

**MEDICAL EMERGENCIES MANAGEMENT POLICY
 (NON-CARDIAC ARREST)**

**To be read in conjunction with Policy for Resuscitation and Physiological
 Observations Policies for: inpatients Mental Health and Community Health and
 Community Setting
 Patient Group Directions Policy (Community Health only)**

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DOCUMENT CONTROL

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Amendments	Policy revised to reflect the acquisition of Somerset Community Health and changes to the Trusts governance structure.		
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Intended recipients: All Trust staff			
Committee/Group consulted: Medicines in Clinical Practice, Medicines Management Group, Resuscitation Group, Community Hospital Best Practice Group, Community Matrons			
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1. INTRODUCTION

- 1.1 Acutely ill patients require rapid but careful assessment and emergency management. The aim is always to prevent further deterioration and stabilise the patient.
- 1.2 This policy must be used in conjunction with the Physiological Observations Policy for Inpatients and the Physiological Observations Policy for Community Setting, when preventing deterioration and managing medical emergencies.
- 1.3 Chest pain, seizure, sepsis, anaphylactic shock, acute shortness of breath and respiratory failure are all examples of medical emergencies and they can occur in any clinical area. Left untreated or not treated rapidly enough, can lead to cardiac arrest and fatality. There may be life-threatening abnormalities of physiology present e.g. hypoxia, hypovolaemia and anaphylaxis.

2. PURPOSE & SCOPE

- 2.1 This policy will provide management guidelines for some common medical emergencies and provide recommendations on drugs to be used. Line managers should ensure these medications are accessible at all times
- 2.2 This policy is relevant to all adults and children over the age of 12 years. It will provide a standardised approach across the Trust on the management of most common adult and young person's medical emergencies. However, this policy is not a substitute for seeking immediate expert help, when this is needed.
- 2.3 This policy will also consider the emergency management of acute deterioration which may occur in a mental health unit. These include incidents of self harm (cutting and overdose) and hanging.

3. DUTIES AND RESPONSIBILITY

- 3.1 The **Chief Executive** is ultimately responsible for ensuring the Trust complies with nationally agreed evidence based practice and legal requirements, during safe and effective management of medical emergencies.
- 3.2 The **Trust Board** has the responsibility to ensure that all relevant staff receive training and competency assessment, to enable them to effectively and safely deal with medical emergencies. This responsibility is delegated to the Director of Nursing and Patient Safety.
- 3.3 The **Medical Director** is the Lead Director responsible for implementing the policy and ensuring it is updated at least every 3 years or sooner according to recommendations of evidenced based best practice.
- 3.4 The **Best Practice Groups** are responsible for ensuring relevant incidents relating to deterioration and management of medical emergencies are

discussed and any recommendations to improve practice are shared locally among their teams.

- 3.5 The **Resuscitation Group** is responsible for ensuring there are adequate controls to provide safe emergency and resuscitation practice in line with national guidelines. Advising on training requirements for individual staff groups. Reviewing cases where emergency/ resuscitation techniques have been used and providing advice on techniques, medical equipment and medicines required for safe emergency care and resuscitation practice.
- 3.6 The **Senior Nurse for Clinical Practice** is the Lead for Deteriorating patients and Resuscitation and as such is responsible to review incidents of deteriorating patients requiring emergency intervention. The Senior Nurse for Clinical Practice is also responsible for the review process of this policy and for consulting with others and amending the policy as appropriate.
- 3.7 **Ward Sisters / Charge Nurses / Ward Managers** are responsible for ensuring medical emergency medications are readily available within the general ward stock for drugs.
- 3.8 All **staff** have a duty of care to the patient and must adhere to the standards set in this policy and associated policies, at all times and are accountable for any duty delegated, in relation to this policy. All staff must ensure high standards of documentation are maintained, as this is crucial for good patient management and as a lasting record of assessment, decisions, procedures and communications that occurred. The **resuscitation status** of each patient during episodes of deterioration leading to a medical emergency must be considered. All staff must ensure they have received training and undergone competency assessment, where relevant, when carrying out aspects of this policy.

4. **PRESCRIPTION or Patient Group Direction (PGD) FOR ADMINISTRATION OF EMERGENCY MEDICINES**

- 4.1 There are certain medicines that have exemptions under The Human Medicines Regulations 2012. The impact of this act is that medicines specified in Schedule 19 may be administered by injection for the purpose of saving a life in an emergency without the need for a prescription..
- 4.2 This extract from Schedule 19, contains details of the drugs that may be administered parentally for 'the purpose of saving life in an emergency':
- adrenaline injection 1 in 1000 (1 mg in 1ml) up to 1mg for intramuscular use in anaphylaxis
 - atropine sulphate injection (bradycardia/cardiac arrest)
 - chlorphenamine injection (antihistamine)
 - Dicobalt edetate injection (cyanide poisoning)
 - Glucose injection
 - Glucagon injection (hypoglycaemia)
 - hydrocortisone injection (steroid)
 - naloxone hydrochloride

- mepyramine injection (antihistamine)
- promethazine hydrochloride injection (antihistamine)
- snake venom antiserum
- sodium nitrate injection (cyanide poisoning)
- sodium thiosulphate injection
- sterile pralidoxime (cyanide poisoning)

4.3 **Administering medical gases:** the trust requires a valid prescription or PGD for routine administration of oxygen and Entonox. This is a pharmacy only medication so will need to be administered via a PGD. However high flow oxygen can be administered without prescription for a short period of time during a medical emergency.

4.4 The Trust requires a PGD in place as a framework to guide local practice and training needs. It is important that Registered staff are aware of those drugs that can be given in an emergency without a PGD, such as adrenaline for anaphylaxis and oral and intramuscular glucose for hypoglycaemia.

4.5 Some treatments recommended in this policy may be used “off licence” or out of the indications recommended in the summary of product characteristics. For example, Flumazenil is only licensed for use during anaesthesia or intensive care.

4.6 The Trust requires both Mental Health and Community Health Service inpatient units and Minor Injury Unit (MIUs) to be able to provide this drug should a clinical situation arise where the respiratory effects of the administration of benzodiazepines require rapid rescue and reversal, to prevent further patient deterioration. In such cases, it is imperative that the drug is administered by an experienced clinician.

