RECOGNITION OF A CBRN INCIDENT

Indicators of an environmental or CBRN hazard include:

Any symptoms involving incident response or reconnaissance 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
Any unusual or unexplained symptoms, signs, illness or deaths

Smells associated with chemicals

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Smell</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine</td>
<td>Swimming pools</td>
</tr>
<tr>
<td>Cyanide</td>
<td>Bitter almonds</td>
</tr>
<tr>
<td>Hydrogen sulphide</td>
<td>Bad eggs</td>
</tr>
<tr>
<td>Lewisite</td>
<td>Geraniums</td>
</tr>
<tr>
<td>Phosgene</td>
<td>Freshly mown hay</td>
</tr>
<tr>
<td>Sulphur mustard</td>
<td>Garlic</td>
</tr>
</tbody>
</table>

Chemical detection

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Monitor</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>H - mustard</td>
<td>Chemical Agent</td>
<td>Red</td>
</tr>
<tr>
<td>G - nerve agents</td>
<td>Monitor</td>
<td>Yellow</td>
</tr>
<tr>
<td>V - nerve agents</td>
<td>3 colour</td>
<td>Green</td>
</tr>
</tbody>
</table>

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

**CONFIRM**
- Put on Individual Protective Equipment (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 (exploitation)

**COMMUNICATE**
- Inform Command using METHANE report and/or CBRN1 incident report
- Warn local Medical Treatment Facilities and personnel

**CONTAIN** (also see Casualty Hazard Management references)
- Prevent secondary contamination, if persistent hazard
- Prevent secondary infections, if contagious biological agent

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**METHANE REPORT**

<table>
<thead>
<tr>
<th>M</th>
<th>My call sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Exact location and wind direction</td>
</tr>
<tr>
<td>T</td>
<td>Type of incident</td>
</tr>
<tr>
<td>H</td>
<td>Hazards identified (C, B, R, combined or unknown)</td>
</tr>
<tr>
<td>A</td>
<td>Assessment (or Access): Scene / Casualty</td>
</tr>
<tr>
<td>N</td>
<td>Number of casualties: triage and type</td>
</tr>
<tr>
<td>E</td>
<td>Emergency treatment given and resources required (incl.decontamination)</td>
</tr>
</tbody>
</table>
### CONSIDERATIONS / BRIEF

#### Safety
- Hazard(s):
  - PPE/IPE state?
  - Work/Rest rate?

#### Cordons
- Hot zone?
- Exclusion zone?
- Downwind hazard?
- CDL marked?
- CDA?

#### Command/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
- AXP
- HLS

#### Exploit/Recovery
- SIBCRA?
- Recovery end state?
- Time to end state?

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**SCENE LAYOUT**

Wind direction / speed:
- Ambient temperature:

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For abbreviations - refer to AMedP-7.2 Lexicon
CBRN TRIAGE (HOT ZONE)

Triage Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Immediate</td>
</tr>
<tr>
<td>T2</td>
<td>Delayed</td>
</tr>
<tr>
<td>T3</td>
<td>Minimal</td>
</tr>
</tbody>
</table>

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

T3 – Minimal

WALKING?

YES → OBEYING COMMAND?

YES → T1 – Immediate

NO → T2 – Delayed

NO → SIGNS OF LIFE / BREATHING?

YES → NO, AFTER STIMULI & AIRWAY MANOEUVRE

YES → DEAD¹

NO → CATASTROPHIC HAEMORRHAGE?²

YES → RESPIRATORY DISTRESS?

YES, or RR < 10 or > 30 → T1 – Immediate

NO, or 10 - 30 → NO T1 CRITERIA

NO → UNCONSCIOUS OR FITTING?

YES → T2 – Delayed

NO → TRIAGE, TREAT & REASSESS

¹ 1. Where resources permit, resuscitation maybe attempted on cases of witnessed respiratory arrest with early use of antidotes (e.g. atropine for nerve agent toxicity).

² 2. The application of a tourniquet mandates that the T1 triage category remains in place.
| 'CRESS' ASSESSMENT |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Heat stroke       | Altered           | Increased         | Normal / Large pupils | Normal   | Varied             | High temperature (>38°C) |
|                   |                   |                   |                      |         |                   |                          |
| Sepsis            | Normal, reduced or agitated | Increased         | Normal               | Normal / Sputum | Warm → Pale (cool) | Fast pulse Fever (>38.3°C) |
|                   |                   |                   |                      |         |                   |                          |
| Atropine          | Agitated / Confused | Increased         | Large pupils / Blurred vision | Dry mouth / Thirsty | Normal / Blue | Sudden onset |
|                   |                   |                   |                      |         |                    |                          |
| Opiate (Morphine) | Reduced / Unconscious | Reduced / Stopped | Pinpoint pupils | Normal | Normal / Blue | Normal / Blue |
|                   |                   |                   |                      |         |                |                |
| Cyanide           | Unconscious / Convulsions | Increased or stopped | Normal / Large pupils | Normal | Pink → Blue | Normal / Blue |
|                   |                   |                   |                      |         |                   |                          |
| Nerve agent       | Convulsions       | Increased or reduced / stopped | Pinpoint pupils* | Increased | Sweaty | Sudden onset |
|                   |                   |                   |                      |         |                   |                          |
|                   |                   |                   |                      |         | Vomiting | Slow pulse |
|                   |                   |                   |                      |         | Incontinence |         |

