



Ymddiriedolaeth GIG
Gwasanaethau Ambiwylans Cymru
Welsh Ambulance Services
NHS Trust

Ymddiriedolaeth GIG Gwasanaethau Ambiwylans Cymru Welsh Ambulance Services NHS Trust

Community First Responder Initial Training Day Two Lesson Plan

Tutor: Jon Johnston	Session: Day One	Date: TBC	Time: TBC
Student Population:	Venue: TBC	Duration: 7.5 hours	Entry Behaviour: New entry volunteers
Equipment Required: Laptop, training package, group work laminates, Manual handling equipment Responder bags and airway manikins			
Paperwork required. Sign off forms, online register to be completed.			

Location Facilities Requirements Risk assessed training environment. Appropriate facilities to enable learning. Facilitated by one instructor.	
	Risk Assessment: Low COVID-19 Risk Assessment: Low

Session Aims: To increase confidence in your clinical scope of practice and your self-confidence to discharge duties on behalf of the Welsh Ambulance Service NHS Trust. Learning Outcomes: By the end of the day volunteers will be able to: • Explain the benefits of the chain of survival. • Explain the common types and causes of cardiac arrest in adults and paediatric patients. • Demonstrate Basic Life Support procedures for adult and paediatric patients. • Demonstrate how to use an AED safely.	Introduction: (Slide 1 – 3) Self Ground rules – Learner’s agreement – Slide 2 - Trust Behaviours Learning outcome for session – Slide 4
	Reference JRCALC

Objective:	Tutor Activity – Focus	Student Activity - Strategy	Equipment
Welcome all students to the session.	Complete the course online register – Training Website	Provide names and WAST PIN.	Training Website Online Register
Slide 3 – Knowledge Check	Knowledge check completion allocate around 15 mins -Go through assessments, how they work, what we are looking for, and when they will be. Explain the reassessment process. -Knowledge checks. Explain when they will be, marking system and percentage of overall pass mark. -Complete knowledge check for induction, multiple choice	Look, listen, ask questions.	Power Point, V1.
Slide 4-5 – Learning outcomes	Learning Outcomes and reference materials Learning Outcomes: By the end of the day volunteers will be able to: • Explain the benefits of the chain of survival. • Explain the common types and causes of cardiac arrest in adults and paediatric patients. • Demonstrate Basic Life Support procedures for adult and paediatric patients. • Demonstrate how to use an AED safely. • Resuscitation Council (UK) provide the guidelines on how to conduct basic life support (BLS).	Look, listen, ask questions, Demonstrate.	Power Point, V1.
Slide 6 – 9 – Chain or survival	Resuscitation Council (UK) provide the guidelines on how to conduct basic life support (BLS).	Look, listen, ask questions , Demonstrate	Power Point, V1.

	A critical set of actions needed to treat life threatening emergencies with the greatest level of efficiency. - The chain of survival here depicts the actions required to treat a person in cardiac arrest – when the heart has stopped working. Key for a CFR is Early recognition.		
Slide 10-15– Assessment of breathing	- Flowchart to assist you as a CFR to follow a methodical and structured approach to patient assessment - The illustration to the right is the flowchart which is available as a crib sheet – recommend to have a copy with you in your response bag - Following this methodical process will ensure you acknowledge and address the most important elements in order of ‘life threatening’ priorities of the patient - This is referred to as the Primary Survey – an initial rapid assessment to gain a General Impression and to identify any immediate major life threatening problems that need correcting before proceeding onto the next stage of patient assessment (Eg. arriving at the side of an unconscious patient you identify the patient has a noisy airway (Snoring) which indicates the tongue is occluding the airway – as you can see during the A section of the primary survey you would consider utilising a simple airway manoeuvre to open the airway, before moving on - We’ll look at each section in turn during this presentation		Power Point, V1.
Slide 17 – 23 – AED use.	Safe use of an AED All automated and will analyse the heart rhythm once PADS are placed on chest	Look, listen, ask questions Demonstration.	Power Point, V1.

	- Most if not all AEDs will issue audible instructions of what to do - If the AED does not detect a shockable rhythm – it will not tell you to press the shock button - Some are equipped with a small monitor screen which enables you to view the current ECG rhythm – you are not expected to read ECGs!		
Slide 24– CPR	Correct demonstration of Chest Compressions (CPR) on Adult, Child and Infant.	Look, listen, ask questions.	Power Point, V1.
Slide 25– Airway Management	Describing the airway management of a cardiac arrest patient. - As a Community First Responder you will not be expected to perform mouth to mouth ventilations. - Left-hand Box: A Bag Valve Mask (BVM) is being used to provide ventilations – this will be covered in Module 3 and during your Practical Day 1 - Right-hand Box: The i-Gel airway is being used to provide ventilations and involves insertion and connection of several different types of equipments and is a more advanced airway adjunct used in cardiac arrest by CFRs – this will be covered in Module 3 and your Practical Day 1. - When performing CPR at 30:2 using a BVM and OPA watch for rise and fall of the chest whilst ventilating – compressions to briefly stop whilst ventilating – this should be a minimal amount of time. - Once i-Gel and equipment have been set up, compression are to be continuous and uninterrupted - COVID: Current bystander guidance is to lightly cover the patient's face with a cloth and perform ECC only	Look, listen, ask questions.	Power Point, V1.

Slide 26-29	Q&A session and recap on key learning points • Manage Catastrophic Haemorrhage First! • Push hard and fast to save a life! • The recoil is just as important as the compression!	Look, listen, ask questions.	Power Point, V1.
Slide 30-34	Explain and demonstrate the correct use of the Automated External Defibrillator (AED)	Look, listen, ask questions.	Power Point, V1.
Slide 35	<u>Group work – Basic Life Support</u> Demonstrate BLS including airway up to I-Gel and AED (double responder approach). • Include identifying CPR is required • Prepare chest and apply pads • Whilst AED analyses (15secs) prepare BVM	Look, listen, ask questions.	Power Point, V1.
Slide – 36-44 – Special Circumstances	Special Circumstances: • ROSC • Pregnancy • Hypothermia • Neck stoma patients • Drowning • Paediatrics	Look, listen, ask questions.	Power Point, V1.

Slide 45-47 – Key Learning points	Review/recap learning objectives. Highlight key learning points. • If feasible, add a left lateral tilt if resuscitating a pregnant patient (between 15–30°). A small amount of tilt may be better than no tilt. • Signs of life can be difficult to detect in mild to severe hypothermia. • You will need additional support and assistance when managing a neck stoma patient in cardiac arrest. • Remember it is not always appropriate to start CPR in some situations.	Look, listen, ask questions.	Power Point, V1.
Slide 43	<u>Group work – practise time</u>	Look, listen, ask questions.	Power Point, V1.
Slide 44 – Wellbeing checklist – close	✓ Complete wellbeing checklist	Look, listen, ask questions.	Power Point, V1.

Cardiac Arrest Management

Welcome / Croeso

**Community First Responder
Initial Training
Day Two**

Welsh Ambulance Services NHS Trust

1

Housekeeping

- Welcome
- Introductions
- Fire exits/tests
- Breaks
- Mobiles
- WAST behaviours
- Order of the day

Welsh Ambulance Services NHS Trust

2

Learner Agreement – OUR BEST

To get there, we all need to be

- Take Ownership
- Be inclusive of the whole team
- Broaden our Understanding
- Respect others
- Show respect to each other
- Practice clinically
- Continuously improve our Service

Welsh Ambulance Services NHS Trust

3

Knowledge Check – Day 1

Welsh Ambulance Services NHS Trust

4

Learning Outcomes

By the end of this session you should be able to:

- Explain the benefits of the chain of survival
- Explain the common types and causes of cardiac arrest in adults and paediatric patients
- Demonstrate BLS procedures for adult and paediatric patients
- Demonstrate how to use an AED safely

Welsh Ambulance Services NHS Trust

5

WAST FR Reference material

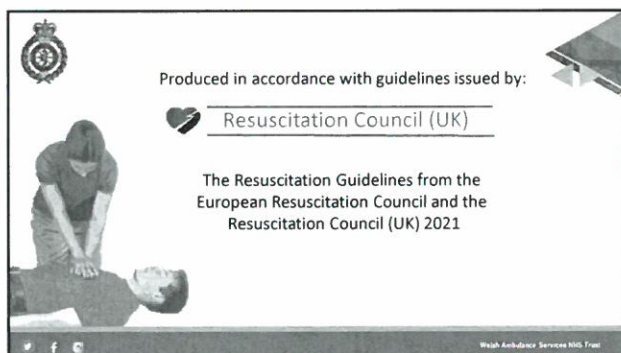
FIRST RESPONDER CARE Essentials

Richard Pilbery
Kris Lethbridge

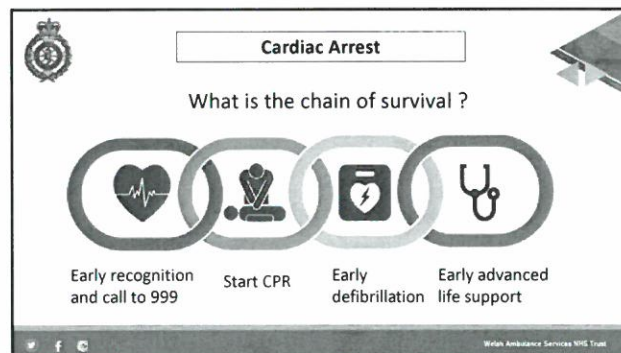
Some images courtesy of Bing

Welsh Ambulance Services NHS Trust

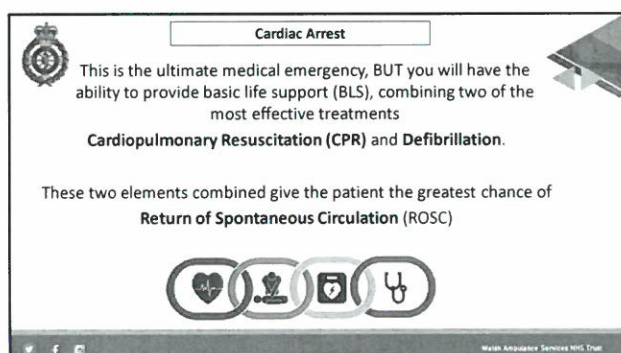
6



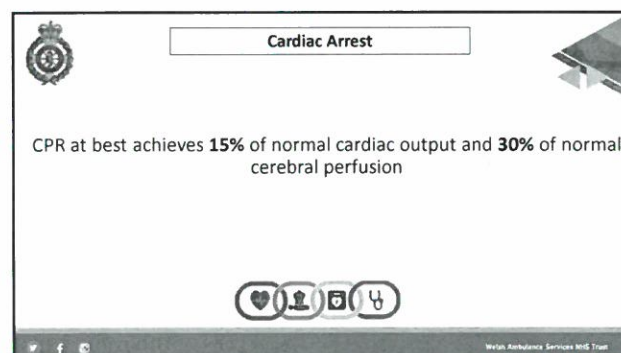
7



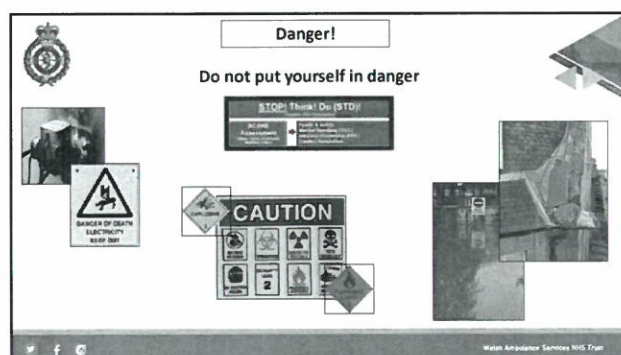
8



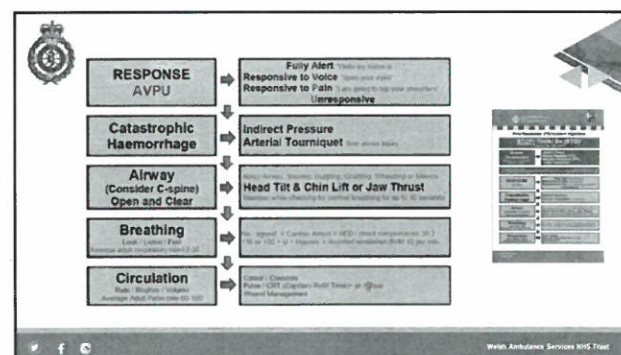
9



10



11



12

RESPONSE
AVPU

Check the Victim for a Response

"Can you open your eyes?"

