AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

Clinical Care Standards

D21-57475

Evidence Sources

Acute Anaphylaxis

Clinical Care Standard

November 2021

Introduction

The quality statements for the Acute Anaphylaxis Clinical Care Standard were developed in consultation with the Acute Anaphylaxis Clinical Care Standard Topic Working Group and are based on best available evidence and guideline recommendations at the time of development.

Literature searches are conducted by the Australian Commission on Safety and Quality in Health Care to identify the evidence base for each potential quality statement and include searching for current and relevant:

- Australian clinical practice guidelines, standards and policies
- International clinical practice guidelines
- Other high-level evidence, such as systematic reviews and meta-analyses.

Where limited evidence is available, the Commission consults with a range of stakeholders to explore issues and develop possible solutions.

An overview of the key evidence sources for the Acute Anaphylaxis Clinical Care Standard is presented in Table 1. A full list of the evidence sources for each of the draft quality statements is also included.

Table 1: Overview of the key evidence sources for the Acute Anaphylaxis Clinical Care Standard*

Evidence sources reviewed in the development of the standard	Relevance to the draft Quality Statements (QS)					
	QS1. Prompt recognition of anaphylaxis	**QS2. Immediate injection of intramuscular adrenaline**	**QS3. Correct patient positioning**	**QS4. Access to a personal adrenaline injector in all healthcare settings**	**QS5. Observation time following anaphylaxis**	**QS6. Discharge management and documentation**
Australian guidelines						
Australasian Society of Clinical Immunology and Allergy (ASCIA) - Acute Management of Anaphylaxis Guideline (2021)	✓	✓	✓		✓	✓
Australasian Society of Clinical Immunology and Allergy (ASCIA) Acute Management of Anaphylaxis in Pregnancy Guideline (2020)	✓	✓	✓		✓	
Australian and New Zealand College of Anaesthetists (ANZCA) and Australian and New Zealand Anaesthetic Allergy Group (ANZAAG). Perioperative Anaphylaxis Management Guidelines (2017)	✓	✓			✓	✓
Royal Children's Hospital, Melbourne. Clinical Practice Guidelines: Anaphylaxis (2017)	✓	✓	✓		✓	✓

Evidence sources reviewed in the development of the standard	Relevance to the draft Quality Statements (QS)					
	QS1. Prompt recognition of anaphylaxis	**QS2. Immediate injection of intramuscular adrenaline**	**QS3. Correct patient positioning**	**QS4. Access to a personal adrenaline injector in all healthcare settings**	**QS5. Observation time following anaphylaxis**	**QS6. Discharge management and documentation**
Safer Care Victoria. Anaphylaxis Clinical Care Standard. (2019)	✓	✓	✓	✓	✓	✓
Sydney Children's Hospitals Network. Anaphylaxis and Generalised Allergic Reaction (GAR) practice guideline (2019)	✓	✓	✓		✓	✓
Remote Primary Health Care Manuals. (2017). *CARPA Standard Treatment Manual (7th edition)*. Alice Springs, NT: Centre for Remote Health.	✓	✓	✓			✓
International guidelines						
World Allergy Organization guidelines for the assessment and management of anaphylaxis (2011)	✓	✓	✓		✓	✓
The World Allergy Organization journal. World Allergy Organization Anaphylaxis Guidance 2020.	✓	✓				✓
World Allergy Organization anaphylaxis guidelines: 2015 update of the evidence base	✓	✓	✓		✓	✓

Evidence sources reviewed in the development of the standard	Relevance to the draft Quality Statements (QS)					
	QS1. Prompt recognition of anaphylaxis	**QS2. Immediate injection of intramuscular adrenaline**	**QS3. Correct patient positioning**	**QS4. Access to a personal adrenaline injector in all healthcare settings**	**QS5. Observation time following anaphylaxis**	**QS6. Discharge management and documentation**
National Institute for Health and Care Excellence. Anaphylaxis: assessment and referral after emergency treatment [CG134]. London: NICE; 2020 (short guideline).	✓				✓	✓
National Institute for Health and Care Excellence. Anaphylaxis Quality Standard. QS 119 (2016)						✓
Resuscitation Council (UK). Emergency treatment of anaphylactic reactions. Guidelines for healthcare providers (2016)	✓	✓	✓		✓	✓
EAACI. Anaphylaxis: guidelines from the European Academy of Allergy and Clinical Immunology (2014)	✓	✓	✓		✓	✓

* Only the key Australian and International guidelines are included in this table. Other evidence sources are listed in the following tables for each quality statement.

