

It's as easy as... ABC

Dr Andrew Smith



ABCDE

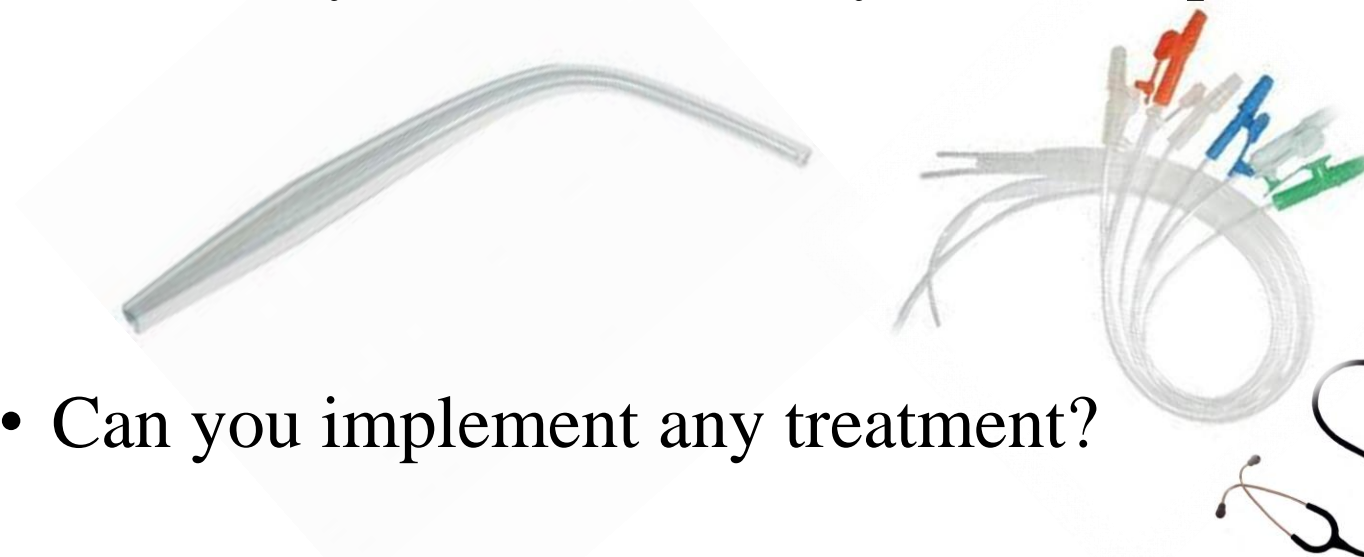
- A useful framework to apply to your assessment and management of (unwell) patients.
- Correct problems before moving on and reassess
- Call for help early – it shows you're safe!

- A – Airway
 - B – Breathing
 - C – Circulation
 - D – Disability
 - E – Exposure
- } Reassessment