5. **SUMMARY OF NON - CARDIAC ARREST MEDICAL EMERGENCIES**

5.1 The following emergencies are covered in this policy:

- anaphylaxis (Anaphylaxis Treatment Protocol, Appendix C)
- acute asthma attack/shortness of breath
- Bradycardia with adverse features and Supraventricular tachycardia (SVT) with adverse features where sufficient expertise is available
- sepsis/meningitis
- hypoglycaemia of known diabetic mellitus exists (follow Trust Management of Hypoglycaemia Policy)
- hypoglycaemia in patients not known to have diabetes mellitus
- Venous Thromboembolism (VTE) – Deep Vein Thrombosis (DVT)/Pulmonary Embolism (PE) (refer to the DVT/PE Trust Policy)
- Oculogyric crisis
- respiratory depression
- acute effects on the central nervous system, including seizures
- acute chest pain indicative of possible cardiac cause
- management of self harm (cutting and overdose) and hanging

- 5.1.1 Acutely ill patients require rapid but careful assessment. Initiation of treatment often precedes a definitive diagnosis but diagnosis should be actively pursued. The aim is to prevent further deterioration and stabilise the patient before being transferred to an acute district general hospital if appropriate.
- 5.1.2 The general principles of emergency management discussed in this policy, can be applied to the majority of acutely ill adults, irrespective of underlying diagnosis or admitting speciality.
- 5.1.3 Immediate interventions and investigations are those which will influence the **acute management** of the patient and include:

- Assess and manage Airway (A) Breathing (B) Circulation (C) Disabilities (D) Exposure (E), utilising a 'look, listen and feel' approach
- assess and record physiological observations – blood pressure (BP), pulse rate (manual), respiratory rate, temperature, oxygen saturation, and central nervous system response
- always calculate and record a Patient at Risk (PAR) Score and follow the PAR score guidelines and coloured warning zone guidelines
- assess neurological function using the 'Alert, Voice, Pain, Unresponsive' (AVPU) assessment tool and if appropriate, also the Glasgow Coma Scale (GCS)
- complete the Trust's Sepsis Proforma when considering sepsis related deterioration. The tool will identify the patient with Sepsis and provide goal orientated interventions that must be implemented
- maintain oxygen saturation levels at above 94% by immediately administering using high flow oxygen at 15 litres per minute delivered via a mask and reservoir bag

NB: Patients with COPD and other risk factors for hypercapnia who develop critical illness should have the same initial target saturations as other critically ill patients pending results of blood gas measurements (Thorax, 2008).

- obtain peripheral intravenous access, using a wide bore cannulae inserted into the largest vein if possible, usually the ante-cubital fossa.
- maintain a systolic blood pressure (BP) of at least 90mmHg with fluid resuscitation where indicated. Crystalloid (0.9% Sodium Chloride) is the preferred choice, administered in stat doses of 250mls over 5-10 minutes - caution with history of heart disease/heart failure.
- identify and confirm any known allergies
- obtain a glucose level –capillary sample and venous sample in every acute presentation, not just those with decreased Loss of Consciousness (LOC) and known diabetes

NB: an abnormal capillary blood glucose result must be acted upon immediately rather than waiting for a venous sample result.

- obtain a full blood count, urea and electrolytes, liver function test, clotting screen and lactate level (if sepsis suspected) but not at the cost of delaying transfer to definitive care
- obtain a twelve lead Electrocardiogram (ECG) but not at the cost of delaying transfer to definitive care

- request a chest X-Ray (where indicated) but not at the cost of delaying transfer to definitive care
- when considering sepsis, take blood culture samples – both aerobic and anaerobic - preferably before administering antibiotics (if practical). Attempting to obtain blood cultures must never delay commencing treatment
- carry out an Explicit Wells Score and D-dimer test if a DVT/PE is suspected, in accordance with Trust Policy
- be prepared to carry out Basic Life Support (BLS), including the assessment and insertion of simple airway adjuncts, such as oral pharyngeal airway or nasal pharyngeal, at any time
- Prepare to carry out automated external cardiac defibrillation if device and people trained in its use are available.

5.1.4 A machine derived blood pressure is inaccurate at extreme levels of BP and in tachycardias (especially Atrial Fibrillation). A manual sphygmomanometer BP and pulse rate must always be obtained during a medical emergency from acute deterioration.

5.1.5 In-hospital cardiac arrest, asystole or pulseless electrical activity (PEA), has a survival rate of around 10% and there is no specific treatment. There are usually documented deteriorations in physiology prior to the arrest. These are often treatable and reversible so the aim is to recognise decline early and to provide early corrective management in order to prevent cardiac arrest by adhering to the Trust's Physiological Observations Policies.

5.1.6 Hypoxaemia and hypovolaemia are common and often co-exist during acute deterioration from conditions such as sepsis, anaphylaxis, trauma or haemorrhage from a Gastro Intestinal (GI) bleed. Electrolyte abnormalities, notably hyperkalaemia, hypokalaemia or hypocalcaemia are easily detected and readily correctable. Drug therapy or poisoning/toxins may contribute to instability.

Hypoglycaemia in patients not known to have diabetes mellitus

5.2 It is rare for patients to develop hypoglycaemia requiring emergency treatment, in patients not known to have diabetes mellitus treated with insulin or sulfonylureas.

5.2.1 However the following situations can be a cause of hypoglycaemia in such patients:

- Reactive hypoglycaemia - too much insulin in the blood in people without diabetes type 1 is commonly caused by the pancreas producing too much insulin after a large carbohydrate-based meal. Thought to be more common in people who are overweight or have had gastric bypass surgery, and those with type 2 diabetes.
- in rare cases, a benign (non-cancerous) tumour in the pancreas may cause an overproduction of insulin, or the tumour itself may use up too much glucose.
- fasting/anorexia, malnutrition,

- binge drinking or heavy drinking of alcohol
- Addison's Disease
- certain medication – hypoglycaemia has been known to occur in people taking quinine, salicylates and propranolol
- severe illnesses affecting the liver, kidneys or thyroid gland

5.2.2 Usually, hypoglycaemia in people without diabetes is managed by dietary changes alone. In the very rare circumstances that the hypoglycaemia constitutes a medical emergency, where the administration of Intravenous (IV) Glucose is required and the cause investigated. During such situations, staff must ensure a valid prescription is in place when administering IV glucose and follow the relevant injectable medicines monograph.

Management of emergency incidents involving self harm (cutting and overdose) and hanging

5.3 There exists thorough guidance from NICE in respect of the management and treatment of short and longer term self harm (see Self-harm: the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care)

5.3.1 Trust policy on the “Clinical Assessment and Management of Risk of Harm to Self and Others” must also be used during such incidences.

5.3.2 The immediate intervention and treatment for self harm via cutting:

- ensure the patient is assessed and managed using the ABCDE approach
- apply direct pressure
- elevate the wound - if significant loss of blood, lay affected person down
- apply a sterile non – adherent dressing
- refer to emergency medical services if bleeding does not stop or the wound requires further assessment and treatment such as suturing.

5.3.3 The immediate intervention for self harm via overdose:

- consideration should be given to undertaking the following investigations:
- capillary blood glucose (CBG),
- Paracetamol and Salicylate levels recommended at 4 hours post overdose or immediately, FBC, INR, U+E, LFT, Glucose and CK,
- ECG, especially if overdose involved Tricyclic antidepressants
- refer to TOXBASE (<http://www.toxbase.org/>) the National Poisons Information Service for specific advice and onward referral to emergency medical services for specific treatments based on the substance ingested.

5.3.4 The immediate intervention following attempted hanging:

- assess and manage the patient/client using the ABCDE approach
- essential assessment and management centres on the stabilisation and protection of the airway

- staff should avoid the use of intubation however this may be necessary if there is respiratory failure and must only be undertaken by suitably trained staff.
- stabilisation of the cervical spine in the event damage may have occurred, should be considered though this will be limited without the use of appropriate equipment.
- immediate transfer to emergency medical services.