** See also National Institute for Health and Care Excellence. Anaphylaxis: Assessment to confirm an anaphylactic episode and the decision to refer after emergency treatment for a suspected anaphylactic episode. Clinical Guideline 134 (Full guideline). (2020)

EVIDENCE SOURCES FOR EACH QUALITY STATEMENT

Quality Statement 1: Prompt recognition of anaphylaxis	**A patient with acute-onset clinical deterioration with signs or symptoms of an allergic response is rapidly assessed for anaphylaxis, especially in the presence of an allergic trigger or a history of allergy.**
EVIDENCE SOURCES	
Australian guidelines and standards	
Australasian Society of Clinical Immunology and Allergy. Acute Management of Anaphylaxis. ASCIA Guidelines. Sydney: ASCIA; 2021.	
Australasian Society of Clinical Immunology and Allergy. Acute management of anaphylaxis in pregnancy. Sydney: ASCIA; 2020.	
Kolawole H, Marshall S, Crilly H, Kerridge R, Roessler P. Australian and New Zealand Anaesthetic Allergy Group/Australian and New Zealand College of Anaesthetists Perioperative Anaphylaxis Management Guidelines. Anaesth Intensive Care 2017 Mar;45(2):151–8.	
Sydney Children's Hospitals Network. Anaphylaxis and Generalised Allergic Reaction (GAR) practice guideline (2019)	
Royal Children's Hospital, Melbourne. Clinical Practice Guidelines: Anaphylaxis (2017)	
Remote Primary Health Care Manuals. (2017). CARPA Standard Treatment Manual (7th edition). Alice Springs, NT: Centre for Remote Health.	
Safer Care Victoria. Anaphylaxis Clinical Care Standard. Melbourne: Victorian Government 2019.	
International guidelines and standards	
Cardona V, Ansotegui IJ, Ebisawa M, El-Gamal Y, Rivas MF, Fineman S, et al. World Allergy Organization anaphylaxis guidance 2020. World Allergy Organ J 2020 Oct;13(10):100472.	
National Institute for Health and Care Excellence. Anaphylaxis: assessment and referral after emergency treatment [CG134]. London: NICE; 2020.	
Simons FE, Ardusso LR, Dimov V, Ebisawa M, El-Gamal YM, Lockey RF, et al. World Allergy Organization Anaphylaxis Guidelines: 2013 update of the evidence base. Int Arch Allergy Immunol 2013;162(3):193–204.	
Simons FER, 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 2015 Oct 28;8(1):1–16.	

Quality Statement 1: Prompt recognition of anaphylaxis	**A patient with acute-onset clinical deterioration with signs or symptoms of an allergic response is rapidly assessed for anaphylaxis, especially in the presence of an allergic trigger or a history of allergy.**
EAACI. Anaphylaxis: guidelines from the European Academy of Allergy and Clinical Immunology (2014)	
Resuscitation Council (UK). Emergency treatment of anaphylactic reactions. Guidelines for healthcare providers (2016)	
Other sources	
Brown SGA, Stone SF, Fatovich DM, Burrows SA, Holdgate A, Celenza A, et al. Anaphylaxis: clinical patterns, mediator release, and severity. J Allergy Clin Immunol 2013 Nov;132(5):1141–9.	
Campbell RL, Li JT, Nicklas RA, Sadosty AT, Members of the Joint Task Force, Practice Parameter Workgroup. Emergency department diagnosis and treatment of anaphylaxis: a practice parameter. Ann Allergy Asthma Immunol 2014 Dec;113(6):599–608.	
Mullins RJ, Wainstein BK, Barnes EH, Liew WK, Campbell DE. Increases in anaphylaxis fatalities in Australia from 1997 to 2013. Clin Exp Allergy 2016 Aug;46(8):1099–110.	

