The Ship Doctor
MARITIME EMERGENCY MEDICINE

FREE FIELD EDITION · V1.0

⚠ RED ZONE · TIME-CRITICAL

RED-ZONE EMERGENCY CARDS

Pocket Emergency Checklists for Maritime Clinicians

Doctors · Cruise Nurses · Offshore Medics · Paramedics · Expedition Teams

18 PROTOCOLS · A–E · ALS · MARCH

theshipdoctor.com

Scan for updates + printable card set

How to use these cards

A deck of one-page checklists for the first, decisive minutes of a life-threatening emergency at sea — when you are hours or days from definitive care and working with the ship's medical chest, limited hands, and a radio link to shore.

Get printable pocket cards & updates: **theshipdoctor.com/red-zone-cards**

EACH CARD, THE SAME WAY

Recognise the red flags · **Act now** in order · confirm **drugs & doses** · avoid the **do-nots** · then **call TMAS** and weigh **MEDEVAC**. Work top to bottom.

SCOPE & SAFETY — READ ONCE

These checklists are **decision support for trained clinicians**, not a substitute for your own judgement, your training, or radio medical advice. Doses are typical adult values for quick reference and **must be verified** against current guidelines, the patient, and your medical chest before administration. Drug availability, formulations and protocols vary by ship, flag state and chest category. When in doubt, treat what you see, support A–B–C, and call TMAS early.

BEFORE ANY EMERGENCY

Know your medical chest and its category, where the AED, oxygen and emergency bag live, your TMAS / radio-medical-advice number, your MEDEVAC chain (MRCC / Coastguard), and the ship's enclosed-space and restraint policies. Seconds saved here save lives later.

The Red-Zone Deck

18 PROTOCOLS

Download printable A6 cards: **theshipdoctor.com/red-zone-cards**

The first 60 seconds

Before you reach for a card, run the universal sequence. It applies to every red-zone emergency in this deck.

⚠ 1 · SAFETY & ALARM

Make the scene safe — fire, fumes, machinery, enclosed space. **Never enter an enclosed space to rescue without breathing apparatus and a team.** Raise the alarm; get the AED, oxygen and emergency bag; send for help. Note the time.

2 · PRIMARY SURVEY — A B C D E

- **A** **Airway** — patent? Open it; protect the C-spine if trauma. Suction.
- **B** **Breathing** — rate, effort, SpO_2, both sides. Give oxygen. Treat life-threats.
- **C** **Circulation** — stop major bleeding first; pulse, BP, colour; IV access & fluids.
- **D** **Disability** — AVPU/GCS, pupils, and **always** a glucose check.
- **E** **Exposure** — examine fully, then cover. Keep the patient **warm**. Reassess A→E.

3 · GET HELP ON THE RADIO

For anything red-zone, contact **TMAS / radio medical advice early** — you do not need a diagnosis first. For evacuation, contact your **MRCC / Coastguard**. Keep treating while you call.

TMAS & MEDEVAC

Radio medical advice (TMAS) is free, available 24/7, and the single most valuable resource you have at sea. Call **early** and have your handover ready.

THE HANDOVER — READ IT DOWN THE PAGE

SHIP & POSITION — name, call sign, position, next port & ETA, weather/sea state.

PATIENT — age, sex, weight, crew role; known history, medication, allergies.

PROBLEM — what happened, when (exact times), how it has changed.

VITALS — A·B·C·D·E findings: HR, BP, RR, SpO_2, temp, GCS, glucose.

DONE — what you have given/done and the response.

CHEST — medical chest category & what is available to you.

ASK — your specific question and what you need decided.

WHEN TO THINK MEDEVAC

Raise it early for: cardiac chest pain / STEMI, stroke in the treatment window, major trauma or haemorrhage, airway threat, septic shock, major/airway burns, refractory anaphylaxis, status epilepticus, serious poisoning. **Decision is shared** — master, TMAS and rescue authority weigh clinical need against range, weather and aircraft/vessel capability. Keep stabilising throughout, and prepare records, medications and a clear casualty package.