6. TRAINING REQUIREMENTS

6.1 The Trust will work towards all staff being appropriately trained in line with the Organisation's Staff Mandatory Training Matrix (training needs analysis). All training documents referred to in this policy are accessible to staff within the Learning and Development Section of the Trust Intranet.

6.2 Clinical staff who give any medications, especially parenteral medications, must have received training and competency assessment in the following areas as directed by the Trust's Training Matrix:

- medicines management training and competency assessment and
- drugs calculations
- Basic Life Support for community health staff
- Immediate Life Support for mental health RN and Cardiac Rehabilitation teams
- anaphylaxis training
- administration of intravenous drugs and competency assessment
- Acute Illness Management (AIM) training
- for Health Care Assistants (HCA) only - physiological observations (including PAR score) training and competency assessment

6.3 All registered health care professionals required to administer medications via a PGD must ensure they have completed the PGD training and competency assessment framework as stipulated in the Trust's PGD policy. However, it is important that staff are not put in the position that they feel they cannot give medicines such as adrenaline for anaphylaxis because they think they are "not covered" by a PGD due to lack of PGD training and competency assessment.

7. EQUALITY IMPACT ASSESSMENT

7.1 All relevant persons are required to comply with this document and must demonstrate sensitivity and competence in relation to the nine protected characteristics as defined by the Equality Act 2010. In addition, the Trust has identified Learning Disabilities as an additional tenth protected characteristic. If you, or any other groups, believe you are disadvantaged by anything contained in this document please contact the Equality and Diversity Lead who will then actively respond to the enquiry.

8. MONITORING COMPLIANCE AND EFFECTIVENESS

Monitoring arrangements for compliance and effectiveness

- 8.1 Monitoring of medical emergencies and adherence to this policy will be carried out at a local level and discussed further with learning points shared with the Resuscitation Group and relevant Best Practice Group, where appropriate.
- 8.2 All medical emergencies resulting in a resuscitation event and/or the transfer of the patient to an acute district general hospital due to deterioration, requires the event reporting through DATIX and an initial review of the event locally by a 72 hour report. These incidences are also reviewed by the Senior Nurse for Clinical Practice.
- 8.3 Adverse drug reactions that include an anaphylactic reaction should be reported to the Medicines and Healthcare products Regulatory Agency (MHRA) using the yellow card scheme (www.mhra.gov.uk). Discuss all cases of fatal anaphylactic reaction with the coroner. All fatal events will be the subject to a:
- DATIX report
 - 72 hour report
 - Initial review by the Senior Nurse for Clinical Practice
 - Further investigation by Clinical Practice Team
 - Review by the Resuscitation Group
- 8.4 **Process and Frequency of reviewing results and ensuring improvements in performance occur**
- review of resuscitation incidents undertaken quarterly by the Resuscitation Group.
 - deterioration incidents are reviewed and lessons learnt are discussed at the relevant Best Practice Group.

9. COUNTER FRAUD

- 9.1 The Trust is committed to the NHS Protect Counter Fraud Policy – to reduce fraud in the NHS to a minimum, keep it at that level and put funds stolen by fraud back into patient care. Therefore, consideration has been given to the inclusion of guidance with regard to the potential for fraud and corruption to occur and what action should be taken in such circumstances during the development of this procedural document.

10. RELEVANT CARE QUALITY COMMISSION (CQC) REGISTRATION STANDARDS

The standards and outcomes which inform this procedural document, are as follows:

Section		Outcome
Information and involvement	1	Respecting and involving people who use services
	2	Consent to care and treatment
Personalised care, treatment and support	4	Care and welfare of people who use services
	6	Cooperating with other providers
Safeguarding and safety	8	Cleanliness and infection control
	11	Safety, availability and suitability of equipment
Suitability of staffing	12	Requirements relating to workers
	14	Supporting workers
Quality and management	15	Statement of purpose
	16	Assessing and monitoring the quality of service provision
	17	Complaints
	21	Records

11. RELEVANT NATIONAL REQUIREMENTS

<http://www.nelm.nhs.uk/en/Communities/NeLM/PGDs/FAQs/When-is-a-PGD-not-necessary/>

<http://www.mhra.gov.uk/Howweregulate/Medicines/Availabilityprescribingsellingandsupplyingofmedicines/ExemptionsfromMedicinesActrestrictions/PatientGroupDirectionsintheNHS/index.htm>

<http://www.resus.org.uk/pages/faqAna.htm>

Johansson SG, Bieber T, Dahl R, Friedmann PS, Lanier BQ, Lockey RF, et al (2004) “*Revised nomenclature for allergy for global use: Report of the Nomenclature Review Committee of the World Allergy Organization, October 2003*” *Journal of Allergy and Clinical Immunology*; 113(5):832-6.

NICE Clinical Guideline 16 (July 2004) “*Self-harm: the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care*”

SIGN (2012) “*British Guideline on the Management of Asthma. A national guideline*”

The Medicines Act (1968)

The Prescription Only Medicines (Human Use) Order 1997

TOXBASE (<http://www.toxbase.org/>) The National Poisons Information Service

O’ Driscoll BR, Howard LS, Davison AG (2008) “BTS guideline for emergency oxygen use in adult patients”. *Thorax* 2008; 63 (Suppl VI)

12 REFERENCES, ACKNOWLEDGEMENTS AND ASSOCIATED DOCUMENTS

12.1 Cross reference to other procedural documents

Deep Vein Thrombosis (DVT) / Pulmonary Embolism (PE) Policy

Development & Management of Organisation-wide Procedural Documents Policy and Guidance

Learning Development and Mandatory Training Policy

Patient Group Directions PGD Policy

Physiological Observations Policy

Resuscitation Policy

Risk Management Policy and Procedure

Staff Mandatory Training Matrix (Training Needs Analysis)

Training Prospectus

Untoward Event Reporting Policy and procedure

Venous Thromboembolism (VTE) Policy

All current policies and procedures are accessible to all staff on the Trust intranet (on the home page, click on 'Policies and Procedures'). Trust Guidance is accessible to staff on the Trust Intranet (within Policies and Procedures).

13. APPENDICES

For the avoidance of any doubt the appendices in this policy are to constitute part of the body of this policy and shall be treated as such. This should include any relevant Clinical Audit Standards.

