

Updated: January 2018

Illinois Poison Center Antidote Stocking Chart
Uses and Suggested Minimum Stock Quantities for Poison Antidotes for Illinois Hospitals with Emergency Departments
Poison Center 24-hour Hot line: 1-800-222-1222

NOTE: The following suggested antidote stocking levels were developed from a published consensus guideline panel and consultation with the clinical staff of the Illinois Poison Center. They were designed for guidance for Illinois Hospitals with Emergency Departments. Requirements and special circumstances in other areas of the U.S. may justify different stocking quantities (e.g. antivenoms for snakes, scorpions, spiders, etc).

Poison Antidotes			
Antidote	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
N-Acetylcysteine (Mucomyst, Acetadote, Cetylev)	Acetaminophen	IV: 450mL (90g) Acetadote	Acetaminophen is the drug most commonly involved in intentional and unintentional poisonings. IV administration is preferred over PO in patients that are uncooperative, vomiting, or present with altered mental status, unprotected airway, pregnancy or hepatic failure. 500mL (100g) of the oral product provides enough to treat two 100kg adults for 24h. Several vials may be stocked in the ED to provide a loading dose and the remaining vials in the pharmacy. 450mL (90g) of IV product will treat three 100kg adult patients for the entire 21h IV protocol.
	Carbon tetrachloride	Available as 30mL vial, 200mg/mL	
	Other hepatotoxins	PO: 500mL (100g) of 20% NAC or equivalent dose of effervescent tablets	
Antivenin, <i>Crotalidae</i> Polyvalent Immune Fab – Ovine (CroFab)	Pit viper envenomation (eg, rattlesnakes, cottonmouths, and copperheads)	12-18 vials	Advised in geographic areas in Illinois with endemic populations of copperhead, water moccasin, eastern massasauga, or timber rattlesnake. In low-risk areas, know nearest alternate source of antivenin. 12 vials will provide 8h of treatment; 18 vials will provide 24h of treatment. Stock in pharmacy. Store in refrigerator.
Antivenin, <i>Latrodectus mactans</i> (Black widow spider)	Black widow spider envenomation	0-1 vial Available as 2.5mL vial	Serious <i>Latrodectus</i> envenomations are rare in Illinois. This product is only used for severe envenomations. Antivenin must be given in a critical care setting since it is an equine-derived product that may cause anaphylaxis. Product must be refrigerated at all times. Know the nearest source of antidote.

