NHS South Yorkshire Integrated Care Board

South Yorkshire Children & Young People's Alliance

Anaphylaxis

Clinical Guideline

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Approved on	September 2024
Review on	September 2027

Purpose of Guidance

This guideline has been created with the aim of standardising care throughout the South Yorkshire Integrated Care System footprint, with agreed management of anaphylaxis which a common presentation in paediatric units and to ensure equity for all of our children and young people.

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Version Control

This is a controlled document. Whilst this document may be printed, the electronic version posted on the **Healthier Together Staff Hub** is the controlled copy. Any printed copies of this document are not controlled.

Date	Version	Comments	Changes Made
TBC	1 [Original]	None	None

Key Definitions

Allergy: A hypersensitivity reaction mediated via the immune system involving mast cell degranulation and/or inflammatory cell activation in response to an allergenic stimulus. Allergens are generally either proteins or drugs and the reactions are usually reproducible.

Anaphylaxis: **a severe, life-threatening, systemic hypersensitivity reaction, which must be treated urgently.**

Introduction & Background

Allergen exposure can occur as a consequence of ingestion, inhalation, injection or contact with skin/mucosal membranes. The subsequent allergic reaction can cover a spectrum of severity from mild to life-threatening anaphylaxis.

The commonest allergens encountered in children are foods, particularly dairy products, egg, nuts, seeds and legumes. Aeroallergen and venom allergies are also seen and, rarely, latex.

This guideline should not be used for transfusion reactions – please see separate transfusion reaction guidelines

Clinical Management: Acute Care

Diagnosis and Recognition of Anaphylaxis

Do not stop to take a detailed history in suspected anaphylaxis.

	Symptoms	Signs
Mild – Moderate Reactions	Itching of skin, lips, eyes, nose, mouth, throat Nausea Abdominal pain Vomiting Diarrhea Change in behaviour	Urticarial rash Angio-oedema Conjunctival inflammation
Severe (Anaphylaxis)	Coughing Wheezing Difficulty in breathing Hoarseness Change in voice Drooling Collapse	Bronchospasm Tachycardia Pallor Respiratory distress Laryngeal oedema Hypotension Respiratory arrest Cardiac arrest

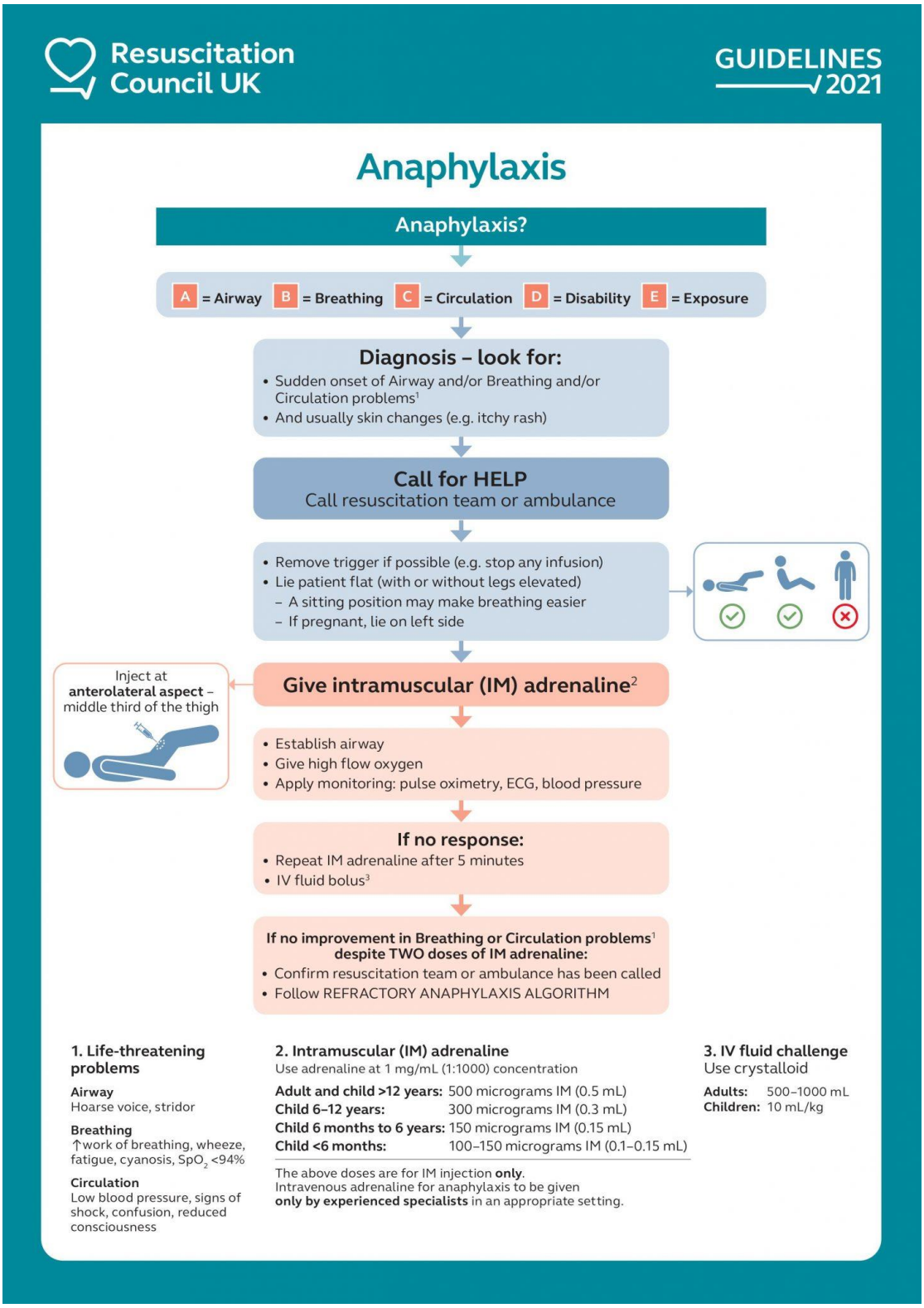
Recognise anaphylaxis based on:

- Sudden onset and rapid progression of symptoms
- Airway and/or Breathing and/or Circulation problems

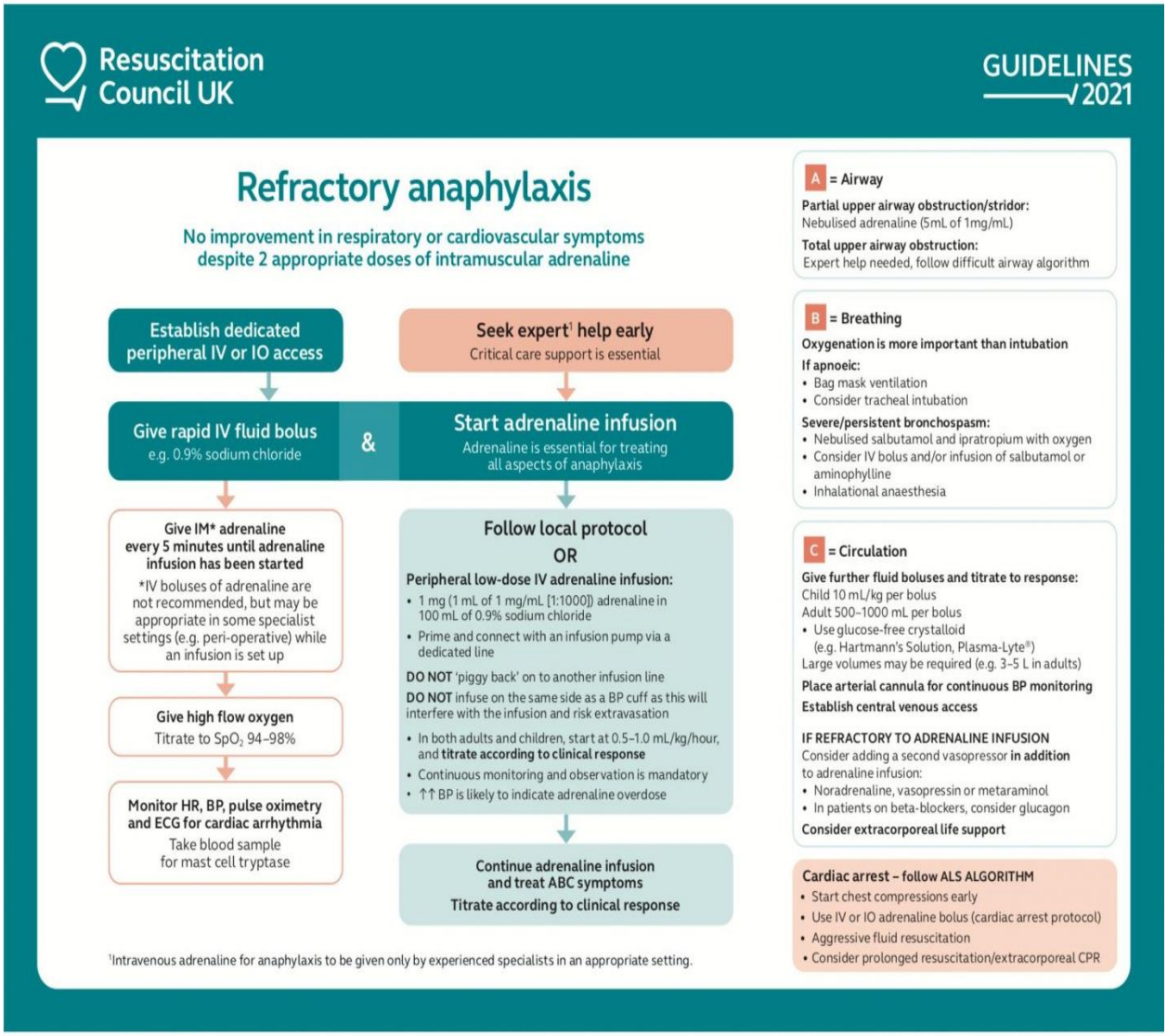
Remember:

- 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 anaphylaxis (some patients can have only a decrease in blood pressure i.e. a circulation problem)

Management of Anaphylaxis



Please follow the refractory anaphylaxis algorithm if there is no improvement in respiratory or cardiovascular symptoms despite 2 appropriate doses of intramuscular adrenaline.



