

*Louisiana CHEMPACK Response Plan
Region 4*



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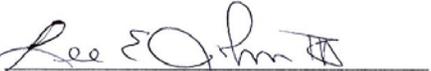
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Record of Changes to Plan

Change Number	Date	Part Affected	Name of Poster
	3-13-13	Reviewed by PHERC- no changes	K Buroker
1	06-17-14	Page 7 (Tri Reg Pharm changed to host site Pharmacist	C Broussard
	7-31-15	Plan reviewed-no changes	K Buroker
2	10-04-16	Page 7 Concept of Operations—Section F.	C Broussard
3	10-04-16	Page 9 #2	C Broussard
4	10-04-16	Page 9 Part C Notification	C Broussard
5	10-04-16	Page 13 Appendix B	C Broussard
6	10-04-16	Page 14 Appendix C	C Broussard
7	10-04-16	Page 23 Appendix F #1 and # 2	C Broussard
8	10-04-16	Pages 24-26 Appendix F	C Broussard
9	10-04-16	Page 32 Appendix F Blue box	C Broussard
10	10-04-16	Page 37 Appendix I	C Broussard
11	10-04-16	Page 39 Appendix J	C Broussard
12	10-04-16	Added pages 41-46 Acronyms & Definitions	C Broussard
13	10-26-26	Signatory Page	K Buroker

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Region 4 CHEMPACK Response Plan

I. Purpose and Scope

A. Purpose

This plan defines Region 4 policies and procedures relative to CHEMPACK.

B. Scope

This plan establishes policies, procedures and organizational structures for response to a nerve agent or other organophosphate incident requiring the use of CHEMPACK. This response plan follows the established state guidelines to direct CHEMPACK response within a regional level.

II. Situation and Assumptions

A. Situation

1. CHEMPACK is federal owned asset which has been pre-positioned in one regional hospital Host Sites by the Louisiana Department of Health Office of Public Health (LDH OPH). These assets are to be used by pre-hospital services and hospitals under the **direction of the Louisiana Poison Center (LPC)**. The Louisiana Poison Center is available to assist in providing consultation on medical treatment during the response to an incident involving nerve agents or organophosphates.
2. The response to a nerve agent or organophosphate incident should be implemented in phases based upon the severity of the incident. The phases are as follows:
 - a) Tier I: Utilization of local resources.
 - b) Tier II: Request and use of CHEMPACK resources by telephoning the **Louisiana Poison Center (LPC) at 800-222-1222 or 318-813-3317.**
3. The toxic effects of nerve agents and other organophosphates require immediate medical and pharmaceutical intervention in both the pre-hospital and hospital settings.
4. The early recognition of symptoms consistent with nerve agent or organophosphate exposure and the rapid delivery of appropriate medical care directly affect a person's ability to survive exposure to these substances. *Appendix A includes a list of potential nerve agents and organophosphate substances. Appendix E includes physical findings following exposure to nerve agents or organophosphates. Appendix C and D includes treatment guidelines.*

5. The CHEMPACK Containers are designated by their respective contents as EMS or Hospital Containers. Located within Region 4 are two Containers- one EMS and one Hospital Container. The EMS Container has a large number of auto-injectors medications and is primarily intended for field use. The quantity of medications found in an EMS Container is sufficient to treat approximately 454 patients. Hospital Containers with multi-dose vials of medications are primarily intended for use in the hospital setting. The quantity of medications available in a Hospital Container is sufficient to treat approximately 1000 patients.
6. The medications in CHEMPACK Containers are the same three drugs: atropine, pralidoxime (2-PAM), and diazepam. *Appendix B includes the specific type and amounts of medication for the EMS and Hospital CHEMPACK Containers and Buffers.*
7. A CHEMPACK Buffer, which contains only atropine and pralidoxime sufficient to treat approximately five patients for 12 hours, is co-located with CHEMPACK at each Host Site.
8. CHEMPACK Containers participate in the federal Shelf Life Extension Program (SLEP), allowing for extension of expiration dates as long as the sealed contents are maintained in a controlled environment. Post incident, unused expired medications must be discarded in accordance with the Louisiana Board of Pharmacy rules and regulations. Replacement of CHEMPACK Container contents is not assured.

B. Assumptions

1. Following the release of a nerve agent or organophosphate, the number of patients could quickly overwhelm the resources available. It may not be possible to save all victims.
2. Patients exposed to organophosphate substances may require treatment with much larger amounts of atropine and pralidoxime than patients exposed to nerve agents.
3. Accepted treatment guidelines should be followed. *Appendices C and D include Treatment and Dosing guidelines for the pre-hospital and hospital setting.*
4. Host Sites must be familiar with CHEMPACK Container(s) and preparing the requested or pre-determined amounts of medication for transfer. The LDH requires that all internal policies and guidelines provide for the immediate opening of the CHEMPACK containers and preparing the requested or pre-determined amounts of medication for transfer. *Appendix F includes the CHEMPACK Allocation Guidelines.*

III. Regional Concept of Operations

- A. Request to use CHEMPACK assets will be made by an Incident Commander or other healthcare provider to LPC. **LPC 1-800-222-1222 or 318-813-3317.**
- B. The LPC will determine whether Buffers or CHEMPACK assets are needed and will notify the Host Site to prepare for deployments, including initiating the Chain of Custody Form, see *Appendix H*. The LPC is authorized by the LDH and CDC to direct a Host Site to break the seal of a CHEMPACK or Buffer Container.
- C. **LPC** will serve as a notification and allocation authority for CHEMPACK assets from Host Sites to EMS and between hospitals.
- D. All CHEMPACK transfers will occur at the Emergency Department's entrance of the Host Sites and Receiving sites.
- E. The Louisiana State Police will coordinate security and transportation of assets from Host Sites to the incident site and/or to Receiving Sites through LSP HAZMAT Hotline. **The Louisiana State Police Hazmat Hotline is available 24/7 at 877-925-6595.** LPC will advise LSP on quantity that will need to be dispatched in order to determine appropriate transportation.
- F. CHEMPACK generated waste will not be returned to the Host Site, but should be disposed of by the agency or facility that requested the material. This disposal will be in accordance with approved methods of disposal.

IV. Organization and Responsibilities

A. Pre-Incident

The CDC authorized the State to move CHEMCPACK Containers for designated special events such as the Super Bowl, major political events, state fairs, large concerts and key summits. Regional requests for relocations must be sent to LDH CHEMPACK Coordinator in advance of the event.

B. Post-Incident

1. After a CHEMPACK response, the Host Site Pharmacist will document the date and location of the incident and conduct an inventory of any unused assets. This inventory will be provided to the OPH State Director of Pharmacy and the Louisiana CHEMPACK Coordinator for control and/or return of CHEMPACK assets.

2. CHEMPACK generated waste will not be returned to the Host Site, but should be disposed of by the agency or facility that used the material. This disposal will be in accordance with approved methods of disposal.
3. If a CHEMPACK Container is decommissioned, any and all equipment, Containers and other material originally supplied when the Container was placed will be returned to the CDC CHEMPACK Program.
4. Requests for replenishment of supplies should be made to CDC SNS Program by the LA CHEMPACK Coordinator as soon as possible following an incident. There is currently no funding source available to replenish CHEMPACK assets.

B. Unauthorized Opening of a CHEMPACK Container

1. If a Container is inadvertently opened, the Host Site DEA registrant is to notify the Louisiana CHEMPACK Coordinator immediately upon discovering the incident. **The Louisiana Office of Public Health is available 24/7 at 800-256-2748.**
2. An inventory of the Container contents will be conducted by the Host Site and provided to the OPH State Director of Pharmacy. The circumstances surrounding the opening will accompany the inventory.

V. CHEMPACK Notification Levels for Host Sites

A. Notification level shall be determined by the Louisiana Poison Center. The LPC will notify the host Sites.

1. **Level 1 – STANDBY**

A nerve agent or organophosphate release is suspected, CHEMPACK Host Site(s) may be notified to be aware of the possibility of an incident.

No action by the Host Site is necessary at this time.

2. **Level 2 – ALERT**

Conditions indicate or symptoms are consistent with a nerve agent or organophosphate release. The LPC will notify the Host Site. The Host Site should initiate response plans in anticipation of opening the CHEMPACK Container(s) and or dispatch of CHEMPACK Buffers.

CHEMPACK Container is not opened at this alert level.

3. **Level 3 - ACTIVATION**

Conditions indicate or symptoms are consistent with a nerve agent or organophosphate release AND assets greater than those locally or readily available are necessary to meet the demands of the incident.

