



Emergency Treatment of Anaphylaxis Policy and Guidelines

This procedural document supersedes: PAT/EC 3 v.7 – Policy and Guidelines for the Emergency Treatment of Anaphylaxis



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Date written/revised:	April 2022
Approved by:	Patient Safety Review Group
Date of approval:	6 May 2022
Date issued:	July 2022
Next review date:	April 2025
Target audience:	Clinical staff, Trust-wide

Amendment Form

Please record brief details of the changes made alongside the next version number. If the procedural document has been reviewed **without change**, this information will still need to be recorded although the version number will remain the same.

Version	Date Issued	Brief Summary of Changes	Author
Version 8	May 2022	Changes to some job titles and updates following release of 2021 Resuscitation Council (UK) Guidelines: Emergency treatment of anaphylactic reactions (with links to NICE guidance).	Nicola Vickers Michelle Thomas
Version 7	13 July 2018	Changes to trust name and some job titles. Amendment to discharge and referral process for the emergency department.	Nicola Vickers
Version 6	July 2016	Minimal changes to Duties & Responsibilities, monitoring compliance through incident reporting and training.	Nicola Vickers
Version 5	July 2013	Changes to include NICE clinical Guideline 134 recommendations- PLEASE READ IN FULL	Lisette Caygill

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1. INTRODUCTION

Increasing numbers of people are presenting to UK hospitals with anaphylaxis and despite previous guidelines, at least 50% of reactions are not treated with IM adrenaline (the first line treatment of anaphylaxis) and treatment, investigation, and follow-up of patients with anaphylaxis is suboptimal.

There are no randomised controlled clinical trials in humans providing unequivocal evidence for the optimal treatment of anaphylaxis; such evidence is unlikely to be forthcoming. Nonetheless, the evidence-base for specific management strategies has increased, and international guidelines have been updated.

Experts from Resuscitation Council UK's Anaphylaxis Working Group updated the guidelines in 2021, compiling insight and knowledge to develop a series of Guidelines that provide the best chance of survival for a person experiencing anaphylaxis.

The updated guidelines provide:

- an updated consensus about the recognition and treatment of anaphylaxis in all healthcare settings.
- a focus on the treatments that patients with anaphylaxis should receive, that are relevant to all healthcare providers.
- recommendations for treatment that are easy to implement, and that will be appropriate for most anaphylaxis reactions.
- new guidance on the treatment of refractory anaphylaxis.

The guidance does not cover every possible anaphylaxis scenario and has been written to be as simple as possible to facilitate teaching, learning and implementation. Improved implementation should reduce harm and deaths from anaphylaxis.

This policy will apply to all staff working within Doncaster & Bassetlaw Teaching Hospitals NHS Foundation Trust and those community-based staff also employed by this Trust.

The policy is intended to provide treatment protocols for adults and children.

The policy is not intended to replace existing advice for defined groups in hospital or to influence the essential individual advice and management provided in specialist areas (Anaesthetics). The Association of Anaesthetists (anaesthetists.org) and the British Society for Allergy and Clinical Immunology (bsaci.org) have published specific guidance for the treatment of anaphylaxis associated with anaesthesia. Additional resources relating to the treatment and investigation of peri-operative anaphylaxis - including referral pathways - can be found at nationalauditprojects.org.uk/NAP6home.

2. PURPOSE

- To produce a comprehensive set of guidelines regarding the treatment of anaphylaxis.
- To promote consistency in the emergency treatment of anaphylaxis.
- To provide a framework which facilitates early recognition and diagnosis of anaphylaxis.
- To outline an immediate course of action to be taken in the event of anaphylaxis.
- To determine the roles and responsibilities of clinical staff.
- To establish an ongoing review and audit process for the emergency treatment of anaphylaxis.

3. DUTIES AND RESPONSIBILITIES

It is the responsibility of the **Patient Safety Review Group** to approve the policy.

It is the responsibility of **Resuscitation Services** under the guidance of the **Clinical Education Manager** and the **Patient Safety Review Group** to review and update the policy and ensure implementation and compliance throughout the organisation.

It is the responsibility of the **Policy Co-ordinator** to ensure policy distribution across the organisation.

It is the responsibility of the **Managers and Matrons** in the Clinical Divisions to ensure that staff are provided with the opportunity to complete training appropriate to their role.

It is the responsibility of **individual staff members** to complete the training appropriate to their roles.