Appendix A Medical Emergency (non – cardiac arrest) Treatment Guidelines - Adult

Appendix B Medical Emergency (non – cardiac arrest) Treatment Guidelines – children over 12 years

Appendix C Anaphylaxis Treatment Protocol

Medical Emergency (non – cardiac arrest) Treatment Guidelines - Adult

Medical Emergency	Drug	Dose (Adults)	Cautions / Comments
Anaphylaxis: first line treatment Adjunctive therapy	Adrenaline 1 in 1,000 ampules or pre filled syringe	Follow Trust anaphylaxis guidelines: 0.5ml by IM injection into a large muscle (for a thin person will need to be the lateral aspect of the thigh). Repeat if necessary after 5 minutes.	Patients taking non-cardiac selective beta blockers may not respond. Adrenaline may cause severe hypertension in patients taking any beta blocker. This drug can be given without a prescription or PGD in an emergency
	Chlorphenamine 10mg in 1ml	10mg, IM or slow IV (for IV admin dilute with 5 -10ml water for injection)	Injections can cause transient hypotension or CNS stimulation
	Hydrocortisone 100mg in 1ml	200mg IM or slow IV injection	Onset of action delayed for several hours. Can prevent later problems in severely affected patients
Medical emergencies requiring initial fluid challenge	Sodium Chloride 0.9% Intravenous fluid	250mls intravenous infusion over 5-10 minutes	Continue fluid challenge until the patient shows signs of hemodynamic improvement. Beware of transient responders and monitor closely. Consider effects of fluid overload in chronic heart disease.
Acute Angina	Glyceryl trinitrate 400microgram spray	1 or 2 doses under the tongue and then close mouth. May be repeated up to 3 times at 5 minute intervals in 15 minutes before requiring transfer to acute care setting if no response	Obtain ECG for review by medical practitioner. Be aware for possible signs of MI. A prescription or PGD is required for nursing staff to administer this drug.
Acute chest pain	Aspirin Dispersible 300mg	Stat dose 300mg aspirin given upon first onset of chest pain	Can be chewed or dispersed in water. If aspirin is given before the patient is transferred to an acute setting, this must be documented in the patient's records accompanying the patient. Aspirin interacts significantly with a number of other drugs, especially warfarin.

Medical Emergency	Drug	Dose (Adults)	Cautions / Comments
Seizures/epilepsy	Diazepam Emulsion 5mg in 1ml	10mg SLOW IV - max rate 1ml (5mg) per minute. Repeat once after 10 minutes if necessary.	Obtain relevant drug monograph and follow preparation instructions. Use only if facilities for reversing respiratory depression with mechanical ventilation at hand
	Diazepam rectal solution	10 - 20mg (elderly 10mg). Repeat once after 10 -15 minutes if necessary.	Use where facilities for resuscitation not available or if unable to administer IV diazepam Ensure the airway is clear Assist patient into recovery position Only administer prescribed diazepam if the seizure does not resolve within 10 minutes Stay with the patient. Consider secondary causes for seizure, such as head injury or sepsis Consider transfer to acute hospital
	Alternative medications where the rectal route is not appropriate (often used within the community setting):	Adults over 18 years (unlicensed indication) 10mg repeated once after 10 minutes if necessary.	Always follow the manufactures guidelines on administration.
	Midazolam Epistatus Buccal Liquid 10mg in 1 ml Buccolam (midazolam oromucosal) 10mg in 2 ml – pre-filled syringe	Adults over 18 (unlicensed) 10mg/2ml pre-filled syringe -the full amount of the prefilled syringe should be given slowly into the space between the gum and the cheek. If necessary, the dose can be divided between both sides of the mouth. Children over 12- 10mg/2ml pre-filled syringe - the full amount of the prefilled syringe should be given slowly into the space between the gum and the cheek. If necessary, the dose can be divided between both sides of the mouth.	Always follow the manufactures guidelines on administration. Seek emergency assistance if the seizure has not ceased following one dose of Buccolam. Always follow the manufactures guidelines on administration. Seek emergency assistance if the seizure has not ceased following one dose of Buccolam

Medical Emergency	Drug	Dose (Adults)	Cautions / Comments
<p>Hypoglycaemia: Initial management – with diabetes</p> <p>Mild hypoglycaemia – conscious and able to swallow:</p> <p>Moderate hypoglycaemia – conscious and able to swallow</p> <p>Severe hypoglycaemia – unconscious/drowsy unable to swallow</p>	<p>GlucoTabs 4g per tablet or GlucoJuice 59ml per bottle</p> <p>Administer 1 x 59ml GlucoJuice or 1-2 tubes of GlucoGel (10g glucose per tube).</p> <p>Intramuscular injection of glucagon 1mg (weight less than 25kg – 500mcg).</p>	<p>Administer 10g -20g fast acting glucose 3 - 5 x GlucoTabs (4g glucose per tablet) or if GlucoTabs not appropriate 1 x 59ml bottle of GlucoJuice. Repeat dose after 10 minutes if blood glucose remains below 4mmol/L</p> <p>Administer 1 x 59ml bottle. Ensure gag reflex is present. Repeat dose after 10 minutes if blood glucose remains below 4mmol/L</p> <p>Pre-filled injection Glucagon 1mg Kept within the hypobox.</p> <p>Check airway. Place patient in recovery position.</p> <p>If not effective after 5-10 minutes proceed to 50ml of 20% Glucose IV administered over 5 minutes, flush well with saline. ARRANGE TRANSFER TO SECONDARY CARE UNIT.</p>	<p>Refer to Trust policy for Hypoglycaemia:</p> <p>These drugs can be given without a prescription or PGD in an emergency situation.</p> <p>ALWAYS FOLLOW UP WITH A SLOWLY DIGESTED STARCHY CARBOHYDRATE Check glucose level. Once it is at 4mmol/L or over and the patient has recovered – Give a slice of bread OR a glass of milk OR a meal. Re-check blood glucose after 15 minutes. NOTE: usual treatment should be continued after a hypoglycaemic episode – however treatment may need review. Record episodes in Hypo Box Record Book. Top copy to be stapled in Medical notes in chronological order.</p> <p>Check capillary blood glucose every 15 minutes until above 4mmols/L. Ensure use of correct IV monograph Ensure administered into a large peripheral vein through a large bore cannula – care is required since this concentration is irritant especially if extravasation occurs <u>ARRANGE TRANSFER TO SECONDARY CARE</u></p>

Medical Emergency	Drug	Dose (Adults)	Cautions / Comments
Hypoglycaemia – without diabetes	Glucagon 1mg (In Hypobox)	Body weight less than 25kg – 500 micrograms Body weight over 25kg - 1mg subcutaneously Use if patient unconscious or unable to give oral glucose.	This drug can be given without a prescription or PGD in an emergency situation.
Emergency management (unconscious/unable to swallow)	IV Glucose 20%	50ml of 20% Glucose IV, administered over 5 minutes, flush well with saline. Administer a further 50ml if capillary blood glucose remains less than 4mmols/L	Check capillary blood glucose every 15 minutes until above 4mmols/L. Ensure use of correct IV monograph Ensure administered into a large peripheral vein through a large bore cannula – care is required since this concentration is irritant especially if extravasation occurs <u>ARRANGE TRANSFER TO SECONDARY CARE</u>
Sepsis/ Septic Shock/ Meningitis	Benzylpenicillin 1.2g vial Cefotaxime can be used as an alternative for patients allergic to penicillin	1.2g by IV injection. Administer over 3-5 minutes, max rate 300mg per minute.	Obtain relevant drug monograph and following preparation instructions. Refer to the Trust's Surviving Sepsis Proforma Administer oxygen therapy to maintain SpO ₂ 94-98%. Commence IV fluids 250ml crystalloid (0.9% sodium chloride) over 5-10minutes Obtain blood cultures if available but do not delay administration of antibiotics if cultures cannot be obtained. Transfer patient urgently to hospital.
Oculogyric crisis (A spasmodic movement of the eyeballs into a fixed position, usually upward, that persists for several minutes or hours)	Procyclidine 5mg in 1ml	5-10mg IM or IV (occasionally more than 10mg needed)	Obtain relevant drug monograph and following preparation instructions. Usually effective in 5-10 minutes but may need 30 minutes for relief

