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MCCS-FCD-L (25-30xx)

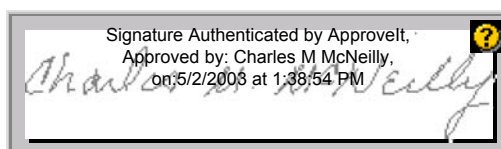
2 May 2003

MEMORANDUM FOR Office of The Surgeon General, ATTN: DASG-HCO, 5109 Leesburg Pike, Falls Church, VA 22041-3258

SUBJECT: Interim Doctrine on the Antidote Treatment, Nerve Agent, Auto-injector

1. The enclosed interim doctrine on the Antidote treatment, nerve agent, auto-injector (ATNAA) is provided for use by U.S. Army personnel during deployments. Field Manual 4-02.285, when published, will supersede this interim doctrine.
2. The basis of issue is three ATNAAs per service member.
3. Other services may use this interim doctrine as they desire.
4. Points of contact for this action is Mr. Roy Flowers; Commercial (210) 221-9684, DSN 471-9684, E-mail address is roy.flowers@amedd.army.mil, and LTC Debra Schnelle; Commercial (703) 681-8185, DSN 761-8185, and E-mail address is debora.schnelle@amedd.army.mil.

FOR THE COMMANDER:



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(CONT)

MCCS-FCD-L

SUBJECT: Interim doctrine on the Antidote Treatment, Nerve Agent, Auto-injector

CF: (CONT)

USA Armor Center and School

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Commandant

USA Chemical School

USA Infantry School

USA Military Police School

USA Engineer School

1 May 2003

## **INTERIM DOCTRINE FOR THE USE OF THE ANTIDOTE TREATMENT, NERVE AGENT, AUTO-INJECTOR**

### **1. Antidote Treatment, Nerve Agent, Auto-injector**

The Antidote Treatment, Nerve Agent, Auto-injector (ATNAA) (Figure 1) is a new nerve agent antidote device that will be used by the Armed Forces in the treatment of nerve agent poisoning.

*a. Description.* The ATNAA is a multi-chambered device that consists of three components. The auto-injector tube, a spring-activated needle, and a safety cap. The device is packaged in a chemically hardened pouch.

(1)The auto-injector outer cylinder is natural polypropylene consisting of two chambers (one chamber contains 2.5 mg [2.1 mg effective dose] of **atropine** injection; the second chamber contains 600 mg of **pralidoxime chloride** injection). It has a pressure activated coiled spring mechanism which triggers the needle for injection of the antidote solutions. The third component is a safety cap.

(2)The label is white with black lettering; there are two colored stripes on the end of the label (one is tan and the other is yellow). The safety cap is gray plastic. The needle end is green plastic.

#### **CAUTION**

**When the safety cap is removed and pressure is applied to the needle end of the auto-injector, the spring mechanism is activated, the needle immediately extends, releasing the antidote.**

(3)The chemically protected pouch is amber and black in color. The end of the pouch that covers the atropine (needle end of the auto-injector) is solid black, the remainder of the pouch is amber. The lettering on the pouch is black.

*b. Issue to Service Members.* Each service member will be issued and will carry three ATNAA for the treatment of nerve agent poisoning. These devices are for use as the first aid (self-aid, buddy aid, and combat lifesaver) and initial treatment of nerve agent poisoning (trauma specialist/corpsman/emergency medical technician).

#### **NOTE**

The ATNAA will replace the MARK I when all Stocks of the MARK I have been exhausted or the devices shelf life expires.

*c. Use by/on Other Persons.* The use of the ATNAA by or on persons to whom it has not been prescribed (e.g., contractors, displaced persons, civilian casualties of terror or combat actions) is enabled by a Department of Defense policy that empowers Health Care Providers and other first responders and service members to use these medications in an emergency outside of a medical treatment facility, as an element of pre-hospital or on-site emergency medical actions.

