



## 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 Hotline: 1-800-222-1222

Suggested antidote stocking levels are developed from a published consensus guideline panel and consultation with the clinical staff of the Illinois Poison Center. They are designed as guidance for Illinois hospitals with emergency departments. Requirements and special circumstances in other areas of the U.S. may justify different stocking quantities.

IPC clinical guidelines acquaint clinicians with information on adverse effects and overdoses of harmful substances and provide practical suggestions on assessment and management. Use of this clinical guideline as an educational tool is within the treating clinician's discretion with the ultimate determination regarding its application to be made by the treating clinician considering the individual patient's clinical history, assessment, and overall health.

This guideline is not intended to: (1) substitute for professional medical advice, diagnosis, or treatment of patients, (2) be used to approve or deny financial coverage for any specific therapeutic or diagnostic modality, (3) be inclusive of all methods of care or exclusive of others directed at obtaining the same results, or (4) serve as a standard of care. IPC accepts no responsibility for the success of any particular treatment.

**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.

General Antidotes			
	Indication	Suggested Minimum Stock Quantity	Comments
N-acetylcysteine (NAC) <i>Acetadote</i>	Acetaminophen  Carbon tetrachloride  Other hepatotoxins  Note: acetaminophen is the most commonly involved drug in intentional and unintentional poisonings	IV: 90g = 450mL of 200mg/mL  Available as 30mL vials	450mL of IV product provides enough for three 100kg adults to receive the entire 21hr protocol.  IV administration preferred for patients who are uncooperative/vomiting w/ oral administration, those with altered mental status, unprotected airway, pregnancy, or hepatic failure.  Stock several vials in ED for loading doses and remaining vials in pharmacy.
		PO: 100g = 500mL of 20% NAC  Available in 4mL, 10mL, 30mL vials; inhalation solution (10%) may be used for PO administration if needed	500mL of PO product provides enough to treat two 100kg adults for 24hrs (assuming no doses have to be repeated).  Stock in pharmacy.
Atropine	Alpha <sub>2</sub> agonists (clonidine, guanfacine, etc.)  Cholinergic/muscarinic agonists (bethanechol, donepezil, galantamine, rivastigmine, pyridostigmine, tacrine, etc.)  Bradycardia-producing agents (calcium channel blockers, beta blockers, digoxin)  Muscarine-containing mushrooms ( <i>Clitocybe</i> , <i>Inocybe</i> )  Nerve agents (sarin, soman, tabun, VX)  OPIs/carbamate insecticides	175mg or more  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)  Atropine sulfate auto-injectors for military use: 2mg/0.7mL; 1mg/0.7mL; 0.5mg/0.7mL; 0.25mg/0.3mL ( <i>Atropen</i> )  Atropine sulfate 2.1mg/0.7mL with pralidoxime chloride 600mg/2mL ( <i>DuoDote</i> )	Product should be immediately available in ED. Some may be stored in the pharmacy or other hospital sites, but should be easily mobilized if a severely poisoned patient needs treatment.  Note: stocked 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). Drugs stocked in chempack containers are intended for use in mass casualty events.
Calcium (chloride, gluconate)	Hydrofluoric acid (HF), fluoride salts (NaF)  Hyperkalemia (not digoxin-induced)  Hypermagnesemia	10% calcium chloride: 10 x 10mL vials  10% calcium gluconate: 30 x 10mL vials  2.5% topical calcium gluconate gel is available as a commercial product ( <i>Calgonate</i> ) in single-use tubes; alternatively, topical calcium gluconate or carbonate gels may be extemporaneously prepared by the pharmacy	Many vials of calcium chloride may be necessary in life-threatening HF poisoning. Stock in ED and pharmacy.  The chloride salt provides 3x more calcium than the gluconate salt. Calcium chloride is very irritating and administration through a central line is preferable.  <i>Calgonate</i> (calcium gluconate 2.5% gel) is not FDA-approved but is manufactured in an FDA/GMP-approved facility and distributed by Calgonate Corp in Port St. Lucie, Florida. Available at: <a href="http://www.calgonate.com">www.calgonate.com</a>
Digoxin immune Fab <i>Digifab</i>	Naturally occurring cardiac glycosides (foxglove, oleander)  Digoxin and digitoxin	15 vials  Each vial neutralizes 0.5mg of digoxin	15 vials would neutralize a steady-state digoxin level of 15ng/mL in a 100kg patient. An initial dose of 2-3 vials (chronic) or 10 vials (acute) may be given if the digoxin level is unknown. More may be necessary in severe intoxications.  Know nearest source of additional supply. Stock in ED or pharmacy.