Activate response plan. Dispatch “Buffers” and/or open the CHEMPACK Container and prepare contents for deployment as directed by the LPC including initiating the Chain of Custody Form.

VI. ADMINISTRATION AND LOGISTICS

A. Resource Allocation

Reported estimates of the number of persons affected will determine regional recommendations for resource allocation.

B. Communication

LPC will authorize the opening of CHEMPACK Containers at Host Site(s) or the dispatch of CHEMPACK Buffers. The **LPCC** will contact the **LSP** to direct the transportation of CHEMPACK assets by the **LSP**. **LSP** will coordinate the transportation of the CHEMPACK by **LSP** assets or arrange transport with local law enforcement.

C. Notification

The **LPC** will contact the Host Site(s) to authorize opening a CHEMPACK Container or dispatch of CHEMPACK Buffers. The **LPC** will also notify the Region 4 OPH Medical Director who in turn will notify the Region 4 PHERC, EMS DRC, and Hospital DRC. **A notification procedure should never delay the deployment of CHEMPACK.**

Appendix A: Nerve Agents and Organophosphate Commercial Products

Agent	Abbreviation	Chemical Name
Tabun	GA	Ethyl N, N-dimethyl-phosphoramidocyanidate
Sarin	GB	Isopropyl-methylphosphonofluoridate
Soman	GD	1,2,2-Trimethylpropyl methylphosphonofluoridate
Cyclosarin	GF	Cyclohexyl-methylphosphonofluoridate
VX	VX	S-[2-(diisopropylamino)ethyl] methylphosphonothiolate

Chemical Name	Brand Names
acephate	Orthene
azinphos-methyl	Gusathion, Guthion
bensulide	Betasan, Lescosan
bomyl	Swat
bromophos	Nexion
bromophos-ethyl	Nexagan
cadusafos	Apache, Ebulos, Rugby
carbophenothion	Trithion
chlorethoxyfos	Fortress
chlorfenvinphos	Apachlor, Birlane
chlormephos	Dotan
chlorphoxim	Baythion-Cchlorpyrifos, Brodan, Dursban, Lorsban
chlorthiophos	Celathion
coumaphos	Asuntol, Co-Ral
crotoxyphos	Ciodrin, Cypona
crufomate	Ruelene
cyanofenphos	Surecide
cyanophos	Cyanox
cythioate	Cyffee, Proban
dEF	De-Green, E-Z-Off D
dematon	Systox
demeton-S-methyl	Duratox, Metasystoxl
dialifor	Torak
diazinon	
dichlorfenthion	VC-13, Nemacide
dichlorvos	DDVP, Vapone
dicrotophos	Bidrin
dimefos	Hanane, Pestox XIV

dimethoate	Cygon, DeFend
dioxathion	Deinav
disulfoton	Disyston
ditalimfos	
edifenphos	
endothion	
EPBP	S-Seven
EPN	
ethion	Ethanox
ethoprop	Mocap
ethyl parathion	E605, Parathion, Thiophos
etrimfos	Ekamet
famphur	Bash, Bo-Ana, Famfos
fenamiphos	Nemacur
fenitrothion	Accothion, Agrothion, Sumithion
fenophosphon	Agritox, Trichloronate
fensulfothion	Dasanit
fenthion	Baytex, Entex, Tiguvon
fonofos	Dyfonate, N-2790
formothion	Anthro
fosthietan	Nem-A-Tak
heptenophos	Hostaquick
hiometon	Ekatin
hosalone	Zolone
IBP	Kitazin
iodofenphos	Nuvalol-N
isazofos	Brace, Miral, Triumph
isofenphos	Amaze, Oftanol
isoxathion	E-48, Karphos,
leptophos	Phosvel
malathion	Cythion
mephosfolan	Cytrolane
merphos	Easy off-D, Folex
methamidophos	Monitor
methidathion	Supracide, Ultracide
methyl parathion	E 601, Penncap-M
methyl trithion	
mevinphos	Duraphos, Phosdrin
mipafox	Isopestox, Pestox XV
monocrotophos	Azpdrom
naled	Dibrom
oxydemethon-methyl	Metasystox-R
oxydeprofos	Metasystox-S
phencapton	G 28029

Appendix B: Container Contents

EMS CONTAINER – Treats 454 Patients

	Quantity	Total Units in Container	Number of Cases
ATNAA Auto Injector	1200	200	6
Atropine Sulfate 0.4 mg/ml 20 ml	100	100	1
Pralidoxime 1Gm inj 20 ml vial	276	276	1
Atropen 0.5 mg	144	144	1
Atropen 1.0 mg	144	144	1
Diazepam 5mg/ml auto-injector	300	150	2
Diazepam 5mg/ml, 10ml vial	50	50	1
Sterile Water for Injection 20cc vials	200	100	2
Sensaphone 2050	1	1	1
Satco C DEA Container	1	1	1

HOSPITAL CONTAINER – Treats 1000 Patients

	Quantity	Total Units in Container	Number of Cases
Mark I Auto Injector	480	240	2
Atropine Sulfate 0.4 mg/ml 20 ml	900	100	9
Pralidoxime 1Gm inj 20 ml vial	2760	276	10
Atropen 0.5 mg	144	144	1
Atropen 1.0 mg	144	144	1
Diazepam 5mg/ml auto-injector	150	150	1
Diazepam 5mg/ml, 10ml vial	650	50	13
Sterile Water for Injection 20cc vials	2800	100	28
Sensaphone 2050	1	1	1
Satco C DEA Container	1	1	1

HOSPITAL BUFFER – Treats 3 to 5 patients for 12 Hours

	Quantity
Pralidoxime 1Gm inj (20 ml vial)	12 vials

Appendix C: Treatment Guidelines for Pre-Hospital

Antidote Dosing based on Symptoms

- Diaphoresis, Diarrhea
- Urination
- Miosis
- Bradycardia, Bronchospasm, Bronchorrhea, Bronchoconstriction
- Emesis
- Lacrimation
- Salivation

Collectively, these “**DUMBBELS**” findings present clinically as abdominal distress and severe compromise of lung function due to excess secretions.

Exposure	Symptoms	Initial Dosing* (EMS/Field)	Repeat Dosing (Transport/Hospital)
Mild	DUMBBELS Agitation	Observe or MARK 1 or ATNAA	Observe
Moderate	DUMBBELS Agitation Respiratory distress	2 Mark 1** or 2 ATNAA	Atropine 5-10 min 2-PAM q 30-60 min
Severe	DUMBBELS Respiratory distress Seizures	3 MARK 1*** or 3 ATNAA Diazepam	Atropine 5-10 min 2-PAM q 30-60 min Diazepam q 2-5 min

* Consider the use of Mark1 or ATNAA auto-injectors for infant/child/frail elderly **ONLY** in extraordinary circumstances if multi-dose not available, IV route not established and/or precise dosing is impossible.

** As quick as possible, administer both drugs from the auto-injector, one right after the other.

Information on Auto-Injectors

Note: Use of antidotes will not protect responders from anticipated exposures.

1. Auto-injectors are self-contained, simple, compact injection systems that come equipped with a pre-measured dose (normal adult dose) of antidote.
2. An antidote relieves, counteracts, or reverses the effects of poisons or drugs such as nerve agents.
3. The Mark 1 and ATNAA auto-injectors must be kept at room temperature (about 25°C/77°F) and must be protected from freezing.

4. Auto-injectors permit rapid administration of antidote, prevent needle cross-contamination between patients, and enable rapid and accurate administration to a large number of patients (even if the emergency provider and the patient are in chemical protective clothing).
5. Auto-injectors facilitate treatment by providing simple, accurate, drug administration of a pre-measured, controlled dose.
6. Auto-injectors administer a predictable drug dose that is not operator dependent.
7. MARK1 or ATNAA auto-injectors contain pre-measured doses of the nerve agent antidotes:
 - Atropine
 - 2-PAM Chloride (2-PAM CL; pralidoxime chloride)
 - Each auto-injector contains pre-measured amounts of Atropine (2 mg total dose per injection) and 2-PAM CL (600 mg total dose per injection).
8. **Mark1 or ATNAA Auto-injectors are to be used only:**
 - When specific signs and symptoms of exposure are present
 - Scene has been declared the site of a nerve agent release by a competent authority
 - Following consultation with medical control and/or Louisiana Poison Control Center
 - **Mark1 or ATNAA Auto-injectors are not to be used as a prophylaxis for personal protection.**

Mark1 and ATNAA Nerve Agent Antidote Auto-injector Use

Each Mark I Auto-injector contains:

Atropine auto-injector 2mg in 0.7cc

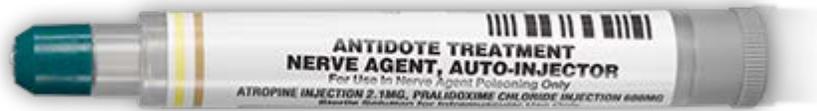
Pralidoxime auto-injector 600mg in 2cc



- The small injector, marked **1**, is atropine – 2mg and should be given first.
- The larger injector, marked **2** is 2-PAM – 600 mg and is given after the atropine.