*d. Protection From Freezing.* The **atropine** and the **pralidoxime chloride** solutions freeze at about 30°F (1°C). Therefore, when the temperature is below freezing, the ATNAA should be protected from freezing. Normally, the ATNAA issued to service members is carried in the protective mask carrier. During cold weather when the temperature is below freezing, the injectors should be carried in an inside pocket close to the body. (However, should the ATNAA become frozen, it can be thawed multiple times, if necessary, and used.) Allowing the device to freeze will delay your ability to administer the antidote when needed, which could lead to increased injury from exposure to a nerve agent.

*e. Protection From Heat.* Heat can destroy/reduce the effectiveness of the atropine and 2 PAM Cl.

## **2. Use of the Antidote, Treatment, Nerve Agent, Auto-injector.**

*a.* The ATNAA is used as an antidote against the effects of nerve agent.

*b.* The essential prevention and treatment elements of nerve agent poisoning are—

(1) Donning the protective mask and hood at the first indication of a nerve agent attack.

(2) Immediately decontaminating the exposed skin.

(3) Administering the ATNAA as soon as any signs or symptoms are noted.

(4) Administer the convulsant antidote nerve agent (CANA) as buddy aid, combat lifesaver aid, or as medical treatment to prevent/control convulsions in a nerve agent poisoned casualty. See FM 8-285/NAVMED P-5041/AFJMAN 44-149/FMFM 11-11 for detailed information on administration of CANA.

## **3. Signs and Symptoms of Nerve Agent Poisoning**

*a.* Nerve agent poisoning may be identified from the characteristic signs and symptoms. If exposure to vapor has occurred, the pupils will be very small, usually pinpointed. If exposure has been cutaneous, or has followed ingestion of a nerve agent in contaminated food or water, the pupils may be normal or, in the presence of severe systemic symptoms, slightly to moderately reduced in size. In this event, the other manifestations of nerve agent poisoning must

be relied on to establish the diagnosis. No other known chemical agent produces muscular twitching and fasciculations, rapidly developing pinpoint pupils, or the characteristic train of muscarinic, nicotinic, and CNS manifestations.

*b.* It is important that all service members know the following **MILD** and **SEVERE** signs and symptoms of nerve agent poisoning. Service members who have most or all of the symptoms listed below must **IMMEDIATELY** receive first aid (self-aid or buddy aid) (paragraphs 8b and c, below).

(1) **MILD poisoning** (self-aid). Casualties with **MILD** symptoms may experience most or all of the following:

- (a) Unexplained runny nose.
- (b) Unexplained sudden headache.
- (c) Sudden drooling.
- (d) Difficulty in seeing (dimness of vision and miosis).
- (e) Tightness in the chest or difficulty in breathing.
- (f) Wheezing and coughing.
- (g) Localized sweating and muscular twitching in the area of the contaminated skin.
- (h) Stomach cramps.
- (i) Nausea with or without vomiting.
- (j) Tachycardia followed by bradycardia.

(2) **SEVERE symptoms** (buddy aid). Casualties with **SEVERE** symptoms may experience most or all of the **MILD** symptoms, plus most or all of the following:

- (a) Strange or confused behavior.
- (b) Increased wheezing and increased dyspnea (difficulty in breathing).
- (c) Severely pinpointed pupils.
- (d) Red eyes with tearing.
- (e) Vomiting.

(f) Severe muscular twitching and general weakness.

(g) Involuntary urination and defecation.

(h) Convulsions.

(i) Unconsciousness.

(j) Respiratory failure.

(k) Bradycardia.

#### 4. Effects of Nerve Agent Antidotes

##### a. General.

(1) *Atropine*. Atropine sulfate remains an essential drug in the treatment of nerve agent poisoning. It acts by blocking the effects of acetylcholine at muscarinic receptors and produces relief from many of the symptoms previously listed. If given in large doses, some therapeutic effects are also produced within the central nervous system although atropine does not readily penetrate the blood-brain barrier as does diazepam, and central muscarinic receptors are thought not to be identical with those in the periphery. Atropine is thought to counteract the respiratory depression in the medulla oblongata. However, the combination of adequate atropinization to break the bronchial spasms *plus* assisted ventilation is several times more effective in saving lives than assisted ventilation alone.