4. RECOGNITION AND DIAGNOSIS

Anaphylaxis can be caused by a broad range of triggers, but the most common allergens identified include food, drugs, and venom. There are clear age distributions for both hospitalisation and fatalities that vary by trigger. Food is the most common cause of anaphylaxis in young people. Pre-school-aged children have the highest rate of hospitalisation due to food anaphylaxis, but a disproportionately low rate of fatal outcomes. The greatest risk from fatal food allergy appears to be in teenagers and adults up to age 30 years. In contrast, fatal anaphylaxis due to drugs is rare in children, and is highest in the elderly.

A reaction may occur following exposure to a variety of different agents such as foods, vaccinations, and contrast media. Latex allergy should also be considered due to increased prevalence - Glove Use Policy (CORP/HSFS 13).

Virtually any food or class of drug can be implicated as a cause of anaphylaxis, although the classes of foods and drugs responsible for many reactions are well-described. In around one third of cases, a specific food or drug trigger may not be evident. A significant number of cases of

anaphylaxis are termed “idiopathic”, either because a trigger cannot be identified, or a non-immune mechanism is relevant. Nonetheless, the acute treatment of these patients is the same.

Recognition of anaphylaxis is based on:

- Sudden onset and rapid progression of symptoms
- Airway and/or Breathing and/or Circulation problems
- Skin and/or mucosal changes (flushing, urticaria, angioedema) – but these may be absent in up to 20% of cases.

Other symptoms include rhinitis, conjunctivitis, abdominal pain, vomiting diarrhoea, and a sense of impending doom.

Cardiovascular collapse is a common manifestation, especially in response to intravenous drugs or stings, and is caused by vasodilatation and loss of plasma from the blood compartment. In rare events manifestations may be delayed by a few hours (adding to diagnostic difficulty) or persist for more than 24 hours.

4.1 Cautions and Considerations for Treatment

All who treat anaphylaxis should be aware of the potential for confusion between anaphylaxis and a panic attack. Victims of previous anaphylaxis may be particularly prone to panic attacks if they think they have been re-exposed to the allergen that caused a previous problem. The sense of impending doom and breathlessness leading to hyperventilation are symptoms that resemble anaphylaxis in some ways. Whilst there is no hypotension, pallor, wheeze, or urticarial rash/swelling, there may sometimes be an erythematous rash associated with anxiety which adds to the diagnostic difficulty. A mild anaphylactic reaction which triggers panic causes diagnostic difficulty. Problems can also arise with vasovagal attacks after immunisation procedures, but the absence of rash, breathing difficulties, and swelling is a useful distinguishing feature as is the slow pulse of a vasovagal attack compared with the rapid pulse of an anaphylactic episode.

5. SUSPECTED ANAPHYLAXIS - IMMEDIATE ACTION

The guidelines for initial treatment are summarised in the algorithm shown in Appendix 1 (for adults and children).

- Summon help – call **2222** or **999** if required.
- Initiate patient assessment based on **ABCDE** approach.
- Remove suspected allergen where possible.
- All victims should recline in a position of comfort. Lying flat with or without leg elevation may be helpful for hypotension but unhelpful for breathing difficulties. Changes in posture from supine to standing or sitting upright have been associated with cardiovascular collapse

and death during anaphylaxis. The change in posture further reduces venous return to the heart; this can lead to a further reduction in cardiac output and can compromise myocardial perfusion. **Pregnant patients should lie on their left side to prevent caval compression.**

- Initially, give the highest concentration of oxygen possible, using a mask with an oxygen reservoir. As soon as is feasible, adjust the inspired oxygen concentration to achieve an oxygen saturation of 94 – 98% (in patients at risk of hypercapnic respiratory failure, consider a target range of 88 – 92%). If the patient’s trachea has been intubated, ventilate the lungs with an appropriate inspired concentration of oxygen. Use blood gas measurements to guide further oxygen and ventilation therapy.
- Adrenaline should be administered intramuscularly to all patients with clinical signs of shock, airway swelling, or definite breathing difficulty, and will be rapidly absorbed. The best site for IM injection is the anterolateral aspect of the middle third of the thigh. The needle used for injection must be sufficiently long to ensure that the adrenaline is injected into muscle: use a green (21G) or blue (23G) needle. **This can be administered without a prior prescription for suspected life-threatening anaphylaxis.**
- Manifestations such as inspiratory stridor, wheeze, cyanosis, pronounced tachycardia, and decreased capillary filling alerts the responder to the likelihood of a severe reaction.
- Cardiopulmonary resuscitation must be performed in the event of cardiopulmonary arrest.