Airway

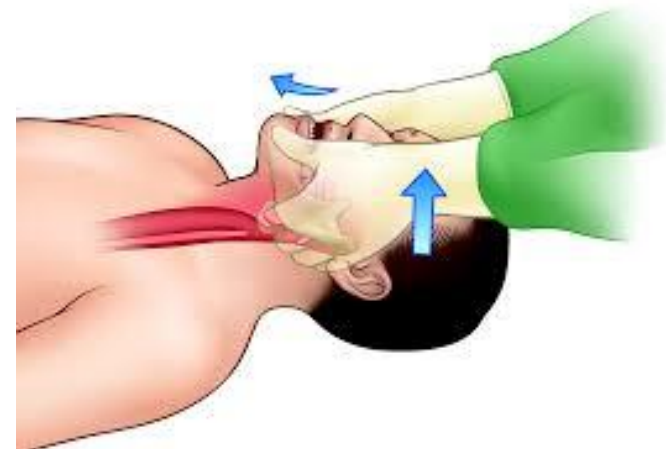
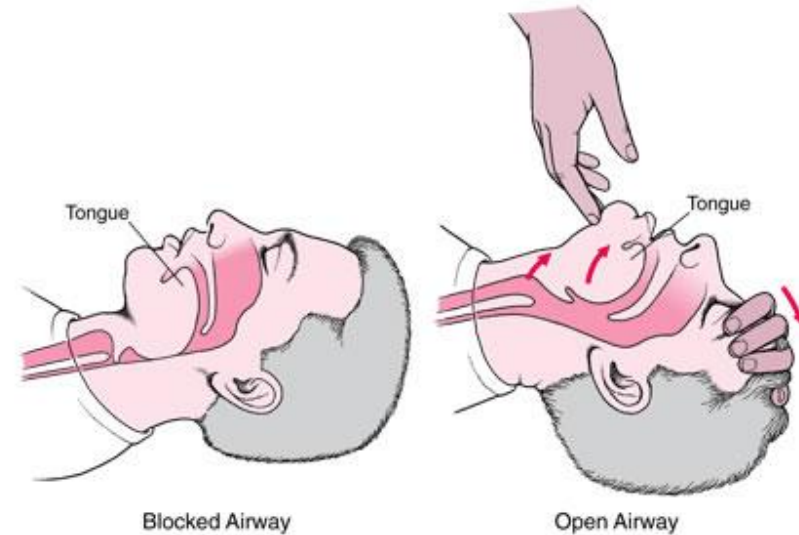
- Ask the patient to speak – if they can, the airway is patent.
- Are there added sounds?
 - Gurgles, Stridor, Snoring
- Is there visible obstruction?
 - Foreign body, Vomit, Blood
 - Can they be removed safely with forceps/suction?



- Can you implement any treatment?

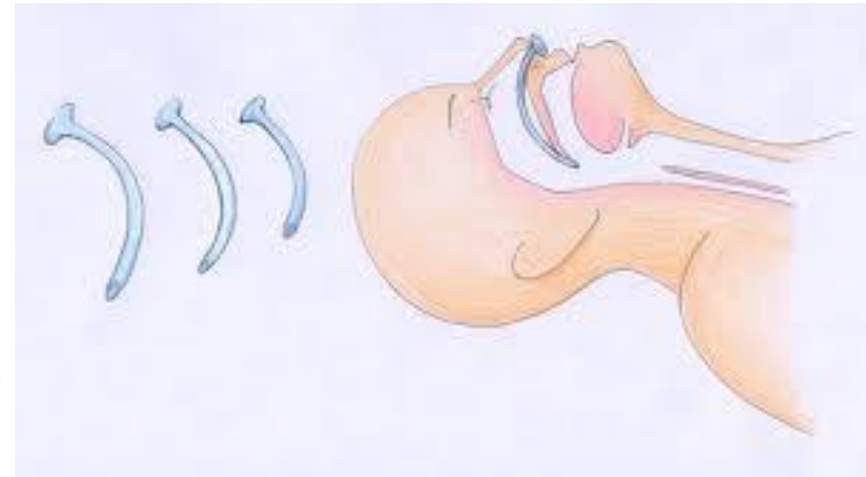
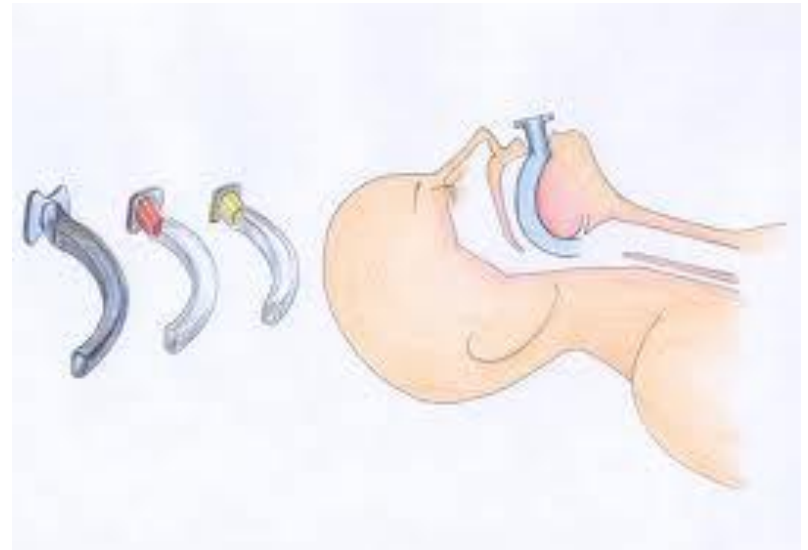
Airway manoeuvres