(2) *2 PAM Cl*. **2 PAM Cl** is an oxime which increases the effectiveness of drug therapy in poisoning by some--but not all--cholinesterase inhibitors. Unlike atropine, **2 PAM Cl** acts by blocking the nerve agent inhibition of cholinesterase and/or reactivating the inhibited acetylcholinesterase clinically at muscarinic sites. Thus **2 PAM Cl** relieves the skeletal neuromuscular block, as well as reactivating the acetylcholinesterase clinically at muscarinic sites. The role of **2 PAM Cl** is to block and reverse the bonding of the nerve agent to the acetylcholinesterase. Oximes must be given early in the poisoning; after a short period of time (different for each type of nerve agent), they may no longer be effective.

#### NOTE

**2 PAM Cl** varies in its effectiveness against nerve agents.  
It is least effective against **GD**.

##### b. Rate of Absorption.

(1) *Atropine*. A 2.1 mg intramuscular (IM) injection will reach peak effectiveness in minutes, then blood concentrations will decline. If the system is unchallenged by a nerve agent, a 2.1 mg IM injection will cause atropine effects for several hours. In the presence of a nerve

agent challenge, the effectiveness of atropine is markedly reduced and the duration of the agent is significantly shortened. More frequent doses of atropine will be required to achieve and maintain atropinization.

(2) *PAM Cl.* Depending on the degree of intoxication, a 600 mg IM injection will be effective in 6 to 8 minutes and will maintain peak effectiveness for 1 hour or more. If the system is unchallenged by a nerve agent, a 600 mg IM will remain in the circulatory system for several hours without apparent effect.

*c. Symptoms Produced by the Antidotes in Individuals with Minimal or no Nerve Agent Exposure.*

(1) *Atropine.*

(a) The administration of a single dose of 2.1 mg (one auto-injector) of atropine to an individual who has absorbed minimal or no nerve agent produces **MILD** symptoms, including dryness of the skin, mouth, and throat, with slight difficulty in swallowing. The individual may have a feeling of warmth, slight flushing, rapid pulse, some hesitancy of urination, and an occasional desire to belch. The pupils may be slightly dilated but react to light. In some individuals, there may be **MILD** drowsiness and slowness of memory and ability to recall. Recipients of atropine may have the feeling that their movements are slow and their near vision is blurred. Some individuals may be mildly relaxed. These symptoms should not interfere with ordinary activity, except in the occasional individual who proves to be unusually reactive to the "sensation" effects of atropine (particularly the feeling of drowsiness). However, mental reaction may be slightly slowed down (for this reason, aviators must not fly an aircraft after taking atropine until cleared by the flight surgeon). If the administration of 2.1 mg of atropine is repeated within an hour without nerve agent challenge, the symptoms become **MODERATE**. In most of these individuals, there will be some CNS symptoms (such as drowsiness, fatigue, slowness of memory and ability to recall, the feeling that body movements are slow, and blurred near vision); but they can continue ordinary activity with some loss of efficiency. Near vision may be impaired for as long as 24 hours. After repeated injections of atropine, heat-stressed individuals will become casualties. A third 2.1 mg dose of atropine (again without nerve agent challenge) administered within an hour will result in severe symptoms which will not permit ordinary activity--in fact, most individuals will be incapacitated. **SEVERE** incapacitating symptoms of over-atropinization (nerve agent antidote poisoning) are a very dry mouth; swelling of the tongue and oral mucous membranes; difficulty in swallowing; thirst; hoarseness; dry and flushed skin; dilated pupils; blurred near vision; tachycardia (rapid pulse); urinary retention (in older individuals); constipation; slowing of mental and physical activity; restlessness; headache; disorientation; hallucinations; depression; increased drowsiness; extreme fatigue; rapid respiratory panting; and respiratory distress. Abnormal behavior may require restraint. The effects of atropine without nerve agent challenge are fairly prolonged, lasting 3 to 5 hours after one or two injections and 12 to 24 hours after marked over-atropinization. Over-atropinization may be incapacitating but presents little danger to life in a temperate environment for the nonheat-stressed individual. A single dose of 10 mg of atropine has been administered intravenously to *normal young adults* without endangering life--even in the absence of any prior

absorption of a nerve agent--although it has produced very marked signs of overdose.

