COMBAT CASUALTY CARE MANUAL

CIOMR GUIDELINE
Following TCCC/CLS principles
and conforming to STANAG 2122

V4.4 2021

FULL EXAMINATION only if feasible (tactical, climate)

1. **wounds** (expose; look also for exit wounds !)
   → cover with dressings
   (chest: vented/non-vented seal)
   → remove rings
   protruding gut → do not push back
   → use wet dressing
   visible brain → do not compress
   foreign objects → do not remove
   bones → do not push back (splint as found)

2. **"hidden injuries"** (blast and blunt trauma)
   chest: shortness of breath, external markings
   abdomen: pain, rigidity, external markings
   → evacuate

3. **spine injuries**
   (pain in neck/back, tingling, paralysis)
   (unclear in unconscious casualties !)
   → immobilize spine, if tactical situation permits and if equipment is available

NOTE: securing the airway and removing a casualty from danger has priority over immobilizing the spine !

4. **freezing injuries**
   - frost nip
     (pale, no feeling, elastic skin) → rewarm w/ body heat
   - frost bite (1st, 2nd, 3rd degree)
     (pale, no feeling, rigid skin) → cover, no pressure
     → evacuate
     → treatment in MTF
   - trench foot (pale/blue, blisters)
     → dry, don't rub
     → do not burst blisters
     → evacuate

ASSESSMENT / TREATMENT of EACH CASUALTY

MARCH (only in TFC !)

M. Massive bleeding (pat casualty down !)
- Limbs * tourniquet, 7 cm proximal to exposed wound
  * check bleeding and palpable distal pulse
  * if necessary: apply 2nd Tq, just proximal to 1st
  * then write T+time on strap(s) and/or casualty
- Other * direct pressure / hemostatic dressing + 3 minutes pressure / pressure dressing

A. Airway (+ alertness/level of consciousness+ neck)
Shout
- no reply, eyes closed, no movement (unconscious casualty) **go to page 4**
- casualty reacts (conscious casualty): listen / ask what's wrong
  - if voice is clear: **go to R. Respiration**
  - if voice is hoarse/breathing is noisy:
    * permit casualty's preferred posture
    * inspect mouth; clean if necessary
    * follow **NATIONAL guidance** on insertion of nasopharyngeal airway

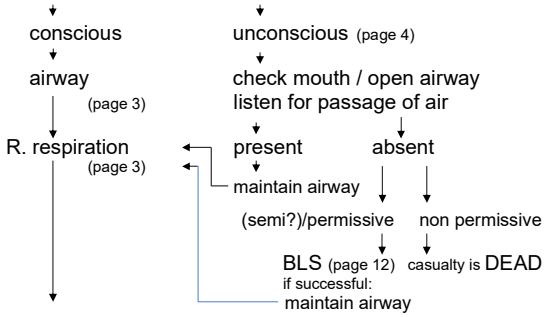
Immobilize neck of casualty (only in blunt trauma)
go to R. Respiration

R. Respiration
Check rate
- >30/min or inability to count to 10 in one breath: distress ← chest injury, blast, shock (get help !)
- <10/min: ← head injury (get help !)
- ASAP apply seal (vented/non-vented/improvised) on ALL chest wounds (also check back !)
- if casualty deteriorates, remove/burp seal temporarily
  go to page 5 C. Circulation

ALGORITHM **details on following pages**

- **Always think security and call for help ASAP!**
- **Master Drill**: under fire / hostile / safe → CUF<>TFC
- Multiple casualties: perform triage
- Assess / treat individual casualty / casualties (MARCH)

M. stop massive external bleeding
A. alertness and airway



C. circulation (page 5)
H. hypothermia prevention & head injury

then:

- pain relief
- antibiotics
- eye injuries
- burns
- fractures
- other wounds
- communication
- continuous re-assessment / treatment / triage
- documentation
- positioning & preparation for evacuation
- evacuation with hand-over

UNCONSCIOUS CASUALTY

Casualty doesn't react to shouting (no reply, eyes closed, no movement)

1. Inspect mouth, remove debris (blood, vomit, teeth)

2. Open airway (chin lift or jaw thrust)

3. Listen for passage of air (for max 10 seconds)
   - present
     * maintain airway by nasopharyngeal airway
       follow NATIONAL guidance
     * and/or turn casualty on side / in recovery position
       (right now or after completion of MARCH)
     * if possible, immobilize neck in blunt trauma

     go to page 3 R. Respiration

   - absent in non-permissive environment
     * casualty is most likely **DEAD**

   - absent in semi-permissive environment
     * occasionally BLS can be considered
     * if torso trauma **is** also present,
       follow NATIONAL guidance or refer to Medic for potential bilateral needle decompression;
       if breathing returns

