

Guideline on Antidote Availability for Emergency Departments (July 2022)

APPENDIX 1: Stocking Guidance

Doses and Clinical Advice on the Administration of Antidotes

[TOXBASE](#) and/or the BNF should be consulted for further advice on doses and indications for antidote administration. If necessary, the National Poisons Information Service (NPIS) should be telephoned for more patient-specific advice. Contact details for NPIS are available on [TOXBASE](#).

Stock Levels

The recommended minimum stocking levels (rounded up to full “pack-sizes” where necessary) are based on the amount of antidote required to initiate treatment for an adult patient in the ED and to continue treatment for the first 24 hours.

Higher stock levels may be required, and individual departments should determine the amount of each antidote they stock based on the epidemiology of poisoning presentations to their department.

Additional drugs that are used in the poisoned patient that are widely available in ED are not listed in the table – in particular, it is important to ensure that insulin, benzodiazepines (diazepam and/or lorazepam), glyceryl trinitrate or isosorbide mononitrate and magnesium are immediately available in the ED.

Category A				
The following drugs should be <u>immediately available in the ED</u> or any area where poisoned patients are initially treated				
These drugs should be held in a <u>designated storage facility</u> that is clearly marked for antidote storage only [antidotes requiring refrigeration should be segregated from other medicines in the medication fridge and clearly identified as antidotes]				
Drug	Indication	Presentation	Recommended stock	Special storage conditions
Acetylcysteine	Paracetamol	200 mg/mL, 10 mL ampoule	20 ampoules	
Activated charcoal	Many oral poisons	50 g pack	7 packs	
Atropine	Bradycardia Organophosphorus or carbamate insecticides	600 microgram/mL, 1 mL ampoule	10 ampoules ¹	
Calcium chloride	Calcium channel blockers Systemic effects of hydrofluoric acid	10 mmol in 10ml ampoule	6 ampoules	
Calcium gluconate	Local infiltration for hydrofluoric acid	10 mL 10% ampoule	10 ampoules	
Calcium gluconate gel	Hydrofluoric acid	25g tube	1 pack of 12 tubes	
Hydroxocobalamin (<i>Cyanokit® only suitable product</i>)	Cyanide	5g pack (<i>Cyanokit®</i>)	2 packs	
Sodium thiosulfate		50% (500 mg/mL), 10 mL ampoule or 25% (250 mg/mL), 50 mL ampoule	5 ampoules 10 mL 50% or 2 ampoules 50 mL 25%	

¹ Much higher doses may be required in OP poisoning: see [TOXBASE](#) for further advice

Drug	Indication	Presentation	Recommended stock	Special storage conditions
Flumazenil	Reversal of iatrogenic over-sedation with benzodiazepines. Should not be used as a “diagnostic” agent. Use with caution in patients with benzodiazepine poisoning, particularly in mixed drug overdoses; contraindicated in mixed tricyclic antidepressant / benzodiazepine overdoses and in those with a history of epilepsy.	100 microgram/mL, 5 mL ampoule	5 ampoules	
Glucagon	Beta-adrenoreceptor blockers. Other indications e.g. calcium channel blockers, seek NPIS advice	1 mg vial	50 vials	Store in fridge, can store at room temperature but reduced shelf life must be marked
Intralipid 20%	Severe systemic local anaesthetic toxicity. Always seek NPIS advice before giving intralipid for other poisonings.	100 mL 20% solution or 250mL 20% solution or 500mL 20% solution	1.5 litres	
Methylthioninium chloride (methylene blue)	Metaemoglobinemia	0.5% (5 mg/mL), 2 mL or 10 mL ampoules 1.0% (10 mg/mL), 5 mL ampoules	5 ampoules 10mL 0.5% or 25 ampoules 2mL 0.5% or 5 ampoules 5mL 1%	
Naloxone	Opioids	400 microgram/1 mL, 1 mL ampoule	30 ampoules	
Prochlorperazine injection	Dystonic reactions	5 mg/mL, 2 mL ampoule	5 ampoules	
Sodium bicarbonate 8.4%	TCAs & class Ia & Ic antiarrhythmic drugs Urinary alkalinisation	10 mL ampoule or 100 mL bottle or 250 mL bottle or 200 mL polyfusor	500mL	
Sodium bicarbonate isotonic 1.26% or 1.4%	Urinary alkalinisation	500 mL polyfusor	12 polyfusors	
ViperaTAb [®] or Viperfav ^{®2}	European adder (<i>Vipera berus</i>)	One package of two 4 mL vials One package of one 4 mL vial	1 package (2 vials) 1 package (1 vial)	Store in fridge Store in fridge

² ViperaTAb/Viperfav can be ordered from Public Health England (PHE) through the ImmForm website (<https://portal.immform.phe.gov.uk/>) and will be delivered by Movianto Ltd on a scheduled delivery day.

