

Lesson plan – Intermediate Trauma Management (example)

Based on two sessions, 0900-1230, 1330-1700

Time: 0900-0930	Module: Introduction
Action	Comment
<ul style="list-style-type: none"> Welcome the participants 	
<ul style="list-style-type: none"> Faculty member to introduce themselves briefly 	<i>Avoid personal anecdotes / excess detail</i>
<ul style="list-style-type: none"> Allow time for each participant to introduce themselves briefly with their name and position. 	<i>Limited follow-up questions, but if appropriate to form rapport</i>
<ul style="list-style-type: none"> Basic timetable for the day, with programmed breaks and lunch 	
<ul style="list-style-type: none"> Basic rules <ul style="list-style-type: none"> No mobile phones Respect for other participants Punctuality 	<i>Be careful not to sound prescriptive / authoritarian.</i>
<ul style="list-style-type: none"> Name badges and group allocation 	<i>There should be a clear method for assigning participants to groups for small group work</i>
<ul style="list-style-type: none"> Fitness disclaimer 	<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"> Safety notice regarding images and videos 	<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"> Explain concepts of levels of response in TCCC methodology 	<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"> Assessment methodology 	<i>Practical assessment of core skills + written assessment, depending on centre preference</i>
<ul style="list-style-type: none"> List of 5 core skills covered in Basic Trauma Curriculum 	

<ul style="list-style-type: none"> List of 10 core skills for the session <ul style="list-style-type: none"> Junctional haemorrhage control NPA insertion Bag-valve mask Chest seal application Needle decompression Pelvic fracture management Additional wound management (burns, eyes, splinting, head injuries) Communication of casualty information and completion of documentation C-spine stabilisation and restriction Complete tactical trauma assessment (MARCH) Non-technical skills, including: <ul style="list-style-type: none"> Patient moving and handling Rescuer safety / scene assessment Communication and leadership 	
<ul style="list-style-type: none"> Describe levels of care <ul style="list-style-type: none"> Red zone / Care Under Fire (CUF) Amber zone / Tactical Field Care (TFC) Green zone / Tactical Evacuation Care 	<p><i>Important to stress that actions and approach is different between zones.</i></p> <p><i>Green zone is not part of the session's curriculum.</i></p>
<ul style="list-style-type: none"> Equipment <ul style="list-style-type: none"> IFAK Trauma bag Demonstration of Basic Trauma Management approach <ul style="list-style-type: none"> CUF, tourniquet control and massive haemorrhage MARCH assessment 	<p><i>Show participants each item but do not teach or demonstrate</i></p> <p><i>There should be a minimum of 1 IFAK per participant and 1 trauma bag per small group of 6-8 participants (1 instructor)</i></p> <p><i>This can be done via a TCCC video or a physical demonstration. Important to establish the expected level of skill to this point.</i></p>

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: 0930-1000		What: Tactical Field Care: Massive Haemorrhage,
Action		Comment
<ul style="list-style-type: none"> Reminder of signs of massive haemorrhage, blood sweep to assess and control methods 		
<ul style="list-style-type: none"> Tourniquet: reassess 		<i>Important to recheck method and ensure comprehensive understanding. If applied in TFC, can be 5-8cm above wound (deliberate)</i>
<ul style="list-style-type: none"> Direct pressure 		
<ul style="list-style-type: none"> Hemostatic dressing / wound packing 		<i>Reminder of core principles, consider playing TCCC video</i>
<ul style="list-style-type: none"> Pressure bandage (Israeli) 		
<ul style="list-style-type: none"> Improvised pressure device 		<i>Additional method for junctional haemorrhage control with rigid object (metallic water bottle)</i>
Core skill #1: pressure delivery device (PDD) (4 stage approach)		
<ul style="list-style-type: none"> Junctional haemorrhage management 		
<ul style="list-style-type: none"> Anatomy 		
<ul style="list-style-type: none"> Direct pressure and packing 		
<ul style="list-style-type: none"> Difficult to secure gauze of wound packing procedure with simple pressure bandage 		
<ul style="list-style-type: none"> Image of PDD, discussion of improvised options 		
<ul style="list-style-type: none"> Key points of PDD 		<i>Stages 1 and 2.</i>
<ul style="list-style-type: none"> Rigid object applied on top of wound packing gauze 		
<ul style="list-style-type: none"> Held in place with 1 tourniquet or 2 looped together 		
<ul style="list-style-type: none"> Demonstration of pressure bandages to groin and axilla or clavicle area 		<i>The participants should be comfortable with the basic process. These two techniques represent the more challenging, particularly if the casualty is prone and / or unconscious</i>
<ul style="list-style-type: none"> Ensure sufficiently tight 		
<ul style="list-style-type: none"> The clip should double back over the wound site 		
Split in small groups for practice		<i>Stages 3 and 4.</i>
Stations for core skills		

There is the choice between running Core Skill 1 and revision of pressure bandages in parallel (simultaneously) or sequentially. If in parallel:

- 1 instructor oversees the PDD
- 1 instructor teaches the 2 more challenging 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.

