**RADIATION INJURY**

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| * Burns and / or blast injury. * Multiple health issues with lower dose exposures. |
| **BLS Treatment** |
| * Position of comfort. * NPO. * Assess circulation, airway, breathing, and responsiveness. * **Oxygen** as indicated. * Provide Spinal Motion Restriction as indicated or position of comfort as indicated. * Appropriately splint suspected fractures/instability as indicated. * Bandage wounds/control bleeding as indicated. |
| **ALS Treatment** |
| * For pain, administer **Morphine.** |
| **Comments**   * Follow facility radiation exposure plan for patient decontamination and disposal of all contaminated waste. * In the nuclear bomb scenario casualty load will be excessive. Utilize austere care protocol and strict triaging to maximize available resources. Access all available disaster resources. |

**CHEMICAL AGENT INJURY**

**NERVE AGENTS (e.g. VX, Sarin, Soman, Tabun)**

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| * Causes “SLUDGE” (Salivation, Lacrimation, Urination, Diaphoresis/Diarrhea, Gastric hypermotility, Emesis/Eye (small pupils, blurry vision). * Severe exposures may result in decreased level of consciousness, fasciculation/muscle weakness, paralysis, seizures. |
| **BLS Treatment** |
| * Position of comfort. * NPO. * Assess circulation, airway, breathing, and responsiveness. * **Oxygen** as indicated. * Provide Spinal Motion Restriction as indicated or position of comfort as indicated. * Appropriately splint suspected fractures/instability as indicated. * Bandage wounds/control bleeding as indicated. |
| **ALS Treatment** |
| * Administer **Atropine** 2-5 mg IVP/IO. Repeat every 2 – 5 minutes until SLUDGE symptoms subside. * For seizures: administer **Midazolam**. |
| **Comments**  Nerve agent poisoning can be very toxic. Large amounts of **Atropine/2-PAM** may be needed to treat symptoms. If the patient is initially symptomatic and no response is seen to the initial doses of medication, continue giving until a response is achieved. May need to access pharmaceutical disaster cached called, “CHEMPACK” to have sufficient supply of antidote to treat multiple patients. If available, administer **DuoDote** [**Atropine/Pralidoxime (2-PAM)] Autoinjector** IM in using dosing table below: |

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| **DuoDote (2-PAM) Dosing Estimator**  *DuoDote = Atropine 2.1mg / Pralidoxime 600mg* | | |
| **Do NOT Use**  **Atropine/2-PAM Injector** | **Use Between 1 – 3**  **Atropine/2-PAM Injectors IM** | **Use 3**  **Atropine/2-PAM Injectors IM** |
| * No signs of life * Fits non-resuscitation group (expectant) due to other concomitant injury | Titrate dose based on 1 or more SLUDGE signs and:   * Elderly * Children appearing under age 14 * Prolonged extrication (may require more than 3 autoinjectors) | * Exhibiting 2 or more SLUDGE signs OR * Non-ambulatory |
| Bronchospasm and respiratory secretions are the best acute symptoms to monitor response to **Atropine/2-PAM** therapy:   * Decreased bronchospasm and respiratory secretions = getting better. * No change or increased bronchospasm and respiratory secretions = needs more **2-PAM**. | | |

**MUSTARD (SULFUR MUSTARD)**

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| Blistering agent affecting skin and mucous membranes. |
| **BLS Treatment** |
| * Position of comfort. * NPO. * Assess circulation, airway, breathing, and responsiveness. * **Oxygen** as indicated. * Provide Spinal Motion Restriction as indicated or position of comfort as indicated. * Appropriately splint suspected fractures/instability as indicated. * Bandage wounds/control bleeding as indicated. * Preserve body temperature if blistered area is large. |
| **ALS Treatment** |
| * Advanced airway if indicated. |
| **Comments**   * Liquid or vapor mustard penetrates the skin and mucous membranes and damages cells within minutes of exposure, so decontamination must be done immediately after exposure. * Mustard agent can be very persistent; all surfaces with potential contamination must be carefully cleaned before considered decontaminated. |