Paediatric Adaptions:
 *Infant (≤1 yr)
 *Child (1yr to puberty)
 Whilst stabilising the head gently tug a strand of hair whilst calling the patient's name (if known)

Welsh Ambulance Services NHS Trust

13

Catastrophic Haemorrhage

Check for Catastrophic Haemorrhage

Address Catastrophic Haemorrhage first before commencing BLS

Welsh Ambulance Services NHS Trust

14

Airway
(Consider C-spine)
Open and Clear

Clear the airway and open it with a head tilt chin lift/ Jaw Thrust

"this will open the airway"

Paediatric Adaptions:
 Infant: Keep head neutrally aligned. Do NOT tilt the head.
 Child: Head tilt chin lift. Do NOT use an OPA

Welsh Ambulance Services NHS Trust

15

Breathing
Look / Listen / Feel
Average CO2B respiration rate 12-20

Look, Listen and Feel for normal breathing up to 10 seconds

*COVID 19 pandemic
Check for breathing at arms length
(Chest rise & fall, noises)

Welsh Ambulance Services NHS Trust

16

Demonstration

- ✓ Danger
- ✓ Response
- ✓ Cat Haem
- ✓ Airway
- ✓ Breathing

Welsh Ambulance Services NHS Trust

17

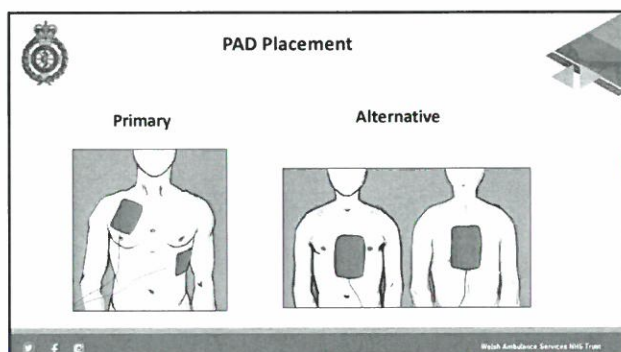
If NOT breathing or if breathing is ineffective with NO signs of life

Deploy the defibrillator!

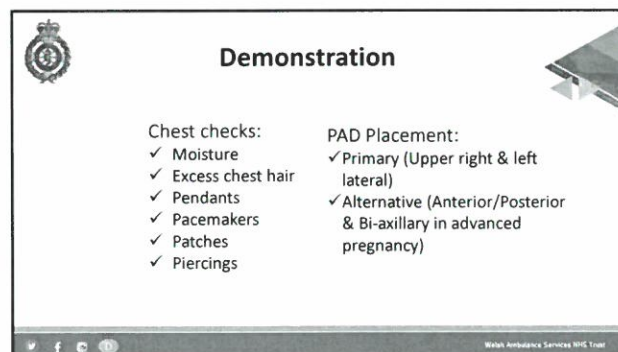
Solo Responder: before commencing chest compressions
Double Responder: simultaneously to commencing chest compressions

Welsh Ambulance Services NHS Trust

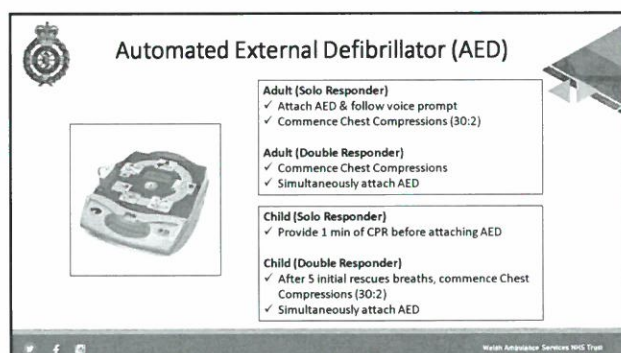
18



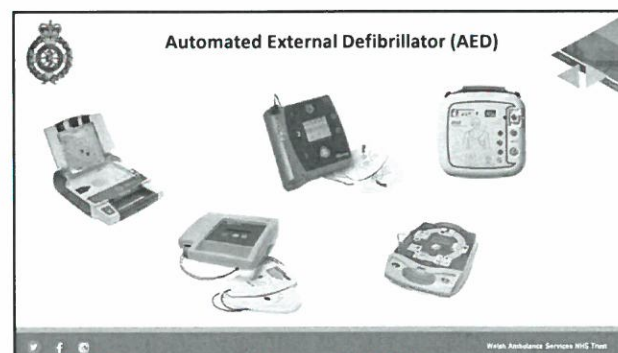
19



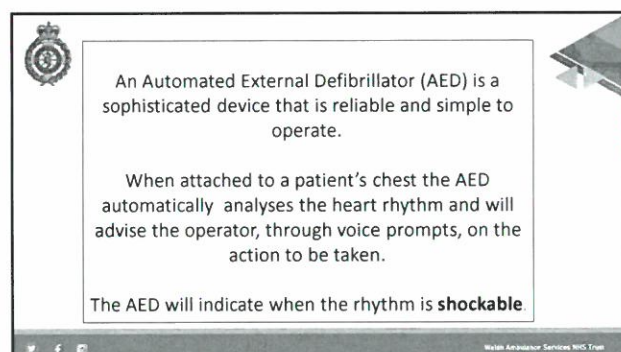
20



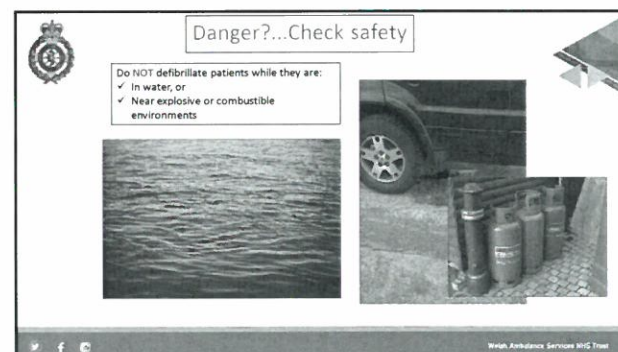
21



22



23



24

Circulation
 Rate 1 Rhythmic / Volume
 Average Adult Pulse rate 60-100

Child (Solo Responder)
 ✓ Provide 5 Initial Rescue Breaths
 ✓ Commence Chest Compressions (30:2)

Child (Double Responder)
 ✓ Provide 5 Initial Rescue Breaths
 ✓ Commence chest compressions whilst simultaneously attaching AED

Infant (Solo Responder)
 ✓ Provide 5 Initial Rescue Breaths
 ✓ Commence Chest Compressions





Welsh Ambulance Services NHS Trust

25

After 30 compressions, ventilate the patient

Ventilate twice after each 30 compressions
Ratio of 30:2
 *Equipment will be used to perform ventilations

I-Gel airway
 Ventilate once every 6 seconds
 Compressions can now be continuous

No I-Gel Airway for Paediatric Patients




Welsh Ambulance Services NHS Trust

26

Continue BLS until...

- Qualified help arrives and takes over
- The victim starts breathing normally
- You become exhausted



Welsh Ambulance Services NHS Trust

27

Demonstration

- ✓ Danger
- ✓ Response
- ✓ Cat Haem
- ✓ Airway
- ✓ Breathing
- ✓ Circulation
- ✓ Deploy Defibrillator (Adult and child)
- ✓ CPR (Airway Stepwise Approach)

Welsh Ambulance Services NHS Trust

28

Key Learning Points

- ✓ Manage Catastrophic Haemorrhage First!
- ✓ Push hard and fast to save a life!
- ✓ The recoil is just as important as the compression!