BREAK

Time: 1030-1200		What: Airway and Respiration
Action		Comment
Airway Management 1030-1035		
<ul style="list-style-type: none"> Airway management <ul style="list-style-type: none"> D/w Reminder participants of basic assessment and manoeuvres, chin lift / head tilt 		
Core skill #2: Nasopharyngeal airway (4 stage approach) 1035-1045		
<ul style="list-style-type: none"> Introduce NPA airway <ul style="list-style-type: none"> Indications Measure and lubrication Tilt head and insert, ensure correct direction 		<p><i>Use of head mannequin to demonstrate, stages 1 and 2</i></p> <p><i>Brief discussion if necessary of advantages of NPA over OPA</i></p>
Core skill #3: Bag-Valve Mask (4 stage approach) 1045-1055		
<ul style="list-style-type: none"> Bag-valve mask <ul style="list-style-type: none"> Indications Describe how BVM functions with reference to components Demonstrate on airway mannequin 		<p><i>Stress reduced breathing, fast breathing is also an indication if ineffective but not the primary indication. Absent breathing is a sign of cardiac arrest and thus would not ordinarily result in CPR in a trauma setting</i></p> <p><i>1- and 2-person techniques, using 2 fingers on mask and 3 under jaw. Requires focused pressure</i></p>
Respiration Management 1055-1100		
<ul style="list-style-type: none"> Important clarify / describe / define terms <ul style="list-style-type: none"> Cause Respiratory distress 		<p><i>Blunt or penetrating injury, blast</i></p> <ul style="list-style-type: none"> <i>Worsening shortness of breath</i> <i>Laboured / rapid breathing (worsening)</i> <i>Confusion</i> <i>Discoloured lips</i> <i>Rapid pulse</i> <i>Distended neck veins</i>
Core skill #4: chest seal application (4 stage approach) 1100-1110		

<ul style="list-style-type: none"> • Open pneumothorax 	<i>Puncture wound with signs such as hissing / sucking, coughing up blood, froth around wound</i>
<ul style="list-style-type: none"> ○ Describe pressure differential 	<i>Causes air to enter chest cavity from wound and collect in pleural space, a video can assist</i>
<ul style="list-style-type: none"> ○ Prompt application of chest seal on exhalation 	<i>Can be vented or otherwise</i>
<ul style="list-style-type: none"> ○ 'Burp' chest wound by removing dressing during exhalation 	
Core skill #5: needle decompression (4 stage approach) 1110-1120	
<ul style="list-style-type: none"> • Tension pneumothorax, treatment with needle decompression 	<i>A tension pneumothorax specifically involves one-way passage of air, collecting in pleural cavity and compressing the heart / lungs</i>
<ul style="list-style-type: none"> ○ Show participants the needle and describe the components 	<i>Brief discussion of additional potential needles if specific needle is not available (14 gauge catheter), with limitations due to length</i>
<ul style="list-style-type: none"> ○ 2nd mid-clavicular (outside nipple line) or 5th mid-axilla intercostal space 	<i>Avoid complicating with preference. Either is acceptable. Identification of sites can be demonstrated on a volunteer if appropriate.</i>
<ul style="list-style-type: none"> ○ Perpendicular entry 	
<ul style="list-style-type: none"> ○ Above lower rib to avoid neurovascular bundle 	
<ul style="list-style-type: none"> ○ Listen for sound of air escape or observe for symptom improvement 	
<ul style="list-style-type: none"> ○ Secure the catheter with simple dressing or tape 	
<ul style="list-style-type: none"> • If fails or symptoms return after NDC 	<i>Catheter can kink / twist or block with blood</i>
<ul style="list-style-type: none"> ○ Repeat second site and then if 2nd failure, return to first site (more lateral) 	
Stations for core skills for airway and respiration (core skills 2-5) 1120-1200	
<i>The stations should run in parallel in small groups, but the precise configuration depends on the availability of resources, in particular chest mannequins for NDC practice.</i>	
LUNCH	