Each ATNAA Auto-injector contains:

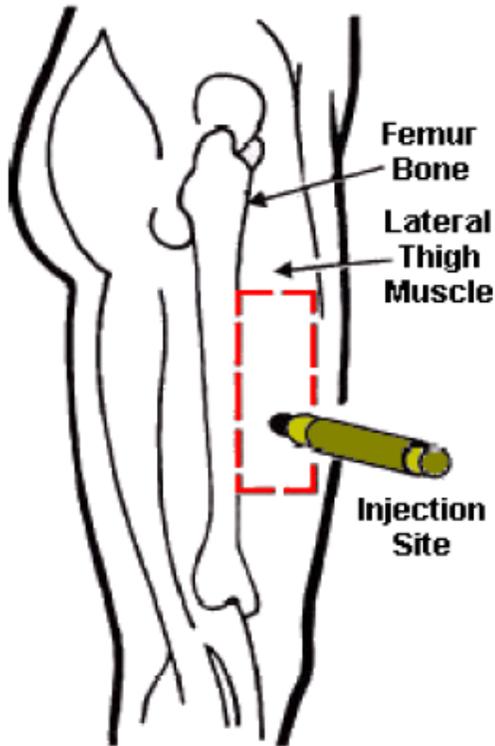
A combination of atropine 2.1mg/0.7ml and pralidoxime chloride 600mg/2.0ml



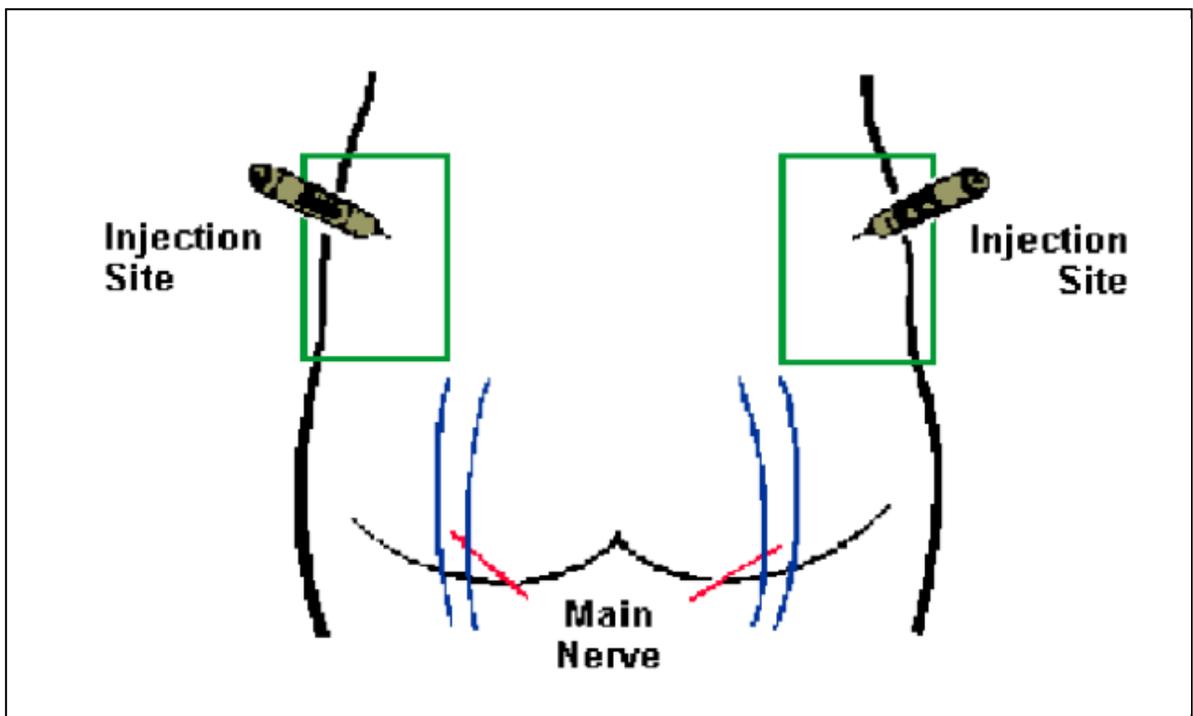
Preferred site of injection for infants, children and adults the anterolateral thigh

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- Remove the safety cap from the auto-injectors.
- Apply firm, even pressure (not jabbing motion) to the injector until it pushes the needle into your thigh (or buttocks). Using a jabbing motion may result in an improper injection or injury to the thigh or buttocks.
- Firm pressure automatically triggers the coiled spring mechanism. This plunges the needle through the clothing into the muscle and at the same time injects the antidote into the muscle tissue.
- **Hold the injector firmly in place for at least 10 seconds.**
- Carefully remove the auto-injector from the injection site.
- The needle does not retract. Dispose of the auto-injector with caution.



IMPORTANT: Physicians and/or other medical personnel and emergency responders assisting evacuated victims of nerve agent exposure should avoid exposing themselves to cross-contamination by ensuring that they do not come into direct contact with the patient's clothing.

Cautions for Use of Auto-injectors:

- 1) Every potential exposure in the immediate vicinity of the incident must be medically evaluated and monitored. Delayed symptoms may present anytime post incident.
Any patient ill enough to receive even one dose of atropine must be evaluated at an appropriate facility (e.g. casualty collection point, hospital, etc.).
- 2) Signs or symptoms of nerve agent poisoning may reappear. Serial observations are a critical part of the management process.
- 3) Auto-injectors have been developed for use in the adult population. Safety and effectiveness of 2-PAM CL in children has not been established.

For additional information on the treatment of pediatric patients contact the Louisiana Poison Center at 800-222-1222 or 318-813-2217.

Appendix D: Treatment Guidelines for Hospitals

Patient	Mild/Moderate Effects ¹	Severe Effects ²	Other Treatment
Child	Atropine: 0.05mg/kg IM or IV (minimum 0.1mg Maximum 5mg) AND 2-PAM: 25mg/kg IM or IV (maximum 2Gm IM or 1Gm IV)	Atropine: 0.1mg/kg IM or IV (minimum 0.1mg, maximum 5mg) AND 2-PAM: 50mg/kg IM or IV (maximum 2Gm IM or 1Gm IV)	Assisted ventilation for severe exposure. Repeat atropine at 2-5 minute intervals until secretions have diminished and airway resistance has decreased. Repeat 2-PAM chloride once at 30-60 minutes, then at one-hour intervals for 1-2 doses, as necessary. Diazepam for seizures: Child - 0.05 to 0.3 mg/kg IV (maximum 10 mg); Adult - 5 mg IV Other benzodiazepines (e.g. lorazepam) may provide relief.
Adult	Atropine: 2 to 4 mg IM or IV AND 2-PAM³: 600mg IM, or 25mg/kg IV slowly	Atropine: 6mg IM AND 2-PAM³: 1800 mg IM, or 50mg/Kg IV slowly	Child - 0.05 to 0.3 mg/kg IV (maximum 10 mg); Adult - 5 mg IV Other benzodiazepines (e.g. lorazepam) may provide relief. Phentolamine for 2-PAM chloride-induced hypertension: 1 mg IV for children; 5 mg IV for adults.

1. **Mild/Moderate effects of nerve agents** include localized sweating, muscle fasciculations, nausea, vomiting, weakness, and dyspnea.
2. **Severe effects of nerve agents** include unconsciousness, seizures, apnea, flaccid paralysis.
3. Dose selection of 2-PAM chloride for elderly patients should be cautious (usually starting at 600 mg IM, or 25 mg/kg IV slowly) to account for the generally decreased organ functions in this population.

NOTE: 2-PAM chloride (2-PAM) is pralidoxime chloride, trade name Protopam®.

CHEMPACK: CHEMPACK is a federal program to provide nerve agent antidotes (Atropine, 2-PAM, Diazepam) to during an emergency.

Additional Assistance: Contact the **Louisiana Poison Center at 800-222-1222 or 318-813-3317** for additional information regarding dosing.

