

# Lesson plan – Basic Trauma Management (example)

Based on two sessions, 0900-1200, 1300-1630

Time: 09:00 - 09:30	What: Introduction
Action	Comment
<ul style="list-style-type: none"> <li>Welcome the participants</li> </ul>	
<ul style="list-style-type: none"> <li>Faculty member to introduce themselves briefly</li> </ul>	<i>Avoid personal anecdotes / excess detail</i>
<ul style="list-style-type: none"> <li>Allow time for each participant to introduce themselves briefly with their name and position.</li> </ul>	<i>Limited follow-up questions, but if appropriate to form rapport</i>
<ul style="list-style-type: none"> <li>Basic timetable for the day, with programmed breaks and lunch</li> </ul>	
<ul style="list-style-type: none"> <li>Basic rules               <ul style="list-style-type: none"> <li>No mobile phones</li> <li>Respect for other participants</li> <li>Punctuality</li> </ul> </li> </ul>	<i>Be careful not to sound prescriptive / authoritarian.</i>
<ul style="list-style-type: none"> <li>Name badges and group allocation</li> </ul>	
<ul style="list-style-type: none"> <li>Fitness disclaimer</li> </ul>	<i>Important to emphasise individuals are free to opt out for any reason, physical or otherwise, from exercises, but practical elements are an essential part of responder duties</i>
<ul style="list-style-type: none"> <li>Safety notice regarding images and videos</li> </ul>	<i>This should have been sent in advance of the day, to give individual learners a chance to opt out of elements.</i>
<ul style="list-style-type: none"> <li>Explain concepts of levels of response in TCCC methodology</li> </ul>	<i>There are different levels of response and we train participants to understand and respect designated levels and acting within competence / scopes of practice.</i>
<ul style="list-style-type: none"> <li>Assessment methodology</li> </ul>	<i>Practical assessment of core skills + written assessment, depending on centre preference</i>
<ul style="list-style-type: none"> <li>Leading causes of death in trauma               <ul style="list-style-type: none"> <li>Extremity haemorrhage</li> </ul> </li> </ul>	

○ Junctional haemorrhage	
○ Airway obstruction	
○ Tension Pneumothorax	
• List of 5 core skills for the session	
○ Rapid assessment (MARCH)	
○ Tourniquet application	
○ Wound packing	
○ Pressure dressing	
○ Airway management	
• Non-technical skills, including:	
○ Patient moving and handling	
○ Rescuer safety / scene assessment	
○ Communication and leadership	
• Describe levels of care	<i>Important to stress that actions and approach is different between zones.</i>
○ Red zone / Care Under Fire (CUF)	
○ Amber zone / Tactical Field Care (TFC)	
○ Green zone / Tactical Evacuation Care	<i>Green zone is not part of the session's curriculum.</i>
• Describe contents of IFAK	<i>Show participants each item but do not teach or demonstrate. 1 IFAK per participant.</i>

## NB 4 stage approach

*This is the basic approach to be adopted for teaching each of the core skills.*

*Skills teaching uses a phased approach to teach skills of ranging complexity.*

- **Stage 1: Demonstration of the skill by instructor at real speed.** *This stage provides visual imagery and a realistic look at how the skill should be completed. No commentary or explanation is given, but any talking that ordinarily accompanies the skill should be included (e.g., shouting for help).*
- **Stage 2: Repetition of the demonstration by the Instructor with dialogue,** *providing the rationale for actions. This provides reinforcement — the performance is slowed and broken into parts to allow for questions on clarity and checking for understanding.*
- **Stage 3: The demonstration is repeated, but the Instructor is verbally guided by one of the participants.** *This phase begins the transition of the skill session to the participant. The participant talks the Instructor through the skill while the Instructor performs it. The Instructor does not lead the participant.*
- **Stage 4: The participant repeats the demonstration with observation from the other participants.**

*After the 4 stages, the participants practice independently. It is important that instructors circulate through the room and confirm understanding and practical skills.*