- Head tilt, chin lift in adults/teenagers
 - “Sniffing-the-air” in children
 - Neutral position in babies
- Jaw thrust
 - Can be used efficiently with a mask
 - Use if cervical spine concerns



Airway Adjuncts

- **Oro-pharangeal airway (Guedel)**
 - Measure from incisors to mandible
 - Insert using rotational method (in adults)
 - Remove if gagging
- **Naso-pharangeal airway**
 - Measure from nostril to earlobe
 - Lubricate and insert in right nostril.
 - Contraindicated in basal skull fractures
- **Others:**
 - Laryngeal mask airway
 - Endotracheal Intubation
 - Cricothyroidotomy



Breathing

- Is there accessory muscle use? Are they in obvious distress?
- What's the respiratory rate? Normal is 12-20 for an adult
 - Occasional gasps are not normal
 - *If the patient is not breathing, this is a cardiac arrest, begin CPR!*
- Oxygen Saturations
 - Normally aim for >94%
 - 88-92% if at high risk of hypercapnic respiratory failure
 - If in doubt, give high-flow oxygen* (hypoxia will kill before hypercapnia).
- Trachea central? Chest expansion normal? Percussion normal?
- Auscultation normal?
- Consider ABG/VBG*
- Consider other investigations (e.g. PEFR, CXR)
- Can you implement any treatment?

*NB: See other talks on O2 Therapy and ABGs



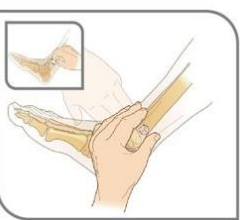
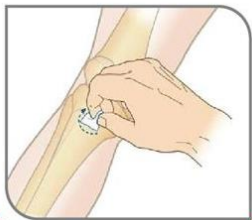
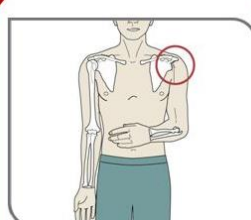
Circulation

- Capillary refill
 - Should be <2 seconds. Cold/Clammy?
- Pulse – rate, rhythm, good volume?
- Blood Pressure – *may be normal until late*
- Urine output (marker of organ perfusion)
 - 0.5mls/kg/hr – i.e. Half the weight (kg) per hour.
- JVP
- Auscultate the heart

- Gain IV/IO access and take bloods.
- Consider ECG
- Can you implement any treatment?



Intraosseous access



Disability

- What's the patient's conscious level?
- AVPU – Alert, Voice, Pain, Unresponsive
- GCS:

BEHAVIOR	RESPONSE	SCORE
Eye opening response	Spontaneously	4
	To speech	3
	To pain	2
	No response	1
Best verbal response	Oriented to time, place, and person	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
Best motor response	Obeys commands	6
	Moves to localized pain	5
	Flexion withdrawal from pain	4
	Abnormal flexion (decorticate)	3
	Abnormal extension (decerebrate)	2
	No response	1
Total score:	<i>Best response</i>	15
	<i>Comatose client</i>	8 or less
	<i>Totally unresponsive</i>	3



What's the GCS?

- A 17yo motorcycle collision victim is in resus. His eyes are opening to pain and he's muttering noises. On pressure to his trapezius muscle his right hand reaches to his chest. **9**
- An 85yo woman is on the medical ward. She is sitting in bed reading her paper and puts it down when you ask. She thinks you are her grandchild. **14**
- A seven year old girl is unresponsive to pain, and shows no movement despite painful stimuli. **3**
- A dog is playing catch in the park.

