

# CBRNE Overview

## Chemical-Biological-Radiological-Nuclear-Explosive

### Some general principles of Hazmat/WMD/NBC incidents:

1. Rescuer safety is the first priority.
2. The possibility of ongoing respiratory exposure or chemical contamination should prompt a NO APPROACH\* response by EMS units until the scene is secured by the fire service.
3. EMS operates only in the "cold" zone.
4. Do not become part of the problem.
5. Under Incident Command System, the fire service commands the scene.

**\*\*Note: If additional antidotes are required on scene, the incident commander can request these resources from medical control.**

\* NO APPROACH does not mean to do nothing. Ambulatory patients may be directed out of the area of ongoing chemical exposure. Keep other arriving rescuers from becoming contaminated. Always be aware of possible rescuer exposure.

### Blister Agents

#### Signs and Symptoms:

- Red Skin
- Blisters
- Itching
- Burning
- Dry cough
- Hoarse voice

### Cyanide

#### Severe Signs and Symptoms:

- Seizures
- Coma

#### Mild Signs and Symptoms:

- Headache
- Shortness of Breath
- Palpitations
- Chest Pain

### Choking Agents

#### Signs and Symptoms:

- Shortness of breath
- Choking
- Secretions
- Dry cough

#### Common Choking Agents:

- Chlorine
- Methylisocyanate
- Methylene Diphenylene Isocyanate(MDI)

### Riot Control Agents

#### Signs and Symptoms:

- Burning Eyes
- Burning Nose
- Burning Airways
- Burning Skin

#### Agent Examples:

- Oleoresin Capsicum (OC)
- Chlorobenzalmalononitrile (CS)
- Chloroacetophenone (CN)

### \*\*Nerve Agents

#### Severe Signs and Symptoms:

- Paralysis
- Seizures
- Coma

#### Mild Signs and Symptoms:

- Headache
- Shortness of Breath
- Dizziness
- Weakness
- Nausea/Vomiting
- Salivation
- Bradycardia
- Diaphoresis
- Hypotension
- Wheezing
- Eye Pain/Dim Vision

#### Common Clinical Presentations:

##### Vapor:

- Immediate onset of symptoms
- Usually severe symptoms

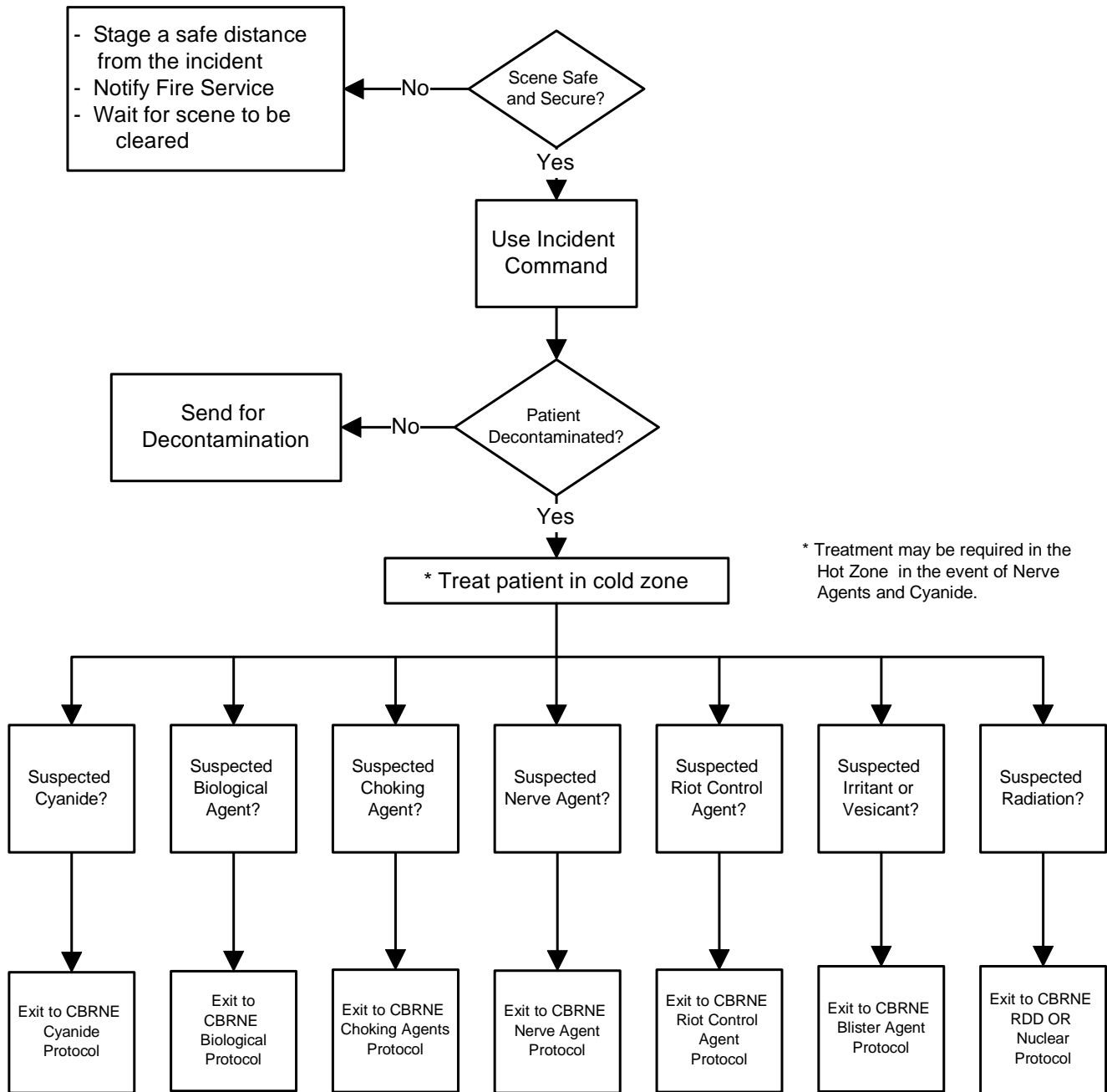
##### Liquid:

- Onset of symptoms may be delayed
- Muscle Fasciculation
- Muscle fasciculations are treated as Seizures

##### Powder:

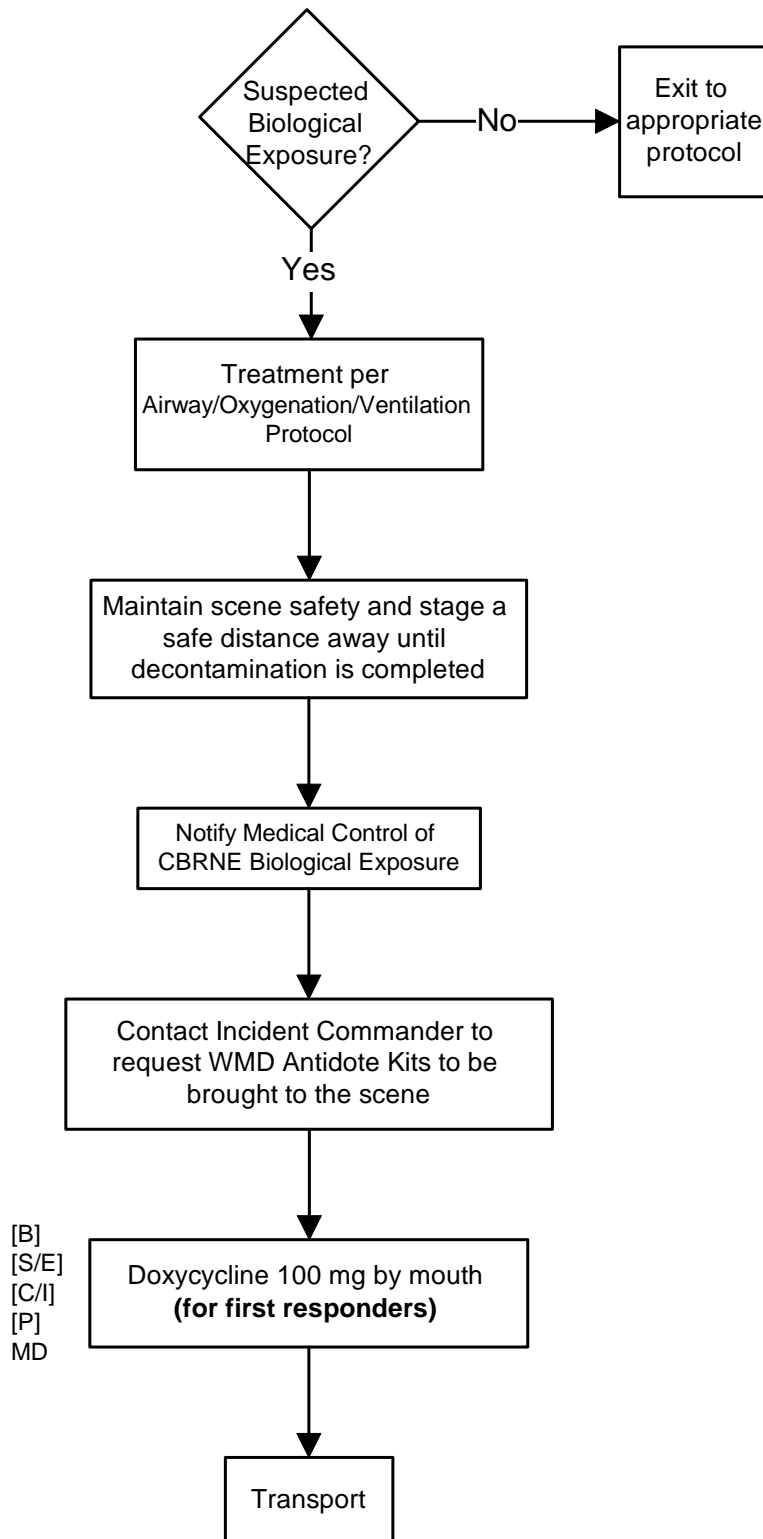
- Onset of symptoms may be delayed

# CBRNE



\* NO APPROACH does not mean to do nothing. Ambulatory patients may be directed out of the area of ongoing chemical exposure. Keep other arriving rescuers from becoming contaminated. Always be aware of possible rescuer exposure.