Ethanol	Ethylene glycol  Methanol	Ethanol is unnecessary if adequate amounts of fomepizole are stocked; consider stocking 180-360g in the form of 40% or 95% ethanol to be used as a bridge until fomepizole is obtained or patient is transferred to another facility where fomepizole can be given.  IV ethanol is not commercially manufactured.	180g provides loading and maintenance doses for a 100kg adult for 8-24hrs; more would be needed during dialysis or prolonged treatment.  Oral ethanol (40% or as high as patient can tolerate) may be given via NG tube, usual dose is 2.5mL/kg load followed by 0.3-0.5mL/kg/hr. IV is rarely recommended; contact poison control center for dilution/administration instructions if IV formulation is considered.  Ethanol may cause hypotension or metabolic abnormalities (e.g., hypoglycemia) especially in pediatric patients. Since ethanol is not FDA-approved for toxic alcohol poisoning and fomepizole offers greater efficacy and safety, fomepizole is the preferred alcohol dehydrogenase inhibitor.  Stock in pharmacy.
Flumazenil	Benzodiazepines	6-12mg  Available in 0.1mg/mL vials (5mL and 10mL)	Use with caution due to risk of seizures. Stock in ED and any unit where procedural sedation is performed; more may be stocked in the pharmacy for use in reversal of conscious sedation.
Folinic acid <i>Leucovorin</i>	Methanol, formaldehyde, formic acid  Methotrexate, trimetrexate  Pyrimethamine  Trimethoprim	1 x 50mg vial  Available as 10mg/mL vials (10mL and 50mL); 50mg, 100mg, 200mg, 350mg, and 500mg single-use vials for reconstitution; and as 5mg, 10mg, 15mg, and 25mg oral tablets	For methotrexate-poisoned patients, administer folinic acid only. Obtain rheumatology/oncology consult if available, or refer to IPC clinical guideline for dosing if needed.  Stock in pharmacy.
Fomepizole, 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.  Available as 1.5g/1.5mL vials	One 1.5g vial provides an initial dose of 15mg/kg to an adult weighing up to 100kg. Maintenance dosing is given every 12hrs; more frequent dosing (every 4hrs) is required during hemodialysis.  Fomepizole is preferred to ethanol because of ease of use, fewer adverse effects, simplicity of dosing, and less need for close monitoring. Ethanol is unnecessary if adequate supply of fomepizole is stocked.  Stock in pharmacy. Know where nearest alternate supply is located.
Glucagon	Beta blockers	50-90 x 1mg vials	This quantity provides 4-8hrs of maximum dosing (i.e., a 10mg IV bolus dose followed by 10mg/h). More may be necessary.  Stock 30mg in ED and remainder in pharmacy. Know where nearest alternate supply is located.

