



4102	<b>Alternative Medications / Dosages</b>
<b>Operational Policy</b>	



Last Reviewed: February 17, 2023

Last Revised: July 1, 2023

**PURPOSE:** To identify all medications, concentrations, and dosing formulas for medications determined to be “alternative” or that are permitted for use in the event of a mass exposure to nerve agents, organophosphates, or carbamates (“CDC Medications”). In the event that a medication cannot be purchased in a concentration already approved by REMSA (see Policy #3303 (Drug and Equipment List)), a medication waiver must be submitted and approved by the REMSA Medical Director prior to purchase and deployment.

<b>Alternative Medications</b>		<b>CDC Medications</b>	
<b>Medication &amp; Concentration</b>	<b>Formula</b>	<b>Medication &amp; Concentration</b>	<b>Formula</b>
<u>Albuterol MDI</u> 90 mcg / 1 puff	<p><u>Adults:</u> 2 metered doses (2 puffs)</p> <p><u>Pediatrics:</u></p> <ul style="list-style-type: none"><li>• Weight = 14 kg (~31 lbs) or less: <b>NOT PERMITTED.</b></li><li>• Weight = 15 kg (~33 lbs) or more: 2 metered doses (2 puffs).</li></ul>	<u>Atropine Autoinjector</u> 2 mg / 0.7 mL	<p><u>Adults:</u> 2 mg (1 injection) IM. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u> <b>NOT PERMITTED.</b></p>
<u>Atropine Autoinjector</u> 2 mg / 0.7 mL	<p><u>Adults:</u> 2 mg (1 injection) IM. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u> <b>NOT PERMITTED.</b></p>	<u>Atropine Autoinjector</u> 1 mg / 0.7 mL	<p><u>Adults:</u> 2 mg (2 injections) IM. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u></p> <ul style="list-style-type: none"><li>• Weight = 14 kg (~31 lbs) or less: <b>NOT PERMITTED.</b></li><li>• Weight = 15 kg (~33 lbs) or more: 1 mg IM. <b>MAY REPEAT PRN.</b></li></ul>
<u>Atropine Autoinjector</u> 1 mg / 0.7 mL	<p><u>Adults:</u> 2 mg (2 injections) IM. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u></p> <ul style="list-style-type: none"><li>• Weight = 14 kg (~31 lbs) or less: <b>NOT PERMITTED.</b></li><li>• Weight = 15 kg (~33 lbs) or more: 1 mg IM. <b>MAY REPEAT PRN.</b></li></ul>	<u>Atropine Autoinjector</u> 0.5 mg / 0.7 mL	<p><u>Adults:</u> 2 mg (4 injections) IM. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u> 0.5 mg IM x2. <b>MAY REPEAT PRN.</b></p>

