



CBRN FIRST RESPONDER MEDICAL AIDE-MEMOIRE



Developed by the
Committee of the Chiefs of Medical Services (COMEDS)
CBRN Medical Working Group

supported by the
Voluntary National Contribution Fund



REFERENCES / CONTACTS / NOTES

AMedP-7.1 Medical Management of CBRN Casualties

AMedP-7.2 CBRN First Aid Handbook

Emergency contact number:

Poisons / CBRN specialist advice or notification number:

Local medical facility notification number:

Military liaison number:



NOTES



RECOGNITION OF A CBRN INCIDENT

Indicators of an environmental or CBRN hazard include:

- Any symptoms involving first responders or medical facility personnel
- Multiple casualties with similar non-traumatic symptoms and signs
- Unusual taste, smell or mist
- Unexplained dead animals
- Unexplained symptoms including:
 - Altered vision
 - Headache
 - Chest tightness
 - Non-thermal burns
 - Eye pain
 - Excessive secretions
 - Difficulty in breathing
- Any unusual or unexplained symptoms, signs, illness or deaths

Smells associated with chemicals Chemical detection

Chlorine	<i>Swimming pools</i>
Cyanide	<i>Bitter almonds</i>
Hydrogen sulphide	<i>Bad eggs</i>
Lewisite	<i>Geraniums</i>
Phosgene	<i>Freshly mown hay</i>
Sulphur mustard	<i>Garlic</i>

Chemical Agent Monitor	H - mustard
	G - nerve agents
3 colour detector paper	Red - mustard (H)
	Yellow - nerve (G)
	Green - nerve (V)

Principles of CBRN casualty management:

Recognition

Safety (Six 'C's Confirm - Clear - Cordon - Control - Communicate - Contain)

Self / Buddy first aid

Triage

Casualty assessment ('Quick Look')

Life saving interventions (T1 casualties only)

Casualty hazard management (Decontaminate and/or Isolate/Quarantine)

Supportive management (includes critical care)

Definitive management (includes specific antidotes & antibiotics, and surgery)

Rehabilitation

CBRN INCIDENT IMMEDIATE ACTIONS

Six Cs

CONFIRM

- Put on personal protective equipment (PPE) (where available)
- Warn others nearby
- Identify possible routes of exposure (e.g. food, airborne, skin)

CLEAR

- Move upwind, if gas, vapour or airborne particles
- Move to a safe distance (outside any exclusion zone)

CORDON

- Establish hot and warm (decontamination) zone
- Establish a formal clean / dirty line (CDL)

CONTROL

- Stop any eating, drinking or smoking in contaminated area
- Control and monitor re-entry and exit to / from zones
- Limit movement downwind of hazard
- Protect the area for further assessment including forensics

COMMUNICATE

- Inform Command using METHANE report and other incident report
- Warn local medical facilities and notify appropriate health authority

CONTAIN

- Prevent secondary contamination, if persistent hazard
- Prevent secondary infections, if contagious biological agent

METHANE REPORT

M	My call sign				
E	Exact location and wind direction				
T	Type of incident				
H	Hazards identified (C, B, R, combined or unknown)				
A	Assessment (or Access): Scene / Casualty				
N	Number of casualties: triage and type	T1	T2	T3	Dead
E	Emergency treatment given and resources required (incl.decontamination)				

CONSIDERATIONS / BRIEF

Command	Organisation?			
Safety	Hazard(s):			
	PPE state? Work / Rest rate?			
Cordons	Hot zone?			
	Exclusion zone?			
	Downwind hazard?			
	CDL marked? Decon area?			
Control Comms	I/C: Call signs/channels:			
	Next report due:			
Assessment	Agent(s) detected:			
Triage	T1	T2	T3	D
Treatment	See Cards 7-9			
Transport	Ambulance? Air?			
	Risk to transport?			
Exploit/ Recovery	Forensics?			
	Recovery end state?			
	Time to end state?			

SCENE LAYOUT

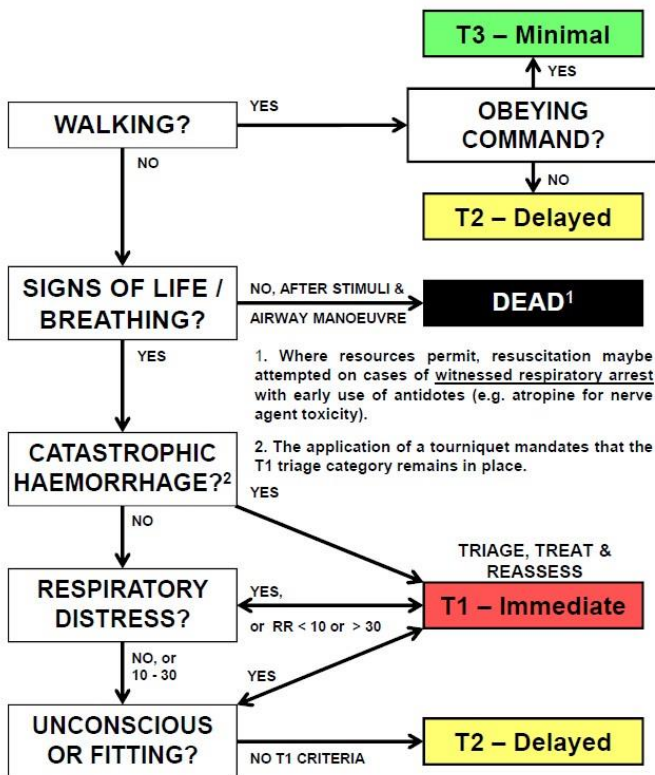
Wind direction / speed:
Ambient temperature:

MEDICAL INCIDENT MANAGEMENT

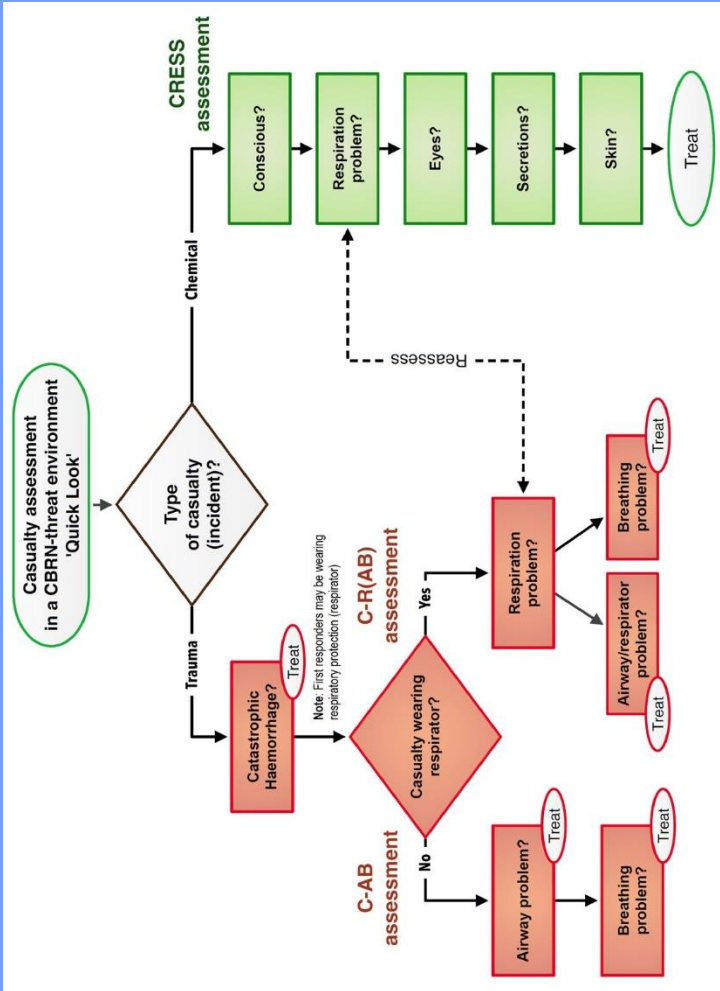
CBRN TRIAGE (HOT ZONE)

Triage Categories

T1	Immediate	Requires life-saving interventions (LSI)
T2	Delayed	Stretcher casualty but not requiring LSI, or casualty is incapacitated
T3	Minimal	Walking and not incapacitated



'QUICK LOOK' ASSESSMENT



		Nerve agent	Cyanide	Opiate (Morphine)	Atropine	Sepsis	Heat stroke
C	Consciousness	Convulsions	Unconscious / Convulsions	Reduced → Unconscious	Agitated / Confused	Normal, reduced or agitated	Altered
R	Respiration	Increased or reduced / stopped	Increased or stopped	Reduced → Stopped	Increased	Increased	Increased
E	Eyes	Pinpoint pupils*	Normal / Large pupils	Pinpoint pupils	Large pupils / Blurred vision	Normal	Normal / Large pupils
S	Secretions	Increased*	Normal	Normal	Dry mouth / Thirsty	Normal / Sputum	Normal
S	Skin	Sweaty	Pink → Blue	Normal / Blue	Flushed / Dry	Warm → Pale Rash	Varied
	Other features	Vomiting Incontinence Slow pulse	Sudden onset		Fast pulse	Fast pulse Fever (>38.3°C) Bio-syndrome [^]	High temperature (>38°C)

* Pinpoint pupils (and/or increased secretions) may be delayed if skin absorption or eye protection worn.

[^] 'Bio-syndromes' include: respiratory, cutaneous (skin), lymphadenopathy, haemorrhagic, gastrointestinal, and neurological (central & peripheral).

'CRESS' ASSESSMENT

CBRN MEDICAL TREATMENT

Priorities for Treatment

HOT (First Aid)	WARM (EMT*)	INTERVENTION <small>*Emergency Medical Treatment by medical personnel only</small>
<C>	<C>	Catastrophic haemorrhage control
A	A	Basic Airway management
a	a	antidotes
B	B	Breathing (and administration of oxygen)
	C	Circulation (and initial management of sepsis)
	Decon	Decontamination (and disability)
Evac	Evac	Evacuation to warm or clean zone

General First Aid Treatment Options



Catastrophic Haemorrhage Control

Attempt to apply pressure dressing

- If limb - apply tourniquet (where available)
- If torso - manage as conventional catastrophic haemorrhage

Apply dressing / marking to protect and notify if potential contamination

(Expose to treat drill)



Airway Management*

Basic airway manoeuvres

- head tilt & chin lift (non-trauma)
- jaw thrust (trauma)

** If wearing respiratory protection: check airway based on risk assessment from*

airborne hazard and signs of airway or respiratory problem.