Medical Emergency	Drug	Dose (Adults)	Cautions / Comments
Respiratory Depression due to benzodiazepines	Flumazenil 100 micrograms in 1ml	200 micrograms IV over 15 seconds, then 100 micrograms at 60second intervals if required. Usual dose range 300 – 600 micrograms. Max total dose = 1mg.	Obtain relevant drug monograph and following preparation instructions. Flumazenil Injection is for slow intravenous injection or infusion. This drug is being used “out – side” of it’s product licence, where it should only be administered for the complete or partial reversal of the central sedative effects of benzodiazepines in anaesthesia and intensive care. Therefore it should only be administered under the supervision of an experienced clinician. The elderly population are more sensitive to the effects of benzodiazepines and should be treated with due caution. Be prepared to support ineffective respiratory effort using approved simple airway adjuncts and administration of high flow oxygen.
Due to opiates	Naloxone 400 micrograms in 1ml	0.4 – 2mg IV If no response repeat at 2-3 minute intervals up to a maximum of 10mg.	Obtain relevant drug monograph and following preparation instructions SC or IM has slower onset of action. Only use if IV route not feasible. This has a very short half life – proceed with caution with IV administration, especially in known IV Drug Users patients. May precipitate severe withdrawal symptoms.
Shortness of breath acute asthma (increasing asthma symptoms, PEF 50-75% best or predicted, no signs of acute severe asthma)	Salbutamol inhaler 100 micrograms per dose	administer salbutamol by repeated activations (up to 4 puffs) of a pMDI via an appropriate large volume spacer	Patient may experience fine tremor, headache or palpitations

Medical Emergency	Drug	Dose (Adults)	Cautions / Comments
acute severe asthma (unable to complete sentences, PR >110, RR >25, PEF 35-55% of best or predicted)	Salbutamol 5mg nebuliser solution + Supplementary oxygen	Salbutamol 5mg nebuliser (preferably oxygen driven) Oxygen to maintain SpO ₂ 94-98% or Via spacer, give 4 puffs initially and give a further 2 puffs every 2 minutes according to response up to maximum of 10 puffs	Consider transfer to acute Trust. Oxygen-driven nebulisers are preferred for nebulising bronchodilators because of the risk of oxygen desaturation while using air-driven compressors. Always consider alternative diagnosis for shortness of breath symptoms , such as: PE, MI, DVT; pneumothorax, LVF, pneumonia, anaphylaxis

APPENDIX B

Medical Emergency (non – cardiac arrest) Treatment Guidelines – children over 12 years

Medical Emergency	Drug	Dose (Children 12 years and over)	Cautions / Comments
Anaphylaxis : first line treatment - Adjunctive therapy -	Adrenaline 1 in 1,000 ampules or pre-filled syringe	Refer to Trust anaphylaxis guidelines: 0.5ml by IM injection into a large muscle (for a thin person this will need to be the lateral aspect of the thigh. Repeat if necessary after 5minutes.	Patients taking non-cardiac selective beta blockers may not respond. Adrenaline may cause severe hypertension in patients taking any beta blocker. Adrenaline auto-injector commonly available as 0.15 and 0.3 mg. The dose recommendations for adrenaline are intended for healthcare providers treating anaphylaxis therefore routine use of auto-injectors is discouraged. If an adrenaline auto-injector is the only available adrenaline preparation when treating anaphylaxis, healthcare providers should use it. This drug can be given without a prescription or PGD in an emergency
	Chlorphenamine 10mg in 1ml	10mg, IM or slow IV (for IV admin dilute with 5 -10ml water for injection)	Injections can cause transient hypotension or CNS stimulation
	Hydrocortisone 100mg in 1ml	200mg IM or slow IV injection	Onset of action delayed for several hours. Can prevent later problems in severely affected patients
Medical emergencies requiring initial fluid challenge	Sodium Chloride 0.9% Intravenous fluid	250ml intravenous infusion over 5-10 minutes	Continue fluid challenge until the patient shows signs of hemodynamic improvement. Beware of transient responders and monitor closely. Also consider effects of fluid overload in chronic heart disease.
Acute Angina Attack	Glyceryl trinitrate 400microgram spray	1 or 2 doses under the tongue and then close mouth. May be repeated up to 3 times at 5 minute intervals in 15 minutes before requiring transfer to acute care setting if no response	Obtain ECG for review by appropriate clinician/medical practitioner. Be aware for possible signs of MI. A prescription or PGD is required for nursing staff to administer this drug.

Medical Emergency	Drug	Dose (Children 12 years and over)	Cautions / Comments
Acute chest pain	Aspirin Dispersible 300mg	Stat dose 300mg aspirin given upon first onset of chest pain	Can be chewed or dispersed in water. If aspirin is given before the patient is transferred to an acute setting, this must be documented in the patient's records accompanying the patient. Aspirin interacts significantly with a number of other drugs, especially warfarin.
Seizures/Epileptic	Diazepam Emulsion 5mg in 1ml	10mg SLOW IV - max rate 1ml (5mg) per minute. Repeat if necessary after 10 minutes	Obtain relevant drug monograph and following preparation instructions Use only if facilities for reversing respiratory depression with mechanical ventilation at hand.
	Diazepam rectal solution	10mg – 20mg. Repeat once after 10 minutes if necessary.	Use where facilities for resuscitation not available or if unable to administer IV diazepam. Ensure the airway is clear Assist patient into recovery position Only administer prescribed diazepam if the seizure does not resolve within 10 minutes Stay with the patient Consider secondary causes for seizure, such as head injury or sepsis Consider transfer to acute hospital
	Alternative medications (often used within the community setting): Midazolam Epistatus Buccal Liquid 10mg in 1 ml Buccolam (midazolam oromucosal) 10mg in 2 ml	Adults over 18 years (unlicensed) 10mg repeated once after 10 minutes if necessary. Children over 12- 10mg/2ml pre-filled syringe - the full amount of the prefilled syringe should be given slowly into the space between the gum and the cheek. If necessary, the dose can be divided between both sides of the mouth.	Always refer to manufactures instructions for administration Always follow the manufactures guidelines on administration. Seek emergency assistance if the seizure has not ceased following one dose of Buccolam

