

# Emergency Oxygen, Drugs and IV Fluid Use for Adult Patients by Healthcare Staff



**EMERGENCY OXYGEN, DRUGS AND IV FLUID USE FOR ADULT PATIENTS BY HEALTH CARE STAFF**

<b>Document Type</b>	Clinical Guideline
<b>Unique Identifier</b>	CL022
<b>Document Purpose</b>	The purpose of this clinical guideline is to give the clinical information in one document on oxygen, drugs and IV fluids that health care staff may give to adults in an emergency situation, without prescription.
<b>Document Author(s)</b>	Tony Kinsey, Senior Resuscitation Officer Alan Pollard, Chief Pharmacist
<b>Target Audience</b>	All clinical staff working in Worcestershire Health and Care NHS Trust.
<b>Responsible Group</b>	Agreed by Medicines Management and Safety Group on 28/11/11.
<b>Date Ratified</b>	29 <sup>th</sup> February 2012
<b>Expiry Date</b>	28 <sup>th</sup> February 2015
<b>Date Equality Impact Assessment Completed</b>	11/11/11

The validity of this clinical guideline is only assured when viewed via the Worcestershire Health and Care NHS Trust website ([hacw.nhs.uk](http://hacw.nhs.uk)). If this document is printed into hard copy or saved to another location, its validity must be checked against the unique identifier number or the internet version. The internet version is the definitive version.

If you would like this document in other languages or formats (i.e. large print), please contact the Communications Team on 01905 760020 or email [communications@hacw.nhs.uk](mailto:communications@hacw.nhs.uk).

### Key individuals involved in developing the document

Name	Designation
Tony Kinsey	Senior Resuscitation Officer
Alan Pollard	Chief Pharmacist

### Circulated to the following individuals for comments

Name	Designation
Sandra Brennan,	Director of Quality and Executive Nurse
Vicky Preece	Deputy Director of Nursing
Sue Lunec	Chief Pharmacist for Community Care
Bill Creaney	Medical Director
Sue Lahiff	Matron, Evesham Hospital.
Ginny Snape	Matron, Tenbury Hospital.
Maria Wilday	Matron and Hospital Manager, POWCH
Lyn Ingles	Matron, Malvern Hospital
Teresa Owen	Lead Nurse, Pershore Hospital
Derek Hammond	Adult Acute Inpatient Lead Nurse
Simon Kerlake	Ward manager, Athelon ward, Newtown Hospital
Barry Reynolds	Assistant Resuscitation Officer
Kate Cross	Assistant Resuscitation Officer
Rosemary Pickford	Pharmacist
Trish Cerrone	Training and Development Manager
Carole Roberson	Professional Practice Facilitator for District Nursing
Carol Clive	Consultant Nurse, Infection Control
Lesley Way	Patient Safety Officer
Della Lewis	Clinical Governance Manager

### Version History

Version	Circulation Date	Job Title of Person/Name of Group circulated to	Brief Summary of Change
December 2011	28.11.11	Medicines Management and Safety Group	Minor changes
January 2012		Clinical Policies Group	Minor amendments
CPGG V1		Clinical Policies Administrator	Formatting applied
V2	06.03.12	Clinical Policies Administrator	Front Sheet

### Accessibility

Worcestershire Health and Care NHS Trust has a contract with Applied Language Solutions to handle all interpreting and translation needs. This service is available to all staff in the trust via a free-phone number (0800 084 2003). Interpreters and translators are available for over 150 languages. From this number staff can arrange:

- Face to face interpreting;
- Instant telephone interpreting;
- Document translation; and
- British Sign Language interpreting.

### Training and Development

Worcestershire Health and Care NHS Trust recognises the importance of ensuring that its workforce has every opportunity to access relevant training. The Trust is committed to the provision of training and development opportunities that are in support of service needs and meet responsibilities for the provision of mandatory and statutory training. All staff employed by the Trust are required to attend the mandatory and statutory training that is relevant to their role and to ensure they meet their own continuous professional development.