Time: 1330-1355	What: Circulation / Hypothermia / Head Injuries
Action 1300-1355	Comment
Circulation and hypothermia 1300-1310	
<ul style="list-style-type: none"> Reassess steps to date (M, A, R) 	
<ul style="list-style-type: none"> Shock recognition 	
<ul style="list-style-type: none"> Signs 	<p><i>Although there are many signs, such as breathing, pallor, fast heart, confusion, <u>the two most specific are confusion and weak/absent radial pulse.</u></i></p> <p><i>The others can be present due to pain, adrenaline response, stress or hypothermia</i></p>
<ul style="list-style-type: none"> AVPU to assess consciousness 	<i>Alert, Voice, Pain, Unresponsive</i>
Core skill #6: pelvic fracture management (4 stage approach)	
<ul style="list-style-type: none"> Pelvic fractures 	<i>Low threshold to suspect in case of traumatic injury and shock signs</i>
<ul style="list-style-type: none"> Significance 	<i>Pelvic fracture must be assumed to associate with significant internal bleeding</i>
<ul style="list-style-type: none"> Signs 	<i>Amputation, pain, deformities, pelvic instability, crepitus. <u>However do not elicit pain, as this can worsen injury / bleeding</u></i>
<ul style="list-style-type: none"> Management 	<i>General approach is to draw pelvis together, whether with official device (pelvic sling) or improvised</i>
<ul style="list-style-type: none"> Improvised methods 	<i>Bedsheet, triangular bandage, foil blanket</i>
<ul style="list-style-type: none"> Hypothermia 	
<ul style="list-style-type: none"> Remove wet clothing 	
<ul style="list-style-type: none"> Isolate from ground 	
<ul style="list-style-type: none"> Cover in blanket, in particular foil blanket 	
Head Injuries	
<ul style="list-style-type: none"> Mechanisms 	<i>Presence within 50 metres of blast, direct blow to head, vehicle involvement</i>
<ul style="list-style-type: none"> Signs and symptoms 	<p><i>IED checklist:</i></p> <ul style="list-style-type: none"> <i>injury</i> <i>evaluation (HEADS)</i> <i>distance</i>
<ul style="list-style-type: none"> Traumatic brain injury 	<i>MACE2 score sheet</i>
Small group practice, involving the following elements	
<ul style="list-style-type: none"> Reassessment of M, A and R 	

○ Shock recognition, including AVPU	
○ Improvised pelvic sling	<i>Stages 3 and 4</i>
○ Formal pelvic sling	<i>Stages 3 and 4</i>

Time: 1400-1500	What: Additional wounds
Action 1400-1405	Comment
<ul style="list-style-type: none"> Reminder of order of priorities, MARCH <ul style="list-style-type: none"> Essential to reassess whenever there is a major change to circumstances or intervention Documentation and communication PAWS 	<ul style="list-style-type: none"> <u>Pain – not covered</u> <u>Antibiotics – not covered</u> Wounds Splinting
<ul style="list-style-type: none"> Head injuries 	Important to discuss from awareness perspective
Core skill #7: Additional wound management (4 stage approach) 1405-1425	
Wounds (including burns and eyes)	
<ul style="list-style-type: none"> Burn managements <ul style="list-style-type: none"> Definition of burns (1st to 3rd degree) Rules of nines to define extent Management 	Remove additional items / cover with dry dressings
<ul style="list-style-type: none"> Eye injuries <ul style="list-style-type: none"> Signs and symptoms Management: visual acuity test, cover eye with rigid shield, (pain relief) Do not cover both eyes Do not remove foreign body, secure in place 	Avoid pressure to eyeball
Splinting	
<ul style="list-style-type: none"> Signs of fracture 	Pain, deformity, reduced sensation, asymmetry between limbs
<ul style="list-style-type: none"> Explain principle of splinting 	Strength comes from moulding of splint
<ul style="list-style-type: none"> Management of fracture <ul style="list-style-type: none"> Secure limb in natural, resting position Casualty or other person can stabilise the limb Remember to check pulses before and after 	Do not secure splint too tightly

○ Secure joints above and below	
Stations for core skills for wound management 1430-1455	
<i>The stations should run in parallel in small groups</i>	
Break 1455-1500	