     go to page 3 R. Respiration

   - absent in permissive environment

     go to page 12 Basic Life Support

Nine-liner

Line 1. Location of the pick-up site
Line 2. Radio frequency, call sign, and suffix
Line 3. Number of patients by precedence:
• A – Urgent
• B – Urgent Surgical
• C – Priority
• D – Routine
• E – Convenience
Line 4. Special equipment required:
• A – None
• B – Hoist
• C – Extraction equipment
• D – Ventilator
Line 5. Number of patients:
• A – Litter
• B – Ambulatory
Line 6. Security at pick-up site:
• N – No enemy troops in area
• P – Possible enemy troops in area (caution)
• E – Enemy troops in area (approach with caution)
• X – Enemy troops in area (armed escort required)
Line 7. Method of marking pick-up site:
• A – Panels
• B – Pyrotechnic signal
• C – Smoke signal
• D – None
• E – Other
Line 8. Patient nationality and status:
• A – Coalition Military
• B – Coalition Civilian
• C – Non – coalition Military
• D – Non – coalition Civilian
• E – EPW
• F – High Value Target
Line 9. Obstacles at pick-up site

BASIC LIFE SUPPORT (BLS)

is appropriate in SAFE environment;
is occasionally considered in hostile environment

Casualty is unresponsive; breathing is absent
(NOTE: "gasping" equals absent breathing)

1. Get help
2. Place heel of one hand on lower half of breastbone
3. Place 2nd hand on top of 1st hand
4. Compress chest perpendicularly
   depth: 5-6 cm
   rate: 100-120/min
5. After 30 compressions, give 2 rescue breaths
   ("mouth-to-mouth") in max. 10 seconds
   Don't wait for 2nd exhalation; resume compressions
6. Alternate 30 compressions with 2 breaths
7. Maintain until:
   - casualty begins to breathe/move
   - exhaustion of caregiver sets in
   - BLS is taken over by other personnel

8. **If BLS successful but casualty still unconscious**
   - maintain airway by nasopharyngeal airway
     follow NATIONAL guidance
   - and/or turn casualty on side / in recovery position

go to page 3 R. Respiration

MASTER DRILL

Assess: - under fire (non-permissive)
- hostile/safe environment (semi-permissive/permissive)

1. Under fire / threat **(→ Care Under Fire)**
(non-permissive)
- win the fight; prevent injuries to self and the casualty
- direct casualty to get under cover and apply self-aid
- *as directed by commander-on-scene:*
  * extricate casualty from burning vehicles/buildings
  * move casualty to place of relative safety
- *when feasible:*
  * **stop life threatening external bleeding**
    tourniquet (applied over the uniform
    - high on the limb
    - otherwise 7 cm proximal to a readily visible wound
  * turn unconscious casualty on belly / side
- **NO FURTHER EXAMINATION or TREATMENT**
- don't leave casualty and/or weapons behind
- **when no longer under fire, re-assess:** **go to # 2**

2. Hostile / Safe environments **(→ Tactical Field Care)**
(semi-permissive / permissive)
- revert to CUF if tactical situation deteriorates
- call for help
- secure the area if necessary
- use Personal Protective Equipment
- enemy casualties: apply flex-cuffs / disarm
- move casualties from immediate threats if possible
- own troops with altered consciousness: disarm, look / ask for additional weapons, remove comms equipment
- assess number of casualties
  * multiple: triage, assess, treat **go to page 2 TRIAGE**
  * single: assess, treat **go to page 3 MARCH**

COMMUNICATION

METHANE message (to report and call for help)
"Me" (who's calling)
Exact location (GPS, map grid, "description")
Type of incident (firefight, IED, etc)
Hazards (unexploded ordnance, chemicals, etc)
Accessibility
Number and type of casualties/injuries
Expected/required help (helo, armoured ambulance etc)

ATMIST handover (to medical personnel)
Adult <>child (age)
Time of injury
Mechanism of injury
Injuries found and/or suspected
Signs:airway,respiratory(rate),pulse(rate),consciousness
Treatment given

EVACUATION

1. call for evacuation, as early as possible, using NATO (nineliner, page 15) or national procedures
2. re-examine casualty and re-triage after treatment
3. evacuate in order of T1 (A,B,C), T2, T3
4. unresponsiveness / tourniquet / burnt airway as T1
5. this may be overruled by higher echelon

DEATH

1. unmistakable signs: decapitation, lividity, decomposition
2. during treatment: permanent loss of respiratory activity and cardiac activity
3. remove tags and personal effects (**NATIONAL guidance**)
4. make every effort not to leave the dead behind

C. Circulation
- check tourniquets that were applied during CUF
  * expose wounds
  * if still bleeding and/or distal pulse still palpable: tighten Tq / apply 2nd Tq
  * if not bleeding and transportation time > 2 hours: move Tq in "2 step" procedure from "high" on limb to 7 cm prox. of wound, directly on skin
    (not for casualty in shock / with traumatic amputation)
- keep tourniquets visible (not covered by equipment)
- check for shock: * weak / absent bilateral radial pulse
  * ↓ mental status without head injury
  * sweaty; pale / grey
  * respiratory distress / rate >30/min
  * heart rate >120/min (radial/carotid)
- assess/stop other external bleeding (check the back!)
  * expose
  * apply direct pressure / elevation / pressure dressing / hemostatic dressing with pressure / (tourniquet)
  * if tourniquet is used: write T+time on strap / casualty : check result / keep Tq visible
- stop internal bleeding in fractured limbs by splinting
- **NATIONAL** guidance on drinking, i.v.access, i.v.fluids
- refer casualties in shock to Medic