## Contents:

1. Introduction.....	4
2. Purpose of guideline.....	4
3. Scope.....	4
4. Training.....	4
5. Responsibilities.....	4
6. Drugs Covered.....	5
7. Monitoring Implementation.....	5
8. Equality Impact Assessment.....	5
9. References.....	5

## Appendices:

1. Oxygen: high flow.....	6
2. Adrenaline 1:1000 (0.5mg/0.5ml) Injection.....	7
3. Aspirin 300mg dispersible tablets.....	8
4. Glycerol Trinitrate(GTN) Aerosol spray.....	9
5. Glucose (Dextrose) Gel.....	10
6. Glucagon Hydrochloride 1% (1 mg/mL) injection.....	11
7. Naloxone 400microgram in 1ml injection.....	12
8. Diazepam 10mg Rectal Tubes.....	13
9. Salbutamol 5mg via nebuliser or MDI + Spacer.....	14
10. Sodium Chloride 0.9% Infusion.....	15

## **1. Introduction**

- a. The law requires that in most cases drugs are administered following a Patient Specific Direction (PSD) from a prescriber but in some cases a health care professional may administer drugs without referral to a prescriber using a Patient Group Direction (PGD). In certain emergency situations the Medicines Act is waived and some specific drugs used to save life may be administered without referral to a PSD or a PGD. This clinical guideline brings together drugs of these two categories and also includes some simple drugs that do not require either a PGD or an exemption from the Medicines Act.
- b. The guideline has been produced to aid decision making prior to and during emergency situations. Although the clinical information needed is in the appendix of this guideline, health care professionals will still need to be signed up to Patient Group Directions for three of the medications as indicated below. Not all drugs will be available on all sites.

## **2. Purpose of the Guideline**

- a. It is essential that health care staff are able to treat patients effectively and promptly in all emergency medical situations.
- b. The purpose of this clinical guideline is to give the clinical information in one document on oxygen, drugs and IV fluids that health care staff may give to adults in an emergency situation, without prescription. It is recommended that this guideline is kept close to the resuscitation equipment and emergency drugs. It will then be readily available in emergency situations. As this will be a paper copy the current validity of guideline must be checked regularly.

## **3. Scope**

- a. The guideline covers staff working for Worcestershire Health and Care NHS Trust (WHCT). Which of the oxygen, drugs and IV fluids that staff can give in emergency situations will depend on their staff group and training as highlighted in section 4.
- b. Adult patients are defined as those aged eighteen or over.

## **4. Training**

- a. Oxygen – any member of WHACT staff who has a current Adult Basic Life Support (BLS) course with the airway skill station or Adult BLS and use of AED (BLS-AED), or Immediate Life Support (ILS) or Advanced Life Support (ALS).
- b. Adrenaline, Aspirin, GTN, Glucose gel and Glucagon – any registered health care professional who has a current Adult BLS or Adult BLS-AED or ILS or ALS.
- c. Naloxone, Diazepam PR, Salbutamol Nebuliser and Sodium Chloride 0.9% infusion – any registered health care professional who has a current ILS or ALS.

## **5. Responsibilities**

- a. Clinical managers are responsible through the Staff Appraisal and Development Review process to ensure that staff have the opportunity to attend the appropriate training to allow them to administer oxygen, drugs or IV fluids.
- b. WHCT staff are responsible for attending the appropriate training to allow them to administer oxygen, drugs and IV fluids as appropriate to their role.
- c. Drugs and IV fluids must only be given if within the competence of the registered health care professional.
- d. Registered health care professionals are also responsible for reading and signing the appropriate PGDs where needed.
- e. All staff are responsible for following the advice in this clinical guideline.

## 6. Drugs Covered

a. Information on the following emergency drugs for adults are given:

1. Oxygen: high flow
2. Adrenaline 1:1000 (0.5mg in 0.5ml) I.M. for anaphylaxis
3. Aspirin 300 mgs tablets
4. GTN 400 microgram spray
5. Glucose (Dextrose) Gel
6. Glucagon I.M.
7. Naloxone 400 micrograms I.M
8. Diazepam 10mg (PR) Also sign up to PGD
9. Salbutamol 5mg by nebuliser Also sign up to PGD
10. Sodium Chloride 0.9% infusion. Also sign up to PGD

b. Full details of these drugs are given in appendices 1-10. The usual presentation of the drug is described i.e. mg/ml. However, this will sometimes vary due to drug supplies. Staff are responsible for checking the individual drug presentation before administration.

## 7. Monitoring Implementation

- a. The use of some of the above drugs will be monitored by the Trust Resuscitation Officers auditing the information returned to them on the Trust "Emergency Record and Transfer Forms".
- b. The use of the above drugs will be monitored by the pharmacy department for mental health and prison healthcare areas through the replacement of relevant emergency drug boxes due to usage as opposed to expiry.