BEHAVIOR	RESPONSE	SCORE
Eye opening response	Spontaneously	4
	To speech	3
	To pain	2
	No response	1
Best verbal response	Oriented to time, place, and person	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
Best motor response	Obeys commands	6
	Moves to localized pain	5
	Flexion withdrawal from pain	4
	Abnormal flexion (decorticate)	3
	Abnormal extension (decerebrate)	2
	No response	1
Total score:	<i>Best response</i>	<u>15</u>
	<i>Comatose client</i>	8 or less
	<i>Totally unresponsive</i>	3

Disability continued

- Equal and reactive pupils?
- Blood glucose ($\sim 3 - 11$ mmol/L) [ABCD**D**on't**E**ver**F**orget**G**lucose]



Exposure

- Temperature ($\sim 35.5 - 37.5$ °C)
- Has the patient taken any drugs, recreational or prescribed? (e.g. morphine, benzodiazepines, alcohol)
- Fully examine patient
 - Any rashes, injuries, bleeding?
- Past history
 - Collateral if needed
 - Recent events leading to deterioration
- **Reassess ABCDE**



Human Factors

- There is growing appreciation of the effect ‘human factors’ (or ‘non-technical skills’) play in successful outcomes in critical care scenarios. Examples include:
 - Leadership
 - Identifying a team leader to run the resuscitation
 - May not be the most senior member of staff
 - They should avoid performing tasks (e.g. inserting cannulas)
 - Managing conflict of opinion within the team/making decisions
 - Communication
 - Escalating concerns/difficulties
 - Clear role allocation with feedback when jobs complete
 - Teamwork
 - Taking on experience appropriate tasks
 - Situational awareness
 - Knowing colleagues’ (first) names and job roles
 - Debrief/reflection



Don't forget other patients witnessing the scenario



Examples

52 ♂ brought in by ambulance with shortness of breath and cough.

A – Patent, talking in short sentences

B – RR38, Saturating 85% on 15L via Hudson mask

Wheeze heard throughout the chest. Course crackles right base

Get Help

O2 driven Salbutamol/Ipratropium nebs +/- a steroid

Non-rebreathe mask (not a Hudson)

ABG and CXR

C – P118, regular. BP 98/67. Central Cap refill <2secs

Cannula and bloods

Fluids

Consider ECG, cardiac monitor

D – T38.6. BM 6.7. GCS 15/15

Antibiotics

Blood and sputum cultures

E – PMHx: Asthma. 2/7 Amoxicillin started by GP

Reassess!



Examples

You respond to an emergency buzzer on the orthopaedic ward for a patient who has become unresponsive after returning from theatre 2 hours ago

A – Gurgling/Snoring noises

Get more help

Assess airway for obstruction e.g. vomit

Airway manoeuvres – simple adjuncts

B – RR7, Saturating 88% on air. Transmitted upper airway sounds.

Oxygen! Bag-valve mask to support ventilation.

Reassess airway – can you alter your adjuncts?

C – P120, regular. No BP available as cuff not working.

Any IV access?

D – T35.6. BM 5. GCS E1 V2 M4. Small Pupils.

