people are unwilling to make observations or express concerns. This occurs when people are intimidated by other people’s aggressive behaviour or when a power gradient exists and a perceived threat of punishment. Sometimes people are unwilling to speak up because they are unwilling to consider that a senior person could make a mistake.

If patient safety is compromised you are bound by your duty of care to be assertive. If patient safety is not
threatened, and the disagreement is over the style in which something is being done, the best approach may be to give in and follow it up afterwards.

Graded assertiveness is a technique in which a concern is expressed in a series of steps, which have increasing degrees of assertion, ranging from low to high.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Try for example:</th>
</tr>
</thead>
</table>
| Demonstrate that you are listening to people | I heard you say…  
Is that what you mean…..?  
Also non verbal: Nod and make eye contact |
| Find out how people are feeling       | You look concerned…..  
You look confused ……  
How do people feel about ……?    |
| Ask questions.                        | Does anyone have any experience with this or any other ideas?                    |
| Have shared decision- making         | Is everyone happy with this?                                                    |
| Ask for agreement for important decisions. | I propose we do this… is everyone happy with this approach?  
Does anyone have any concerns?  
OK How should we decide? |
| Speak calmly                          | Everything is going well  
That’s not quite the right way… lets try something different |
| Avoid language which is aggressive or panicking | Let’s just regroup for a minute.  
Ok Just for everyone’s information…. |
| Share information.                   | Thankyou, that was done well  
That’s a good idea  
If it’s OK with you, I would prefer it if you did ….  
I understand what you are trying to say, however, I feel ……. |
Avoid Conflict

People respond to conflict in a variety of ways:

- Avoiding
- Accommodating
- Appeasing
- Rebelling
- Passive aggression
- Confronting
- Compromising

Most of the response types listed above will lead to dysfunction within a team. When conflict develops in a team the most appropriate response will be the one which is in the best interests of the patient.

It is not in the best interests of the patient to avoid, accommodate or appease potential conflict if you are concerned that care is seriously compromised by it.

Negotiation and mutual agreement is the ideal approach.

4 Step Negotiation

1. State what actually happened or what you observed
2. State how you feel about it and find out their perspective
3. Say what you want to happen next
4. Agree on the next step
**Graded assertiveness**

<table>
<thead>
<tr>
<th>Step</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bring to attention</td>
<td>“His BP is a little low”</td>
</tr>
<tr>
<td>Make an “I” statement or observation</td>
<td>“The rhythm on the cardiac monitor just changed. Did you notice that?”</td>
</tr>
<tr>
<td></td>
<td>“The chest wall doesn’t appear to be moving well”</td>
</tr>
<tr>
<td></td>
<td>“I just noticed you injected that drug into the arterial line”</td>
</tr>
<tr>
<td></td>
<td>“I am concerned about the BP…”</td>
</tr>
<tr>
<td></td>
<td>“I was not aware that we didn’t need written consent for this procedure….”</td>
</tr>
<tr>
<td>2. Enquire</td>
<td>“Doesn’t the person administering the drug normally check the drug ampoules themselves?”</td>
</tr>
<tr>
<td>Make an enquiry or offer an alternative as a suggestion</td>
<td>“When will we insert a central line so the adrenaline can be administered without causing necrosis?”</td>
</tr>
<tr>
<td></td>
<td>“You’re not going to cannulate the arm with the AV fistula, are you?”</td>
</tr>
<tr>
<td></td>
<td>Why don’t I see who else is around that can help or give advice”</td>
</tr>
<tr>
<td>3. Clarify</td>
<td>“I’m new to this so can you explain to me what BP we are aiming for?”</td>
</tr>
<tr>
<td>Ask for an explanation</td>
<td>“I can’t find a written consent, can you tell me where it is?”</td>
</tr>
<tr>
<td>Ask for clarification for your own understanding</td>
<td>“It would help me to understand why you feel we need to intubate the patient right now and why we can’t wait”</td>
</tr>
<tr>
<td></td>
<td>I feel uncomfortable about this, please explain what you’re doing”</td>
</tr>
<tr>
<td>4. <strong>Demand a response</strong> or take control of the case</td>
<td>”I’m not happy with what you are doing and it must stop”</td>
</tr>
<tr>
<td></td>
<td>“Stop - You must listen to me!”</td>
</tr>
<tr>
<td></td>
<td>“I’m calling for help now”</td>
</tr>
</tbody>
</table>

*Use four grades of assertiveness to express your concern*
Negotiation Tips

State what happened or what you observed. Do not interpret others’ behaviour. Also avoid excessive focus on one individual because poor performance is multifactorial. Provide negative feedback with specific examples of behaviour.

