

Royal College of Emergency Medicine and National Poisons Information Service Guideline on Antidote Availability for Emergency Departments (December 2021)

Please read this together with the Stocking Guidance in Appendix 1 [Ensure you use V2 dated Dec 2021]

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

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 dinitrate and magnesium are immediately available in the ED.

To access antidotes and other treatments (countermeasures) held nationally for the management of Major Incidents and/or CBRN Incidents please follow local Trust protocols and national guidance available on [TOXBASE](#).

CATEGORY A – Immediately Available in ED

The following drugs should be immediately available in the ED or any area where poisoned patients are initially treated. These drugs should be held in a designated storage facility 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
Acetylcysteine	Paracetamol
Activated charcoal	Many oral poisons
Atropine	Organophosphorus or carbamate insecticides
	Bradycardia
Calcium chloride	Calcium channel blockers
	Systemic effects of hydrofluoric acid
Calcium gluconate	Local infiltration for hydrofluoric acid
Calcium gluconate gel	Hydrofluoric acid
Cyanide antidotes - Hydroxocobalamin (Cyanokit®) - Sodium thiosulfate	Cyanide: the choice of antidote depends on the severity of poisoning, cause of poisoning and source of cyanide – generally sodium thiosulfate is recommended for mild-moderate cyanide poisoning and hydroxocobalamin for moderate-severe cyanide poisoning but clinicians are advised to consult TOXBASE and/or call NPIS for advice on the management of patients with cyanide poisoning
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.
Glucagon	Beta-adrenoreceptor blockers. Other indications e.g. calcium channel blockers, seek NPIS advice
Intralipid 20%	Severe systemic local anaesthetic toxicity. Always seek NPIS advice before giving intralipid for other poisonings.
Methylthionium chloride (methylene blue)	Methaemoglobinaemia
Naloxone	Opioids
Procyclidine injection	Dystonic reactions
Sodium bicarbonate 8.4% and 1.26% or 1.4%	TCAs & class Ia & Ic antiarrhythmic drugs Urinary alkalinisation
ViperaTAB or Vipervav *	European adder (<i>Vipera berus</i>)

* ViperaTAB/Vipervav do not need to be held in hospitals in Northern Ireland

CATEGORY B – Available within 1 hour

The following drugs should be available within 1 hour (i.e. usually[#] within the hospital)

Drug	Indication
Andexanet Alpha	Reversal of anticoagulation from apixaban or rivaroxaban in adults with life-threatening or uncontrolled gastrointestinal bleeding (use according to local and national guidelines – discuss with local haematologists and NPIS).
Cyproheptadine	Serotonin syndrome
Dantrolene	Neuroleptic malignant syndrome (NMS) Other drug-related hyperpyrexia seek NPIS advice
Desferrioxamine	Iron
Digoxin specific antibody fragments (Digibind or Digifab)	Digoxin and related glycosides
Folinic Acid (either calcium folinate <i>or</i> disodium folinate)	Methotrexate Methanol, formic acid
Fomepizole (<i>or</i> Ethanol). Fomepizole is the antidote of choice. <i>Ethanol should only be held if fomepizole is not available.</i>	Ethylene glycol, diethylene glycol, methanol
Idarucizumab	Dabigatran related active, life-threatening bleeding (use according to local and national guidelines – discuss with local haematologists and NPIS)
L-Carnitine	Severe sodium valproate toxicity
Macrogol '3350' (polyethylene glycol) <i>Klean-Prep</i> [®]	Whole bowel irrigation for agents not bound by activated charcoal e.g. iron, lithium, also for bodypackers and for slow release preparations
Mesna (<i>in hospitals commonly using cyclophosphamide</i>)	Cyclophosphamide
Octreotide	Sulphonylureas
Phytomenadione (Vitamin K1)	Vitamin K dependent anticoagulants
Protamine sulfate	Heparin
Pyridoxine, high dose injection	Isoniazid

[#] Shared arrangements between local hospitals may be appropriate provided the 1h target can be met

CATEGORY C – Held Supra-Regionally

These drugs are held in specialist sites for supply 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.

Drug	Indication	Source
Prussian Blue (Berlin Blue)	Thallium	Category C Holding Centres**
Botulinum antitoxin	Botulism	Botulinum Antitoxin Holding Centres
Glucarpidase	Methotrexate	Oxford Pharmacy Store
Pralidoxime chloride	Organophosphorus insecticides	Pralidoxime Holding Centres
Sodium calcium edetate	Heavy metals (particularly lead)	Category C Holding Centres**
Succimer (DMSA)	Heavy metals (particularly lead and arsenic)	Category C Holding Centres**
Unithiol (DMPS)	Heavy metals (particularly mercury)	Category C Holding Centres**
Uridine Triacetate	5-Fluorouracil or Capecitabine	WEP Clinical

The eight **Supra-Regional Category C Antidote Holding Centres are: Addenbrooke's Hospital, Cambridge; St Thomas' Hospital, London; Derriford Hospital, Plymouth; Salford Royal Hospital, Salford; St James's University Hospital, Leeds; The Royal Victoria Infirmary, Newcastle; The Royal Sussex County Hospital, Brighton; Sandwell General Hospital, West Bromwich.

It is not considered essential to hold the following drugs

Benzatropine, Dicobalt Edetate, Dimercaprol, Methionine, Penicillamine, Phentolamine, Physostigmine, Sodium Nitrite

Antivenoms for non-indigenous venomous animals:

- Public Health England (PHE) holds a stock of exotic antivenoms at a number of hubs across the UK for NHS use in cases of venomous bites from non-indigenous animals.
- In the event of a bite, advice should be sought from NPIS. If antivenom is indicated an order will be placed with Movianto by either a national antivenom expert or NPIS for both in hours and out of hours delivery.
- Any unused antivenom should be stored in the fridge for collection by Movianto UK on behalf of PHE.
- PHE does not supply exotic antivenoms for use by zoos. Those responsible for the operation of establishments of any size where wild animals are kept for exhibition to the public including aquariums, sanctuaries, bird gardens and safari parks must ensure the availability of 'in-date' anti-venom, either at the establishment or local hospital.