

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
<p><b>Acetaminophen</b> <b>(Tylenol/Ofirmev)</b> <u>Indications:</u></p> <ul style="list-style-type: none"> <li>• Fever control (pediatric seizure).</li> <li>• Pain control.</li> </ul> <p><u>Contraindications:</u></p> <ul style="list-style-type: none"> <li>• Avoid in patients with severe liver disease.</li> <li>• Impairment or sensitivity to acetaminophen.</li> <li>• Do not use with other drug products containing acetaminophen or if patient has taken any drug containing acetaminophen within 4 hours.</li> </ul>	<p><b>Pain Management</b></p> <ul style="list-style-type: none"> <li>• 325 – 1000 PO, no repeat.</li> <li>• 1000 mg IV over 10 minutes (if not taken or given PO)</li> </ul>
<p><b>Activated Charcoal</b> <u>Indications:</u></p> <ul style="list-style-type: none"> <li>• Poisoning/Overdose.</li> </ul> <p><u>Contraindications:</u></p> <ul style="list-style-type: none"> <li>• <b>Caustic Substances</b></li> <li>• <b>Ingestion greater than 60 minutes ago</b></li> <li>• <b>Patient unable to protect airway</b></li> </ul>	<p><b>Poisoning/Substance Abuse/Overdose</b></p> <ul style="list-style-type: none"> <li>• <b>Contact Medical Direction for 25 – 50 grams PO</b></li> </ul>
<p><b>Adenosine</b> <b>(Adenocard)</b> <u>Indications:</u></p> <ul style="list-style-type: none"> <li>• Specifically for treatment or diagnosis of Supraventricular Tachycardia.</li> <li>• Consider for regular or wide complex tachycardia.</li> </ul> <p><u>Contraindications:</u></p> <ul style="list-style-type: none"> <li>• WPW (Wolff-Parkinson-White) Syndrome.</li> </ul>	<p><b>Narrow and Wide Complex Regular Tachycardia</b></p> <ul style="list-style-type: none"> <li>• 6 mg rapid IV/IO push, followed by rapid flush. <ul style="list-style-type: none"> <li>▪ May repeat 12 mg if no conversion.</li> <li>▪ May repeat successful dose if dysrhythmia recurs after conversion.</li> <li>▪ May dilute adenosine with 20 mL of 0.9% normal saline and give as rapid IV push.</li> </ul> </li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
<p><b><u>Albuterol</u></b> <b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Nebulized treatment for use in respiratory distress with bronchospasm.</li> <li>• Hyperkalemia.</li> </ul>	<p><b>Allergic Reaction/Anaphylaxis</b></p> <ul style="list-style-type: none"> <li>• 2.5 mg via nebulizer or metered-dose inhaler (MDI) 2 – 4 puffs. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes for continued symptoms.</li> </ul> </li> <li>• 2.5 mg albuterol and 0.5 mg ipratropium (DuoNeb) via nebulizer. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes (maximum 3 doses).</li> </ul> </li> <li>• Contact <b>Medical Direction</b> for additional dosing.</li> </ul> <p><b>Asthma/COPD/RAD</b></p> <ul style="list-style-type: none"> <li>• 2.5 mg albuterol and 0.5 mg ipratropium bromide (DuoNeb) via nebulizer. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes for continued symptoms (maximum 3 doses).</li> </ul> </li> <li>• 2.5 mg albuterol via nebulizer. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes for continued symptoms.</li> </ul> </li> <li>• Albuterol metered-dose inhaler (MDI) 2 – 4 puffs. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes for continued symptoms.</li> </ul> </li> </ul> <p><b>Crush/Suspension Injury</b></p> <ul style="list-style-type: none"> <li>• Albuterol continuous 10 – 20 mg nebulized if ECG suggestive of hyperkalemia before or after extrication.</li> </ul> <p><b>Hyperkalemia</b></p> <ul style="list-style-type: none"> <li>▪ Albuterol continuous 10 – 20 mg nebulized</li> </ul> <p><b>Smoke Inhalation/Carbon Monoxide Poisoning</b></p> <ul style="list-style-type: none"> <li>• 2.5 mg albuterol via nebulizer. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes for continued symptoms.</li> </ul> </li> </ul>
<p><b><u>Amiodarone</u></b> <b>(Cordarone)</b> <b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Antiarrhythmic used mainly in wide complex tachycardia and ventricular fibrillation.</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>• Avoid in patients with heart block or profound bradycardia.</li> <li>• Hypersensitivity, including iodine</li> <li>• Contraindicated in patients with WPW (Wolff-Parkinson-White) Syndrome.</li> <li>• Cardiogenic Shock</li> </ul>	<p><b>Cardiac Arrest</b> <b>V-Fib/Pulseless V-Tach</b></p> <ul style="list-style-type: none"> <li>• 300 mg IV/IO <ul style="list-style-type: none"> <li>▪ Repeat 150 mg dose as needed.</li> </ul> </li> </ul> <p><b>Post Resuscitative Care</b></p> <ul style="list-style-type: none"> <li>• Infusion 1 mg/min IV/IO (if arrest was the result of V-Fib or Pulseless V-Tach and, the patient is having frequent PVCs or runs of VT or transport time exceeds 30 minutes).</li> </ul> <p><b>Tachycardia</b> <b>Wide complex tachycardia</b></p> <ul style="list-style-type: none"> <li>• 150 mg IV/IO mixed with 50 – 100 mL D5W or 0.9% NaCl over 10 min. <ul style="list-style-type: none"> <li>▪ May repeat once in 10 minutes.</li> <li>▪ If successful, consider maintenance infusion of 1 mg/min IV/IO.</li> </ul> </li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Aspirin</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• An antiplatelet drug for use in cardiac chest pain.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• History of anaphylaxis to aspirin or NSAIDs</li> <li>• Active GI bleeding</li> </ul>	<p><b>Acute Coronary Syndrome</b></p> <ul style="list-style-type: none"> <li>• 324 mg PO.             <ul style="list-style-type: none"> <li>▪ If patient has taken a partial dose within the last hour, administer additional aspirin dose to equal 324 mg.</li> </ul> </li> </ul>
<p><b><u>Atropine</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Anticholinergic drug used in bradycardias and organophosphate poisonings.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Avoid in hypothermic bradycardia</li> <li>• Caution with myocardial ischemia, increases O2 demand</li> <li>• Not effective in Mobitz type II block or new 3<sup>rd</sup> degree block</li> </ul>	<p><b>Bradycardia</b></p> <ul style="list-style-type: none"> <li>• 1 mg IV/IO every 3 – 5 minutes to total of 3 mg.</li> </ul> <p><b>Nerve Agents/Organophosphate Poisoning</b></p> <ul style="list-style-type: none"> <li>• 2 mg IV/IO; repeat every 5 minutes until excess secretions cease (stop).</li> </ul>
<p>Atropine and Pralidoxime Auto-Injector (DuoDote or MARK I) Nerve Agent Kit</p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Antidote for Nerve Agents or Organophosphate Overdose.</li> </ul>	<p><b>Nerve Agent/Organophosphate Poisoning</b></p> <ul style="list-style-type: none"> <li>• Refer to <a href="#">Nerve Agents Organophosphate Poisoning Protocol – Adult 2.13A</a> for symptom assessment and dosing guidelines.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Calcium Chloride</u></b> <b><u>10% solution</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Calcium channel blocker overdose, hyperkalemia, or beta blocker overdose.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Do not routinely use in cardiac arrest.</li> <li>• Avoid use if pt is taking digoxin.</li> <li>• Do not mix with or infuse immediately before or after sodium bicarbonate.</li> </ul>	<p><b>Bradycardia</b></p> <ul style="list-style-type: none"> <li>• 1,000 mg (10 mL of a 10% solution) mixed in 50 mL NS or D5W IV/IO over 10 minutes. <ul style="list-style-type: none"> <li>▪ May repeat in 10 minutes.</li> <li>▪ Do not exceed 1 mL per minute. Flush with 0.9% NaCl before and after administration.</li> </ul> </li> </ul> <p><b>Cardiac Arrest</b> <b>Wide Complex PEA</b></p> <ul style="list-style-type: none"> <li>• 1,000 mg of 10% solution IV/IO</li> </ul> <p><b>Crush/Suspension Injury</b></p> <ul style="list-style-type: none"> <li>• 1000 mg mixed in 50 mL NS or D5W over 10 minutes.</li> <li>• May repeat in 10 minutes, with constant cardiac monitoring.</li> </ul> <p><b>Hyperkalemia</b></p> <ul style="list-style-type: none"> <li>• 500 – 1000 mg mixed in 50 mL NS or D5W over 10 minutes.</li> <li>• May repeat dose in 10 minutes, with constant cardiac monitoring.</li> </ul>
<p><b><u>Calcium Gluconate</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Calcium channel blocker overdose, hyperkalemia/ renal failure, wide complex PEA or beta blocker overdose with bradycardia.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Hypercalcemia</li> </ul>	<p><b>Bradycardia</b></p> <ul style="list-style-type: none"> <li>• 2,000 mg mixed in 50 mL NS or D5W IV/IO over 5 – 10 minutes. <ul style="list-style-type: none"> <li>▪ May repeat in 10 minutes.</li> </ul> </li> </ul> <p><b>Cardiac Arrest</b> <b>Wide Complex PEA</b> 2,000 mg IV/IO push</p> <p><b>Crush/Suspension Injury</b></p> <ul style="list-style-type: none"> <li>• 2,000 mg mixed in 50 mL NS or D5W IV/IO over 5 – 10 minutes <ul style="list-style-type: none"> <li>▪ May repeat in 10 minutes.</li> </ul> </li> </ul> <p><b>Hyperkalemia</b></p> <ul style="list-style-type: none"> <li>• 2,000 mg mixed in 50 mL NS or D5W IV/IO over 5 – 10 minutes. <ul style="list-style-type: none"> <li>▪ May repeat in 10 minutes.</li> </ul> </li> </ul>
<p><b><u>Dexamethasone</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Steroid used to control inflammatory conditions, asthma, croup, allergic reactions or adrenal insufficiency</li> </ul>	<p><b>Adrenal Insufficiency</b></p> <ul style="list-style-type: none"> <li>• 10 mg IV/IO/IM.</li> </ul> <p><b>Allergic Reaction/Anaphylaxis</b></p> <ul style="list-style-type: none"> <li>• 0.6 mg/kg IV/IO/IM/PO, maximum dose 10 mg – <i>extended care protocol.</i></li> </ul> <p><b>Asthma/COPD/RAD</b></p> <ul style="list-style-type: none"> <li>• 10 mg IV/IO/IM/PO.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Dextrose 5%, 10%, 50%</u></b> <b>Glucose solutions</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Symptomatic hypoglycemia.</li> <li>• Use in medication infusion medium.</li> </ul>	<p><b>Diabetic Emergencies (Hypoglycemia)</b></p> <ul style="list-style-type: none"> <li>• Dextrose 10% (preferred) or 50% IV up to 25 grams.             <ul style="list-style-type: none"> <li>▪ Recheck blood glucose after 5 minutes.</li> <li>▪ Repeat up to 25 grams dextrose 10% or 50% if glucose levels &lt; 60 mg/dl with continued altered mental status.</li> <li>▪ 25 grams = 250 mL of 10% solution.</li> <li>▪ 1 amp (25 grams) = 50 mL of 50% solution.</li> </ul> </li> </ul>
