

 the structured approach to a child in cardiac arrest

Instructor Notes This session is 45 mins.

Read notes on facilitating plenaries.

Consider commencing the session in a usual plenary style and moving into groups of 3-4 after slide 4 (Rapid Assessment).

> Sit candidates in groups (3-4 people each group). They will need pen, clip board and 2 double sided copies per group of the A4 Serious Illness Activity Sheet

Interactive session is also to:

Candidates nominate a scribe and a spokesperson

ACTIVITY PACKS x 4 - one per group of six candidates

Aim of this session is to recap the recognition and resuscitation of the seriously unwell child, briefly recap identifying when circulatory arrest has occurred, revision of BLS and ALS, and the use of two cases to practice the material discussed

Write down three reasons to have a structured approach to a serious ill child.

I minute for activity – 3 minutes for shared answers

Multiple answers (incl. Human Factors issues - Chapter 2 in 7e)

so you don't miss anything method to calm oneself down in panic position prioritise assessment and treatment in a logical order

learn an automated response. Minimise fixation

Shared situational awareness

Communication

•SEGUE to algorithm activity – **click to show aeroplane** - repetition assists in established automated responses

Slide 3



apls

Circulation

Disability Conscious level

Heart rate

Capillary refill time Blood pressure Skin temperature

Posture & Pupils



Be brief – this and the next slide is recall from pre-reading and the online learning.

In Disability also mention along with posture COLOUR & TONE

This slide has animation.

Rapid assessment features are emphasised in the online learning – this slide is a prompt for recall of pre-course learning. Give candidates the 'space' to provide the answers.

Slide 7

Slide 6



Rapid assessment

Airway & Breathing

Effort

Efficacy Effects

Initial management is similar regardless of cause of the illness

Once more information is available specific treatment can target the cause of the illness

Having a "scaffold" for resuscitation helps the practitioner to provide resuscitation whilst giving more time to gain more information to enable a diagnosis and specific treatment to be found



Present this case and the following slide and invite candidates to discuss in their groups the initial resuscitation and then think about the differential diagnosis of respiratory and circulatory failure and the specific interventions that should be given. Invite candidates to provide answers to next two slides, including any other key features that they can think of

Allow 2 minutes See Slide 24 for hidden features

Show key features and ask for diagnosis and emergency treatment.

Ask whether there are any other key features / diagnoses not listed here.

Allow 4 minutes

See Slide 25 for hidden features, diagnosis and treatment. Note Prostaglandin is in 'grey' font, as a teaching point for infants pg 76-77 (not suitable for Tyler – who is 3 yrs old)

Slide 11

Ruby's case

Ruby is 4 months old. She has been brought in by her parents who are concerned that she is sleepy and not taking her feeds. She has had no previous illnesses

apls

Slide 12

	On examination	Resuscitation
•	Snoring	
	Resp rate 40/min No recession SpO ₂ not recordable	
2	Heart rate 140/min Pale Cold peripheries BP 80 mmHg systolic	
,	AVPU Pupils: sluggish, equal and reactive	
	Hypothermic - temperature 34.5°C	

Present this case and the following slide and invite candidates to discuss in their groups the initial resuscitation and then think about the differential diagnosis of reduced conscious level and the specific interventions that should be given.

Invite candidates to provide answers to next two slides, including any other key features that they can think of before summing up. Eg:

Fever - meningitis

acute onset – cerebrovascular event

high BP – hypertensive encephalopathy

vague and inconsistent history, other trauma in an infant – child abuse

Allow 2 minutes See Slide 26 for hidden features



Slide

14

Key Feature	Diagnosis	Treatment
Seizures develop		
Bruising, full fontanelle	1	1
Poor growth or regression		
Acute onset and fever	1	
Possibility of	1	T

Show key features and ask for diagnosis and emergency treatment.

Ask whether there are any other key features / diagnoses not listed here.

E.g.

headaches, acute onset – cerebrovascular event headaches, high BP – hypertensive encephalopathy vague and inconsistent history, other trauma in an infant – child abuse

The use of the structured approach in these cases will help ensure early and appropriate treatment. Candidates may practice this in the illness simulations which follow.

Allow 4 minutes See Slide 27 for hidden features

Pack of laminated sections of BLS and ALS algorithms

5 mins to order cards into BLS and ALS algorithm sequences & keep displayed on table

Start whole group review of questions with activity:

Tap/clap at CPR rate of 100-120 beats/min - give group min 20 secs – watch, some in group will adapt to others or some stay confident. Encourage whole group to listen to each other & yet know their own beat.

* can use ALSi on CPR rhythm or SR to give audible rate – (set up in advance to ensure volume on iPad is on maximum)

Ask why is CPR rate is at 100-120 beats/min?

