

# Pharmacy responses to major incidents

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# EPRR...

## Emergency Preparedness

The extent to which emergency planning enables the effective and efficient prevention, reduction, control, mitigation of, and response to emergencies

## Resilience

Ability of the community, services, area or infrastructure to detect, prevent and, if necessary, to withstand, handle and recover from disruptive challenges

## Response

Decisions and actions taken in accordance with the strategic, tactical and operational objectives defined by emergency responders



# Emergencies and incidents

## Emergency (CCA 2004)

- an event or situation which threatens serious damage to human welfare in a place in the United Kingdom
- an event or situation which threatens serious damage to the environment of a place in the United Kingdom
- war, or terrorism, which threatens serious damage to the security of the United Kingdom

## Incidents

For the NHS, incidents can be:

- Business Continuity
- Critical Incident
- Major Incident

## Major Incident

Serious threat to the health of the community or causes such numbers or types of casualties, as to require special arrangements.

Includes any event defined as an emergency.



# Descriptions and levels

Incident description type	Context
Big bang	Serious transport accident, explosion, or series of smaller incidents
Rising tide	Developing infectious disease epidemic, or a capacity/staffing crisis or industrial action
CBRNE	Chemical, biological, radiological, nuclear and explosives
HAZMAT	Accidental incident involving hazardous materials
Cyber attack	Targeted on infrastructure or data confidentiality
Mass casualty	Casualty numbers where the normal major incident response must be augmented

Incident level	
Level 1	An incident that can be responded to and managed by a local health provider organisation within their respective business as usual capabilities and business continuity plans in liaison with local commissioners.
Level 2	An incident that requires the response of a number of health providers within a defined health economy and will require NHS coordination by the local commissioner(s) in liaison with the NHS England local office.
Level 3	<p>An incident that requires the response of a number of health organisations across geographical areas within a NHS England region.</p> <p>NHS England to coordinate the NHS response in collaboration with local commissioners at the tactical level.</p>
Level 4	<p>An incident that requires NHS England National Command and Control to support the NHS response.</p> <p>NHS England to coordinate the NHS response in collaboration with local commissioners at the tactical level.</p>

# Principles and management

## Principles of EPRR

- Preparedness and anticipation
- Continuity
- Subsidiarity
- Communication
- Cooperation and integration
- Direction

## Management of response and recovery

- Operational
- Tactical
- Strategic



Recent incidents	Learning
<p>Westminster Bridge March 22, 2017</p> <p>Manchester Arena May 22, 2017</p> <p>London Bridge June 3, 2017</p> <p>Grenfell Tower June 14, 2017</p> <p>Finsbury Park June 19, 2017</p> <p>Parsons Green September 15, 2017</p>	<p>Moran et al BMJ 2017; 359:j4765</p> <ul style="list-style-type: none"> <li>• Different threats, different injuries</li> <li>• Hot and cold debriefs</li> <li>• Benefit of exercises</li> <li>• Resuscitation and damage control surgery</li> <li>• Intensive secondary procedures</li> <li>• Early rehabilitation</li> <li>• Logistic demands</li> <li>• Coordinated multidisciplinary intervention</li> <li>• Implications for primary and community care</li> <li>• Profound psychological stress</li> <li>• Effects on staff</li> </ul>





## Quality & Policy

### Clinical Standards & Guidance

[RCEM Standards](#)

[RCEM Guidance](#)

#### External Guidance

[Paediatric EM  
Guidance \(NHS  
Institute\)](#)

[Local Guidance](#)

### Quality Improvement & Clinical Audit

## College Guidelines

This page contains guidelines and statements produced by the College's Quality in Emergency Care (QEC) committee. For clinical guidelines relevant to EM published by other organisations please go to the [External Guidelines](#) page. For clinical guidelines written by Emergency Departments (EDs) and shared for use/adaptation by other EDs please go to the [Local Guidelines](#) page.