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Poison Antidotes			
Antidote	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Atropine sulfate	<p>Alpha₂ agonists (eg, clonidine and guanfacine)</p> <p>Alzheimers drugs (eg, donepezil, galantamine, rivastigmine, tacrine)</p> <p>Antimyasthenic agents (eg, pyridostigmine)</p> <p>Bradycardia-producing agents (eg, beta blockers, calcium channel blockers, and digitalis glycosides)</p> <p>Cholinergic agonists (eg, bethanechol)</p> <p>Muscarine-containing mushrooms (eg, <i>Clitocybe</i> and <i>Inocybe</i>)</p> <p>Nerve agents (eg, sarin, soman, tabun and VX)</p> <p>Organophosphate and carbamate insecticides</p>	<p>175mg or greater</p> <p>Available in various formulations: 0.4mg/mL (1mL, 0.4mg vial) 0.4mg/mL (20mL, 8mg vial) 0.1mg/mL (10mL, 1mg syringe) 1.0 mg/mL (1 mL; 1 mg vial)</p> <p>Atropine sulfate military-style auto-injectors: (Atropen): 2mg/0.7mL; 1mg/0.7mL; 0.5mg/0.7mL; 0.25mg/0.3mL</p> <p>Atropine sulfate 2.1mg/0.7mL with pralidoxime chloride 600mg/2mL (DuoDote)</p>	<p>The product should be immediately available in the ED. Some also may be stored in the pharmacy or other hospital sites, but should be easily mobilized if a severely poisoned patient needs treatment.</p> <p>Note: Product is necessary to be adequately prepared for WMD incidents; the suggested amount may not be sufficient for mass casualty events. Auto-injectors are available from Bound Tree Medical (800-533-0523). Drug stocked in chempack containers is intended only for use in mass casualty events.</p>
<p>Botulinum antitoxin</p> <p>Botulinum antitoxins available:</p> <p>HBAT (heptavalent types A-G)</p> <p>Baby Botulism Immune Globulin (BIG)</p>	<p>Food-borne botulism</p> <p>Wound botulism</p> <p>Botulism as a biological weapon</p> <p>Note: Heptavalent antitoxin not currently recommended for infant botulism</p>	<p>None.</p> <p>Product is stored at 9 CDC regional centers (including the Chicago Quarantine). To obtain antitoxin, hospitals must call their local or state Department of Public Health, which will contact the CDC in Atlanta. The CDC emergency operation center can be reached at 770-488-7100.</p>	<p>Antitoxin must be given in a critical care setting since it is an equine-derived product.</p> <p>Note: Product must be refrigerated at all times. Heptavalent antitoxin is stored in the CDC SNS.</p> <p>BabyBIG is available for infant botulism types A and B, through the Infant Botulism Treatment and Prevention Program, sponsored by the California Department of Public Health, telephone: 510-231-7600, www.infantbotulism.org/physician/obtain.php.</p>
Calcium disodium EDTA (Versenate)	<p>Lead</p> <p>Zinc salts (eg, zinc chloride)</p>	<p>2 x 5mL vials (200mg/mL)</p>	<p>One vial provides 1 day of therapy for a child. 2-4g per 24h may be necessary in adult patients. Stock in pharmacy.</p> <p>Note: Edetate disodium (Endrate) is not the same as calcium disodium EDTA, and is used primarily as an IV chelator for emergent treatment of hypercalcemia.</p>

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Calcium chloride and Calcium gluconate	Fluoride salts (eg, NaF)	10% calcium chloride: 10 x 10mL vials	<p>Many vials of calcium chloride may be necessary in life-threatening HF poisoning. Stock in ED. More may be stocked in pharmacy.</p> <p>The chloride salt provides 3 x more calcium than the gluconate salt. Calcium chloride is very irritating and administration through a central line is preferable.</p> <p>Topical calcium gluconate or carbonate gels may be extemporaneously prepared by the pharmacy. Calgonate (calcium gluconate 2.5% gel) is not FDA approved but is manufactured in an FDA-GMP approved facility and is distributed by Calgonate Corp in Port St. Lucie, Florida.</p>
	Hydrofluoric acid (HF)	10% calcium gluconate: 30 x 10mL vials	
	Hyperkalemia (not digoxin-induced)		
	Hypermagnesemia		
Centruroides Immune F(ab) ₂ – Equine (Anascorp)	Scorpion envenomation	None	<p>Toxic scorpion envenomations are rare in Illinois. This product is manufactured by Rare Disease Therapeutics, Inc. in Nashville, Tennessee. It was approved by the FDA in 2011 and can be stored at room temperature. Usual dose: 1-3 vials.</p>

