



Emergency Treatment of Anaphylaxis Policy and Guidelines

This procedural document supersedes: PAT/EC 3 v.6 – Emergency Treatment of Anaphylaxis Policy and Guidelines

This procedural document should be used in conjunction with:

- Resuscitation Policy - PAT/EC 1
- Glove Use Policy - CORP/HSFS 13
- Mental Capacity Act 2005 PAT/PA 19
- Privacy and Dignity Policy - PAT/PA 28



Did you print this document yourself?

The Trust discourages the retention of hard copies of policies and can only guarantee that the policy on the Trust website is the most up-to-date version. **If, for exceptional reasons, you need to print a policy off, it is only valid for 24 hours**

| | |
|---------------------------------|---|
| Author/reviewer: (this version) | Nicola Vickers - Resuscitation & Manual Handling Lead |
| Date written/revised: | June 2018 |
| Approved by: | Patient Safety Review Group |
| Date of approval: | 6 July 2018 |
| Date issued: | 13 July 2018 |
| Next review date: | June 2021 |
| 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 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 |
| Version 4 | September 2011 | Previous Appendix 1 – Patient Group Direction has been removed and the following appendices re-numbered | Kate Pears |
| Version 3 | November 2008 | <ul style="list-style-type: none"> • To implement changes in treatment algorithm published by Resuscitation Council (UK) January 2008 • The 'Latex Policy' has changed its name to 'Glove Use Policy' • Contents page added • References updated | Kate Pears |

Contents

| | | Page No. |
|-----------|---|----------|
| 1 | INTRODUCTION | 4 |
| 2 | PURPOSE | 4 |
| 3 | DUTIES AND RESPONSIBILITIES | 4 |
| 4 | RECOGNITION AND DIAGNOSIS | 5 |
| | 4.1 Cautions and Considerations for Treatment | 5 |
| 5 | IMMEDIATE ACTION | 6 |
| | 5.1 Administration of Intra Muscular (I.M) Adrenaline (Epinephrine)..... | 6 |
| | 5.2 Intravenous Administration of Adrenaline..... | 7 |
| 6 | SUBSEQUENT MANAGEMENT | 7 |
| | 6.1 Administration of Antihistamines and Corticosteroids | 7 |
| | 6.2 Intravenous Fluid Administration by First Medical Responders | 8 |
| | 6.3 Beta 2 Agonist Administration by First Medical Responders | 8 |
| | 6.4 Investigations in Adults and Young People (16 Years or Older) & Children..... | 8 |
| | 6.5 Assessment after the Suspected Anaphylactic Reaction | 8 |
| 7 | OBSERVATION & ADMISSION | 9 |
| | 7.1 Observation for Adults & Young People (16 Years or Older) | 9 |
| | 7.2 Admission for Children (Younger than 16 Years) | 9 |
| 8 | DISCHARGE REQUIREMENTS | 9 |
| | 8.1 Referral..... | 9 |
| | 8.2 Adrenaline Auto-Injector..... | 9 |
| | 8.3 Patient Information and Support before Discharge..... | 9 |
| 9 | STORAGE AND HANDLING OF MEDICINES | 10 |
| 10 | TRAINING/ SUPPORT | 10 |
| 11 | MONITORING COMPLIANCE WITH THE PROCEDURAL DOCUMENT | 10 |
| 12 | DEFINITIONS | 11 |
| 13 | EQUALITY IMPACT ASSESSMENT | 11 |
| 14 | ASSOCIATED TRUST PROCEDURAL DOCUMENTS | 11 |
| 15 | REFERENCES | 11 |
| | APPENDIX 1 –INITIAL TREATMENT ALGORITHM | 12 |
| | APPENDIX 2 – ANAPHYLAXIS ALGORITHM | 13 |
| | APPENDIX 3 – EQUALITY IMPACT ASSESSMENT - PART 1 INITIAL SCREENING | 14 |

1 INTRODUCTION

Anaphylaxis appears to be increasingly common and has been strongly associated with the increasing prevalence of allergic disease over the last two or three decades (Resuscitation Council UK, 2008).

The provision of an evidence based treatment programme remains difficult since there is a distinct lack of unequivocal research data on which to base definitive treatment guidelines and policies. There is however, a wealth of experience that can be drawn upon from organisations such as the Resuscitation Council (UK). The project team within the Council includes a wide and representative membership.