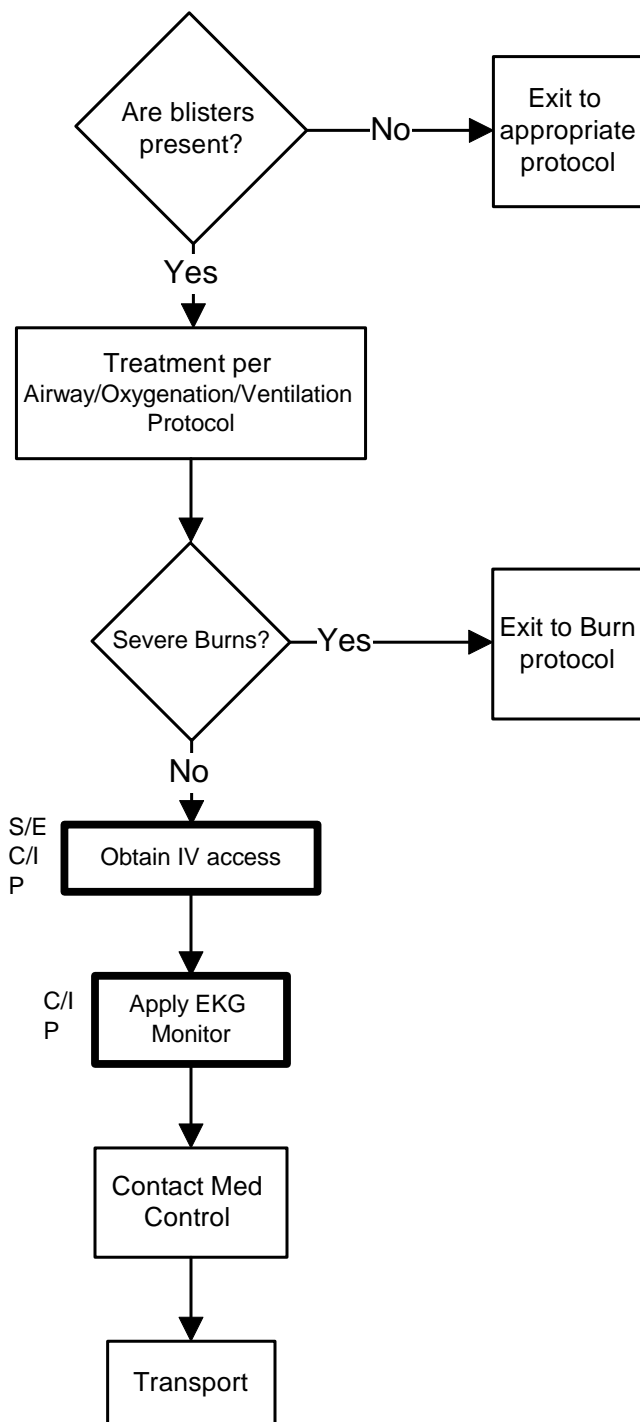
# CBRNE - Biological



**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
Appropriate Receiving Facility

# CBRNE - Blister Agents



**\* Signs and Symptoms:**

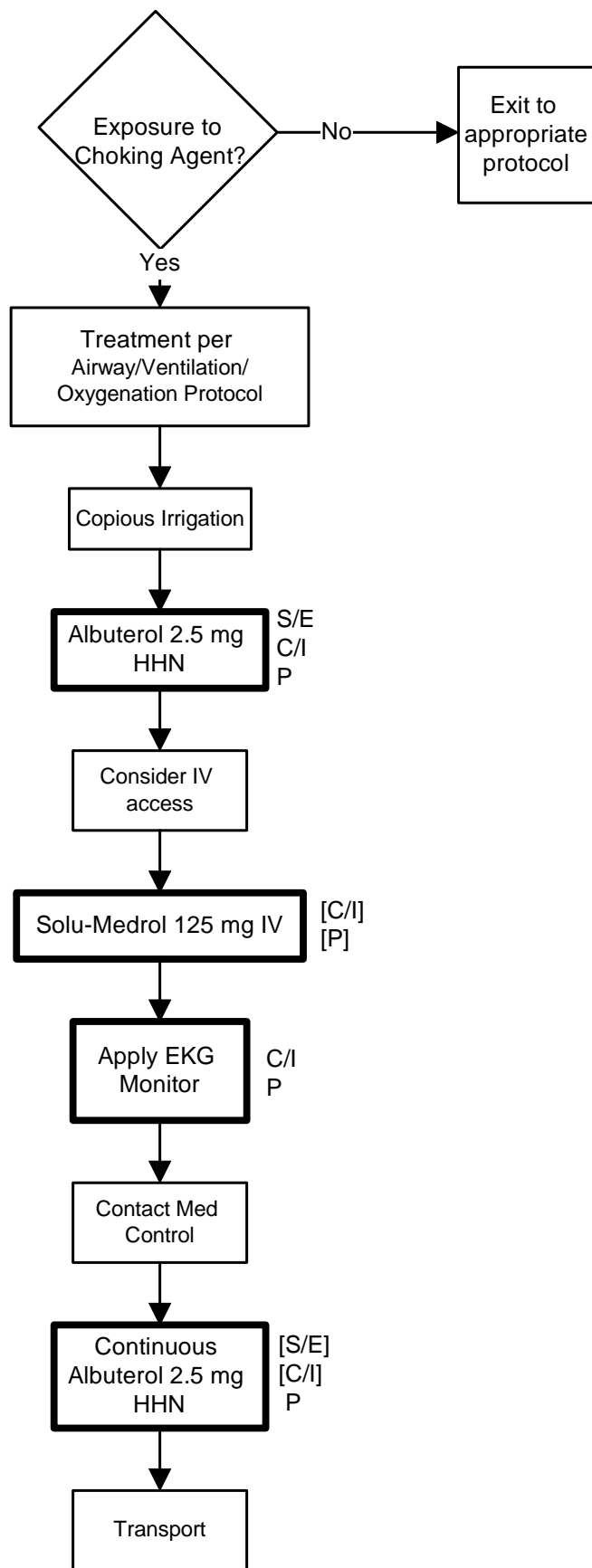
- Red Skin
- Blisters
- Itching
- Burning
- Dry cough
- Hoarse voice

\* Signs and symptoms may be delayed 2-4 hours.