Time: 09:30-10:00	What: Case under Fire
Action	Comment
<ul style="list-style-type: none"> <li>• Short video of CUF</li> </ul>	<i>Preferably TCCC official content</i>
<ul style="list-style-type: none"> <li>○ Self-aid</li> </ul>	<i>Casualty can self-apply tourniquet</i>
<ul style="list-style-type: none"> <li>○ Do not enter scene until safe and constantly reassess</li> </ul>	<i>If necessary, a rescuer must retreat from the scene</i>
<ul style="list-style-type: none"> <li>○ Assess if casualty is conscious</li> </ul>	<i>This is limited to calling to casualty and shaking</i>
<ul style="list-style-type: none"> <li>○ Only medical treatment is tourniquet application</li> </ul>	
Core skill #1: Demonstrate self-application of tourniquet (4 stage approach)	
<ul style="list-style-type: none"> <li>• Recognition of massive haemorrhage</li> </ul>	<i>Important to ask and clarify that massive haemorrhage can lead to death in &lt;3 minutes</i>
<ul style="list-style-type: none"> <li>○ Amputation</li> </ul>	
<ul style="list-style-type: none"> <li>○ Pulsation of blood</li> </ul>	
<ul style="list-style-type: none"> <li>○ Pooling of blood</li> </ul>	
<ul style="list-style-type: none"> <li>• Key points of tourniquet application</li> </ul>	<i>Practice on self to begin, on non-dominant arm</i>
<ul style="list-style-type: none"> <li>○ High, tight and fast (&lt;1 minute)</li> </ul>	
<ul style="list-style-type: none"> <li>○ Avoid joints and wounds</li> </ul>	

<ul style="list-style-type: none"><li>○ Must stop blood flow, check pulse</li></ul>	<i>Pulse check at the wrist requires previous anatomical awareness. Do not rely on pulse check, over a visual and tactile (checking tightness) assessment of tourniquet</i>
<ul style="list-style-type: none"><li>○ Write time on strap</li></ul>	
<ul style="list-style-type: none"><li>○ Reassure that pain is usually a sign that tourniquets are correctly place</li></ul>	<i>Pain is not the goal but an indicator of successful placement</i>
<ul style="list-style-type: none"><li>• Instructor demonstrates technique</li></ul>	<i>This is the 4 stage approach. It is important all participants observe at this stage and do not merely begin practising.</i>
<ul style="list-style-type: none"><li>○ Full speed, in silence</li></ul>	
<ul style="list-style-type: none"><li>○ Slow with commentary</li></ul>	
<ul style="list-style-type: none"><li>○ Volunteer participant narrates the technique performed by the Instructor</li></ul>	
<ul style="list-style-type: none"><li>○ Volunteer practices the technique him/herself</li></ul>	
<ul style="list-style-type: none"><li>• Participants begin to practise with observation and correction by Instructor and facilitator(s)</li></ul>	
<ul style="list-style-type: none"><li>• Further practice of tourniquet</li></ul>	<i>Depending on time, this section may need shortening. The priority is to give everyone a chance to practise as often as possible.</i>
<ul style="list-style-type: none"><li>○ Neighbour</li></ul>	
<ul style="list-style-type: none"><li>○ Leg</li></ul>	
<ul style="list-style-type: none"><li>○ Dominant arm</li></ul>	
<ul style="list-style-type: none"><li>○ Timed</li></ul>	
Non-technical skill: demonstrate casualty movement techniques	
<ul style="list-style-type: none"><li>• Video</li></ul>	<i>TCCC or other reputable source</i>
<ul style="list-style-type: none"><li>• Demonstrate core 1-person and 2-person technique</li></ul>	
<ul style="list-style-type: none"><li>○ Safety warning</li></ul>	
<ul style="list-style-type: none"><li>○ If unable to extract casualty, control massive haemorrhage and retreat to safety</li></ul>	
<ul style="list-style-type: none"><li>• Break into groups of 3 for practice</li></ul>	<i>Be careful to avoid unsafe practice, if unable to carry using core methods, improvised methods are unlikely to succeed</i>
BREAK	

