

SIMULATION CASE PI-1

Learning outcomes:

By the end of this simulation the candidates will:

- Recognise the child with anaphylaxis
- Implement resuscitation of the child with anaphylaxis

Simulation focus: Anaphylaxis

Timing: 0-3 minutes: introduction; remaining time: split equally between simulation and debrief

Introduction [Environment and Set]

Prior to the start of the simulation: one instructor to:

1. [Environment] Brief candidate group to *check the Environment*:

Room	Candidates to set up the room appropriately	
Equipment	Candidates to check required equipment present and accessible	

Equipment list:

In addition to generic equipment list:

- Appropriate size manikin to be ready for simulation in room and covered until simulation commences

2. [Set] Give *History*

You have received a pre-alert from the non-paramedic crew bringing in a three year old child known to be allergic to peanuts; she attended a friend's birthday party and after eating part of a chocolate bar she vomited once and developed a widespread urticarial rash.

Then leave the room for candidate group to prepare and after 2 minutes, return with instructor team and commence simulation

[Dialogue] Simulation

Initial handover *{to tell candidate on your arrival with the child as Non-Paramedic SBAR to Team Leader}*

Situation	3 year old - ? anaphylaxis	
Background	A three year old child is known to be allergic to peanuts and her parents normally ensure that she avoids ingesting all nuts. Today she attended a friend's birthday party and after eating part of a chocolate bar she vomited once and developed a wide spread urticarial rash.	
Assessment	A	Soft noise
	B	RR 28 – no added respiratory sounds
	C	Pulse 120 with a good volume; BP 100 systolic
	D	Opens eyes to voice
	E	Wide spread urticarial rash; swollen eyes
Recommendation	Needs resuscitation and emergency management of anaphylaxis	

Clinical course *{to be given as the simulation progresses}*

After a few minutes her breathing increases to 40/min, she has a marked inspiratory stridor, pulse rate rises to 190/min, she looks pale and systolic blood pressure remains at 100 mmHg.

Both airway obstruction and tachycardia resolve after the administration of intramuscular adrenaline and nebulised adrenaline.

Key treatment points



Airway	Establish airway patency		
Breathing	High flow oxygen via face mask		
Circulation	IV access		
Specific therapy	Intramuscular adrenaline 10mcg/kg (140mcg) or 150 micrograms Epipen		
	Nebulised adrenaline 5ml 1:1000 (=1mg/ml solution) in addition for stridor		
	Steroids		
Handover to PICU Consultant	S		
	B		
	A		
	R		

[Closure] Debrief

Using the learning conversation, carry out the debrief of both the technical and non-technical elements of the simulation. The debrief will be for the team as a whole and should focus on some or all of the following:

- Technical skills in an A, B, C, D, E format and guided by the KTPs; in particular the safe and effective demonstration of all continuously assessed skills:
 - BLS
 - Defibrillation
 - Airway management
- Non-technical skills, including qualities of team membership and leadership:

Team members	<ul style="list-style-type: none"> • Clear communication • Respect • Flexibility • Assertiveness • Ability to listen
Team leaders	All of the above, plus <ul style="list-style-type: none"> • Full overview of all aspects associated with child, parents and team • Prioritises according to KTPs • Summarises and re-evaluates

- Feedback on Environment, where required

Potential issues that may be raised for this specific simulation

- See APLS anaphylaxis algorithm ([a copy of the algorithm will be available in the simulation station](#))
- management of intractable hypotension: fluid boluses, repeat adrenaline every 5 mins, adrenaline IV infusion (noradrenaline and vasopressin have also been used)
- observation period for a patient who has suffered a suspected anaphylactic reaction: minimum 6h, consider up to 24h (biphasic reactions)
- minimum monitoring: SpO₂, non-invasive blood pressure and ECG
- consider anaphylaxis in rapid-onset wheeze in an asthmatic with allergies

At the end of the debrief, give the opportunity for candidates to ask questions, answer these and then summarise the key points

Assessment

Refer to the *Instructor guidance on simulations* document for a guide to the assessment of the simulation station. These assessments should be documented on the paper-based or electronic system for the final faculty meeting. Any scores of *serious concern* should be reported immediately to the course director.