Get the editable tools

Scan for the TMAS handover template + the MEDEVAC planning checklist.

theshipdoctor.com/red-zone-cards

CARDIAC

Cardiac Arrest

01

Adult ALS at sea · unresponsive, not breathing normally

RECOGNISE

- Unresponsive AND not breathing normally / agonal gasps
- No central pulse within 10 s (do not delay chest compressions to check)
- Sudden collapse; preceding chest pain, breathlessness or arrhythmia

ACT NOW

1. Shout for help. Send someone for the AED & emergency bag. Note the time.
2. CPR 30:2 — push hard & fast, centre of chest, 5–6 cm, ~100–120/min, full recoil.
3. Attach AED as soon as it arrives. Follow voice prompts. Shock if advised.
4. Minimise pauses: change compressor every 2 min. Insert airway adjunct; O_2.
5. Gain IV/IO access. Treat reversible causes — 4 H's & 4 T's.
6. Continue until ROSC, AED says no shock + no signs of life after prolonged effort, or you are exhausted with no help — keep TMAS in the loop on duration.

DRUGS / DOSE

Adrenaline 1 mg IV/IO	1:10,000 — every 3–5 min (non-shockable: ASAP)
Amiodarone 300 mg IV/IO	after 3rd shock; 150 mg after 5th (VF/pVT)

DO NOT

- ✕ Don't interrupt compressions for >10 s for any reason.
- ✕ Don't shock asystole/PEA. Don't stop to repeatedly recheck a pulse.

CALL TMAS
Early — for arrest duration & termination-of-resuscitation decision.

MEDEVAC
Only after ROSC; package for transfer, anticipate re-arrest.

CARDIAC

Chest Pain / ACS

02

Suspected acute coronary syndrome

RECOGNISE

- Central/crushing chest pain >15 min ± arm, jaw, back; sweating, nausea
- Breathless, grey, clammy; may be atypical in diabetics, women, elderly
- ECG if available: ST elevation / depression / new LBBB

ACT NOW

1. Sit the casualty up, reassure, total rest. Note time of onset.
2. High-flow O_2 ONLY if SpO_2 <94% or shocked.
3. Aspirin 300 mg chewed (unless true allergy).
4. GTN spray if systolic BP >90 and not on PDE5 inhibitor (Viagra-type).
5. Monitor pulse, BP, SpO_2; attach AED/defib pads — arrest risk is highest now.
6. Record a 12-lead ECG if equipped and transmit to TMAS.

DRUGS / DOSE

Aspirin 300 mg PO	chewed, once
GTN 400–800 mcg SL	repeat 5 min if pain persists & BP holds
Morphine 2.5–5 mg IV	titrate for severe pain + antiemetic — on TMAS advice

DO NOT

- × Don't give GTN if BP low, RV infarct suspected, or recent PDE5 inhibitor.
- × Don't let them walk to the clinic — bring the kit to the patient.

CALL TMAS

Immediate. Transmit ECG. Discuss antiplatelet/anticoagulant & MEDEVAC.

MEDEVAC

Urgent for STEMI / ongoing pain / instability — time-critical.

⚠ ALLERGY

03

Anaphylaxis

Acute life-threatening hypersensitivity

RECOGNISE

- Sudden onset after trigger (food, sting, drug) — minutes to 2 h
- Airway: swelling, hoarse voice, stridor · Breathing: wheeze, hypoxia
- Circulation: pale, clammy, low BP, collapse ± widespread rash/itch

ACT NOW

1. ADRENALINE IM NOW — do not delay for anything else. Note the time.
2. Remove trigger (stop drug/infusion; scrape out sting). Call for help.
3. Lie flat, legs raised (sit up only if breathing is the problem). Do NOT stand.
4. High-flow O_2. Large-bore IV; rapid 500–1000 mL crystalloid bolus if shocked.
5. Repeat adrenaline IM after 5 min if no improvement.
6. Monitor; observe for biphasic reaction; keep adrenaline drawn up.