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Antidote	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
<p>Cyanide Antidote:</p> <p>Sodium nitrite and sodium thiosulfate (Nithiodote)</p>	<p>Acetonitrile</p> <p>Acrylonitrile</p> <p>Bromates (thiosulfate only)</p> <p>Chlorates (thiosulfate only)</p> <p>Cyanide (eg, HCN, KCN, and NaCN)</p> <p>Cyanogen chloride</p> <p>Cyanogenic glycoside natural sources (eg, apricot pits and peach pits)</p> <p>Hydrogen sulfide (nitrites only)</p> <p>Laetrile</p> <p>Mustard agents (thiosulfate only)</p> <p>Nitroprusside (thiosulfate only)</p> <p>Smoke inhalation (combustion of synthetic materials; thiosulfate only)</p>	<p>2-4 kits</p> <p>Each kit contains: 1 vial (10mL) sodium nitrite (300mg) 1 vial (50mL) sodium thiosulfate (12.5g)</p> <p>Stocking this kit may be unnecessary if an adequate supply of hydroxocobalamin HCl is available.</p>	<p>Stock 2 kits in the ED. Consider also stocking 2 kits in the pharmacy.</p> <p>Note: This kit has a short shelf life of 24 months.</p> <p>Significant adverse reactions include methemoglobinemia and hypotension. For smoke inhalation victims, thiosulfate without the use of nitrites may be considered.</p> <p>In 2012, the cyanide kit containing 12 amyl nitrite pearls, two 10mL sodium nitrite vials, and two 50mL sodium thiosulfate vials was discontinued by the manufacturer and is no longer available in the US.</p>
<p>Deferoxamine mesylate (Desferal)</p>	<p>Iron</p> <p>Deferoxamine has also been used for chronic aluminum toxicity in chronic kidney disease patients</p>	<p>12-36g</p> <p>Available in 500mg and 2g vials</p>	<p>Quantity recommended supplies 8-24h of therapy for a 100kg adult. Per package insert, the maximum daily dose is 6g (12 vials). However, this dose may be exceeded in serious acute iron poisonings. Stock in pharmacy.</p>
<p>Digoxin immune Fab (Digibind, Digifab)</p>	<p>Cardiac glycoside-containing plants (eg, foxglove and oleander)</p> <p>Digitoxin</p> <p>Digoxin</p>	<p>15 vials</p> <p>Each vial (40mg) neutralizes 0.5mg of digoxin</p>	<p>An initial dose of 2-3 vials for chronic poisoning or 10 vials for acute poisoning may be given to a digoxin-poisoned patient in whom the digoxin level is unknown. More may be necessary in severe intoxications. 15 vials would effectively neutralize a steady-state digoxin level of 15ng/mL in a 100kg patient. Know nearest source of additional supply. Stock in ED or pharmacy.</p>

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Antidote	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Dimercaprol (BAL in oil)	Arsenic Copper Gold Lead Lewisite Mercury	4 x 3mL vials (100mg/mL)	This amount provides 3 doses of 3-5mg/kg/dose given every 4h to treat 1 seriously poisoned adult (up to 100kg) or provides enough to treat a 15kg child for more than 24h. 2400 mg will provide enough to treat a 100 kg adult for 24 hours. Stock in pharmacy. Know nearest source of additional supply.
Ethanol	Ethylene glycol Methanol	Ethanol is unnecessary if adequate amounts of fomepizole are stocked. Consider stocking 180-360g in the form of 95% ethanol or equivalents (10% ethanol can be prepared from dehydrated alcohol and D ₅ W for IV use).	180g provides loading and maintenance doses for a 100kg adult for 8-24h. More alcohol or fomepizole will be needed during dialysis or prolonged treatment. 95% or 40% alcohol diluted in juice may be given orally if IV alcohol is unavailable. Stock in pharmacy. Note: See also fomepizole in this chart. Ethanol may cause hypotension or metabolic abnormalities (eg, hypoglycemia) especially in pediatric patients. Since ethanol treatment for toxic alcohol poisoning is not FDA approved and fomepizole offers greater efficacy and safety, fomepizole is the preferred alcohol dehydrogenase inhibitor.
Fat emulsion (Intralipid, Liposyn II, Liposyn III)	Local anesthetics and potentially other cardiac toxins (eg, bupropion, calcium channel blockers, cocaine, beta blockers, tricyclic antidepressants)	1,200 mL Available in 100mL of 20% emulsion	Fat emulsion is used to reverse cardiac toxicity induced by local anesthetics and other cardiac toxins. The evidence for the efficacy of fat emulsion therapy is based on animal studies and human case reports. Consultation with a regional poison center toxicologist is advised. Initial dose: 1.5mL/kg IV over 1 min. Follow with infusion of 0.25mL/kg/min over 30 min. Loading dose may be repeated once. Rate may be increased to 0.5mL/kg/min for 60 min if blood pressure drops. Maximum total dose is 8mL/kg. Consider storage in pharmacy, ED, and possibly surgical units.
Flumazenil (Romazicon)	Benzodiazepines	Total 6-12mg Available in 5 and 10mL vials (0.1mg/mL)	Due to risk of seizures, use with extreme caution in poisoned patients. More may be stocked in the pharmacy for use in reversal of conscious sedation. Stock in ED, pharmacy, and any unit where procedural sedation is performed.