Medication & Concentration	Formula	Medication & Concentration	Formula
<u>Atropine Autoinjector</u> 0.5 mg / 0.7 mL	<u>Adults:</u> 2 mg ( <u>4 injections</u> ) IM. <b>MAY REPEAT PRN.</b>  <u>Pediatrics:</u> 0.5 mg IM x2. <b>MAY REPEAT PRN.</b>	<u>Diazepam - IM</u> 10 mg / 2 mL	<u>Adults:</u> 5 mg (1 mL) IM  <u>Pediatrics:</u> 0.1 mg / kg IM <ul style="list-style-type: none"><li>• Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL.</b></li><li>• Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL.</b></li></ul>
<u>Diazepam – IV</u> 10 mg / 2 mL	<u>Adults:</u> 2.5 mg (0.5 mL) IV  <u>Pediatrics:</u> 0.05 mg / kg IV	<u>Diazepam – IV</u> 10 mg / 2 mL	<u>Adults:</u> 2.5 mg (0.5 mL) IV  <u>Pediatrics:</u> 0.05 mg / kg IV
<u>Diazepam - IM</u> 10 mg / 2 mL	<u>Adults:</u> 5 mg (1 mL) IM  <u>Pediatrics:</u> 0.1 mg / kg IM <ul style="list-style-type: none"><li>• Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL.</b></li><li>• Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL.</b></li></ul>	<u>Diazepam Autoinjector</u> 10 mg / 2 mL	<u>Adults:</u> 10 mg (1 injection) IM. <b>MAY REPEAT TWICE AT 15 MINUTE INTERVALS.</b> <b>ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER.</b>  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>
<u>Diazepam - IV</u> <u>Related to CPAP Mask</u> 10 mg / 2 mL	<u>Adults:</u> 1 mg / 0.2 mL IV.  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>	<u>DuoDote (NAAK) Autoinjector</u> Atropine 2.1 mg / 0.7 mL & Pralidoxime 600 mg / 2 mL	<u>Adults:</u> 1 injection (both syringes) IM. <b>MAY REPEAT TWICE.</b>  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>
<u>Diazepam Autoinjector</u> 10 mg / 2 mL	<u>Adults:</u> 10 mg (1 injection) IM. <b>MAY REPEAT TWICE AT 15 MINUTE INTERVALS.</b> <b>ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER.</b>  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>	<u>Mark I (NAAK) Autoinjector</u> Atropine 2 mg / 0.7 mL & Pralidoxime 600 mg / 2 mL	<u>Adults:</u> 1 injection (both syringes) IM. <b>MAY REPEAT TWICE.</b>  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>
<u>DuoDote (NAAK) Autoinjector</u> Atropine 2.1 mg / 0.7 mL & Pralidoxime 600 mg / 2 mL	<u>Adults:</u> 1 injection (both syringes) IM. <b>MAY REPEAT TWICE.</b>  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>	<u>Midazolam (Seizalam) - IV</u> 5 mg / 1 mL <b>OR</b> 50 mg / 10 mL	<u>Adults:</u> 2.5 mg (0.5 mL) IV.  <u>Pediatrics:</u> 0.05 mg / kg IV.

Medication & Concentration	Formula	Medication & Concentration	Formula
<u>Ketamine - IVPB</u> 100 mg / 1 mL OR 10 mg / 1 mL	<u>Adults:</u> 0.3 mg / kg. Infuse in 50-100 mL Normal Saline, administer over 5 minutes. <b>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). MAX SINGLE DOSE IS 30 MG.</b> <u>Pediatrics:</u> NOT PERMITTED.	<u>Midazolam (Seizalam) - IM/IN</u> 5 mg / 1 mL OR 50 mg / 10 mL	<u>Adults:</u> 5 mg (1 mL) IM/IN. <u>Pediatrics:</u> 0.1 mg / kg IM/IN
<u>Ketamine - IN</u> 100 mg / 1 mL OR 10 mg / 1 mL	<u>Adults:</u> 0.5 mg / kg IN. <b>MAY REPEAT ONCE. ADDITIONAL ADMINISTRATIONS REQUIRE A BASE HOSPITAL ORDER (BHO). MAX SINGLE DOSE IS 30 MG.</b> <u>Pediatrics:</u> NOT PERMITTED.	<u>Pralidoxime - IM</u> 1000 mg / 5 mL (in 20 mL vial)	<u>Adults:</u> 600 mg (3 mL) IM. <b>MAY REPEAT TWICE.</b> Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b> <u>Pediatrics:</u> 20 mg / kg IM. <b>MAY REPEAT TWICE.</b> <ul style="list-style-type: none"><li>• Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b></li><li>• Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.</b></li></ul>
<u>Lorazepam – IV/IN</u> 4 mg / 1 mL	<u>Adults:</u> 2.4 mg / 0.6 mL IV/IN. <u>Pediatrics:</u> 0.05 mg / kg IV/IN.	<u>Pralidoxime - IVPB</u> 1000 mg / 20 mL	<u>Adults:</u> 600 mg (12 mL) IVPB. <u>Pediatrics:</u> 20 mg / kg IVPB.
<u>Lorazepam - IM</u> 4 mg / 1 mL	<u>Adults:</u> 5.2 mg / 1.3 mL IM. <u>Pediatrics:</u> 0.1 mg / kg IM. <ul style="list-style-type: none"><li>• Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh.</li><li>• Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid.</li></ul>		
<u>Lorazepam</u> <u>Related to CPAP Mask</u> 4 mg / 1 mL	<u>Adults:</u> 1.2 mg (0.3 mL) slow IV/IO push or IM/IN. <u>Pediatrics:</u> NOT PERMITTED.		

