



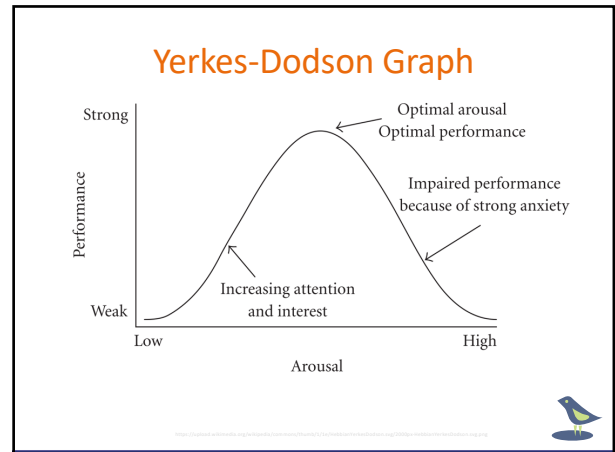
ThinkAskLearn
Health Professional Education

Paediatric Resuscitation – Embracing the Fear

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1



2

Emergency

- ED's holds different meanings to us all




3



4


Emergency

- ED's holds different meanings to us all
- Depends on role, previous experience, and developmental considerations
 - ED nurse - excitement/boredom/challenging
 - Parent - safe haven/tragedy unfolds
 - Child - funny smells
 - bright lights
 - noisy machines
 - strangers who do things that hurt



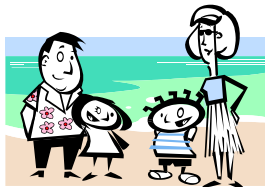
5

- Caring for a child in an ED demands specialised knowledge and skills
- Not only physiological but psychosocial
- A child's size and appearance do not necessarily reflect the child's chronological age



6

Involve the Family



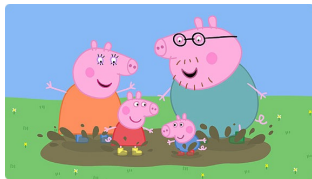
7

Learn some kid culture

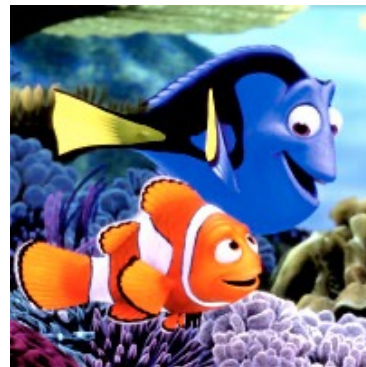
'If you play with kids they will play with you'



8

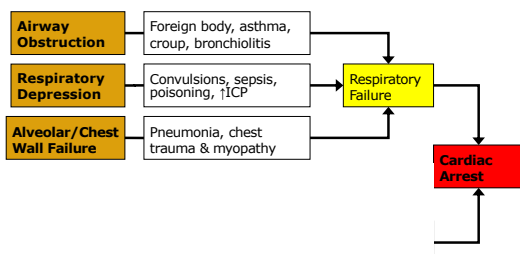


9



10

Causes of Cardiac Arrest



Apls 2018



11

The Primary Survey

Airway
Breathing
Circulation
Disability
Exposure



12

Paediatric Parameters

Age	Wt Kg	HR	Resp	Systolic BP	ETT*	LMA	Suction Fr	NGT Fr	IDC Fr
Term	3.5	110-160	30-40	70-90	3.0	No 1	8	5-6	5-8
6m	7.5	110-160	30-40	70-90	3.0	No 1.5	8-10	6-8	8-10
1yr	10	110-160	30-40	70-90	3.5	No 1.5	8-10	6-8	8-10
2yr	12.5	95-140	25-30	80-100	4	No 2	10	8	10
3yr	14	95-140	25-30	80-100	4	No 2	10	8-10	10
4yr	16	95-140	25-30	80-100	4	No 2	10-12	6-8	10-12
6yr	20	90-120	20-25	90-110	5	No 2.5	10-12	6-8	10-12
8yr	26	80-120	20-25	90-110	5.5	No 2.5	10-12	10-12	10-12
10	32	80-120	20-25	90-110	6	No 3	12	10-12	12
>12	40	80-120	20-25	90-110	6	No 3	12	10-12	12