Time: 1045-1050		What: Massive Haemorrhage
<ul style="list-style-type: none"> <li>• Introduction to MARCH algorithm               <ul style="list-style-type: none"> <li>○ Priorities of stages according to mortality risk</li> <li>○ Mention core condition associated with each stage (haemorrhage, airway obstruction, pneumothorax, shock, hypothermia)</li> </ul> </li> </ul>		
Massive haemorrhage 1050-1100		
<ul style="list-style-type: none"> <li>• Recheck tourniquets               <ul style="list-style-type: none"> <li>○ Retighten or add second tourniquet side by side</li> <li>○ Leave all tourniquets in place</li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li>• Cautionary note on improvised tourniquets               <ul style="list-style-type: none"> <li>○ Direct pressure in absence of tourniquet is more effective</li> <li>○ Difficult to fix and keep in place</li> <li>○ Difficult to move casualty</li> </ul> </li> </ul>		<p><i>CUF tourniquets can be ineffective due to time pressure. Do not remove however</i></p> <p><i>Ensure tourniquets are visible and known to other personnel</i></p> <p><i>Can use actual belt to demonstrate the difficulty</i></p> <p><i>Do not prescribe / criticise practice, but gently demonstrate the issues and suggest that an improvised tourniquet may be worse than alternative control measures</i></p>
<ul style="list-style-type: none"> <li>• Additional haemorrhage can be controlled with deliberate tourniquet use, 5-8cm above bleeding site</li> </ul>		<p><i>Cut away clothing</i></p>
<p>NB at some stage, you may encounter the question about how long a tourniquet should remain in place. It is important to emphasise that at the level of Basic Management,</p> <ul style="list-style-type: none"> <li>• <u>a responder must not remove a tourniquet once placed</u></li> <li>• <u>wait for medical assessment and evacuation</u></li> <li>• <u>it is important the tourniquets are not placed for minor, non-arterial bleeding</u></li> </ul> <p>Avoid excessive detail and speculation about specific timeframes, but stress that under 2 hours there is unlikely to be damage to the limb. There may be a concern that even a short period cuts off blood and damages the limb, but reassure this is not the case.</p> <p>There is additional higher-level training (level 3, Corpsman Medic) to convert a tourniquet but not relevant at the basic level.</p>		
Core skill #2: Wound packing (4 stage approach) 1100-1130		
<ul style="list-style-type: none"> <li>• Show picture of junctional areas (neck, axilla, groin)</li> </ul>		
<ul style="list-style-type: none"> <li>• Video of technique</li> </ul>		<p><i>TCCC or alternative reputable source. The video can act as stage 1 of 4 stage approach</i></p>

<ul style="list-style-type: none"> <li>Demonstration of wound packing with moulage and rolled gauze</li> </ul>	<i>Explain method to whole group, stage 2.</i>
<ul style="list-style-type: none"> <li>Emphasise direct pressure to wound site</li> </ul>	
<ul style="list-style-type: none"> <li>Gauze does not directly stop bleeding without focused pressure on bleeding site</li> </ul>	
<ul style="list-style-type: none"> <li>Haemostatic gauze = 3 minutes, non-haemostatic = 10 minutes</li> </ul>	
<b>Split into smaller groups for practical exercise</b>	
<ul style="list-style-type: none"> <li>8 participants per instructor</li> </ul>	<i>Stages 3 and 4 in small group to save time</i>
<ul style="list-style-type: none"> <li>Minimum 1 practice per participant</li> </ul>	
<p><b>NB wound packing with the moulages is a difficult and artificial exercise. Reassure the participants:</b></p> <ul style="list-style-type: none"> <li><i>The lack of clotting of water or the blood substitute certainly can make it harder.</i></li> <li><i>Equally, in real life, the stress of the situation will be very challenging</i></li> <li><i>Avoid a sense of failure if a participant cannot control bleeding and just emphasise importance of direct pressure to wound site and then packing/pressure for 3/10 mins (hemostatic or not)</i></li> <li><i>If the bleeding continues, only remove and restart if hemostatic used. Otherwise, add additional non-hemostatic and apply pressure</i></li> </ul>	
<b>Core skill #3: Pressure bandage (4 stage approach) 1130-1200</b>	
<ul style="list-style-type: none"> <li>Pressure bandages (Israeli) are used to secure wound packing or dress minor wounds</li> </ul>	<ul style="list-style-type: none"> <li><i>Not used for direct haemorrhage control</i></li> <li><i>Avoid excessive tightening (not a tourniquet)</i></li> </ul>
<ul style="list-style-type: none"> <li>The absorbent pad over the wound</li> </ul>	
<ul style="list-style-type: none"> <li>The bandage slides inside the clip and reverses direction to create additional pressure</li> </ul>	
<ul style="list-style-type: none"> <li>Clip therefore should lie on top of wound packing</li> </ul>	
<ul style="list-style-type: none"> <li>There is a loop to facilitate self-application</li> </ul>	
<ul style="list-style-type: none"> <li>Instructor to demonstrate a single, simple application of a pressure bandage, without wound packing</li> </ul>	<i>This can be a simple demonstration, stages 1 and 2.</i>
<b>Split into smaller groups for practical exercise</b>	
<ul style="list-style-type: none"> <li>8 participants per instructor</li> </ul>	<i>The specific techniques for the junctional areas are taught in the small group. Stage 3 and 4 can occur in small group.</i>
<ul style="list-style-type: none"> <li>Instructor to demonstrate pressure bandage in the 3 junctional areas (neck, axilla, groin)</li> </ul>	<i>It is important that instructors are very familiar with specific techniques</i>
<b>Stations for core skills</b>	