DRUGS / DOSE

Adrenaline 0.5 mg IM	0.5 mL of 1:1000, anterolateral thigh, repeat 5 min
IV crystalloid 500–1000 mL	rapid bolus, titrate to BP
Salbutamol neb	for persistent wheeze (adjunct only)

DO NOT

- ✕ Don't give IM adrenaline at 1:10,000 strength or push undiluted IV.
- ✕ Don't sit/stand a hypotensive patient up — sudden death risk.
- ✕ Steroids & antihistamines are NOT first-line and must never delay adrenaline.

CALL TMAS

After first adrenaline — for IV adrenaline infusion & disposition.

MEDEVAC

For refractory/biphasic cases or airway compromise.

TRAUMA

Catastrophic Bleeding

04

Major trauma · MARCH primary survey

RECOGNISE

- Visible pulsatile / pooling haemorrhage; amputation; crush
- Pale, cold, tachycardic, confused, weak radial pulse = shock
- Mechanism: fall, machinery, mooring line, enclosed-space, fire

ACT NOW

1. M — Massive haemorrhage FIRST: direct pressure → wound packing → tourniquet high & tight on limbs. Note tourniquet time.
2. A — Airway with C-spine care if mechanism suggests it.
3. R — Respiration: seal sucking chest wounds (3-sided), decompress tension pneumothorax.
4. C — Circulation: 2 large-bore IVs; permissive hypotension (radial pulse / SBP ~90).
5. H — Head/Hypothermia: keep WARM, prevent the lethal triad; reassess.
6. Splint fractures, dress, document, reassess A-B-C every few minutes.

DRUGS / DOSE

Tranexamic acid 1 g IV	over 10 min within 3 h of injury, then 1 g / 8 h
Analgesia	ketamine/morphine titrated — on TMAS advice
Warmed fluids	small boluses to maintain a radial pulse

DO NOT

- ✕ Don't flood with cold fluid to a normal BP — worsens bleeding & clotting.
- ✕ Don't remove an impaled object — stabilise it in place.
- ✕ Don't release a correctly applied tourniquet at sea without TMAS advice.

CALL TMAS
Early for trauma management, blood products & MEDEVAC priority.

MEDEVAC
Highest priority — surgical bleeding cannot be fixed onboard.

AIRWAY

Choking / Airway

05

Foreign-body airway obstruction

RECOGNISE

- Sudden inability to speak/cough during eating; clutching throat
- Severe: silent cough, cyanosis, decreasing consciousness
- Mild: still able to cough forcefully and speak

ACT NOW

1. MILD (effective cough): encourage coughing, stay with them, watch closely.
2. SEVERE & conscious: 5 sharp back blows between shoulder blades.
3. Then 5 abdominal thrusts (chest thrusts if pregnant/obese). Alternate 5 & 5.
4. UNCONSCIOUS: lower safely, call for help/AED, START CPR (compressions help expel).
5. Each time you open the airway, look for & remove a visible object only.
6. After relief, assess for injury; abdominal thrusts need a medical review.

DRUGS / DOSE

– No drugs in the acute obstruction. Oxygen once airway is clear.

DO NOT

- × Don't do blind finger sweeps — you may push the object deeper.
- × Don't give up if they go unconscious — switch straight to CPR.

CALL TMAS

After the event, or during if a second rescuer is free.

MEDEVAC

If hypoxic injury, persistent stridor, or surgical airway needed.