<p><b><u>Diazepam (Valium)</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Seizure control.</li> <li>• Sedation.</li> <li>• Anxiolytic.</li> </ul>	<p><b>Behavioral Emergencies: Anxiety</b></p> <ul style="list-style-type: none"> <li>• 5 mg IV</li> </ul> <p><b>Bradycardia</b></p> <p><b>Procedural Sedation for Cardiac Pacing</b></p> <ul style="list-style-type: none"> <li>• 5 mg IV/IO, may repeat 2.5 mg once in 5 minutes.</li> </ul> <p><b>Continuous Positive Airway Pressure (CPAP)Anxiolytic.</b></p> <ul style="list-style-type: none"> <li>• <b>Contact Medical Direction</b> for 5 mg IV (may repeat once in 5 minutes).</li> </ul> <p><b>Hyperthermia</b></p> <ul style="list-style-type: none"> <li>• 2 mg IV, may repeat once in 5 minutes.</li> </ul> <p><b>Nerve Agent/Organophosphate Poisoning</b></p> <ul style="list-style-type: none"> <li>• 5 mg IV every 5 minutes <b>OR</b></li> <li>• 10 mg IM <b>OR</b></li> <li>• Diazepam auto-injector (10mg).</li> <li>• Repeat every 10 minutes as needed</li> </ul> <p><b>Poisoning/Substance Abuse/Overdose</b></p> <ul style="list-style-type: none"> <li>• 2 mg IV, may repeat once in 5 minutes</li> </ul> <p><b>Restraints: Resistant or Aggressive Behavior</b></p> <ul style="list-style-type: none"> <li>• Contact <b>Medical Direction</b> for 2.5 mg IV.</li> <li>• Contact Medical Direction if additional dosing is needed.</li> </ul> <p><b>Seizure</b></p> <ul style="list-style-type: none"> <li>• May assist with patient's own diazepam gel as prescribed.</li> <li>• 5 – 10 mg IV, then 2.5 mg every 5 minutes (maximum dose 20 mg)</li> </ul> <p><b>Tachycardia</b></p> <p><b>For Cardioversion Sedation</b></p> <ul style="list-style-type: none"> <li>• 5 mg IV/IO, may repeat 2.5 mg once in 5 minutes.</li> </ul> <p><b>Traumatic Brain Injury</b></p> <p>5 mg IV/IO, may repeat once in 5 minutes.</p>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Diltiazem</u></b> <b>(Cardizem)</b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Calcium channel blocker used to treat narrow complex tachycardia/SVT.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Heart block, ventricular tachycardia, WPW, and/or acute MI.</li> <li>• WPW (Wolff-Parkinson-White) Syndrome.</li> </ul>	<p><b>Tachycardia</b> <b>Narrow Complex Tachycardia</b></p> <ul style="list-style-type: none"> <li>• 0.25 mg/kg IV (maximum dose 20 mg) over 2 minutes. <ul style="list-style-type: none"> <li>▪ Consider 10 mg maximum dose for elderly patient or patient with low blood pressure.</li> <li>▪ May repeat dose in 15 minutes at 0.35 mg/kg (maximum dose 25 mg) if necessary.</li> <li>▪ Consider maintenance infusion 5 – 15 mg/hour IV.</li> </ul> </li> </ul>
<p><b><u>Diphenhydramine</u></b> <b>(Benadryl)</b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Antihistamine used as an adjunctive treatment in allergic reactions.</li> <li>• Antidote for dystonic reaction.</li> </ul>	<p><b>Allergic Reaction/Anaphylaxis</b></p> <ul style="list-style-type: none"> <li>• 25 – 50 mg IM/IV/IO to treat pruritus.</li> <li>• 25 – 50 mg by mouth – <i>extended care protocol</i>. <ul style="list-style-type: none"> <li>▪ May repeat every 4 – 6 hours as needed; maximum dose of 300 mg/24 hours.</li> </ul> </li> </ul> <p><b>Nausea/Vomiting</b></p> <ul style="list-style-type: none"> <li>• 25 – 50 mg IV/IM for dystonic reaction.</li> <li>• 25 mg PO – <i>extended care for motion sickness</i>.</li> </ul> <p><b>Poisoning/Substance Abuse/Overdose – Dystonic Reaction</b></p> <ul style="list-style-type: none"> <li>• 25 – 50 mg IV/IM.</li> </ul> <p><b>Restraints</b></p> <ul style="list-style-type: none"> <li>• For acute dystonic reaction to droperidol or haloperidol 25 – 50 mg IV <b>OR</b> 50 mg IM.</li> </ul>
<p><b><u>Dopamine</u></b></p> <ul style="list-style-type: none"> <li>• <b><u>Indications:</u></b> A vasopressor used in shock or hypotensive states.</li> <li>• Infusion pump required.</li> </ul>	<p><b>Use by CCP in IFT per Medical Direction only</b></p> <p><b>Shock</b></p> <ul style="list-style-type: none"> <li>• 5-20 mcg/kg/min IV/IO</li> </ul>
<p><b><u>Droperidol</u></b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Delirium (off-label)</li> <li>• Antiemetic</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Do not use if known or suspected prolonged QTc interval &gt;450 msec</li> </ul>	<p><b>Nausea/Vomiting</b></p> <ul style="list-style-type: none"> <li>• 0.625 - 1.25 mg slow IV push over 1 – 2 minutes or IM.</li> <li>• May repeat once in 10 minutes if nausea/vomiting persists</li> </ul> <p><b>Restraints: Resistant or Aggressive Behavior</b></p> <ul style="list-style-type: none"> <li>• 5 mg IM/IV.</li> <li>• Contact <b>Medical Direction</b> if additional dosing is needed</li> </ul> <p><b>Restraints: Violent/Combative Behavior, OR Delirium with Agitated Behavior:</b></p> <ul style="list-style-type: none"> <li>• 10 mg IM.</li> <li>• Contact <b>Medical Direction</b> if additional dosing is needed.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Epinephrine 1:1,000</u></b> <b><u>(1 mg/mL)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>Bronchodilation in Asthma and COPD exacerbation. Primary treatment for anaphylaxis.</li> <li>Vasopressor used for bradycardia, post-resuscitative care, shock, anaphylaxis.</li> </ul> <p><b><u>MIXING INSTRUCTIONS FOR EPINEPHRINE INFUSIONS</u></b> Epinephrine 1:1,000 (1mg/mL) multidose vial (30mL) and withdraw 4 mg (4mL) and add to a 250 mL infusion bag of D5W or 0.9% NaCl. The resulting concentration is 16 mcg/mL</p>	<p><b>Allergic Reaction/Anaphylaxis</b></p> <ul style="list-style-type: none"> <li>0.3 mg IM by autoinjector <b>OR</b> 0.3 mg (0.3 mL) IM. <ul style="list-style-type: none"> <li>May repeat dose x 1. For additional dosing, contact <b>Medical Direction</b> (EMT).</li> </ul> </li> <li>0.3 mg (0.3 mL) IM. <ul style="list-style-type: none"> <li>May repeat every 5 – 15 minutes.</li> <li>Maximum of 3 doses.</li> <li>For additional dosing, contact <b>Medical Direction</b>.</li> </ul> </li> <li>For anaphylaxis refractory to IM epinephrine, consider epinephrine infusion 2 – 10 mcg/min IV/IO, titrated to effect. (Infusion pump required.)</li> </ul> <p><b>Asthma/COPD/RAD</b></p> <ul style="list-style-type: none"> <li>Consider 0.3 mg IM by autoinjector (preferred) <b>OR</b> epinephrine (1:1,000) (1 mg/mL) 0.3 mg (0.3 mL) IM. <ul style="list-style-type: none"> <li>For additional dosing, contact <b>Medical Direction</b>.</li> </ul> </li> </ul> <p><b>Bradycardia</b></p> <ul style="list-style-type: none"> <li>Infusion 2 – 10 mcg/min IV/IO, titrated to effect (Infusion pump required.)</li> </ul> <p><b>Post-Resuscitative Care</b></p> <ul style="list-style-type: none"> <li>Infusion 2-10 mcg/min IV/IO titrated to effect. (Infusion pump required.)</li> </ul> <p><b>Septic Shock</b></p> <ul style="list-style-type: none"> <li>Infusion 2 – 10 mcg/min IV/IO titrated to MAP ≥ 65 (systolic ≥ 90). (Infusion pump required.)</li> </ul> <p><b>Shock (Cardiogenic or Distributive)</b></p> <ul style="list-style-type: none"> <li>Infusion 2-10 mcg/min IV/IO titrated to effect. (Infusion pump required.)</li> </ul> <p><b>Smoke Inhalation</b></p> <ul style="list-style-type: none"> <li>3 mg (mL) in 3 mL 0.9% NaCl via nebulizer for symptomatic patients.</li> </ul>
<p><b><u>Epinephrine 1:10,000</u></b> <b><u>(0.1 mg/mL)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>Vasopressor used in cardiac arrest.</li> <li>Push Dose Epinephrine for short transport times or as a bridge to infusion</li> </ul> <p><b><u>MIXING INSTRUCTIONS FOR PUSH DOSE EPINEPHRINE:</u></b> Add 1 ml (0.1mg) of epinephrine to 9 ml of normal saline in a 10 ml syringe for a concentration of 10mcg/ml</p>	<p><b>Cardiac Arrest</b></p> <ul style="list-style-type: none"> <li>1 mg IV/IO every 3 to 5 minutes. <ul style="list-style-type: none"> <li>Repeat every other cycle when utilizing high performance CPR.</li> <li>In hypothermic arrest do not administer until temperature is &gt; 30°C (90°F), then increase dosing intervals to twice normal from 30-35°C.</li> </ul> </li> </ul> <p><b>Shock, Bradycardia, and Hypotension during ROSC</b></p> <ul style="list-style-type: none"> <li>Push Dose Epinephrine (10 mcg/mL concentration) <ul style="list-style-type: none"> <li>10-20 mcg (1-2 mL) IV/IO every 2 minutes</li> <li>Titrate to effect</li> <li>Transition to infusion as soon as feasible</li> </ul> </li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Etomidate</u></b> <b>(Amidate)</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Sedative used in Rapid Sequence Intubation.</li> </ul>	<p><b>Rapid Sequence Intubation</b> <b>{Sedate then} Paralyze</b></p> <ul style="list-style-type: none"> <li>0.3 mg/kg IV/IO (maximum 40 mg).</li> </ul>
<p><b><u>Fentanyl</u></b> <b>(Sublimaze)</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Narcotic analgesic</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>Avoid use if BP &lt; 100 mmHg.</li> </ul>	<p><b>Acute Coronary Syndrome</b></p> <ul style="list-style-type: none"> <li>25 – 50 mcg slow IV push.</li> <li>Repeat every 5 minutes up to 300 mcg and systolic BP remains ≥100 mmHg.</li> </ul> <p><b>Bradycardia</b></p> <p><b>Analgesia for Cardiac Pacing</b></p> <ul style="list-style-type: none"> <li>25 – 50 mcg slow IV push.</li> <li>May repeat every 5 minutes to a total of 300 mcg and systolic BP remains ≥100 mmHg.</li> </ul> <p><b>Pain Management</b></p> <ul style="list-style-type: none"> <li>25 – 100 mcg slow IV push, every 2 – 5 minutes to a total of 300 mcg titrated to pain relief <b>OR</b></li> <li>50 – 100 mcg IM/IN, every 5 minutes to a total of 300 mcg titrated to pain relief.</li> <li>Contact <b>Medical Direction</b> for additional dosing.</li> </ul> <p><b>Nasotracheal and Orotacheal Intubation</b></p> <p><b>Post Intubation Care</b></p> <ul style="list-style-type: none"> <li>Fentanyl 50 – 100 mcg IV/IO, may repeat every 15 minutes as needed for analgesia (maximum 300 mcg).</li> <li>Contact <b>Medical Direction</b> for additional dosing.</li> </ul> <p><b>Rapid Sequence Intubation</b></p> <p><b>Post-Intubation Care</b></p> <ul style="list-style-type: none"> <li>Fentanyl 50 – 100 mcg IV/IO, may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg).</li> </ul> <p><b>Supraglottic Airway</b></p> <ul style="list-style-type: none"> <li>50 – 100 mcg slow IV/IO push every 15 minutes, as needed (maximum 300 mcg)</li> </ul>



# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p>Glucagon <b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Converts glycogen to glucose in the liver to increase blood sugar</li> <li>• Use in patients with no IV access</li> <li>• Indicated for beta blocker or calcium channel blocker overdose</li> </ul>	<p><b>Bradycardia</b></p> <ul style="list-style-type: none"> <li>• 2 – 5 mg IV/IO over 3 – 5 minutes. <ul style="list-style-type: none"> <li>▪ May repeat up to 10 mg.</li> <li>▪ If effective, place on infusion 1 – 5 mg/hr IV/IO via pump.</li> </ul> </li> </ul> <p><b>Diabetic Emergencies (Hypoglycemia)</b></p> <ul style="list-style-type: none"> <li>• 1 mg IM. <ul style="list-style-type: none"> <li>▪ Recheck glucose 15 minutes after administration of glucagon.</li> <li>▪ May repeat glucagon 1 mg IM if glucose level is &lt;60 mg/dl with continued altered mental status.</li> </ul> </li> </ul>
<p><b>Glucose Oral Glucose Solutions</b> <b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Use in conscious hypoglycemic states. Patient must be able to protect their own airway</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Diabetic Emergencies (Hypoglycemia)</b> Administer 1 – 2 tubes commercially prepared glucose gel, OR</li> <li>• 15 to 30 mL (1 – 2 tablespoons) of <i>Pure VT Maple Syrup</i> or equivalent, for a standard dose of 15 to 30 grams sugar.</li> </ul>
<p><b>Haloperidol (Haldol)</b> <b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Medication to assist with sedation of agitated patients.</li> <li>• Chemical restraint.</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>• Poorly controlled seizure disorder - May lower seizure threshold.</li> <li>• Neuroleptic malignant syndrome (NMS)</li> <li>• Parkinson's Disease.</li> </ul>	<p><b>Restraints</b></p> <ul style="list-style-type: none"> <li>• Contact <b>Medical Direction</b> for 5 mg IM. <ul style="list-style-type: none"> <li>▪ May be combined with midazolam, lorazepam or diazepam.</li> <li>▪ May combine and administer benzodiazepine and haloperidol in one syringe.</li> <li>▪ Use lower doses in elderly/frail.</li> <li>▪ Contact <b>Medical Direction</b> if additional dosing is needed.</li> </ul> </li> </ul>
<p><b>Heparin</b> <b>Indications:</b></p> <ul style="list-style-type: none"> <li>• STEMI and no affirmative finding from fibrinolytic questionnaire.</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>• History of Heparin Induced Thrombocytopenia</li> </ul>	<p><b>Paramedic</b></p> <ul style="list-style-type: none"> <li>• Maintenance of already established heparin drip.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Hydrocortisone</u></b> <b><u>(Solu-Cortef)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Steroid used for adrenal insufficiency and associated distributive shock.</li> </ul>	<p><b>Adrenal Insufficiency</b></p> <ul style="list-style-type: none"> <li>• 100 mg IV/IO/IM (preferred steroid for use in adrenal insufficiency). <ul style="list-style-type: none"> <li>▪ May be repeated every 6 hours – <i>extended care protocol</i>.</li> </ul> </li> </ul> <p><b>Distributive Shock</b></p> <ul style="list-style-type: none"> <li>• 100 mg IV/IO/IM. <ul style="list-style-type: none"> <li>▪ Stress dose steroid for patient in shock with history of adrenal insufficiency</li> </ul> </li> </ul>
<p><b><u>Hydroxocobalamin</u></b> <b><u>(Cyanokit)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Cyanide poisoning</li> <li>• Vitamin B12 with hydroxyl group complexed to cobalt is displaced by cyanide resulting in non-toxic cyanocobalamin</li> </ul>	<p><b>Smoke Inhalation</b></p> <ul style="list-style-type: none"> <li>• Hydroxocobalamin via use of Cyanokit: <ul style="list-style-type: none"> <li>▪ Reconstitute: Place the vial of hydroxocobalamin in an upright position; add 0.9% NaCl to the vial (200 mL for 5 grams vial or 100 mL for 2.5 grams vial) using the transfer spike. Fill to the line.</li> <li>▪ Rock vial for at least 60 seconds (do not shake).</li> <li>▪ Using vented intravenous tubing, administer IV over 15 minutes.</li> <li>▪ Depending on clinical response, a second dose may be required.</li> <li>▪ May color skin or urine red.</li> </ul> </li> </ul>
<p><b><u>Ipratropium Bromide</u></b> <b><u>(Atrovent)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Anticholinergic bronchodilator. Blocks the muscarinic receptors of acetylcholine.</li> <li>• Relief of bronchospasm in patients with reversible obstructive airway disease and bronchospasm.</li> </ul>	<p><b>Allergic Reaction/Anaphylaxis</b></p> <ul style="list-style-type: none"> <li>• 0.5 mg ipratropium and 2.5 mg albuterol (DuoNeb) via nebulizer. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes (maximum 3 doses).</li> <li>▪ Contact <b>Medical Direction</b> for additional dosing.</li> </ul> </li> </ul> <p><b>Asthma/COPD/RAD</b></p> <ul style="list-style-type: none"> <li>• 0.5 mg ipratropium and 2.5 mg albuterol (DuoNeb) via nebulizer. <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes for continued symptoms (maximum 3 doses).</li> </ul> </li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