### Position Statements

NEW: [Paediatric trauma - Stabilisation of the Cervical Spine](#) (Aug 2017)

NEW: [Position statement on CQUIN to reduce attendances by frequent attenders and mental health attendances](#) (Aug 2017)

NEW: [Ambulatory Emergency Care Position Statement](#) (Jul 2017)

[Position Statement on Complications of Early Pregnancy and the role of the ED](#) (Apr 2017)

[Position statement on Resuscitative Thoracotomy in Trauma Units](#) (Apr 2017)

[RCEM Response to RCR Imaging in Paediatric Trauma Guidelines](#) (Mar 2017)

[Clinical responsibility for patients within the emergency department](#) (Nov 2016)

[Acute Ischaemic Stroke and Intravenous Thrombolysis](#) (Dec 2015)

[Alcohol related harm](#) (May 2015)



RCEM &  
NPIS  
Guideline  
on  
Antidote  
Availability

The following drugs should be immediately available in the ED or any area where poisoned patients are initially treated. <u>These drugs should be held in a designated storage facility*</u> The stock held should be sufficient to initiate treatment (stocking guidance is in Appendix 1).	
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 Dicobalt edetate Hydroxocobalamin (Cyanokit®) Sodium nitrite Sodium thiosulphate	Cyanide The choice of antidote depends on the severity of poisoning, certainty of diagnosis and cause of poisoning/ source of cyanide. <ul style="list-style-type: none"> <li>- <b>Dicobalt edetate</b> is the antidote of choice in severe cases when there is a high clinical suspicion of cyanide poisoning e.g. after cyanide salt exposure.</li> <li>- <b>Hydroxocobalamin</b> (Cyanokit®) should be considered in smoke inhalation victims who have a severe lactic acidosis, are comatose, in cardiac arrest or have significant cardiovascular compromise</li> <li>- <b>Sodium nitrite</b> may be used if dicobalt edetate is not available.</li> <li>- <b>Sodium thiosulphate</b> is used generally as an adjuvant to other antidotes.</li> </ul>
Flumazenil	Reversal of iatrogenic over-sedation with benzodiazepines. Use with caution in patients with benzodiazepine poisoning, particularly in mixed drug overdoses. Should not be used as a “diagnostic” agent and is contraindicated in mixed tricyclic antidepressant (TCA)/ benzodiazepine overdoses and in those with a history of epilepsy.
Glucagon	Beta-adrenoceptor blocking drugs. Other indications e.g. calcium channel blocker (CCB) / TCA
Intralipid 20%	Severe, systemic local anaesthetic toxicity
Methylthioninium chloride (methylene blue)	Methaemoglobinaemia
Naloxone	Opioids
Procyclidine injection	Dystonic reactions
Sodium bicarbonate 8.4% and 1.26% or 1.4%	TCA's & class Ia & Ic antiarrhythmic drugs Urinary alkalinisation
ViperaTAB*	European adder, <i>Vipera berus</i>

[http://www.rcem.ac.uk/docs/College %20Guidelines/RCEM%20NPIS%20Antidote%20Guideline%20List.pdf](http://www.rcem.ac.uk/docs/College%20Guidelines/RCEM%20NPIS%20Antidote%20Guideline%20List.pdf)


\* *ViperaTAB* does not need to be held in hospitals in Northern Ireland

The following drugs should be available within 1 hour (i.e. within the hospital)	
Drug	Indication
Calcium folinate	Methotrexate (MTX)
	Methanol, formic acid
Cyproheptadine	Serotonin syndrome
Dantrolene	Neuroleptic malignant syndrome (NMS)
	Other drug-related hyperpyrexia (consult TOXBASE)
Desferrioxamine	Iron
Digoxin specific antibody fragments (Digibind or Digifab)	Digoxin and related glycosides
Fomepizole (or Ethanol (IV or oral)) <b>Fomepizole is the antidote of choice.</b> Ethanol only needs to be held if fomepizole is unavailable.	Ethylene glycol, diethylene glycol, methanol
Idarucizumab	Dabigatran related active bleeding (discuss with local haematologists and NPIS)
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
Phentolamine <sup>#</sup>	Digital ischaemia related to injection of epinephrine
Phytomenadione (Vitamin K1)	Vitamin K dependent anticoagulants
Protamine sulphate	Heparin
Pyridoxine, high dose injection	Isoniazid