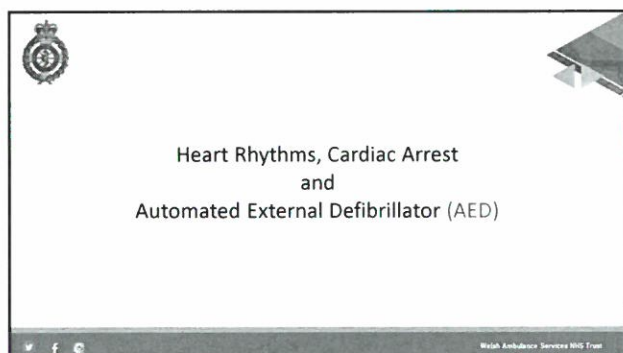
Welsh Ambulance Services NHS Trust

29

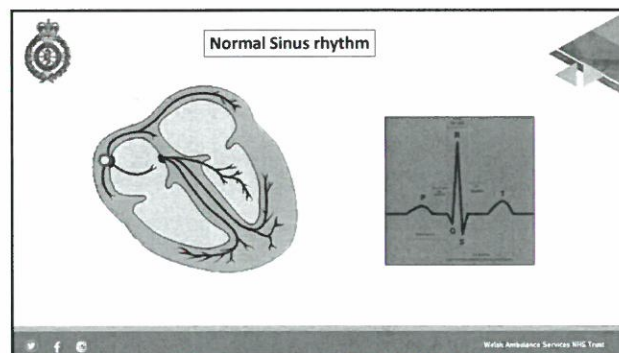


Welsh Ambulance Services NHS Trust

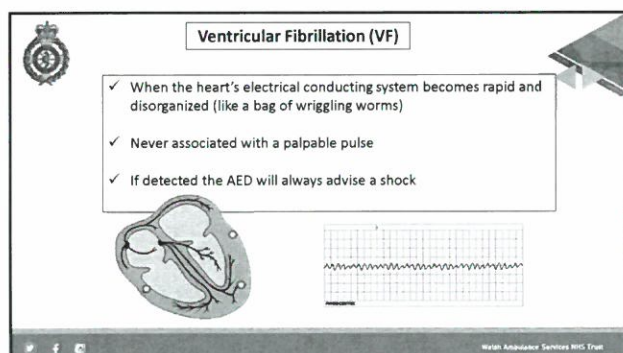
30



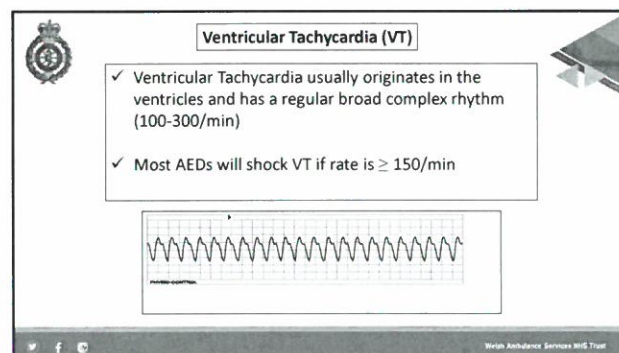
31



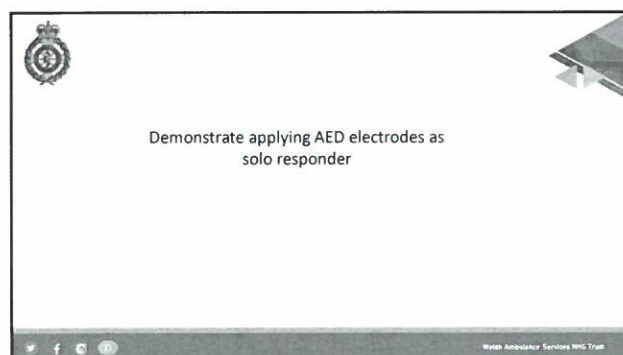
32



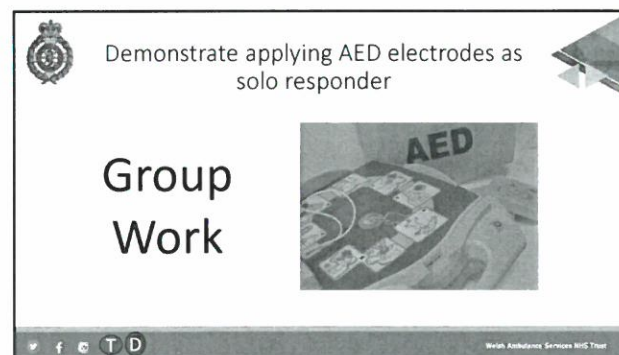
33



34



35



36



Demonstrate BLS including airway up to I-Gel and AED
(double responder approach)

 Welsh Ambulance Services NHS Trust

37



Demonstrate BLS including airway up to I-Gel and AED

Group Work



 Welsh Ambulance Services NHS Trust

38



Return of Spontaneous Circulation (ROSC)

1. Reassess patient's airway and breathing:
 - ✓ Provide **rescue breathing**, if the rate of spontaneous respirations reduce (less than 10 rpm), at a rate of 10 to 12 breaths/min or one every 6 seconds).
 - ✓ Oxygen therapy should be titrated to maintain an SpO₂ of 94-98 (except in trauma where high flow oxygen is administered)
2. Reassess patient's circulation:
 - ✓ Perform frequent observations
 - ✓ Check blood glucose if possible.
 - ✓ If traumatic arrest keep patient warm (blanket)
3. If patient remains stable after 10min place the patient into the recovery position

 Welsh Ambulance Services NHS Trust

39





 Welsh Ambulance Services NHS Trust

40



Special Circumstances

- ✓ Pregnancy
- ✓ Hypothermia
- ✓ Neck stoma patients
- ✓ Drowning
- ✓ Paediatrics

 Welsh Ambulance Services NHS Trust

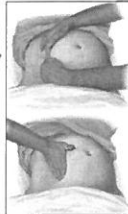
41



Cardiac arrest in pregnancy

- ✓ The procedure for resuscitating a pregnant patient is the same for any patient, but with some modifications
- ✓ If possible, manually displace the uterus to the left to minimise compression on the inferior vena cava
- ✓ If feasible, tilt patient to the left (Approx. 15-30 degrees). A small amount of tilt is better than no tilt (under right buttock)
- ✓ In advanced pregnancy (**≥ 28 weeks**) when performing external chest compressions (ECC) the hand position will need to be higher on the sternum (Approx. 2-3cm)
- ✓ Alternative pad placement maybe required (Anterior-posterior or bi-axillary)

(Care Essentials, Chapter 20, p225)



 Welsh Ambulance Services NHS Trust

42

Cardiac arrest in hypothermic patients

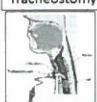
- ✓ A core body temperature less than 35 degrees is defined as Hypothermia
- ✓ In cases of moderate (28-32 degrees) and severe (less than 28 degrees) hypothermia, signs of life can be very difficult to identify.
- ✓ Unless there is clear indication that the cardiac arrest was caused by a lethal injury or fatal illness, patients should be resuscitated on the principle that 'no one is dead until they are warm and dead' [Truhlar, 2015]

(First Responder, Care Essentials Chapter 14, p157)

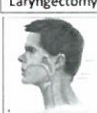
43

Cardiac arrest in neck stoma patients

Tracheostomy



Laryngectomy



- ✓ Patients with a Tracheostomy or Laryngectomy airways are very challenging to manage – you will need urgent support!
- ✓ Tracheostomy tubes often have universal connectors for resuscitation ventilatory equipment to connect to.
- ✓ Laryngectomy airways often have speaking valves attached in the stoma.
- ✓ If all else fails use chest compressions only




44

Warning!

Graphic Image follows

45

When NOT to resuscitate

There maybe times when a patient has an injury or presenting condition that is unequivocally associated with death, irrespective of age

- ✓ Massive cranial and cerebral destruction
- ✓ Hemitorporectomy (or similar massive injury)
- ✓ Decomposition/Putrefaction
- ✓ Incineration
- ✓ Hypostasis (graphic image warning!)
- ✓ Rigor Mortis



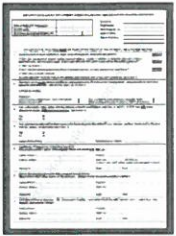
Whenever there is a chance of survival, resuscitation should be attempted

46

When NOT to resuscitate

- ✓ The patient has a valid Do Not Attempt CPR (DNACPR) →
- ✓ A valid Advanced Decision for Refusal of Treatment (ADRT)

'Ultimately, if you are unsure about the validity of previously made decisions, then commencing resuscitation is defensible' [AAACE, 2016]



47

Key Learning Points

- ✓ If feasible, add a left lateral tilt if resuscitating a pregnant patient (between 15–30°). A small amount of tilt may be better than no tilt.
- ✓ Signs of life can be difficult to detect in mild to severe hypothermia
- ✓ You will need additional support and assistance when managing a neck stoma patient in cardiac arrest
- ✓ Remember it is not always appropriate to start CPR in some situations.

48

 Aims and Objectives

You should now:

- ✓ Understand what the chain of survival is.
- ✓ Understand different types and causes of cardiac arrest in adults.
- ✓ Understand the procedure for providing BLS to adults
- ✓ Recognise when you should not start resuscitation
- ✓ Understand the special circumstance surrounding resuscitation.

   Welsh Ambulance Services NHS Trust

49





   Welsh Ambulance Services NHS Trust

50

 Group Work



     Welsh Ambulance Services NHS Trust

51

 At the end of session:
A wellbeing checklist

- ✓ Reflect on what went well today.
- ✓ Recognise what was difficult.
- ✓ Check in with the colleagues around you.
- ✓ Reflect for a moment on the difference you made to people and be proud.
- ✓ Are you ok? Use support scale below if you're not.
- ✓ Go home: **rest, restore** and do something you **enjoy!**



**Diolch
Thank You**

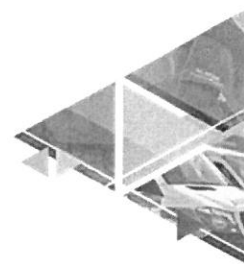
Feeling a bit down? Talk to a colleague
Finding things difficult? Talk to the management team
Need Professional advice? Call Wellbeing Support Service 0300 522 4700
Don't know what to do? Call the Samaritans

www.wellbeingtelling.com



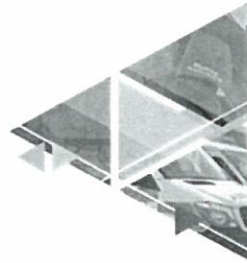
   Welsh Ambulance Services NHS Trust

52



Initial Recruitment Course Day 2

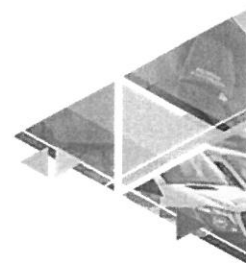
Time	Session	Activity	Equipment
Session 1 0845-0900	Welcome and Refreshments Housekeeping (Recap)	Welcome Hand out sign-off booklets	Refreshments Name labels Pens Teas and Coffee Milk and sugar
0900-0915	Day 1 Knowledge Check		Note pads and pens Desks and chairs Sign-off booklet Knowledge check
Session 2 0915-1015	Basic Life Support (BLS) with Automated External Defibrillation (AED)	Power point with Adult & Paediatric demonstrations blended into presentation	Laptop and screen BLS/AED power point Manikins (Adult, child & infant) Response bag x 1 AED x 1 Crib sheets
1015-1030	Return of Spontaneous Circulation (ROSC) and Special Circumstances	Power point	Laptop and screen BLS/AED power point (slide 53-56)
1030-1045	Break		Tea and coffee Milk and sugar
1045-1215	Practice Time BLS/AED	Round robin (pairs) 15min per BLS station 1. Adult 2. Paediatric (infant & child)	Response bags AEDs Manikins (Adult, child, infant) Sign-off booklets
1215-1245	Lunch		
Session 3 1245-1315	Choking	Tutor led demonstration	Manikins (Adult, child, infant) Sign off
Session 4 1315-1400	Respiratory conditions (What are they and how do you manage?) 1. COPD (Emphysema & Bronchitis) Asthma & Pulmonary Embolism (PE)	Poster group work 2 teams 15min research 30min present/discuss (15min per team)	First Responder, Care Essentials manual Flip charts x 2 Paper and pens



1400-1445	Circulatory conditions (What are they and how do you manage?) 1. Angina and Acute Coronary Syndrome (ACS) Shock and Heart Failure	Poster group work 2 teams 15min research 30min present/discuss (15min per team)	First Responder, Care Essentials manual Flip charts x 2 Paper and pens
1445-1500	Break		
Session 5 1500-1545	Assessing breathing 1. Rate, depth, pattern 2. SPO2 ranges	Tutor led demonstration	White board/Flip chart and paper Marker pens SPO2 monitor
	Assessing circulation 1. Pulse rate, pattern character 2. Cap refill 3. Blood Pressure	Tutor led demonstration	White board/Flip chart and paper Marker pens Omron BP machine
Session 6 1545-1645	Practice time Medical scenario (pairs)	Assess (DRCABC only) & manage: 1. Cardiac patient 15min per scenario	Response bags Enhanced skills bags Sign-off booklets
1645-1700	Hand in paperwork Close		Sign-off booklets

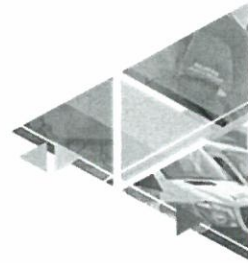
Sign-offs required

Day 1 Knowledge check	BLS practice: Adult, child and infant	Choking: Adult, child and infant	Medical scenario: Patient assessment



Day 2 Trainer's Guide:

Session 1			
0845-0900	Welcome Refreshments Introductions Housekeeping	Hand out sign-off booklets	Tea, coffee, milk, sugar, biscuits Name labels Pens
0900-0915	Day 1 Knowledge check	Hand out knowledge checks	Knowledge checks Pens
Spacious room/s required, enough to seat 8 students comfortably. Space also needed for tutor desk with laptop/screen or projector. Students to help themselves to refreshments Tutor to open session with housekeeping reminder and to hand out sign off booklets Initially, space students out ready to complete Day1 knowledge check. Provide name labels to each student. Water to be available. *Complete Day 1 knowledge check.			