## Ketamine

### Indications:

- Short acting dissociative anesthetic
- Sedative used in Rapid Sequence Intubation.
- Pain control.
- Chemical restraint

### Contraindications:

- Contraindicated in patients unable to tolerate hyperdynamic states such as those with known or suspected aortic dissection, myocardial infarction, and aortic aneurysm, and those that cannot tolerate hypertension.
- Avoid in patients with known schizophrenia.

### **Post Intubation Care**

- 1 mg/kg ideal body weight (IBW) every 5 – 15 minutes, as needed.
  - Contact **Medical Direction** for additional dosing.

### **Pain Management**

- 0.25 mg/kg IV infusion (in 50 – 100 mL bag 0.9% NaCl **over 10 minutes**). May be administered via bolus. (Consider lower 0.15 mg/kg dose for frail or elderly patients.) **OR** 0.5 mg/kg IM/IN
  - May repeat ketamine dose every 15 – 20 minutes for a total of 1 mg/kg.
  - Contact **Medical Direction** for additional dosing

- **Rapid Sequence Intubation: Sedation prior to paralysis** 2 mg/kg IV/IO

### **Restraints: Violent/Combative Behavior or Delirium with Agitation**

- Contact **Medical Direction** for 4 mg/kg **IM injection only**.
  - Use 100 mg/mL concentration: maximum dose 500 mg.
  - Repeat 100 mg IM dose in 5 – 10 minutes for continued agitation.

### **Supraglottic Airway: Sedation Post tube placement**

- 1 mg/kg ideal body weight (IBW) IV/IO every 5 – 15 minutes, as needed.

### **Bradycardia Adult & Pediatric (analgesia for transcutaneous pacing)**

- Ketamine 0.25 mg/kg IV/IO every 15 min prn analgesia. Administer slow over 2-3 minutes.

### **Traumatic Brain Injury**

- 4 mg/kg (maximum dose 500 mg) **IM injection only**  
Contact **Medical Direction** for additional dosing.

