GENERAL CONSIDERATIONS

A. Consider the possibility of accidental or self-poisoning under the following conditions:
   1. History of observed or admitted accidental or intentional ingestion
   2. Coma of unknown origin
   3. History of suicide gesture or attempt
   4. Intoxicated behavior (hyperactive, hypoactive, unstable gait, lethargic, slurred speech)
   5. Patients with altered mental status, particularly with bizarre behavior

B. Scene safety is your primary concern. Potential threats include:
   1. Violent, agitated behaviors from the patient
   2. Possibility of the EMT becoming contaminated by the substance

C. If suspected HazMat or WMD exposure:
   1. Initial PPE should be Level A.
   2. EMS personnel will NOT approach the victim without donning appropriate PPE or the victim has received emergency decontamination.

D. Emergency decontamination procedures should be initiated whenever a victim has been exposed to a solid or liquid agent or the agent is unknown. With known agents, follow PPE and decontamination recommendations based on research. Emergency decontamination procedures should include:
   1. Removal of all clothing, including undergarments
   2. Body flushed with large quantities of water
   3. Evacuation to an isolated area away from the agent release

E. With known or suspected chemical / WMD exposure, contact Medical Control early and advise of the situation.

F. EMS should consider the confirmed or potential release of a nerve agent when responding to an unspecified incident or scene involving:
   1. An unknown illness involving a potentially large number of patients
   2. An explosion from an unknown source at an event where a large number of people are in attendance
   3. An incident where the initial EMS responders on scene suddenly become symptomatic
   4. Any incident where a large number of patients present with signs and symptoms for which CHEMPACK assets would be therapeutic of nerve agent exposure

G. The State of Ohio has caches of CHEMPACKS stored throughout the state as a part of the Strategic National Stockpile. A request to deploy these assets should be made if there are more than 50 potential victims.

H. The Incident Commander (IC) will contact Medical Control to make joint decision for need of CHEMPACK deployment. The IC will contact the OSP Central Dispatch at 1-866-599-5377 to make the request for CHEMPACK deployment.

I. When the Incident Commander has declared an event to be a terror event as defined by current ORC/OAC statutes, EMS Providers of all certification levels may administer nerve agent auto-injectors if they have received the proper training to perform the procedure.
A. Assess and manage airway:
   1. Administer oxygen as needed to treat shock and/or respiratory distress
   2. Apply pulse oximeter and treat per pulse oximeter procedure
   3. Assist ventilations with BVM as indicated

B. Evaluate patient’s general appearance, relevant history of condition and determine OPQRST and SAMPLE.

C. Obtain relevant history
   1. What, when, why taken (if known)
   2. Quantity taken (if known)

D. Check blood sugar and treat accordingly.

E. Follow Altered LOC Protocol as indicated.

F. Take the container that the substance came from to the hospital, along with any other medications the patient takes, unless this results in an unreasonable delay of transport

G. Establish communications with Medical Control and advise of patient condition. Transport IMMEDIATELY unless an advanced life support unit is en route and has an ETA of less than 5 minutes.

ADVANCED EMT / PARAMEDIC

A. Apply monitor and check rhythm; follow Dysrhythmia Protocol as indicated.

B. Start IV saline, TKO, while en route to hospital. DO NOT DELAY TRANSPORT

SPECIAL CONSIDERATIONS

A. Narcotic Overdose
   1. Assess and manage airway. Defer advanced airway until after Narcan administration, if possible. Do NOT administer Narcan if patient already has an advanced airway in place.
   2. If respiratory compromise, administer naloxone (Narcan):
      - Adult dose and pediatric dose for child greater than 4 kg (~8.5 pounds):
        First two doses of naloxone: 0.4-2 mg via slow IVP/IO or 4 mg IN every 2-3 minutes as needed for respiratory compromise.
        *Note: The maximum IN volume is 4 mL. Further doses in a short timeframe will not be absorbed into the nasal mucosa and are ineffective. If it is known the patient already received 4 mL by law enforcement or other first responders, then administer additional doses via IVP/IO route.
        Third and additional doses of naloxone: 0.4-2 mg via slow IVP/IO every 2-3 minutes. Maximum cumulative dose is 12 mg. If maximum dose is given and respirations do not improve, secure airway and transport.
For newborns < 4 kg: Administer 0.1 mg/kg naloxone (Narcan) slow IVP. May repeat as needed to maximum dose of 2 mg. Can be administered IN, if unable to obtain IV access.