#### NOTE

While an unchallenged dose of atropine may allow individuals to continue normal duties, they must be closely monitored for possible heat injury. This is especially important when at **MOPP Level 4** and the individuals' ability to perspire is reduced due to atropine.

(b) In hot, desert, or tropical environments or in heat-stressed individuals, doses of atropine tolerated well in temperate climates may be seriously incapacitating by interference with the sweating mechanism. This can sharply reduce the combat effectiveness of troops who have suffered little or no exposure to a nerve agent. In hot climates or in heat-stressed individuals, one dose (2.1 mg) of atropine can reduce efficiency. Two doses (4.2 mg) will sharply reduce combat efficiency, and three doses (6.6 mg) will incapacitate troops for several hours. In hot, humid climates, individuals who have inadvertently taken an overdose of atropine and are exhibiting signs of atropine intoxication should have their activity restricted. In addition, these casualties must be kept as cool as possible for 6 to 8 hours after injection to avoid serious incapacitation. Usually, the casualties will recover fully in 24 hours or less from a significant overdose of atropine.

(c) Experience in chemical operations has shown that when troops become alarmed, some believe they have been exposed to more chemical agents than they actually have been. Hence, it is important that service members **NOT** give themselves more than one atropine injection (2.1 mg). Casualties who are able to ambulate and know who they are and where they are **WILL NOT** need any more atropine injections. If the symptoms do recur additional atropine, up to two more injections for a total of three (3), can be administered to these casualties. A service member must consult with a buddy to determine if he or she needs additional injections of atropine. If an individual's heart rate is above 90, breathing appears normal, bronchial secretions have diminished, and the skin is dry, the individual does not need any more atropine at this time. Additional atropine is given by a **buddy** since casualties requiring more will be unable to administer additional injections to themselves. The additional administration of atropine to a service member with only **MILD** symptoms must be approached cautiously with at least 10 to 15 minutes elapsing between successive injections. If the signs of nerve agent poisoning disappear, or if signs of atropinization, such as a heart rate above 90, diminished bronchial secretions, and dry skin, appear during one of these 10- to 15-minute periods, no further injections should be administered. These casualties should remain under observation without further injections of atropine unless signs of nerve agent intoxication reappear.

#### NOTE

Although one means of determining the casualty's need for additional atropine is the heart rate, assessing his

respiratory effort is important in the evaluation. Labored breathing, including coughing, noisy breathing, wheezing, and gasping for air, indicates the need for administering additional atropine. When the heart rate is not obtainable, the need for additional atropine may be based on the degree of respiratory impairment. When adequate atropine has been given, labored breathing efforts will be relieved. This assessment must be performed without compromising the protective posture of **MOPP**.

(d) Patients with severe symptoms due to systemic absorption of a nerve agent have increased tolerance for atropine. Multiple doses may be required before signs of atropinization appear, such as heart rate above 90, diminished bronchial secretions, and dry skin. Large doses are required to ameliorate the muscarinic effects of nerve agent poisoning. The absence of increased tolerance for atropine indicates that nerve agent poisoning probably is not present or is **MILD**. In the presence of severe nerve agent poisoning, as much as 25 to 30 mg of atropine may be required for treatment in the first 2 to 3 hours. More than three injections of atropine will be administered **only** by the combat lifesaver (CLS) or medical personnel.

(2) *2 PAM Cl*. **MILD** visual changes may be a side effect of **2 PAM Cl**. After the administration of three injections of **2 PAM Cl**, generally no further oxime benefit is attained by additional injections of **2 PAM Cl**.