BREATHING

Severe Asthma

06

Acute respiratory distress / bronchospasm

RECOGNISE

- Marked breathlessness, can't complete sentences; loud wheeze
- RR >25, HR >110, SpO_2 <92%, exhaustion, silent chest = life-threatening
- Triggers: allergen, cold air, infection, smoke/fumes

ACT NOW

1. Sit upright, reassure, loosen clothing. Note the time.
2. High-flow O_2 to keep SpO_2 94–98%.
3. Salbutamol 5 mg nebulised (O_2-driven); repeat back-to-back if severe.
4. Add ipratropium 500 mcg to the nebuliser for severe attacks.
5. Steroids early — prednisolone PO or hydrocortisone IV.
6. Watch for the silent chest, drowsiness, falling effort = peri-arrest — pre-alert.

DRUGS / DOSE

Salbutamol 5 mg neb	repeat / back-to-back as needed
Ipratropium 500 mcg neb	added for severe / life-threatening
Hydrocortisone 200 mg IV	or prednisolone 40–50 mg PO

DO NOT

- ✕ Don't sedate a distressed asthmatic — respiratory depression kills.
- ✕ Don't be reassured by a 'quiet' chest — it can mean no air is moving.

CALL TMAS
Early if life-threatening features or poor response to nebs.

MEDEVAC
For life-threatening / near-fatal attack not responding.

NEURO

Stroke

07

Sudden focal neurological deficit · time-critical

RECOGNISE

- F — Face droop · A — Arm weakness · S — Speech slurred · T — Time
- Sudden severe headache, visual loss, vertigo, collapse
- Establish the LAST TIME SEEN WELL — this drives everything

ACT NOW

1. Note exact time of onset / last seen well. Call for help.
2. Position safely; protect the airway (recovery position if reduced GCS).
3. Check capillary glucose — hypoglycaemia mimics stroke (treat if low).
4. O_2 only if SpO_2 <94%. Monitor GCS, pupils, BP, vitals.
5. Nil by mouth — high aspiration risk from swallow failure.
6. Document deficit & time-line precisely for the receiving team.

DRUGS / DOSE

—	No thrombolysis at sea. Treat glucose if <4 mmol/L.
Do NOT give aspirin	until haemorrhagic stroke excluded by imaging ashore

DO NOT

- Don't give food, drink or oral meds — swallow is unsafe.
- Don't assume stroke without checking glucose first.

CALL TMAS

Immediate — onset time determines MEDEVAC urgency for thrombolysis window.

MEDEVAC

Time-critical if within treatment window — discuss at once.

SEPSIS

Sepsis

08

Life-threatening response to infection · Sepsis Six

RECOGNISE

- Suspected infection + looks very unwell / deteriorating
- Temp <36 or >38·3, HR >90, RR >20, confusion, mottled skin
- Red flags: SBP <90, lactate ≥2, low urine, non-blanching rash

ACT NOW

1. TAKE — blood cultures (if able) before antibiotics. Note the time.
2. TAKE — measure lactate if a meter is available.
3. TAKE — monitor urine output (catheter if trained/available).
4. GIVE — high-flow oxygen, target SpO_2 94–98%.
5. GIVE — IV broad-spectrum antibiotics from the medical chest (per TMAS).
6. GIVE — IV fluid bolus 500 mL crystalloid, reassess, repeat if hypotensive.

DRUGS / DOSE

O_2 + IV crystalloid 500 mL	reassess after each bolus
IV antibiotics	earliest possible — agent per TMAS & chest
Antipyretic / analgesia	supportive

DO NOT

- Don't delay antibiotics waiting for cultures if you can't take them.
- Don't under-resuscitate — but reassess between boluses for overload.

CALL TMAS
Early — antibiotic choice, source & MEDEVAC.

MEDEVAC
For septic shock / no response to initial resuscitation.

BURNS

Major Burns

09

Thermal · chemical · electrical · engine-room

RECOGNISE

- Burn >15% body surface, or face/airway, hands, perineum, circumferential
- Airway: soot, singed nasal hair, hoarse voice, stridor = act fast
- Suspect inhalation/CO in any enclosed-space fire

ACT NOW

1. STOP the burning; ensure scene & rescuer safety. Remove from source.
2. COOL the burn with running water 20 min (within 3 h). Brush off dry chemical first.
3. Remove jewellery & non-stuck clothing. KEEP THE PATIENT WARM (cool burn, warm body).
4. Airway: high-flow O_2; anticipate swelling — early TMAS for airway plan.
5. Cover with cling film (lengthways, not circumferential) or clean dressing.
6. Start IV fluids for large burns; estimate % area; strong analgesia.