The following drugs are rarely used and are suitable to be held supra-regionally. In the absence of nationally agreed arrangements, this needs to be organised locally. Use of these antidotes should be discussed with NPIS and/or a clinical toxicologist

Prussian Blue (Berlin Blue)	Thallium
Botulinum antitoxin	Botulism
Glucarpidase	Methotrexate
Pralidoxime chloride	Organophosphorus insecticides
Sodium calcium edetate	Heavy metals (particularly lead)
Succimer (DMSA)	Heavy metals (particularly lead and arsenic)
Unithiol (DMPS)	Heavy metals (particularly mercury)

# PHE Guidance




Public Health  
England

Protecting and improving the nation's health

## Antimicrobial Prophylaxis Guidance for Bomb Blast Victims

Version 1.0



Public Health  
England

Protecting and improving the nation's health

### Overview: Management of bloodborne virus (BBVs) risk in bomb blast victims (hepatitis B, C and HIV)

#### Background

It is a recognised complication of bomb injuries that implantation of human body projectiles, derived from other victims and from suicide bombers can occur, and that these projectiles create a potential risk of transmission of bloodborne viruses (BBVs).

Analysis of injuries from the London bombings in 2005 showed that victims within 2 metres of the blasts suffered significant human projectile injuries; however, it must be presumed that any person suffering from trauma at a blast scene may have incurred human projectile injury. Most of these implanted projectiles were bone fragments.

#### Risk of transmission of BBVs

The prevalence of hepatitis B, C and HIV carriage in the UK population is generally low, with estimates suggesting that the population prevalence of hepatitis B is <1%, hepatitis C <0.5%, and HIV <0.3%. Marked variations from these general population prevalence figures may occur within different groups.

The risk of transmission of these BBVs at such events is unknown; however, the usually accepted risks of transmission per incident following sharps injuries from known infected persons in clinical settings, which may be the closest natural model, is generally quoted as being 1:3 for hepatitis B, 1:30 for hepatitis C and 1:300 for HIV.

#### Available post-exposure interventions for the management of BBVs

##### Hepatitis B

The post-exposure management of hepatitis B using hepatitis B vaccine is well described in 'Immunisation against infectious disease' (The Green Book). The rapid schedule immunisation described has few contra-indications; and is known to be highly effective in equivalent situations provided that it is given within 48 hours of potential exposure (although may still be effective, and should be considered, up to

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## Antibiotic prophylaxis

These regimens are appropriate for adult and paediatric patients. For dosing recommendations refer to the British National Formulary (BNF), local hospital formulary, or contact local microbiology department.

Soft tissue injury (No foreign body in situ)	IV Co-amoxiclav OR Cefuroxime/Metronidazole until first surgical debridement/washout  Then to complete 1 week course with oral Co-amoxiclav
Soft tissue injury (Foreign body in situ)	IV Co-amoxiclav OR Cefuroxime/Metronidazole until first surgical debridement/washout and removal of projectile foreign body.  Then to complete 2 week course with oral Co-amoxiclav  If foreign body remains in situ liaise with local microbiology department regarding duration of antibiotics
Open fractures OR "Through and through fractures" <sup>4</sup> OR Intra-articular injuries	IV Co-amoxiclav OR Cefuroxime/Metronidazole  Stat dose of Gentamicin during initial operation (repeated if septic during subsequent operations)  Continue IV antibiotics until wound closure OR until no planned return to theatre <sup>5</sup>  Complete a six week course of oral Co-amoxiclav <sup>7</sup> after conversion from IV antibiotics