Appendix E: Poisoning from Nerve Agents or Organophosphates

Nerve agents and Organophosphate Insecticides cause the same symptoms. In fact, the Germans were researching insecticides when the extremely potent agents now referred to as the “G” (for German) agents were discovered. All of these substances work in the same manner, by inhibiting the enzyme acetylcholinesterase.

Treatment of patients exposed to any of these substances is based upon the history of exposure, the route of exposure, and the symptoms present.

It is important to remember that symptoms following exposure may occur within seconds and progress to potentially fatal within minutes, so therapy should be initiated as quickly as possible.

Routes of Exposure:

Exposure to organophosphates can occur through inhalation (breathing), dermal (skin) exposure, ocular (eye) exposure, or through the gastrointestinal tract (drinking or eating).

Patient History

- Symptoms following exposure to a nerve agent can occur within seconds. Symptom onset following dermal exposure may be delayed up to 18 hours post exposure.
- A history of possible exposure combined with classic physical signs and symptoms help make the diagnosis.
- Most nerve agents have little or no odor. Some commercially available organophosphate insecticides have a very strong odor.

Physical

Physical findings vary according to the route of exposure, the age of patient, and the specific chemical.

- Muscarinic findings may include the following:
 - **Diaphoresis, Diarrhea**
 - **Urination**
 - **Miosis**
 - **Bradycardia, Bronchospasm, Bronchorrhea, Bronchoconstriction**
 - **Emesis**
 - **Lacrimation**
 - **Salivation**

Collectively, these “**DUMBBELS**” findings present clinically as abdominal distress and severe compromise of lung function due to excess secretions.

- Nicotinic findings may include the following:
 - Muscle fasciculations (twitching)
 - Fatigue
 - Paralysis
 - Respiratory muscle weakness
 - Diminished respiratory effort
 - Tachycardia
 - Hypertension

- CNS findings may include the following:
 - Anxiety
 - Restlessness
 - Confusion
 - Headache
 - Slurred speech
 - Ataxia
 - Seizures
 - Coma
 - Central respiratory paralysis
 - Altered level of consciousness and/or hypotonia

Medical Care:

- Pre-hospital care
 - Ensure airway support and ventilation and perform endotracheal intubation, if necessary, to support the patient before arrival.
 - Circulatory support with intravenous (IV) access, fluids, and cardiac and pulse oximetry monitoring can facilitate safe transport.
 - Decontamination is of the utmost importance in minimizing continued exposure and to protect providers and other patients from contamination. Decontamination involves removing all of the patient's clothing and washing him or her completely with water and soap.
 - By describing the scene, prevalent odors, or other casualties, pre-hospital providers may provide important clues to the presence of exposure.
 - If caregivers in the pre-hospital setting are able to make the diagnosis or organophosphate poisoning then treatment can begin in the pre-hospital setting with the administration of antidotal therapy.
 - Consultation with the staff of the Louisiana Poison I Center at 800-222-1222 can aid in making the diagnosis.

- Hospital and Emergency Department Care
 - Patients who are inadequately decontaminated may expose rescue personnel and hospital staff to the toxin.
 - Assess the patient's airway, breathing, and circulation (ABCs). Secure the airway and perform cardiovascular resuscitation if needed. Endotracheal intubation may be necessary for airway protection and ventilatory support.
 - If the patient's condition is stable, decontamination is the next priority. Pre-hospital providers may also need decontamination. The dermal decontamination of exposed individuals is a priority before they enter the emergency department where they can contaminate other patients and staff members.
 - Gastric decontamination with activated charcoal should be performed in all cases of significant exposure because of the entero-hepatic recirculation common with these compounds.
 - Severe exposures require expeditious antidotal therapy. Atropine is used to dry excess secretions and to ease respiratory tension.
 - Atropine should be used in doses sufficient to dry secretions. Dose atropine to drying of respiratory secretions without regard to changes in heart rate or pupil size. Continued repeat dosing of atropine should occur as needed to control excess secretions.
 - **Pralidoxime (2-PAM)** is used break the bond between the agent and the acetylcholinesterase molecule. 2-PAM aids in treating the muscular weakness associated with exposure to a nerve agent or other organophosphate.
 - **Seizures should be treated with diazepam (Valium) or other benzodiazepine like lorazepam (Ativan).**

Consultations:

- Consult a medical toxicologist or the Louisiana Poison Center at 800-222-1222 for patient management assistance.
- Consult a critical care specialist early in severe poisonings for on-going care outside the Emergency Department.

Appendix F: CHEMPACK Allocation Guidelines

This guideline provides a method by which the assets of the two types of CHEMPACK (EMS or Hospital) Containers may be deployed. Personnel who will be a part of the team that opens the Container, gathers, sorts, packages, and deploys CHEMPACK assets should be familiar with these guidelines.

Assets and Case Sizes Defined:

- (1) **Mark 1 Kits** – For **HOSPITAL CONTAINERS ONLY** – Each case contains a total of 240 Mark 1 Kits packaged in 8 smaller boxes of 30 auto-injectors (case size: 16.0 ht x 14” wd x 19.25” long and weighs 47.1 lbs)
ATNAA Auto-injectors – **FOR EMS CONTAINERS ONLY** – Each case contains a total of 200 individually packaged ATNAA auto-injectors. (Case size: 10.75” ht x 12.75” wd x 17.5” long and weighs 23.5 lbs)
- (2) **Atropine Sulfate 0.4mg/mL** – Each case contains a total of 100 multiple doses vials packaged in four flats of 25 vials.
(Case size: 6.5” ht x 7.38” wd x 13.88” long and weighs 12.3 lbs)
- (3) **Pralidoxime 1gram vials** – Case contains a total of 276 vials packaged in 46 boxes of six 1 gram vials. (case size: 11.81” ht x 14” wd x 12.31” long and weighs 11.5 lbs)
- (4) **Atropen® 0.5mg auto-injectors** – Each case contains 144 auto-injectors packaged in 12 smaller boxes of 12 auto-injectors. (case size: 14” ht x 10.5” wd x 19.18” long and weighs 16.8 lbs)
- (5) **Atropen® 1mg auto-injectors** – Each case contains 144 auto-injectors packaged in 12 smaller boxes of 12 auto-injectors. (case size: 14” ht x 10.5” wd x 19.18” long and weighs 16.8 lbs)
- (6) **Diazepam 10mg/2mL auto-injectors** – Each case contains 150 auto-injectors packaged in 10 smaller boxes of 15 auto-injectors. (case size: 9.5” ht x 8.5” wd x 24.24” long and weighs 20 lbs)
- (7) **Diazepam 5mg/mL 10mL** – Each case contains 25 multiple dose vials packaged in smaller boxes of five 10mL vials. (case size: 6” ht x 6.5” wd x 2.75” long and weighs 1.8 lbs)
- (8) **Sterile Water for Injection 20mL single use vials** – Each case contains 100 vials packaged in four flats of 25 vials. (case size: 13” ht x 6.63” wd x 6” long and weighs 7.2 lbs)

Basic Principles:

- (1) **TIMELY RESPONSE IS CRITICAL!**
- (2) Attempts will be made to avoid opening or dividing smaller boxes or flats within the larger cases. This will allow for a minimum of additional handling and which would slow the packaging and transportation of the assets further. **TIMELY RESPONSE IS CRITICAL!**
- (3) Education of all personnel who may be involved in this process is essential to make rapid deployment possible.

EMS Container Allocations

Each EMS Container treats up to 454 patients

Halves Allocation Method (~227 patients per site)

Asset and Amount	SITE ONE	SITE TWO
ATNAA, 1200 auto-injectors	3 cases (600 auto injectors)	3 cases (600 auto injectors)
Atropine Sulfate 0.4mg/mL 20mL, 100 vials	2 flats (50 vials)*	2 flats (50 vials)*
Pralidoxime 1 gram vials, 276 vials	23 boxes (138 vials) *	23 boxes (138 vials) *
Atropen® 0.5mg, 144 auto-injectors	6 boxes (72 auto-injectors) *	6 boxes (72 auto-injectors)
Atropen® 1mg, 144 auto-injectors	6 boxes (72 auto-injectors) *	6 boxes (72 auto-injectors)*
Diazepam 10mg, 300 auto-injectors	1 case (150 auto-injectors)	1 case (150 auto-injectors)
Diazepam 5mg/mL 10mL vials, 50 vials	1 case (25 vials)	1 case (25 vials)
Sterile Water for Injection 20mL vial, 200 vials	1 case (100 vials) *	1 case (100 vials) *



* Cases of these items must be opened to retrieve individual boxes or flats.