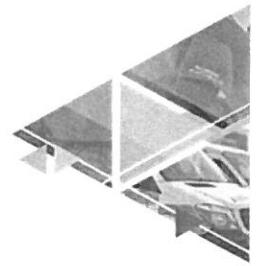
Session 2			
0915-1015	Basic Life Support (BLS) and Automated External Defibrillator (AED)	Tutor to deliver power point combined with built in demonstrations (BLS for adult, child and infant)	Power point (PP), laptop and screen Manikins: adult, child and infant Response bag AED Crib sheets
1015-1030	Return of spontaneous circulation and special circumstances	Tutor to continue and complete PP	PP (slides 53-56)
1030-1045	Break		
1045-1215	Group practice	Round robin BLS stations (15min per station): adult, child and infant. Tutor and helpers to oversee group practice.	Manikins: adult, child and infant Response bags AEDs Sign off booklets

Students will have already covered individual airway skills in day 1 and have read pre-learning booklet prior to course.

Space required in front of students for manikins for BLS tutor demonstration and BLS practice (including several manikins). Have other manikins and response bags/AEDs prepared and ready for group practice.

Tutor will demonstrate use of stepwise approach to airway management as part of managing a patient in cardiac arrest (manual manoeuvres to I-Gel) – both as solo responder and double.

Tutor will demonstrate safe use and deployment of AED.



Trainer's Notes:

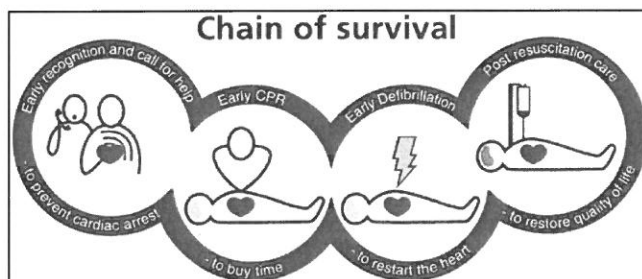
Resuscitation Council UK

- ✓ Resuscitation Council (UK) provide guidelines on how basic life support (BLS) need to be conducted.

Chain of Survival

- ✓ A critical set of actions needed to treat life threatening emergencies with the greatest level of efficiency
- ✓ The chain of survival depicts the actions required to treat a person in cardiac arrest – when the heart has stopped working, in order to optimise the greatest chance of survival
- ✓ Key actions for CFR's are Early recognition, CPR and defibrillation

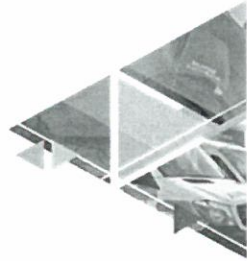
The Chain of Survival is a sequence of important actions that are required to optimise the chances of survival in an out of hospital cardiac arrest (OHCA).



Basic Life Support (BLS)

Dangers (SCENE)

- ✓ Before you move onto your patient assessment you must check it's safe for you to proceed – when attending any emergency call your safety is of paramount importance – this needs to be assessed before anything else you do
- ✓ STOP!, Think! Do (STD)! Dynamic risk assessment is a rapidly flowing risk assessment which provides you with opportunity to assess, take action and eliminate or reduce risk– if it's not safe do NOT proceed any further – retreat to safety and update ambulance control (Clinical Contact Centre CCC)
- ✓ The acronym SCENE breaks your assessment of the scene down even further – Safety, Cause, Environment, Numbers of patients and Extras (Talk through each one)



- ✓ Alongside other consideration such as
- 1. H&S responsibilities
- 2. MH (Task – type of MH activity (pushing, pulling, lifting etc), Individual – capabilities of the person carrying out the activity, Load – size, shape, weight of load, Environment – the area in which the object is to be moved
- 3. Infection Prevention – consider what Personal Protective Equipment (PPE) is required
- 4. Conflict Resolution – Threat recognition, Avoidance, Communication Skills, Teamwork, Intervention teams,

Response (AVPU)

Adult: Pain stimulus - gently shake shoulders and apply a gentle squeeze to the Trapezius muscle.
Paediatric (Infant ≤ 1 year, Child 1 year to puberty): Pain stimulus – DO NOT shake the patient.
Whilst stabilising the head gently tug a strand of hair whilst calling the patient's name (if known) or for an infant gently flick the sole of bare foot whilst checking for a response.

Cat Haem

Bleeding that will cause death in a matter of minutes (Eg. spurting arterial bleed, large pool of blood, blood on the floor and 4 more (chest, abdomen, pelvis, long bone)

Airway

Inspect airway and clear if required. DO NOT blind finger sweep. Suction to be under direct vision and for no longer than 15 seconds. Remove loose fitting dentures. Open airway initially with HTCL or jaw thrust to check breathing.

*Paediatric Adaptions

Infant: Keep head neutrally aligned. Do NOT tilt the head. Trachea is like a drinking straw and easily kinked.

Child: Head tilt chin lift

Do NOT use an OPA, this requires a different insertion technique.

Breathing

Look, listen and Feel for 10 seconds at arm length. Is the patient breathing? Ineffective breathing is an occasional gasp (agonal).

If NOT breathing or breathing is ineffective (Eg. Occasional gasps known as agonal breathing) and there are no signs of life start CPR!

(Eg. Signs of life could be noises from patient such as coughing; movement; breathing; detectable pulse)



Circulation

Check pulse at the carotid artery (if appropriate)

Defibrillator

Deploy AED.

Attach PADS – to be done immediately if solo or simultaneously with ongoing ECC if double

Chest checks:

Shave excessive hair where PADS are to be placed

Perspiration, patches, pendants, pacemaker, piercings

Primary PAD position – upper right chest and left lateral

Alternative: anterior (over sternum slightly to left) and posterior (toward lower aspect of left scapula) or bi-lateral for heavily pregnant patient (left and right lateral as close into the arm pits as possible)

PADS must NOT overlap or have wiring caught between skin and PAD.

As soon as possible commence external chest compressions (ECC):

Place heel of hand onto sternum approximately 2 finger breadth up from Xiphisternum, place second hand over top of first, interlink fingers. Straight arms, locked elbows with rescuer's shoulders directly above patient's chest. Compress the chest (approx. 1/3 depth or 5-6CM) at a rate of 100-120bpm.

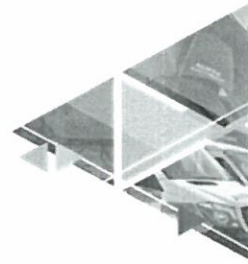
*Adult: following 30 compressions provide 2 ventilations (Adult and can be used for paediatrics)

1. Place heel of hand onto sternum approximately 2 finger breadth up from Xiphisternum
2. Place second hand over top of first
3. Interlock fingers
4. Straight arms and locked elbows
5. Rescuer's shoulders directly above patient's chest. Compress the chest (approx. 1/3 depth or 5-6CM) at a rate of 100-120bpm.

*Paediatric: provide 5 rescue breaths first then provide CPR at ratio of 30:2 as solo or 15:2 if double.

Manage airway utilising the stepwise approach (as appropriate and where possible)

Remember! You can ascend and descend the airway ladder



If advised to shock!

Do **NOT** defibrillate patients while they are:

- ✓ In water, or
- ✓ Near explosive or combustible environments (Oxygen flow **MUST** be at least 1m away)

Do **NOT** touch the patient whilst the AED is about to shock

Unless the I-Gel airway set is completely connected you **MUST** remove the flow of oxygen away from the patient (approx. 1M or arm length)

Before the 'shock' button is pressed, assertively and at a loud volume shout, CLEAR, TOP, MIDDLE, BOTTOM and OXYGEN AWAY! (whilst looking up and scanning the patient 360 degrees)

Automated External Defibrillator (AED)



An Automated External Defibrillator (AED) is a sophisticated device that is reliable and simple to operate.

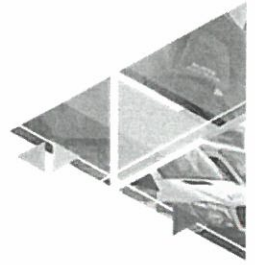
When initially attached to a patient's chest the AED will automatically analyse the heart rhythm and will advise the operator, through voice prompts, on the action to be taken.

The AED will indicate when the rhythm is **shockable**

Learning Outcome:

*Leading cause of cardiac arrest in adults is of a cardiac nature.

*Cardiac arrest in paediatric patients is predominately a secondary cause after respiratory failure (Eg. Hypoxia)



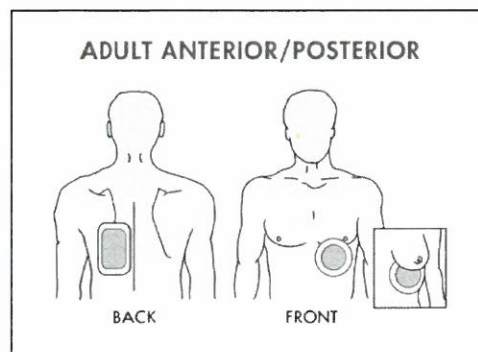
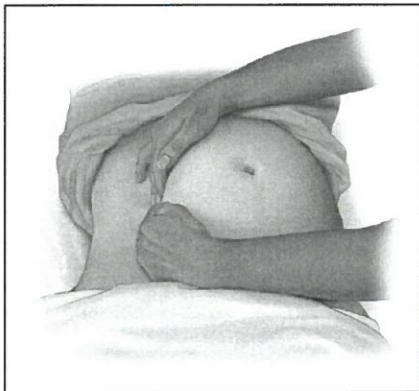
Return of Spontaneous Circulation (ROSC)

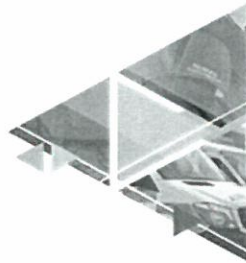
Discuss slide

Special Considerations in cardiac arrest:

Pregnancy

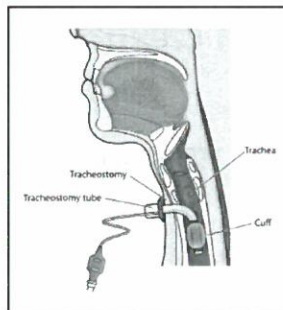
- ✓ The procedure for resuscitating a pregnant patient is the same for any patient, but with some modifications
- ✓ If possible, manually displace the uterus to the left to minimise compression on the inferior vena cava combined with soft padding under right buttock.
- ✓ If feasible, tilt patient to the left (Approx. 15-30 degrees). A small amount of tilt is better than no tilt.
- ✓ In advanced pregnancy (≥ 28 weeks) when performing external chest compressions (ECC) the hand position will need to be higher on the sternum (Approx. 2-3cm)
- ✓ Alternative pad placement maybe required (Anterior-posterior or bi-axillary)





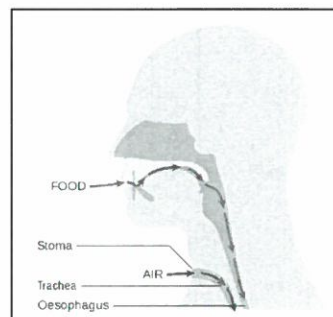
Tracheostomy patient

- ✓ Patients with a tracheostomy potentially have a patent upper airway (see illustration). However, this is not always the case.
- ✓ Some tracheostomy tubes have a removable inner tube - you may need to remove this. First check if it has a connector for ventilating equipment (Catheter mount, BVM etc.), if so clear airway as best as possible, connect equipment and follow BLS procedure.
- ✓ If this fails remove the tube and attempt ventilation via the oral route using BVM, covering the stoma with a gloved hand.
- ✓ Alternatively, cover stoma with a paediatric mask and ventilate. Remember you may need to cover the patient's mouth and nose.