There is the choice between running Core Skill 2 and 3 (wound packing, pressure bandage) in parallel (simultaneously) or sequentially. If in parallel:

- 1 instructor oversees 2 wound packing moulages
- 1 instructor teaches the 3 specific pressure bandage techniques

Generally, if this approach is adopted, it is essential to coordinate and time each station to last an equal amount of time, factoring in time to rotate. Both skills are demonstrated in overview in the full group, with the specific details and techniques elucidated in the small groups.

If a rotational method for small group is adopted, then participants need to be reminded of their group allocation and it is important that this is communicated clearly.

#### Final summary of morning

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| <ul style="list-style-type: none"> <li>• Questions</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>• Brief resume of where we have reached and what is to come in afternoon</li> </ul> |  |

#### LUNCH

Time: 13:00-13:55		What: Airway Management
<ul style="list-style-type: none"> <li>Re-introduction to MARCH algorithm <ul style="list-style-type: none"> <li>Simple assessment of knowledge through group questions</li> </ul> </li> </ul>		
<ul style="list-style-type: none"> <li>Discussion of airway <ul style="list-style-type: none"> <li>Description anatomically</li> <li>Threats and dangers</li> </ul> </li> </ul>		<p><i>Videos / images can demonstrate airway obstruction</i></p> <p><i>Does not include the lungs</i></p> <p><i>Liquids, foreign bodies, swelling, allergic reaction and unconsciousness (relaxed muscles)</i></p>
<ul style="list-style-type: none"> <li>Explain core elements <ul style="list-style-type: none"> <li>Assessment of airway, including foreign body check</li> </ul> </li> </ul>		<p><i>Consider a TCCC video if no mannequin available</i></p> <p><i>Do not reach into mouth for foreign body, can tilt head to side if mouth is full of liquid.</i></p> <p><i>Note this is not a formal assessment of respiration despite the similarity to BLS airway management.</i></p>
<ul style="list-style-type: none"> <li>Head tilt / chin-lift</li> </ul>		<i>Gentle manoeuvre to stretch and open airway</i>
<ul style="list-style-type: none"> <li>Jaw thrust</li> </ul>		<i>Concern re spinal injury. The jaw thrust is less suitable for semi-conscious patients (due to pain) and harder to maintain</i>
<ul style="list-style-type: none"> <li>Recovery position</li> </ul>		<i>Emphasise that this avoids risks of aspiration of liquids (vomit in particular)</i>
<ul style="list-style-type: none"> <li>Patient self-positioning</li> </ul>		<i>Patient is often best placed to assume position of comfort to assist airway patency</i>
<p><i>NB Participants may be familiar with airway adjuncts such as nasopharyngeal and oropharyngeal airways. NPA airways feature in higher levels of TCCC training, but oropharyngeal airways do not.</i></p> <p><i>It is at the discretion of the instructor / training centre whether to refer to either airway but neither feature as part of the formal curriculum for Basic Trauma Management.</i></p>		
Core skill #4: Airway management (4 stage approach) 1320-1355		
<ul style="list-style-type: none"> <li>Demonstration of a complete airway assessment and management by instructor</li> </ul>		<i>Stages 1 and 2</i>
<b>Practice in small groups</b>		<b>Stages 3 and 4</b>
<ul style="list-style-type: none"> <li>1 instructor to oversee airway manoeuvres (head-tilt, jaw thrust)</li> </ul>		
<ul style="list-style-type: none"> <li>1 instructor to oversee recovery position and patient self-positioning</li> </ul>		
Break (5 minutes) to reset		