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Ketorolac</u></b> <b>(Toradol)</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• A nonsteroidal anti-inflammatory drug used for pain control. Consider as first line in renal colic.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Avoid Ketorolac in patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, or known peptic ulcer disease.</li> <li>• Avoid NSAIDS in women who are pregnant or could be pregnant.</li> <li>• Avoid in patients currently taking anticoagulants such as coumadin.</li> </ul>	<p><b>Pain Management</b></p> <ul style="list-style-type: none"> <li>• <b>Contact Medical Direction for 15 mg IV OR 30 mg IM.</b></li> </ul>
<p><b><u>Lactated Ringers</u></b></p> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Use Lactated Ringers with <b>caution</b> in patients with:             <ul style="list-style-type: none"> <li>▪ Hyperkalemia or severe renal failure (potassium)</li> <li>▪ Severe hepatic failure (impaired lactate clearance)</li> <li>▪ Severe metabolic acidosis or alkalosis (potassium and worsening alkalosis)</li> <li>▪ Lactic acidosis</li> <li>▪ Neonates and infants less than 6 months (lactate effects on neonates)</li> </ul> </li> </ul>	<p>Lactated Ringers may be used as a direct substitute for Normal Saline with the following exceptions and precautions:</p> <p>Lactated Ringers (LR) <b>should NOT</b> be directly combined with the following drug agents (due to limited data or clear evidence of incompatibility). These medications should be administered at a site separate from where the LR is infusing via a normal saline lock/line, or stop the LR infusion for medication injection, then administer a saline flush, and then restart the LR infusion.</p> <ul style="list-style-type: none"> <li>• Amiodarone</li> <li>• Atropine</li> <li>• Calcium Chloride</li> <li>• Dexamethasone</li> <li>• Diazepam</li> <li>• Diltiazem</li> <li>• Epinephrine</li> <li>• Etomidate</li> <li>• Fentanyl</li> <li>• Glucagon</li> <li>• Ketamine</li> <li>• Lorazepam</li> <li>• Metoprolol</li> <li>• Naloxone</li> <li>• Pralidoxime</li> <li>• Sodium Bicarbonate</li> <li>• Tranexamic Acid</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

## **Lidocaine**

### **Indications:**

- Antiarrhythmic used for control of ventricular dysrhythmias.
- Used prior to intubation of patients with suspected increased intracranial pressure (e.g., TBI, ICH) to reduce increases in intracranial pressure
- Anesthetic for nasotracheal intubation and intraosseous access.

### **Contraindications:**

- Do not use lidocaine if CHF, cardiogenic shock, heart block or WPW.

### **Cardiac Arrest**

#### **V-Fib/Pulseless V-Tach**

- 1 – 1.5 mg/kg IV/IO.
  - Repeat dose 0.5 – 0.75 mg/kg up to a maximum dose of 3 mg/kg.

#### **Intraosseous Access**

- Slowly administer 20 – 50 mg (1 – 2.5 mL) 2% lidocaine through IO device catheter.
  - Allow 2 – 5 min for anesthetic effects, if possible.

#### **Nasotracheal Intubation**

- 2% lidocaine jelly.

#### **Post-Resuscitative Care**

- Maintenance infusion 1 – 4 mg/min IV/IO (30 – 50 mcg/kg/min) if patient is having frequent PVCs or runs of VT, or if transport time exceeds 30 minutes.

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

## **Lorazepam** **(Ativan)**

### **Indications:**

- Seizure control.
- Sedation.
- Anxiolytic.

### **Contraindications:**

- CNS Depression
- Breastfeeding
- Sleep Apnea
- Hepatic or Renal failure
- Caution if used with opioids

### **Behavioral Emergencies: Management of Anxiety**

- Attempt non-pharmacological interventions first.
- Contact **Medical Direction** to consider:
  - 1 mg PO or IV

### **Bradycardia: Procedural Sedation for Cardiac Pacing**

- 1 mg IV/IO, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

### **Continuous Positive Airway Pressure (CPAP): Anxiolytic**

- Contact **Medical Direction** for 0.5 – 1 mg IV; may repeat once in 5 minutes **OR**
- 1 – 2 mg IM, may repeat once in 10 minutes.

### **Hospice: Anxiety**

- 0.25 – 2 mg PO or SL

### **Hyperthermia: Uncontrolled shivering during cooling**

- 1 mg IV, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

### **Nasotracheal and Orotracheal Intubation: Post Intubation Care**

- 1 – 2 mg IV/IO every 15 minutes as needed for sedation (maximum 10 mg)
- Contact **Medical Direction** for additional dosing.

### **Nerve Agent/Organophosphate Poisoning**

- 1 mg IV, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

### **Poisoning/Substance Abuse/Overdose: Severe agitation, seizures or hyperthermia**

- 1 mg IV, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

### **Restraints**

- Contact **Medical Direction** for
  - 1 mg IV, **OR**
  - 2 mg IM.
- May combine and administer Benzodiazepine and Haloperidol in one syringe.
- Contact Medical Direction if additional dosing is needed.

### **Seizure**

- 1 - 2 mg IV, may repeat every 5 minutes (maximum dose 8 mg)