DRUGS / DOSE

Parkland fluid	2–4 mL x %TBSA x kg crystalloid / 24 h, half in first 8 h
Analgesia	IV morphine/ketamine titrated
Chemical	irrigate copiously; do not 'neutralise' — see SDS / MFAG

DO NOT

- Don't apply ice, creams, butter or burst blisters.
- Don't wrap cling film circumferentially around a limb or chest.
- Don't enter a smoke-filled space without breathing apparatus.

CALL TMAS

Early for fluid plan, airway, analgesia & MEDEVAC threshold.

MEDEVAC

Major / airway / chemical / electrical burns — urgent.

IMMERSION

Drowning

10

Submersion / immersion casualty

RECOGNISE

- Recovered from water; may be apnoeic, coughing, or apparently well
- Hypoxia is the primary problem — prioritise rescue breaths/oxygen
- Often combined with hypothermia and possible C-spine injury

ACT NOW

1. Rescuer safety first — do not become a second casualty.
2. If not breathing: give 5 initial rescue breaths, then standard CPR 30:2.
3. High-flow O_2; expect vomiting — have suction/roll ready.
4. Remove wet clothing, insulate, handle gently (cold heart is irritable).
5. Even 'recovered' patients need observation — delayed deterioration occurs.
6. Continue resuscitation in hypothermic drowning — warm before declaring.

DRUGS / DOSE

Oxygen	high-flow, the priority intervention
–	Routine abdominal thrusts to 'clear water' are NOT recommended

DO NOT

- ✕ Don't try to expel water from the lungs/stomach before ventilating.
- ✕ Don't discharge an asymptomatic near-drowning early — observe for hours.

CALL TMAS

Early — observation period, oxygenation & MEDEVAC.

MEDEVAC

For any hypoxia, respiratory distress, or reduced consciousness.

COLD

11

Hypothermia

Core temperature below 35 °C

RECOGNISE

- Cold environment / immersion; shivering (mild) then stops (worse)
- Confusion, slurred speech, clumsiness, drowsiness, slow weak pulse
- Severe: rigid, barely detectable pulse — may look dead

ACT NOW

1. Move gently to shelter; horizontal; handle minimally (VF risk).
2. Remove wet clothing; insulate head & body; windproof, dry layers.
3. Mild & alert: warm sweet drinks, active rewarming, calories.
4. Moderate/severe: passive + careful active external rewarming to trunk.
5. If arrest: CPR — check pulse for a full 60 s first (bradycardia is protective).
6. Rewarm before declaring death: 'not dead until warm and dead'.

DRUGS / DOSE

Warm humidified O_2 / warm IV fluids	if available
–	Drugs are less effective when very cold — follow TMAS / ALS hypothermia rules

DO NOT

- Don't rub limbs or give alcohol; don't rewarm peripheries first (afterdrop).
- Don't stop CPR on a cold patient until rewarmed & reassessed.

CALL TMAS

Early for rewarming strategy & prolonged-resuscitation decisions.

MEDEVAC

For moderate/severe hypothermia or cardiac instability.

METABOLIC

12

Diabetic Crisis

Hypoglycaemia & DKA / hyperglycaemia

RECOGNISE

- HYPO (<4 mmol/L): sweaty, shaky, confused, aggressive, fitting, coma
- DKA (high glucose): thirst, polyuria, vomiting, deep breathing, acetone breath
- ALWAYS check capillary glucose in any collapse / altered behaviour

ACT NOW

1. HYPO + conscious & safe swallow: 15–20 g fast carbs, repeat at 15 min.
2. HYPO + unable to swallow: IM glucagon OR IV glucose; recheck in 10 min.
3. After recovery: give long-acting carbohydrate to prevent relapse.
4. DKA: high-flow O_2, large-bore IV, start 0.9% saline, check ketones.
5. DKA: do NOT give insulin without TMAS guidance & fluids first.
6. Monitor glucose, consciousness, vitals throughout.