Glucarpidase	Methotrexate	Quantity determined by institution	Do not administer dose within 2hrs of folic acid. Know nearest source of supply.  Stock in pharmacy. Store in refrigerator.
Hydroxocobalamin <i>Cyanokit</i>	Acetonitrile, acrylonitrile  Cyanide (HCN, KCN, NaCN)  Cyanogen chloride  Naturally occurring cyanogenic glycosides (apricot/peach pits, etc.)  Laetrile  Nitroprusside  Smoke inhalation (combustion of synthetic materials)	2-4 kits; each contains one 5g vial  Note: Diluent is not included in the kit	Symptomatic cyanide poisoned 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.
Insulin	Calcium channel blockers (dihydropyridine and non-dihydropyridine)	Quantity determined by institution  Humulin R is available as 100 units/mL in a 1.5mL cartridge and 10mL bottle	High-dose insulin can reverse cardiovascular toxicity due to calcium channel blocker overdose. Dextrose may be required for hypoglycemia.  Usual starting dose is 1 unit/kg regular insulin; 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.
Lipid emulsion <i>Intralipid</i>	Local anesthetics and other cardiac toxins	1,200mL  Available as 20% emulsion in 100mL, 250mL, 500mL, and 1000mL vials; also as a 30% emulsion in 500mL vials	Fat emulsion may reverse cardiac toxicity induced by local anesthetics and other cardiac toxins based on evidence from animal studies and human case reports. Consultation with a medical toxicologist is advised.  Initial dose is 1.5mL/kg IV over 1 min, followed by 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 (ACMT 2017).  Stock in pharmacy, ED; possibly surgical units.
Methylene blue	Methemoglobin-inducing agents: aniline dyes, dapsone, dinitrophenol, local anesthetics (benzocaine), metoclopramide, phenazopyridine, naphthalene, nitrobenzene, nitrates and nitrites  Monomethylhydrazine-containing mushrooms ( <i>Gyromitra</i> )	600mg (12 ampules)  Available as 50mg/10mL ampules	600mg provides enough for 6 doses of 1mg/kg per dose for a 100kg adult. The usual dose is 1mg/kg (0.2mL/kg of 0.5% solution). A second dose may be given in 1hr, more may be necessary in certain cases.  Methylene blue is also considered as experimental therapy for shock associated with drug overdose.  Stock in pharmacy.

<p>Naloxone <i>Narcan, Kloxxado, Zimhi</i></p>	<p>Alpha<sub>2</sub> agonists (clonidine, guanfacine; has worked in a few cases of tizanidine exposure)</p> <p>Opioids/opiates (including codeine, diphenoxylate, meperidine, buprenorphine, tramadol)</p> <p>Unknown cause of CNS/respiratory depression</p>	<p>40mg</p> <p>Available as 5mg/0.5mL and 2mg/2mL prefilled syringes, 0.4mg/mL vials (1mL and 10mL)</p> <p>Also available as 0.4mg/0.1mL and 8mg/0.1mL intranasal solutions</p>	<p>Stock 20mg ED and 20mg in pharmacy.</p>
<p>Octreotide <i>SandoSTATIN</i></p>	<p>Sulfonylurea hypoglycemic agents (glipizide, glyburide, glimepiride)</p>	<p>225mcg</p> <p>Available as 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 blocks the release of insulin from pancreatic beta cells, reversing sulfonylurea-induced hypoglycemia. Usual adult dose is 50-100mcg IV or SC every 6-12hrs; 225mcg provides 4 x 75mcg adult doses. Usual pediatric dose is 1-1.5mcg/kg every 6-12hrs.</p> <p>Stock in pharmacy.</p>
<p>Physostigmine</p>	<p>Anticholinergic alkaloid-containing plants (deadly nightshade, jimson weed)</p> <p>Atropine, antihistamines, and other anticholinergic agents</p>	<p>2 vials</p> <p>Available as 1mg/mL vials (2mL)</p>	<p>Usual adult dose is 1-2mg slow IV push. Duration of effect is 30-60 min.</p> <p>Stock in ED or pharmacy.</p>
<p>Pralidoxime (2-PAM) <i>Protopam</i></p>	<p>OPIs</p> <p>Nerve agents (sarin, soman, tabun, VX)</p> <p>Possibly: Antimyasthenic agents (pyridostigmine)</p>	<p>7-18g</p> <p>Available as 1g vials (<i>Protopam</i>)</p> <p>Also available in auto-injectors: atropine sulfate 2.1mg/0.7mL with pralidoxime chloride 600mg/2mL (<i>DuoDote, ATNAA</i>)</p>	<p>7g will provide enough to treat a 100kg adult with a loading dose of 2g followed by a maximum infusion of 650mg/hr for 8hrs, 18g will provide enough for 24hrs. Healthcare facilities in agricultural areas where OPIs are used should maintain adequate supplies.</p> <p>Stocked 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). Drugs stocked in chempack containers are intended for use in mass casualty events.</p> <p>Stock in ED or pharmacy.</p>
<p>Pyridoxine</p>	<p>Acrylamide</p> <p>Ethylene glycol</p> <p>Hydrazine</p> <p>Hydrazine MAOIs (isocarboxazid, phenelzine)</p> <p>Isoniazid (INH)</p> <p>Monomethylhydrazine-containing mushrooms (<i>Gyromitra</i>)</p>	<p>100 vials (10g)</p> <p>Available as 100mg/mL vials (1mL) for IV use</p>	<p>Usual dose is 1g pyridoxine HCl for each gram of INH ingested. If amount ingested is unknown, give 5g of pyridoxine; 4g IV followed by 1g IM. Repeat 5g dose every 30 min if seizures are uncontrolled. More may be necessary.</p> <p>For ethylene glycol, a dose of 100mg/day may enhance the clearance of toxic metabolite.</p> <p>Stock in ED or pharmacy. Know nearest source of additional supply.</p>