- They will know the answer, however knowing doesn't mean doing......

clinicians (in simulation) haven't shown to be great at keeping rate or sustaining depth –

Studies show that we need repeated practice and feedback on performance – (what they are going to get on the face to face course)

As main evidence for resuscitation is primarily related to effective CPR – need to change manpower to prevent exhaustion & maintain rate and depth

Recap of BLS and ALS

Slide 15	Danger? - Safety R R S Check for signs and functions Start CPR Start CPR S Start CPR Continue CPR until responsiveness or normal breathing return P100 Contance Cardiots: Avent	Check with cards on the table
Slide 16	Basic Life Support D Dangers? R Responsive? S Send for help A Open Airway B Normal Breathing? C Start CPR C Start CPR D Attach CPR D Attach CPR C Start CPR C Start CPR C Start CPR D Continue CPR until responsiveness of normal breathing return Continue CPR until responsiveness of containee CPR until responsiveness	Points of difference APLS sequence is for trained paediatric healthcare providers Normal breathing? – Include 2 rescue breaths (children have hypoxic arrests) Signs of life? Start CPR 15:2 vs 30:2
Slide 17	PEA/Asystole algorithm	Check with cards on the table 5 mins of small group activity

Questions to be answered in their groups – worksheet with questions provided

-How long is a cycle?

-What do you do during the 2 minute cycle?

When is adrenaline given? VT/VF vs asystole?

Which of the Hs and Ts are of particular importance in asystole?

hypoxia hypovolaemia anything else suggested by history of child's illness/injury

Which of the Hs and Ts are of particular importance in PEA?

hypovolaemia hypocalcaemia tension pneumothorax cardiac tamponade hypothermia pulmonary embolus

How is ROSC assessed? – why feel for a pulse? Where do you feel for a pulse?

Attach influence (na anitar	PEA/Asystole algorithm	apis In Second
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Pet-maxifulfine care	Perci-ressultation core formation statist Varia production guarantee Nation by distribution guarantee Nation by distribution statistics was according and was according and was according and	



This is the part of the ALS algorithm for VF/VT

Remember to include tone & colour when you mention posture

Closure – include that further opportunities to discuss assessment and management of illnesses raised in the Serious Illness plenary will be in the workshops and illness scenarios.

Initial management is similar regardless of cause of the illness

Once more information is available specific treatment can target the cause of the illness

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Slide 24	7 th edition	Advanced Paediatric Life Support
	Cases in full for instructor use only	Structured Approach to the Seriously III Child and Child in Cardiac Arrest

Instructor Notes

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Slide 25

Ty ar	vler's case: Primary nd resuscitation	assessment
	On examination	Resuscitation
A	Patent	Call for help
в	Resp rate 40/min SpO ₂ not recordable Significant recession Poor AE R lower chest	Maintain airway (may nee intubation) High flow oxygen via face mask
с	Pale Heart rate 170/min Weak peripheral pulses BP 65 mmHg systolic CRT 4 sec	IV access and fluids (10-20 mls/kg bolus) Bloods Reassess
	AVPU	-

Allow 2 minutes

mat emergei	ncy treatment:	Like Swapper
Key Feature	Diagnosis	Treatment
Creps at right lung base	Severe pneumonia	Resp support IV antibiotics
History of asthma	Severe asthma	Resp support Bronchodilators IV corticosteroids
Fever and rash	Septicaemia	IV/IO Fluid Antibiotics
Signs of heart failure	CHD / Cardiomyopathy	Diuretics, inotropes Prostaglandin
Abnormal ECG rhythm	Arrhythmia	Arrhythmia algorithms
High blood glucose	Diabetes	Fluid, Insulin

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Allow 2 minutes

	On examination	Resuscitation
A	Snoring	Call for help
В	Resp rate 40/min No recession SpO ₂ not recordable	 Open and protect airway High flow oxygen vic face mask
с	Heart rate 140/min Pale Cold peripheries BP 80 mmHg systolic	IV/IO access and judicious fluids Blood tests esp blood diucose
D	AVPU Pupils: sluggish, equal and reactive	Start to warm
E	Hypothermic - temperature 34.5°C	Reassess

Ruby's case: Primary assessment

Slide 9

Slide 8

	eney treatmen	ic.
Key Feature	Diagnosis	Treatment
Seizures develop	Post-ictal state	Supportive, investigate cause
Bruising, full fontanelle	Head injury	Trauma algorithm
Poor growth or regression	Metabolic condition	BGL, Blood gas, lactate and ammonia Metabolic screen
Acute onset and fever	Meningitis Encephalitis	Antibiotics Consider acyclovir
Possibility of poisoning	Drugs	Supportive Antidotes

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