DRUGS / DOSE

Glucose 15–20 g PO	fast carbs if conscious; repeat at 15 min
Glucagon 1 mg IM	if no IV access and cannot swallow
Glucose 10% IV 100–200 mL	titrate to response if IV access

DO NOT

- ✕ Don't give oral glucose to someone who can't protect their airway.
- ✕ Don't start insulin for DKA at sea without fluids & TMAS direction.

CALL TMAS

Early for DKA management & insulin/fluid regimen.

MEDEVAC

For DKA, recurrent hypos, or failure to recover consciousness.

NEURO

13

Seizure

Convulsion & status epilepticus

RECOGNISE

- Sudden collapse with rhythmic jerking, eyes open/rolled, incontinence
- Status: a seizure >5 min, or repeated seizures without recovery between
- Consider hypoglycaemia, head injury, alcohol withdrawal, eclampsia

ACT NOW

1. Protect from injury; cushion the head; do NOT restrain. Note the time.
2. Once jerking stops, place in recovery position; suction; high-flow O_2.
3. Check capillary glucose — treat hypoglycaemia immediately.
4. If seizing ≥5 min (status): give a benzodiazepine.
5. Repeat benzo ONCE after 5–10 min if still seizing; prepare airway support.
6. Reassess; protect airway; look for & treat the cause.

DRUGS / DOSE

Midazolam 10 mg IM/buccal	first line if no IV access
Lorazepam 4 mg IV	if IV access; repeat once after 5–10 min
Glucose	if hypoglycaemic — treat first

DO NOT

- Don't put anything in the mouth or restrain limbs.
- Don't give a 3rd benzo dose — escalate to TMAS (risk of resp arrest).

CALL TMAS
For status, recurrent seizures, or suspected eclampsia.

MEDEVAC
For status epilepticus or unresolved cause.

ENCLOSED SPACE

14

Enclosed-Space Casualty

Toxic / oxygen-deficient atmosphere

RECOGNISE

- Collapse in tank, hold, cofferdam, pump room, chain locker, sewage tank
- Oxygen deficiency, H_2S, CO, CO_2, hydrocarbon vapours, inert gas
- THE RESCUER IS THE NEXT VICTIM — most deaths are would-be rescuers

ACT NOW

1. RAISE THE ALARM. Do NOT enter to rescue without breathing apparatus & a team.
2. Follow the enclosed-space rescue plan; trained team in BA + lifelines only.
3. Ventilate the space; test the atmosphere before & during entry.
4. Once safely removed to fresh air: high-flow O_2 immediately.
5. Open airway, support breathing, CPR if in arrest; treat as hypoxic.
6. Suspect CO — give 100% O_2 for hours; suspect cyanide in fire smoke.

DRUGS / DOSE

Oxygen 100%	the antidote to hypoxia & CO — high-flow, prolonged
Cyanide antidote	hydroxocobalamin if smoke/fire & available — per TMAS

DO NOT

- Don't enter without BA, monitoring & a standby team — ever.
- Don't trust a single 'quick breath' — many gases kill in one breath.

CALL TMAS

Urgent — toxic exposure, oxygen therapy & antidotes.

MEDEVAC

For significant exposure, CO poisoning, or persistent symptoms.