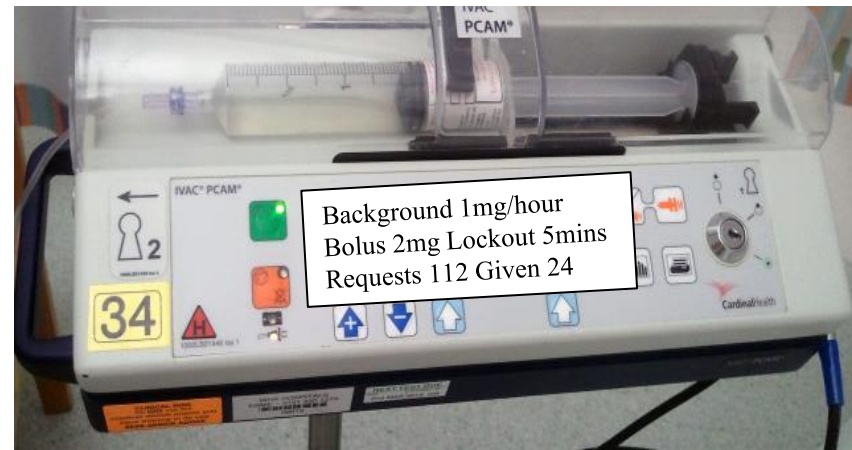
?Any medication you would consider. Cover with blanket.

E – Left leg in cast, foot cold,
no foot pulses palpable, delayed CR
PCA at bedside.

Nalaxone

Stop PCA

Remove cast/call surgeons



Examples

You're talking to a patient on a ward round who suddenly collapses in front of you.

A – No obvious obstruction

B – You can't detect any respiration.

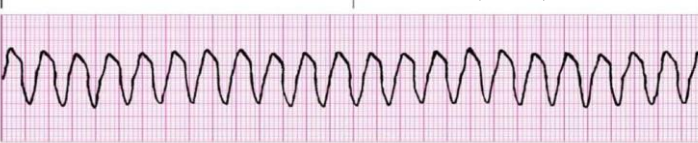
Call for Help – e.g. emergency buzzer

Commence CPR!

- 30 compressions to 2 rescue breaths
- Apply defibrillator and assess rhythm



Ventricular Fibrillation (VF) **Shockable**



Ventricular Tachycardia (VT)

Assess for Pulse

- **Pulse Present** – Treat via broad complex tachycardia algorithm (e.g. Amiodorone)
- **Pulse Absent** - Shockable