What: 14:00-14:30	Comment
<ul style="list-style-type: none"> <li>• Introduction to final steps of MARCH algorithm               <ul style="list-style-type: none"> <li>○ Respiration (pneumothorax)</li> <li>○ Circulation (shock)</li> <li>○ Hypothermia</li> </ul> </li> <li>• Non-technical skills               <ul style="list-style-type: none"> <li>○ Leadership, team structure and task designation</li> <li>○ Clear communication between team leader and team members.</li> <li>○ Effective use of IFAKs, including their state of readiness</li> <li>○ Situational awareness, including change to casualty condition or safety at scene</li> </ul> </li> </ul>	<p><i>It is worth acknowledging to the audience that at the Basic Trauma Management level, the priorities are massive haemorrhage and airway management. There is less emphasis of R, C and H</i></p> <p><i>Teaching of the non-technical skills is beyond the scope of the session, but they can be raised for awareness and discussion</i></p>
<b>Respiration 1400-1410</b>	
<ul style="list-style-type: none"> <li>• Signs of respiratory distress</li> <li>• Threats and dangers</li> <li>• Application of chest seal, whether vented or non-vented, or even improvised               <ul style="list-style-type: none"> <li>○ Venting of wound ('burping')</li> </ul> </li> </ul>	<p><i>Pneumothorax, brief description of mechanism. Discussion of pressure change during inhalation, causing air to enter chest cavity, normally lungs.</i></p> <p><i>Clean wound, apply on exhalation</i></p> <p><i>This is beyond the scope of the course but worth mentioning if the participants ask or show signs of advanced knowledge</i></p>
<b>Circulation 1410-1420</b>	
<ul style="list-style-type: none"> <li>• Signs of shock</li> <li>• Threats and dangers</li> <li>• Management               <ul style="list-style-type: none"> <li>○ Raise legs</li> <li>○ Check radial pulse</li> <li>○ Keep patient warm</li> </ul> </li> </ul>	<p><i>Shock can simply be described as a consequence of blood loss and damage to organs</i></p> <p><i>Important to emphasise awareness and raising to medical personnel</i></p> <p><i>Improve blood flow to head</i></p> <p><i>Hypothermia link</i></p>
<b>Hypothermia 1420-1430</b>	
<ul style="list-style-type: none"> <li>• Distinction between hypothermia of environmental and metabolic cause</li> </ul>	<p><i>All trauma patients are at risk of hypothermia, regardless of external temperature</i></p>

• Signs of hypothermia	<i>Shivering, drowsiness, slurred speech, slow respiratory rate</i>
• Management	<i>Early action to prevent not treat</i>
○ Remove wet clothing	
○ Isolate from ground	
○ Foil blanket	
	<i>Gold on outside, silver on inside</i>
<b>Core skill #5: Complete rapid trauma assessment (4 stage approach) 1430-1500</b>	
• Demonstration of a respiratory, circulation and hypothermic assessment by instructor in front of whole group	<i>Stages 1 and 2</i>
• Demonstration in small groups	<i>Stages 3 and 4</i>
○ Each instructor to lead a small group to practice R, C and H	
• Instructor to demonstrate full MARCH assessment in front of whole group	
○ CUF: enter red zone (crawl), apply tourniquet and extract casualty	<i>Emphasise rescuer safety</i>
○ TFC: all elements of MARCH	
<b>Break 1500-1515</b>	