Quality Statement 2: Immediate injection of intramuscular adrenaline	**A patient with anaphylaxis, or suspected anaphylaxis, is administered adrenaline intramuscularly without delay, before any other treatment including asthma medicines. Corticosteroids and antihistamines are not first-line treatments for anaphylaxis.**

EVIDENCE SOURCES

Australian guidelines and standards
Australasian Society of Clinical Immunology and Allergy. Acute Management of Anaphylaxis. ASCIA Guidelines. Sydney: ASCIA; 2021.
Australasian Society of Clinical Immunology and Allergy. Acute management of anaphylaxis in pregnancy. Sydney: ASCIA; 2020.
Kolawole H, Marshall S, Crilly H, Kerridge R, Roessler P. Australian and New Zealand Anaesthetic Allergy Group/Australian and New Zealand College of Anaesthetists Perioperative Anaphylaxis Management Guidelines. Anaesth Intensive Care 2017 Mar;45(2):151–8.
Sydney Children's Hospitals Network. Anaphylaxis and Generalised Allergic Reaction (GAR) practice guideline (2019)
Royal Children's Hospital, Melbourne. Clinical Practice Guidelines: Anaphylaxis (2017)
Remote Primary Health Care Manuals. (2017). CARPA Standard Treatment Manual (7th edition). Alice Springs, NT: Centre for Remote Health.
Safer Care Victoria. Anaphylaxis Clinical Care Standard. Melbourne: Victorian Government 2019.
International guidelines and standards
Cardona V, Ansotegui IJ, Ebisawa M, El-Gamal Y, Rivas MF, Fineman S, et al. World Allergy Organization anaphylaxis guidance 2020. World Allergy Organ J 2020 Oct;13(10):100472.
Resuscitation Council (UK). Emergency treatment of anaphylactic reactions: guidelines for healthcare providers. London: Resuscitation Council (UK); 2016.
Simons FER, 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 2015 Oct 28;8(1):1–16.
Other sources
Australian Medicines Handbook. Australian Medicines Handbook 2020. Adelaide: AMH; 2020.

Quality Statement 2: Immediate injection of intramuscular adrenaline	**A patient with anaphylaxis, or suspected anaphylaxis, is administered adrenaline intramuscularly without delay, before any other treatment including asthma medicines. Corticosteroids and antihistamines are not first-line treatments for anaphylaxis.**
Campbell RL, Bellolio MF, Knutson BD, Bellamkonda VR, Fedko MG, Nestler DM, et al. Epinephrine in anaphylaxis: higher risk of cardiovascular complications and overdose after administration of intravenous bolus epinephrine compared with intramuscular epinephrine. J Allergy Clin Immunol Prac 2015 Jan–Feb;3(1):76–80.	
Safer Care Victoria. Use of a patient's own adrenaline (epinephrine) autoinjector in hospital. Melbourne: Victorian Government; 2019.	
Campbell RL, Li JT, Nicklas RA, Sadosty AT, Members of the Joint Task Force, Practice Parameter Workgroup. Emergency department diagnosis and treatment of anaphylaxis: a practice parameter. Ann Allergy Asthma Immunol 2014 Dec;113(6):599–608.	
Kanwar M, Irvin CB, Frank JJ, Weber K, Rosman H. Confusion about epinephrine dosing leading to iatrogenic overdose: a life-threatening problem with a potential solution. Ann Emerg Med 2010 Apr;55(4):341–4.	
Liew WK, Williamson E, Tang ML. Anaphylaxis fatalities and admissions in Australia. J Allergy Clin Immunol 2009 Feb;123(2):434–42.	
Mullins RJ, Wainstein BK, Barnes EH, Liew WK, Campbell DE. Increases in anaphylaxis fatalities in Australia from 1997 to 2013. Clin Exp Allergy 2016 Aug;46(8):1099–110.	
Murad A, Katelaris CH. Anaphylaxis audit in a busy metropolitan emergency department: a review of real life management compared to best practice. Asia Pac Allergy 2016 Jan;6(1): 29–34.	
Tham EH, Leung ASY, Pacharn P, Lee S, Ebisawa M, Lee BW, et al. Anaphylaxis – Lessons learnt when East meets West. Pediatr Allergy Immunol 2019 Nov;30(7):681–8.	

Quality Statement 3: Correct patient positioning	**A patient experiencing anaphylaxis is laid flat, or allowed to sit with legs extended if breathing is difficult. An infant is held or laid horizontally. The patient is not allowed to stand or walk during, or immediately after, the event until they are assessed as safe to do so, even if they appear to have recovered.**

