



Emergency treatment of anaphylactic reactions: Advice for healthcare providers (Care Home Nurses)

What is anaphylaxis?

Anaphylaxis is a severe, life-threatening, generalised or systemic hypersensitivity reaction. This is characterised by rapidly developing life-threatening airway and/or breathing and/or circulation problems usually associated with skin and mucosal changes.

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

- Sudden onset and rapid progression of symptoms
- Life-threatening **A**irway and/or **B**reathing and/or **C**irculation problems
- Skin and/or mucosal changes, e.g., flushing, urticarial (Hives, raised itchy area), angioedema (swelling of the lower layer of skin and tissue)

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 **C**irculation problem)

What are the causes of anaphylaxis?

Anaphylaxis can be triggered by any of a very broad range of triggers, but those most commonly identified include food, **drugs** and venom. The relative importance of these varies very considerably with age, with food being particularly important in children and **medicinal products being much more common triggers in older people**. Virtually any food or **class of drug** can be implicated, although the classes of foods and drugs responsible for the majority of reactions are well described. Of foods, nuts are the most common cause; **muscle relaxants, antibiotics, NSAIDs and aspirin are the most commonly implicated drugs**. It is important to note that, in many cases, no cause can be identified.

Treatment of an anaphylactic reaction

As the diagnosis of anaphylaxis is not always obvious, all those who treat a person who may be having an anaphylactic reaction must have a systematic approach to the sick patient. In general, the clinical signs of critical illness are similar whatever the underlying process because they reflect failing respiratory, cardiovascular, and neurological systems, i.e., ABCDE problems. **Use an ABCDE** (Airways, Breathing, Circulation, Disability & Exposure) **approach to recognise and treat an anaphylactic reaction**. Treat life-threatening problems as you find them. The basic principles of treatment are the same for all age groups.

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

1. Recognition that they are seriously unwell.
2. An early call for help.
3. Initial assessment and treatments based on an ABCDE approach.
4. Adrenaline therapy if indicated.
5. Investigation and follow-up by an allergy specialist.

Immediate action

- Send for additional health professional assistance.
- Send a responsible adult to dial 999 and state that there is a case of suspected anaphylaxis.
- Stay with the patient at all times.
- Lie the patient down, ideally with the legs raised (unless the patient has breathing difficulties).
- Administer oxygen if available.
- If breathing stops, mask resuscitation should be performed.
- If there is no pulse, start cardiopulmonary resuscitation.

All patients with clinical signs of shock, airway swelling or definite breathing difficulties should be given **adrenaline (epinephrine) 1:1000 administered by intramuscular (IM) injection** (never subcutaneously).

For information on dosage to be given see algorithm. The preferred site is the mid-point of the anterolateral aspect of the thigh. If there is no clinical improvement, the dose may be repeated after five minutes.

Further doses of adrenaline can be given if needed.

Anaphylaxis algorithm – [table 1](#)

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

Anaphylaxis pack

An anaphylaxis pack normally contains:

- **two** ampoules of adrenaline (epinephrine) 1:1000, (obtained from a pharmacy via a purchase order)
- **four** 23G needles
- **four** graduated 1ml syringes, and
- Laerdal or equivalent masks suitable for children and adults.

Packs should be checked regularly to ensure the contents are within their expiry dates. Protect from heat, light, and moisture. Avoid prolonged exposure to raised temperatures.

Chlorphenamine (chlorpheniramine) and hydrocortisone are not first-line treatments and do not need to be included in the pack.

Auto-injectors for self-administration of adrenaline should not be used as a substitute for a proper anaphylaxis pack. However, if an adrenaline auto-injector is the only available adrenaline preparation when treating anaphylaxis, health care providers should use it.

Anaphylaxis: Treatment in a care home setting – table 1

Anaphylactic reaction?

Airway Breathing Circulation Disability Exposure

Diagnosis – look for:

- Acute onset of illness
- Life-threatening **Airway** and/or **Breathing** and/or **Circulation** problems
- And usually skin changes (erythema, urticaria, mucosal changes)

- Call for help
- Remove trigger if possible
- Lie patient flat – A sitting position may make breathing easier
- Raise patients' legs
(If breathing not impaired)

Intramuscular adrenaline

Life-threatening problems

Airway: swelling, hoarseness, stridor
(noisy or high-pitched sound with breathing), throat tightness

Breathing: rapid breathing, wheeze, fatigue
Cyanosis, chest tightness
SpO₂<94%, confusion

Circulation: pale, clammy, low blood pressure
Faintness, drowsy/coma,

Intramuscular Adrenaline

IM doses of 1:1000 adrenaline (1mg/ml)

Adult 500 micrograms IM (0.5ml)

Repeat every 5-10 mins, up to 3 doses
Remember urgency of hospital transfer

Ordering of Adrenaline Ampoules for Anaphylaxis Packs

Adrenaline (epinephrine) **ampoules** for anaphylaxis can be obtained from community pharmacy via a purchase order signed by a GP. When renewing the adrenaline in your anaphylaxis kits, please stock ampoules **not** Adrenaline Autoinjectors (ensuring you also include dosing charts, needles, and syringes)

Storage of adrenaline

Anaphylaxis packs should be stored securely at room temperature. Access to the pack should be as quick as possible, to prevent delay in treatment. If administering a medication with a risk of anaphylaxis (i.e. Flu vaccination) then the pack should be with the staff member administering the medication. The expiry date of the pack should be checked monthly to ensure it is still safe to use.

Anaphylaxis training

All health professionals must be familiar with techniques for resuscitation of a patient with anaphylaxis to prevent disability and loss of life. Anaphylaxis training can be incorporated with yearly resuscitation /anaphylaxis training or accessed online.

Learning resource <https://www.e-lfh.org.uk/> has been written to meet the needs of a wide variety of health care professionals such as health care support workers, registered practitioners and medical staff in both the community and hospital setting Click on the link then register, they will ask for your Nursing home registration number, click on live chat if having problems accessing the training. Please complete An Introduction to Anaphylaxis and Recognising and Managing Anaphylaxis modules.

References

1. **The Green Book** PHE Guidance 27th November 2021
2. **Emergency treatment of anaphylactic reactions Guidelines for healthcare providers Working Group of the Resuscitation Council(UK) May 2021**
[Anaphylaxis - Resuscitation Council](#)

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