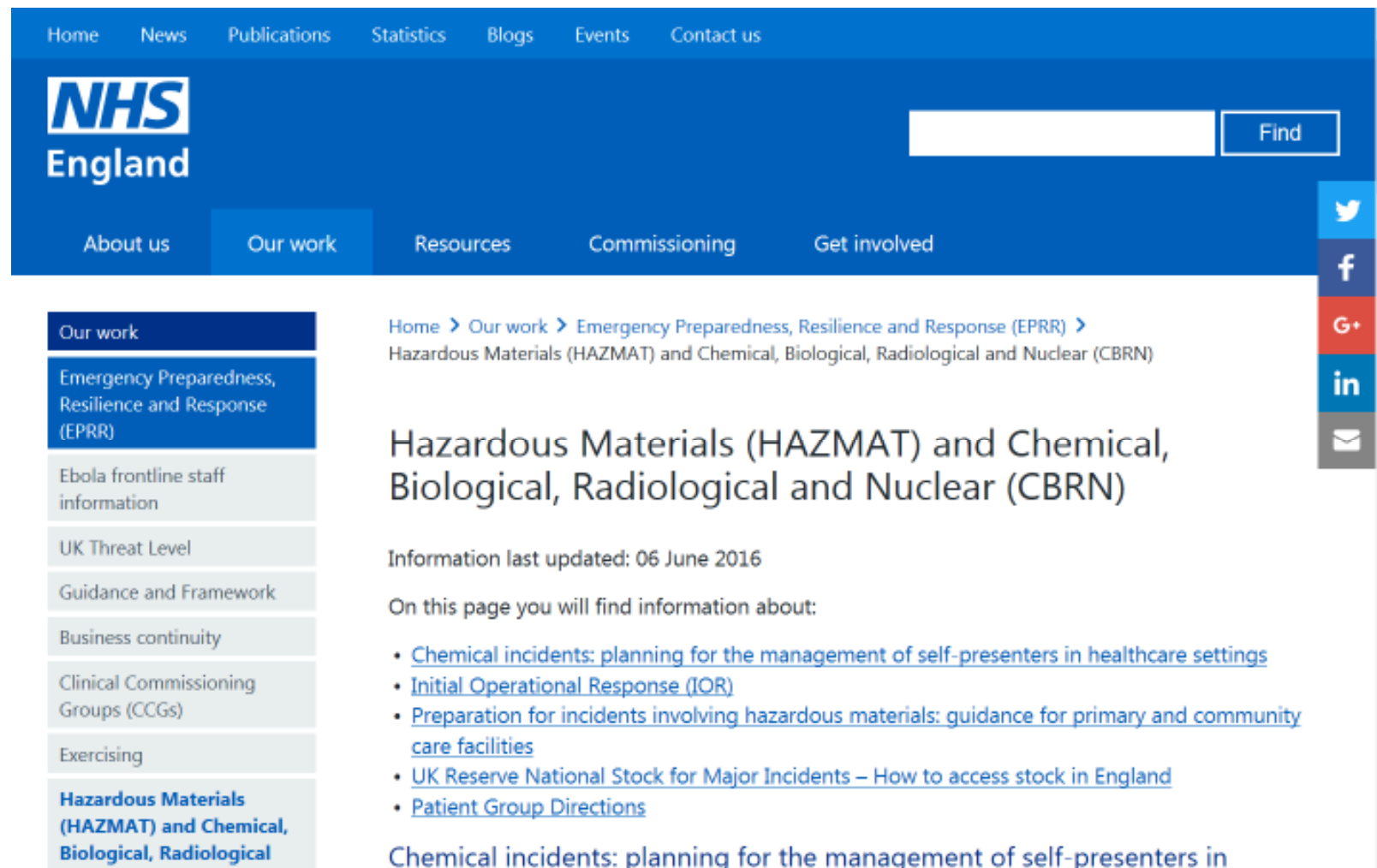
<sup>4</sup> An injury involving a penetrating object which has passed through a victim

<sup>5</sup> For example a decision made to allow a wound to heal by secondary intention.

<sup>7</sup> Extended duration recommended due to the high risk of a contaminated foreign body and the logistical challenges of ensuring appropriate follow-up for all victims due to their geographical dispersion.