5.1 Administration of Intramuscular (I.M) Adrenaline (Epinephrine)

Adults

A dose of 500 micrograms adrenaline 1: 1000 solution (0.5 ml) should be administered intramuscularly and repeated after about 5 minutes in the absence of clinical improvement or if deterioration occurs after the initial treatment, especially if consciousness becomes, or remains impaired because of hypotension.

Children

The dose of adrenaline 1:1000 solution administered in children is determined by age. (Table below)

> 12 years	up to 500 micrograms IM 300 micrograms if child is small or pre pubertal	0.5 mL of 1 mg/ml 0.3 mL of 1 mg/ml
6 - 12 years	300 micrograms IM	0.3 mL of 1 mg/ml
6 months – 6 years	150 micrograms IM	0.15 mL of 1 mg/ml
< 6 months	100 – 150 micrograms IM	0.1 – 0.15ml of 1 mg/ml

As for adults, repeat the IM adrenaline dose after 5 minutes if there is no improvement in the patient’s condition.

There is large inter-individual variability in the response to adrenaline, with peak absorption occurring around 5–10 min after IM injection. If there is no improvement in Breathing or Circulation problems despite two doses of adrenaline, follow the algorithm for refractory Anaphylaxis. Pallor can occur following adrenaline, due to vasoconstriction. This might be misinterpreted as ongoing cardiovascular compromise or anaphylaxis and thereby can increase the risk of adrenaline overdose. This is a particular concern in small children, who may remain pale following 2–3 doses of adrenaline. A significantly raised BP is a key indicator of adrenaline overdose.

Measure vital signs (respiratory rate, oxygen saturations, heart rate, BP, level of consciousness) and auscultate for wheeze to monitor the effect of treatment and assess if further doses of adrenaline are required.

5.2 Intravenous Administration of Adrenaline

Intravenous adrenaline should only be administered by those who have been trained in its use for the management of anaphylaxis.

Intravenous administration of adrenaline in this situation is **hazardous** and should be given in a dilution of **at least 1:10,000 (never 1:1,000)**. For adults titrate IV adrenaline using 50 microgram boluses according to response and for children give 1 microgram/kg. Intravenous injection of adrenaline must be reserved for patients with profound shock that is immediately life threatening and for special indications, e.g. during anaesthesia. ***This should only be administered by a doctor who has received training in the use of intravenous adrenaline.***

The injection should be given as slowly as seems reasonable while monitoring heart rate and the electrocardiogram.

5.3 Intravenous Fluid Administration by First Medical Responders

In the presence of hypotension/shock, or poor response to an initial dose of adrenaline:

- Secure IV access and give a rapid IV fluid bolus (500 – 1000 mL in an adult or 10 mL/kg in a child) and monitor the response. Use non-glucose-containing crystalloids that contain sodium in the range 130 – 154 mmol/L (0.9% sodium chloride, Hartmann's) for initial resuscitation.
- Give further fluids as necessary. A large volume (up to 3 – 5 litres in adults) may be needed for severe anaphylactic shock. Use a non-glucose-containing crystalloid (Hartmann's or Plasma-Lyte) rather than 0.9% sodium chloride to reduce the risk of causing hyperchloremia.
- Give fluids via the IO route if IV access is delayed.

- Colloid solutions are not recommended for treatment of anaphylaxis and are a recognised cause of anaphylaxis. Stop a colloid infusion in any patient presenting with suspected anaphylaxis.

6. REFRACTORY ANAPHYLAXIS

There are now 2 algorithms; Initial treatment of anaphylaxis, with emphasis on repeating the dose of adrenaline after 5 minutes and giving an IV fluid bolus if Airway/Breathing/Circulation problems persist and Treatment of refractory anaphylaxis, defined as anaphylaxis where there is no improvement in respiratory or cardiovascular symptoms despite two appropriate doses of IM adrenaline.

The algorithm for the treatment of refractory anaphylaxis (appendix 2) is designed to support clinicians, and not to replace the expertise of experienced critical care clinicians.

- Critical care support should be sought early – 2222 or 999
- Maintenance adrenaline therapy is critical, using a low-dose IV adrenaline infusion. If an IV infusion cannot be administered continue to give IM adrenaline after every 5 minutes while life-threatening cardiovascular and respiratory features persist.
- Adrenaline therapy should be supported with an initial rapid fluid bolus and maintenance fluid therapy.
- IV adrenaline infusions are important in the management of all aspects of refractory anaphylaxis – not just cardiovascular shock.
- Prolonged resuscitation and critical care support (hours to days) may be required.