Suction airway, if equipment available, or self-drainage

Place in recovery position



Antidotes (See agent-specific first aid)

Breathing

**RIBS - rate, injuries, back & sides.*

RIBS* assessment

Breathing support and ventilation, as resources allow

If sucking chest wound

- apply appropriate dressing

If low oxygen level or blue

- give oxygen, if available

If penetrating injury - consider tension pneumothorax

- seek medical assistance immediately (medical skill required)

AGENT-SPECIFIC FIRST AID

Nerve agent

- Remove from scene, and decontaminate any liquid contamination
- Clear secretions and vomit (suction airway, if equipment available)
- Administer Nerve Agent antidote immediate therapy, if available
- Place in recovery (semi-prone) position

Vesicant (Blistering agent)

Immediate pain - consider Lewisite / phosgene oxime / caustic agent

Delayed redness (6-12 hours) - consider sulphur mustard

- Remove from scene
- Immediate decontamination (absorbent material; if caustic, wet wash)
- Monitor exposed for redness and irritation, especially eyes and airway
- Report any breathing or swallowing difficulty, incl. hoarse voice / cough

Pulmonary (choking) agent

- Remove from scene; avoid exertion
- If liquid contamination or T1, remove clothing
- Basic airway management including head tilt and chin lift
- If respiratory secretions, allow free drainage in recovery position
- If cyanosed (blue); give oxygen, if available

Chemical asphyxiant (e.g cyanide)

- Remove from scene immediately **avoid mouth to mouth ventilation.*
- If breathing and symptomatic, give oxygen (if available)
- Start CPR if cardiac arrest witnessed or within 10 minutes*
- Administer antidote immediate therapy, if severe and available

Heat illness including heat stroke

Heat stroke is an altered conscious level with an excessive core temperature (>40°C) and is a medical emergency

- Stop activity, and check for any use of atropine
- Strip, soak, fan and fluids (SSFF), if permissible
- Rehydrate but avoid drinking large volumes ('little and often')
- Record any altered level of conscious, confusion or agitation
- Record core body temperature, where possible

BIOLOGICAL & RADIATION FIRST AID

Mental (Psychotropic) Incapacitant / Delirium / Atropine overdose

- If confused or agitated, remove any weapon system and reassure
- Avoid physical restraint due to risk of heat illness
- Manage in cool, calm & sheltered environment (manage as heat illness)

BIOLOGICAL CASUALTY MANAGEMENT

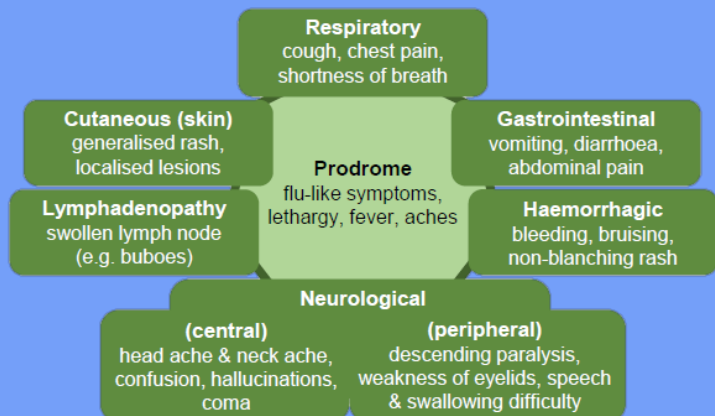
Assess risk of transmission (contagious disease)

- consider isolation & contact tracing

Monitor vital signs and identify type of bio-syndrome

- pulse rate, respiratory rate, temperature and level of consciousness

BIO-SYNDROMES



RADIOLOGICAL CASUALTY MANAGEMENT

Treat trauma first

- Record any physical / personal dosimetry
- Record the proximity and duration near to known source
- Record the onset time of any nausea, vomiting and / or diarrhoea
- Record any use of anti-sickness or stable iodine medication

AT-MIST-D HANDOVER

ID number	If known e.g. AB1234		
A	Age of casualty (adult / child (& age))		
T	Time of wound / exposure or time of onset of symptoms		
M	Mechanism of injury or type of incident		
I	Injuries (including injury pattern & observed injuries)	Intoxication (type, route of exposure, & contamination risk)	Infection Irradiation (including any dosimetry)
	Symptoms and signs (including toxidromes)		Other:
S	Cat haem	C onsciousness	
	A	R esp	
	B	E yes	
	Circ	S ecretions	
T	Treatment given:	S kin	Other antidotes:
		Auto-injector	
		Atropine	
		Oxime	
D	Anticonvulsant		

D

Decontamination status:

(no contamination; fully decontaminated; wound contamination; internal hazard)