B. Envenomed Snake Bites
1. Apply a pressure immobilization bandage (i.e., air splint, blood pressure cuff) 4-5 inches proximal to the bite. There should be a palpable pulse distal to the bandage. Upper extremity pressures should range from 40-70 mm Hg and lower extremity pressures should range from 55-70 mm Hg. It is NOT a tourniquet.
2. Splint bitten extremity.
3. Keep bitten extremity below the level of the heart.
4. Do not attempt to “suck the poison out”. This will cause wound infection and is ineffective.

C. Beta Blocker Overdose
1. Can cause significant bradycardias and hypotension, may require stepwise, multi-drug therapy.
2. Apply cardiac monitor; treat dysrhythmias per Dysrhythmia Protocol.
3. If bradycardic with normal blood pressure, patient needs only close monitoring.
4. Give normal saline fluid boluses initially for hypotension.
5. If patient is hypotensive AND bradycardic, add Atropine, 1mg IV, repeat in 5 minutes as needed for bradycardia.
6. If hypotension persists despite fluids, (with or without bradycardia) give Glucagon 5mg IV over 5 minutes. If no effect in 10 minutes, dose should be repeated. Be prepared to treat vomiting, a known side-effect of Glucagon.

D. Calcium Channel Blocker Overdose
1. Can cause significant bradycardias and hypotension, may require stepwise, multi-drug therapy.
2. Apply cardiac monitor; treat dysrhythmias per Dysrhythmia Protocol.
3. If bradycardic with normal blood pressure, patient needs only close monitoring.
4. Give normal saline fluid boluses initially for hypotension.
5. If patient is hypotensive AND bradycardic, add Atropine, 1mg IV, repeat in 5 minutes as needed for bradycardia.
6. If hypotension persists despite fluids, give IV Calcium gluconate 3g slow IVP. If no effect in 10 minutes, dose should be repeated.
7. If hypotension persists despite IV Calcium, give Glucagon 5mg IV over 5 minutes. If no effect in 10 minutes, dose should be repeated. Be prepared to treat vomiting, a known side-effect of Glucagon.

E. Carbon Monoxide Poisoning
1. The formation of carboxyhemoglobin (COHb) is a function of the atmospheric concentrations and the time of exposure. The determination of CO poisoning is difficult to impossible using atmospheric CO measurements alone, and should be made primarily on clinical grounds.
2. Remember that pulse oximetry should not be used as a determination of oxygenation in the patient with elevated carboxyhemoglobin.
3. Patients suffering from exposure to by-products of combustion should, when feasible, have a SpCO level recorded. These situations include fire victims of smoke inhalation, exposure to CO, firefighters during rehab activities, patients or families with complaints of general illness or headaches.
4. Common symptoms of CO poisoning:
   a. Headache
b. Fatigue
c. Nausea/Vomiting
d. Dizziness
e. Confusion
f. Malaise
g. Decreased or altered LOC
h. Shortness of breath
i. Collapse

5. Patients exhibiting vague, confusing, nondescript, or flu-like symptoms should be assessed for SpCO level. The classic “Cherry-red” skin discoloration associated with CO poisoning is a late sign and is an unreliable indicator.

6. Using appropriate PPE, remove patient from exposure environment.

7. Assess ABCs

8. Assess and manage airway:
   a. Administer oxygen as needed to treat shock and/or respiratory distress
   b. Apply pulse oximeter and treat per pulse oximeter procedure
   c. Assist ventilations with BVM as indicated

9. Obtain vital signs and SpCO level
   a. Suspect CO poisoning if patient is symptomatic and SpCO >3% in non-smokers and >10% in smokers
   b. Treat as indicated for symptoms and SpCO level (see following table)