*ETT sizes are for MicroCuff tubes only

Normal ETT = (Age/4)+4

Paracetamol 15mg/kg

Defibrillation 4Joules/kg for all shocks

Adrenaline 10mcg/kg 1:10 000

Fluid Bolus 20ml/kg Normal Saline

Assessment - ABCDE - Glucose - Temperature - Urine

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13

AIRWAY

IS THE AIRWAY OPEN AND EASILY MAINTAINED?

➤ RECOGNISING THE SICK CHILD

- An anxious child holding his/her head in a sniffing position
- The presence of stridor, wheeze or grunting
- The child is drooling and/or not swallowing



14

Anaphylaxis

Assess for:
Upper airway obstruction (stridor, lip swelling)
Lower airway obstruction (wheezes, respiratory distress)
Shock (downs, pale, clammy, hypotension)
Blebs (skin changes, bull's test, redness)

Call for help
Remove upper airway agent
Position flat or sitting, not walking or standing

Cardiac arrest?

NO
Adrenaline IM
Use auto injector if available (injected injection into upper outer thigh)
Adults: 0.5mg (0.5ml of 1:1000)
Children: 10mcg/kg (0.01ml/kg of 1:1000) (max dose 0.5ml, max dose 0.5mg)
Repeat every 5 minutes as needed

YES
Refer to ALS algorithm

Monitor: SpO₂, ECG, BP
Stay high flow oxygen
Start IV access

For shock:
0.9% sodium chloride rapid infusion
Adults: 1L bolus
Children: 20ml/kg

RESOLVED
Observe at least 6 hours
Monitor vital signs, reassess ABC

NOT RESOLVED
Consider steroids as an adjunct to adrenaline in mild to moderate anaphylaxis
Consider antihistamines to treat angioedema, urticaria and pruritus once stabilised

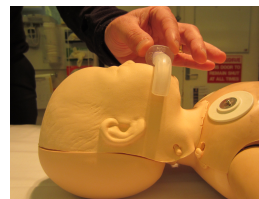
Call for specialist advice and transfer to a critical care setting
Consider:
• Further 0.9% sodium chloride
• Nebulised adrenaline for bronchospasm
• Nebulised salbutamol for bronchospasm

It is an irreversible disease & a potentially fatal allergic reaction to an allergen

Reviewed July 2024



Sizing and Inserting OPA



16

BREATHING

➤ RECOGNISING THE SICK CHILD

- The chest is not expanding adequately or symmetrically
- The respirations are rapid, too slow, or only periodic
- There is moderate to severe use of accessory muscles ie., nasal flaring, tracheal tug, subcostal/substernal/intercostal recession
- There is alteration in the child's colour ie., pallor, dusky or cyanosis.
- Grunting child



17

Self Inflating Bags



18

Breathing – T piece

- Ventilation pressure is regulated by partially occluding the open end.
- Barometer - To measure inflation pressure.
- Lung compliance may be felt by operator.
- Can provide PEEP
- Needs a reliable O2 source therefore not suitable during transport.



19



20

ETT Sizing

- $ETT = Age/4 + 4$
- Length cm = $(Age/2) + 12$ for an oral tube
- Length cm = $(Age/2) + 15$ for a nasal tube
- Neonates - internal diameter mm = 3 - 3.5
- Introducers - Don't let it protrude.