EMS Container Allocations

Thirds Allocation Method (~151 patients per site)

Asset and Amount	SITE ONE	SITE TWO	SITE THREE
ATNAA 1200 auto injectors	2 cases (400 auto injectors)	2 cases (400 auto injectors)	2 cases (400 auto injectors)
Atropine Sulfate 0.4mg/mL 20mL, 100 vials	2 flats (50 vials) **	1 flat (25 vials) **	1 flat (25 vials) **
Pralidoxime 1 gram vials, 276 vials	16 boxes (96 vials) **	15 boxes (90 vials) **	15 boxes (90 vials) **
Atropen® 0.5mg, 144 auto-injectors	4 boxes (48 auto-injectors) **	4 boxes (48 auto-injectors) **	4 boxes (48 auto-injectors) **
Atropen® 1mg, 144 auto-injectors	4 boxes (48 auto-injectors) **	4 boxes (48 auto-injectors) **	4 boxes (48 auto-injectors) **
Diazepam 10mg, 300 auto-injectors	7 boxes (105 auto-injectors) **	7 boxes (105 auto-injectors) **	6 boxes (90 auto-injectors) **
Diazepam 5mg/mL 10mL vials, 50 vials	4 boxes (20 vials)**	3 boxes (15 vials)**	3 boxes (15 vials)**
Sterile Water for Injection 20mL vial, 200 vials	3 flats (75 vials)**	3 flats (75 vials) **	2 flats (50 vials)**



Cases of these items must be opened to retrieve individual boxes or flats.

* **Due to the rapid need for the ATNAA auto injectors, further handling and division is not advised, It is better to transport full cases to the field instead of attempting to further divide the assets in a more even fashion.

EMS Container Allocations

Fourths Allocation Method (~113 patients per site)

Asset and Amount	SITE ONE	SITE TWO	SITE THREE	SITE FOUR
ATNAA 1200 auto injectors	3 boxes (300 auto injectors)			
*Atropine Sulfate 0.4mg/mL 20mL, 100 vials	1 flat (25 vials)	1 flat (25 vials)	1 flat (25 vials)	1 flat (25 vials)
*Pralidoxime 1 gram vials, 276 vials	12 boxes (72 vials)	12 boxes (72 vials)	12 boxes (72 vials)	10 boxes (60 vials)
*Atropen 0.5mg, 144 auto-injectors	3 boxes (36 auto-injectors)	3 boxes (36 auto-injectors)	3 boxes (36 auto-injectors)	3 boxes (36 auto-injectors)
*Atropen 1mg, 144 auto-injectors	3 boxes (36 auto-injectors)	3 boxes (36 auto-injectors)	3 boxes (36 auto-injectors)	3 boxes (36 auto-injectors)
*Diazepam 10mg, 300 auto-injectors	5 boxes (75 auto-injectors)	5 boxes (75 auto-injectors)	5 boxes (75 auto-injectors)	5 boxes (75 auto-injectors)
*Diazepam 5mg/mL 10mL vials, 50 vials	3 boxes (15 vials)	3 boxes (15 vials)	3 boxes (15 vials)	1 box (5 vials)
*Sterile Water for Injection 20mL vial, 200 vials	2 flats (50 vials)	2 flats (50 vials)	2 flats (50 vials)	2 flats (50 vials)



Cases of these items must be opened to retrieve individual boxes or flats.

* *Due to the rapid need for the ATNAA auto injectors, further handling and division is not advised. It is better to transport full cases to the field instead of attempting to further divide the assets in a more even fashion.

Hospital Container Allocations

Each Hospital Container treats up to 1000 patients

Halves Allocation Method (500 patients per hospital)

Asset and Amount	Hospital One	Hospital Two
Mark 1 Kits, 480 auto-injectors	1 case (240 Mark 1 Kits)	1 case (240 Mark 1 Kits)
Atropine Sulfate 0.4mg/mL 20mL, 900 vials	5 cases (500 vials)	4 cases (400 vials)
Pralidoxime 1 gram vials, 2760 vials	5 cases (1380 vials)	5 cases (1380 vials)
Atropen® 0.5mg, 144 auto-injectors	*6 boxes (72 auto-injectors)	*6 boxes (72 auto-injectors)
Atropen® 1mg, 144 auto-injectors	*6 boxes (72 auto-injectors)	*6 boxes (72 auto-injectors)
Diazepam 10mg, 150 auto-injectors	*5 boxes (75 auto-injectors)	*5 boxes (75 auto-injectors)
Diazepam 5mg/mL 10mL vials, 650 vials	13 cases (325 vials)	13 cases (325 vials)
Sterile Water for Injection 20mL vial, 2800 vials	14 cases (1400 vials)	14 cases (1400 vials)



*  **Cases of these items must be opened to retrieve individual boxes or flats.**

Hospital Container Allocations

Thirds Allocation Method (333 patients per hospital)

Asset and Amount	Hospital One	Hospital Two	Hospital Three
Mark 1 Kits, 480 auto-injectors	*6 boxes (180 Mark 1 Kits)	*5 boxes (150 Mark 1 Kits)	*5 boxes (150 Mark 1 Kits)
Atropine Sulfate 0.4mg/mL 20mL, 900 vials	3 cases (300 vials)	3 cases (300 vials)	3 cases (300 vials)
Pralidoxime 1 gram vials, 2760 vials	4 cases (1104 vials)	3 cases (828 vials)	3 cases (828 vials)
Atropen® 0.5mg, 144 auto-injectors	*4 boxes (48 auto-injectors)	*4 boxes (48 auto-injectors)	*4 boxes (48 auto-injectors)
Atropen® 1mg, 144 auto-injectors	*4 boxes (48 auto-injectors)	*4 boxes (48 auto-injectors)	*4 boxes (48 auto-injectors)
Diazepam 10mg, 150 auto-injectors	*4 boxes (60 auto-injectors)	*3 boxes (45 auto-injectors)	*3 boxes (45 auto-injectors)
Diazepam 5mg/mL 10mL vials, 650 vials	9 cases (225 vials)	9 cases (225 vials)	8 cases (200 vials)
Sterile Water for Injection 20mL vial, 2800 vials	10 cases (1000 vials)	9 cases (900 vials)	9 cases (900 vials)



Cases of these items must be opened to retrieve individual boxes or flats.

Hospital Container Allocations

Fourths Allocation Method (250 patients per hospital)

Asset and Amount	Hospital One	Hospital Two	Hospital Three	Hospital Four
Mark 1 Kits, 480 auto-injectors	*4 boxes (120 Mark 1 Kits)			
Atropine Sulfate 0.4mg/mL 20mL, 900 vials	3 cases (300 vials)	2 cases (200 vials)	2 cases (200 vials)	2 cases (200 vials)
Pralidoxime 1 gram vials, 2760 vials	3 cases (828 vials)	3 cases (828 vials)	2 cases (552 vials)	2 cases (552 vials)
Atropen® 0.5mg, 144 auto-injectors	*3 boxes (36 auto-injectors)	*3 boxes (36 auto-injectors)	*3 boxes (36 auto-injectors)	*3 boxes (36 auto-injectors)
Atropen® 1mg, 144 auto-injectors	*3 boxes (36 auto-injectors)	*3 boxes (36 auto-injectors)	*3 boxes (36 auto-injectors)	*3 boxes (36 auto-injectors)
Diazepam 10mg, 150 auto-injectors	*3 boxes (45 auto-injectors)	*3 boxes (45 auto-injectors)	*2 boxes (30 auto-injectors)	*2 boxes (30 auto-injectors)
Diazepam 5mg/mL 10mL vials, 650 vials	7 cases (175 vials)	7 cases (175 vials)	6 cases (150 vials)	6 cases (150 vials)
Sterile Water for Injection 20mL vial, 2800 vials	6 cases (600 vials)	6 cases (600 vials)	6 cases (600 vials)	5 cases (500 vials)



Cases of these items must be opened to retrieve individual boxes or flats.

Hospital Container Allocations

For any number of patients that exceed the treatment capacity of available CHEMPACK Buffers the following allocation will be used for 100 or fewer patients. There are enough supplies in a hospital pack to supply 8 sites with 100 or fewer patients from the allocations below, or fewer sites with re-supply amounts available.