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Lorazepam</u></b> (continued) <b><u>(Ativan)</u></b></p>	<p><b>Supraglottic Airway: Post-Tube Sedation</b></p> <ul style="list-style-type: none"> <li>Lorazepam 1 – 2 mg IV/IO every 15 minutes as needed (maximum 10 mg)</li> </ul> <p><b>Tachycardia:</b> <b>For Cardioversion Procedural Sedation</b></p> <ul style="list-style-type: none"> <li>1 mg IV/IO, may repeat once in 5 minutes <b>OR</b></li> <li>2 mg IM, may repeat once in 10 minutes.</li> </ul> <p><b>Traumatic Brain Injury</b></p> <ul style="list-style-type: none"> <li>1 mg IV/IO, may repeat once in 5 minutes <b>OR</b></li> <li>2 mg IM, may repeat once in 10 minutes.</li> </ul>
<p><b><u>Magnesium Sulfate</u></b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Elemental electrolyte used to treat seizures due to preeclampsia and eclampsia during the third trimester of pregnancy.</li> <li>A smooth muscle relaxor used in refractory respiratory distress resistant to beta-agonists.</li> <li>Torsades de Pointes.</li> </ul>	<p><b>Asthma/COPD/RAD</b></p> <ul style="list-style-type: none"> <li>2 grams in 50 mL D5W or 0.9% NaCl IV/IO over 10 minutes.</li> </ul> <p><b>Cardiac Arrest – Torsades de Pointes With No Pulse</b></p> <ul style="list-style-type: none"> <li>1 – 2 grams IV/IO over 1 – 2 minutes.</li> </ul> <p><b>Obstetrical Emergencies</b></p> <ul style="list-style-type: none"> <li>4 grams in 10 mL D5W or 0.9% NaCl given slow IV push over 5 minutes for patients in the third trimester of pregnancy or post-partum who are seizing or are postictal.</li> </ul> <p><b>Seizures</b></p> <ul style="list-style-type: none"> <li>4 grams in 10 mL D5W or 0.9% NaCl given slow IV push over 5 minutes in the presence of seizure in the third trimester of pregnancy or post-partum.</li> </ul> <p><b>Tachycardia – Wide Complex Polymorphic Torsades de Pointes</b></p> <ul style="list-style-type: none"> <li>If pulse present, consider 2 grams IV/IO diluted in 10 mL D5W or 0.9% NaCl over 10 minutes.</li> </ul>
<p><b><u>Methylprednisolone</u></b> <b><u>(Solu-medrol)</u></b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Steroid used in respiratory distress to reverse inflammatory and allergic reactions.</li> </ul>	<p><b>Adrenal Insufficiency</b></p> <ul style="list-style-type: none"> <li>125 mg IV/IO/IM.</li> </ul> <p><b>Allergic Reaction/Anaphylaxis</b></p> <ul style="list-style-type: none"> <li>1 mg/kg IV, maximum dose 125 mg every 6 hours – <i>extended care protocol.</i></li> </ul> <p><b>Asthma/COPD/RAD</b></p> <ul style="list-style-type: none"> <li>125 mg IV/IO/IM.</li> </ul>
<p><b><u>Metoclopramide</u></b> <b><u>(Reglan)</u></b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Anti-emetic used to control nausea and/or vomiting and as alternative treatment for adrenal insufficiency.</li> </ul>	<p><b>Nausea/Vomiting</b></p> <ul style="list-style-type: none"> <li>5 – 10 mg slow IV push over 1-2 minutes, OR,</li> <li>10 mg IM.</li> <li>May repeat once after 10 minutes if nausea/vomiting persists.</li> <li>May repeat IM every 4 – 6 hours as needed - <i>extended care protocol.</i></li> <li>Administer IV slowly, over 1 – 2 minutes, to reduce dystonic reactions.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Metoprolol</u></b> <b>(Lopressor)</b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Use for rate control in narrow complex tachycardia with an irregular rhythm.</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Contraindicated in patients with HR &lt; 45 bpm, SBP &lt; 100 mmHg, heart block or acute heart failure syndromes (CHF or cardiogenic shock).</li> <li>• Use with caution in patients with bronchospastic disease.</li> <li>• Contraindicated in patients with WPW (Wolff-Parkinson-White) Syndrome.</li> </ul>	<p><b>Tachycardia: Irregular Narrow Complex</b></p> <ul style="list-style-type: none"> <li>• 5 mg IV/IO over 2 – 5 minutes.             <ul style="list-style-type: none"> <li>▪ May repeat every 5 minutes to a maximum of 15 mg as needed to achieve a ventricular rate of 90 – 100 BPM.</li> </ul> </li> </ul>
<p><b><u>Midazolam</u></b> <b>(Versed)</b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Seizure control.</li> <li>• Sedation.</li> <li>• Anxiolytic.</li> </ul> <p><b>(continued)</b></p>	<p><b>Behavioral Emergencies: Anxiety</b></p> <ul style="list-style-type: none"> <li>• Midazolam 2.5 mg IM/IN; OR</li> <li>• Midazolam 1.25 mg IV.</li> </ul> <p><b>Bradycardia: Procedural Sedation for Cardiac Pacing</b></p> <ul style="list-style-type: none"> <li>• 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes OR</li> <li>• 5 mg IM, may repeat once in 10 minutes.</li> </ul> <p><b>Continuous Positive Pressure Airway (CPAP): Anxiolytic</b></p> <ul style="list-style-type: none"> <li>• Contact <b>Medical Direction</b> for authorization.</li> <li>• 2.5 mg IV/intranasal, may repeat once in 5 minutes OR</li> <li>• 5 mg IM, may repeat once in 10 minutes.</li> </ul> <p><b>Hospice: Anxiety</b></p> <ul style="list-style-type: none"> <li>• 2.5 mg IN, may repeat every 10 – 15 minutes as needed to a maximum of 7.5 mg.</li> </ul> <p><b>Hyperthermia</b></p> <ul style="list-style-type: none"> <li>• 2.5 mg IV/intranasal, may repeat once in 5 minutes OR</li> <li>• 5 mg IM, may repeat once in 10 minutes.</li> </ul> <p><b>Nasotracheal and Orotracheal Intubation Post Intubation Care</b></p> <ul style="list-style-type: none"> <li>• 2.5 – 5 mg IV/IO, every 5 – 10 minutes as needed for sedation (maximum 20 mg).</li> <li>• Contact <b>Medical Direction</b> for additional dosing.</li> </ul>



# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

## **Midazolam** (continued) **(Versed)**

### **Indications:**

- Seizure control.
- Sedation.
- Anxiolytic.

### **Nerve Agent/Organophosphate Poisoning**

- 2.5 mg IV/intranasal, may repeat every 5 minutes **OR**
- 5 mg IM, may repeat every 10 minutes.

### **Pain Management**

- **Antidote:** For dysphoria (emergence reaction) caused by ketamine,
  - 1 – 2 mg IV/IM every 5 minutes as needed.

### **Poisoning/Substance Abuse/Overdose**

- 2.5 mg IV/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

### **Rapid Sequence Intubation: Post-Intubation Care**

- 2.5 – 5 mg IV, every 5 – 10 minutes as needed for sedation (maximum 20 mg).
- Contact **Medical Direction** for additional dosing.

### **Rapid Sequence Intubation: Sedation**

- 0.2 mg/kg IV/IO (0.1mg/kg IV/IO for patients in shock).

### **Restraints**

- Contact **Medical Direction** for 5 mg IM, **OR** 2.5 mg IV.
- May combine and administer Benzodiazepine and Haloperidol in one syringe.
- Contact Medical Direction if additional dosing is needed.

### **Seizure**

- May assist with patient's own intranasal midazolam as prescribed.
- 10 mg IM (preferred if no IV access established) or intranasal, may repeat 10 mg IM/IN every 10 minutes (maximum dose 20 mg). **Note:** 5 mg/mL concentration is required for IM/intranasal **OR**
- 5 mg IV, may repeat every 5 minutes until seizure activity resolved (maximum dose 20 mg).

### **Supraglottic Airway**

Midazolam 2.5 – 5 mg IV/IO every 5 – 10 minutes, as needed (maximum 20 mg).

### **Tachycardia: Sedation for Cardioversion**

- 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

### **Traumatic Brain Injury**

- 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Morphine Sulfate</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>Narcotic analgesic</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>Avoid use if BP &lt; 100 mmHg.</li> <li>Associated with increased mortality in Acute Coronary Syndrome.</li> </ul>	<p><b>Acute Coronary Syndrome</b></p> <ul style="list-style-type: none"> <li>2 – 4 mg IV/IM every 5 minutes to a maximum of 15 mg titrated to pain and systolic BP remains ≥100 mmHg.</li> </ul> <p><b>Bradycardia: Analgesia for Cardiac Pacing</b></p> <ul style="list-style-type: none"> <li>2 – 4 mg IV every 10 minutes to a total of 15 mg and systolic BP ≥100 mmHg.</li> </ul> <p><b>Pain Management</b></p> <ul style="list-style-type: none"> <li>2 – 5 mg IV/IM every 10 minutes to a total of 20 mg titrated to pain relief and if systolic BP is &gt; 100 mmHg.</li> <li>Contact <b>Medical Direction</b> for additional dosing.</li> </ul>
<p><b><u>Naloxone (Narcan)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>Narcotic overdose.</li> </ul>	<p><b>Altered Mental Status (Unknown Etiology)</b></p> <ul style="list-style-type: none"> <li>1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg. May repeat every 3 – 5 minutes if no response to a maximum of 12 mg.</li> <li>Single spray of NARCAN® Nasal Spray (4 mg/0.1 ml) into one nostril. May repeat every 3 – 5 minutes if no response or patient relapses, to a total of 12 mg.</li> <li>0.4 – 2 mg IV/IM/IO/SQ/intranasal, titrated to response. If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg.</li> </ul> <p><b>Cardiac Arrest with suspected opioid overdose</b></p> <ul style="list-style-type: none"> <li>2 – 4 mg IV/IO/intranasal</li> </ul> <p><b>Pain Management</b></p> <ul style="list-style-type: none"> <li><b>Antidote:</b> For hypoventilation from opiate administration by EMS personnel, administer naloxone 0.4 – 2.0 mg SQ/IV/IO/IM or 2.0 – 4.0 mg intranasal as needed.</li> </ul> <p><b>Poisoning/Substance Abuse/Overdose</b></p> <p><b>Narcotic Overdose</b></p> <ul style="list-style-type: none"> <li>1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg. May repeat every 3 – 5 minutes if no response to a maximum of 12 mg.</li> <li>Single spray of NARCAN® Nasal Spray (4 mg/0.1 ml) into one nostril. May repeat every 3 – 5 minutes if no response or if patient relapses, to a total of 12 mg.</li> <li>0.4 – 2 mg IV/IM/IO/SQ/intranasal, titrated to response.             <ul style="list-style-type: none"> <li>If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg.</li> </ul> </li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

## Nitroglycerin

### Indications:

- Vasodilator used in the treatment of chest pain secondary to acute coronary syndrome and CHF
- Infusion pump required for infusion.