7. SUBSEQUENT MANAGEMENT

7.1 Administration of Antihistamines and Corticosteroids

Antihistamines

Antihistamines are not recommended as part of the initial emergency treatment for anaphylaxis. Antihistamines have no role in treating respiratory or cardiovascular symptoms of anaphylaxis but can be used to treat skin symptoms that often occur as part of allergic reactions including anaphylaxis. ***Their use must not delay treatment of respiratory or cardiovascular symptoms of anaphylaxis (using adrenaline and IV fluids).***

Antihistamines can be helpful in alleviating cutaneous symptoms (whether these are due to anaphylaxis or non-anaphylaxis allergic reactions) but must not be given in preference to adrenaline to treat anaphylaxis. In the presence of ongoing Airway/Breathing/ Circulation problems of anaphylaxis, give further IM adrenaline and seek expert advice.

Once a patient has been stabilised, use a non-sedating oral antihistamine (cetirizine) in preference to chlorphenamine which causes sedation. If the oral route is not possible, chlorphenamine can be given by intravenous or intramuscular injection, but note that such H1-receptor antihistamines can cause hypotension when given as a rapid IV bolus.

Recommended doses for oral cetirizine for an allergic reaction are shown in the table below:

Age	Dose of oral cetirizine
< 2 years	250 micrograms/kg
2–6 years	2.5–5 mg
6–11 years	5–10 mg
12+ years	10–20 mg
Adults	10–20 mg

Steroids

The routine usage of corticosteroids to treat anaphylaxis is not advised. Consider giving steroids after initial resuscitation for refractory reactions or ongoing asthma/shock. Steroids must not be given preferentially to adrenaline. The primary action of corticosteroids is the regulation of the late-phase (rather than early-phase) inflammatory response. However, there is little evidence that corticosteroids help shorten protracted symptoms or prevent biphasic reactions.

In asthma, early corticosteroid treatment may be beneficial in adults and children. Corticosteroids may be indicated where an acute asthma exacerbation may have contributed to the severity of anaphylaxis. Steroids should be given by the oral route where possible.

7.2 Beta 2 Agonist Administration by First Medical Responders

Bronchodilators

The presenting signs and symptoms of severe anaphylaxis and life-threatening asthma can be the same. Individuals presenting with asthma in the context of possible exposure to a known allergen (so anaphylaxis is a differential diagnosis) should receive treatment with intramuscular adrenaline. Consider inhaled bronchodilator therapy with salbutamol and/or ipratropium. There are no data to support the choice of one bronchodilator above another in the treatment of anaphylaxis however, bronchodilators should not be used as an alternative to further parenteral treatment with adrenaline in the presence of persisting respiratory problems.

Further guidance on treatment of bronchospasm in severe asthma can be found in the asthma guidelines published by the British Thoracic Society and Scottish Intercollegiate Guideline Network (SIGN) (www.brit-thoracic.org.uk)

7.3 Investigations in Adults and Young People (16 Years or Older) & Children

The time of onset of anaphylaxis is the time when symptoms were first noticed. It is important this time is recorded accurately. After a suspected anaphylactic reaction in adults or young people aged 16 years or older, take timed blood samples for mast cell tryptase testing as follows:

- a) Minimum: one sample, ideally within 2 h (when peak tryptase levels generally occur) and no later than 4 h after onset of symptoms.
- b) Ideally: take three timed samples:
 - 1) An initial sample as soon as feasible – but do not delay treatment to take sample.
 - 2) A second sample 1 – 2 h (but no later than 4 h) after onset of symptoms.
 - 3) A third sample at least 24 h after complete resolution, or in convalescence (for example, at a follow-up allergy clinic). This sample is important as it provides a baseline tryptase value – some individuals have an elevated baseline level and may be at greater risk of anaphylaxis in response to some triggers. Serial samples have better specificity and sensitivity than a single measurement in confirming a diagnosis of anaphylaxis.

Sample requirements

- Either serum ('liver function test' tube) or plasma samples are acceptable in most laboratories. • Sample volumes as little as 0.5 mL are usually sufficient, but >2 mL is preferred.
- Record the timing of each sample accurately on the request form, on the sample tube and in the clinical records. State on the request form (and in the clinical records) how many minutes/hours after the onset of symptoms the sample was taken. This will enable tracking of changes in tryptase levels over time, which is essential for interpretation.
- Specimens are stable for up to two days at room temperature, up to seven days refrigerated at 2 – 8°C, and for longer if frozen at – 20°C. Note that samples stored for longer than these times may still provide useful information and should therefore be submitted for analysis.
- Consult your local laboratory if you have any queries.