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Folic acid and Folinic acid (Leucovorin)	Formaldehyde/Formic acid Methanol Methotrexate, trimetrexate Pyrimethamine Trimethoprim	Folic acid: 3 x 50mg vials Folinic acid: 1 x 50mg vial	For adjunctive treatment of methanol-poisoned patients with an acidosis, give 50mg folinic acid initially, then 50mg of folic acid every 4h for 6 doses. For methotrexate-poisoned patients, administer folinic acid only. Stock in pharmacy.
Fomepizole (Antizol) 4-methylpyrazole (4-MP)	Ethylene glycol Methanol	1-2 x 1.5g vials Hospitals with critical care and hemodialysis capabilities should consider stocking 4 vials or more. Note: Available in a kit of 4 x 1.5g vials	One 1.5g vial provides an initial dose of 15mg/kg/12h to an adult weighing up to 100kg. More frequent dosing (ie, every 4h) is required during hemodialysis. Ethanol is unnecessary if adequate supply of fomepizole is stocked. Fomepizole is preferred to ethanol because of ease of use, fewer adverse effects, simplicity of dosing, and less need for close monitoring. Stock in pharmacy. Know where nearest alternate supply is located.
Glucagon HCl	Beta blockers	50-90 x 1mg vials	This quantity provides 4-8h of maximum dosing (ie, a 10mg IV bolus dose followed by 10mg/h). More may be necessary. Know where nearest alternate supply is located. Stock 30mg in ED and remainder in pharmacy.
Glucarpidase	Methotrexate	Quantity determined by institution.	Do not administer dose within 2 hours of leucovorin. Know nearest source of supply. Store in refrigerator.

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Hydroxocobalamin HCl (Cyanokit)	Acetonitrile Acrylonitrile Cyanide (eg, HCN, KCN, and NaCN) Cyanogen chloride Cyanogenic glycoside natural sources (eg, apricot pits and peach pits) Laetrile Nitroprusside Smoke inhalation (combustion of synthetic materials)	2-4 kits Each kit contains one 5g vial. Note: Diluent is not included in the kit.	Seriously poisoned cyanide patients may require 5-10g (1-2 kits). Stock 2 kits in ED. Consider also stocking 2 kits in the pharmacy. The product has a shelf life of 30 months post-manufacture.
Idaracizumab (Praxbind)	Dabigatran	5 g Supplied as 2 2.5 g/50 mL vials.	Store in refrigerator. Unopened vial may be kept at room temperature for up to 48 hours if stored in original package in order to protect from light, or up to 6 hours when exposed to light. Stock in pharmacy.
Insulin and dextrose	Calcium channel blockers (diltiazem, nifedipine, verapamil)	Quantity determined by institution. Humulin R is available as 100 units/mL in a 1.5mL cartridge and 10mL bottle. Dextrose 50% in water is available in 50mL ampules and syringes. Dextrose 25% is available in 10mL vials and syringes for pediatric use.	High-dose insulin and dextrose therapy can reverse cardiovascular toxicity associated with calcium channel blocker overdose. IV Bolus: Recommended starting dose of 1 unit/kg regular insulin (with 1 amp D ₅₀); The lowest maintenance dose is 0.5-1 units/kg/hr. Higher doses may be considered under consultation with medical toxicologist. Stock in ED and pharmacy.