### Contraindications:

- Avoid in any patient who has used a phosphodiesterase inhibitor for erectile dysfunction and pulmonary hypotension, such as sildenafil (Viagra, Revatio) or vardenafil (Levitra, Staxyn) within 24 hours or tadalafil (Cialis, Adcirca) within 48 hours.
- Avoid in patients receiving IV prostacyclins for pulmonary hypertension.

### **Acute Coronary Syndrome**

- Facilitate administration of patient's own nitroglycerin every 3 – 5 minutes while symptoms persist and systolic BP remains  $\geq 100$  mmHg, to a total of 3 doses. Contact **Medical Direction** for additional dosing.
- 0.4 mg SL every 3 – 5 minutes while symptoms persist and if systolic BP remains  $\geq 100$  mmHg (MAP  $\geq 65$ ).
- 10 – 30 mcg/min IV if symptoms persist (must be on a pump).
  - Increase IV nitroglycerin by 10 mcg/min every 5 minutes while symptoms persist and systolic remains  $\geq 100$  mmHg, max rate 200 mcg/min. Two (2) IV lines or equivalent are recommended, and IV nitroglycerin must be on an infusion pump.
- If IV nitroglycerin is not available, consider the application of nitroglycerin paste 1 – 2 inches transdermal.

### **Congestive Heart Failure**

- Contact **Medical Direction** for online order to facilitate administration of the patient's own nitroglycerin, while symptoms persist and systolic BP is  $\geq 140$  mmHg (EMT).
- 0.4 mg SL every 3 – 5 minutes while symptoms persist and systolic BP is  $\geq 140$  mmHg.
- Contact **Medical Direction** to consider nitroglycerin:
  - For systolic BP of 140 – 160 mmHg: nitroglycerin 0.4 mg SL.
  - For systolic BP of 160 – 200 mmHg: nitroglycerin 0.8 mg SL (2 tabs/sprays).
  - For systolic BP  $> 200$  mmHg: nitroglycerin 1.2 mg SL (3 tabs/sprays).
  - The above doses may be repeated every 5 minutes until symptomatic improvement or systolic BP is 140 mmHg.
- Titrate IV drip until symptomatic improvement or systolic BP of 140 mmHg:
  - For systolic BP of 140 – 160 mmHg: IV nitroglycerin start at 50 mcg/min.
  - For systolic BP of 160 – 200 mmHg: IV nitroglycerin start at 100 mcg/min.
  - For systolic BP  $> 200$  mmHg: IV nitroglycerin start at 200 mcg/min.
  - Note: It is recommended two (2) IV lines in place and the IV nitroglycerin must be on an infusion pump. Maximum dose of 400 mcg/min.
- If patient improves after SL, may apply nitroglycerin paste 1" – 2" transdermal.