7.4 Assessment after the Suspected Anaphylactic Reaction

Document the acute clinical features of the suspected anaphylactic reaction which may include rapidly developing life-threatening problems involving the airway [pharyngeal or laryngeal oedema], breathing [bronchospasm with tachypnea], circulation [hypotension and/or tachycardia], associated skin and mucosal changes.

Record the onset of the reaction and the circumstances immediately before the onset of symptoms to help to identify the possible trigger.

An Anaphylaxis Registry has been established in the UK. Healthcare professionals are encouraged to report all anaphylaxis events. All cases of fatal anaphylaxis must be reported to the coroner (or equivalent). Adverse drug reactions that involve anaphylaxis should be reported to the Medicines and Healthcare products Regulatory Agency (MHRA) using the yellow card scheme (<https://www.gov.uk/report-problem-medicine-medical-device>).

8. OBSERVATION & ADMISSION

8.1 Observation for Adults & Young People (16 Years or Older)

Patients who have had suspected anaphylaxis should be treated and then observed in a clinical area with facilities for treating life-threatening ABC problems. Some patients experience further symptoms following resolution of the initial reaction. This may be a true biphasic reaction but can also represent further allergen absorption (e.g. if there is residual food allergen present in the gut, eating may cause further intestinal absorption of the allergen, resulting in further symptoms). It may be advisable for patients to eat some food at least one hour prior to discharge to mitigate against the risk of subsequent symptoms after leaving hospital. In some patients, postural hypotension has been reported after both anaphylaxis and milder allergic reactions. Before discharge, patients should be asked to stand up and be assessed for dizziness. Measure blood pressure if appropriate. If the patient is unable to stand due to an existing disability – sit upright if possible and assess.

Adults and young people aged 16 years or older who have emergency treatment for suspected anaphylaxis should be observed for 6-12 hours from the onset of symptoms, depending on their response to emergency treatment. In people with reactions that are controlled promptly and easily, a shorter observation period may be considered if they receive appropriate post-reaction care prior to discharge.

8.2 Admission for Children (Younger than 16 Years)

Children younger than 16 years who have emergency treatment for suspected anaphylaxis should be admitted to hospital under the care of a paediatric medical team.

9. DISCHARGE REQUIREMENTS

9.1 Referral

After emergency treatment for suspected anaphylaxis, patients should be offered a referral to a specialist allergy service. Advice on referral and investigations can be obtained through the Duty Immunologist at Northern General Hospital (via switchboard).

If the patient is being discharged from the emergency department, the request for a referral to be completed should be included in the discharge letter to the GP.

9.2 Adrenaline Auto-Injector

Prescription of adrenaline auto-injectors is appropriate for all patients who have had anaphylaxis, except for those with a drug-induced reaction (unless it is difficult to avoid future exposure to the trigger drug).

Individuals provided with adrenaline auto-injectors on discharge from hospital must be given instructions and training, and have appropriate follow-up, including contact with the patient's general practitioner.

Following advice from MHRA, NICE guidelines currently recommend that patients prescribed adrenaline auto-injectors should always **have two devices** available. Patients (and those close to them, such as immediate family members, friends, carers) should receive training in their use, and practise regularly using a suitable training device so that they will know what to do in an emergency

9.3 Patient Information and Support before Discharge

Before discharge a healthcare professional with the appropriate skills and competencies should offer the patient (or, as appropriate, their parent and/or carer) the following:

- Information about anaphylaxis, including signs and symptoms of an anaphylactic reaction.
- Information about the risk of a biphasic reaction.
- Information on what to do if an anaphylactic reaction occurs (use the adrenaline auto-injector and call emergency services).
- Link to a demonstration of the correct use of the adrenaline auto-injector and when to use it.
- Advice about how to avoid the suspected trigger (if known).
- Information about the need for referral to a specialist allergy service and the referral process.
- Information about patient support groups.

Any person who has a ReSPECT form (Recommended Summary Plan for Emergency Care and Treatment) or similar emergency treatment plan should have details of serious allergies and how to treat them recorded on it.

Further advice can be obtained from the duty immunologist at the Northern General Hospital Sheffield via switchboard.