**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
 Appropriate Receiving Facility

# CBRNE - Choking Agents



### Common Choking Agents:

- Chlorine
- Methylisocyanate
- Methylene Diphenylene Isocyanate(MDI)

### Signs and Symptoms:

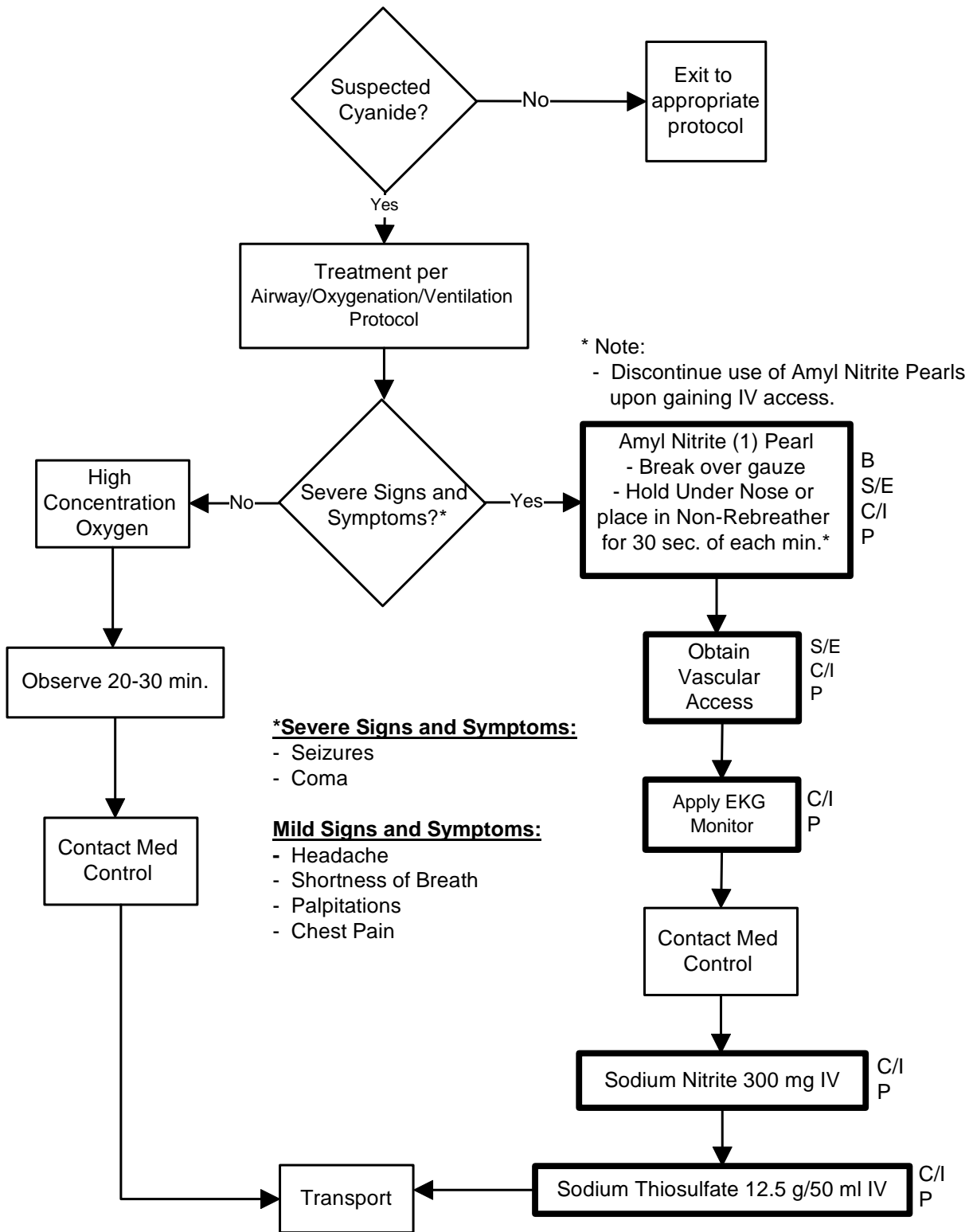
- Shortness of breath
- Choking
- Secretions
- Dry cough