State how you feel about it. This may include your interpretation of their behaviour or performance, but expressed as a concern. Understand the other person’s perspective. Ask what they think happened and why?

Say what you want to happen next. Ideally this step will enable the recipient to reciprocate in a similar way. This will enable mutual understanding of perspectives.

Agree on the next step. If agreement isn’t achieved within a time frame compatible with safe patient care then you can follow one of two paths.

- If you have authority, you can deliver a directive. This will be more acceptable to the other parties if a positive team climate has been achieved. See preceding section.

- If you do not have authority you should start graded assertiveness.
## 11. Errors, Adverse Events and Performance Issues

### Errors

There are several basic types of errors and numerous reasons why we make mistakes (Table 11.1)

<table>
<thead>
<tr>
<th>Types of errors we commit</th>
<th>Factors contributing to errors</th>
<th>7 deadly behaviours (that contribute to errors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Knowledge-based errors</td>
<td>1. Team experience</td>
<td>1. Inattention, carelessness distractibility</td>
</tr>
<tr>
<td></td>
<td>a) Inadequate total experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Complexity</td>
<td>2. Impulsivity / Recklessness</td>
</tr>
<tr>
<td></td>
<td>c) High workload</td>
<td>3. Invulnerability</td>
</tr>
<tr>
<td></td>
<td>a) Unfamiliar environment or equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Unfavourable ambient conditions</td>
<td></td>
</tr>
<tr>
<td>3) Slips actions</td>
<td>3. Other people</td>
<td>5. Failure to manage stress</td>
</tr>
<tr>
<td></td>
<td>a) Omitted</td>
<td>6. Automatic behaviour</td>
</tr>
<tr>
<td></td>
<td>b) Committed inadvertently</td>
<td>7. Emotional incompetence</td>
</tr>
<tr>
<td></td>
<td>c) Done out of sequence</td>
<td></td>
</tr>
<tr>
<td>4) Misapplication of rules</td>
<td>4. Performance-degrading factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Failed to follow guidelines or routine procedures</td>
<td></td>
</tr>
<tr>
<td>5) Violations / corner cutting</td>
<td>5. Fatigue</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Illness / impairment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b) Unsafe behaviours</td>
<td></td>
</tr>
</tbody>
</table>

1. Don’t recognise
2. Don’t know or can’t do

2. Clinical judgment
3. Environmental management

1. Team experience
2. Physical environment
3. Other people
4. Performance-degrading factors

1. Inattention
2. Carelessness
3. Distractibility
4. Impulsivity
5. Recklessness
6. Invulnerability
7. Submissiveness
8. Failure to manage stress
9. Automatic behaviour
10. Emotional incompetence
Managing performance-shaping factors

It is often within our control to manage factors that degrade our performance.

Health professionals frequently feel compelled to continue practicing even when they recognise conditions are suboptimal. Performance pressure can occur if they work within a culture that favours efficiency over safety, or if they have a strong individual sense of duty, or infallibility.

While we cannot lay down tools until ideal working conditions are provided, it is important that we assess the risks posed by suboptimal environmental conditions and our own (and colleagues’) performance shaping factors.

On some occasions these factors will be able to be optimized. A useful first step is to follow the steps in the acronym HALT and manage unsafe behaviours

<table>
<thead>
<tr>
<th>HALT ACRONYM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not proceed if you are:</td>
</tr>
<tr>
<td>Hungry</td>
</tr>
<tr>
<td>Angry</td>
</tr>
<tr>
<td>Late</td>
</tr>
<tr>
<td>Tired</td>
</tr>
</tbody>
</table>
12. Clinical Practice Guidelines

There is good evidence to support the use of clinical guidelines. NSW ITIM, in conjunction with the Liverpool Hospital Trauma Department, has developed several evidence based clinical practice guidelines for use in the trauma patient including:

1. Emergency Airway Management in the Trauma Patient
2. Initial Management of Closed Head Injury in Adults, 2nd Edition
3. Management of Hypovolaemic Shock in the Trauma Patient
4. Management of Haemodynamically Unstable Patients with a Pelvic Fracture

Full copies of these are available from the NSW ITIM website:

13. References


16) Breast cancer


21) Crisis Management in Anesthesiology Gaba DM (Ed)