10. STORAGE AND HANDLING OF MEDICINES

All staff should be aware of the location and availability of drugs and equipment required for the emergency treatment of anaphylaxis.

11. TRAINING/ SUPPORT

The training requirements of staff will be identified through a training needs analysis. Clinical staff who are expected to complete the training must do so every 2 years.

Please note: The training requirements of staff will be identified through a learning needs analysis (LNA).

Role specific education will be co-ordinated/delivered by the topic lead. Alternatively, training may be accessed via an approved e-learning platform where available.

12. MONITORING COMPLIANCE WITH THE PROCEDURAL DOCUMENT

All instances of anaphylaxis must be reported on Datix and subsequently investigated by the Ward/Department Manager.

What is being Monitored	Who will carry out the Monitoring	How often	How Reviewed/ Where Reported to
Overall compliance with the policy.	Clinical Education & Ward/department Managers	As instances are reported via datix	Any failure to comply with the policy will be reported and discussed at PSRG and divisional governance groups.

Any other audit which is undertaken within the Trust will be shared collaboratively with Resuscitation Services.

13. DEFINITIONS

Anaphylaxis

The World Allergy Organisation Anaphylaxis Committee defines anaphylaxis as:

"A serious systemic hypersensitivity reaction that is usually rapid in onset and may cause death. Severe anaphylaxis is characterized by potentially life-threatening compromise in airway, breathing and/or the circulation, and may occur without typical skin features or circulatory shock being present.

Refractory anaphylaxis

Defined as anaphylaxis requiring ongoing treatment (due to persisting respiratory or Cardiovascular symptoms) despite two appropriate doses of IM adrenaline.

14. EQUALITY IMPACT ASSESSMENT

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are disadvantaged over others. Our objectives and responsibilities relating to equality and diversity are outlined within

our equality schemes. When considering the needs and assessing the impact of a procedural document any discriminatory factors must be identified.

An Equality Impact Assessment (EIA) has been conducted on this procedural document in line with the principles of the Equality Analysis Policy (CORP/EMP 27) and the Fair Treatment For All Policy (CORP/EMP 4).

The purpose of the EIA is to minimise and if possible, remove any disproportionate impact on employees on the grounds of race, sex, disability, age, sexual orientation or religious belief. No detriment was identified. See Appendix 3.

15. ASSOCIATED TRUST PROCEDURAL DOCUMENTS

This procedural document should be used in conjunction with:

Equality Analysis Policy - **CORP/EMP 27**

Fair Treatment for All Policy - **CORP/EMP 4**

Glove Use Policy - **CORP/HSFS 13**

Hand Hygiene Policy - **PAT/IC 5**

Mental Capacity Act 2005 Policy and Procedure, including Deprivation of Liberty Safeguards (DoLS) - **PAT/PA 19**

Privacy and Dignity Policy - **PAT/PA 28**

Resuscitation Policy - **PAT/EC 1**

16. DATA PROTECTION

Any personal data processing associated with this policy will be carried out under 'Current data protection legislation' as in the Data Protection Act 2018 and the UK General Data Protection Regulation (GDPR) 2021.

For further information on data processing carried out by the trust, please refer to our Privacy Notices and other information which you can find on the trust website:

<https://www.dbth.nhs.uk/about-us/our-publications/information-governance/>

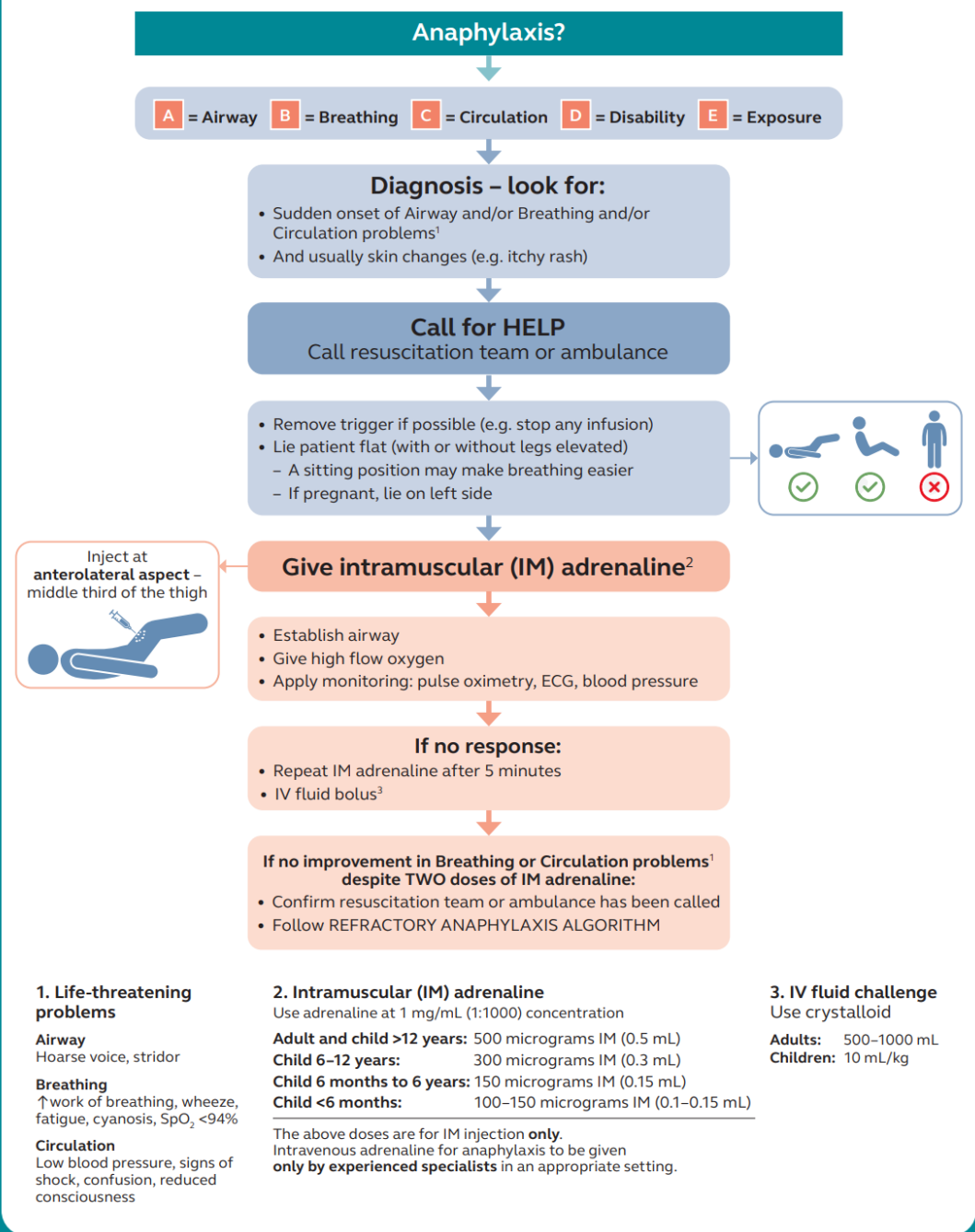
17. REFERENCES

The Emergency Treatment of Anaphylactic Reactions. Guidelines for Healthcare providers. Resuscitation Council (UK) Guidelines May 2021 <https://www.resus.org.uk/library/additional-guidance/guidance-anaphylaxis/emergency-treatment>

Anaphylaxis: assessment to confirm an anaphylactic episode and the decision to refer after emergency treatment for a suspected anaphylactic episode. NICE Clinical Guideline 134 December 2011.