Tenths Allocation (100 patients)

Asset and Amount	Each Hospital
Mark 1 Kits, 480 auto-injectors	*2 boxes (60 Mark 1 Kits)
Atropine Sulfate 0.4mg/mL 20mL, 900 vials	1 case (100 vials)
Pralidoxime 1 gram vials, 2760 vials	1 case (276 vials)
Atropen® 0.5mg, 144 auto-injectors	*1 box (12 auto-injectors)
Atropen® 1mg, 144 auto-injectors	*1 box (12 auto-injectors)
Diazepam 10mg, 150 auto-injectors	*1 box (15 auto-injectors)
Diazepam 5mg/mL 10mL vials, 650 vials	3 cases (50 vials)
Sterile Water for Injection 20mL vial, 2800 vials	3 cases (300 vials)



***  Cases of these items must be opened to retrieve individual boxes or flats.**

Sample “Pick List”

Your hospital site has been contacted and given directions to open 1 CHEMPACK Container. Instructions to prepare 1 one-tenths allocation are given. The following “pick list” should be used to prepare the shipment.

One-tenths Allocation Pick List

After the CHEMPACK Container seal is broken and the door is removed, collect the following and prepare for deployment. Check beside each number after those items have been removed, checked and set aside for shipment.

1. Remove one of the cases of Mark I Kits labeled with a blue sticker. Open that case, remove 2 of the boxes inside and place those 2 boxes aside for shipment. 
2. Remove one case of atropine sulfate labeled with a green sticker. Do not open the case. Set aside for shipment. 
3. Remove one case of pralidoxime labeled with a red sticker. Do not open the case. Set aside for shipment. 
4. Remove the case of atropine 0.5mg auto-injectors labeled with a pink sticker. Open the case and remove 1 of the boxes inside. Place that 1 box aside for shipment. 
5. Remove the case of atropine 1.0mg auto-injectors labeled with an orange sticker. Open the case and remove 1 of the boxes inside. Place that 1 box aside for shipment. 
6. Remove one case of diazepam auto-injectors labeled with a brown label. Open the case and remove 1 of the boxes inside. Place that 1 box aside for shipment. 
7. Remove three cases of diazepam 5mg/ml labeled with a purple sticker. Do not open the three cases. Place those cases aside for shipment. 
8. Remove three cases of sterile water for injection labeled with yellow stickers. Do not open the cases. Place those cases aside for shipment. 
9. Package items removed from cases in a box and secure with tape.

Legend

For Hospital Containers:

Mark I Kits

Contents: 8 boxes of 30 Kits
240 total

For EMS Containers

ATNAA Auto-injectors

Contents: 6 boxes of 200
1200 total

Atropine Sulfate
0.4 mg/ml 20ml vials

Contents:
4 flats of 25 vials each
100 vials total

Pralidoxime
1Gram vials

Contents:
46 boxes of 6 vials
276 vials total

Atropen
0.5mg

Contents:
12 boxes of 12 injectors
144 auto-injectors total

Atropen
1.0mg

Contents:
12 boxes of 12 injectors
144 auto-injectors total

Diazepam
10mg

Contents:
10 boxes of 15 injectors
150 auto-injectors total

Diazepam
5mg/ml 10 ml vials

Contents:
5 boxes of 5 vials each
25 vials total

Sterile Water for Injection
20 ml vials

Contents:
4 flats of 25 vials each
100 vials total

Appendix G: Pharmacology of Nerve Agent Antidotes

Atropine: Competitive antagonist of acetylcholine at muscarinic sites. It is used to treat gastrointestinal, pulmonary, and upper airway symptoms after known or suspected exposure to a nerve agent or organophosphate. Administer until cholinergic signs reverse. Large doses may be needed.

Adult Dose	0.05 mg/kg IV initially; then 1-2 mg IV q20-30min until cholinergic signs reverse
Pediatric Dose	<12 years: 0.02-0.05 mg/kg IV q20-30min until cholinergic signs reverse; ≥12 years: Administer as in adults
Contraindications	Documented hypersensitivity; thyrotoxicosis; narrow-angle glaucoma; tachycardia
Interactions	Coadministration with other anticholinergics have additive effects; may increase pharmacologic effects of atenolol and digoxin; may decrease antipsychotic effects of phenothiazines; tricyclic antidepressants with anticholinergic activity may increase effects
Pregnancy	C (Safety for use during pregnancy has not been established)
Precautions	Caution in coronary heart disease, tachycardia, congestive heart failure, cardiac arrhythmias, and hypertension; caution in peritonitis, ulcerative colitis, hepatic disease, and hiatal hernia with reflux esophagitis; in prostatic hypertrophy, prostatism can cause dysuria and catheterization may be required; may impair regulation of body temperature (caution in hot and humid weather)

2-PAM Chloride: An agent that reactivates AChE by binding to organophosphate molecule, displacing the AChE and allowing it to once again inactivate acetylcholine. It is used to treat muscle weakness and respiratory muscle weakness in known exposure. 2-PAM must be administered before a phenomenon known as aging occurs. Aging may occur as soon as two minutes after exposure to Soman or as late as 48 hours after exposure to VX. Aging times vary by specific organophosphate substance, so 2-PAM should be administered as soon as possible after exposure.

In a symptomatic patient, both 2-PAM and atropine should be administered.

Adult Dose	1-2 g IV over 15 min, then 500 mg/h IV until muscle strength returns
Pediatric Dose	<12 years: 25-50 mg/kg IV initially, then 10-20 mg/kg/h IV until muscle strength returns; ≥12 years: 0.5-1 g IV initially, then 500 mg/h IV until muscle strength returns
Contraindications	Documented hypersensitivity
Interactions	AChE inhibitors may potentiate the action of barbiturates; may antagonize the effects of neostigmine, pyridostigmine, and edrophonium. Morphine, theophylline, aminophylline, succinylcholine, reserpine, and phenothiazines can worsen condition of patients poisoned by organophosphate insecticides or nerve agents (do not administer)
Pregnancy	C (Safety for use during pregnancy has not been established)
Precautions	Rapid injection can cause tachycardia, laryngospasm, muscle rigidity, pain at injection site, blurred vision, diplopia, impaired accommodation, dizziness, drowsiness, nausea, tachycardia, hypertension, and hyperventilation; can precipitate myasthenia crisis in patients with myasthenia gravis and muscle rigidity in healthy volunteers; renal dysfunction increases serum levels because excreted in urine; can transiently increase creatinine phosphokinase level; aspartate aminotransferase and/or alanine aminotransferase levels increase in 1 of 6 patients.

Further Inpatient Care

- Admit patients to the hospital if they require therapy with atropine or 2-PAM. Monitoring, respiratory support, and assisted ventilation may be needed.
- Consult the poison center for information regarding the specific agent and patient management guidance.

Further Outpatient Care

- Patients with minor or no symptoms of toxicity after inhalational exposure to a nerve agent or other organophosphate exposure may be discharged from the Emergency Department after 6 hours of observation.

- Patients with dermal exposure should be monitored for an extended period. Symptoms following dermal exposure, even if decontamination has been performed, may be delayed for up to 18 hours post exposure.
- Discharged patients usually do not require outpatient medications, but should be counseled about the duration that any symptoms present may persist.

Transfer

- Transfer pediatric patients with severe life-threatening exposures to a facility with a pediatric intensivist and intensive care unit.

Patients should be clinically stable before transfer.

Appendix H: Chain of Custody Form

CHEMPACK CHAIN OF CUSTODY FORM

CONTAINER NUMBER (4 Digits): _____

DATE: _____

A. HOST SITE

STEP 1: TO BE COMPLETED BY THE HOST SITE

Name, Address and Phone Number of HOST Facility

Contact Person: _____

Title: _____

Name of HOST Facility: _____

Address: _____

City/State: _____

Phone Number: _____

Name, Address, and Phone Number of RECEIVING Site

Contact Person: _____

Title: _____

Name of Receiving Site: _____

Address: _____

City/State: _____

Phone Number: _____

STEP 2: ATTACH A COPY OF THE PICK/PACKING LIST TO THIS FORM

STEP 3: DELIVER MATERIALS TO THE DESIGNATED PICK UP LOCATION

STEP 4: ENTER THE NAME OF THE PERSON TRANSPORTING THE MATERIALS: _____

STEP 5: ENTER THE TIME THE MATERIALS ARE RELEASED FOR TRANSPORT: _____

STEP 6: IMPORTANT- RETAIN THE BOTTOM COPY OF THIS FORM FOR YOUR RECORDS.

B. TRANSPORTER

STEP 1: ENTER THE NAME AND TITLE OF THE PERSON MATERIALS ARE RELEASED TO AT THE RECEIVING SITE:

C. RECEIVING SITE

STEP 1: PERFORM INVENTORY OF MATERIALS RECEIVED. COMPARE TO PICK/PACKING LIST.