<table>
<thead>
<tr>
<th>SpCO (%)</th>
<th>Signs &amp; Symptoms</th>
<th>Pre-Hospital Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>Possible minor headache</td>
<td>Observe</td>
</tr>
<tr>
<td>5-9</td>
<td>Headache</td>
<td>100% oxygen, reassess after 10 minutes on 100% oxygen</td>
</tr>
<tr>
<td>10-19</td>
<td>Dyspnea, headache</td>
<td>100% oxygen and transport to closest appropriate facility</td>
</tr>
<tr>
<td>20-29</td>
<td>Headache, nausea, dizziness</td>
<td>100% oxygen and transport to closest appropriate facility</td>
</tr>
<tr>
<td>30-39</td>
<td>Severe headache, vomiting, altered LOC</td>
<td>100% oxygen and transport to closest appropriate facility</td>
</tr>
<tr>
<td>40-49</td>
<td>Confusion, syncope, tachycardia</td>
<td>100% oxygen and transport to closest appropriate facility</td>
</tr>
<tr>
<td>50-59</td>
<td>Seizures, shock, apnea, coma</td>
<td>Secure airway and 100% oxygen and transport to closest appropriate facility</td>
</tr>
<tr>
<td>&gt;59</td>
<td>Coma, death</td>
<td>Secure airway and 100% oxygen and transport to closest appropriate facility</td>
</tr>
</tbody>
</table>

c. Establish IV access as indicated for complaints of nausea, change in mental status, or the need for fluid bolus.
d. Treat dysrhythmias per Dysrhythmia Protocol
e. Contact Medical Control for consideration of direct transport to a hyperbaric center if the patient’s SpCO >30% and/or the patient is unconscious, has significant altered mental status or if the patient is pregnant.
f. Special Considerations:
   1. Fetal SpCO levels may be 10-15% higher than maternal reading
   2. Heavy smokers may have a normal baseline SpCO level of up to 10%
   3. When using meter on multiple patients, is must be turned off and on between patients so that the device will properly calibrate
   4. Sensor placement on the 4th digit of the non-dominant hand is recommended. Do NOT place sensor on thumb or 5th digit.

F.  **Nerve Agent and Organophosphate (Cholinergic) Poisoning**

1. Antidote dosing guidelines:
2. Initial dosing based on symptoms present:

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Symptoms</th>
<th>Initial Dosing</th>
</tr>
</thead>
</table>
| Mild       | Pinpoint pupils and/or no other symptoms| • No antidote.  
• Monitor and observe                                                   |
| Moderate   | BAD SLUDGEM, agitation, respiratory distress | • 1-2 doses of atropine initially  
• If dyspnea develops, administer 2-PAM only after the patient begins to improve with atropine |
| Severe     | BAD SLUDGEM, agitation, respiratory distress, seizures | • 3 doses of atropine initially  
• If dyspnea develops administer 2-PAM only after the patient begins to improve with atropine  
• Administer diazepam every 2-5 minutes |

3. Cholinergic toxidrome = BAD SLUDGEM = Bradycardia, Anxiety, Delirium, Salivation, Lacrimation, Urination, Defecation, GI upset, Emesis, Miosis

4. Remember, goal is to treat the patient until the bronchorrea and oropharyngeal secretions and the airway are clear. Do not rely on the resolution of miosis, or the development of tachycardia to indicate that the patient is improving.

G. Cyanide Exposure

1. Hydroxocobalamin (marketed under the similar-sounding name "Cyanokit") has replaced the traditional cyanide antidote kit and is the single-agent antidote of choice. Administer 70 mg/kg (usually ~5 g) of hydroxocobalamin IV over 15 minutes as a single-agent therapy for patients with cyanide poisoning. May give repeat dose of 5 g IV if patient response is inadequate or poisoning is severe.

2. Only if hydroxocobalamin is unavailable should the traditional cyanide antidote kit be used. Administer contents of cyanide antidote kit as follows:

3. Amyl Nitrate pearls: crush and have patient inhale for 30 seconds, breathe oxygen for 30 seconds, repeat sequence until sodium nitrate loading is completed.
4. Sodium Nitrate: administer 10 ml of the 3% solution slow IVP over 3 minutes
5. Sodium Thiosulfate: administer 50 ml IV bolus over 10 minutes.
6. **Closely monitor BP and ECG**
7. Smoke inhalation victims may have significant cyanide *and* carbon monoxide poisoning. Be prepared to treat both. The creation of methemoglobinemia via sodium nitrate is dangerous in this setting.