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Nitrous Oxide</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Non-narcotic analgesic gas</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>• Contraindicated in abdominal pain, head/facial/chest/ abdominal trauma, headache/migraine, altered mental status, pregnancy, pneumothorax, head injury, or diving emergency patients.</li> <li>• Not to be used if patient has received an opiate.</li> <li>• <b>Must have approval of District Medical Advisor</b></li> <li>• Requires use of scavenger/ventilation fan and open window.</li> </ul>	<p><b>Pain Management for isolated extremity injuries (suspected fractures) or global soft tissue injuries (e.g., burns or road rash) or uncomplicated back/flank pain or renal colic (kidney stone)</b></p> <ul style="list-style-type: none"> <li>• Patient must be able to self-administer this medication for pain control as needed.</li> </ul>
<p><b><u>Norepinephrine (Levophed)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Alpha and Beta 1 receptor adrenergic receptor agonist vasopressor</li> <li>• Infusion pump required.</li> </ul>	<p><b>Post Resuscitation Care</b></p> <ul style="list-style-type: none"> <li>• Infusion 1 – 30 mcg/min IV/IO, titrated to effect.</li> </ul> <p><b>Septic Shock</b></p> <ul style="list-style-type: none"> <li>• Infuse 1 – 30 mcg/min IV/IO (preferred 1<sup>st</sup> line agent).</li> </ul> <p><b>Shock</b></p> <ul style="list-style-type: none"> <li>• Infusion 1 – 30 mcg/min (preferred 1<sup>st</sup> line agent).</li> </ul>
<p><b><u>Normal Saline (0.9% NaCl)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Isotonic vehicle for dilution and/or dissolution of drugs for IV, IM, or SC injection or flushing of indwelling access</li> <li>• Isotonic fluid use for fluid resuscitation</li> </ul>	<p><b>Use per Protocol</b></p>
<p><b><u>Ondansetron (Zofran)</u></b> <b>Anti-emetic</b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Anti-emetic used to control nausea and/or vomiting.</li> </ul>	<p><b>Nausea/Vomiting</b></p> <ul style="list-style-type: none"> <li>• 4 mg PO/ODT/IV/IM             <ul style="list-style-type: none"> <li>▪ May give IV solution by oral route.</li> <li>▪ Paramedics repeat once after 10 minutes if nausea/vomiting persists.</li> </ul> </li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Oxygen</u></b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Indicated in any condition with increased cardiac workload, respiratory distress, or illness or injury resulting in altered ventilation and/or perfusion. Goal oxygen saturation 94 – 98%.</li> <li>Indicated for pre-oxygenation whenever possible prior to endotracheal intubation. Goal oxygen saturation 100%.</li> </ul>	<p><b>Administer oxygen as appropriate with a target of achieving 94-98% saturation:</b></p> <ul style="list-style-type: none"> <li>1 – 4 liters/min via nasal cannula.</li> <li>6 – 15 liters/min via NRB mask.</li> <li>15 liters via BVM / ETT / supraglottic airway.</li> </ul>
<p><b><u>Oxymetazoline (Afrin)</u></b> <b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>Alpha adrenergic agonist provides vasoconstriction for epistaxis</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>Heart disease (increased BP, HR, palpitations).</li> <li>Pregnancy.</li> </ul>	<p><b>Epistaxis/Nosebleed</b></p> <ul style="list-style-type: none"> <li>2 sprays into the affected nostril followed by direct pressure.</li> </ul>
<p><b><u>Oxytocin (Pitocin)</u></b> <b><u>Indications:</u></b> Post-partum hemorrhage after placental delivery.</p>	<p><b>Normal Labor and Delivery</b></p> <ul style="list-style-type: none"> <li>10 units IM.</li> </ul> <p><b>Obstetrical Emergencies</b></p> <ul style="list-style-type: none"> <li>10 units IM</li> </ul>
<p><b><u>Phenylephrine (Neo-Synephrine)</u></b> <b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>Cardiac disease (increased BP, HR, palpitations)</li> <li>Use of MAO inhibitors; risk of hypertensive reaction</li> <li>Pregnancy</li> </ul>	<p><b>Epistaxis/Nosebleed</b></p> <ul style="list-style-type: none"> <li>2 sprays into affected nostril followed by direct pressure</li> </ul> <p><b>Nasotracheal Intubation</b></p> <ul style="list-style-type: none"> <li>Pre-medicate nasal mucosa with a vasoconstricting nasal decongestant spray such as neo-synephrine, if available.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Pralidoxime</u></b> <b>(2-PAM)</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Antidote for Nerve Agents or Organophosphate Overdose.</li> <li>• Administered with Atropine.</li> </ul>	<p><b>Nerve Agent</b></p> <ul style="list-style-type: none"> <li>• 1 – 2 gram IV. <ul style="list-style-type: none"> <li>▪ Reconstitute pralidoxime 1 gram vial with 20 mL sterile water for injection.</li> <li>▪ Dilute reconstituted pralidoxime 1 gram in 100 mL of 0.9% NaCl (may dilute 1-2 grams in this manner).</li> <li>▪ Infuse over 5 minutes (1 gram dose) to 10 minutes (2 gram dose).</li> </ul> </li> <li>• Maintenance infusion: <ul style="list-style-type: none"> <li>▪ Reconstitute pralidoxime 1 gram vial with 20 mL sterile water or 0.9% NaCl for injection.</li> <li>▪ Dilute reconstituted pralidoxime 1 gram in 100 mL of 0.9% NaCl.</li> <li>▪ Infuse 1 gram over 15 – 30 minutes, followed by continuous infusion at 500 mg/hr, to a maximum of 12 grams/day.</li> </ul> </li> </ul>
<p><b><u>Procainamide</u></b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Ventricular arrhythmias</li> </ul> <p><b><u>Contraindications:</u></b></p> <ul style="list-style-type: none"> <li>• Avoid if prolonged QTc or CHF</li> <li>• Complete heart block, 2<sup>nd</sup>/3<sup>rd</sup> degree AV block, Torsades de pointes, systemic lupus erythematosus</li> </ul>	<p><b>Wide complex tachycardia (infusion pump required):</b></p> <ul style="list-style-type: none"> <li>• Procainamide 10 mg/kg IV over 20 minutes until arrhythmia suppressed, hypotension (SBP &lt;90), or QRS duration increases &gt; 50%. Avoid if prolonged QT or CHF.</li> </ul>
<p><b><u>Prochlorperazine</u></b> <b>(Compazine)</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Anti-Emetic used to control Nausea and/or Vomiting.</li> </ul>	<p><b>Nausea/Vomiting</b></p> <ul style="list-style-type: none"> <li>• 5 – 10 mg slow IV push over 1-2 minutes, <b>OR</b>,</li> <li>• 10 mg IM <ul style="list-style-type: none"> <li>▪ May repeat once after 10 minutes if nausea/vomiting persists.</li> <li>▪ May repeat IM every 4 – 6 hours as needed – <i>extended care protocol</i>.</li> <li>▪ Administer IV slowly, over 1 – 2 minutes, to reduce dystonic reactions.</li> </ul> </li> </ul>
<p><b><u>Proparacaine</u></b> <b>(Alcaine)</b></p> <p><b><u>Indications:</u></b></p> <ul style="list-style-type: none"> <li>• Topical anesthetic</li> </ul>	<p><b>Eye Injuries</b></p> <ul style="list-style-type: none"> <li>• 2 drops to affected eye; repeat every 5 minutes as needed.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Rocuronium</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Non-depolarizing paralytic agent used as a component of rapid sequence intubation, when succinylcholine is contraindicated and for post intubation paralysis.</li> <li>• Onset of action is longer than succinylcholine, up to 3 minutes, patient will NOT fasciculate.</li> </ul>	<p><b>Rapid Sequence Intubation Post Intubation Paralytic</b></p> <ul style="list-style-type: none"> <li>• 1 mg/kg IV/IO via <b>on-line Medical Direction</b> only.</li> </ul> <p><b>Rapid Sequence Intubation {Sedate then} Paralyze</b></p> <ul style="list-style-type: none"> <li>• 1 mg/kg IV/IO.</li> </ul>
<p><b><u>Sodium Bicarbonate</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• A buffer used in acidosis to increase the pH in Cardiac Arrest, Hyperkalemia or Tricyclic (Cyclic) Overdose, crush syndrome</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>• Do not routinely use in cardiac arrest</li> <li>• Avoid extravasation</li> </ul>	<p><b>Poisoning/Substance Abuse/Overdose Tricyclic (Cyclic) with symptomatic dysrhythmias, (eg. tachycardia and wide QRS):</b></p> <ul style="list-style-type: none"> <li>• 1 – 2 mEq/kg IV/IO.</li> </ul> <p><b>Cardiac Arrest: Wide Complex PEA or Pre-Existing Metabolic Acidosis</b></p> <ul style="list-style-type: none"> <li>• 1 – 2 mEq/kg IV/IO</li> </ul> <p><b>Crush/Suspension Injury</b></p> <ul style="list-style-type: none"> <li>• 1 mEq/kg (maximum dose 50 mEq) IV/IO bolus over 5 minutes.             <ul style="list-style-type: none"> <li>▪ Infusion secondary to initial bolus: 150 mEq in 1000 mL D5W at a rate of 250 mL/hour or 4mL/min – <i>extended care protocol.</i></li> </ul> </li> </ul> <p><b>Hyperkalemia</b></p> <ul style="list-style-type: none"> <li>• 1 mEq/kg (maximum dose 50 mEq) IV/IO bolus over 5 minutes.</li> </ul>
<p><b><u>Succinylcholine Paralytic Agent</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Paralytic Agent used as a component of rapid sequence intubation.</li> </ul> <p><b>Contraindications</b></p> <ul style="list-style-type: none"> <li>• Avoid in patients with burns &gt;24 hours old, chronic neuromuscular disease (e.g., muscular dystrophy), ESRD, or other situation in which hyperkalemia is likely.</li> </ul>	<p><b>Rapid Sequence Intubation {Sedate then} Paralyze</b></p> <ul style="list-style-type: none"> <li>• 1.5 mg/kg IV/IO immediately after sedation.</li> </ul>
<p><b><u>Tetracaine</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Topical anesthetic</li> </ul>	<p><b>Eye Injuries</b></p> <ul style="list-style-type: none"> <li>• 2 drops to affected eye; repeat every 5 minutes as needed.</li> </ul>

# Vermont Adult Medication Reference

This document is to serve as a reference for the 2022 Vermont Statewide Protocols.  
See the Pediatric Color Coded Appendix for pediatric dosages

<p><b><u>Tranexamic Acid (TXA)</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• See <u>Tranexamic Acid (TXA) Protocol – Adult 4.7</u></li> <li>• <b>Must have approval of District Medical Advisor to use TXA.</b></li> </ul>	<p><b>Obstetrical Emergencies</b></p> <ul style="list-style-type: none"> <li>• Mix 1 gram TXA in 50 - 100 mL 0.9% NaCl. Infuse via wide-open IV/IO bolus over approximately 10 minutes. <ul style="list-style-type: none"> <li>▪ Notify receiving facility of TXA administration prior to arrival.</li> </ul> </li> </ul> <p><b>Tranexamic Acid</b></p> <ul style="list-style-type: none"> <li>• Mix 1 gram TXA in 50 - 100 mL 0.9% NaCl. Infuse via wide-open IV/IO bolus over approximately 10 minutes. <ul style="list-style-type: none"> <li>▪ Notify receiving facility of TXA administration prior to arrival.</li> </ul> </li> </ul>
<p><b><u>Vasopressin</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Posterior pituitary hormone (ADH) vasoconstrictor</li> <li>• Used in cardiac arrest, vasodilatory shock</li> </ul>	<p><b>Use by CCP in IFT per Medical Direction only</b></p> <p><b>Cardiac Arrest</b></p> <ul style="list-style-type: none"> <li>• <b>40 Units IV/IO x 1</b></li> </ul> <p><b>Shock</b></p> <ul style="list-style-type: none"> <li>• 0.02-0.1 units/min IV infusion per interfacility transfer orders, typically a second line pressor</li> </ul>
<p><b><u>Vecuronium Paralytic Agent</u></b></p> <p><b>Indications:</b></p> <ul style="list-style-type: none"> <li>• Long-acting non-depolarizing paralytic agent.</li> </ul> <p><b>Contraindications:</b></p> <ul style="list-style-type: none"> <li>• Avoid in patients with chronic neuromuscular disease (e.g., muscular dystrophy).</li> </ul>	<p><b>Rapid Sequence Intubation Post Intubation Paralysis</b></p> <ul style="list-style-type: none"> <li>• 0.1 mg/kg IV/IO via on-line Medical Direction only.</li> </ul> <p><b>Rapid Sequence Intubation {Sedate then} Paralyze</b></p> <ul style="list-style-type: none"> <li>• 0.1 mg/kg IV/IO.</li> </ul>