Medical Emergency	Drug	Dose (Children 12 years and over)	Cautions / Comments
<p>Hypoglycaemia: Initial management – with diabetes</p> <p>Mild hypoglycaemia – conscious and able to swallow:</p> <p>Moderate hypoglycaemia – conscious and able to swallow</p> <p>Severe hypoglycaemia – unconscious/drowsy unable to swallow</p>	<p>GlucoTabs 4g per tablet or GlucoJuice 59ml per bottle</p> <p>Administer 1 x 59ml GlucoJuice or 1-2 tubes of GlucoGel (10g glucose per tube).</p> <p>Intramuscular injection of glucagon 1mg (children weighing less than 25kg – 500mcg).</p>	<p>Administer 10g -20g fast acting glucose 3 - 5 x GlucoTabs (4g glucose per tablet) or if GlucoTabs not appropriate 1 x 59ml bottle of GlucoJuice. Repeat dose after 10 minutes if blood glucose remains below 4mmol/L</p> <p>Administer 1 x 59ml bottle. Ensure gag reflex is present. Repeat dose after 10 minutes if blood glucose remains below 4mmol/L</p> <p>Pre-filled injection Glucagon 1mg Kept within the Hypobox.</p> <p>Check airway. Place patient in recovery position.</p> <p>If not effective after 5-10 minutes proceed to 50ml of 20% Glucose IV administered over 5 minutes, flush well with saline. ARRANGE TRANSFER TO SECONDARY CARE UNIT.</p>	<p>Refer to Trust policy for Hypoglycaemia:</p> <p>These drugs can be given without a prescription or PGD in an emergency situation.</p> <p>ALWAYS FOLLOW UP WITH A SLOWLY DIGESTED STARCHY CARBOHYDRATE Check glucose level. Once it is at 4mmol/L or over and the patient has recovered – Give a slice of bread OR a glass of milk OR a meal. Re-check blood glucose after 15 minutes. NOTE: usual treatment should be continued after a hypoglycaemic episode – however treatment may need review. Record episodes in Hypo Box Record Book. Top copy to be stapled in Medical notes in chronological order.</p> <p>Check capillary blood glucose every 15 minutes until above 4mmols/L. Ensure use of correct IV monograph Ensure administered into a large peripheral vein through a large bore cannula – care is required since this concentration is irritant especially if extravasation occurs <u>ARRANGE TRANSFER TO SECONDARY CARE</u></p>

Medical Emergency	Drug	Dose (Children 12 years and over)	Cautions / Comments
Hypoglycaemia – without diabetes Emergency management (unconscious/unable to swallow)	Glucagon 1mg (In Hypobox)	Body weight less than 25kg – 500 micrograms Body weight over 25kg - 1mg subcutaneously Use if patient unconscious or unable to give oral glucose.	This drug can be given without a prescription or PGD in an emergency situation.
	IV Glucose 20%	50ml of 20% Glucose IV, administered over 5 minutes, flush well with saline. Administer a further 50ml if capillary blood glucose remains less than 4mmols/L	Check capillary blood glucose every 15 minutes until above 4mmols/L. Ensure use of correct IV monograph Ensure administered into a large peripheral vein through a large bore cannula – care is required since this concentration is irritant especially if extravasation occurs <u>ARRANGE TRANSFER TO SECONDARY CARE</u>
Sepsis/Septic Shock/Meningitis	Benzylpenicillin 1.2g vial Cefotaxime can be used as an alternative for patients allergic to penicillin	1.2g by IV injection. Administer over 3-5 minutes, max rate 300mg per minute.	Obtain relevant drug monograph and following preparation instructions. Refer to the Trust's Surviving Sepsis Proforma Administer oxygen therapy to maintain SpO ₂ 94-98% Commence IV fluids (crystalloid) 250ml stat to maintain systolic BP or at least 90mmHg. Obtain blood cultures if available but do not delay giving antibiotics of blood cultures can not be obtained Transfer patient urgently to hospital.
Oculogyric crisis (A spasmodic movement of the eyeballs into a fixed position, usually upward, that persists for several minutes or hours)	Procyclidine 5mg in 1ml	5-10mg IM or IV (occasionally more than 10mg needed)	Obtain relevant drug monograph and following preparation instructions Usually effective in 5-10 minutes but may need 30 minutes for relief
Respiratory depression: due to benzodiazepines -	Flumazenil 100 micrograms in 1ml	200 micrograms IV over 15 seconds, repeated at 1 minute intervals if required. Maximum total dose = 1mg.	Obtain relevant drug monograph and following preparation instructions. Flumazenil Injection is for slow intravenous injection or infusion.

Medical Emergency	Drug	Dose (Children 12 years and over)	Cautions / Comments
due to opiates -			<p>This drug is being used “out – side” of it’s product licence, where it should only be administered for the complete or partial reversal of the central sedative effects of benzodiazepines in anaesthesia and intensive care.</p> <p>Therefore it should only be administered under the supervision of an experienced clinician.</p> <p>Be prepared to support ineffective respiratory effort using approved simple airway adjuncts and administration of high flow oxygen.</p> <p>Flumazenil Injection may be used concurrently with other resuscitative procedures.</p> <p>It should be administered only if the potential benefits to the patient outweigh the possible risks.</p>
	Naloxone 400 micrograms in 1ml	0.4 – 2mg IV. If no response repeat at 2-3 minute intervals up to a maximum of 10mg.	<p>Obtain relevant drug monograph and following preparation instructions</p> <p>SC or IM has slower onset of action. Only use if IV route not feasible.</p> <p>This has a very short half life – proceed with caution with IV administration, especially in known IV Drug Users patients.</p> <p>May precipitate severe withdrawal symptoms.</p>
<p>Shortness of breath</p> <p>acute asthma (increasing asthma symptoms, PEF 50-75% best or predicted, no signs of acute severe asthma)</p>	Salbutamol inhaler 100 micrograms per dose	administer salbutamol by repeated activations (up to 4 puffs) of a pMDI via an appropriate large volume spacer	Patient may experience fine tremor, headache or palpitations

Medical Emergency	Drug	Dose (Children 12 years and over)	Cautions / Comments
<p>acute severe asthma (unable to complete sentences, PR >110, RR >25, PEF 35-55% of best or predicted)</p>	<p>Salbutamol 5mg nebuliser solution + Supplementary oxygen</p>	<p>Salbutamol 5mg nebuliser (preferably oxygen driven) Oxygen to maintain SpO2 94-98% or Via spacer, give 4 puffs initially and give a further 2 puffs every 2 minutes according to response up to maximum of 10 puffs</p>	<p>Consider transfer to acute Trust. Oxygen-driven nebulisers are preferred for nebulising bronchodilators because of the risk of oxygen desaturation while using air-driven compressors.</p> <p>Always consider alternative diagnosis for shortness of breath symptoms , such as: PE, MI, DVT; pneumothorax, LVF, pneumonia, anaphylaxis</p>

ANAPHYLAXIS TREATMENT PROTOCOL

(adapted from Resuscitation Council Emergency Treatment of Anaphylactic Reactions Guidelines for Healthcare Providers, 2012)

1. DEFINITION

- 1.1 Anaphylaxis is a severe, life-threatening, generalised or systemic hypersensitivity reaction. This is characterised by a rapidly developing life-threatening airway and/or breathing and/or circulation problems usually associated with skin and mucosal changes.
- 1.2 Anaphylaxis can be triggered by many triggers, but those most commonly identified include food, drugs and venom. The relative importance of these vary considerably with age, with food being particularly important in children and medicinal products being much more common triggers in older people.