## 8. Equality Impact Assessment

- a. An equality Impact Assessment has been carried out and approved. No inequalities were found. It was noted that this guideline only applies to adults.

## 9. References

British National Formulary. Latest edition.

British Thoracic Society. Guidelines for emergency oxygen use in adult patients. 2008

Clinical Guideline 20. October 2004. The diagnoses and management of the epilepsies in adults and children in primary and secondary care.

Summary of Product Characteristics of all medicinal products included except oxygen and glucose gel.

Resuscitation Council (UK) – Advanced Life Support. Sixth edition. 2011

Resuscitation Council (UK) – Emergency treatment of anaphylactic reactions. Guidelines for healthcare providers. 2008

## Appendix 1. OXYGEN: High flow

Clinical Condition	To treat or prevent hypoxia/hypoxaemia
Who can administer	Any member of staff who has a current Adult BLS training including an airway skills station, or BLS-AED training or ILS training or ALS training.
Inclusion criteria	<p>Patients presenting with:</p> <ul style="list-style-type: none"> <li>• Hypoxia from any cause</li> <li>• Cardiac or respiratory arrest</li> <li>• Respiratory distress or compromise</li> <li>• Sudden or unexplained loss of consciousness/ neurological deficit</li> <li>• Circulatory compromise</li> <li>• Airway obstruction</li> <li>• Collapse or unwell and collapse anticipated</li> </ul>
Exclusion criteria	Paraquat poisoning
Cautions	<p>Fire hazard</p> <p>Remove free flowing oxygen when defibrillators are in use – burns have been reported.</p>
Action if patient declines or is excluded	<p>Refer to supervising doctor or A &amp; E.</p> <p>Document findings and action taken</p>

Drug Details	
Name, form & strength of medicine	Oxygen gas
Route/Method	<p>In cases of patient who is still breathing oxygen is given via an adult non re-breathe mask with reservoir.</p> <p>In cases of patient who is not breathing, oxygen is given via a pocket mask or bag-valve mask device.</p>
Dosage	<p>ALL emergency situations:</p> <p>Give 100% oxygen at a flow rate of 15 L/minute</p>
Duration of treatment	<p>Continuous - to maintain oxygen saturations at 94-98% until urgent assessment performed by doctor or paramedic.</p> <p>In cases of patients at risk of “oxygen induced” hypercapnic respiratory failure e.g. pre-existing COPD maintain oxygen saturations of 88-92% until urgent assessment by doctor or paramedic.</p>
Side effects	Prolonged inhalation may cause dry mouth, coughing and fatigue.
Advice to patient/carer	<ul style="list-style-type: none"> <li>• Explain why oxygen is being used and its effects</li> <li>• Give the patient/carer verbal instructions on how to use the mask.</li> </ul>
Follow Up	Monitor oxygen saturations and refer patient for follow up with Doctor or A & E.

**Appendix 2. ADRENALINE 1:1000 (0.5mg/0.5ml) Injection** (also refer to Trust anaphylaxis guidelines)

Clinical Condition	Emergency treatment of acute anaphylaxis
<b>Who can administer</b>	Any registered health care professional who has a current Adult BLS, or BLS-AED, or ILS or ALS training.
<b>Inclusion criteria</b>	<p>Assess patient using the ABCDE approach and consider diagnosis of anaphylaxis and giving adrenaline when:</p> <p>(1) acute onset of illness            (2) life-threatening <b>A</b>irway and / or <b>B</b>reathing and / or <b>C</b>irculation problems            (3) and usually skin changes present</p> <p>Call 999</p> <p>Give oxygen if available - administer at high flow rate (15 litres/min) via non re-breathe mask with reservoir.</p>
<b>Exclusion criteria</b>	Children under 18 years old (refer to Child guidelines)
Drug Details	
<b>Name, form &amp; strength of medicine</b>	Adrenaline 0.5 mg in 0.5 ml (1:1000) injection 0.5ml ampoules
<b>Legal Status</b>	Prescription only Medicine (POM) but wavered in a life saving emergency
<b>Route/Method</b>	Intramuscular Injection (preferably to the antero-lateral aspect of thigh) IM
<b>Dosage</b>	Adults 500 micrograms 0.5ml IM
<b>Frequency</b>	Repeat if necessary after 5 minutes according to patient's response. Monitor individual patient's response: re-assessing ABCDE
<b>Duration of treatment</b>	Maximum two doses
<b>Side effects</b>	Anxiety, nausea, tremor, sweating, tachycardia, vomiting, headache, dizziness, cold extremities, dyspnoea
<b>Advice to patient/carer</b>	<p>If appropriate and practical:</p> <ul style="list-style-type: none"> <li>• Explain treatment and course of action</li> <li>• Discuss what caused the anaphylaxis and measures to avoid/manage such episodes again if appropriate.</li> <li>• Patients at high risk of such reactions e.g. to foods, may wish to carry their own adrenaline self administration pen.</li> </ul>
<b>Follow up</b>	Arrange immediate transfer to Acute Trust Accident & Emergency Department. Advice that adrenaline has been given.