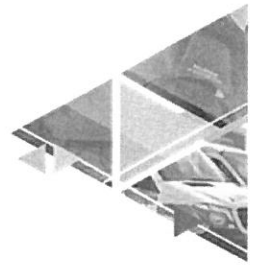


Laryngectomy patient

- ✓ Laryngectomy patients have no connection between upper airway and their lungs. Do NOT attempt to ventilate via the mouth/nose.
- ✓ Normally, there are no tubes in a laryngectomy patient but may have a speaking valve fitted in the stoma – this should NOT be removed.
- ✓ Attempt ventilation over the stoma using the BVM using a paediatric mask.
- ✓ However, if all ventilator efforts fail, chest compressions alone can generate sufficient tidal air volume – if performing compression only BLS provide high flow oxygen to the stoma site.



Managing either type of neck stoma patient will be challenging – further support and



Hypothermia

- ✓ A core body temperature less than 35 degrees is defined as Hypothermia
- ✓ In cases of moderate (28-32 degrees) and severe (less than 28 degrees) hypothermia, signs of life can be very difficult to identify.
- ✓ Unless there is clear indication that the cardiac arrest was caused by a lethal injury or fatal illness, patients should be resuscitated on the principle that 'no one is dead until they are warm and dead' [Truhlar, 2015]

(First

Responder, Care Essentials Chapter 14,)

Technique differences in paediatric cardiac arrest

- ✓ Cardiac arrest in paediatric patients is secondary to a respiratory cause (Eg. fully obstructed airway leading to hypoxia)
- ✓ Always start BLS with 5 initial rescue breaths first before starting 30:2 or 15:2
- ✓ For infants (under 1 year) maintain a neutral aligned position of the head and neck to prevent the trachea kinking, like a drinking straw.
- ✓ When providing chest compressions on a child (over 1 year old) use one hand and on an infant use two fingers or the encircling technique.

Drowning

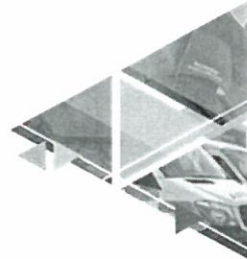
- ✓ Get the person out of the water as soon as possible, placing them supine, then check for breathing
- ✓ If NOT breathing or is breathing abnormally, administer 5 rescue breaths using BVM and high flow O2 (correction of hypoxia in a drowning victim is the most important aspect)
- ✓ An adult submersed in water of 6 degrees or more for 30 min or more is unlikely to survive. However, in water of less than 6 degrees chance of survival can be increased by 90 min, although this is more likely to occur in children immersed in ice cold water [Tipton, 2011]

As with hypothermia, nobody is dead until they are warm and dead [Truhlar, 2015]

When NOT to resuscitate

There may be times when a patient has an injury or presenting **condition that is unequivocally associated with death**, irrespective of age

- ✓ Massive cranial and cerebral destruction
- ✓ Hemitorporectomy (or similar massive injury)-complete amputation below waist
- ✓ Decomposition/Putrefaction- tissue damage suggesting death occurred hours before or even longer
- ✓ Incineration- full thickness burns and charring covering more than 95% of total body surface



- ✓ Hypostasis (graphic image warning!)- pooling of blood in parts of the body after death (blood draining internally below level of heart after death)
- ✓ Rigor Mortis- stiffness of the body and limbs following death

Whenever there is a chance of survival, resuscitation should be attempted

- ✓ The patient has a valid Do Not Attempt CPR (DNACPR)
- ✓ A valid Advanced Decision for Refusal of Treatment (ADRT)

DO NOT ATTEMPT CARDIOPULMONARY RESUSCITATION
 Form for use in the event of cardiac arrest in a patient who has been assessed as not requiring resuscitation (DNACPR) and in whom no other treatment should be given unless otherwise indicated.

Name: _____ Date of birth: _____

Address: _____

Reason for DNACPR: Select an appropriate reason from A, B or C.

A. The patient has a permanent and irreversible condition which is incompatible with survival.

B. The patient has a permanent and irreversible condition which is incompatible with survival and the patient has expressed a wish to refuse resuscitation.

C. The patient has a permanent and irreversible condition which is incompatible with survival and the patient has expressed a wish to refuse resuscitation.

Signature of doctor: _____ Date: _____

My Advance Decision to Refuse Treatment

Name: _____ Any distinguishing features in the event of an emergency: _____

Address: _____ Date of birth: _____

Signature: _____

What is this document for?

This document is a declaration by you, the patient, that you do not want to receive certain medical treatments or procedures in the event of an emergency. It is a legal document that can be used to guide healthcare professionals in making decisions about your care.

Advice to the reader

Read this document carefully. It is a legal document that can be used to guide healthcare professionals in making decisions about your care. It is important to understand the implications of this document and to discuss it with your healthcare professionals.

Please Check

Read this document carefully. It is a legal document that can be used to guide healthcare professionals in making decisions about your care. It is important to understand the implications of this document and to discuss it with your healthcare professionals.

Resuscitation Council (UK) Form

1. This form is to be completed by the patient or a person acting on their behalf.

2. The patient must be aged 16 years or over.

3. The patient must be of sound mind and must understand the implications of this form.

4. The patient must sign this form in the presence of a witness.

5. The patient must sign this form in the presence of a healthcare professional.

6. The patient must sign this form in the presence of a healthcare professional.

7. The patient must sign this form in the presence of a healthcare professional.

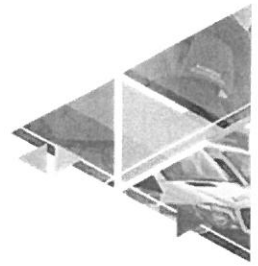
8. The patient must sign this form in the presence of a healthcare professional.

9. The patient must sign this form in the presence of a healthcare professional.

10. The patient must sign this form in the presence of a healthcare professional.

(Handout laminates)

*Sign off to be completed for BLS practice



Session 3			
1245-1315	Choking	Tutor to discuss and demonstrate choking procedures. Students (pairs) to then practice. Tutor and helpers to oversee.	Manikins: choking Charlie, adult, child and infant Sign off booklets

Students will have read pre-learning booklet prior to course and covered elements of scene and patient assessment in day 1

Space required for students to be seated with desks to work on for group tasks and separate clear space for choking practice.

Tutor will discuss and demonstrate choking procedures before group then practice.

Choking – blocked airway

Choking is a mechanical obstruction of the airway occurring anywhere between the mouth and carina.

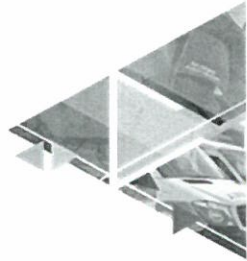
Signs of obstruction

- ✓ Pulling in of muscles between the ribs
- ✓ Pulling of muscles in the neck
- ✓ Clutching the throat

Sounds of obstruction

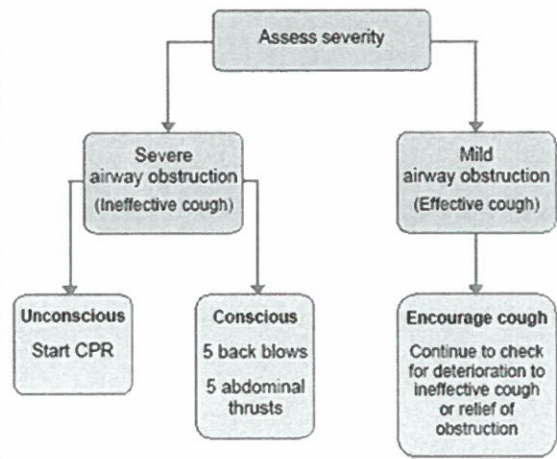
- ✓ Snoring
- ✓ Gurgling
- ✓ Stridor – a high pitched sound usually on breathing in
- ✓ Silence

Ask the patient if they are choking first!



 Resuscitation Council (UK)

Adult choking treatment



Paediatric adaptations:

Child

Change your position depending on size of child

Adjust the force of the back blow according to size of child. Remember this is immediately life threatening and you need to unblock the airway.

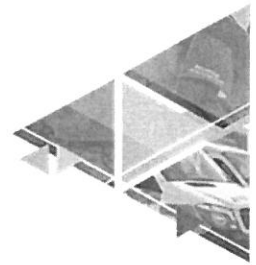
Infant

Lay infant face down on your lower arm, supporting the head under the chin.

Adjust the force of the back blow according to the size of the infant. Remember this is immediately life threatening.

If back blows are ineffective, turn infant over, lying them on their back along your forearm, apply chest thrusts with two fingers on the sternum.

When lying infant along your arm use slight tilt downwards for gravity to assist.



Session 4 1315-1400	Respiratory conditions	Poster group work 2 teams 15min for research 30min to present	Flip chart , paper and pens First Responder, Care Essentials manual (p. 123-126 and 228)
1400-1445	Circulatory conditions	Poster group work 2 teams 15min for research 30min to present	First Responder, Care Essentials manual (p. 141-145) Flip chart, paper and pens

Respiratory conditions –split in 2 groups

Task:

1. What are these conditions?
2. How would a CFR manage each condition?

(Group 1)

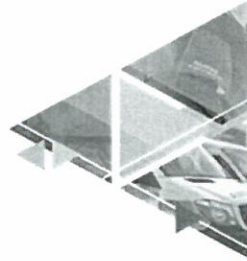
COPD – First Responder, Care Essentials (p. 125)

- ✓ Largest contributory factor is a history of smoking, although only 15% of smokers develop COPD [Patel, 2008]
- ✓ Smoking effects the respiratory system in many ways, predominately by **inflammation**:
 1. Inflammatory cells release substances which trigger an **immune response**, which activate enzymes which cause damage to lung tissue. Although this is mainly damaging process the body is able to limit the damage.
However, in COPD so many enzymes are released they overwhelm this protective and neutralising process. This results in **lung tissue being destroyed** – particularly in the case of Emphysema
 2. Inflammation caused by **inhaling cigarette smoke oxidants**, directly damage cells (free radicals)
*Both of the above mechanisms cause alveolar destruction which in turn creates **excessive mucus**. This is further exacerbated by the **damaged respiratory cilia** that line the airways to remove debris and mucus by flicking them upwards and out of the respiratory tract [Totoro, 2008].