2. SIGNS AND SYMPTOMS OF ANAPHYLAXIS

Anaphylaxis is likely when all of the following 3 criteria are met:

- Sudden onset and rapid progression of symptoms
- Life-threatening Airway and/or Breathing and/or Circulation problems
- Skin and/or mucosal changes (flushing, urticaria, angioedema)

The following supports the diagnosis:

- Exposure to a known allergen for the patient

Remember:

- Skin or mucosal changes alone are not a sign of an anaphylactic reaction
- Skin and mucosal changes can be subtle or absent in up to 20% of reactions (some patients can have only a decrease in blood pressure, i.e. a circulation problem)
- There can also be gastrointestinal symptoms (e.g. vomiting, abdominal pain, incontinence)
- Pallor, limpness

- 2.1 Not everyone will necessarily experience all of these symptoms and some may experience them only in mild forms. If in doubt, refer to medical staff for further investigation. If there is marked difficulty in breathing or swallowing, and/or a sudden weakness or floppiness or sudden reduction in consciousness, seek urgent medical attention immediately.
- 2.2 Sudden onset and rapid progression of symptoms:
 - the patient will feel and look unwell
 - most reactions occur over several minutes. Rarely, reactions may be slower in onset

- the time of onset of an anaphylactic reaction depends on the type of trigger
- an intravenous trigger will cause a more rapid onset of reaction than stings which, in turn, tend to cause a more rapid onset than orally ingested triggers
- the patient is usually anxious and can experience a “sense of impending doom”

3. CARE AND TREATMENT OF ANAPHYLAXIS

3.1 Patients having an anaphylactic reaction in any setting should expect the following as a minimum:

1. recognition that they are seriously unwell
2. immediate call for help
3. initial assessment and treatments initiated based on an ABCDE approach
4. adrenaline therapy if indicated
5. investigation and follow-up by an allergy specialist

Patient positioning

3.2 All patients should be placed in a comfortable position. The following factors should be considered:

- patients with airway and breathing problems may prefer to sit up as this will make breathing easier.
- lying flat with, or without leg elevation, is helpful for patients with a low blood pressure (circulation problem). If the patient feels faint, do not sit or stand them up as this can cause cardiac arrest.
- patients who are breathing and unconscious should be placed on their side (recovery position).
- pregnant patients should lie on their left side to prevent caval compression

Triggers

3.3 If possible, remove the trigger causing the anaphylactic reaction:

- stop any drug/s suspected of causing an anaphylactic reaction (for example, stop intravenous infusion of an antibiotic or blood product)
- remove the stinger after a bee sting. Early removal is more important than the method of removal.
- after food-induced anaphylaxis, attempting to make the patient vomit is not recommended.
- do not delay definitive treatment if removing the trigger is not feasible.

Cardio-respiratory arrest following an anaphylactic reaction

3.4 Start cardiopulmonary resuscitation (CPR) immediately and follow current Trust policy for Resuscitation.

- 3.5 Staff must ensure that help is on its way, as early advanced life support (ALS) measures are essential. The intramuscular (IM) route for adrenaline is not recommended after cardiac arrest has occurred.

Anaphylaxis algorithm

- 3.6 The key steps for the treatment of an anaphylactic reaction are shown in the algorithm.

Administering Adrenaline

- 3.7 The best site for an IM injection is the antero-lateral aspect of the middle third of the thigh. The needle used for injection needs to be sufficiently long enough to ensure that the adrenaline is injected into the muscle.
- 3.8 Repeat the IM adrenaline dose if there is no improvement in the patient's condition. Further doses can be given at about 5-minute intervals according to the patient's response.
- 3.9 The Resuscitation Council (UK) has taken advice from several sources and a PGD is not required for anyone (whether they are a healthcare professional or not) to give intramuscular adrenaline for the purpose of saving a life in an emergency.
- 3.10 Auto-injectors are often given to patients at risk of anaphylaxis, for their own use.
- 3.11 Currently there are only two doses of adrenaline auto-injector commonly available: 0.15 and 0.3 mg. The more appropriate dose for an auto-injector should be prescribed for individual patients by an allergy specialist.
- 3.12 Healthcare professionals should be familiar with the use of the most commonly available auto-injector devices. The dose recommendations for adrenaline in this policy are intended for healthcare providers treating an anaphylactic reaction. If an adrenaline auto-injector is the only available adrenaline preparation when treating anaphylaxis, healthcare providers should use it.

Antihistamines

- 3.13 Antihistamines are a second line treatment for an anaphylactic reaction and should only be given after initial resuscitation.
- 3.14 Antihistamines (H1-antihistamine) may help counter histamine-mediated vasodilation and bronchoconstriction. Chlorphenamine should be injected slowly either by the intravenous (IV) or IM routes.

Steroids

- 3.15 Corticosteroids are a second line treatment for an anaphylactic reaction and should only be given after initial resuscitation.

- 3.16 They may help prevent or shorten protracted reactions. In asthma, early corticosteroid treatment is beneficial in adults and children. Hydrocortisone should be injected slowly either by the IV or IM route and must take care to avoid inducing further hypotension.

Other drugs – Bronchodilators

- 3.17 The signs and symptoms of a severe anaphylactic reaction and life threatening asthma attack, can be similar.
- 3.18 If the patient has asthma-like features alone, follow the British Thoracic Society – SIGN asthma guidelines (www.brit-thoracic.org.uk).
- 3.19 If the symptoms are likely to be due to anaphylaxis rather than asthma alone, consider bronchodilator therapy with salbutamol (inhaled or IV), ipratropium (inhaled), aminophylline (IV) or magnesium (IV). Remember that intravenous magnesium is a vasodilator and can cause hot flushes and make hypotension worse.

4. POST CARE

- 4.1 All patients who have had a suspected anaphylactic should be treated and then observed for at least six hours in a clinical area with facilities for treating life-threatening airway, breathing and circulation problems. This will require patients being transferred from a Somerset Partnership Trust care facility to an acute District General Hospital for further assessment and monitoring due to the possible early recurrence of symptoms.