POISONING

15

Poisoning / Overdose

Ingestion, exposure & opioid overdose

RECOGNISE

- Found with empty packets/containers; altered consciousness
- Opioids: pinpoint pupils, slow shallow breathing, drowsy/coma
- Identify the agent, amount, time & route if at all possible

ACT NOW

1. Ensure scene safety (decontaminate chemical exposure, remove clothing).
2. Support ABCs — airway and breathing are what kill; high-flow O_2.
3. OPIOID overdose with low resp rate: give naloxone, titrate to breathing.
4. Recovery position if reduced consciousness; suction; protect airway.
5. Gather all packaging / SDS; record agent, dose, timing for TMAS.
6. Monitor closely — many poisons have delayed or rebound effects.

DRUGS / DOSE

Naloxone 400 mcg IV/IM	titrate, repeat — opioids only; short-acting
Activated charcoal	only on TMAS advice & if airway protected
Specific antidotes	per TMAS / poisons centre

DO NOT

- ✕ Don't induce vomiting. Don't give charcoal to a drowsy patient.
- ✕ Don't assume one naloxone dose is enough — it wears off; re-dose.

CALL TMAS

Early — contact poisons centre via TMAS for agent-specific care.

MEDEVAC

For serious toxicity, deterioration, or specialised antidote needs.

MARINE LIFE

16

Marine Envenomation

Jellyfish · stingray · stonefish · sea snake

RECOGNISE

- Sting/puncture in water; severe pain, swelling, weal, puncture marks
- Systemic: nausea, breathing difficulty, collapse — treat as anaphylaxis
- Box jellyfish / Irukandji & sea-snake bites can be rapidly fatal

ACT NOW

1. Remove from water; rest the part; watch for anaphylaxis (see Card 03).
2. JELLYFISH: rinse with vinegar (do not use fresh water); remove tentacles.
3. STINGRAY / STONEFISH / weever: immerse in HOT water (~45 °C) for pain.
4. SEA SNAKE / blue-ringed octopus: pressure-immobilisation bandage; total rest.
5. Support ABCs; be ready to ventilate (some venoms paralyse breathing).
6. Clean wounds; remove spines if easy; watch for infection & retained barbs.

DRUGS / DOSE

Hot-water immersion ~45 °C	for stingray/stonefish/fish-spine venom
Adrenaline IM	if anaphylaxis — see Card 03
Antivenom	only on TMAS / shore expert advice

DO NOT

- Don't apply a tourniquet for jellyfish; don't rinse box-jelly with fresh water.
- Don't use hot water on jellyfish stings; match the method to the animal.

CALL TMAS
For species ID, antivenom, and respiratory support guidance.

MEDEVAC
For systemic envenomation, paralysis, or respiratory failure.

HEAT

17

Heat Stroke

Core temp 40 °C with CNS dysfunction

RECOGNISE

- Hot environment / engine room; hot, often dry skin (may still sweat)
- Confusion, agitation, collapse, seizures — the brain is failing
- Distinguish from heat exhaustion (sweaty, dizzy, intact mental state)

ACT NOW

1. Move to a cool, shaded, ventilated place. Remove excess clothing.
2. COOL AGGRESSIVELY & FAST — every minute counts.
3. Wet the skin + fan continuously; ice packs to neck, axillae, groin.
4. Cold/iced-water immersion if feasible and safe to do so.
5. Stop cooling around 38–39 °C to avoid overshoot; monitor temp.
6. Support ABCs; manage seizures; rehydrate orally if alert, IV if not.

DRUGS / DOSE

Active cooling	the treatment — drugs do not lower the core temp
IV crystalloid	cautious rehydration, guided by status
Benzodiazepine	for shivering/seizures — per TMAS

DO NOT

- × Don't give antipyretics (paracetamol/ibuprofen) — they don't work here.
- × Don't delay cooling for transport — cool first, move second.

CALL TMAS
Early — cooling targets, fluids & complications.

MEDEVAC
For heat stroke with organ dysfunction or no improvement.