### Appendix 3. ASPIRIN 300mg dispersible tablets

Clinical Condition	Emergency treatment of suspected myocardial infarction or acute coronary syndrome
Who can administer	Any registered health care professional who has a current Adult BLS, or BLS-AED, or ILS or ALS training.
Inclusion criteria	<ul style="list-style-type: none"> <li>Any patient with suspected ischaemic chest pain</li> </ul>
Exclusion criteria	<ul style="list-style-type: none"> <li>Known severe hypersensitivity to ibuprofen, aspirin or other non steroidal anti-inflammatory drugs (NSAIDs),</li> <li>Has already been given aspirin for current episode (e.g. by other first contact service) or has received other thrombolytic drugs within the last 24 hours</li> <li>Suspected or known haemorrhagic stroke</li> </ul>
Cautions	Use in asthmatics (may exacerbate asthma if affected – but likely benefits outweigh potential risks)
Action if patient declines or is excluded	Refer to supervising doctor or Acute Trust Accident & Emergency Department as appropriate. Document action/refusal in patient's record.
Drug Details	
Name, form & strength of medicine	Aspirin 300 mg dispersible tablets
Legal status	General Sales List (GSL)
Route/Method	Oral One tablet to be dispersed in water (or chewed) and swallowed immediately. If chewed, give patient a little water to drink afterwards if practical to prevent oral mucosal and oesophageal irritation.
Dosage	300mg
Frequency	Single dose
Side effects	<ul style="list-style-type: none"> <li>May cause nausea and vomiting.</li> <li>Aspirin can irritate the GI mucosa</li> <li>Hypersensitivity reactions include rashes, angioedema and bronchospasm.</li> </ul>
Follow up	Arrange immediate transfer to Acute Trust Accident & Emergency Department. Advise A & E and ambulance staff that aspirin has been given.

#### Appendix 4. GLYCERYL TRINITRATE (GTN) Aerosol Spray: 400microgram per metered dose

<b>Clinical Condition</b>	<b>Chest pain due to angina or suspected angina</b>
<b>Who can administer</b>	Any registered health care professional who has a current Adult BLS, or BLS-AED, or ILS or ALS training.
<b>Inclusion criteria</b>	Adults and elderly with suspected ischaemic chest pain
<b>Exclusion criteria</b>	<ul style="list-style-type: none"> <li>• Known severe hypersensitivity to nitrates</li> <li>• Hypotension (actual or estimated systolic blood pressure &lt; 90 mmHg), hypotensive shock.</li> <li>• Hypertrophic cardiomyopathy</li> <li>• Toxic pulmonary oedema</li> <li>• Head trauma</li> <li>• Cerebral haemorrhage / cerebrovascular disease</li> <li>• Marked anaemia</li> <li>• Aortic stenosis</li> <li>• Mitral stenosis</li> <li>• Cardiac tamponade</li> <li>• Hypovolaemia</li> <li>• Constrictive pericarditis</li> <li>• Children</li> </ul>
<b>Cautions</b>	Pregnancy – not known to be harmful Breast-feeding – use only when benefit clearly outweighs risks Extreme bradycardia Closed angle glaucoma Recent (last 24 hours) use of sildenafil (e.g. Viagra®) or other similar drug
<b>Action if patient declines or is excluded</b>	Refer to supervising doctor/A&E as appropriate. Document action/refusal in patient's record.
<b>Drug Details</b>	
<b>Name, form &amp; strength of medicine</b>	Glyceryl trinitrate (GTN) spray 400microgram/ metered dose
<b>Legal status</b>	P medicine, may be administered if needed
<b>Route/Method</b>	Sublingual
<b>Dosage</b>	Adults and elderly: one or two sprays under the tongue and close the mouth
<b>Frequency</b>	Dose may be repeated after 5 minutes if pain has not subsided.
<b>Duration of treatment</b>	Doses can be repeated up to a maximum of 3 doses. If there is inadequate response, refer to supervising doctor/A & E.
<b>Side effects</b>	Throbbing headache, dizziness, postural hypotension, tachycardia, bradycardia Less common, metallic taste, nausea, vomiting, syncope, flushing
<b>Follow up</b>	Refer to doctor or A & E, since this may mean early MI or acute unstable angina.