Name and title of person performing inventory: _____

STEP 2: DISTRIBUTE MATERIALS FOR USE.

STEP 3: RETAIN THE CUSTODY FORM AND PICK/PACKAGING LIST FOR YOUR RECORDS.

Appendix I: General Information Signage and Fact Sheet

CHEMPACK

ANTIDOTES FOR: *Nerve Agent or Organophosphate* EXPOSURES

Clinically presents as abdominal distress and severe compromise of lung function due to excess secretions

Diaphoresis, Diarrhea
Urination
Miosis
Bradycardia, Bronchospasm,
Bronchorrhea, Bronchoconstriction
Emesis
Lacrimation
Salivation



Medications are atropine, pralidoxime
and diazepam as auto-injectors
and multi-dose vials



**Call Louisiana Poison Center at
1-800-222-1222
to consult and request CHEMPACK assets**

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CHEMPACK FACT SHEET

What is CHEMPACK?

CHEMPACK is nerve agent antidotes placed in secure containers by the federal government. Thirty of these containers have been pre-positioned across Louisiana. Nerve agent antidotes are an important component of all hazard preparedness. Terrorist have access to many different types of chemical agents and nerve agents are considered a likely choice. A deliberate or accidental nerve agent release could occur anywhere and at anytime in the United States. A release could require a large supply of nerve agent antidotes. The pre-positioning of CHEMPACK containers will expedite delivery of these nerve agent antidotes to a disaster site to save lives. CHEMPACK is a component of the Center for Disease Control and Prevention's Strategic National Stockpile.

What medicines are in CHEMPACK?

The medications in CHEMPACK are antidotes for nerve agents or organophosphate poisoning. The three medications in CHEMPACK are atropine, pralidoxime and diazepam in Mark 1 Kits and multi-dose vials. Mark 1 Kits are often used in the field. Multi-dose vials allow titrated treatment in hospitals. These medications could be used by emergency medical services (EMS), law enforcement and hospitals in Louisiana. CHEMPACK was designed to supplement and re-supply local and state responders in the event of a chemical emergency event.

Where are the CHEMPACK assets?

The CHEMPACK assets have been pre-positioned across Louisiana. The location of the CHEMPACK containers is kept confidential. This confidentiality protects these valuable medications and site that host them.

How will CHEMPACK be used?

It is expected that a nerve agent incident will be identified locally. CHEMPACK will be used by first responders in the field and by health care professionals in hospitals. The Louisiana Poison Control Center will provide consultation on symptoms of nerve agent or organophosphate poisoning with first responders and health care professionals. **The Louisiana Poison Control Center can be contacted 24/7 by telephoning 800-222-1222.**

Allocation of assets will be coordinated by the Louisiana Poison Center in the first hours of an incident. Pre-event planning has begun with local and state response partners. These include the Governor's Office of Homeland Security and Emergency Preparedness, parish Office of Homeland Security and Emergency Preparedness, Louisiana State Police, Louisiana Sheriff's Association, local law enforcement, the Department of Health and Hospital Office of Public Health, Bureau of Emergency Medical Service, EMS providers, Louisiana Hospital Association, hospitals and the Louisiana Poison Center. CHEMPACK will be an addition to existing state, regional, local and facility plans.

Has CHEMPACK ever been used?

The CHEMPACK assets have never been used to respond to a chemical terrorism event in the United States. These medications were used in 1995 following a sarin nerve agent attack on the Tokyo mass transit system. Pre-positioning and planning for the use of these nerve agent antidotes are an important part of chemical terrorism preparedness for the United States and Louisiana.

Other Resources

The Centers for Disease Control and Prevention has detailed information about the Strategic National Stockpile on its Web site at: <http://www.bt.cdc.gov/stockpile/>

Appendix J: Sample CHEMPACK Health Alert Network

At [insert time] on [insert date] first responders are reporting persons with signs and symptoms of nerve agent or organophosphate poisoning at [insert location information]. Local assets will be used first. Medications from the federal cache, CHEMPAC include Mark 1 Kits, atropine, pralidoxime and diazepam. These medications and consultation on treatment is available by contacting the **Louisiana Poison Center at 800-222-1222**. Attached are general treatment guidelines for both pre-hospital and hospital settings. These guidelines do not supersede facility specific protocols.

Treatment Guidelines for Pre-Hospital

Antidote Dosing based on Symptoms

- Diaphoresis, Diarrhea
- Urination
- Miosis
- Bradycardia, Bronchospasm, Bronchorrhea, Bronchoconstriction
- Emesis
- Lacrimation
- Salivation

Collectively, these “**DUMBBELS**” findings present clinically as abdominal distress and severe compromise of lung function due to excess secretions.

Exposure	Symptoms	Initial Dosing* (EMS/Field)	Repeat Dosing (Transport/Hospital)
Mild	DUMBBELS Agitation	Observe May also administer 1 MARK 1 or 1 ATNAA auto injector	Observe
Moderate	DUMBBELS Agitation Respiratory distress	Administer 2 Mark 1 kits ** or 2 ATNAA auto injectors**	Atropine 5-10 min 2-PAM q 30-60 min
Severe	DUMBBELS Respiratory distress Seizures	Administer 3 MARK 1 kits** or 3 ATNAA auto injectors** Administer Diazepam to control Seizure activity	Atropine 5-10 min 2-PAM q 30-60 min Diazepam q 2-5 min

* Consider the use of Mark1 Kits for infant/child/frail elderly **ONLY** in extraordinary circumstances if multi-dose not available, IV route not established and/or precise dosing is impossible.

** As quick as possible, both drugs from the auto-injector, one right after the other.

Treatment Guidelines for Hospitals

Patient	Mild/Moderate Effects ¹	Severe Effects ²	Other Treatment
Child	<p>Atropine: 0.05mg/kg IM or IV (minimum 0.1mg Maximum 5mg) AND 2-PAM: 25mg/kg IM or IV (maximum 2Gm IM or 1Gm IV)</p>	<p>Atropine: 0.1mg/kg IM or IV (minimum 0.1mg, maximum 5mg) AND 2-PAM: 50mg/kg IM or IV (maximum 2Gm IM or 1Gm IV)</p>	<p>Assisted ventilation for severe exposure.</p> <p>Repeat atropine at 2-5 minute intervals until secretions have diminished and airway resistance has decreased.</p> <p>Repeat 2-PAM chloride once at 30-60 minutes, then at one-hour intervals for 1-2 doses, as necessary.</p> <p>Diazepam for seizures: Child - 0.05 to 0.3 mg/kg IV (maximum 10 mg); Adult - 5 mg IV Other benzodiazepines (e.g. lorazepam) may provide relief.</p>
Adult	<p>Atropine: 2 to 4 mg IM or IV AND</p> <p>2-PAM³: 600mg IM, or 25mg/kg IV slowly</p>	<p>Atropine: 6mg IM AND</p> <p>2-PAM³: 1800 mg IM, or 50mg/Kg IV slowly</p>	<p>Phentolamine for 2-PAM chloride-induced hypertension: 1 mg IV for children; 5 mg IV for adults.</p>

4. **Mild/Moderate effects of nerve agents** include localized sweating, muscle fasciculations, nausea, vomiting, weakness, dyspnea.
5. **Severe effects of nerve agents** include unconsciousness, seizures, apnea, flaccid paralysis.
6. Dose selection of 2-PAM chloride for elderly patients should be cautious (usually starting at 600 mg IM, or 25 mg/kg IV slowly) to account for the generally decreased organ functions in this population.

NOTE: 2-PAM chloride (2-PAM) is pralidoxime chloride, trade name Protopam®.

CHEMPACK: CHEMPACK is a federal program to provide nerve agent antidotes (Atropine, 2-PAM, Diazepam) to during an emergency.

Additional Assistance: Contact the **Louisiana Poison Center at 1-800-222-1222 or 318 813-3317** for additional information regarding dosing.

Appendix K: Acronyms and Definitions

2PAM: Pralidoxime chloride. Used to separate the agent from acetyl cholinesterase.

ABCs: Airway, Breathing, Circulation.

AChE: Acetylcholine esterase, an enzyme essential for the transmission of signals through the central nervous system.

Aerosol: A solid particle or liquid droplet suspended in air. An aerosol is larger than a molecule and can be filtered from the air.

All Hazards Response Plans: Emergency Operations plans designed to cover all areas of emergency operations, including natural disasters, terrorist attacks, disease outbreaks, etc.