## 5. Principles of Self-Aid, Buddy Aid, and Combat Lifesaver Procedures

a. The protective mask and hood must be put on **IMMEDIATELY** at the first signs of a chemical attack. (The protective overgarment should have already been put on prior to the use of chemicals on the battlefield.) Stop breathing, put on your mask, clear and seal the mask, and resume breathing. Secure the mask hood. The mask and protective clothing are worn continually until the “all clear” signal is given.

b. **IMMEDIATELY** mask any casualty that does not have a mask on if the atmosphere is still contaminated.

c. The appearance of more than mild to severe nerve agent poisoning symptoms calls for the immediate IM injection of the nerve agent antidote and CANA. Since inhalation will be the most common route of exposure, the most likely initial symptom will be rhinorrhea (runny nose), then miosis (dim vision), followed by a feeling of tightness or constriction in the chest. After ocular (eyes) splash, there will be immediate miosis. After cutaneous (skin) splash, the initial systemic symptoms may be localized sweating and localized muscular twitching, followed by nausea and abdominal cramps. After ingestion, the first symptoms are likely to be nausea and vomiting. In any case, use the nerve agent antidotes as directed.

d. Promptly remove any liquid nerve agent on the exposed skin, on the clothing, or in the eyes.

(1) If a liquid nerve agent gets on the exposed skin, decontamination must be accomplished within 1 minute. Then continue the mission. Examine the contaminated area occasionally for local sweating and muscular twitching. If these occur, the nerve agent antidote should be administered. Combat duties should be continued, as systemic symptoms of nerve agent poisoning may not occur or may be **MILD** if the decontamination was done immediately and successfully.

(2) If a drop or splash of liquid nerve agent gets into the eye, instant action is necessary to avoid serious effects. Irrigate the eye immediately with water. During the next minute, the pupil of the contaminated eye should be observed by a buddy. If the pupil rapidly gets smaller, a nerve agent antidote should be administered. If the pupil does not get smaller, the ocular contamination was not caused by a nerve agent and atropine is not needed.

*e.* If good relief is obtained from one ATNAA and breathing is normal, carry on with combat duties. Dryness of the mouth is a good sign--it means enough atropine has been taken to overcome the dangerous effects of the nerve agent. If symptoms of the nerve agent are not relieved, the service member should be administered two more ATNAAs plus one injection of **CANA** by a buddy, in accordance with the provisions of paragraph 5b. If symptoms still persist and the pulse (heart rate) drops below 90 per minute, bronchial secretions persist, or the skin remains moist, then the service member can be administered additional atropine injections by the CLS or medical personnel (who carry additional atropine for the treatment of nerve agent casualties) to maintain adequate atropinization. The CLS and trauma specialist/corpsman also carry extra **CANA** for administration to nerve agent casualties (paragraph 5). The CLS or trauma specialist/corpsman can administer additional **CANA** up to a maximum of three before evacuating the casualty. Evacuate the service member to a MTF as soon as the combat situation permits.

*f.* Atropine and 2 **PAM CI** by injection do not relieve the local effects of nerve agent vapor on the eyes. Although the eyes may hurt and there may be difficulty in focusing and a headache, the service members should carry on with their duties to the best of their ability. These symptoms are annoying but not dangerous.

*g.* Exposure to high concentrations of a nerve agent may bring on incoordination, mental confusion, and/or collapse so rapidly that the casualty cannot perform self-aid. If this happens, the nearest able service member must render buddy aid.

*h.* **SEVERE** nerve agent exposure may rapidly cause unconsciousness, muscular paralysis, and the cessation of breathing. When this occurs, antidote alone will not save life. **IMMEDIATELY** after a buddy administers three ATNAA and one **CANA**, assisted ventilation must be started by medical personnel, if a resuscitation device is available. Assisted ventilation should be continued until normal breathing is restored.

## 6. Principles in the Use of the ATNAA

The following are principles to be followed in the administration of the nerve agent antidotes.

*a. Self-Aid.* If you experience most or all of the **MILD** symptoms of nerve agent poisoning, you should IMMEDIATELY hold your breath (**DO NOT INHALE**) and put on your protective mask. Then administer *one* ATNAA injection into your lateral thigh muscle (or buttocks). (Self-aid procedure for administering the autoinjectors is below.)

(1) Wait 10 to 15 minutes after giving yourself the *first* ATNAA injection since it takes that long for the antidote to take effect. If you are able to ambulate, know who you are, and where you are, you **WILL NOT** need a second ATNAA injection.