Sodium bicarbonate	<p>Chlorine gas</p> <p>Hyperkalemia</p> <p>Serum Alkalinization: agents producing a quinidine-like effect as noted by widened QRS complex on EKG (amantadine, carbamazepine, chloroquine, cocaine, diphenhydramine, flecainide, propafenone, propoxyphene, tricyclic antidepressants, quinidine, etc.)</p> <p>Urine Alkalinization: weakly acidic agents (chlorophenoxy herbicides, chlorpropamide, methotrexate, phenobarbital, and salicylates)</p>	<p>15-20 vials, either 8.4% (50 mEq/50mL) or 7.5% (44 mEq/50mL)</p> <p>Consider stocking 4.2% (5 mEq/10mL) for pediatric patients.</p>	<p>Nebulized 2.5-5% sodium bicarbonate has been demonstrated in anecdotal case reports to provide symptomatic relief for chlorine gas inhalation.</p> <p>Stock 15 vials in ED and remainder in pharmacy.</p>
Sodium nitrite and sodium thiosulfate <i>Nithiodote</i>	<p>Acetonitrile, acrylonitrile</p> <p>Cyanide (HCN, KCN, NaCN)</p> <p>Cyanogen chloride</p> <p>Naturally occurring cyanogenic glycosides (apricot/peach pits, etc.)</p> <p>Laetrile</p> <p>*thiosulfate only: bromates, chlorates, mustard agents, nitroprusside, smoke inhalation (combustion of synthetic materials)</p> <p>*nitrite only: hydrogen sulfide</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>Significant adverse reactions include methemoglobinemia and hypotension. For smoke inhalation victims, thiosulfate without the use of nitrites may be considered.</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>
Uridine triacetate <i>Vistogard</i>	Fluorouracil (5-FU) or capecitabine overdose, regardless of symptoms or early-onset toxicity	<p>20-40g</p> <p>Available as 10g packets for oral use, product is orange-flavored</p>	<p>Initiate as soon as possible after overdose or early-onset toxicity. Adult dose is 10g every 6hr for 20 doses. Pediatric dose is 6.2g/m<sup>2</sup> BSA (max dose 10g) every 6hrs for 20 doses. Finish entire 20-dose course, even if patient appears or feels well.</p> <p>Stock in pharmacy. Administer within 30 min of preparation. Discard unused portions.</p>