Medication & Concentration	Formula
<u>Lorazepam – IV/IN</u> 2 mg / 1 mL	<u>Adults:</u> 2.6 mg (1.3 mL) IV.  <u>Pediatrics:</u> 0.05 mg / kg IV.
<u>Lorazepam - IM</u> 2 mg / 1 mL	<u>Adults:</u> 5 mg (2.5 mL) IM.  <u>Pediatrics:</u> 0.1 mg / kg IM. • Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b> • Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.</b>
<u>Lorazepam</u> <u>Related to CPAP Mask</u> 2 mg / 1 mL	<u>Adults:</u> 1 mg (0.5 mL) slow IV/IO push or IM/IN.  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>
<u>Magnesium Sulfate</u> 4 g / 100 mL (IV Bag)	<u>Adults:</u> 2 gm (50 mL) IV/IO.  <u>Pediatrics:</u> 0.05 gm / kg IV/IO.
<u>Mark I (NAAK) Autoinjector</u> Atropine 2 mg / 0.7 mL & Pralidoxime 600 mg / 2 mL	<u>Adults:</u> 1 injection (both syringes) IM. <b>MAY REPEAT TWICE.</b>  <u>Pediatrics:</u> <b>NOT PERMITTED.</b>
<u>Morphine Sulfate – IV/IM</u> 10 mg / 1 mL	<u>Adults:</u> 5 mg (0.5 mL) IV/IM.  <u>Pediatrics:</u> 0.1 mg / kg IV/IM. • Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh. • Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid.
<u>Morphine Sulfate – IV</u> 10 mg / 10 mL	<u>Adults:</u> 5 mg (5 mL) IV.  <u>Pediatrics:</u> 0.1 mg / kg IV.

Medication & Concentration	Formula
<u>Morphine Sulfate - IM</u> 10 mg / 10 mL	<p><u>Adults:</u> 2.5 mg (2.5 mL) IM x2.</p> <p><u>Pediatrics:</u> 0.1 mg / kg IM.</p> <ul style="list-style-type: none"> <li>• Patients weighing 14 kg or less (≈31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b></li> <li>• Patients weighing 15 kg or more (≈33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.</b></li> </ul>
<u>Naloxone – IV/IM</u> 4 mg / 10 mL <b>OR</b> 0.4 mg / 1 mL	<p><u>Adults:</u> 0.5 mg (1.25 mL) IV/IM. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u> 0.1 mg / kg IV/IM. <b>MAX SINGLE DOSE IS 0.5 MG. MAY REPEAT PRN.</b></p>
<u>Naloxone - IN</u> 4 mg / 10 mL <b>OR</b> 0.4 mg / 1 mL	<p><u>Adults:</u> 0.4 mg (1 mL) IN. <b>MAY REPEAT PRN.</b></p> <p><u>Pediatrics:</u> 0.2 mg (0.5 mL) IN x2. <b>MAY REPEAT PRN.</b></p>
<u>Ondansetron – IM/IV</u> 40 mg / 20 mL	<p><u>Adults:</u> 4 mg (2 mL) IM/IV. <b>MAY REPEAT TWICE TO MAX 12 MG.</b></p> <p><u>Pediatrics:</u> 0.1 mg / kg IV/IM.</p> <ul style="list-style-type: none"> <li>• Patients weighing 14 kg or less (≈31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b></li> <li>• Patients weighing 15 kg or more (≈33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.</b></li> </ul>

Medication & Concentration	Formula
<u>Pralidoxime - IM</u> 1000 mg / 5 mL (in 20 mL vial)	<p><u>Adults:</u> 600 mg (3 mL) IM. <b>MAY REPEAT TWICE.</b> Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b></p> <p><u>Pediatrics:</u> 20 mg / kg IM. <b>MAY REPEAT TWICE.</b></p> <ul style="list-style-type: none"> <li>• Patients weighing 14 kg or less (~31 lbs): Preferred injection site is the lateral thigh. <b>MAX VOLUME PER INJECTION IS 3 mL AT THIS SITE.</b></li> <li>• Patients weighing 15 kg or more (~33 lbs): Preferred injection site is the deltoid. <b>MAX VOLUME PER INJECTION IS 1 mL AT THIS SITE.</b></li> </ul>
<u>Pralidoxime - IVPB</u> 1000 mg / 20 mL	<p><u>Adults:</u> 600 mg (12 mL) IVPB.</p> <p><u>Pediatrics:</u> 20 mg / kg IVPB.</p>