

**Updates to:
Part 3 - Management of Anaphylaxis in a Non-Hospital Setting
Question & Answer Document
February 2019**

1. [Why have the guidelines changed?](#)
2. [What are the most significant changes in the new guidelines?](#)
3. [Why is diphenhydramine \(Benadryl®\) no longer recommended in the initial emergency management of anaphylaxis?](#)
4. [Why is the administration of epinephrine only recommended intramuscularly into the vastus lateralis?](#)
5. [Why is 'calling 911' no longer the first step in the management of anaphylaxis?](#)
6. [What if the client has received immunizations to both thighs?](#)
7. [My client's condition has stabilized before the paramedics arrived. Should they still be transferred to the hospital by ambulance?](#)
8. [As an immunization provider, how can I ensure I am prepared to respond to anaphylaxis in a non-hospital setting?](#)
9. [Which guideline should I follow, the provincial DST or the BC Immunization Manual guidelines?](#)

1. Why have the guidelines changed?

Due to the changing scope of practice in other areas of nursing, a provincial decision support tool (DST) for the management of anaphylaxis "[Anaphylaxis: Initial Emergency Treatment by Nurses \(Adult and Pediatric\)](#)" has been developed. The provincial anaphylaxis DST was developed to ensure that the initial emergency management of anaphylaxis is consistent amongst all nurses across the province, in all settings. [The BC Immunization Manual, Part 3 - Management of Anaphylaxis in a Non-Hospital Setting](#), has been revised to be consistent with the provincial DST. The updated guidelines incorporate the most up-to-date evidence based on the World Allergy Organization guidelines¹, and were developed in consultation with a pediatric allergist.

2. What are the most significant changes in the new guidelines?

There are two significant practice changes to the clinical direction:

- i. The use of diphenhydramine (Benadryl®) is no longer recommended as an adjunct to epinephrine during the initial emergency treatment of anaphylaxis.
- ii. Epinephrine is to be administered intramuscularly (IM) into the vastus lateralis ONLY, for individuals of all ages even if the vastus lateralis has been used for immunization.

3. Why is diphenhydramine (Benadryl®) no longer recommended in the initial emergency management of anaphylaxis?

H1 antihistamines (e.g., Benadryl®) are not indicated as first line treatment in the initial emergency management of anaphylaxis. Antihistamines are not life-saving as they have no effect on respiratory or cardiovascular symptoms, and as such, have little clinical importance in life-threatening anaphylaxis. Antihistamines relieve less severe, cutaneous symptoms of anaphylaxis including urticaria, pruritus and angioedema.¹

Epinephrine is the first line treatment for anaphylaxis and there is no known equivalent substitute. Prompt intramuscular injection of epinephrine should not be delayed by taking the time to administer antihistamines, and thus, these medications are not recommended in the initial emergency management of anaphylaxis.

4. Why is the administration of epinephrine only recommended intramuscularly into the vastus lateralis?

The recommended route of epinephrine administration is ALWAYS intramuscular (IM) injection into the vastus lateralis. The rationale is that due to the rich vasculature of the thigh muscle, the rate of absorption is far quicker than when epinephrine is given subcutaneously (SC) and/or in the deltoid muscle. Plasma concentrations of epinephrine may be up to five times higher when administered intramuscularly into the vastus lateralis, as compared to either subcutaneously or intramuscularly into the deltoid.²

5. Why is 'calling 911' no longer the first step in the management of anaphylaxis?

Immediate administration of epinephrine is crucial in the emergency treatment of anaphylaxis. Depending on the situation, taking time to call 911 first could delay or distract the provider in administration of epinephrine. Delays in administration of epinephrine have been associated with fatalities. However, ideally these steps should be performed simultaneously.²

6. What if the client has received immunizations to both thighs?

If immunizations have been administered to both thighs, epinephrine should be administered IM into the vastus lateralis at least 2.5 cm (1 inch) from the original immunization injection site. Epinephrine should always be administered IM into the vastus lateralis to facilitate the quickest rate of epinephrine absorption into the peripheral blood to combat anaphylaxis. Administration of the potential life-saving epinephrine in the route and site that achieves maximum concentration far outweighs the theoretical risk of potentially increasing the speed of absorption of the vaccine.^{3,4}

7. My client's condition has stabilized before the paramedics arrived. Should they still be transferred to the hospital by ambulance?