21

Laryngoscopes –Straight vs Curved



22

Ventilation of Kids



23

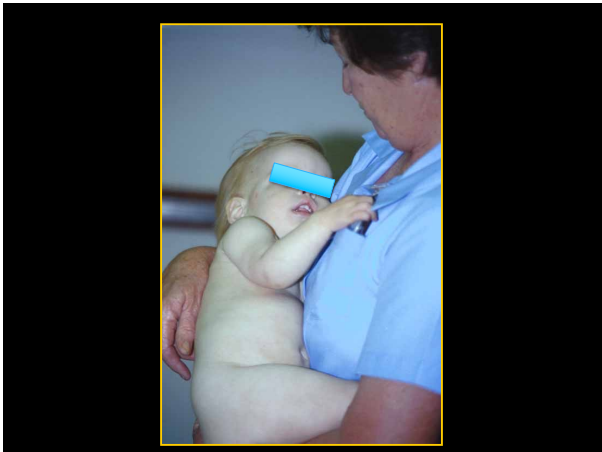
CIRCULATION

➤ RECOGNISING THE SICK CHILD

- Tachycardia/bradycardia
- Pulse pressure
- Dehydration status
- There are changes in skin colour ie., very pale, mottled, dusky, cyanosed
- The limbs will be cool to touch, with decreased capillary refill
- There is a petechial rash



24



25



26

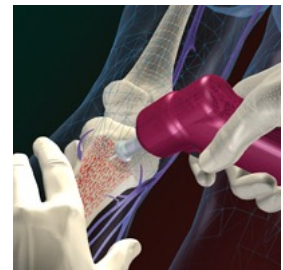
Circulation Treatment

- 2 large bore cannula
- EZ-IO drill (90 seconds if no cannula)



27

EZ-IO Drill



28

Circulation Treatment

- 2 large bore cannula
- EZ-IO drill (90 seconds if no cannula)
- Fluid, drugs and defibrillation joules are calculated on weight.
- Weight can be estimated using $(age + 4) \times 2$
Crystalloid - 20ml/kg N/S boluses
- Consider blood/inotropes at 3rd bolus



29

DISABILITY (NEUROLOGICAL ASSESSMENT)

- IS THE PATIENT CONSCIOUS AND ALERT?
- RECOGNISING THE SICK CHILD
 - If the parent reports increased sleepiness or drowsiness, and there is evidence that the child is failing to interact with his parents.
 - There is paradoxical irritability.
 - General muscle tone will be flaccid with poor or sluggish response to pain.
- Assess BSL early and frequently



30

Primary Survey – Disability

- Alert
- Verbal
- Pain
- Unresponsive

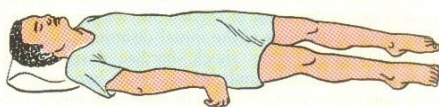


31

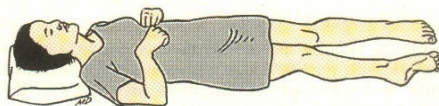


32

Abnormal Posturing



A. Extension posturing (decerebrate rigidity)



B. Abnormal flexion (decorticate rigidity)



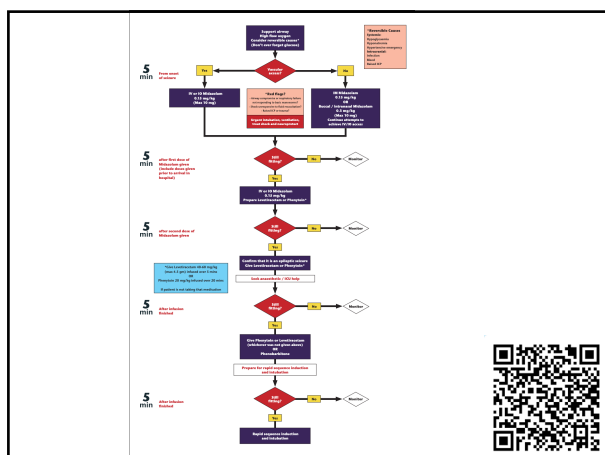
33

Disability Treatment

- In a Child with a conscious level of P or U consider intubation
- Treat hypoglycaemia with
 - 2ml/kg 10% dextrose
- Treat prolonged seizures with IV midazolam then IV phenytoin or IV Phenobarbitone if already on phenytoin.



34



35

Exposure

- If you don't take a temperature you can't find a fever
- Rash



36



37

Conclusion

- Resus rooms have different meaning for all
- Finding sick kids is not hard
- Undertaking a complete assessment is vitally important
- Primary survey identifies the seriously sick kids.

38