Note: Atrovent and Lasix administration are inappropriate in this protocol.

### Performance Indicators

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
Appropriate Receiving Facility

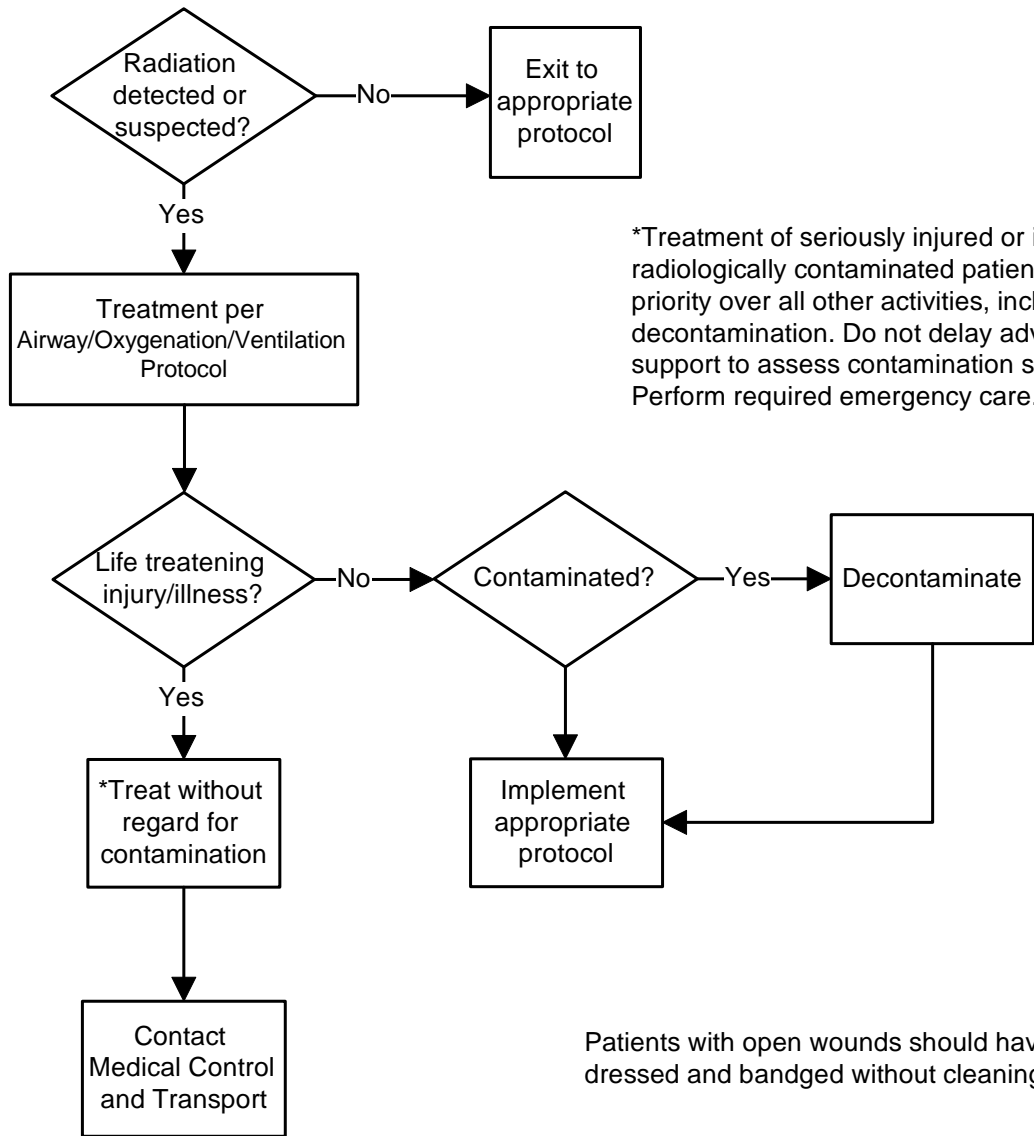
# CBRNE - Cyanide



**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
Appropriate Receiving Facility