Time: 1500-1550		What: Communication, evacuation, complete assessment
Action		Comment
Core skill #8: Communication of casualty information and completion of documentation 1500-1510		
<ul style="list-style-type: none"> Explain DD1380 		<i>Handout example card</i>
Core skill #9: C-spine stabilisation and restriction 1510-1530		
<ul style="list-style-type: none"> Explain principles of c-spine stabilisation <ul style="list-style-type: none"> Not necessary to use rigid collar 		<p><i>Rigid collar can aggravate situation, cause agitation, make airway difficult to manage and slow down extraction and evacuation</i></p> <p><i>Immobilisation or restriction can involve improvised methods, headblocks, hard board</i></p>
<ul style="list-style-type: none"> Only immobilise if casualty is stable, alert (GCS 15) and in traumatic circumstance, including presence of <ul style="list-style-type: none"> Mechanism Signs Non-toxication / non-distracting injury / able to communicate 		<p><i>Emphasise that traumatised patients have other treatment priorities before c-spine. [Canadian C-spine rules]</i></p> <p><i>These factors make assessment c-spine problematic and necessitate immobilisation</i></p>
Core skill #10: Complete tactical trauma assessment (MARCH) 1530-1540		
<ul style="list-style-type: none"> Final reassessment of casualty before evacuation, involving MARCH assessment and communication 		<i>Description and demonstration of full assessment</i>
Non-technical skills 1540-1550		
<ul style="list-style-type: none"> Leadership, team structure and task designation Clear communication between team leader and team members. Effective use of IFAKs, including their state of readiness Situational awareness, including change to casualty condition or safety at scene 		Teaching of the non-technical skills is beyond the scope of the session, but they can be raised for awareness and discussion

Time: 1600-1645		What: Assessment of Complete Tactical Trauma Assessment
Action		Comment
<ul style="list-style-type: none">• Splitting of groups		<i>The scenarios can assess the 9 core skills, in addition to the Complete Tactical Trauma Assessment</i> <ul style="list-style-type: none">• <i>Junctional haemorrhage control</i>• <i>NPA insertion</i>• <i>Bag-valve mask</i>• <i>Chest seal application</i>• <i>Needle decompression</i>• <i>Pelvic fracture management</i>• <i>Additional wound management (burns, eyes, splinting, head injuries)</i>• <i>Communication of casualty information and completion of documentation</i>• <i>C-spine stabilisation and restriction</i>
<ul style="list-style-type: none">○ Each sub-group of 8 will have 2 scenarios to manage, teams of 4		
<ul style="list-style-type: none">○ The scenarios comprise a Complete Tactical Trauma Assessment (MARCH) and some or all of the core skills		
<ul style="list-style-type: none">○ The other team of 4 should provide a single casualty		

<ul style="list-style-type: none"> ○ The scenario can also involve basic (formative) assessment of non-technical skills 	<p><i>The non-technical skill list (ELOs 69-76)</i></p> <ul style="list-style-type: none"> • <i>An appropriate assessment of the CUF (red) and TFC (amber) zones and associated management of the scene.</i> • <i>Demonstration of situational awareness of safety and patient condition, including an evaluation of safety before entering the CUF zone.</i> • <i>Identified options for casualty movement, if necessary, and effect an optimally safe evacuation of the casualty</i> • <i>Demonstration of assignment of a team leader and appropriate team structure.</i> • <i>Clear communication between team leader and team members.</i> • <i>Effective use of IFAKs, including their state of readiness</i> • <i>An awareness of patient dynamics, including sufficient attention to airway (positioning), risk of hypothermia and reassurance of the casualty.</i> • <i>Appropriate / ongoing attempts to evaluate patient consciousness, respiration and circulation, including signs suggesting respiratory distress and shock.</i>
<ul style="list-style-type: none"> • Each scenario is projected to last 15 minutes, with 10 minutes of debrief and 5 minutes to reset 	

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.

Final steps 1645-1700

Time: 1645-1700	What: Final Steps
Action	Comment
<ul style="list-style-type: none"> Collective debrief <ul style="list-style-type: none"> Aggregate any themes common to both small groups Run through non-technical skills list 	<p><i>Highlight major themes:</i></p> <ul style="list-style-type: none"> <i>Respect for rescuer safety and zones of care</i> <i>Communication, teamwork and leadership</i> <i>Reassess regularly</i> <i>Recognise priorities of care according to MARCH</i>
<ul style="list-style-type: none"> Thank participants 	
<ul style="list-style-type: none"> Certificate distribution 	
<ul style="list-style-type: none"> Feedback solicitation 	<i>Online form to be offered for completion</i>