EVIDENCE SOURCES

Australian guidelines and standards
Australasian Society of Clinical Immunology and Allergy. Acute Management of Anaphylaxis. ASCIA Guidelines. Sydney: ASCIA; 2021.
Australasian Society of Clinical Immunology and Allergy (ASCIA) Acute Management of Anaphylaxis in Pregnancy Guideline (2020)
Safer Care Victoria. Anaphylaxis Clinical Care Standard. (2019)
Sydney Children's Hospitals Network. Anaphylaxis and Generalised Allergic Reaction (GAR) practice guideline (2019)
Royal Children's Hospital, Melbourne. Clinical Practice Guidelines: Anaphylaxis (2017)
Remote Primary Health Care Manuals. (2017). CARPA Standard Treatment Manual (7th edition). Alice Springs, NT: Centre for Remote Health.
International guidelines and standards
Resuscitation Council (UK). Emergency treatment of anaphylactic reactions. Guidelines for healthcare providers (2016)
EAACI. Anaphylaxis: guidelines from the European Academy of Allergy and Clinical Immunology (2014)
World Allergy Organization guidelines for the assessment and management of anaphylaxis (2011)
World Allergy Organization anaphylaxis guidelines: 2015 update of the evidence base

Quality Statement 4: Access to a personal adrenaline injector in all healthcare settings	**A patient who has an adrenaline injector has access to it for self-administration during all healthcare encounters. This includes patients keeping their adrenaline injector safely at their bedside during a hospital admission.**
EVIDENCE SOURCES	
Australian guidelines and standards	
Safer Care Victoria. Use of a patient's own adrenaline (epinephrine) autoinjector in hospital. Melbourne: Victorian Government; 2019.	

Quality Statement 5: Observation time following anaphylaxis	**A patient treated for anaphylaxis remains under clinical observation for at least four hours after their last dose of adrenaline or overnight, as appropriate according to the current Australasian Society of Clinical Immunology and Allergy *Acute Management of Anaphylaxis* guidelines. Observation timeframes are determined based on assessment and risk appraisal after initial treatment.**

EVIDENCE SOURCES

Australian guidelines and standards
Australasian Society of Clinical Immunology and Allergy. Acute Management of Anaphylaxis. ASCIA Guidelines. Sydney: ASCIA; 2021.
Other sources
Australian Medicines Handbook. Australian Medicines Handbook 2020. Adelaide: AMH; 2020.
Shaker MS, Wallace DV, Golden DB, Oppenheimer J, Bernstein JA, Campbell RL, et al. Anaphylaxis – a 2020 practice parameter update, systematic review, and Grading of Recommendations, Assessment, Development and Evaluation (GRADE) analysis. J Allergy Clin Immunol 2020 Apr;145(4):1082–123.

Quality Statement 6: Discharge management and documentation	**Before a patient leaves a healthcare facility after having anaphylaxis, they are advised about the suspected allergen, allergen avoidance strategies and post-discharge care. The discharge care plan is tailored to the allergen and includes details of the suspected allergen, the appropriate ASCIA Action Plan, and the need for prompt follow-up with a general practitioner and clinical immunology/allergy specialist review. Where there is a risk of re-exposure, the patient is prescribed a personal adrenaline injector and is trained in its use. Details of the allergen, the anaphylactic reaction and discharge care arrangements are documented in the patient's healthcare record.**

EVIDENCE SOURCES

Australian guidelines and standards
Australian and New Zealand College of Anaesthetists (ANZCA) and Australian and New Zealand Anaesthetic Allergy Group (ANZAAG). Perioperative Anaphylaxis Management Guidelines (2017)
Australasian Society of Clinical Immunology and Allergy. Acute Management of Anaphylaxis. ASCIA Guidelines. Sydney: ASCIA; 2021.
Safer Care Victoria. Anaphylaxis Clinical Care Standard. Melbourne: Victorian Government 2019.
Remote Primary Health Care Manuals. (2017). CARPA Standard Treatment Manual (7th edition). Alice Springs, NT: Centre for Remote Health.
Royal Children's Hospital, Melbourne. Clinical Practice Guidelines: Anaphylaxis (2017)
International guidelines and standards
Cardona V, Ansotegui IJ, Ebisawa M, El-Gamal Y, Rivas MF, Fineman S, et al. World Allergy Organization anaphylaxis guidance 2020. World Allergy Organ J 2020 Oct;13(10):100472.
World Allergy Organization guidelines for the assessment and management of anaphylaxis (2011)

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Other sources	
Australian Medicines Handbook. Australian Medicines Handbook 2020. Adelaide: AMH; 2020.	
Queensland Health, Royal Flying Doctor Service (Queensland Section), Primary Clinical Care Manual 10th edition 2019, the Rural and Remote Clinical Support Unit, Torres and Cape Hospital and Health Service, Cairns.	
Sydney Children's Hospitals Network. Anaphylaxis and Generalised Allergic Reaction (GAR) practice guideline (2019)	