H. Hypothermia prevention
- remove wet clothing, if feasible
- cover the casualty; use any available equipment

Head injury
- look for, recognize, report
  * altered consciousness, amnesia, disorientation
  * headache, dizziness, nausea, vomiting
  * tingling of fingers, ringing in ears

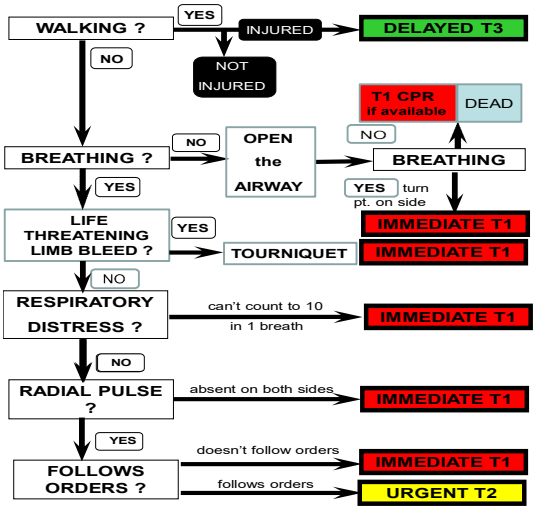
Next:

TRIAGE and TREATMENT of MULTIPLE CASUALTIES

TRIAGE FIRST, TREAT NEXT

"QUICK": "Walking" T3; "NOT Walking but shouting" T2; "Silent" T1
(until further notice)

"FORMAL":



NOW assess and treat each individual casualty, in order of
T1(Airway), T1(Breathing), T1(Circulation), T1(Disability), T2, T3

go to page 3 MARCH

5. **environmental injuries**
   - hyperthermia (overheating)
     (evolving from cramps thru discomfort/headache to loss of consciousness)
     → move to cool place
     → drinks if conscious
     → cool actively (fan, rinse, wet sheet)
     → evacuate if unconscious
   - hypothermia (chill)
     (evolving from shivering to bizarre behavior to loss of consciousness)
     → move to warm place
     → replace wet clothes
     → use buddy heat
     → give warm fluids (NO alcohol) if conscious
     → evacuate if unconscious

6. **battle stress**
   (withdrawn, suspicious, frightened, aroused, talkative, risk taking)
   → disarm
   → ALSO ASSESS FOR INJURIES
   → support by buddies
   → if ineffective: evacuate

1. pain relief
- **follow NATIONAL guidance**

2. antibiotics
- **follow NATIONAL guidance**

3. penetrating eye injury
- do not remove foreign objects
- cover with hard shield (or own ballistic eye protection)

4. burns

all burns:
- follow **NATIONAL guidance** for fluids rate
- prevent hypothermia
- estimate total body surface area burned

flames:
- do not remove adhering clothes
- cool for 10 minutes
- large blisters may be burst
- cover burnt area
- caution: airway burn (see: A Airway)

chemical
- remove soaked clothes (caution)
- rinse for 30 minutes
- cover burnt area

phosphorus
- rinse
- cover with wet dressing (keep dressing wet!)

5. fractures
- give pain relief
- cover wounds
- immobilize (device or improvised)
- check pulse/function before/after

6. other injuries
- expose
- if necessary cover with appropriate dressing

"Full examination" only if feasible (tactical, climate)
(page 10)

7. communication
patient (always talk, encourage, explain)
leadership (Methane) (page 8)
evacuation system (9-liner, page 9) or team leader

8. re-examination, re-treatment, re-triage !

9. documentation
- findings and treatment on Casualty Card
- time of application on tourniquet(s)

10. positioning

NOTE: positioning also depends on tactical situation
- conscious casualty
  * in general: position preferred by casualty
  * burnt airway: (half) upright position
  * injuries to the eye: (half) upright position
  * chest injuries: (half) upright position
  * abdominal injuries: supine, with bent knees (if no fractures in legs or spine)
- unconscious casualty / casualty in shock
  * recovery position (**NATIONAL guidance**)
  * on injured side, unless foreign object in place
  * on back with protection of airway (chinlift) (ONLY in safe environment)
- head injured casualty: upper body slightly elevated

11. preparation for evacuation
- secure all loose ends of bandages and wraps
- secure hypothermia prevention wraps/blankets/straps
- secure litter straps as required
- consider additional padding for long evacuations
- provide instructions to ambulatory patients as needed
- stage casualties in accordance with unit SOPs (may be overruled by higher echelon)

12. hand-over to medical personnel (AT MIST) (page 8)