



## Guide for Chemical Terrorism Identification

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### **Epidemiological Clues of a Chemical Terrorism Attack**

1. Rapid onset (immediate or minutes to hours) of similar symptoms among victims in close proximity to a hazardous materials release.
2. The chemical release might result from an explosion, fire, spill or release of vapor under pressure or from open containers.
3. The abrupt group onset of symptoms or a sudden release of chemicals in a closed or semi-enclosed non-industrial area (e.g. subway, school, convention center) is suspicious for terrorism.
4. Unprotected rescuers becoming victims themselves indicates the presence of conditions Immediately Dangerous to Life and Health (IDLH).

*None of these clues are pathognomonic of chemical terrorism, but indicate a high likelihood that victims are suffering from chemical exposure.*

## **Possible Scenarios of Chemical Attacks**

1. Use of weaponized chemical substance or attack on a weapons stockpile
2. Aerosol spraying (handheld devices, crop dusters)
3. Attack on industrial/commercial chemical sites.
4. Intentional hazardous materials transportation mishap (truck, rail car or tanker with chemicals)

**Immediate identification of specific chemicals is usually not possible.**

## **Sentinel Clues for the Major Chemical Agent Syndromes**

### **Asphyxiation Syndromes**

- √ Cardiovascular and CNS manifestations reflecting tissue hypoxia often accompanied by lactic acidosis. Absence of respiratory irritation or relatively minor. No increase in secretions. Pupils normal or dilated. *Mild*: headache, fatigue, anxiety, irritability, dizziness, nausea. *Moderate to Severe*: dyspnea, altered mental status, cardiac ischemia, syncope, coma and seizures

- v *Consider cyanide*
- v Elevated carboxyhemoglobin, *consider carbon monoxide*
- v Smoke inhalation, *consider combined carbon monoxide & cyanide*
- v Sudden collapse around "rotten eggs" odor, *consider hydrogen sulfide*

### **Cholinesterase Inhibition (e.g. Nerve Agents)**

- v Cholinergic syndrome with pupil constriction (miosis) and increased exocrine secretions +/- fasciculations. *Mild*: miosis, dim vision, eye pain, rhinorrhea, irritability, headache, chest tightness, sweating. *Moderate to Severe*: wheezing, muscular weakness, fasciculations, cognitive impairment, incontinence, coma, seizures
- v *Consider sarin* and other nerve agents
- v Incident involving commercial pesticides, *consider organophosphorous and carbamate insecticides*

### **Pulmonary Irritation: Choking Agents**

- v Respiratory tract irritation and symptoms, usually much more prominent than eye and skin irritation. *Mild*: nose and throat irritation, sore throat, cough, chest tightness, eye irritation

*Moderate to Severe:* laryngitis, wheezing, stridor, acute lung injury, laryngeal edema, non-cardiogenic pulmonary edema

- v Rapid onset of primarily upper respiratory and mucous membrane irritation, *consider tear gas, chlorine, ammonia or chloramines*
- v Delayed onset of primarily lower respiratory symptoms, *consider phosgene gas*

### **Vesicants: Blistering Agents**

- v Eye injuries and skin burns prone to vesicle formation. These may be followed later by respiratory irritation, and after high doses, late systemic effects. *Mild:* conjunctivitis, limited skin erythema, epistaxis, sore throat, cough. *Moderate to Severe:* corneal damage, skin vesicle and bullae formation, nausea, wheezing, stridor, laryngeal edema, hemorrhagic pulmonary edema
- v Delayed onset, *consider sulfur mustard*
- v Rapid onset with vesiculation, *consider lewisite*
- v Rapid onset with sequence of skin blanching, erythema, wheal formation and necrosis, *consider phosgene oxime*

## **BASIC INITIAL MANAGEMENT**

1. Cessation of exposure. Extrication is best performed by properly protected emergency personnel.
2. Early pre-hospital decontamination: clothing removal, irrigation with water, followed by soap and water washing.
3. Focus on airway patency, ventilation and circulation, while surveying for burns, trauma and other injuries.
4. Consult the regional poison center to assist with syndrome-based therapy.
5. Stockpile essential antidotes in advance: diazepam for convulsions, cyanide antidote kits, and atropine and pralidoxime (2-protopam) for treating cholinesterase inhibitors.

## **Reporting Protocols**

If you suspect chemical terrorism is responsible for an illness, contact your local health department and the CDC. A federal emergency technical assistance line, the "Chemical and Biological Hotline" is available 24/7.

More information may be found online at:

- √ <http://www.acponline.org/bioterro/>
- √ <http://www.bt.cdc.gov>
- √ <http://ccc.apgea.army.mil>

Download a PDA version of this card at:

<http://www.acponline.org>

*Phone numbers:*

Regional Poison Center: \_\_\_\_\_

Local Health Department : \_\_\_\_\_

Chemical and Biological Hotline: 800.424.8802

CDC: 404.639.3311

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