# CBRNE - RDD



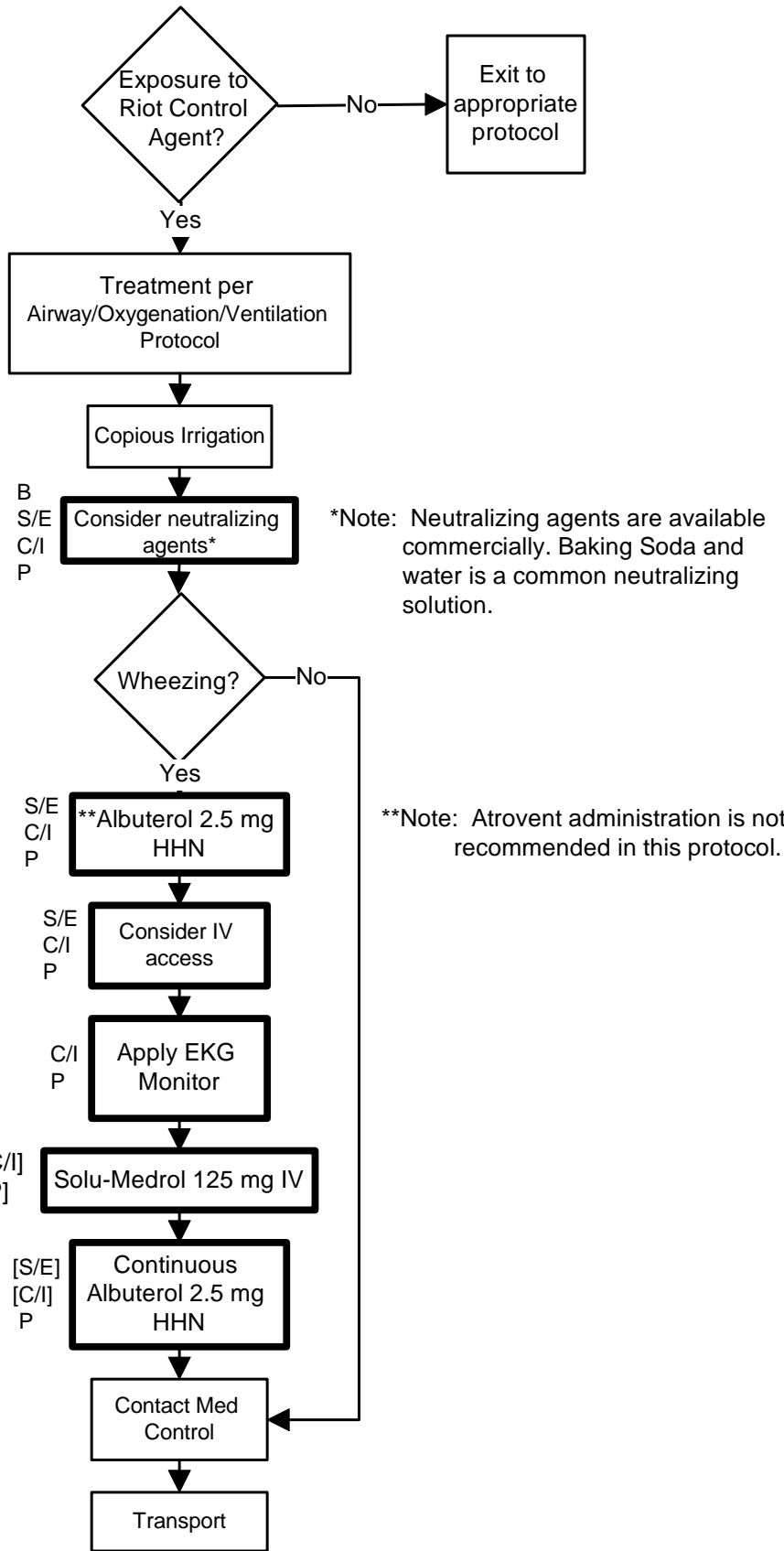
\*Treatment of seriously injured or ill radiologically contaminated patients takes priority over all other activities, including decontamination. Do not delay advanced life support to assess contamination status. Perform required emergency care.