Penetrating CNS injury (Foreign body in situ)	IV Ceftriaxone (high dose)/Metronidazole  Continue for 6 weeks
Penetrating CNS injury (Foreign body removed/not in situ)	IV Ceftriaxone (high dose)/Metronidazole  Continue for 2 weeks
Open skull fracture from penetrating trauma	IV ceftriaxone until closure, then, if no brain injury, continue with oral Augmentin for 6 weeks
CSF leak post-skull fracture	No antibiotics indicated  Give Pneumovax
Penetrating eye injuries	IV/PO Ciprofloxacin AND IV/PO Clindamycin AND topical chloramphenicol  Continue for 2 weeks after removal of any foreign body  If foreign body remains in situ liaise with local microbiology department regarding duration of treatment
Penetrating abdominal injuries	IV Co-amoxiclav OR Cefuroxime/Metronidazole  Add Fluconazole if perforation and spillage of gastrointestinal contents  Continue intravenous antibiotics for a minimum duration of 7 days following surgery  If foreign body remains in situ liaise with local microbiology department regarding duration of treatment
Penetrating chest trauma	IV Co-amoxiclav OR Cefuroxime/Metronidazole  If oesophageal perforation consider adding fluconazole  Continue intravenous antibiotics for a minimum duration of 7 days following surgery  If foreign body remains in situ liaise with local microbiology department regarding duration of treatment

# HAZMAT & CBRN



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Our work

Emergency Preparedness, Resilience and Response (EPRR)

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Clinical Commissioning Groups (CCGs)

Exercising

**Hazardous Materials (HAZMAT) and Chemical, Biological, Radiological**

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## Hazardous Materials (HAZMAT) and Chemical, Biological, Radiological and Nuclear (CBRN)

Information last updated: 06 June 2016

On this page you will find information about:

- [Chemical incidents: planning for the management of self-presenters in healthcare settings](#)
- [Initial Operational Response \(IOR\)](#)
- [Preparation for incidents involving hazardous materials: guidance for primary and community care facilities](#)
- [UK Reserve National Stock for Major Incidents – How to access stock in England](#)
- [Patient Group Directions](#)

Chemical incidents: planning for the management of self-presenters in

# Essential medicines buffer stock

## EMBS purpose

- DH stockpile
- Available for release into the UK supply chain in the event of pandemic or other health emergency
- Around 300 different essential medicines maintained by suppliers to satisfy the healthcare needs of the UK in the event that the supply chain is disrupted
- Volumes are based on three months provision for the UK

## Stock

- Located at storage sites across the UK
- In a UK shortage, suppliers can be directed to buy back all or some of the stock they hold and release it through the usual routes across the UK
- Rotated through the supplier's normal supply chain to prevent it from expiring
- Stock is subject to the individual supplier's internal audits in addition to an audit carried out by the NHS BSA

# Pharmacy learning

## Planning

- Harmonise across multi-site trusts
- On-call and cascade awareness
- Single collation of all information
- Action cards
- Clear recovery plan

## Response

- In hours and out-of-hours
- On site/shift presence
- Single workers and seniority
- Early staffing decisions vs sustained response
- Daily duty manager oversight
- Full use of NMPs – analgesia and regular medicines

## Medicines

- Different incident, different injuries
- Knowledge of anticipated ED numbers
- Rocuronium, fentanyl, morphine, propofol, saline, WFI, tranexamic acid, IV hydroxocobalamin and thiosulfate
- Tetanus, hep B vaccine, antibiotics
- Staff in resus to order medicines
- Pharmacists ordering CDs
- Major incident stocks
- Knowledge of reconstitution
- Displaced people and usual medicines

# Pharmacy learning

## Communications

- Communication and decision logs essential
- Clear action cards
- Daily huddle of staff to prioritise workload
- Media in and media out
- Awareness of relatives and press in hospital

## Recovery and reflections

- Hot and cold debriefs
- Ongoing staff support
- Gratitude for help, mutual aid and support offers
- Phones, mobiles and security access
- Text caller identity

## Presentation acknowledgements

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