**H. Hydroflouric Acid Burns**

1. Responders must wear rubber (neoprene or polyvinyl chloride) gloves when treating HF burns to avoid hand burns.
2. Relief of pain is the only indication of effectiveness of treatment. Therefore the use of analgesic agents is not recommended.
3. Flush area with copious amounts of cold water or saline. Quickly and thoroughly wash the acid off the affected areas. Speed and thoroughness of washing the acid is of paramount importance.
4. Apply calcium gluconate 2.5% gel every 15 minutes to affected area and massage continuously until pain disappears. Calcium gluconate gel can be massaged into skin while flushing with water or saline. Remember, rubber gloves must be worn while touching the victim. Ocular exposures should be treated with immediate water or saline irrigation; there is no evidence that irrigation with calcium or magnesium containing solutions is effective for ocular burns.
5. If pain recurs, apply calcium gluconate gel and massage while transporting the victim to the ED.
6. Establish venous access and apply cardiac monitor. Beware of dysrhythmias, QTc prolongation, hypotension, seizures and coma in patients with intentional ingestions or large dermal, inhalational, or oral exposure.
TOXIC EXPOSURE / POISONING / OVERDOSE

- ASSESS AND MANAGE AIRWAY
- MAINTAIN O2 SATS >95%
- EVALUATE PATIENT CONDITION
- MONITOR VITAL SIGNS
  - HYPOPERFUSION (BP < 100 MMHG SYSTOLIC)
- OBTAIN MEDICAL HISTORY
  - WHAT, WHEN, WHY TAKEN (IF KNOWN)
  - QUANTITY TAKEN / EXPOSURE
- FOLLOW ALTERED LOC PROTOCOL AS INDICATED
- IF REASONABLE AND AVAILABLE BRING SUBSTANCE CONTAINER OR MSDS TO HOSPITAL
- REASSURE PATIENT
- TRANSPORT

SEE SPECIAL CONSIDERATIONS FOR MANAGEMENT OF SPECIFIC EXPOSURES

- IV NS (RUN TO maintain PERFUSION)
- MONITOR ECG

KEY

BASIC EMT
ADVANCED EMT
PARAMEDIC
MED CONTROL

SPECIFIC EXPOSURE GUIDELINES:

- NARCOTIC OVERDOSE:
  - ADMINISTER NALOXONE (NARCAN) IF PATIENT EXHIBITING SIGNS OF RESPIRATORY COMPROMISE.

- ENVENOMED SNAKE BITES:
  - APPLY PRESSURE IMMOBILIZATION BANDAGE (AIR SPLINT OR BP CUFF – DO NOT EXCEED 70 MMHG) AND SPLINT BITTEN EXTREMITY. KEEP BELOW LEVEL OF HEART.

- BETA BLOCKER OVERDOSE:
  - CONSIDER GLUCAGON (GLUCAGEN) 5MG IV PUSH. IF HYPOTENSION AND BRADYCARDIA PERSIST DESPITE FLUIDS AND ATROPINE.

- CALCIUM CHANNEL BLOCKER OVERDOSE:
  - CONSIDER CALCIUM GLUCONATE 3 G SLOW IV PUSH. IF HYPOTENSION AND BRADYCARDIA PERSIST DESPITE FLUIDS AND ATROPINE.
  - CONSIDER GLUCAGON 5MG IV PUSH IF CALCIUM IS INEFFECTIVE.

- CARBON MONOXIDE POISONING:
  - REMOVE PATIENT FROM ENVIRONMENT. ADMINISTER 100% OXYGEN. CONSIDER FACILITY WITH HYPERBARIC OXYGEN CAPABILITIES

- ORGANOPHOSPHATE / NERVE AGENT:
  - ADMINISTER ATROPINE, PRAFLIDOXIME (2-PAM) AND DIAZEPAM (VALIUM). SEE ANTIDOTE DOSING GUIDELINES.

- CYANIDE EXPOSURE:
  - ADMINISTER HYDROXOCOBALAMIN (CYANOKIT). SEE KIT INSTRUCTIONS ON PACKAGE

- HYDROFLUORIC ACID BURNS:
  - FLUSH AREA WITH COPIOUS AMOUNTS OF WATER OR SALINE. APPLY CALCIUM GLUCONATE 2.5% GEL EVERY 15 MINUTES TO AFFECTED AREA AND MASSAGE CONTINUOUSLY UNTIL PAIN DISAPPEARS. CALCIUM GLUCONATE CAN BE ADMINISTERED WHILE FLUSHING AFFECTED AREA. MUST WEAR APPROPRIATE LEVEL RUBBER GLOVES.