## METHYLENE DIPHENYL ISOCYANATE (MDI), METHYLENE DIISOCYANATE, AND METHYL ISOCYANATE (MIC)

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| * Strong eye, skin and respiratory tract irritant. * High concentrations may result in severe respiratory distress and pulmonary edema. |
| **BLS Treatment** |
| * Eyes or skin irritation: flush with copious amounts of water as feasible. * Position of comfort. * NPO. * Assess circulation, airway, breathing, and responsiveness. * **Oxygen** as indicated. * Provide Spinal Motion Restriction as indicated or position of comfort as indicated. * Appropriately splint suspected fractures/instability as indicated. * Bandage wounds/control bleeding as indicated. |
| **ALS Treatment** |
| * Advanced airway as indicated. * Consider needle cricothyroidotomy for laryngospasm if unable to maintain airway with BLS maneuvers or advanced airway procedures. * IV/IO of **Normal Saline** TKO. * **Albuterol** * For patients with severe refractory bronchospasm who are less than 50 years old and NO history of coronary artery disease or hypertension: administerIM **Epinephrine** (1:1,000) * If no response to IM Epinephrine or patient is in extremis: administer IV **Epinephrine** (1:10,000) |
| **Comments**   * All patients who have had a moderate or high level of exposure (respiratory, GI or Cardiovascular signs or symptoms upon exam by EMS personnel) should be referred to a medical facility for examination and treatment. * If utilized, the ETT’s placement and patency must be maintained at all times. |

**CHLORINE**

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| * Strong eye, skin and respiratory tract irritant. * High concentrations may result in severe respiratory distress and pulmonary edema. * Symptoms: * **Low dose**—cough, eye irritation & lacrimation, choking sensation * **High dose**—hoarseness, wheezing, severe cough, sudden collapse due to laryngospasm |
| **BLS Treatment** |
| * Eyes: Flush with copious amounts of water. * Skin: Flush with copious amounts of water. * Position of comfort. * NPO. * Assess circulation, airway, breathing, and responsiveness. * Oxygen as indicated. * Provide Spinal Motion Restriction as indicated or position of comfort as indicated. * Appropriately splint suspected fractures/instability as indicated. * Bandage wounds/control bleeding as indicated. |
| **ALS Treatment** |
| * Establish IV/IO of **Normal Saline** TKO. * **Albuterol** * For patients with severe refractory bronchospasm who are less than 50 years old and NO history of coronary artery disease or hypertension: administer IM **Epinephrine** (1:1,000) * If no response to IM Epinephrine or patient is in extremis: administer IV **Epinephrine** (1:10,000) * Advanced airway as indicated. * Consider needle cricothyroidotomy for laryngospasm if unable to maintain airway with BLS maneuvers or intubation. |
| **Comments**   * All patients who have had a moderate or high level of exposure (respiratory distress or airway symptoms upon exam by EMS personnel) should be referred to a medical facility for examination and treatment. |

**KEY ASSESMENT FINDINGS**

* History: Exposure to a greenish-yellow gas with a pungent, acrid odor.

**Cyanide**

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| Blocks O2 use in cell causing cellular asphyxia and death. |
| **BLS Treatment** |
| * Position of comfort. * NPO. * Assess circulation, airway, breathing, and responsiveness. * **Oxygen** as indicated. * Provide Spinal Motion Restriction as indicated or position of comfort as indicated. * Appropriately splint suspected fractures/instability as indicated. * Bandage wounds/control bleeding as indicated. |
| **ALS Treatment** |
| * Advanced airway as indicated. * If SBP < 90 mmH, administer IV/IO of **Normal Saline** fluid bolus. * **Sodium Thiosulfate** if available. |
| **Comments**   * Patients from enclosed space fires are at risk of cyanide poisoning. * Notify hospital about possible cyanide poisoning and need for Cyanokit antidote. |