Category B

The following drugs should be available within 1 hour (i.e. usually³ within the hospital)

Drug	Indication	Presentation	Recommended stock	Special storage conditions
Andexanet alfa	Reversal of anticoagulation from apixaban/rivaroxaban in adults with life-threatening or uncontrolled GI bleeding (use according to local/ national guidelines, discuss with local haematologists and NPIS).	200 mg vial	3 packs of 4x 200 mg vials	This, and other treatments for anticoagulant toxicity (e.g. blood products, prothombin complex concentrate), are usually stored in Haematology / Transfusion laboratories with local access arrangements.
Cyproheptadine	Serotonin syndrome	4 mg tablet	30 tablets	
Dantrolene	Neuroleptic malignant syndrome (NMS); other drug-related hyperpyrexia, seek NPIS advice	20 mg vial	48 ampoules	
Desferrioxamine	Iron	500 mg vial	40 vials	
Digoxin specific antibody fragments (DIGIfab [®])	Digoxin and related glycosides	40 mg vial	5 vials	Store in fridge
Folinic Acid: either calcium folinate or disodium folinate	Methotrexate	Calcium folinate: 3 mg/mL (10 mL ampoule) or 7.5 mg/mL (2 mL ampoule) or 10 mg/mL (5 mL, 10 mL, 30 mL, 35 mL ampoules)	4500 mg	Store in fridge and protect from light.
		Disodium folinate: 50 mg/mL (2 mL or 8 mL ampoules)		
	Methanol, formic acid	Calcium folinate: 3 mg/mL (10 mL ampoule), 7.5 mg/mL (2 mL ampoule), 10 mg/mL (5 mL, 10 mL, 30 mL, 35 mL ampoules)	1500 mg	
		Disodium folinate: 50 mg/mL (2 mL or 8 mL ampoules)		
Fomepizole (or Ethanol ⁴)	Ethylene glycol, diethylene glycol, methanol	Fomepizole: 5 mg/mL, 20 mL ampoule OR 1 g/mL, 1.5 mL vial	25 ampoules 4 vials	
		100% ethanol, 5mL ampoule	60 ampoules	
Idarucizumab	Dabigatran etexilate related active, life-threatening bleeding (use according to local / national guidelines, discuss with local haematologists and NPIS)	2.5 g/50 mL vials	2 vials	This, and other treatments for anticoagulant toxicity (e.g. blood products, prothombin complex concentrate), are usually stored in Haematology / Transfusion laboratories with local access arrangements.

³ Shared arrangements between local hospitals may be appropriate provided the 1h target can be met

⁴ **Ethanol should only be used if fomepizole is not available.** Ethanol needs frequent blood assay for safe and effective use, ensure laboratory can provide 24/7 service.

Drug	Indication	Presentation	Recommended stock	Special storage conditions
L-Carnitine (Levocarnitine)	Severe sodium valproate toxicity	5 mL (1 g) ampoule	14 ampoules	Store in fridge (stable at room temperature for up to 24 hrs)
Mesna	Cyclophosphamide	400 mg tablet; 1 g/10mL ampoule	Variable, liaise with oncology	
Octreotide	Sulfonylureas	50 microgram/mL, 1 mL ampoule	5 ampoules	Store in fridge
Phytomenadione (Vitamin K1)	Vitamin K dependent anticoagulants ⁵	10 mg tablet; 10 mg/mL, 1mL ampoule	2 tablets 10 ampoules	
Protamine sulfate	Heparin	10 mg/mL, 5 mL ampoule	10 ampoules	
Pyridoxine (high dose injection)	Isoniazid	50 mg/mL, 1 mL ampoule	100 ampoules	

Category C: These antidotes are held in Supra-Regional Holding Centres at eight hospitals in England – use of these antidotes should always be discussed with [NPIS](#) and/or a Clinical Toxicologist who will be able to provide contact details to arrange the supply of these antidotes.

Most antidotes listed in the guidelines are readily available within the UK – further information is given here for unlicensed/ imported products or those with special storage or usage requirements. [TOXBASE](#) also contains details for product supply.

Unlicensed Medicines or ‘Specials’

These are exempt under Schedule 1 of the Medicines Act from the need for a marketing authorisation as they are used to fill a “special need” in response to an order from a prescriber for use in an individual patient, under that prescriber’s direct responsibility. Unlike licensed products, these may not have been assessed by the Licensing Authority against the criteria of safety, quality, and efficacy.

A pharmacist in a hospital is allowed to procure a stock of ‘specials’, to meet an anticipated doctor’s prescription. There are various companies that import unlicensed medicines/‘specials’ into the UK. Specific records must be kept by pharmacy for five years which include details of the product obtained, the prescriber and the patients to which the medicine is dispensed.

‘Advanced supply’ of unlicensed medicines/specials

As appropriate records must be kept, Chief Pharmacists and Trust Clinical Governance Committees should be involved in any decision to hold unlicensed products as an ‘advance supply’ in clinical areas (rather than in pharmacy). For any products held as such, that may be required for immediate use, retrospective collection of patient details must be undertaken and systems must be in place to ensure this is completed in a timely manner.

Further Information:

1. The supply of unlicensed relevant medicinal products (“specials”): [MHRA Guidance Note 14](#)
2. The NHS Specialist Pharmacy Service [Rarely Used and Urgent Medicines List](#)

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⁵ Larger doses and/or prolonged therapy may be required for long-acting anticoagulants