Agents for Anticoagulant Reversal			
	Indication	Suggested Minimum Stock Quantity	Comments
Andexanet Alfa <i>Andexxa</i>	Xa inhibitors (apixaban, rivaroxaban; off-label use for edoxaban and betrixaban)	Quantity determined by institution  Available as 200mg single-use vials for reconstitution	Andexanet alfa can be used for patients taking Xa inhibitors who present with life-threatening bleeding; it is rarely used in cases of acute Xa inhibitor ingestion.  Patients receive "high" or "low" dosing schemes based on Xa inhibitor/dose and length of time since last ingestion; consult IPC clinical guidelines for further information.  Stock in pharmacy.
Idarucizumab <i>Praxbind</i>	Dabigatran	5g  Available as 2.5g/50mL vials	Idarucizumab can be used for patients taking dabigatran who present with life-threatening bleeding; it is rarely used in cases of acute dabigatran ingestion. Given as 2.5mg x two consecutive bolus doses.  Unopened vial may be kept at room temperature for up to 48hrs if stored in original package in order to protect from light, or up to 6 hours when exposed to light.  Stock in pharmacy. Store in refrigerator.
Phytonadione <i>Aquamephyton, Mephyton, Konakion</i>	Indandione derivatives  Long-acting anticoagulant rodenticides (brodifacoum, bromadiolone, diphacinone)  Warfarin	100mg injectable; 100mg oral  Available as 2mg/mL vials (0.5mL), 10mg/mL vials (1mL); 100mcg and 5mg tablets  Note: if the PO formulation is unavailable, the IV formulation can be given orally	Patients 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.
Protamine sulfate	Heparin  Low molecular weight heparins (enoxaparin, dalteparin, tinzaparin)	400-1200 mg; consider recommendation of hospital pharmacy & therapeutics committee  Available as 10mg/mL vials (5mL and 25 mL)	The usual dose is 1-1.5mg for each 100 units of heparin. 400mg will provide enough to treat for 8hrs, 1200mg is enough to treat for 24hrs.  Stock in pharmacy in refrigerator. Preservative-free formulation does not require refrigeration.
Prothrombin complex concentrate 3-Factor ( <i>Prfilnine</i> ) or 4- Factor ( <i>KCentra</i> )	Inandione derivatives  Long-acting anticoagulant rodenticides (brodifacoum, bromadiolone, diphacinone)  Warfarin	5000 IU	Vitamin K 10mg IV should be administered concurrently to maintain clotting factor levels after prothrombin complex concentrate levels have diminished. 5,000 IU provides adequate supply for bleeding due to anticoagulation.  Store in refrigerator.

Antivenins and Antitoxins			
	Indication	Suggested Minimum Stock Quantity	Comments
Crotalidae polyvalent immune Fab <i>CroFab</i>	North American Pit Viper envenomation (e.g., rattlesnakes, cottonmouths, and copperheads)	12-18 vials	12 vials will provide 8hrs of treatment 18 vials will provide 24hrs of treatment  Store in refrigerator. Ovine derived.
Crotalidae immune F(ab') <sub>2</sub> <i>Avavip</i>	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.  Stock either <i>Avavip</i> or <i>CroFab</i> , facilities do not need to stock both antivenins.	20+ vials  Tertiary facilities should consider stocking >20 vials; these facilities are more likely to encounter significant envenomation case which may require multiple doses.	20 vials will provide enough for two doses (initial dose is 10 vials; repeat every 1hr until initial control is achieved)  Additional treatment is generally not required due to long half-life (~130h); manufacturer recommends additional 4-vial doses as needed for delayed coagulopathies and other re-emerging symptoms.  Store at room temperature prior to reconstitution. Equine derived. Contact manufacturer for exchange of expired product.
Latrodectus mactans antivenin	Severe black widow spider envenomation	0-1 vials	Severe Latrodectus envenomations are rare in Illinois.  Store in refrigerator. Equine derived.
Centruroides immune F(ab') <sub>2</sub> <i>Anascorp</i>	Scorpion envenomation	none	Severe scorpion envenomations are rare in Illinois.  Store at room temperature. Equine derived.
Botulinum antitoxin  available products: HBAT (Types A-G, heptavalent) Baby Botulism Immune Globulin (BabyBIG)	Food-borne botulism  Wound botulism  Botulism as a biological weapon  Note: BabyBIG is indicated for infant botulism types A and B; heptavalent antitoxin not currently recommended for infant botulism	none	Heptavalent antitoxin is stored in the CDC SNS in 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. CDC emergency operation center can be reached at 770-488-7100.  BabyBIG is available through the Infant Botulism Treatment and Prevention Program, sponsored by the California Department of Public Health telephone: 510-231-7600 <a href="http://www.infantbotulism.org/physician/obtain.php">www.infantbotulism.org/physician/obtain.php</a>  Stored in refrigerator. Equine derived.