Patients with open wounds should have the wound dressed and bandaged without cleaning.

**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
 Appropriate Receiving Facility

# CBRNE - Riot Control Agents



**Signs and Symptoms:**

- Burning Eyes
- Burning Nose
- Burning Airways
- Burning Skin

**Agent Examples:**

- Oleoresin Capsicum (OC)
- Chlorobenzalmalononitrile (CS)
- Chloroacetophenone (CN)

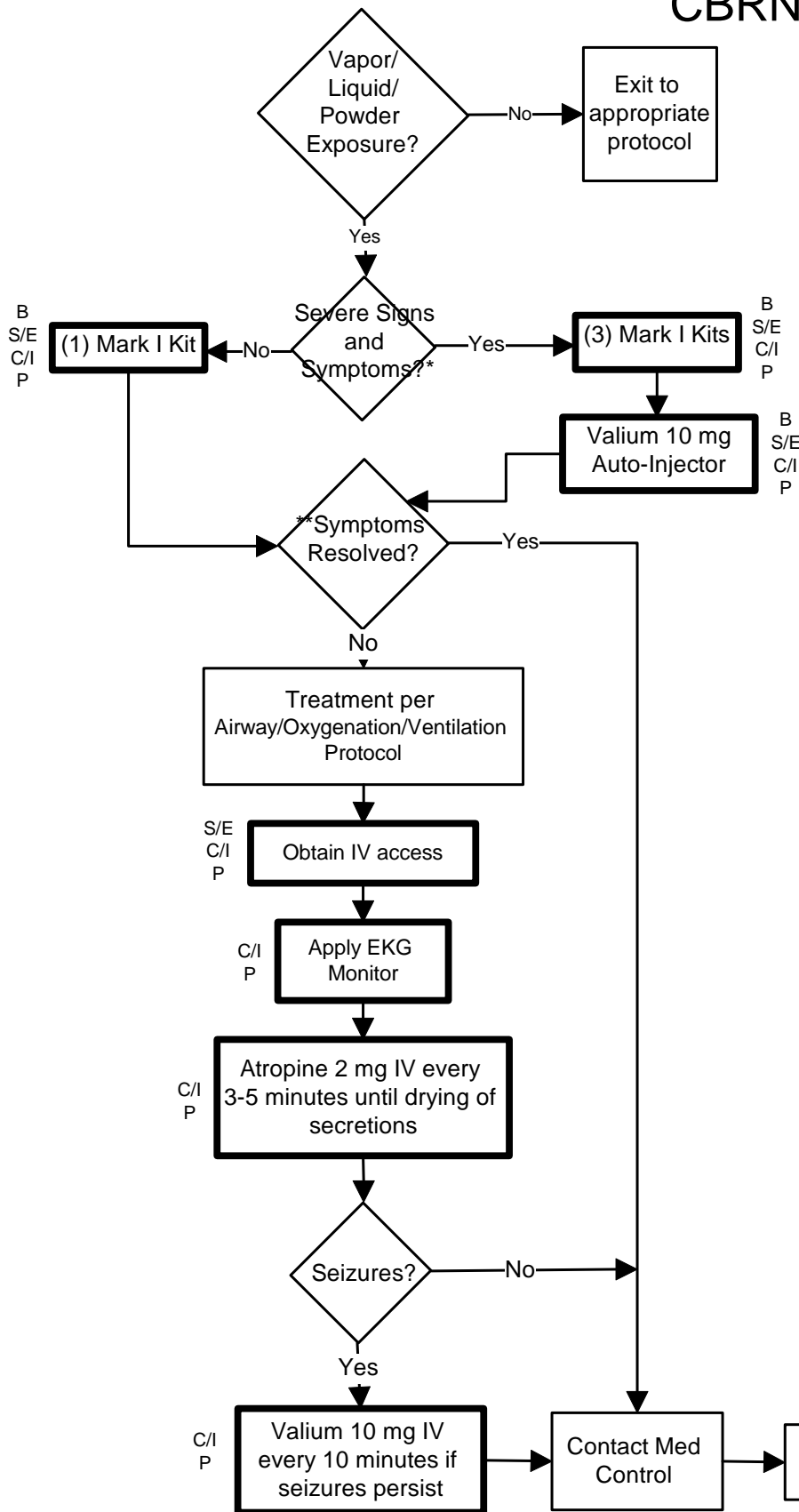
\*Note: Neutralizing agents are available commercially. Baking Soda and water is a common neutralizing solution.

\*\*Note: Atrovent administration is not recommended in this protocol.

**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
 Appropriate Receiving Facility

# CBRNE - Nerve Agents



\*\* Symptoms Resolved refers to the drying of secretions and the ability to ventilate.

