

Rural Anaphylaxis

Section 1: Case Summary

Scenario Title:	Rural Anaphylaxis
Keywords:	Anaphylaxis, Pediatrics, Rural, Remote
Brief Description of Case:	Severe anaphylaxis in a 7 year old female in a remote northern community

Goals and Objectives	
Educational Goal:	To practice managing a critical pediatric patient in a remote setting utilizing RTVS resources
Objectives: (Medical and CRM)	1- Practice the management of pediatric anaphylaxis in a remote setting with limited resources 2- Build relationships between RTVS pathways, particularly RUDI and CHARLIE 3- Build relationships between RTVS and Nursing stations/rural/remote communities 3-Improve telemedicine and SIM tele-facilitation skills of healthcare providers providing virtual care 4- Consider logistical challenges in transferring patients from remote northern communities
EPAs Assessed:	

Learners, Setting and Personnel			
Target Learners:	<input checked="" type="checkbox"/> Junior Learners	<input checked="" type="checkbox"/> Senior Learners	<input checked="" type="checkbox"/> Staff
	<input type="checkbox"/> Physicians	<input type="checkbox"/> Nurses	<input type="checkbox"/> RTs
	<input checked="" type="checkbox"/> Inter-professional		
	<input type="checkbox"/> Other Learners:		
Location:	<input type="checkbox"/> Sim Lab	<input checked="" type="checkbox"/> In Situ	<input type="checkbox"/> Other:
Recommended Number of Facilitators:	Instructors:		
	Confederates:		
	Sim Techs:		

Scenario Development	
Date of Development:	August 11, 2020
Scenario Developer(s):	Brodie Lipon, Brydon Blacklaws,
Affiliations/Institutions(s):	UBC
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Last Revision Date:	Aug 20, 2020
Revised By:	Alysha Mackenzie-Feder, Jeff Beselt
Version Number:	1



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Section 2A: Setting:

This scenario takes place in a rural or remote nursing station or emergency department. It is summer, a sunny 30C day.

Section 2B: Initial Patient Information:

A. Patient Chart					
Patient Name: Emily Smith		Age: 7	Gender: Female	Weight: 30 kg	
Presenting complaint: Stung by multiple wasps 20 min ago, rash, facial swelling, nausea/vomiting					
Temp: 36.6	HR: 160	BP: 90/50	RR: 32	O ₂ Sat: 88%	FiO ₂ : RA
Cap glucose: 6.0			GCS: (E V M) 15 (4,5,6)		
Triage note: Stung by wasps multiple times on lower legs. Urticarial rash, nausea/vomiting, lip swelling and shortness of breath. No known allergies.					
Allergies: None known					
Past Medical History: Eczema			Current Medications: Hydrocortisone 1% cream prn		

Section 2C: Extra Patient Information

A. Further History	
This patient was playing tag in a field and ran into a wasp nest about 20 min ago, stung several times on the legs. The bites are painful. The rash came on a couple of minutes later followed by the lip swelling and mild difficulty breathing. On the way into the station she vomited once. PMHx: Eczema, PSHx: none, normal pregnancy, birth, growth and development, no previous hospitalizations, IUTD. Lives in a stable home with her parents, her grandmother, and 2 younger siblings. Mom works at the store. Dad is a machine operator. No one at home smokes, drinks alcohol, or does any recreational drugs.	
B. Physical Exam	
<i>List any pertinent positive and negative findings</i>	
Cardio: NS1S2 No Murmurs	Neuro: Normal
Resp: Increased WOB with subcostal indrawing, decreased AE bilat, with exertional wheeze, no stridor	Head & Neck: Mild angioedema, no tongue involvement
Abdo: soft, non-tender. no masses	MSK/skin: Diffuse Hives
Other: N/A	



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Section 3: Technical Requirements/Room Vision

A. Patient
<input checked="" type="checkbox"/> Mannequin (<i>specify type and whether infant/child/adult</i>) <i>*If Available</i>
<input checked="" type="checkbox"/> Standardized Patient (*alternative)
<input type="checkbox"/> Task Trainer
<input type="checkbox"/> Hybrid
B. Special Equipment Required
In Situ Simulation utilizing participants usual facilities and equipment. Mannequin if available.
C. Required Medications
Whatever is available on site. SIM will utilize: Epinephrine, Benadryl, Ranitidine, Dexamethasone, Methylprednisolone, IV fluids, Ventolin, oxygen
D. Moulage
Hives, Lip swelling (or none and described by facilitator)
E. Monitors at Case Onset
<input type="checkbox"/> Patient on monitor with vitals displayed
<input checked="" type="checkbox"/> Patient not yet on monitor
F. Patient Reactions and Exam
Exertional wheeze, decreased breath sounds,



Section 4: Confederates and Standardized Patients

Confederate and Standardized Patient Roles and Scripts	
<i>Role</i>	<i>Description of role, expected behavior, and key moments to intervene/prompt learners. Include any script required (including conveying patient information if patient is unable)</i>
	A standardized patient could provide the history information above, otherwise this can be provided by facilitator.