PLEASE NOTE:

- The INTRAMUSCULAR ROUTE is the preferred route for initial administration of adrenaline except if there is cardiac arrest.
- Antihistamines are not recommended as part of the initial emergency treatment for anaphylaxis and their use must not delay treatment with adrenaline. (Antihistamines can be used at a later point when the child is stabilised for symptom relief).
- IV steroids no longer form part of acute anaphylaxis management, as their use is associated with poorer outcomes.

- Any child needing treatment with an adrenaline infusion should be reviewed by and managed in conjunction with PCCU teams.

Other Medication as indicated:

- Nebulised Adrenaline: 400 micrograms/kg, 0.4 ml/kg of 1:1000 (max 5mg)
- Nebulised Salbutamol: 2.5 - 5mg (2.5mg for under 5 yr, 5mg for over 5 years)

Patients on Beta blockers

Children on beta blockers may present with anaphylaxis which is refractory to usual treatment. They should initially be treated following the above algorithm, however, should there be a failure to respond to this then treatment with Glucagon or Vasopressin should be considered.

- Glucagon dosing 20 to 30 micrograms/kg (maximum 1 mg) slow IV bolus over five minutes. May be followed by an infusion of 5 to 15 micrograms/minute titrated to effect (ie, not weight-based).

- Vasopressin (Argipressin) - if needed contact Sheffield Children's Hospital PCCU and ask for advice and guidelines.

Ongoing Management once Stabilised

All children who are treated with adrenaline (IM/nebulised/IO/IV) should have a serum tryptase level tested at the time. This must be obtained as soon as possible. This is especially important where the precipitating allergen or diagnosis is in question, the anaphylaxis is idiopathic, or is thought to be venom or drug related.

Prior to discharge ensure the following must be provided and documented:

- A minimum of 2x Adrenaline autoinjectors prescribed (4 to be prescribed for children primary school aged or younger) and training in their use provided **prior to discharge**.

- Antihistamines (or are available at home) at the doses below.
  Please note these doses are different from those in the BNFc in some cases.

	Medication	**Dose**
1 month – 2 years (or under 10kg)	Chlorphenamine	1mg
2-6 years	Cetirizine	5mg
Over 6 years	Cetirizine	10mg

- Written Allergy Management Plan (find on BSACI website under Professional Resources: **Paediatric Allergy Action Plans - BSACI**

- Family educated about symptoms of anaphylaxis and the possibility of a biphasic reaction.

- Family given advice to avoid the precipitating allergen.
- Follow-up or onwards referral has been arranged with a healthcare professional trained in Allergy.

Consider fast-track discharge (after 2 hours observation from resolution of anaphylaxis) if:	**Minimum 6 hours observation after resolution of symptoms recommended if:**	**Observation for at least 12 hours following resolution of symptoms if any one of the following:**
Good response (within 5 – 10 minutes) to a single dose of adrenaline given within 30 minutes of onset of reaction **and** Complete resolution of symptoms **and** The child already has 2 unused adrenaline auto-injectors and child/parents have been trained how to use them **and** There is adequate supervision following discharge	Two doses of intramuscular adrenaline needed to treat the reaction **or** Prevous biphasic reaction	Severe reaction requiring > 2 doses of adrenaline The child has severe asthma or the reaction involved severe respiratory compromise There is the possibility of continuing absorption of allergy i.e. slow release medications The child presents late at night, or may not be able to respond to any deterioration Children in areas where access to emergency care is difficult

Monitoring Compliance

The NICE guidelines for anaphylaxis management should form the basis of audit into anaphylaxis management on a regular basis.

Review Timeline

This policy will be reviewed in its entirety on a three yearly basis, as is standard practice, by the members of the Guideline Development Group within the Care of the Acutely Ill Child Network. If significant issues are found as a result of the audit process, a review will be conducted in advance of this to ensure patient safety. As part of the audit process, there is scope to make minor amendments to the policy built into he document, and these will be reflected in the version control table visible at the front of this document.

References

- Ref: resuscitation council http://www.resus.org.uk/pages/reaction.pdf updated May 2021
- Anaphylaxis: assessment and referral after emergency treatment (nice.org.uk)