*Cress* pupils may not be present immediately if skin absorption or eye protection worn. 'Bio-syndromes' include: respiratory, cutaneous (skin), lymphadenopathy, haemorrhagic, gastrointestinal, and neurological (central & peripheral).
CBRN MEDICAL TREATMENT

Priorities for Treatment

<table>
<thead>
<tr>
<th>HOT (First Aid)</th>
<th>WARM (EMT*)</th>
<th>INTERVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;C&gt; A a B Evac</td>
<td>&lt;C&gt; A a B C Decon Evac</td>
<td>Catastrophic haemorrhage control</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic Airway management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>antidotes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Breathing (and administration of oxygen)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Circulation (and initial management of sepsis)*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decontamination (and disability)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evacuation to warm or clean zone</td>
</tr>
</tbody>
</table>

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

(Exposure to treat drill)

Airway Management*
Basic airway manoeuvres
- head tilt & chin lift (non-trauma)
- jaw thrust (trauma)
Suction airway, if equipment available, or self-drainage
Place in recovery position

Antidotes (See agent-specific first aid)

Breathing
RIBS* (team medic) 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)

* Where a respirator is worn:
If airway problem is suspected and there is no immediate airborne hazard, then perform an airway check drill and refit as required after.

*RIBS - rate, injuries, back & sides.
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
- 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
- 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 respiratory distress AND hazard cleared, remove respirator
- If liquid contamination or T1, remove clothing
- Basic airway management including head tilt and chin life
- If respiratory secretions, allow free drainage in recovery position
- If cyanosed (blue), give oxygen, if available

Cyanide (Blood agent)
- Remove from scene immediately
- If breathing and symptomatic, give oxygen (if available)
- Start CPR if cardiac arrest witnessed or within 10 minutes
- Administer cyanide immediate therapy MedCM, where 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
- Relax individual protective equipment state, if permissible
- 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**

- **Respiratory**
  - cough, chest pain, shortness of breath
- **Cutaneous (skin)**
  - generalised rash, localised lesions
- **Lymphadenopathy**
  - swollen lymph node (e.g. buboes)
- **Gastrointestinal**
  - vomiting, diarrhoea, abdominal pain
- **Haemorrhagic**
  - bleeding, bruising, non-blanching rash
- **Prograde**
  - flu-like symptoms, lethargy, fever, aches
- **Neurological**
  - (central)
    - head ache & neck ache, confusion, hallucinations, coma
  - (peripheral)
    - descending paralysis, weakness of eyelids, speech & swallowing difficulty

**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

<table>
<thead>
<tr>
<th>ID number</th>
<th>If known</th>
<th>e.g. AB1234</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>Age of casualty (adult / child (&amp; age))</td>
<td></td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>Time of wound / exposure or time of onset of symptoms</td>
<td></td>
</tr>
<tr>
<td><strong>M</strong></td>
<td>Mechanism of injury or type of incident</td>
<td></td>
</tr>
<tr>
<td><strong>I</strong></td>
<td>Injuries (including injury pattern &amp; observed injuries)</td>
<td>Intoxication (type, route of exposure, &amp; contamination risk)</td>
</tr>
<tr>
<td><strong>S</strong></td>
<td>Symptoms and signs (including toxidromes)</td>
<td>Other:</td>
</tr>
<tr>
<td>Cat haem</td>
<td>Consciousness</td>
<td></td>
</tr>
<tr>
<td><strong>A</strong></td>
<td>Resp</td>
<td></td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>Eyes</td>
<td></td>
</tr>
<tr>
<td>Circ</td>
<td>Secretions</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>Skin</td>
<td></td>
</tr>
<tr>
<td><strong>T</strong></td>
<td>Treatment given:</td>
<td>Other MedCM:</td>
</tr>
<tr>
<td>Auto-injector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atropine</td>
<td>Anticonvulsant</td>
<td></td>
</tr>
<tr>
<td>Oxime</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decontamination status:</td>
<td>(no contamination; fully decontaminated; wound contamination; internal hazard)</td>
<td></td>
</tr>
</tbody>
</table>