Chelators for Heavy Metal Poisoning			
	Indication	Suggested Minimum Stock Quantity	Comments
Calcium disodium EDTA	Lead  Zinc salts (zinc chloride)	2 vials  Available as 200mg/mL vials (5mL)	One vial provides 1 day of therapy for a child. 2-4g per day may be necessary in adult patients. Stock in pharmacy.  Note: Edetate disodium ( <i>Endrate</i> ) is not the same as calcium disodium EDTA, and is used primarily as an IV chelator for emergent treatment of hypercalcemia.
Deferoxamine mesylate <i>Desferal</i>	Iron  Note: has also been used for aluminum accumulation due to chronic kidney disease	12-36g  Available in 500mg and 2g vials	Quantity recommended supplies 8-24hrs 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.
Dimercaprol (BAL in peanut oil)	Arsenic, copper, gold, lead, mercury (inorganic or elemental)  Lewisite	4 vials  Available as 100mg/mL vials (3mL)	This provides 3 doses of 3-5mg/kg/dose given every 4hrs to treat one seriously poisoned adult (up to 100kg) or enough to treat a 15kg child for more than 24hrs. 2400mg will provide enough to treat a 100kg adult for 24hrs.  Stock in pharmacy. Know nearest source of additional supply.
Succimer, dimercaptosuccinic acid (DMSA) <i>Chemet</i>	Arsenic, lead, mercury (organic, inorganic, elemental)  Lewisite	10-30 capsules  Available as 100mg capsules	3g (30 capsules) will treat one 100kg adult for 24hrs. Initial treatment of severely symptomatic heavy metal poisoning consists of parenterally administered chelators (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.  Stock in pharmacy.

Agents for Radiological Exposures			
	Indication	Suggested Minimum Stock Quantity	Comments
Calcium-diethylenetriamine pentaacetic acid (Ca-DTPA; Pentetate calcium trisodium inj.)  Zinc-diethylenetriamine pentaacetic acid (Zn-DTPA; Pentetate zinc trisodium inj.)	Internal contamination with transuranium elements (americium, curium, plutonium)	Quantity determined by institution. It has been suggested that 1g will provide enough to treat one 100kg patient for 24 hours.  Available as 200mg/mL solution for IV or inhalation in 5mL ampules	1 ampule provides the usual adult dose of 1g every 24hrs. More would be necessary in a mass casualty event.  The product is sponsored through Hameln Pharmaceuticals, GmbH, of Hameln, Germany and distributed in the U.S. by Akorn, Inc.  Ca-DTPA and Zn-DTPA are available through the SNS and REAC/TS out of Oak Ridge, TN 865-576-3131 (business hours) 865-576-1005 (after hours)
Potassium iodide (KI) <i>iOSAT</i> , <i>Thyrosafe</i> oral tablets <i>SSKI</i> oral solution	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 as 130mg and 65mg oral tablets, 65mg/mL 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 <i>Radiogardase</i>	Radioactive cesium (Cs-137), radioactive thallium (Tl-201), and non-radioactive thallium	Quantity determined by institution. It has been suggested that 25g will provide enough to treat one 100kg patient for 24 hours.  Available as 500mg capsules	The usual oral adult dose is 3g three times daily.  The product is manufactured by Haupt Pharma Berlin GmbH for distribution by HEYL Chemisch-pharmazeutische Fabrik GmbH & Co. KG in Berlin, Germany, and is available in the U.S. from Heyltex Corporation.  Prussian blue is also available through the SNS and REAC/TS out of Oak Ridge, TN 865-576-3131 (business hours) 865-576-1005 (after hours)