### **WARNING**

**Giving yourself a second injection may create a nerve agent antidote overdose, which could result in incapacitation.**

(2) If symptoms of nerve agent poisoning are not relieved after administering one ATNAA injection, seek someone else to check your symptoms. A buddy must administer the second and third sets of injections, if needed.

*b. Buddy Aid.* If you encounter a service member suffering from **SEVERE** signs of nerve agent poisoning, render the following aid:

(1) Mask the casualty, if necessary. Do not fasten the hood.

(2) Administer, in rapid succession, three ATNAAs. Follow administration procedures outlined below.

### **NOTE**

**Do not** use your injectors on a casualty. If you do, you may not have any antidote available when needed for self-aid. Use the casualty's own antidote auto-injectors when providing first aid.

*c. Combat Lifesaver Procedures.* The CLS must check to verify if the individual has received three ATNAAs. If not, the CLS performs first aid as described for buddy aid above. If the individual has received the initial three ATNAAs, then the CLS may administer additional atropine injections at approximately 15-minute intervals until atropinization is achieved (that is a heart rate above 90 beats per minute; reduced bronchial secretions; and reduced salivations). Administer additional atropine at intervals of 30 minutes to 4 hours to maintain atropinization or until the casualty is placed under the care of medical personnel. Check the heart rate by carefully lifting the casualty's mask hood and feeling for a pulse at the carotid artery. Request medical assistance as soon as the tactical situation permits.

*d. Trauma Specialist/Corpsman/Emergency Medical Technician Medical Treatment.* A casualty has received three ATNAAs; however, atropinization has not been achieved. Administer additional atropine at approximately 15-minute intervals until atropinization is achieved (that is a heart rate above 90 beats per minute; reduced bronchial secretions and reduced salivations). Administer additional atropine at intervals of 30 minutes to 4 hours to maintain atropinization or until the casualty is evacuated to an MTF. Check the heart rate by lifting the casualty's mask hood and feeling for a pulse at the carotid artery. Provide assisted ventilation for severely poisoned casualties, if equipment is available. Monitor the patient for development of heat stress.

## **7. Effects of Atropine**

The effect of atropine administration on **MILD** and **MODERATE** cases of nerve agent poisoning may help confirm the diagnosis. Atropine injection alleviates most of the muscarinic manifestations. It has little effect on the CNS symptoms and no effect on the nicotinic symptoms. If the casualty has absorbed little or no nerve agent, the administration of a single dose of 2.1 mg of atropine produces symptoms of mild atropinization (tachycardia, dry mouth) in most individuals and repetition of this dose within 1 or 2 hours produces **MODERATE** symptoms of atropinization in almost all individuals. In contrast, a casualty with **MODERATE** symptoms of nerve agent poisoning will not develop symptoms of atropinization after administration of 2.1 mg of atropine. A casualty with severe symptoms of nerve agent poisoning may tolerate and indeed may require as much as 25 to 30 mg of atropine in the first 2 to 3 hours.

## 8. Procedures For Administering The Nerve Agent Antidotes

### a. Injection Site

The injection site for administering the ATNAA (Figure 1) is normally in the outer thigh muscle. The thigh injection site is the area about a hand's width above the knee to a hand's width below the hip joint (Figure 2). It is important that the injections be given into a large muscle area. If the individual is thinly-built, then the injections should be administered into the upper outer quarter (quadrant) of the buttocks (Figure 3). Injecting in the buttocks of thinly-built individuals avoids injury to the thigh bone.

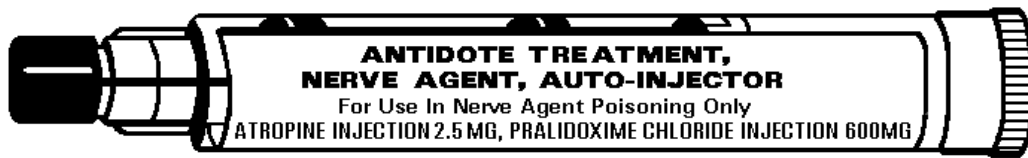


Figure 1. Antidote Treatment, Nerve Agent, Auto-injector.