The treatment of anaphylaxis needs a consistent approach which draws together relevant and appropriate expertise as provided by the Resuscitation Council (UK) and NICE clinical Guideline 134 recommendations.

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 (e.g. Anaesthetics).

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 the **Resuscitation & Manual Handling Lead** 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 **Care Group Managers and Matrons** 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

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

Anaphylactic reactions vary in severity and progress; they may be rapid or slow in onset.

In rare events manifestations may be delayed by a few hours (adding to diagnostic difficulty), or persist for more than 24 hours.

The patient may show one or several of the following signs:-

- Hypotension
- Dyspnoea and wheezing
- Laryngeal oedema
- Urticarial rash and skin or mucosal changes (These alone are not a sign of anaphylaxis)

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.

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 particular 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 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. **Pregnant patients should lie on their left side to prevent caval compression.** If available, oxygen should be administered at high flow rates (10-15 L per minute). Cardiopulmonary resuscitation must be performed in the event of cardiopulmonary arrest.
- Adrenaline should be administered intramuscularly (preferably in the midpoint of the thigh, anterolateral aspect) to all patients with clinical signs of shock, airway swelling, or definite breathing difficulty, and will be rapidly absorbed. **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.

5.1 Administration of Intra Muscular (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 as a result of hypotension. In some cases several doses may be required.

Children

- The dose of adrenaline administered in children is determined by age, see table below:

| | | |
|-----------------|---|--|
| > 12 years | up to 500 micrograms IM 300 micrograms if child is small or pre pubertal | 0.5 mL 1:1000 solution 0.3 mL 1:1000 solution |
| 6 - 12 years | 300 micrograms IM | 0.3 mL 1:1000 solution |
| Child < 6 years | 150 micrograms IM | 0.15 mL 1:1000 solution |

As for adults, doses may be repeated after 5 minutes if necessary.

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 1:1000)**. 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.

6 SUBSEQUENT MANAGEMENT

6.1 Administration of Antihistamines and Corticosteroids

Chlorphenamine

An antihistamine (chlorphenamine) should be administered. Caution is needed to avoid "drug induced" hypotension: administer either by careful slow intravenous injection or by intramuscular injection. Its use may be helpful and is unlikely to be harmful.

The dose for children and adults is determined by age as follows:

| | |
|--------------------|------------------------|
| > 12 years | 10 mg IM or IV slowly |
| 6 - 12 years | 5 mg IM or IV slowly |
| 6 months – 6 years | 2.5 mg IM or IV slowly |
| Child < 6mths | 250 micrograms/kg |

Hydrocortisone

Hydrocortisone (as sodium succinate) should be administered after severe attacks to help avert late sequelae. This is of particular importance for asthmatics (who are at increased risk of severe or fatal anaphylaxis) if they have been treated with corticosteroids previously. The dose of hydrocortisone should be given by slow intravenous or intramuscular injection - care being taken to avoid inducing further hypotension. First medical responders should be aware that although corticosteroids form an essential part of the management of severe anaphylaxis, they may take up to 4-6 hours to have an effect even if administered intravenously.

The dose for adults and children is determined by age as follows:

| | |
|--------------------|-----------|
| > 12 years | 200 mg IM |
| 6 - 12 years | 100 mg IM |
| 6 months – 6 years | 50 mg IM |
| Child <6 months | 25 mg IM |

6.2 Intravenous Fluid Administration by First Medical Responders

If severe hypotension does not respond rapidly to drug treatment, fluid should be infused. A crystalloid may be safer than a colloid (Colloid infusion may be considered to be the cause of the anaphylactic reaction if the patient is receiving a colloid at that time) A rapid infusion of 500 – 1000 mL of 0.9% normal saline may be needed. Children should receive 20 ml/kg of 0.9% normal saline rapidly, followed by another similar dose if there is no clinical response.

6.3 Beta₂ Agonist Administration by First Medical Responders

An inhaled beta₂ agonist such as salbutamol is useful as an adjunctive measure if bronchospasm is a major feature that does not respond rapidly to other treatment.

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

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 sample as soon as possible after emergency treatment has started.
- a second sample ideally within 1-2 hours (but no later than 4 hours) from the onset of symptoms.

Inform the patient (or, as appropriate, their parent and/or carer) that a blood sample may be required at follow up with the specialist allergy service to measure baseline mast cell tryptase.