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Methylene blue	<p>Methemoglobin-inducing agents including:</p> <ul style="list-style-type: none"> Aniline dyes Dapsone Dinitrophenol Local anesthetics (eg, benzocaine) Metoclopramide Monomethylhydrazine-containing mushrooms (eg, <i>Gyromitra</i>) Naphthalene Nitrates and nitrites Nitrobenzene Phenazopyridine 	<p>600 mg</p> <p>Available as 1% solution (1mL and 10mL vials) and 0.5% solution (10 mL ampules).</p>	<p>The usual dose is 1-2mg/kg IV (0.1-0.2mL/kg of 1% solution or 0.2-0.4 mL/kg of 5% solution). A second dose may be given in 1h. More may be necessary. 600 mg provides 3 doses of 2mg/kg for a 100kg adult. Stock in pharmacy. Methylene blue is considered an experimental therapy for shock associated with drug overdose.</p>
Naloxone (Narcan)	<p>Alpha₂ agonists (eg, clonidine and guanfacine)</p> <p>Unknown poisoning with mental status depression</p> <p>Opioids (eg, codeine, diphenoxylate, fentanyl, heroin, meperidine, morphine, and propoxyphene)</p>	<p>Total 40mg</p> <p>Available as 0.4mg/mL vial (1 mL and 10 mL) and 1 mg/mL (2mL) syringe.</p>	<p>Stock 20mg ED and 20mg elsewhere in the institution.</p>
Octreotide acetate (Sandostatin)	<p>Sulfonylurea hypoglycemic agents (eg, glipizide, glyburide)</p>	<p>225mcg</p> <p>Available in 1mL vials (0.05mg/mL, 0.1mg/mL, and 0.5mg/mL) and 5mL multidose vials (0.2mg/mL and 1mg/mL).</p>	<p>Octreotide acetate blocks the release of insulin from pancreatic beta cells that, along with IV dextrose, can reverse sulfonylurea-induced hypoglycemia. The usual adult dose is 50-100mcg IV or SC every 6-12h. The usual pediatric dose is 1-1.5mcg/kg IV or SC every 6-12h. 225mcg provides 4 x 75mcg adult doses. Stock in pharmacy.</p>

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Physostigmine salicylate (Antilirium)	Anticholinergic alkaloid-containing plants (eg, deadly nightshade and jimson weed) Antihistamines Atropine and other anticholinergic agents	2 x 2mL vials (1mg/mL)	Usual adult dose is 1-2mg slow IV push. Note: Duration of effect is 30-60 min. Stock in ED or pharmacy.
Phytonadione (Vitamin K ₁) (Aquamephyton, Mephyton)	Indandione derivatives Long-acting anticoagulant rodenticides (eg, brodifacoum and bromadiolone) Warfarin	100mg injectable; 100mg oral Available as: 0.5mL vials (2mg/mL) and 1mL vials (10mg/mL) 5mg tablets	Patients who are poisoned by long-acting anticoagulant rodenticides may require 50-100mg/day or more for weeks to months to maintain normal INRs. An oral suspension for pediatric patients may be extemporaneously prepared by the pharmacy. Stock in pharmacy.
Pralidoxime chloride (2-PAM) (Protopam)	Organophosphate Insecticides (OPIs) Nerve agents (eg, sarin, soman, tabun, and VX) And possibly: Antimyasthenic agents (eg, pyridostigmine)	7-18 g Also available as: Pralidoxime chloride military-style auto-injectors: 600mg/2mL Atropine sulfate 2.1mg/0.7mL with Pralidoxime chloride 600mg/2mL (DuoDote)	7 g will provide enough to treat a 100 kg adult with a loading dose of 2 g followed by a maximum infusion of 650 mg/hr for 8 h, 18 g will provide enough for 24 h. Healthcare facilities located in agricultural areas where OPIs are used should maintain adequate supplies. Product is necessary to be adequately prepared for WMD incidents; the suggested amount may not be sufficient for mass casualty events. Auto-injectors are available from Bound Tree Medical (800-533-0523). The drugs stocked in chempack containers are intended for use in mass casualty events only. Stock in ED or pharmacy.
Protamine sulfate	Heparin Low molecular weight heparins (eg, enoxaparin, dalteparin, tinzaparin)	400-1200 mg; consider recommendation of hospital pharmacy & therapeutics committee Available as 5mL and 25 mL vials (10mg/mL)	The usual dose is 1-1.5mg for each 100 units of heparin. 400 mg will provide enough to treat a patient for 8 h, 1200 mg will provide enough to treat for 24 h. Stock in pharmacy in refrigerator. Preservative-free formulation does not require refrigeration.
Prothrombin Complex Concentrate 3-Factor (Bebulin, Prifiline) OR 4-Factor (Beriplex, KCentra)	Inandione derivatives Long-acting anticoagulant rodenticides (eg brodifacoum and bromadiolone) Warfarin	5,000 IU	Vitamin K 10 mg IV should be administered concurrently to maintain clotting factor levels after prothrombin complex concentrate levels have diminished. 5,000 IU provides adequate supply for patients actively bleeding associated with anticoagulation toxicity. Store in refrigerator.