Yes. Due to the risk of a biphasic reaction (recurrence of anaphylactic symptoms after the initial resolution of symptoms) all clients who experience anaphylaxis are to be transferred to the hospital by ambulance. Anaphylaxis is a medical emergency and 911 should always be called.

In up to 23% of adults and up to 11% of children, anaphylaxis episodes follow a biphasic course with recurrence of the reaction anywhere from 1-72 hours after the first onset of symptoms with most biphasic reactions occurring within the first 4-6 hours after the initial onset of symptoms.⁵ Hospitalization or a long period of observation is recommended for monitoring of such a recurrence. The presentation of the second phasic reaction may be as pronounced as that of the initial anaphylactic episode.

Informed consent for immunization includes consent for the provision of emergency treatment for anaphylaxis. The risk of anaphylaxis and subsequent treatment and/or action should be included as standard information provided as part of the informed consent process.

8. As an immunization provider, how can I ensure that I am prepared to respond to anaphylaxis in a non-hospital setting?

The immediate administration of epinephrine is the single most important intervention in an anaphylaxis reaction. Preparing an emergency kit will help to ensure what is needed to administer epinephrine is readily available. Review protocols and the BC Immunization Manual, Part 3 – Management of Anaphylaxis in a Non-Hospital Setting on a regular basis. Practice the emergency treatment of anaphylaxis in a non-hospital setting using mock scenarios. Additionally, a provincial learning module is available on LearningHub titled: [Anaphylaxis Initial Emergency Treatment by Nurses \(Adult & Pediatric\)](#).

9. Which guideline should I follow, the provincial DST or the BC Immunization Manual Guidelines?

The provincial anaphylaxis DST is the regulatory decision support tool for nurses, to which all nursing professionals in all settings in the province may refer. The BC Immunization Manual, Part 3 – Management of Anaphylaxis in a Non-Hospital Setting is intended for all immunization professionals across the province, including nursing professionals, pharmacists, midwives, physicians and naturopathic physicians. The clinical content and protocol for managing anaphylaxis in the provincial DST and the BC Immunization Manual, Part 3 are consistent; however Part 3 includes important immunization-specific information and reporting regulations. As there are some steps in the algorithm “Emergency Treatment of Anaphylaxis” that may not be applicable to non-hospital settings, such steps include the statements, “if available” or “if possible”.

ARCHIVED

REFERENCES:

1. Simons FE, Ebisawa M, Sanchez-Borges M, Thong BY, Worm M, Tanno LK et al. 2015 Update of the evidence base: World Allergy Organization anaphylaxis guidelines. *World Allergy Organ J* [Internet]. 2015 Oct [cited 2019 Feb 5];8(1):32 [16p.]. Available from: <https://waojournal.biomedcentral.com/track/pdf/10.1186/s40413-015-0080-1>.
2. Lieberman PL. Recognition and First-Line Treatment of Anaphylaxis. *Am J Med*. 2014 Jan;127(1 Suppl):S6-11.
3. Simons FE, Gu X, Simons KJ. Epinephrine absorption in adults: intramuscular versus subcutaneous injection. *J Allergy Clin Immunol*. 2001 Nov;108:871-873.
4. Simons FE, Roberts JR, Gu X, Simons KJ. Epinephrine absorption in children with a history of anaphylaxis. *J Allergy Clin Immunol*. 1998 Jan;101(1):33-37.
5. Canadian Paediatric Society [Internet]. Ottawa (ON): Canadian Paediatric Society; c2001-2016. Emergency treatment of anaphylaxis in infants and children; 2011 Jan 1 [updated 2018 Apr 6; cited 2018 Aug 15]; [about 10 pages]. Available from: <https://www.cps.ca/en/documents/position/emergency-treatment-anaphylaxis>.

ARCHIVED