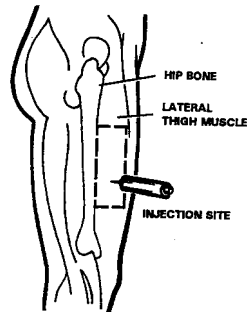


Figure 2. Thigh injection site.

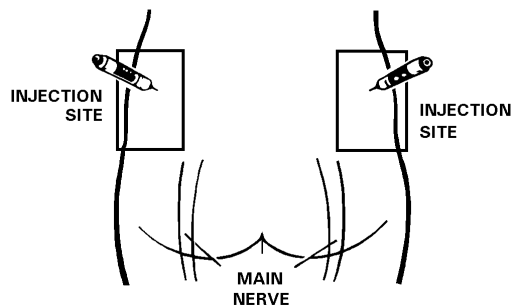


Figure 3. Buttocks injection site.

b. Self-Aid.

TABLE 1. Self-aid for nerve agent poisoning

STEP 1. OBTAIN ONE ATNAA*
STEP 2. CHECK INJECTION SITE
STEP 3. HOLD ATNAA WITH DOMINANT HAND (FIGURE 4A).
STEP 4. GRASP SAFETY CAP WITH NONDOMINANT HAND AND REMOVE FROM INJECTOR (FIGURE 4B). DROP THE SAFETY CAP TO THE GROUND.
STEP 5. CLEAR HARD OBJECTS FROM INJECTION SITE.
STEP 6. INJECT ATNAA AT INJECTION SITE APPLYING EVEN PRESSURE TO THE INJECTOR (FIGURE 5 OR 6). HOLD IN PLACE FOR 10 SECONDS.
STEP 7. BEND NEEDLE OF USED INJECTOR BY PRESSING ON A HARD SURFACE TO FORM A HOOK.
STEP 8. ATTACH USED INJECTOR TO BLOUSE POCKET FLAP OF battledress overgarment/Joint Service Lightweight Integrated System Technology protective garment (FIGURE 7).
STEP 9. MASSAGE INJECTION SITE, MISSION PERMITTING.

\* **ONLY** administer one ATNAA as self-aid.

(1) If you experience any or all of the nerve agent **MILD** symptoms, you must **IMMEDIATELY** put on your protective mask and self-administer one ATNAA (Figure 1). Follow the procedure given Table 1, above. The ATNAA is carried in your protective mask carrier, pocket of the MOPP overgarment, or other location as specified in your unit TSOP. (In cold weather, the ATNAA should be stored in an inside pocket of your clothing to protect the antidote from freezing. A frozen ATNAA cannot be immediately used to provide you with antidote, when needed. However, the ATNAA can still be used after complete thawing.

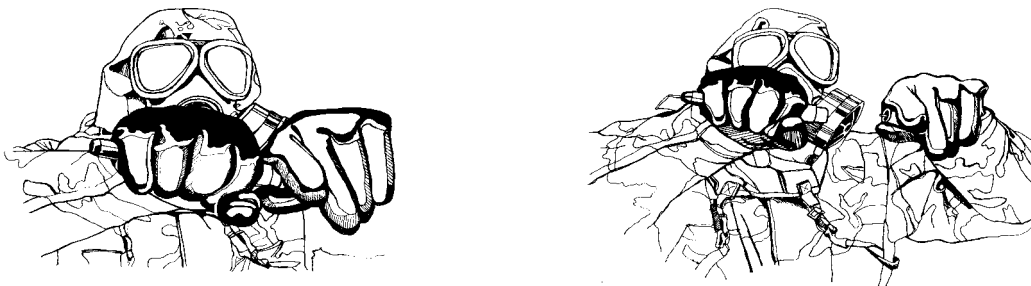


Figure 4. Preparing ATNAA for injection.

(2) After administering the first injection, wait 10 to 15 minutes. After administering one ATNAA, you should decontaminate your skin, if necessary, and put on any remaining protective clothing.