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Antidote	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Pyridoxine hydrochloride (Vitamin B ₆)	Acrylamide Ethylene glycol Hydrazine Hydrazine MAOIs (isocarboxazid, phenelzine) Isoniazid (INH) Monomethylhydrazine-containing mushrooms (eg, <i>Gyromitra</i>)	10g (100 vials) Available as 1mL vials (100mg/mL)	Usual dose is 1g pyridoxine HCl for each gram of INH ingested. If amount ingested is unknown, give 5g of pyridoxine. Repeat 5g dose if seizures are uncontrolled. More may be necessary. Know nearest source of additional supply. For ethylene glycol, a dose of 100mg/day may enhance the clearance of toxic metabolite. Stock in ED or pharmacy.
Silibinin (Legalon-SIL)	Cyclopeptide-containing mushrooms (eg, <i>Amanita phalloides</i> , <i>Amanita verna</i> , <i>Amanita virosa</i> , <i>Galerina autumnalis</i> , <i>Lepiota josserandi</i> , and others)	None. 350mg/vial	Silibinin is a water-soluble preparation of silymarin, a flavolignone extracted from the milk thistle plant. It inhibits uptake of cyclopeptides in hepatocytes. These hepatotoxins are responsible for high morbidity and mortality following ingestion of these mushrooms. Silibinin is manufactured by Madaus, Inc. in Germany, and has been widely used in Europe since 1984. The initial adult loading dose consists of a 1h infusion of 5mg/kg followed by the recommended daily dosage of 20mg/kg via continuous IV infusion. Product is now available in the US under an open-treatment investigational new drug application. Physicians can obtain the product free-of-charge by contacting the primary investigator at 866-520-4412.
Sodium bicarbonate	Chlorine gas Hyperkalemia <u>Serum Alkalinization:</u> Agents producing a quinidine-like effect as noted by widened QRS complex on EKG (eg, amantadine, carbamazepine, chloroquine, cocaine, diphenhydramine, flecainide, propafenone, propoxyphene, tricyclic antidepressants, quinidine, and related agents) <u>Urine Alkalinization:</u> Weakly acidic agents (eg, chlorophenoxy herbicides, chlorpropamide, methotrexate, phenobarbital and salicylates)	15-20 x 50mL vials of either 8.4% (50 mEq/50mL) or 7.5% (44 mEq/50mL) Consider stocking 4.2% (5 mEq/10mL) for pediatric patients.	Stock 15 vials in ED and remainder in pharmacy. Nebulized 2.5-5% sodium bicarbonate has been demonstrated in anecdotal case reports to provide symptomatic relief for chlorine gas inhalation.

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Poison Antidotes			
Antidote	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Succimer (Chemet)	Arsenic	10-30 capsules	Initial treatment of severely symptomatic heavy metal poisoning consists of parenterally administered chelators (eg, BAL, calcium disodium EDTA). Patients who markedly improve may eventually be started on oral DMSA. Asymptomatic or minimally symptomatic patients do not require parenteral therapy and are often treated as outpatients with an oral chelator. FDA approved only for pediatric lead poisoning, however, it has shown efficacy for other heavy metal poisonings. 30 capsules or 3 g represents a 24 hour dose in a 100 kg adult. Stock in pharmacy.
Dimercaptosuccinic acid (DMSA)	Lead	Available as 100mg capsules	
	Lewisite		
	Mercury		