BEHAVIOURAL

18

Acute Agitation

Severe behavioural emergency · crew & patient safety

RECOGNISE

- Aggression, agitation, threat to self/others, loss of reality contact
- Always exclude a medical cause: hypoxia, hypoglycaemia, head injury, drugs
- Risk to ship's safety; consider master's authority & restraint policy

ACT NOW

1. Ensure your own & crew safety first; remove hazards; never lone-work.
2. De-escalate: calm voice, space, one speaker, remove the audience.
3. Check the basics: glucose, SpO_2, temperature, signs of injury or intoxication.
4. Use the ship's policy for restraint only if essential & proportionate.
5. Place under continuous one-to-one observation; document everything.
6. Treat the underlying medical cause; involve the master & TMAS early.

DRUGS / DOSE

Sedation	only on TMAS advice — risk of resp depression at sea
Treat the cause	glucose, oxygen, etc., before assuming psychiatric

DO NOT

- ✕ Don't assume 'psychiatric' before excluding hypoxia/hypoglycaemia/injury.
- ✕ Don't sedate then leave unobserved — airway & vitals must be watched.

CALL TMAS

Early — sedation, restraint, diversion & legal considerations.

MEDEVAC

For uncontrollable risk, serious self-harm, or medical cause needing care.

Red-zone drug card

VERIFY BEFORE GIVING

Typical adult quick-reference doses. Always confirm against current guidelines, the patient, allergies and your medical chest, and follow TMAS advice.

DRUG	ADULT DOSE	INDICATION	NOTES
Adrenaline	**1 mg IV/IO (1:10,000)**	Cardiac arrest	Every 3–5 min
Adrenaline	**0.5 mg IM (1:1000)**	Anaphylaxis	Thigh; repeat 5 min
Amiodarone	**300 mg IV/IO**	VF / pulseless VT	After 3rd shock; 150 mg after 5th
Aspirin	**300 mg PO chewed**	Suspected ACS	Once; unless allergy
GTN	**400–800 mcg SL**	ACS / angina	Only if SBP >90, no PDE5i
Tranexamic acid	**1 g IV / 10 min**	Major trauma bleeding	Within 3 h; then 1 g / 8 h
Salbutamol	**5 mg nebulised**	Severe asthma	Back-to-back if severe
Ipratropium	**500 mcg neb**	Severe asthma	Add to salbutamol
Hydrocortisone	**200 mg IV**	Asthma / adjunct	Not first-line anaphylaxis
Glucose (oral)	**15–20 g**	Conscious hypo	Repeat at 15 min
Glucagon	**1 mg IM**	Hypo, no IV	If cannot swallow
Glucose 10% IV	**100–200 mL**	Hypo with IV	Titrate to response
Midazolam	**10 mg IM/buccal**	Seizure / status	First line, no IV
Lorazepam	**4 mg IV**	Seizure / status	Repeat once 5–10 min
Naloxone	**400 mcg IV/IM**	Opioid overdose	Titrate; re-dose, short-acting
Oxygen	**High-flow**	Hypoxia / CO	100% for CO, prolonged

Vitals & shock

Normal adult ranges and the early signs of shock. Trends matter more than any single number — reassess and write them down.

NORMAL ADULT RANGES

Heart rate	60–100 /min
Resp rate	12–20 /min
SpO_2 (room air)	94–98 %
Systolic BP	≥ 100 mmHg
Temperature	36.1–37.2 °C
Glucose	4.0–7.0 mmol/L
GCS	15 / 15

RECOGNISING SHOCK

Skin	pale, cold, clammy
Pulse	fast, then weak
Cap refill	> 2 seconds
Mental state	anxious → drowsy
Urine	falling output
Late sign	falling BP
Act	O_2, stop bleeding, fluids

AVPU — RAPID CONSCIOUS LEVEL

Alert · responds to **V**oice · responds to **P**ain · **U**nresponsive. Anything below Alert: protect the airway, recovery position, check glucose, escalate.

THE LETHAL TRIAD — KEEP THEM WARM & CLOTTING

In major bleeding, **hypothermia + acidosis + coagulopathy** feed each other. Stop bleeding, minimise cold fluid, keep the patient warm, and give tranexamic acid early.

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