ATNAA: Atropine and pralidoxime chloride injection combined into a single auto-injector. Each injector contains atropine 2.1mg/0.7ml and pralidoxime chloride 600mg/2.0ml.

AV: atrial-ventricular.

BT: Bioterrorism: the use of biological agent in a terrorist incident.

CDC: Centers for Disease Control and Prevention.

CHEMPACK BUFFERS: A small box containing sufficient 2-PAM to treat three to five patients for up to 12 hours. The CHEMPACK Buffers are co-located with CHEMPACK Hospital Containers to prevent the opening of a CHEMPACK Container in an incident where only a few patients have been exposed and require treatment.

Chemical Agent: Chemical agents are solids, liquids, or gases that have chemical properties that produce lethal or serious effects in plants and animals. There are five main classes of chemical agents, all of which produce incapacitation, serious injury, or death: (1) nerve agents, (2) blister agents, (3) blood agents, (4) choking agents, and (5) irritation agents.

Chemical Incident: An event in which a chemical agent is used as a terrorist weapon.

CNS: Central Nervous System.

Competent Authority: In Louisiana, for CHEMPACK use, a Competent Authority is defined as either the on-scene incident commander or a physician.

Concept of Operations Plan (CONPLAN): the CONPLAN, developed during 1995 following Presidential Decision Directive (PDD)-39, provides overall guidance to Federal, State and local agencies concerning how the Federal Government would respond to a potential or actual terrorist threat or incident that occurs in the United States.

Contingency Plan: Targets a specific issue event that arises during the course of disaster operations and presents alternative actions to respond to the situation.

CT: Chemical Terrorism: the use of chemical agents in a terrorist incident.

DEA: Drug Enforcement Administration.

Dermal Exposure: Exposure to toxic substances by entry through the skin.

LDH: Louisiana Department of Health.

HHS: Federal Department of Health and Human Services.

DHS: Federal Department of Homeland Security.

DOD: Federal Department of Defense.

DOJ: Federal Department of Justice.

DRC: Designated Regional Coordinator.

DUMBBELS: Mnemonic for nerve agent symptoms: diaphoresis & diarrhea, urination, miosis, bradycardia, bronchospasm & bronchorrhea, emesis, lacrimation, and salivation & seizures.

ED: Hospital Emergency Department.

Emergency: Any natural or man-caused situation that results in or may result in substantial injury or harm to the population or substantial damage to or loss of property.

EMS: Emergency Medical Services. Usually pre-hospital medical treatment provided by paramedic or ambulance services.

ESF: Emergency Support Function.

Exercise: A simulated emergency condition carried out for the purpose of testing and evaluating the readiness of a community or organization to handle a particular type of emergency.

Expiration Date: The last date a drug or other product should be used.

FDA: Food and Drug Administration- Federal Agency.

FD/EMS: Fire Department/ Emergency Medical Service.

GI: Gastrointestinal.

GOHSEP: Governor's Office of Homeland Security and Emergency Preparedness.

Haz Mat: Hazardous Materials.

HRSA: Health Resource and Services Administration: A federal agency under the Department of Health and Human Services, with a mission to improve health care access and delivery.

Hotspots: A term used to describe areas where the concentration of contaminants is greater than that in the surrounding areas.

Incidence: A measure of the number of new cases (in the form of a count or rate) of a disease or condition that occur in a specified population within a certain period.

IV: Intravenous.

JRCAB: The Joint Readiness Clinical Advisory Board.

Kilo: The prefix used to designate one-thousand.

LD 50 (Lethal Dose 50%): The calculated dosage of a material that would be fatal to 50% of an exposed population.

Liaison: An agency official sent to another agency to facilitate interagency communications and coordination.

Local EOP (Emergency Operations Plan): The local EOP focuses on essential measures for protecting the public, to include warning, emergency public information, evacuation, and shelter.

Local Government: Any county, city, village, town, district, or political subdivision of any State, and Indian Tribe or authorized tribal organization, or Alaska Native village or organization, including any rural community or unincorporated town or village or any other public entity.

LPC: Louisiana Poison Control.

LSP: Louisiana State Police.

Mark I Kit: Nerve agent antidote auto-injector kit. Contains 2 injectors. Atropine injector 2.0mg atropine/0.7ml. Pralidoxime injector 600mg pralidoxime/2.0ml.

Memorandum of Agreement (MOA): a legal document whereby parties agree to specified actions and requirements.

Metropolitan Medical Response System (MMRS): A federal program under the Department of Health and Human Services, with a mission to develop or enhance existing emergency preparedness systems.

Mitigation: Ongoing effort to lessen the impact disasters have on people and property to moderate in force or intensify, relieve, alleviation.

Mortality: A measure of the number of people who die (in the form of a count or rate) of a disease or condition within a specified population in a certain period.

NBC CREST: Nuclear, Biological, and Chemical Casualty and Resource Estimation Support Tool.

Nerve Agents: Highly toxic chemical(s) that block the action of acetylcholine esterase; an enzyme essential for the transmission of signals through the central nervous system. Hazardous in both liquid and vapor state, they can cause convulsions and death within minutes of exposure.

Non-liability: a federal agency or designated employee of a federal agency, including the American Red Cross (ARC) and its employees and volunteers, is not liable for any claim based upon the exercise or performance of or the failure to exercise or perform that function (Section 305 of the Stafford Act-performing a function under the authority of Public Law 93-288).

OEP: Office of Emergency Preparedness.

OHSEP: Office of Homeland Security and Emergency Preparedness.

OP: Organophosphate.

OPH: Louisiana Office of Public Health.

POC: Point of contact.

Population at risk: Those persons who are susceptible to developing the disease being studied.

Push Packages: 12-hour Push Packages are caches of pharmaceuticals, antidotes, and medical supplies designed to address a variety of biologic or chemical agents. Push Packages are positioned in secure regional warehouses ready for immediate deployment to the airfield closest to the affected area following the federal decision to release SNS assets.

QA: Quality Assurance.

QC: Quality Control.

RBC: Red Blood Cell

Recovery: Recovery includes all types of emergency actions dedicated to the continued protection of the public or to promoting the resumption of normal activities in the affected area.

Recovery Plan: A plan developed by each state, with assistance from the responding federal agencies, to restore the affected area.

REMAC: Regional Emergency Medical Advisory Council.

Response: Those activities and programs designed to address the immediate and short-term effects of the onset of an emergency or disaster.

Shelf Life: The time until the expiration date of a drug or pharmaceutical.

SLEP: Shelf Life Extension Program.

SNS (Strategic National Stockpile): The SNS is a national repository of antibiotics, chemical antidotes, antitoxins, life-support medications, IV administration and airway maintenance supplies, and medical/surgical materiel for use in a declared biological or chemical terrorism incident.

SOP: Standard Operating Procedure.

State: For the purpose of the Federal Response Plan and as defined under Public Law 93-288, includes any state of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia, or the Republic of the Marshall Islands.

State Emergency Operations Plan (EOP): The state EOP is the framework within local EOPs are created and through which the federal government becomes involved. The states play three roles: (1) they assist local jurisdictions whose capabilities are overwhelmed by an emergency; (2) they themselves respond first to certain emergencies; and (3) they work with the Federal government when Federal assistance is necessary.

Strategic National Stockpile (SNS): The SNS is a national repository of antibiotics, chemical antidotes, antitoxins, life-support medications, IV administration and airway maintenance supplies, and medical/surgical materiel for use in a declared biological or chemical terrorism incident.

Strategic National Stockpile Program: The SNS Program is designed to supplement and re-supply state and local public health agencies in the event of a biological or chemical terrorism incident anywhere, at any time within the U.S. or its territories.

Terrorism: As defined by the FBI. Terrorism includes the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in the furtherance of political or social objectives.

Terrorist Incident: The FBI defines a terrorist incident as a violent act, or an act dangerous to human life, in violation of the criminal laws of the United States or of any state, to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or social objectives.

Toxicity: The degree of danger posed by a substance to animal or plant life.

Toxins: Toxic substances of natural origin produced by an animal, plant, or microbe. They differ from chemical substances in that they are not manmade. Toxins may include botulism, ricin, and mycotoxins.

Uncertainty: The term used to describe that lack of precise knowledge in a given estimate based on the amount and quality of the evidence or data available.

Volatilization: Entry of contaminants into the atmosphere by evaporation from soil or water.

Weapon of Mass Destruction (WMD): A WMD is any device, material, or substance used in a manner, in a quantity or type, under circumstances evidencing intent to cause death or serious injury to persons or significant damage to property.