Adjunctive Agents			
Adjunctive Agent	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Benzotropine mesylate (Cogentin)	Medications causing a dystonic reaction or other extrapyramidal symptoms	Quantity determined by institution. Available in tablets of 0.5mg, 1mg, and 2mg and in 1mg/mL injectable (2mL vial)	Maximum daily adult dose is 6mg/d. Stock some in ED and some in pharmacy. See also diphenhydramine.
L-Carnitine (Carnitor)	Valproic acid	Quantity determined by institution. 9-15g Available as 330mg and 500mg tablets; 250mg capsules; 5 mL (200mg/mL) IV solution; and 100mg/mL PO solution.	L-Carnitine may be considered in valproate intoxication associated with elevated serum ammonia levels and/or hepatotoxicity. Dosing: 100mg/kg IV over 30 min (max 6g), then 15mg/kg every 4-6h. Oral formulation primarily used prophylactically for patients on chronic valproate therapy. Stock in pharmacy.
Cyproheptadine HCl (Periactin)	Medications causing serotonin syndrome	20-32mg Available in 4mg tablets and 2mg/5mL PO solution.	Cyproheptadine HCl is a nonspecific 5-HT antagonist that has been used in the treatment of serotonin syndrome. Adult dose is 12mg PO initially, followed by 2mg every 2h if symptoms persist. Maintenance dose is 8mg every 6h. Maximum of 32mg/day. Pediatric dose is 0.25mg/kg/day divided every 6h, with a max dose of 12mg/day. Stock in pharmacy.

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Adjunctive Agent	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Dantrolene sodium (Dantrium)	Medications causing Neuroleptic Malignant Syndrome (NMS) Medications causing malignant hyperthermia	800-2000 mg Available in 25mg, 50mg, and 100mg capsules and 20mg/vial IV form.	The recommended dose for NMS is 1mg/kg IV; may repeat as needed every 5-10 min for a maximum of 10mg/kg. Dantrolene sodium inhibits calcium release from the sarcoplasmic reticulum of skeletal muscle and thereby reduces rigidity. Stock in pharmacy. Any hospital using inhalational anesthetics should strongly consider stocking dantrolene for treatment of malignant hyperthermia.
Diazepam (Valium)	Chloroquine and related antimalarial drugs Nerve agents Neuroleptic Malignant Syndrome (NMS) Serotonin syndrome Severe agitation from any toxic exposure/overdose (eg, cocaine, PCP, methamphetamine)	Quantity determined by institution. Available as 5mg/mL injectables in 2mL ampules, 2mL disposable syringes, and 10mL multidose vials. Diazepam military-style auto-injectors for nerve agent-induced seizures: 10mg/2mL.	Diazepam and other benzodiazepines are also used in poisoned and nonpoisoned patients as an anticonvulsant, muscle relaxant, and antianxiety agent. They are usually the first-line therapy for drug-induced agitation, tachycardia, and hypertension. Benzodiazepines are a mainstay in the treatment of NMS and serotonin syndrome. Stock in ED and pharmacy. Adequate supply is necessary to be prepared for WMD incidents. Auto-injectors are available from Bound Tree Medical (800-533-0523). Diazepam is used in conjunction with epinephrine for patients with chloroquine/hydroxychloroquine toxicity (seizures, dysrhythmias, hypotension) or if the amount ingested is more than 5g. Intravenous loading dose 2mg/kg over 30 min. Maintenance dose of 1-2mg/kg per day for 2-4 days.
Diphenhydramine HCL (Benadryl)	Medications causing a dystonic reaction or other EPS	Quantity determined by institution. Available in 25mg and 50mg capsules, oral liquid formulation of 12.5mg/5mL, and 50mg/mL and 10mg/mL injectable syringes.	In addition to its use as an anticholinergic agent, diphenhydramine is a widely used antihistamine in the management of minor or severe allergic reactions. Stock in ED and pharmacy.
Glycopyrrolate Bromide (Robinul)	Organophosphate Insecticides (OPIs) Nerve agents	Quantity determined by institution. Available as 0.2mg/mL in vials of 1mL, 2mL, 5mL, and 20mL.	The dose of glycopyrrolate for OPI poisoning is 0.01-0.02mg/kg IV. Glycopyrrolate is a quaternary ammonium antimuscarinic agent that may assist in the control of hypersecretions caused by acetylcholinesterase inhibition. This agent produces less tachycardia and CNS effects than atropine. Stock in ED and pharmacy.
Phentolamine mesylate (Regitine)	Catecholamine extravasation Intradigital epinephrine injection	Quantity determined by institution. Available as a 5mg/vial powder with 1mL diluent.	Phentolamine is an alpha-adrenergic antagonist that will reverse vasoconstriction and peripheral ischemia associated with extravasation of adrenergic agents. When phentolamine is not available, consider using subcutaneous terbutaline sulfate (Brethine). Phentolamine also offers an additional option in the management of drug-induced hypertension. Stock in ED and pharmacy.