## Appendix 5. GLUCOSE (Dextrose) Gel

Clinical	Emergency treatment of hypoglycaemia
<b>Who can administer</b>	Any registered health care professional who has a current Adult BLS, or BLS-AED, or ILS or ALS training.
<b>Inclusion criteria</b>	Conscious diabetic adults presenting with symptoms of hypoglycaemia and a low blood sugar, i.e. less than 4 mmols/litre as determined by glucose meter/strips.
<b>Exclusion criteria</b>	<ul style="list-style-type: none"> <li>• Unconscious patients (use glucagon)</li> <li>• Known allergy to glucose (dextrose) use glucagon</li> <li>• Children</li> </ul>
<b>Management of excluded patients</b>	If appropriate give glucagon injection as per local protocol or refer to A&E if necessary. Document action taken in patient's record.
<b>Action for patients not wishing to receive care</b>	Refer to A&E. Document refusal and action taken in patient's record

Drug Details	
<b>Name, Form &amp; Strength of medicine</b>	Glucose (dextrose) gel 10 g in a 25 g tube (GlucoGel)
<b>Legal Classification</b>	Food
<b>Route/Method</b>	Oral
<b>Dosage</b>	One 25 g tube
<b>Frequency</b>	Repeat after 10 - 15 minutes if necessary
<b>Maximum or minimum treatment period</b>	Maximum two doses
<b>Follow up</b>	Refer to A & E if patient does not recover
<b>Side effects</b>	None Stated
<b>Advice to patient</b>	<ul style="list-style-type: none"> <li>• Advise patient to take fluids and carbohydrates following recovery</li> <li>• Advise regular monitoring of blood glucose levels</li> <li>• Patient should not drive or operate machinery for at least one hour following recovery from severe hypoglycaemia because symptoms such as blurred vision may still be present, and hypoglycaemia may recur</li> </ul>
<b>Follow up</b>	Refer patient for follow up with GP/diabetes clinic/A & E.

## Appendix 6. GLUCAGON HYDROCHLORIDE 1% (1 mg/ml) injection

Clinical Condition	Emergency treatment of Hypoglycaemia coma
<b>Who can administer</b>	Any registered health care professional who has a current Adult BLS, or BLS-AED, or ILS or ALS training.
<b>Inclusion criteria</b>	Unconscious diabetic patients presenting with symptoms of hypoglycaemia and a blood sugar less than 4 mmols/litre as determined by glucose meter/strips
<b>Exclusion criteria</b>	<ul style="list-style-type: none"> <li>• Where the patient is able to take oral glucose</li> <li>• Alcohol or starvation induced hypoglycaemia</li> <li>• Known to have phaeochromocytoma (a rare tumour)</li> <li>• Known hypersensitivity to glucagon or any of the excipients.</li> <li>• Children</li> </ul>
<b>Cautions</b>	<p>Insulinoma and glucagonoma</p> <p><b>Potential drug interactions with:</b></p> <p>Indometacin – glucagon may lose its ability to raise blood glucose or may even produce hypoglycaemia - give glucagon and inform paramedic or doctor</p> <p>Warfarin – glucagon may increase the anticoagulant effect - give glucagon and inform patient, paramedic and doctor</p>
<b>Action if patient declines or is excluded</b>	Refer to doctor/A&E department as appropriate. Document refusal/action taken in patient's record.
Drug Details	
<b>Name, form &amp; strength of medicine</b>	Glucagon hydrochloride 1% (1 mg in 1mL) vial with prefilled syringe containing water for injection
<b>Legal category</b>	Prescription only Medicine (POM) except in saving life emergency
<b>Route/Method</b>	Intramuscular or subcutaneous injection
<b>Dosage</b>	<p>1 mg</p> <p>If patient responds (usually within 10 minutes of glucagon injection) – give oral carbohydrate to prevent relapse.</p> <p>If there is no response in that time, patient will require intravenous glucose.</p>
<b>Frequency</b>	Single dose with time of administration clearly documented.
<b>Side effects</b>	Occasionally nausea, vomiting, abdominal pain. Tachycardia and hypersensitivity reactions occur rarely.
<b>Advice to patient/carer</b>	<ul style="list-style-type: none"> <li>• Give patient a copy of any relevant patient information leaflet if available and discuss as required</li> <li>• Advise patient not to drive or operate machinery for at least an hour after recovery as hypoglycaemic symptoms may recur</li> <li>• Diabetic control may be poor following hypoglycaemic attack, patient may wish to discuss this with their GP or diabetic liaison nurse and follow up on cause of hypoglycaemia</li> <li>• Patients at risk of hypoglycaemia may wish to carry their own glucagon for emergency use e.g by friends or family</li> <li>• Patients taking warfarin should have their INR checked</li> </ul>
<b>Follow up</b>	Refer patient for follow up with GP/diabetes clinic/A & E.