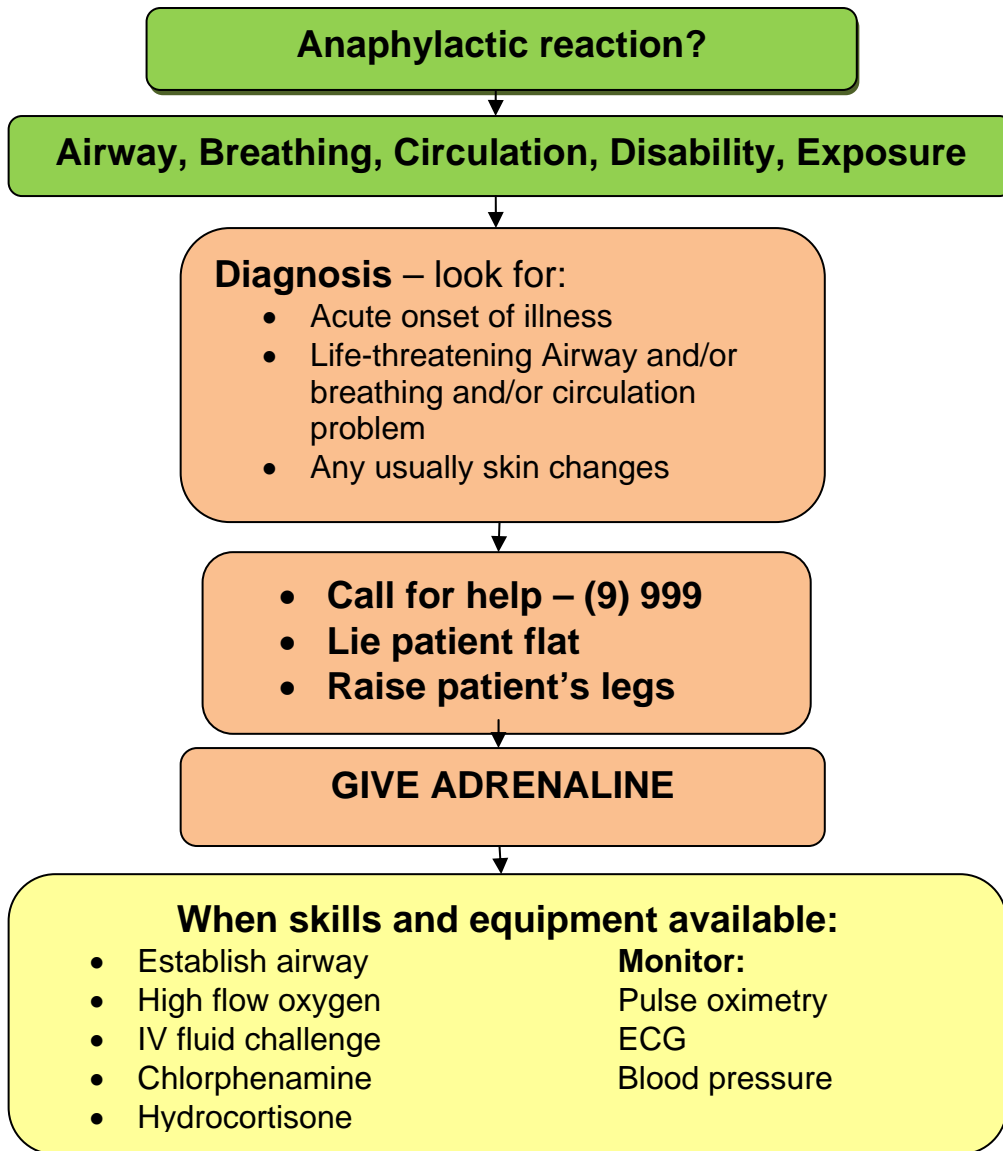
5. RECORD KEEPING

- 5.1 To help confirm the diagnosis of an anaphylactic reaction and identify the most likely trigger, it is useful for the accepting acute District General Hospital to have information on the following:
- a description of the reaction with circumstances and timings to help identify potential triggers
 - a list of administered treatments
 - copies of relevant patient records
 - results of any investigations already completed
- 5.2 All patients with known allergies or sensitivity reactions, must wear a red identification band whilst an inpatient. Details of any known allergies or sensitivities must also be recorded on the front of the MAR chart for all patients and details recorded about any history of anaphylactic reaction in the evaluation record.

6. REPORTING OF REACTION

- 6.1 Adverse drug reactions that include an anaphylactic reaction, should be reported to the Medicines and Healthcare products Regulatory Agency (MHRA) using the yellow card scheme (www.mhra.gov.uk). The British National Formulary (BNF) includes copies of the Yellow Card at the back of each edition. All cases of fatal anaphylactic reaction must be discussed further with the coroner

7. RESUSCITATION COUNCIL UK (2012)



1. Life – threatening problems:

Airway: swelling, hoarseness, stridor

Breathing: rapid breathing, wheeze, fatigue, cyanosis, $S_pO_2 < 92\%$, confusion

Circulation: pale, clammy, low blood pressure, faintness, drowsy/coma, tachycardia

2. Adrenaline (give IM unless experienced with IV adrenaline)

IM doses of 1:1000 adrenaline (repeat after 5 minutes if no better)

- Adult: 500 micrograms IM (0.5ml)
- Child more than 12 years: 500 micrograms IM (0.5ml)
- Child 6-12 years: 300 micrograms IM (0.3ml)
- Child less than 6 years: 150 micrograms IM (0.15ml)

3. IV fluid challenge:

Adult – 500 – 1000ml

Child – crystalloid 20ml/kg

Stop IV colloid if this be the cause of anaphylaxis

4. Chlorphenamine
(IM or slow IV)

- | | |
|------------------------------------|-------------------|
| Adult or child more than 12 years: | 10 mg |
| Child 6-12 years: | 5 mg |
| Child 6 months to 6 years: | 2.5 mg |
| Child less than 6 months: | 250 micrograms/kg |

5. Hydrocortisone
(IM or slow IV)

- | |
|--------|
| 200 mg |
| 100 mg |
| 50 mg |
| 25 mg |

8. REFERENCES

- Alves B, Sheikh A. (2001) *“Age specific aetiology of anaphylaxis”*. Arch Dis Child; 85(4):348.
- Pumphrey RS (2004) *“Fatal anaphylaxis in the UK, (1992-2001)”* Novartis Found Symp; 257:116-28; discussion 128-32, 157-60, 276-85.
- Pumphrey RS (2003) *“Fatal posture in anaphylactic shock”*. Journal of Allergy and Clinical Immunology; 112(2):451-2.
- Resuscitation Council UK (2012) *“Emergency treatment of anaphylactic reactions Guidelines for healthcare providers”*
- Rowe BH, Spooner C, Ducharme FM, Bretzlaff JA, Bota GW (2001) *“Early emergency department treatment of acute asthma with systemic corticosteroids”*. Cochrane Database Systemic Review (1):CD002178.
- Soar J, Deakin CD, Nolan JP, Abbas G, Alfonzo A, Handley AJ, et al (2005) *“European Resuscitation Council guidelines for resuscitation. Section 7. Cardiac arrest in special circumstances”*. Resuscitation ;67 Supplement1:S135-70
- Simons FE, Gu X, Simons KJ (2001) *“Epinephrine absorption in adults: intramuscular versus subcutaneous injection”*. Journal of Allergy and Clinical Immunology. 108(5):871-3.
- Smith M, Iqbal S, Elliott TM, Everard M, Rowe BH (2003) *“Corticosteroids for hospitalised children with acute asthma”*. Cochrane Database Systemic Review (2):CD002886.
- Visscher PK, Vetter RS, Camazine S (1996) *“Removing bee stings”*. Lancet 348(9023):301-2.