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Adjunctive Agents			
Adjunctive Agent	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Thiamine	Ethanol	500-1500 mg	Parenteral thiamine precedes IV dextrose in patients with chronic ethanol abuse.
	Ethylene glycol	Available as 100mg/mL in 2mL vials.	Thiamine 100mg every 6h enhances clearance of toxic metabolites of ethylene glycol. Stock in ED and pharmacy.

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Agents for Radiological Exposures			
Agent	Poison/Drug/Toxin	Suggested Minimum Stock Quantity	Rationale/Comments
Calcium-diethylenetriamine pentaacetic acid (Ca-DTPA; Pentetate calcium trisodium injection) Zinc-diethylenetriamine pentaacetic acid (Zn-DTPA; Pentetate zinc trisodium injection)	Internal contamination with transuranium elements: americium, curium, plutonium	Quantity determined by institution. It has been suggested that 1 g will provide enough to treat one 100 kg patient for 24 hours. Supplied as 200mg/mL in 5mL ampules for IV or inhalation administration. The product is sponsored through Hameln Pharmaceuticals, GmbH, of Hameln, Germany. Distributed in the US by Akorn, Inc.	1 ampule provides the usual adult dose of 1g every 24h. More would be necessary in a mass casualty event. Ca-DTPA and Zn-DTPA are available through the SNS and REAC/TS, Oak Ridge, Tennessee at 865-576-3131 (business hours) or 865-576-1005 (after hours).
Potassium Iodide, KI tablets (Iosat, Thyrosafe) KI liquid (Thyroshield, SSKI)	Prevents thyroid uptake of radioactive iodine (I-131)	Quantity determined by institution. It has been suggested that 130 mg will provide enough to treat one 100 kg patient for 24 hours. Available in 130mg and 65mg tablets, 65mg/mL oral solution, and 1g/mL oral solution.	One 130mg tablet represents the initial daily adult dose. More would be necessary in a mass casualty event. KI tablets and oral solution are OTC. The Illinois Emergency Management Agency makes KI tablets available to healthcare facilities and the general public located near nuclear reactors.
Prussian blue, ferric hexacyanoferrate (Radiogardase)	Radioactive cesium (Cs-137), radioactive thallium (Tl-201), and non-radioactive thallium	Quantity determined by institution. It has been suggested that 25 g will provide enough to treat one 100 kg patient for 24 hours. Available as 500mg capsules.	The usual oral adult dose is 3g, 3 times a day. The product is manufactured by Haupt Pharma Berlin GmbH for distribution by HEYL Chemisch-pharmazeutische Fabrik GmbH & Co. KG, Berlin, Germany, and is available in the US from Heyltex Corporation. Prussian blue is also available through the SNS and REAC/TS, Oak Ridge, Tennessee at 865-576-3131 (business hours) or 865-576-1005 (after hours).

Abbreviations: BAL = British anti-lewisite; CDC = Centers for Disease Control and Prevention; ED = emergency department; EPS = extrapyramidal symptom; NMS = neuroleptic malignant syndrome; OPI = organophosphate insecticide; REAC/TS = radiation emergency assistance center/training site; SNS = Strategic National Stockpile; WMD = weapons of mass destruction.