Asystole **Not Shockable**



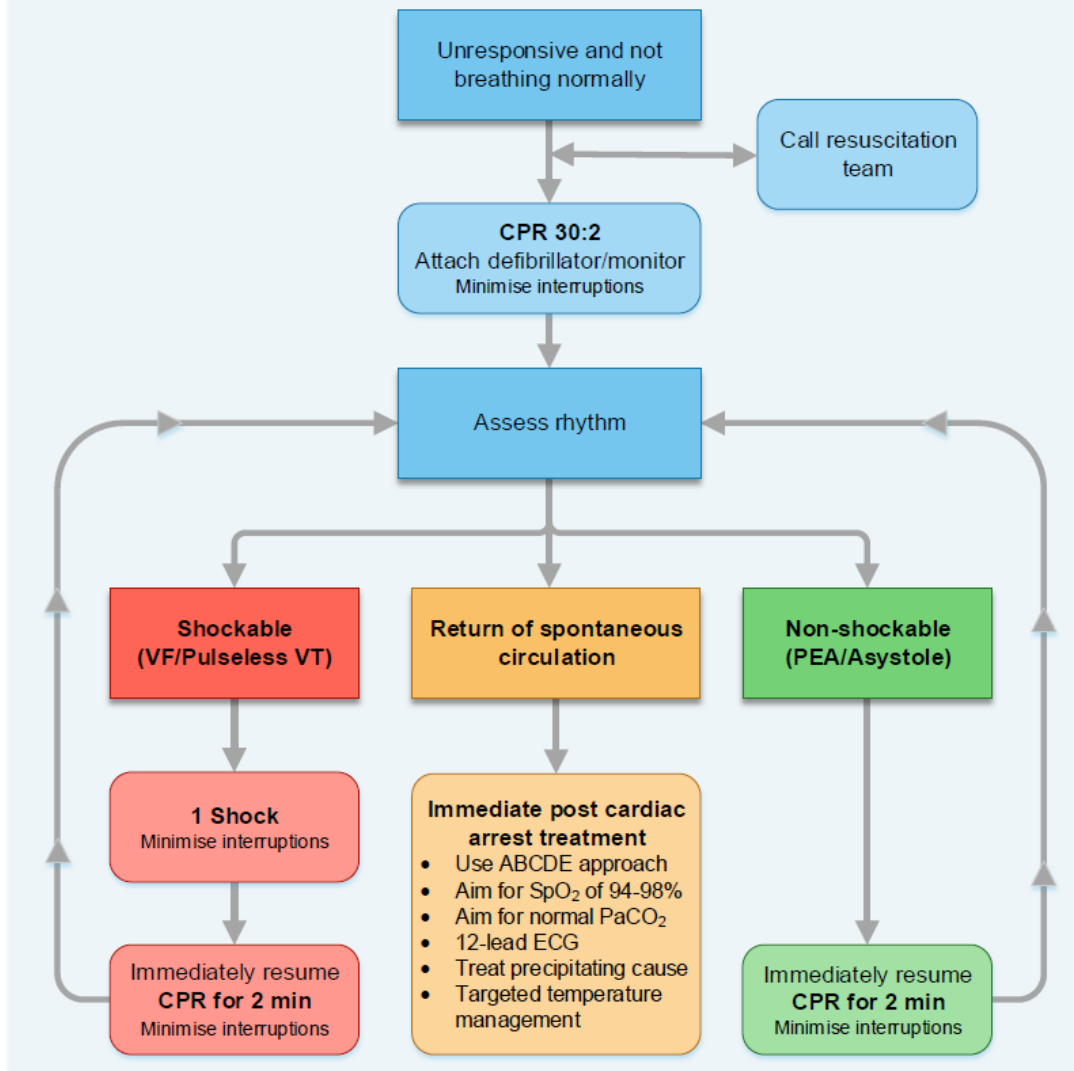
Electrical Activity

Assess for Pulse

- **Pulse Present** – Assess by ABCDE
- **Pulse Absent** – Pulseless Electrical Activity (PEA) – not shockable

Recommence chest compression immediately (aim for 5s pause only)

Adult Advanced Life Support Algorithm



During CPR

- Ensure high quality chest compressions
- Minimise interruptions to compressions
- Give oxygen
- Use waveform capnography
- Continuous compressions when advanced airway in place
- Vascular access (intravenous or intraosseous)
- Give adrenaline every 3-5 min
- Give amiodarone after 3 shocks

Treat Reversible Causes

- Hypoxia
- Hypovolaemia
- Hypo-/hyperkalaemia/metabolic
- Hypothermia
- Thrombosis - coronary or pulmonary
- Tension pneumothorax
- Tamponade – cardiac
- Toxins

Consider

- Ultrasound imaging
- Mechanical chest compressions to facilitate transfer/treatment
- Coronary angiography and percutaneous coronary intervention
- Extracorporeal CPR

Examples

18 year old is brought into resus having a seizure which started 20 minutes ago.

A – Non-rebreathe mask in situ, jaws clenched. Some drooling noted.

Consider nasopharyngeal airway, suction in visible field.

B – Difficult to assess rate but sats 98% on high flow oxygen via Non-rebreathe mask. No obvious added sounds in the chest with equal percussion notes.

Continue

C – HR 120. BP was 140/89 when last checked 10 minutes ago. CR <2secs. No IV access.

Urgent IV access. Consider IO if no success quickly

Bloods can be taken during insertion (particularly U+Es/Bone Profile/glucose/VBG +/- anticonvulsant drug levels +/- toxicology screen)

D – Generalised clonic seizure activity. Pupils equal and reactive.
GCS E4, V1, M1 = 6/15. BM 5.2. Temp 37.8

Priority is to terminate the seizure – this depends on...