6.5 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.

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

7 OBSERVATION & ADMISSION

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

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 provided that they receive appropriate post-reaction care prior to discharge.

7.2 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.

8 DISCHARGE REQUIREMENTS

8.1 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.

8.2 Adrenaline Auto-Injector

After emergency treatment for a suspected anaphylaxis, offer the patient (or, as appropriate, their parent and/or carer) an adrenaline auto-injector as an interim measure before the specialist allergy service appointment.

8.3 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.

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

9 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.

10 TRAINING/ SUPPORT

The training requirements of staff will be identified through a training needs analysis. Role specific education will be delivered by the service lead. All clinical staff who are expected to complete the training must do so every 2 years and training is in the form of an e-learning package. Once completed this training will be recorded on OLM/ESR.

11 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. | Resuscitation & Manual Handling Lead in conjunction with all clinical areas. | As instances are reported | Any failure to comply with policy will be reported to PSRG as part of the six monthly report. |

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

12 DEFINITIONS

Anaphylaxis

Anaphylaxis is a severe life-threatening, generalised or systemic hypersensitivity reaction. It is characterised by rapidly developing, life-threatening problems involving; the airway (pharyngeal or laryngeal oedema) and/or breathing (bronchospasm with tachypnoea) and/or circulation (hypotension and/or tachycardia). In most cases, there are associated skin and mucosal changes. Investigations will show whether the reaction is allergic (immunoglobulin E (IgE) or non IgE mediated) or non-allergic anaphylaxis.

The term Anaphylactoid is no longer used.

The term anaphylaxis has been used throughout this policy in reference to both reactions for simplicity.

13 EQUALITY IMPACT ASSESSMENT

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.**

14 ASSOCIATED TRUST PROCEDURAL DOCUMENTS

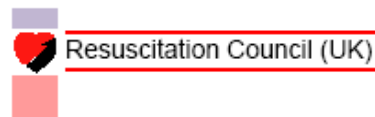
This procedural document should be used in conjunction with:

- Resuscitation Policy - PAT/EC 1
- Glove Use Policy - CORP/HSFS 13
- Mental Capacity Act 2005 - PAT/PA 19
- Privacy and Dignity Policy - PAT/PA 28
- Fair Treatment for All Policy – CORP/EMP 4
- Equality Analysis Policy – CORP/EMP 27

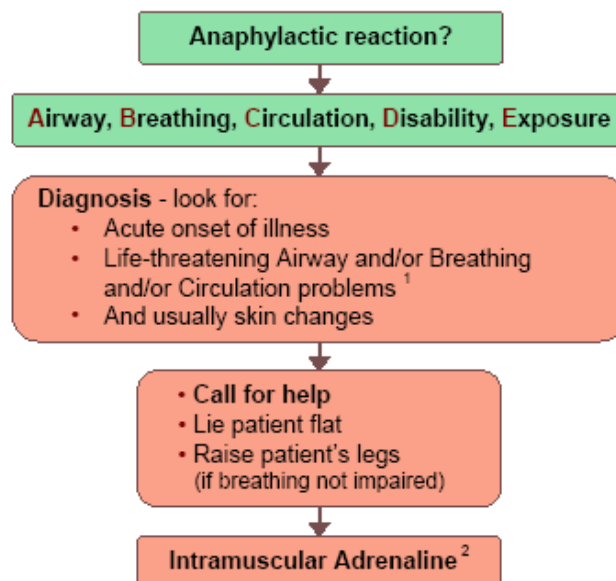
15 REFERENCES

- The Emergency Treatment of Anaphylactic Reactions. Guidelines for Healthcare providers. Resuscitation Council (UK) Guidelines January 2008, *Annotated July 2012 with links to NICE guidance.*
- 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 – INITIAL TREATMENT ALGORITHM



Anaphylactic reactions – Initial treatment



1 Life-threatening problems:

Airway: swelling, hoarseness, stridor
Breathing: rapid breathing, wheeze, fatigue, cyanosis, SpO₂ < 92%, confusion
Circulation: pale, clammy, low blood pressure, faintness, drowsy/coma

