



ThinkAskLearn
Health Professional Education

**Paediatric Resuscitation –
Embracing the Fear**


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1

Emergency

- ED's holds different meanings to us all




2



3


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



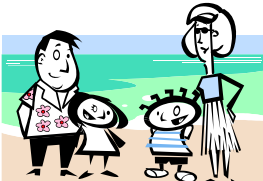
4

- 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




5

Involve the Family



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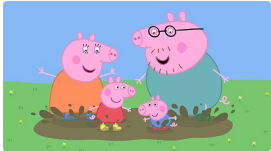
6

Learn some kid culture

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



7



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8



9

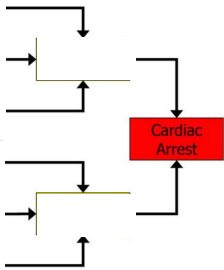


10



11

Causes of Cardiac Arrest



Apls 2018



12

The Primary Survey

- Airway
- Breathing
- Circulation
- Disability
- Exposure



13

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
5yr	20	90-120	20-25	90-110	5	No 2.5	10-12	6-8	10-12
6yr	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
Assessment - ABCDE - Glucose - Temperature - Urine

Defibrillation 4pulses/kg for all shocks
Adrenaline 10mcg/kg 1:10 000
Fluid Bolus 20ml/kg Normal Saline

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14

AIRWAY

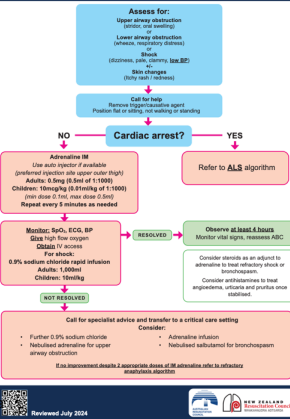
IS THE AIRWAY OPEN AND EASILY MAINTAINED?

- 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



15

Anaphylaxis



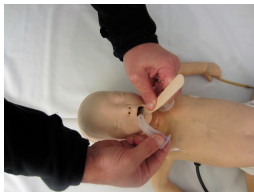
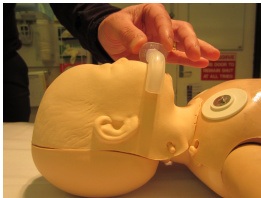
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Reviewed July 2024



16

Sizing and Inserting OPA



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17

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



18

Self Inflating Bags



19

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.



20



21

ETT Sizing

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



22

Laryngoscopes –Straight vs Curved



23

Ventilation of Kids



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24

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



25



26



27

Circulation Treatment

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



28

EZ-IO Drill



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29

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 $(\text{age} + 4) \times 2$
- Crystalloid - 20ml/kg N/S boluses
- Consider blood/inotropes at 3rd bolus



30

Treatment of Arrest Rhythm

- Shockable
 - Uncommon
 - Good CPR
 - Early defibrillation – 4J/kg for all shocks
 - Adrenaline 10mcg/kg after 2nd Defibrillation
 - Repeat Adrenaline every 4 mins
 - Amiodarone 5mg/kg after 3rd unsuccessful shock



31

Treatment of Arrest Rhythm

- Non Shockable
 - Good quality CPR
 - Adrenaline 10mcg/kg immediately Rpt every 4 mins
 - Find and treat cause (4H's & 4T's)
 - Asystole is commonest paediatric arrest rhythm



32

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



33

Primary Survey – Disability

- Alert
- Verbal
- Pain
- Unresponsive



34



35

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.



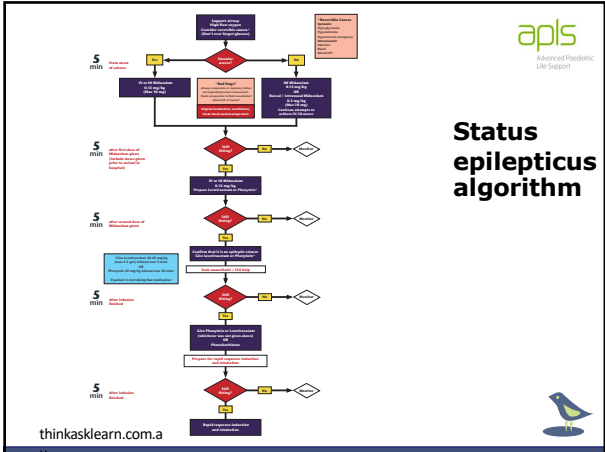
36

Don't Ever Forget Glucose

- Check blood glucose level



37



Status epilepticus algorithm



38

Exposure

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



39



40

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.



41