APPENDIX 1 –SUSPECTED ANAPHYLAXIS ALGORITHM

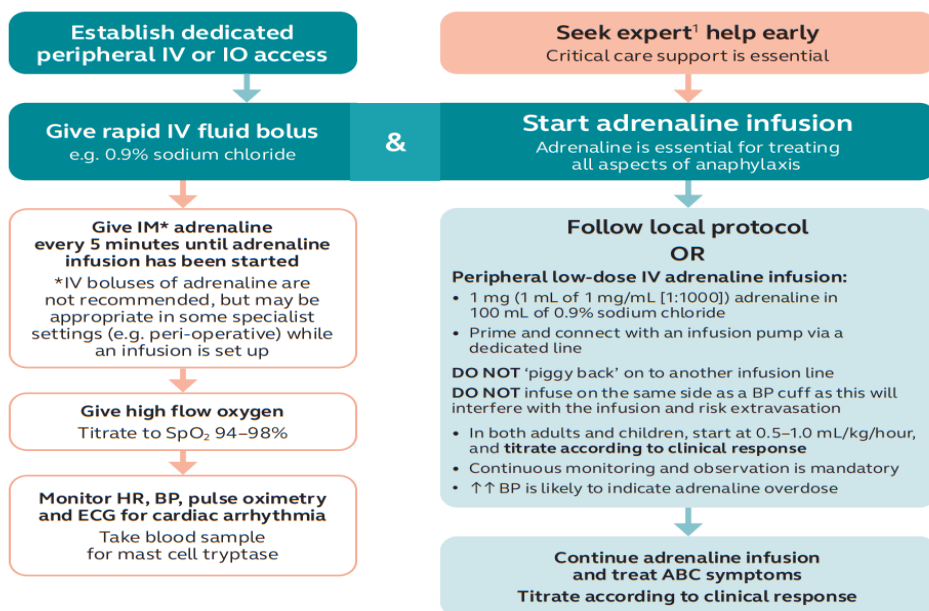
Anaphylaxis



APPENDIX 2 – REFRACTORY ANAPHYLAXIS ALGORITHM

Refractory anaphylaxis

No improvement in respiratory or cardiovascular symptoms despite 2 appropriate doses of intramuscular adrenaline



¹Intravenous adrenaline for anaphylaxis to be given only by experienced specialists in an appropriate setting.

A = Airway
Partial upper airway obstruction/stridor:
 Nebulised adrenaline (5mL of 1mg/mL)
Total upper airway obstruction:
 Expert help needed, follow difficult airway algorithm

B = Breathing
Oxygenation is more important than intubation
If apnoeic:
 • Bag mask ventilation
 • Consider tracheal intubation
Severe/persistent bronchospasm:
 • Nebulised salbutamol and ipratropium with oxygen
 • Consider IV bolus and/or infusion of salbutamol or aminophylline
 • Inhalational anaesthesia

C = Circulation
Give further fluid boluses and titrate to response:
 Child 10 mL/kg per bolus
 Adult 500–1000 mL per bolus
 • Use glucose-free crystalloid (e.g. Hartmann's Solution, Plasma-Lyte®)
 Large volumes may be required (e.g. 3–5 L in adults)
Place arterial cannula for continuous BP monitoring
Establish central venous access
IF REFRACTORY TO ADRENALINE INFUSION
 Consider adding a second vasopressor **in addition** to adrenaline infusion:
 • Noradrenaline, vasopressin or metaraminol
 • In patients on beta-blockers, consider glucagon
Consider extracorporeal life support

Cardiac arrest – follow ALS ALGORITHM
 • Start chest compressions early
 • Use IV or IO adrenaline bolus (cardiac arrest protocol)
 • Aggressive fluid resuscitation
 • Consider prolonged resuscitation/extracorporeal CPR

APPENDIX 3 – EQUALITY IMPACT ASSESSMENT - PART 1 INITIAL SCREENING

Service/Function/Policy/Project/Strategy	Care Group/Executive Directorate and Department	Assessor (s)	New or Existing Service or Policy?	Date of Assessment
Anaphylaxis Policy PAT/EC 3	Resuscitation Services	Michelle Thomas	Existing policy	April 2022
1) Who is responsible for this policy? Resuscitation Services, Training & Education, Education & Research				
2) Describe the purpose of the service / function / policy / project/ strategy? To recognise and treat anaphylaxis				
3) Are there any associated objectives? This policy reflects national guidance on the recognition and management of anaphylaxis				
4) What factors contribute or detract from achieving intended outcomes? Staff Compliance & Availability of Equipment/drugs				
5) Does the policy have an impact in terms of age, race, disability, gender, gender reassignment, sexual orientation, marriage/civil partnership, maternity/pregnancy and religion/belief? No				
<ul style="list-style-type: none"> If yes, please describe current or planned activities to address the impact n/a 				
6) Is there any scope for new measures which would promote equality? Monitor Incidents/Complaints				
7) Are any of the following groups adversely affected by the policy?				
Protected Characteristics	Affected?	Impact		
a) Age	No			
b) Disability	No			
c) Gender	No			
d) Gender Reassignment	No			
e) Marriage/Civil Partnership	No			
f) Maternity/Pregnancy	No			
g) Race	No			
h) Religion/Belief	No			
i) Sexual Orientation	No			
8) Provide the Equality Rating of the service / function /policy / project / strategy – tick (✓) outcome box				
Outcome 1 ✓	Outcome 2	Outcome 3	Outcome 4	
<i>*If you have rated the policy as having an outcome of 2, 3 or 4, it is necessary to carry out a detailed assessment and complete a Detailed Equality Analysis form in Appendix 4</i>				
Date for next review: April 2025				
Checked by: Nicola Vickers			Date: April 2022	