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Section 5: Scenario Progression

Scenario States, Modifiers and Triggers				
Patient State/Vitals	Patient Status	Learner Actions, Modifiers & Triggers to Move to Next State		Facilitator Notes
1. Baseline State Rhythm: Sinus Tach HR: 160 BP: 90/60 RR: 32 O ₂ SAT: 88% RA T: °C 36.6 GCS: 15	<i>Uncomfortable but cooperative, working hard to breath, diffuse hives, swollen lips.</i>	<u>Expected Learner Actions</u> <input type="checkbox"/> IV, O ₂ , Monitors <input type="checkbox"/> Recognize anaphylaxis <input type="checkbox"/> Epi (0.01mg/kg = 0.3mg IM 1:1000) <input type="checkbox"/> Call RUDI <input type="checkbox"/> Broslow Tape	<u>Modifiers</u> - Failure to give Epi within 5 min, or lower dose BP 80/50 <u>Triggers</u> - RN calls RUDI for support (2)	PT weight 30kg
2. RUDI on ZOOM Vitals unchanged (if epi was not given, or lower dose patient BP 80/50)	Unchanged	<u>Expected Learner Actions</u> <input type="checkbox"/> Connect to RUDI doc through Zoom or telephone <input type="checkbox"/> RUDI helps complete Hx and Physical exam <input type="checkbox"/> IV NS bolus (20mL/kg = 600mL) <input type="checkbox"/> Benadryl 50mg PO/IV <input type="checkbox"/> Ranitidine 150mg PO <input type="checkbox"/> Methylprednisolone 60mg IV or Dexamethasone 10mg PO <input type="checkbox"/> Ventolin 5mg Neb x3 PRN	<u>Modifiers</u> -If telephone call, RUDI doc asks to switch to Zoom to visualize pt. -If treatment delayed RR 36 BP 80/50 (75/45 if insufficient epi) -If treatment started quickly rpt vitals: 100/60, 160, 32, 92%RA 36.6, 5.9 <u>Triggers</u> -Treatments given or 5 minutes (3)	- Bolus should be NS
3. Re-evaluation Vitals dependent on treatment: Prompt treatment (delayed or insufficient) Rhythm: Sinus Tach HR: 160 (160) BP: 100/60 (80/50) RR: 32 (36) O ₂ SAT: 92%RA (88%)	Unchanged	<u>Expected Learner Actions</u> <input type="checkbox"/> RUDI Calls CHARLIE CHARLIE Suggests: <input type="checkbox"/> repeat epi (0.3mg IM) <input type="checkbox"/> repeat bolus (20ml/kg) <input type="checkbox"/> repeat ventolin (5mg neb)	<u>Modifiers</u> - With treatment vitals improve: 110/70, 130, 26, 96%RA, 36.6, 6.2 <u>Triggers</u> - Treatments completed or 5 min(4)	



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<p>T: °C 36.6 (36.6) GCS: 15 (15)</p>				
<p>4. 1 Hour later Rhythm: Sinus Tach HR: 125 BP: 110/70 RR: 27 O₂SAT: 96% RA T: °C 36.6 GCS: 15</p>	<p>Feeling better, WOB improved, Angioedema still present, hives decreased but still present.</p>	<p><u>Expected Learner Actions</u> <input type="checkbox"/> CHARLIE recommends transfer <input type="checkbox"/> PTN is initiated</p>	<p><u>Modifiers</u> <u>Triggers</u> -PTN is initiated, patient is accepted, end scenario.</p>	



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Appendix A: Laboratory Results

<u>CBC</u> WBC Hgb: Plt	<u>Cardiac/Coags</u> Trop D-dimer INR aPTT
<u>Lytes</u> Na K Cl HCO ₃ AG Urea Cr Glucose	<u>Biliary</u> AST ALT GGT ALP Bili Lipase
<u>Extended Lytes</u> Ca Mg PO ₄ Albumin TSH	<u>Tox</u> EtOH ASA Tylenol Dig level Osmols
<u>VBG</u> pH pCO ₂ pO ₂ HCO ₃ Lactate	<u>Other</u> B-HCG Urine Dip: Negative



Appendix B: ECGs, X-rays, Ultrasounds and Pictures

Paste in any auxiliary files required for running the session. Don't forget to include their source so you can find them later!

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Appendix C: Facilitator Cheat Sheet & Debriefing Tips

Include key errors to watch for and common challenges with the case. List issues expected to be part of the debriefing discussion. Supplemental information regarding any relevant pathophysiology, guidelines, or management information that may be reviewed during debriefing should be provided for facilitators to have as a reference.

Management of anaphylaxis.

Pediatric dosing, vital signs / resources / Broslow Tape / Pedistat etc.

Fluid boluses in Pediatrics = Normal Saline.

Communication challenges via ZOOM, Internet connection, multiple callers, mute function, video placement, etc.

What resources and treatments are available in the local centre.

Any barriers to transport in the local centre. Transfer may/may not be needed in this case and this can be a discussion point with the patient/family/specialist.

References

1. Canpbel, RL and Kelso, JM. Anaphylaxis: Emergency Treatment. In: UpToDate, Post, TW (Ed), UpToDate, Waltham MA, 2020
2. Barksdale, AN and Muelleman, RL. Allergy, Hypersensitivity, and Anaphylaxis. In: Rosen's Emergency Medicine: Concepts and Clinical Practice 9ed, Walls RM (Ed), Elsevier, Philadelphia, PA, 2018, pp. 1418 – 1429.