## Appendix 7. NALOXONE 400 microgram in 1ml injection

<b>Clinical Condition</b>	<b>Antidote for opioid induced respiratory depression</b>
<b>Who can administer</b>	Any registered health care professional who has a current ILS or ALS training.
<b>Inclusion criteria</b>	Patients presenting with: Confirmed or suspected overdose of opioids with unconsciousness and respiratory depression and possibly pinpoint pupils
<b>Exclusion criteria</b>	Children
<b>Cautions</b>	If patient has not taken opiates then there is little or no pharmacological effect and alternative diagnosis / action should be sought. Use in people physically dependent on opiates may precipitate severe withdrawal symptoms <b>If long acting preparations (e.g. MST) have been taken a doctor must be consulted. Further doses may be needed and must be authorised by the doctor.</b>
<b>Action if patient declines or is excluded</b>	Transfer to A & E or call hospital doctor immediately.
<b>Drug Details</b>	
<b>Name, form &amp; strength of medicine</b>	Naloxone hydrochloride 800mcg in 2ml injection May be available as 2ml ampoules or 2ml pre-filled syringe.
<b>Legal Category</b>	Prescription only Medicine (POM) except in saving life emergency.
<b>Route/Method</b>	IM (IV if access is available)
<b>Dosage</b>	400 microgram IV or 800 microgram IM
<b>Frequency</b>	Stat dose may be repeated after five minutes if respiratory function does not improve <b>If long acting preparations (e.g. MST) have been taken the doctor must be informed. Further doses may be needed and must be authorised by the doctor.</b>
<b>Duration of treatment</b>	Further doses should be under direction of a doctor only.
<b>Side effects</b>	Nausea, vomiting, sweating, tachycardia, tremor and hyperventilation usually as a result of reversal of opiate Cardiac arrest, pulmonary oedema and arrhythmias have been reported in those with pre-existing cardiac abnormalities.
<b>Follow up</b>	Refer to Doctor if available or transfer to A & E as soon as possible.

## Appendix 8. DIAZEPAM 10mg Rectal Tubes – also see PGD

Clinical Condition	Status Epilepticus
<b>Who can administer</b>	Any registered health care professional who has a current ILS or ALS training and has signed the PGD.
<b>Inclusion criteria</b>	Patients presenting with continuous seizure lasting more than 5 minutes, or who have more than three seizures in an hour
<b>Exclusion criteria</b>	Children age under 18 Unstable myasthenia gravis Severe hypersensitivity to benzodiazepines Severe hepatic impairment Respiratory depression / pulmonary insufficiency
<b>Caution</b>	The sedative effects may be enhanced when given to patients who have taken alcohol or other CNS depressants.
<b>Drug Details</b>	
<b>Name, form &amp; strength of medicine</b>	2.5ml Diazepam rectal tubes 4mg in 1ml (10mg)
<b>Legal status</b>	Prescription only Medicine (POM CD Benz) Registered health care professionals must be signed up to use the Patient Group Direction for this drug.
<b>Route/Method</b>	Rectal
<b>Dosage</b>	10mg.
<b>Duration of treatment</b>	Repeat after 5 minutes if necessary. Consider 5mg for second dose in elderly.
<b>Side effects</b>	Sedation, drowsiness, light-headedness, unsteadiness
<b>Follow up</b>	Refer to doctor or A & E for further management.