**\*Severe Signs and Symptoms:**

- Paralysis
- Seizures
- Coma

**Mild Signs and Symptoms:**

- Headache
- Shortness of Breath
- Dizziness
- Weakness
- Nausea/Vomiting
- Salivation
- Bradycardia
- Diaphoresis
- Hypotension
- Wheezing
- Eye Pain/Dim Vision

**Common Clinical Presentations:**

Vapor:

- Immediate onset of symptoms
- Usually severe symptoms

Liquid:

- Onset of symptoms may be delayed
- Muscle Fasciculation
- Muscle fasciculations are treated as Seizures (Below)

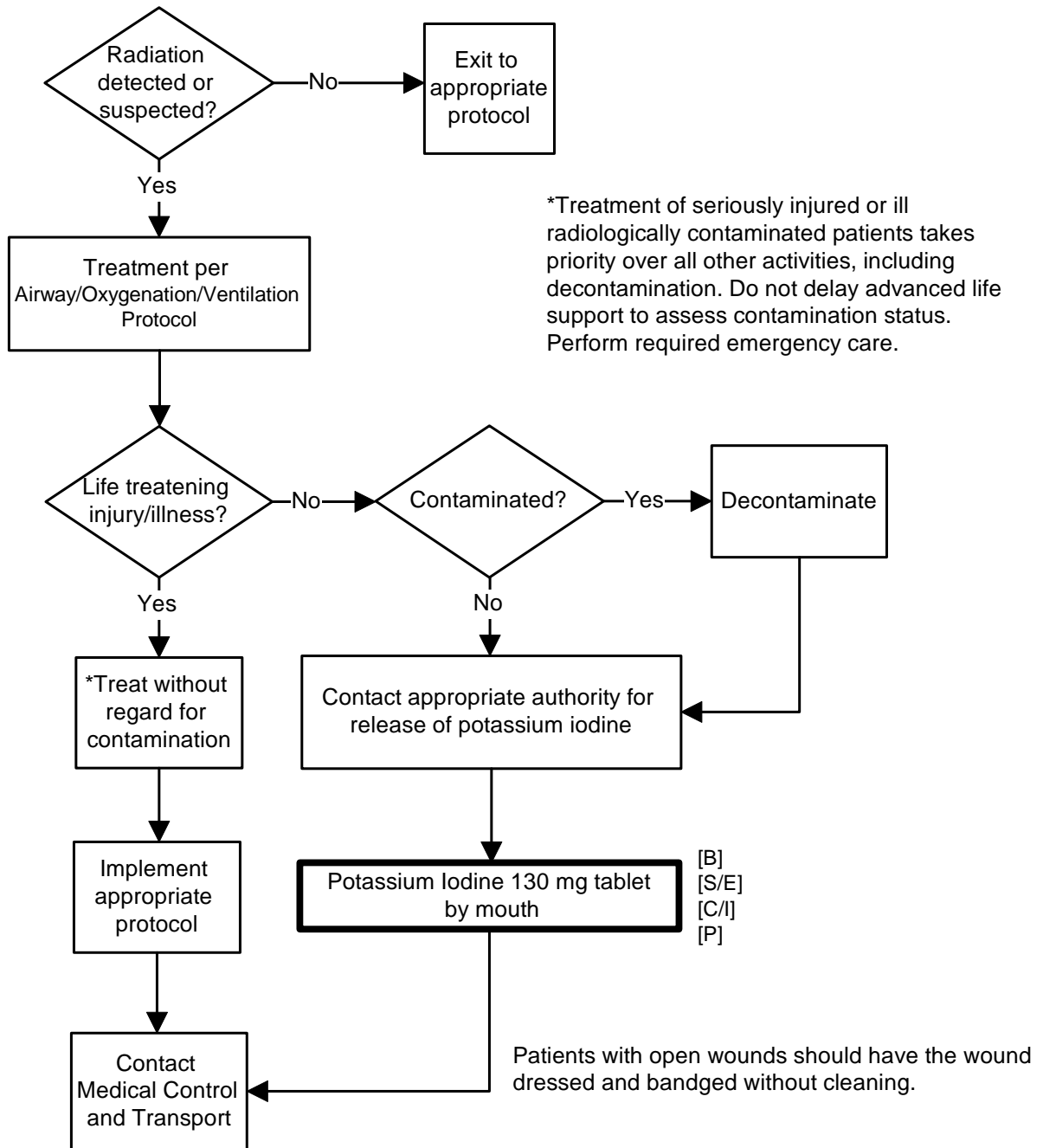
Powder:

- Onset of symptoms may be delayed

**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
Appropriate Receiving Facility    Documentation Of Mark I Kit Use    Patient Response

# CBRNE - Nuclear



Potassium Iodine is not stocked in TEMS regional drug boxes. Supplies of potassium iodine are kept in the TEMS regional WMD Antidote Kits and must be brought to the scene for distribution.

**Performance Indicators**

Initial Evaluation    BSA Affected    PPE Use    Decontamination Prior To Transport  
 Appropriate Receiving Facility