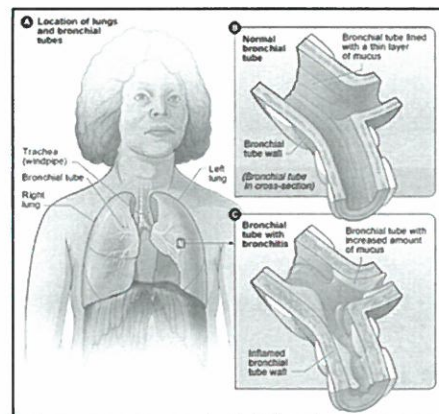
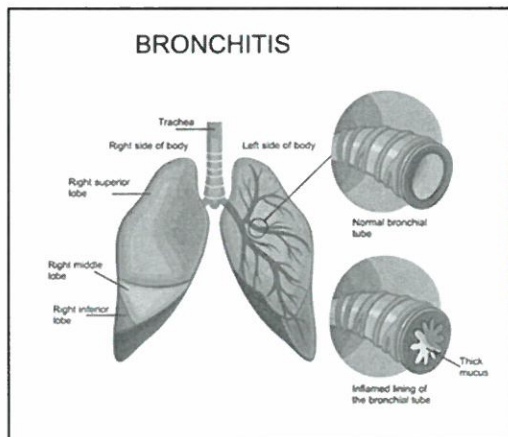
(Group 1)

Chronic Bronchitis – First Responder, Care Essentials (p. 125)

- ✓ Several factors can contribute toward the development of chronic Bronchitis, these can include:
 1. **Cigarette smoking**
 2. **Occupational exposure**: Agriculture, textile, paper, wood, chemical and food processing workers (often through exposure to **small fibrous materials** which damage the lining of the lungs [www.nhs.uk/conditions/bronchitis], and/or
 3. Recurrent bronchial infections



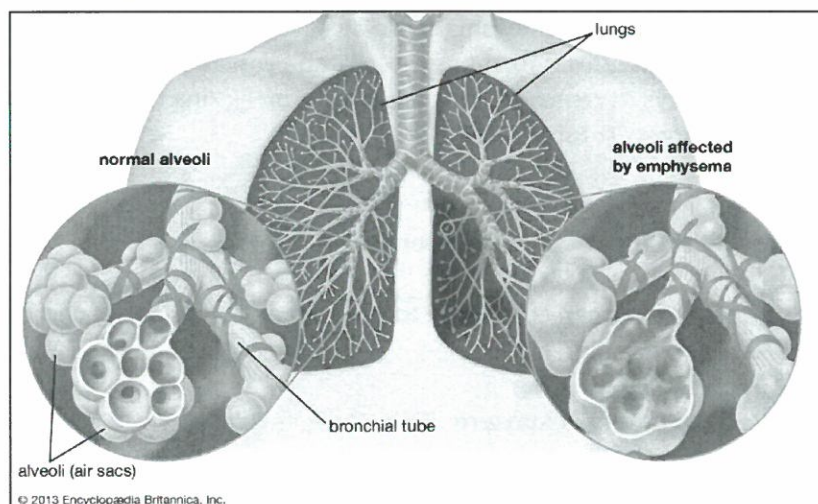
- ✓ These factors lead to **inflammation and narrowing of the airways** with an **increase in mucus production**. Coupled with **damaged cilia** this enables a **build-up of secretions and bronchoconstriction**.
- ✓ **Irritant receptors** are stimulated by this which triggers a **productive cough** [Patel, 2008]



(Group 1)

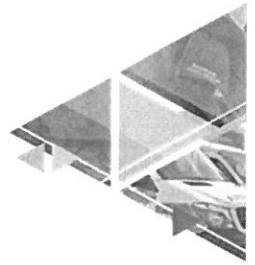
Emphysema – First Responder, Care Essentials (p. 125)

- ✓ The **alveoli walls are destroyed by enzymes** called proteases.
- ✓ Proteases are usually controlled by 'anti proteases'
- ✓ Smoking can disrupt the protease balance. When this occurs the protease begin to destroy the alveoli, **leading to a collapse of the airways**, this causes airway obstruction.
- ✓ Small **blister like air pockets** can develop on the lung called '**bullae**'. Once bullae develop **air can enter the pleural cavity**, causing a Pneumothorax which can lead to a **collapsed lung** [Patel, 2008].



© 2013 Encyclopædia Britannica, Inc.

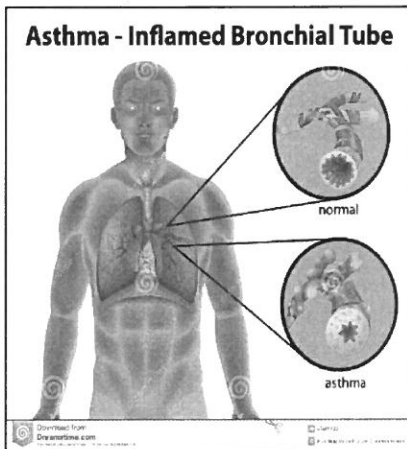
Handout COPD laminates when group presents for visual context



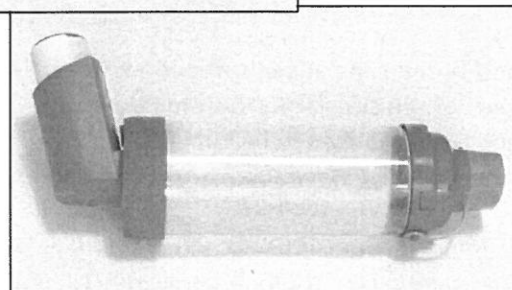
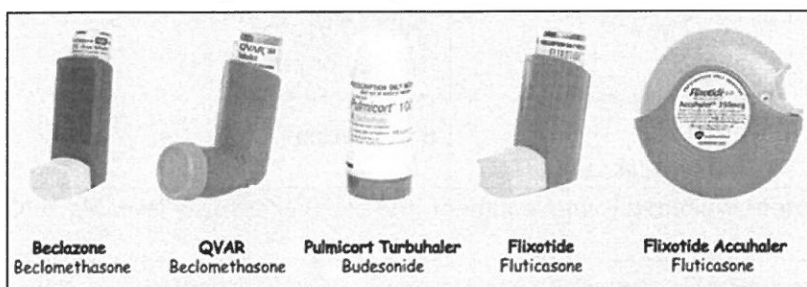
(Group 2)

Asthma

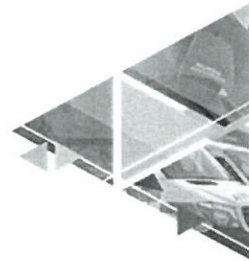
- ✓ An airway obstructing condition that is intermittent and reversible
- ✓ Caused by chronic inflammation of the bronchi (narrowing)



- ✓ Smooth muscle surrounding the airways become irritated causing the muscle to constrict
- ✓ Inflammation can also cause excessive mucous production, worsening the obstruction
- ✓ Often an audible expiratory wheeze can be heard (without a stethoscope)
- ✓ Medications are prescribed to prevent and relieve asthma



Handout Asthma laminates when group presenting for visual context



Severity of Asthma – First Responder, Care Essentials, Chapter 11, p. 124-125

Moderate	Severe	Life-threatening	
SPO2 > 92%	SPO2 >92%	SPO2 <92%	Manage
Adult: RR <25 bpm PR <110 bpm	Adult: RR >25 bpm PR >110 bpm	Adult: Silent chest Poor respiratory effort Exhaustion Altered LOC Cyanosis Hypotension	✓ Encourage patient to use their own medication as prescribed ✓ Administered high flow oxygen ✓ Be prepared to ventilate and/or resuscitate if patient loses consciousness
Child >5years: Able to talk RR <30 bpm PR <125 bpm	Child >5years: Too breathless to talk Accessory neck muscles RR >30 bpm PR >125 bpm	Child >5 years: Silent chest Poor respiratory effort Agitated Altered LOC Cyanosis	
Child 2-5 years: Able to talk RR <40 bpm PR <140 bpm	Child 2-5years: Too breathless to talk Accessory neck muscles RR >40 bpm PR >140 bpm	Child 2-5 years: Silent chest Poor respiratory effort Agitation Altered LOC Cyanosis	
Child <2years: Audible wheezing Accessory neck muscles Still feeds	Child <2 years: Cyanosis Marked respiratory distress Too breathless to feed	Child <2 years: Apnoea or poor respiratory effort Bradycardia	

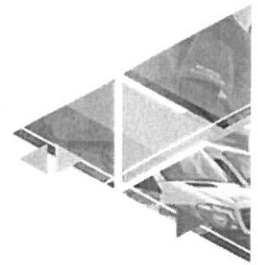
*Only one Sign or symptom is needed to move patient into a higher severity level (Eg. SPO2 91% w into life-threatening

Pulmonary Embolism

A blood borne substance (includes air) which is transported around the blood stream between one part of the circulatory system to another. The substance can become lodged in a vessel, causing the embolism to become stuck in the vessel, blocking blood flow. When the embolism becomes blocked in a pulmonary vessel, it is known as a Pulmonary Embolism (PE).

Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE) represent a spectrum of one disease, known as Venous Thromboembolism (VTE) [Tapson, 2008]

An embolism can also consist of air or fat, the most common being DVT.



*Additional awareness (following lessons learnt) – **NEVER** assume a panic attack with hyperventilation and/or anxiety is a trivial episode. This could be a secondary issue triggered by a more serious event, which has caused the patient to feel anxious and/or panicky. NEVER shall a CFR stand down an ambulance. ALL clinical decisions regarding a patient's ongoing care will only be made by a paid WAST clinician, either through CSD or an attending EA or RRV crew.

Circulatory conditions – split in 2 groups

Task:

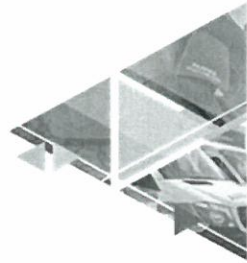
1. What are these conditions?
2. How would a CFR manage each condition?