Time: 1515-1615	What: Assessment of Rapid Casualty Management
<ul style="list-style-type: none"> <li>• Splitting of into small group for assessment               <ul style="list-style-type: none"> <li>○ Each sub-group of 8 will have 2 scenarios to manage, teams of 4</li> <li>○ The scenarios comprise a rapid casualty assessment (MARCH) and each of the core skills</li> </ul> </li> </ul>	<p><i>The scenarios assess 5 core skills</i></p> <ul style="list-style-type: none"> <li>• rapid casualty assessment (ELO 10)</li> <li>• tourniquet application (ELO 13)</li> <li>• hemostatic dressing (wound packing) (ELO 16)</li> <li>• the application of a pressure dressing and (ELO 17)</li> <li>• airway manoeuvres (ELOs 21 and 22).</li> </ul>
<ul style="list-style-type: none"> <li>○ The other team of 4 should provide a single casualty</li> </ul>	
<ul style="list-style-type: none"> <li>○ The scenario can also involve basic (formative) assessment of non-technical skills</li> </ul>	<p><i>The non-technical skill list (ELOs 27-34) covers ELOs 3, 6, 8, 9, 18, 19, 23:</i></p> <ul style="list-style-type: none"> <li>• <i>An appropriate assessment of the CUF (red) and TFC (amber) zones and associated management of the scene.</i></li> <li>• <i>Demonstration of situational awareness of safety and patient condition, including an evaluation of safety before entering the CUF zone.</i></li> <li>• <i>Identified options for casualty movement, if necessary, and effect an optimally safe evacuation of the casualty</i></li> <li>• <i>Demonstration of assignment of a team leader and appropriate team structure.</i></li> <li>• <i>Clear communication between team leader and team members.</i></li> <li>• <i>Effective use of IFAKs, including their state of readiness</i></li> <li>• <i>An awareness of patient dynamics, including sufficient attention to airway (positioning), risk of hypothermia and reassurance of the casualty.</i></li> <li>• <i>Appropriate / ongoing attempts to evaluate patient consciousness, respiration and circulation, including signs suggesting respiratory distress and shock.</i></li> </ul>
<ul style="list-style-type: none"> <li>• Each scenario is projected to last 15 minutes, with 10 minutes of debrief and 5 minutes to reset</li> </ul>	

*NB The debrief should be objective and focused around the core skills, and potentially the non-technical skills. Ideally, the debrief should be orientated an objective analysis of the skills as defined in the assessment checklist, assisted by distributing the checklists to the learners.*

- *Focus feedback on the task, not the learner. Avoid comments that refer to individual attributes as opposed to performance.*
  - *“You did this well” vs. “you are good at this” ...*
- *After highlighting any issue, offer constructive advice on how to improve.*
- *Keep feedback brief and focused.*
- *Refer back to learning objectives. Limit references to elements that are not part of the learning objectives of the course.*
- *Give learners the opportunity to reflect on their performance.*
- *Remain positive, unbiased and objective.*
- *Avoid if possible final conclusions / judgements on performances (pass or fail, unless in the situation below), but it is acceptable to offer comments of a generalised positive nature.*

*If there is an objective, summative nature to the assessment, feedback relating to passing / failing should be directed to the individual in private.*

Time: 1615-1630	What: Final Steps
<ul style="list-style-type: none"> <li>• Collective debrief               <ul style="list-style-type: none"> <li>○ Aggregate any themes common to both small groups</li> <li>○ Run through non-technical skills list</li> </ul> </li> </ul>	<p><i>Highlight major themes:</i></p> <ul style="list-style-type: none"> <li>• <i>Respect for rescuer safety and zones of care</i></li> <li>• <i>Communication and leadership</i></li> <li>• <i>Reassess regularly</i></li> </ul> <p><i>Recognise priorities of care according to MARCH</i></p>
<ul style="list-style-type: none"> <li>• Thank participants</li> </ul>	
<ul style="list-style-type: none"> <li>• Certificate distribution</li> </ul>	
<ul style="list-style-type: none"> <li>• Feedback solicitation</li> </ul>	<i>Online form to be offered</i>