(a) If your heart beats very rapidly and your mouth becomes very dry you have received enough antidote to overcome the dangerous effects of the nerve agent. **DO NOT** give yourself another ATNAA. If you are able to walk without assistance (ambulate), know who you are, and where you are, you **WILL NOT** need the second ATNAA. (If not needed, giving yourself a second ATNAA may create a nerve agent antidote overdose, which could cause incapacitation, especially if you are hot.)

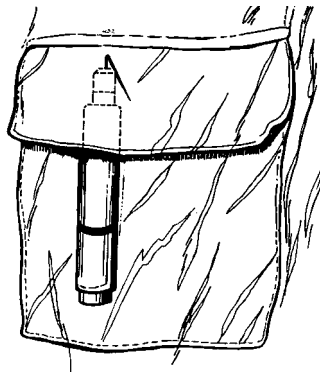
(b) If you continue to have symptoms of nerve agent poisoning, seek someone else (a buddy) to check your symptoms and administer your remaining antidotes, if required.



*Figure 5. Self-aid thigh injection.*



*Figure 6. Self-aid buttocks injection.*



*Figure 7. Used ATNAA attached to clothing.*

*c. Buddy Aid*

Service members may seek assistance after self-aid (self-administering one ATNAA) or may become incapacitated after self-aid. A buddy must evaluate the individual to determine if additional antidotes are required to counter the effects of the nerve agent. Also, service members may experience SEVERE symptoms of nerve agent poisoning; they will not be able to treat themselves. In either case, other service members must perform buddy aid as quickly as possible. Before initiating buddy aid, determine if one ATNAA has already been used so that no more than three sets of the antidote are administered. Buddy aid also includes administering the CANA with the third ATNAA to prevent convulsions. Follow the procedures indicated in Table 2.

**WARNING**

**Squat, DO NOT kneel, when masking the casualty or administering the nerve agent antidote to the casualty. Kneeling may force the chemical agent into or through your protective clothing.**

**CAUTION**

**DO NOT** use your own injectors on a casualty. If you use your own, you may not have any antidote for self-aid.

**WARNING**

**DO NOT inject into areas close to the hip, knee, or thighbone.**

*Table 2. Buddy Aid For Nerve Agent Casualty.*

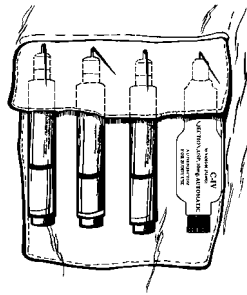
STEP 1. MASK THE CASUALTY AND POSITION HIM ON HIS SIDE.
STEP 2. POSITION YOURSELF NEAR THE CASUALTY'S THIGH.
STEP 1. OBTAIN BUDDY'S THREE OR REMAINING ATNAAs.
STEP 2. CHECK INJECTION SITE.
STEP 3. HOLD ATNAA IN A CLOSED FIST WITH DOMINANT HAND (FIGURE 4A).
STEP 4. GRASP SAFETY CAP WITH NONDOMINANT HAND AND REMOVE FROM INJECTOR (FIGURE 4B). DROP THE SAFETY CAP TO THE GROUND.
STEP 5. CLEAR HARD OBJECTS FROM INJECTION SITE.
STEP 6. INJECT ATNAA AT INJECTION SITE BY APPLYING EVEN PRESSURE TO THE INJECTOR, NOT A JABBING MOTION (FIGURE 8 OR 9). HOLD IN PLACE FOR 10 SECONDS.
STEP 7. BEND NEEDLE OF INJECTOR BY PRESSING ON A HARD SURFACE TO FORM A HOOK.
STEP 8. ATTACH ALL USED INJECTORS TO BLOUSE POCKET FLAP OF BDO/JSLIST (FIGURE 10).
STEP 9. MASSAGE INJECTION SITE, MISSION PERMITTING.



*Figure 8. Injecting the casualty's thigh.*



*Figure 9. Injecting the casualty's buttocks.*



*Figure 10. Three used ATNAA auto-injectors and one CANA auto-injector attached to clothing.*