## Appendix 9. SALBUTAMOL 5mg via nebuliser or MDI + Spacer – also see PGD

Clinical Condition	Moderate / Severe asthma attack
<b>Who can administer</b>	Any registered health care professional who has a current ILS or ALS training and has signed the PGD.
<b>Inclusion criteria</b>	<p>Patients known or suspected or having asthma with <u>any</u> of the following:</p> <ul style="list-style-type: none"> <li>• Difficulty in breathing</li> <li>• Peak Expiratory flow less than 75% of best or predicted</li> <li>• Respiratory rate of 25 or greater</li> <li>• Pulse rate of 110 or more</li> <li>• Cannot complete sentence in one breath</li> </ul> <p><i>Info <u>adapted</u> from SIGN and BTS guidelines on Asthma</i></p>
<b>Exclusion criteria</b>	Hypersensitivity to salbutamol Children under 18
<b>Other actions</b>	Treat each emergency consultation as being acute severe asthma until shown otherwise. Summon medical assistance immediately or refer to A&E.
<b>Action if patient declines or is excluded</b>	Refer to supervising doctor/A & E. Document findings and action taken in patient's record.
Drug Details	
<b>Name, form &amp; strength of medicine</b>	Salbutamol nebuliser solution 5mg in 2.5ml plastic ampoules for inhalation OR Salbutamol metered dose inhaler 100 microgram per puff
<b>Legal Status</b>	Prescription only Medicine (POM). Registered health care professionals must be signed up to use the Patient Group Direction.
<b>Route/Method</b>	Inhalation of solution via nebuliser or via metered dose inhaler and large volume spacer
<b>Dosage / route</b>	5mg nebuliser solution inhaled using nebuliser compressor or ideally with oxygen at 6 – 8 litres per minute (if available) over 5 to 10 minutes or 2 –10 puffs, each puff inhaled separately, using an MDI and a large volume spacer
<b>Duration of treatment</b>	Repeat once after 10 – 20 minutes if necessary whilst waiting medical intervention or ambulance
<b>Side effects</b>	Tremor, headache, tachycardia
<b>Follow up</b>	Refer to supervising doctor or A & E immediately.

## Appendix 10. SODIUM CHLORIDE 0.9% INFUSION – also see PGD

<b>Clinical Condition: Fluid replacement for patients who are haemodynamically unstable and in danger of cardiovascular collapse</b>	
<b>Who can administer</b>	Any registered health care professional who has a current ILS or ALS training and has signed the PGD.
<b>Inclusion criteria</b>	Urine volume less than 0.5ml/kg/hr External Haemorrhage Patients with signs of haemodynamic instability: <ul style="list-style-type: none"> <li>• Peripheral cyanosis</li> <li>• Reduced level of consciousness</li> <li>• Hypotension – less than 90mmHg systolic</li> <li>• Tachycardia with heart rate above 110</li> <li>• Capillary refill time more than 2 seconds</li> </ul>
<b>Exclusion criteria</b>	<ul style="list-style-type: none"> <li>• Child/young person under 18</li> <li>• Patients with severe cardiac failure/cardiogenic shock</li> <li>• Patients who have any evidence of extraversion, pain, discomfort, swelling, phlebitis or reddening around the cannula site and re-cannulation has failed.</li> <li>• If patient develops shortage of breath stop infusion and await medical/paramedic support.</li> </ul>
<b>Action if patient declines or is excluded</b>	Refer to supervising doctor/A & E. Document findings and action taken in patient's record.
<b>Drug Details</b>	
<b>Name, form &amp; strength of medicine</b>	Sodium Chloride Injection BP 0.9% for IV infusion 500ml
<b>Legal Status</b>	Prescription only Medicine (POM): Registered Health Care Professionals must be signed up to use the Patient Group Direction.
<b>Route/Method</b>	IV infusion
<b>Dosage / route</b>	500ml over 5-10 minutes whilst waiting for medical/paramedical assistance.
<b>Duration of treatment</b>	Where there is delay in support arriving, the dose may be repeated if after assessment the patient still needs IV fluid replacement.
<b>Side effects</b>	Administration of large quantities may give rise to sodium accumulation, oedema and hyperchloraemic acidosis.
<b>Follow up</b>	Refer to supervising doctor or A & E immediately.