Angina – First Responder, Care Essentials p. 141

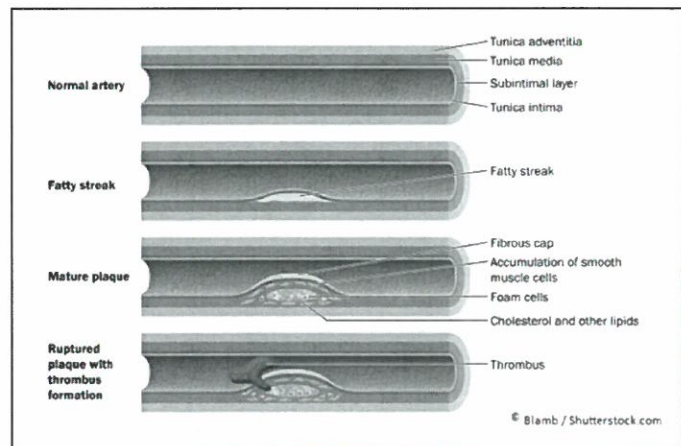
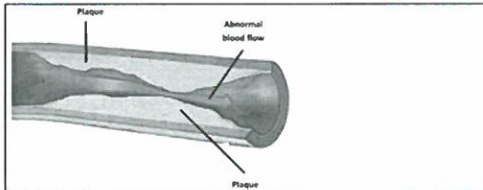
- ✓ Pain or discomfort across the chest, often **sub-sternal in location**
- ✓ Often described as **tightness or indigestion-like ache**
- ✓ Sometimes discomfort **radiates to one or both arms, neck, back or epigastrium**
- ✓ Angina can be classed as **stable if chest discomfort is described as above, triggered on exertion/emotional stress and relieved within minutes on rest or when medications are administered (GTN)**
- ✓ Caused by **greater than 70% stenosis** of at **least one coronary artery**
- ✓ Stenosis is narrowing which **restricts blood flow to the heart muscle (Myocardium)**. Particularly on exertion when the heart muscle requires more oxygen. This leads to **myocardial ischaemia**.
- ✓ **Signs & Symptoms:** central chest discomfort/sub sternal, breathlessness, nausea, vomiting, clammy and pale skin, sweating.
- ✓ **Management:** correct major ABC problems, O2 if indicated, advise patient to use own GTN as prescribed and be prepared to resuscitate.

Coronary Artery Disease – First Responder, Care Essentials p. 141

- ✓ Also known as **ischaemic heart disease**.
- ✓ Mostly caused by **atherosclerosis** of the coronary arteries.
- ✓ **Lipid (Fat) driven immune/inflammatory disease** of medium to large arteries.
- ✓ Over long periods of time (decades) **plaques** form on inside of artery walls. Plaques are made of a build-up of lipids and cholesterol.
- ✓ This causes the release of macrophages (type of WBC)(which dissolves the lipids, leaving a lipid rich 'necrotic core')
- ✓ The interface between plaque and vessel **lumen becomes thickened** which **narrows the space through which blood can pass**, which can lead to exertional angina.



- ✓ If part of the **plaque breaks off** then this can **block the artery**, leading to an **acute coronary syndrome**, which includes the condition Myocardial Infarction (Heart Attack)



Acute Coronary Syndrome – First Responder, Care Essentials p. 142

- ✓ Spectrum of 3 serious conditions (In increasing severity):
 1. Unstable Angina (UA)
 2. Non-ST segment elevation myocardial infarction (NSTEMI)
 3. ST-segment elevation myocardial infarction (STEMI)
- ✓ All 3 condition are a medical emergency
- ✓ In all 3 conditions there is a sudden reduction in coronary artery blood flow [Aaronson, 2004]
- ✓ ST-segment relates to specific changes in the peak and troughs of an ECG print out
- ✓ ST-segment elevation would highly suggest the patient would be suffering an acute heart attack (a blocked coronary artery) and most probably would require specialist treatment with either anti-thrombolytic medications or emergency stenting at a specialist unit, if appropriate.

Treatment for UA and NSTEMI is similar, although as a CFR treatment would be the same for all three conditions

Shock

What is it?

A clinical state where the delivery of oxygenated blood to body tissues is inadequate to meet metabolic demand.

Types

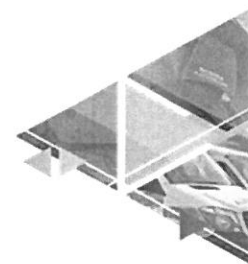
Hypovolemic shock – acute loss of circulating blood volume. Can be assessed in 4 classes:

Class 1: body able to cope, no obvious clinical signs

Class 2: body now compensating. Blood loss is more significant. Body has mechanisms to maintain BP

Class 3: body is decompensating. Blood loss too severe to maintain BP

Class 4: irreversible. Patient likely to die



Distributive shock – wide spread peripheral vascular dilation with leakiness (common in Anaphylaxis and Sepsis)
 Cardiogenic shock – caused by acute cardiac problem (Eg. MI, acute heart failure or arrhythmia)
 Obstructive shock – Uncommon and caused by obstruction of blood flow to/from the heart (Eg. Cardiac Tamponade or Pulmonary Embolism)
 Dissociative shock – oxygen carrying capacity of blood is affected due to reduction in red blood cells (Eg. Carbon Monoxide poisoning or Anaemia)

Heart Failure – First Responder, Care Essentials p. 143

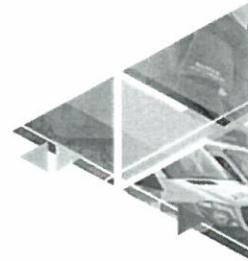
- ✓ **Abnormality of the cardiac structure or functioning.** In turn this **disrupts oxygen delivery** rate for cell and tissue metabolic needs
- ✓ Patients who suffer this for a long time are classed as having **Chronic Heart Failure** – stable if no change to signs and symptoms for a month
- ✓ An acute deterioration in these patients is called **Acute Heart Failure**
- ✓ 20-30% AHF patients are new presentations with small percentage due to malignant hypertensive crisis (BP so high it damages body organs)

Hand out Cardiac laminates when group presenting for visual context

Session 5 1500-1545	Assessing breathing 1. Rate, depth, pattern 2. SPO2 ranges	Tutor to discuss and demonstrate how to assess breathing.	White board/Flip chart, paper and pens SPO2 monitors
	Assessing Circulation 1. Pulse rate, pattern, character 2. Cap Refill 3. BP	Tutor led demonstration	White board/Flip chart, paper and pens Omron BP machines

Students will have read pre-learning booklet prior to course and covered some elements of scene and patient assessment in day 1.

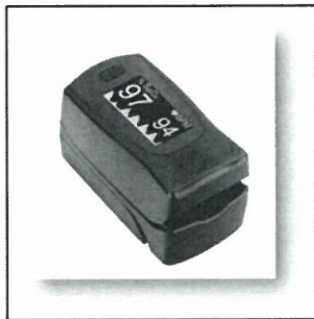
Tutor will discuss and demonstrate how to assess a patient's circulatory system, including the use of the Omron BP machine.



Pulse Oximetry – Handout SPO2 monitors

The principle of pulse oximetry is by simply shining red and infrared light through a part of the body that is relatively translucent and has an arterial pulse, such as finger or toe.

The amount of light transmitted through the tissue depends on the amount of oxyhaemoglobin present; this enables the pulse oximeter to calculate the oxygen saturation and will provide the pulse rate.



1. Assesses severity of respiratory illness or injury.
2. Provides early warning of patient who is deteriorating.
3. Provide feedback about effectiveness of oxygen therapy

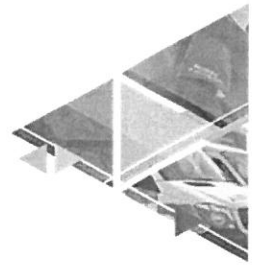


Normal Breathing Rates – Average

- ▶ Adult 12---20
 - ▶ Child 15---30
 - ▶ Infant 25---50
- ✓ Normal rate and depth
 - ✓ Regular pattern of inhalation and exhalation
 - ✓ Regular rise and fall of both sides of the chest
 - ✓ Movement of abdomen

- ✓ Characteristics of Normal Respiration Non COPD patients **94 – 98%**
- ✓ COPD patients **88 – 92%**

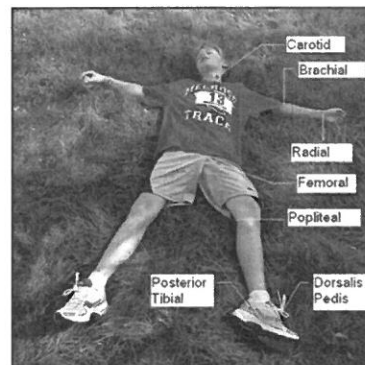
*Some data suggests there is insufficient evidence to say administering high flow O2 in the pre-hospital setting for COPD patients is dangerous, and that it's better to prevent the patient from dying of hypoxaemia. However, a balanced approach is best in that you must not deny O2 to a COPD patient with respiratory distress with SPO2 levels lower than they should be. This is why we must follow JRCALC guidelines and utilise the oxygen therapy flow chart when considering O2 therapy.



Assessing circulation

How to conduct a circulatory assessment – First Responder, Care Essentials p. 136

- ✓ Pulse check – rate, rhythm, volume and character
- ✓ Capillary Refill <2seconds
- ✓ Blood Pressure



Pulse:

The alternating expansion and recoil of the elastic arteries after ventricular systole creates a pressure wave, called a pulse that can be felt in any artery that lies near the surface and can be compressed against a bone or firm structure.

Pulses are assessed for 2 main reasons:

- ✓ To determine the patient's cardiovascular status.
- ✓ To provide reassurance and gain a bond with a patient who may be anxious.

When you assess a patient's pulse you are looking for **4 things**:

- ✓ Rate, 60 to 100 bpm but ask what is normal for them.
- ✓ Rhythm, it should be regular but some conditions produce irregular pulses.
- ✓ Volume, this reflects the strength of the pulse.
- ✓ Character, how would you describe the pulse? Weak and thready or strong and bounding.

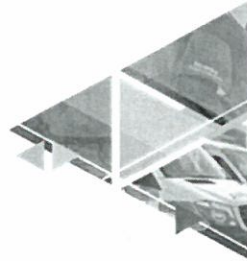
In pulse with regular rhythm, count for 15 seconds and then multiply by 4. If the pulse is very fast or slow / irregular count for the full 60 seconds.

Capillary Re-fill Time (CRT):

CRT is defined as the time taken for distal capillary to regain its colour after pressure has been applied to cause blanching.

Press and hold one of the patient's nailbeds for 5 seconds, then release. The nailbed should pink up again in under 2 seconds. If it's longer than 2 seconds the CRT is delayed.

Beware of poor light as this can lead to errors.



CRT can also be done on the forehead or sternum in paediatrics.
Cold peripheries will also lead to extended CRT.

Blood Pressure:

Blood pressure is the measurement of pressure on the walls of a blood vessel as the blood pulsates through.

It is highest in the aorta and large systemic arteries and lowest in the large veins.

Systolic blood pressure: The phase of the cardiac cycle, when the ventricles contract the blood is forced out of the heart. This is the higher reading of the blood pressure.

Diastolic blood pressure: The phase of the cardiac cycle when the ventricle are relaxed. This is the lower reading of the blood pressure.

It is usually measured in millimetres of mercury (mmHg).