2 Intramuscular Adrenaline

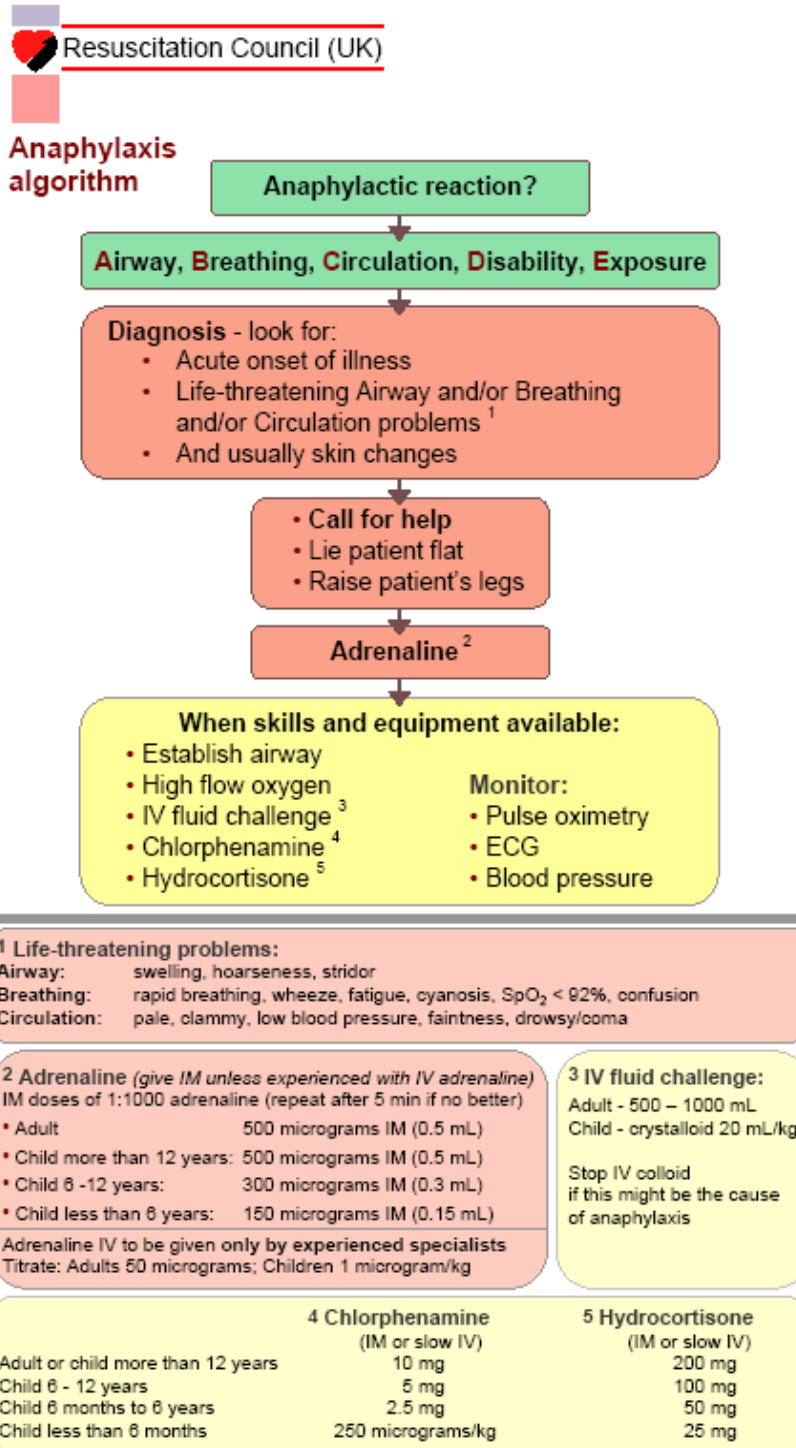
IM doses of 1:1000 adrenaline (repeat after 5 min if no better)

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

See also:

▶ [Anaphylaxis algorithm](#)

APPENDIX 2 – ANAPHYLAXIS ALGORITHM



See also: ► [Anaphylactic reactions – Initial treatment](#)

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 | Nicola Vickers | Existing policy | June 2018 |
| 1) Who is responsible for this policy? People & Organisational Development, Training & Education, Resuscitation Services | | | | |
| 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? Education & Training and availability of 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? N/A | | | | |
| 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: June 2021 | | | | |
| Checked by: Nicola Vickers | | | Date: June 2018 | |