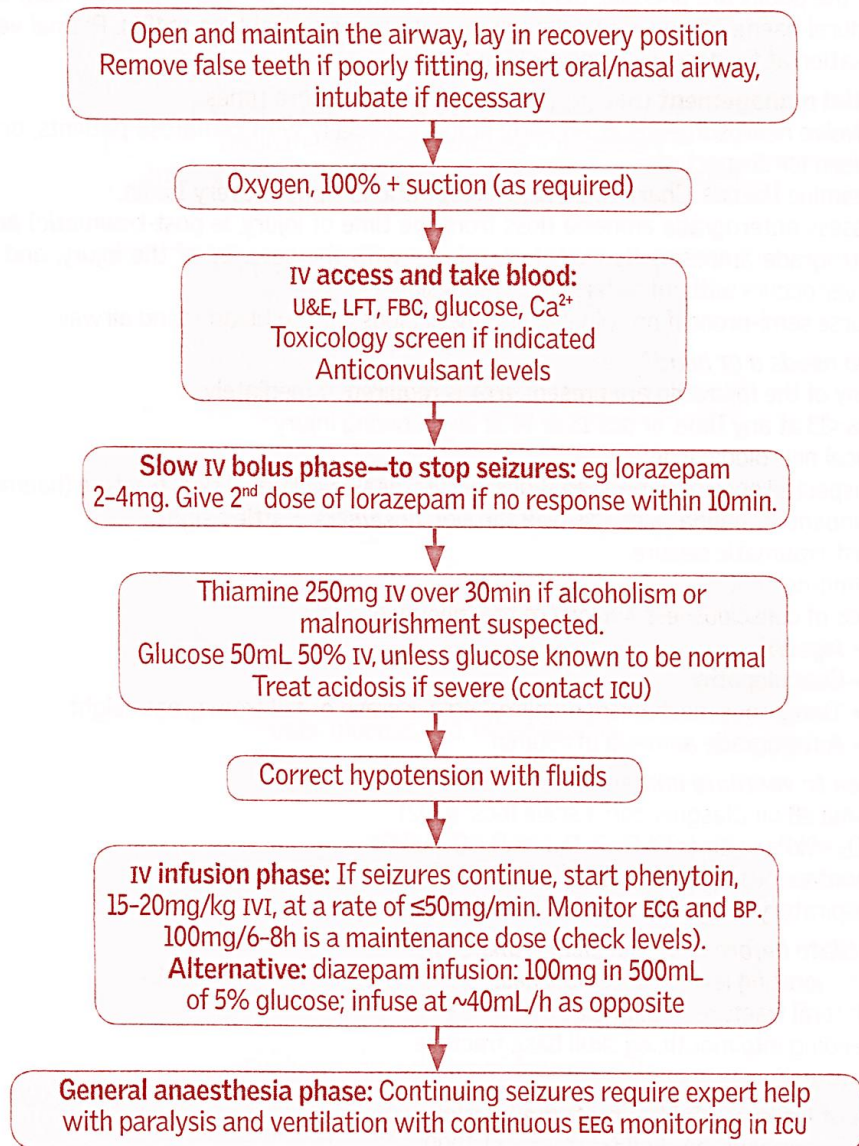
E – Patient with known epilepsy on sodium valproate. Paramedics gave 10mg buccal Midazolam 10 minutes ago which has not had any effect.

Repeat benzodiazepine – ideally IV Lorazepam (typically 4mg)

- If no response, for Phenytoin infusion*
- If no response, consider anaesthetising patient*



Status Epilepticus



Differentials to consider (especially if epilepsy is not a known diagnosis):

- Alcohol withdrawal
- Illicit drugs
- Electrolyte/Metabolic abnormalities, in particular:
 - hypoglycaemia,
 - hypocalcaemia,
 - hypomagnesaemia,
 - hyponatraemia
- Pre-eclampsia
- Head Injury
- SoL
- CVA

Remember...

- ABCDE is a simple and safe approach to assess patients.
- Correct abnormalities before moving on.
- Simple interventions save lives.
- Continually reassess.
- Ask for help!

It doesn't matter how old I get, I'm still going to mentally sing the ABC's to see which letter comes next.



Thanks for Listening

Any Questions?