When to do it (Indications)

- ✓ Assessing severity of Circulation conditions
- ✓ Providing early warning of patient who is deteriorating

When not to do it (Contra-indications)

- Children (cuff wrong size)
- Arm affected by: Injury / Stroke / Disability / Mastectomy / Implant / Dialysis

Advantages

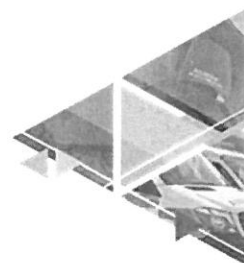
- Easy to use.
- Non-invasive.

Disadvantages

Limitations to equipment.

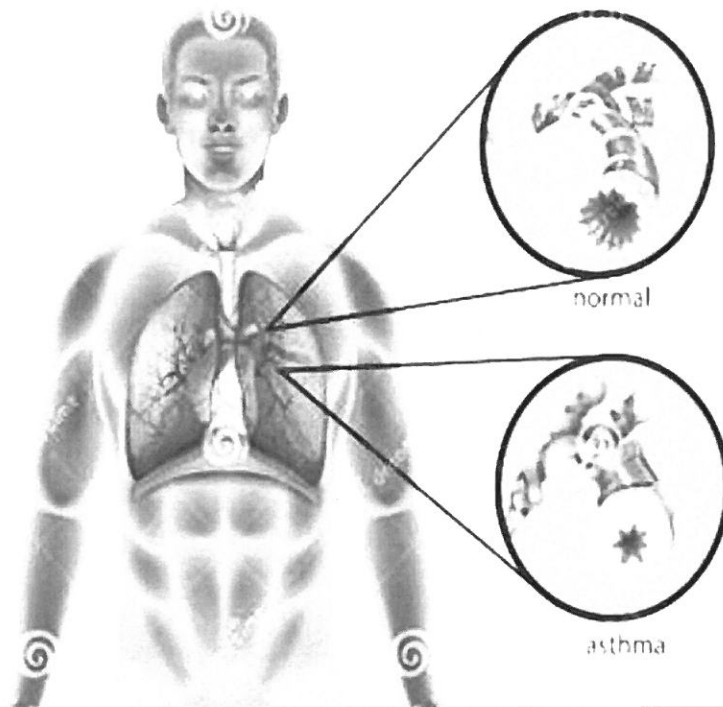
Session 6 1545-1645	Practice Time Medical Scenario (Pairs)	Assess & Manage: 1. Cardiac patient 15min per scenario	Response bags Enhanced skills bags Sign Off booklets Evidence Form 3
1645-1700	Hand in paperwork Close		Sign off booklets

*Sign offs to be completed:
Choking procedures



Asthma

Asthma - Inflamed Bronchial Tube

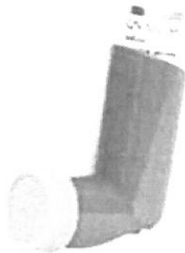


- An airway obstructing condition that is intermittent and reversible
- Caused by chronic inflammation of the bronchi (narrowing)
- Smooth muscle surrounding the airways become irritated causing the muscle to constrict
- Inflammation can also cause excessive mucous production, worsening the obstruction
- Often an audible expiratory wheeze can be heard (without a stethoscope)
- Medications are prescribed to prevent and relieve asthma

Medication



Beclazone
Beclomethasone



QVAR
Beclomethasone



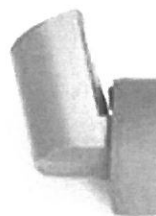
Pulmicort Turbuhaler
Budesonide



Flixotide
Fluticasone

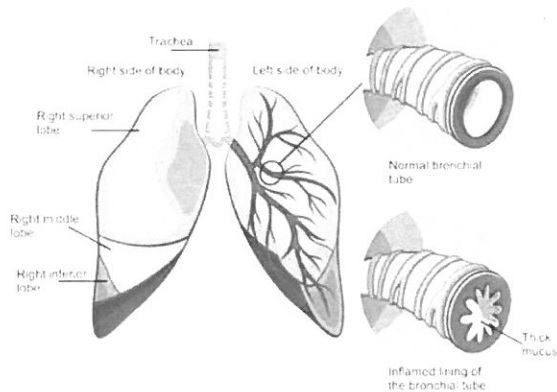


Flixotide Accuhaler
Fluticasone



Chronic Obstructive Pulmonary Disease (COPD)

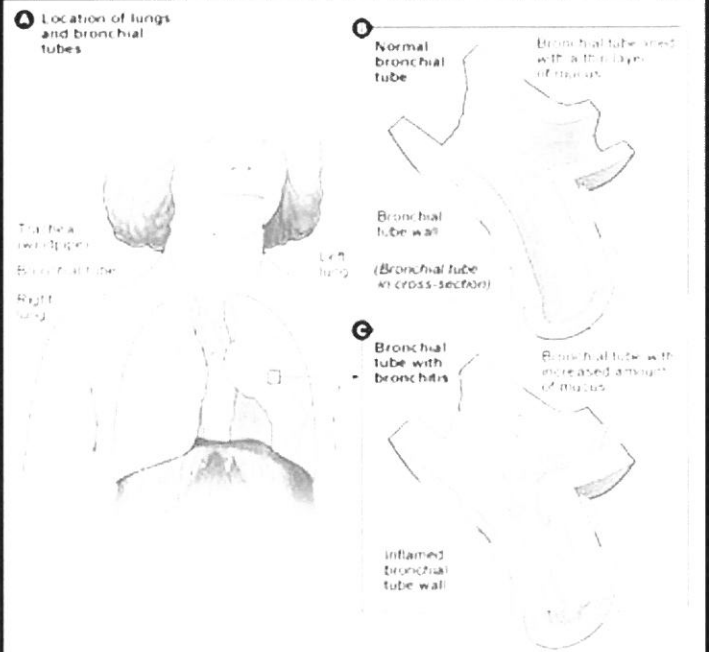
BRONCHITIS



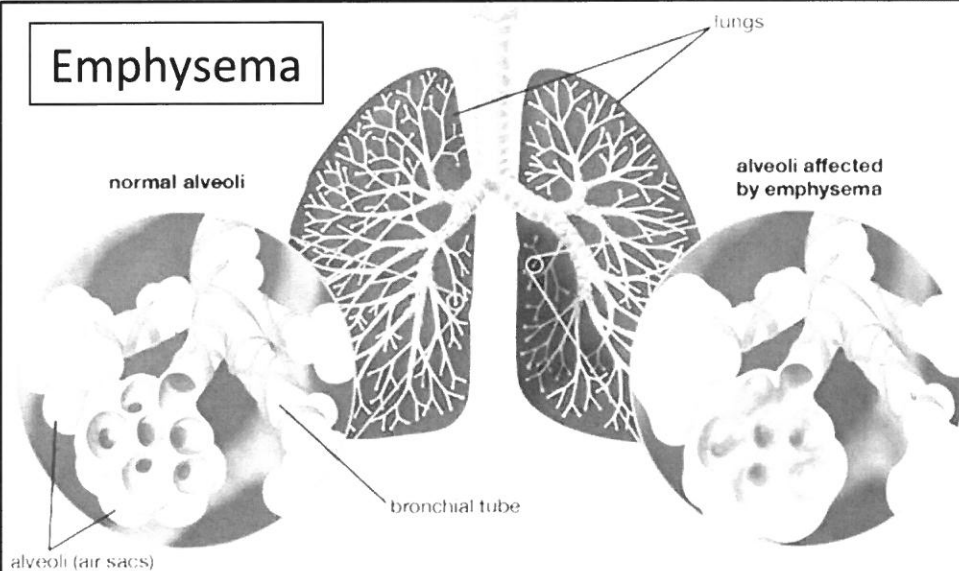
Several factors can contribute toward the development of chronic Bronchitis, these can include:

- Cigarette smoking
- Occupational exposure
- Recurrent bronchial infections

- These factors lead to **inflammation and narrowing of the airways** with **increased mucus production**.
- **Irritant receptors** are stimulated by this which triggers a **productive cough** [Patel, 2008]



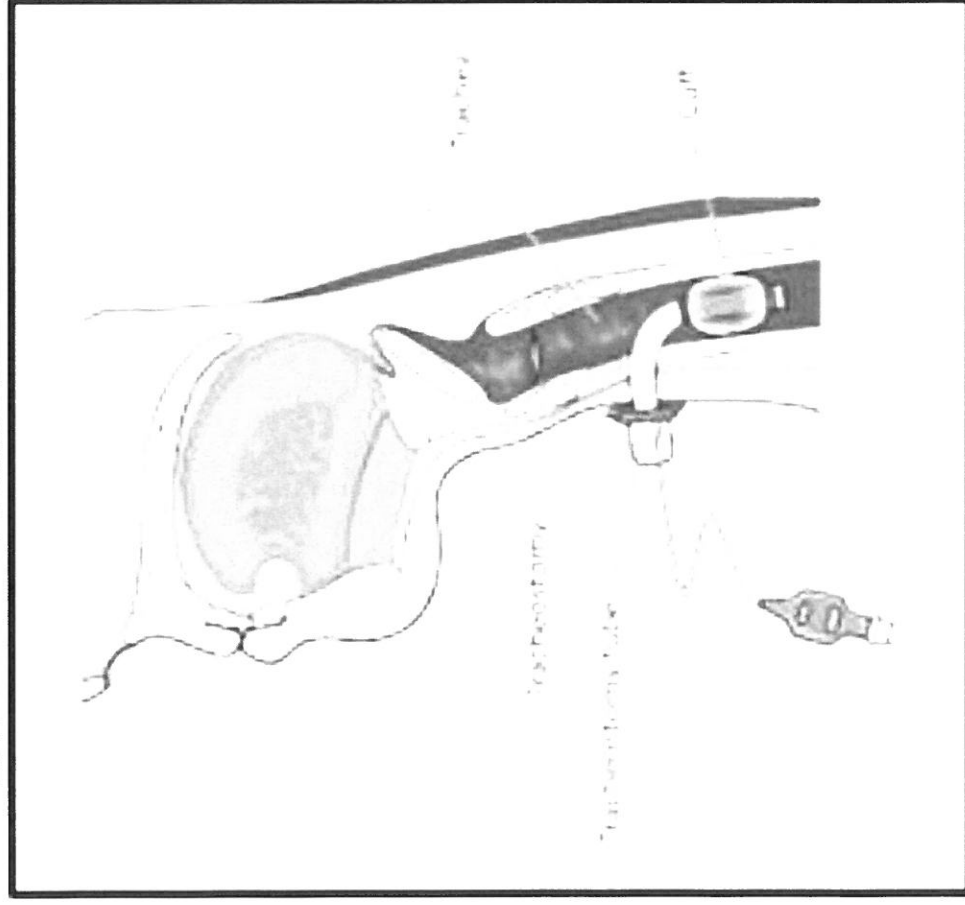
Emphysema



© 2013 Encyclopædia Britannica, Inc.

- The alveoli walls are destroyed by enzymes (proteases)
- Smoking can disrupt the protease balance. When this occurs protease destroy the alveoli, leading to a collapse of the airways, this causes airway obstruction.
- Small **blister like air pockets** can develop on the lung called '**bullae**'. This can lead to a **collapsed lung** [Patel, 2008].

Tracheostomy



Laryngectomy