Adjunctive Therapies			
	Indication	Suggested Minimum Stock Quantity	Comments
Benzotropine	Medications causing a dystonic reaction or other EPS	Quantity determined by institution  Available as 0.5mg, 1mg, and 2mg tablets and as 1mg/mL injectable (2mL vial)	Maximum daily adult dose is 6mg/day; see also diphenhydramine.  Stock in ED and in pharmacy.
L-carnitine	Valproic acid intoxication associated with elevated serum ammonia levels and/or hepatotoxicity	Quantity determined by institution; 9-15g  Available as 330mg tablets, 250mg capsules, 200mg/mL (5mL) IV solution, and 100mg/mL PO solution	Usual dose is 100mg/kg IV over 30 min (max 6g), then 15mg/kg every 4-6hrs. Oral formulation is primarily used prophylactically for patients on chronic valproate therapy.  Stock in pharmacy.
Cyproheptadine	Medications causing serotonin syndrome	20-32mg  Available as 4mg tablets and 2mg/5mL oral solution	Cyproheptadine is a nonspecific 5-HT antagonist that has been used in the treatment of serotonin syndrome; use is not routinely recommended and responses may vary.  Adult dose is 12mg PO initially, then 2mg every 2hrs if symptoms persist. Maintenance dose is 8mg every 6hrs; max dose 32mg/day. Pediatric dose is 0.25mg/kg/day divided every 6hrs, with a max dose of 12mg/day.  Stock in pharmacy.
Dantrolene <i>Dantrium, Ryanodex, Revonto</i>	Medications causing NMS  Medications causing malignant hyperthermia	800-2000 mg  Available as 25mg, 50mg, and 100mg oral capsules and as 20mg and 250mg vials for IV use	Dantrolene inhibits calcium release from the sarcoplasmic reticulum of skeletal muscle and thereby reduces rigidity. The recommended dose for NMS is 1mg/kg IV; repeat as needed every 5-10 min, max 10mg/kg.  Stock in pharmacy. Any hospital using inhalational anesthetics should strongly consider stocking dantrolene for treatment of malignant hyperthermia.
Diazepam	Chloroquine and related antimalarial drugs  Nerve agents  NMS  Serotonin syndrome  Severe agitation from any toxic exposure/overdose (e.g., cocaine, PCP, methamphetamine) or sedative/hypnotic/ethanol withdrawal	Quantity determined by institution  Available as 5mg/mL injectables in 2mL ampules, 2mL disposable syringes, and 10mL multidose vials  Also available in 10mg/2mL auto-injectors for military use to treat nerve agent-induced seizures	Benzodiazepines are used in poisoned and nonpoisoned patients as an anticonvulsant, muscle relaxant, and anxiolytic 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.  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. IV loading dose is 2mg/kg over 30 min; maintenance dose is 1-2mg/kg per day for 2-4 days.  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).

Diphenhydramine	Medications causing a dystonic reaction or other EPS	Quantity determined by institution  Available as 25mg and 50mg capsules, 12.5mg/5mL oral solution, 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.
Folic acid	Methanol, formaldehyde, formic acid	3 x 50mg vials	For adjunctive treatment of methanol-poisoned patients with acidosis, give 50mg initially, then 50mg every 4hrs for 6 doses.  Stock in pharmacy.
Glycopyrrolate	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	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 reverses vasoconstriction and peripheral ischemia associated with extravasation of adrenergic agents. When phentolamine is not available, consider using subcutaneous terbutaline sulfate ( <i>Brethine</i> ).  Phentolamine also offers an additional option in the management of drug-induced hypertension.  Stock in ED and pharmacy.
Thiamine	Ethanol  Ethylene glycol	500-1500mg  Available as 100mg/mL in 2mL vials	Parenteral thiamine precedes IV dextrose in patients with chronic ethanol abuse. Thiamine 100mg every 6h enhances clearance of toxic metabolites of ethylene glycol.  Stock in ED and pharmacy.